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DOI: https://doi.org/10.1111/weng. 12633

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ZORA URL: https://doi.org/10.5167/uzh-254332
Journal Article
Published Version


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Originally published at:
Hundt, Marianne; Dallas, Bethany; Nakanishi, Shimon (2023). The be- versus get-passive alternation in world Englishes. World Englishes:Epub ahead of print.
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# The be-versus get-passive alternation in world Englishes 

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#### Abstract

Multifactorial studies of the BE:GET-passive alternation are still rare. On the basis of the International Corpus of English, this is the first investigation to use mixed modelling for the passive alternation in world Englishes. Overall, our findings reveal that regional differences are far less important than language-internal constraints, with Inner and Outer Circle varieties largely sharing a core grammar. Additionally, while there is qualitative evidence confirming the interchangeability of the two passive allostructions, our generalised-mixed model reveals that the choice is still heavily influenced by the different semantic origins of the variants, evident not only in the adversative semantics of the GET-passive but also in a tendency to prefer human/animate subjects. The strong prescriptive reaction to the progressive passive in the Late Modern period, however, has not resulted in a marked preference for GET over BE in progressives in our data.


## 1 | INTRODUCTION

Passive constructions have attracted the attention of linguists in world Englishes research for various reasons. On the one hand, there is evidence of structural borrowing, as is the case with the kena-passive in Singaporean English (see Fong, 2004: 97-98 or Kim \& Sato, 2013). On the other hand, various studies have observed differences in the frequency of BE- and GET-passives, not only across different varieties of English world-wide but also across the written vs. spoken mode. Several explanations have been offered for the observed variability, including the different historical

[^0]origins of the two constructions and/or prescriptive influence which, in turn, may affect different varieties to different degrees. Both passives combine a catenative verb (BE or GET) with a past participle. As GET does not possess the NICE properties - it needs do-support for negation, inversion, contrast and emphasis - we refer only to BE as an auxiliary (see Quirk et al., 1985: 160).

One of the challenges for research on the passive allostructions is their gradient nature, with prototypical or 'central' passives (Svartvik, 1966; Quirk et al., 1985: 167-68) at one end and those with an adjectival participle at the other end of the cline (cf. They were/got hit vs. They were/got interested). Another obstacle to corpus-based research into passives was that, before the advent of Part-of-Speech (PoS)-tagged corpora, studies had to rely on lexical retrieval, which proves particularly problematic for BE-passives.

With a very few exceptions, existing studies focus on either the BE-passive or the GET-passive, and few of these studies take a multifactorial approach at modelling the BE-passive (in opposition to active transitives, as in Hundt et al., 2016 or Hundt et al., 2021). Biewer (2009), who investigates both GET- and BE-passives looks at them separately rather than as a choice context. Only two previous studies have modelled the BE:GET-passive alternation so far, namely Fehringer's (2022) multifactorial analysis of the alternation in a regional variety of British English (BrE) and Bohmann et al.'s (2023) study on diachronic American English (AmE), which takes a bottom-up, vector-based approach at modelling semantic aspects of the choice between the two variants.

The aim of the present paper therefore is to fill a gap in existing research. On the basis of data from a broad range of regional varieties of English as well as a range of variety types, we model the factors that influence the choice between a BE- and a GET-passive. The predictor variables in our multifactorial approach are mostly derived from previous research into the two passive constructions, which we review in Section 2 of the paper. On account of the gradient nature of passives, ${ }^{1}$ a clear definition of the dependent variable is an important starting point for data retrieval and analysis. We provide background on these aspects in Section 3, along with details on the approach to statistical modelling that we take as well as the operationalisation of the predictor variables. The results of our analyses are presented in Section 4 and their wider relevance for the theoretical modelling of constructional variation in world Englishes is discussed in the concluding section. Specifically, the results on the passive add to a growing body of research showing that world Englishes share a core grammar, including important aspects of variability in the use of alternating forms.

## 2 | PREVIOUS RESEARCH

## 2.1 | Passives in world Englishes

As pointed out above, the majority of previous studies looks at either the BE-passive or the GET-passive in world Englishes. In their study on the active:passive alternation, Hundt et al. (2016) find that there are very few regional differences in academic writing, with no obvious influence of different substrates in the second-language varieties. They attribute the avoidance of the BE-passive in AmE academic writing to prescriptive influence. Hundt et al.'s (2021) multifactorial study reveals more fine-grained differences in the effect size that predictor variables like animacy, length of the subject or givenness play in the choice between active transitives and BE-passives.

Earlier studies have looked at GET-constructions in world Englishes generally (Bruckmaier, 2017; Coto-Villalibre, 2014) or focused more specifically on passives with GET (most others). GET-passives have been studied against the background of different theoretical frameworks, notably generative (Alexiadou, 2006, 2012; Wanner, 2009) and functional (Givón, 1993; Quirk et al., 1985) ones, and using different methodological approaches, such as corpus data (Rühlemann, 2007; Schwarz, 2017) or experimental evidence (Thompson et al., 2013, 2018). The range of Englishes that have been investigated in previous studies is also quite broad, including varieties of English as a first language (InnerCircle) from different regions (specifically northern and southern hemisphere varieties, see Leech et al., 2009 or Hundt et al., 2008), Outer Circle (OC) varieties with AmE or BrE as their matrilect (namely Philippine English vs. Singaporean, Indian, Hong Kong or Fiji English, see Hundt, 2009; Coto-Villalibre, 2015, 2016), as well as English as a
second dialect (ESD) in Jamaica (Bruckmaier, 2016). Fehringer (2022) adds a regional variety of BrE (Tyneside English) to these.

Previous research is somewhat inconclusive with respect to regional differences in the distribution of GET-passives, which are typically presented as normalised frequency (either by corpus size or relative to other GET-constructions). Collins (1996) finds the GET-passive to be more frequent in Australian English (AusE) than in BrE and AmE while Indian English (IndE) uses GET-passives even more frequently than any of the Inner Circle (IC) varieties. Some studies (Leech et al., 2009) provide evidence for the GET-passive being more frequent in AmE than in BrE , while the results of other studies indicate that settler varieties such as Australian (AusE) and New Zealand English (NZE) fall between the two matrilects in their use of GET-passives (Sussex, 1982; Hundt, 1998: 78). There is preliminary evidence that OC varieties align with BrE (namely IndE) or AmE (notably PhilE and SingE), and not necessarily their historical matrilects (Hundt, 2009). One of the possible reasons for these different findings could be that they are based on different corpora which were sampled at different times using different sampling frames. Collins' (1996) investigation uses the American Brown and the English Lancaster-Oslo/Bergen (LOB) corpus, which are collections made from texts published in 1961, and compares them to the Australian Corpus of English and the Kolhapur Corpus of IndE. The latter used the same sampling frame as the Brown and LOB corpora, albeit on material sampled in the second half of the 1980s, about 25 years after the publication of the texts in the reference corpora. With evidence of a growing use of the GET-passive (ongoing change), the diachronic dimension is likely to have had a skewing effect with respect to regional differences across the Brown-type corpora (see Hundt, 1998). Studies based on the International Corpus of English (ICE) include material from spoken as well as written usage, and within written texts, both published and unpublished material. This is important because previous research indicates that GET-passives are used more frequently in speech than in writing (Hundt, 2009), while they are particularly rare in formal writing (Mair, 2006: 111; Leech et al., 2009: 158). Moreover, Bohmann et al.'s (2023) multifactorial analysis of the passive alternation in the Corpus of Historical American English has shown that the association of the GET-variant with informal contexts persists across time, while other factors weaken. In other words, variation according to mode (speech vs. writing) and register (formal vs. informal) is likely to have an influence on the BE:GET-passive alternation, and it remains to be seen how these factors interact with regional variation.

## 2.2 | Constraints on the BE: GET passive alternation

The two passive constructions have quite different diachronic trajectories, which in turn have led to different contextual preferences. While the BE-passive is the older of the two variants, with incipient grammaticalisation of this passive variant dating back to the Old English (OE) period, the GET-passive is a much more recent development.

Like other Germanic languages, OE made use of two verbs, namely beon/wesan 'be' and weorðan 'become'. English lost the latter, more dynamic variant of the emergent passive in the Middle English period (see Fischer, 1992: 250 or Petré, 2010). The variant with GET developed in the Late Modern period, with the earliest unambiguous passives attested from the end of the seventeenth century (see Hundt, 2001: 71). Brinton (1994: 159) points out that the two passives may eventually specialise to stative and dynamic variants of the passive construction:

Though the get passive is not yet fully standardized in English, its existence may ultimately lead to the restriction of the be form to stative or statal passive meaning and the getform to dynamic or inchoative passive meaning.

A precursor to these more dynamic passives are causative transitive constructions with animate subjects such as get sth done, which also had reflexive variants, as in he got himself fired (Hundt, 2001). Unlike prototypical BE-passives, which typically have non-human or inanimate subjects, the origins of the GET-passive thus foster a preponderance for animate subjects. These origins also explain why the subject in GET-passives is still felt to carry some of the
responsibility for the action it undergoes, unlike the prototypical patient in a BE-passive (He got/was fired; see Hatcher, 1949; Vanrespaille, 1991; Carter \& McCarthy, 1999). Because of this semantic difference in the involvement of the grammatical subject, GET-passives have been said to combine with an agent by-phrase less easily and often than BEpassives (see Matthews, 1993: 22 or Carter \& McCarthy, 1999: 51). Our data will allow us to verify how strong these semantic aspects are in determining the choice between BE and GET to form the passive.

While there are historical reasons that the semantics of the subject might have a limiting effect on the availability of GET to form passives, aspectual restrictions in the earlier history of the BE-passive might favour the choice of GET over BE in progressives. The earliest progressive BE-passive dates back to the late 1760s (Bergen, 2013). Moreover, the combination of the progressive with passive BE as auxiliary was one of the most hated grammatical innovation at the time and attracted massive reaction from prescriptive grammarians (see Anderwald, 2016). Smith and Rayson (2007) have therefore argued that the GET-passive might be favoured in combination with the progressive even in Present-Day English, as it avoids the combination of two forms of BE.

Since Hatcher's (1949) paper, the special semantics of the GET-passive has been repeatedly addressed in the literature (Chappell, 1980; Downing, 1996). According to this, GET-passives are prone to combine with verbs such as fire, arrest or sack that express actions which have a negative effect on the subject. The studies that have looked at the alleged 'adversative' semantics of the GET-passive have mostly focused on the proportion of adversative vs. nonadversative meanings of the construction itself. Fehringer (2022) finds that in her older speakers, there is an effect of semantics in that BE shows a clear preference for benefactive contexts, but in younger speakers, semantics of the construction no longer has an effect. Similarly, Bohmann et al. (2023) find that the semantic constraint weakens across time in their AmE data. It will be interesting to see whether semantics has an effect on the passive alternation in our world Englishes data.

## 2.3 | Research questions

With the exception of Fehringer (2022) and Bohmann et al. (2023), this is the only study that takes a multifactorial approach to the BE:GET passive alternation and the first to do so for a broad range of world Englishes. With this approach, we aim to answer the following research questions:

RQ1: Which of the factors in our analysis impact on the choice between the BE- and the GET-passive and how do they interact?

RQ2: Does regional variety emerge as a significant/important factor, and if so, do variety type (IC vs. OC), area (northern vs. southern hemisphere, Asian vs. non-Asian varieties) or diachronic connection (British-based vs. American-based varieties) play a role?

The second RQ is closely related to the question whether the emergence of new Englishes goes hand in hand with a process of nativisation or indigenisation, which does not typically result in categorical differences but rather regional preferences for usage patterns (Schneider, 2007: 22) or what Szmrecsanyi et al. (2016: 133) refer to as 'probabilistic indigenization', namely:
the process whereby stochastic patterns of internal linguistic variation are reshaped by shifting usage frequencies in speakers of post-colonial varieties. To the extent that patterns of variation in a new variety A, for example, the probability of item $x$ in context $y$, can be shown to differ from those of the mother variety, we can say that the new pattern represents a novel, if gradient, development in the grammar of A. These patterns need not be consistent or stable ... but they nonetheless reflect the emergence of a unique, region-specific grammar.

TABLE 1 Overview of world Englishes included.

| Variety | Acronym | Region | Variety type |
| :--- | :--- | :--- | :--- |
| British English | BrE | Europe | Inner Circle |
| Irish English | IrE | Europe | Inner Circle |
| Canadian English | CanE | North America | Inner Circle |
| Australian English | AusE | Pacific | Inner Circle |
| New Zealand English | NZE | Pacific | Inner Circle |
| Hong Kong English | HKE | Asia | Outer Circle |
| Singapore English | SingE | Asia | Outer Circle |
| Indian English | IndE | Pacia | Outer Circle |
| Philippine English | JamE | Caribbean | Outer Circle |
| Jamaican English |  |  | Outer Circle (ESD) |

On the basis of previous research, we predict to find differences in the use of GET-passives across different types of variety, with IC varieties being, overall, more attuned to the colloquial origin of the GET-passive and hence more likely to avoid it in the more formal, written register (see Hundt, 2009).

We also expect GET-passives to more readily combine with progressive aspect, particularly in IC varieties, due to the late emergence of the progressive BE-passive and the tendency to avoid the combination of two forms of auxiliary BE (passive and progressive) in succession. Varieties with a substrate that requires marking for aspect more regularly (like IndE, see Sharma, 2009) are expected to be overall more open to combinations of both progressive and perfect aspect with both passive constructions.

Seeing that the GET-passive, due to its path of constructionalisation, is inherently more agentive, we expect the GET-passive to show an overall greater propensity to be used with human subjects, while the BE-passive is likely to be used more freely with inanimate subjects and a by-phrase openly assigning responsibility to an external agent.

As in previous research on grammatical alternations (Szmrecsanyi et al., 2016), we expect language-internal factors like subject animacy or aspect to play a greater role in the choice of passive construction than variety type (IC vs. OC) or regional variety.

## 3 | METHODOLOGY

Our data come from the ICE, which provides a set of standard, one-million-word corpora compiled along the same sampling principles (Greenbaum, 1996). Seeing that the GET-passive is still increasing and diachronic change might also affect the predictors for the choice in the passive alternation (see Fehringer, 2022), we limit our analysis to the firstgeneration ICE components and exclude any of the ICE-Age 2 components such as ICE-Nigeria or ICE-Sri Lanka (see Hundt, 2020). Moreover, not all currently available ICE components have been syntactically annotated, which would make retrieval of BE-passives problematic. As a result, the regional spread of our data is somewhat limited: our OC varieties come from Asia as African varieties were underrepresented in first-generation ICE components, and those that were included have not been syntactically annotated, yet. We were able to include a total of 10 world Englishes in our study, among them five varieties from countries where English is the first language for the majority of speakers (IC), four where it is an institutionalised second language ( OC ) and one where standard English is spoken as a second dialect of English alongside a creole variety, namely Jamaica. Table 1 gives an overview of the regional varieties we include in our study. We did not include US English in our data because the spoken part of that ICE component has
not been completed, and our aim is to compare the alternation across both spoken and written contexts of use. North American varieties are represented by Canadian English, a close relative of US English.

Since first-generation ICE components represent language use from the late twentieth-century, our study can serve as a starting point for research on more recent (albeit less carefully compiled) corpora such as the Global Web-based English (GloWbE) (www.english-corpora.org/glowbe/) or the News on the Web (NOW) (https://www.english-corpora. org/now/) corpora.

## 3.1 | Retrieving passives from the tagged components of ICE corpora

We accessed the ICE corpora online ${ }^{2}$ via the Zürich Dependency bank (see Lehmann \& Schneider, 2012 for details), which allowed us to make use of the PoS annotation of the corpora. We retrieved all forms of the catenatives followed by a past participle, allowing for a total of five/four words between the catenative and the participle. ${ }^{3}$ The algorithms retrieve affirmative and negative variants of the passives, instances in declaratives and interrogatives as well as variants with intervening adverbs or hesitation markers like uh or ehm common in the spoken part of the corpora. Interestingly, the algorithm also retrieved the occasional (potential) passive with a bare participle; the following example from ICE Hong Kong illustrates this (even though BE and the bare participle are only adjacent and not part of the same verb phrase in (1), which was not included in our set of passives):
(1) They are Welcome Back by Pricilla Chan, Just wake up from dream by Cass Pang, and All time favourite by Shirley Kwan. (ICE-HK, W1B-009) ${ }^{4}$

The number of potential passives retrieved allows us to analyse all constructions with GET (between 161 and 460 per variety, see Table 3, subsection 4.1). The number of potential BE-passives turns out to be too large for exhaustive analysis. Since our main interest is in gauging the relative importance that a common set of predictor variables has on the choice of one construction in the BE:GET-passive alternation, analysing a random subset from the BE-concordances is sufficient. ${ }^{5}$ We decided to select a total of 150 BE-passives for each variety for further analysis.

## 3.2 | Definition of the variable context and manual post-editing

We treat the BE:GET-passive as an alternation, as two different ways of saying the same thing. The following examples illustrate that they co-occur, with example (2) illustrating nicely that both variants are, in fact, occasionally used interchangeably with the same lexical verb.
(2) Anything that has to get gone into can be gone into in the morning, Rose said. (ICE-IRE, W2F-018)
(3) See that the calculated interest is correct and discrepancies, if any should be noted and get rectified. (ICE-IND, W2A-013)

In construction grammar, constructions are 'conventional, learned form-function pairings at varying levels of complexity and abstraction' (Goldberg, 2013: 17) and the variants with the two catenatives can thus be conceived of as allostructions (see Cappelle, 2006) of an overarching, more abstract passive construction. Passive constructions combine a patient subject NP with a catenative and the past participle of a lexical verb; the agent of the related active construction is optionally expressed in a prepositional phrase, typically introduced with by. The relationship between the more abstract passive and its allostructions is shown in Figure 1. At the constructeme level, the catenative ( C ) is underspecified whereas in the two allostructions, the catenative is lexically specified as BE VS. GET, respectively.


FIGURE 1 Constructeme-allostruction relation of the English passive alternation.

Previous research has shown that the passive allostructions are characterised by different contextual preferences: they have an affinity to different registers, verb semantics, animacy of the subject and different propensities to combine with tense, aspect and modality (TAM). Nevertheless, we expect these to be tendencies rather than categorical rules. Importantly, they assign the same semantic role to the NP in subject position, which undergoes the action expressed by the lexical verb.

Since combinations of BE and GET with a past participle are gradient phenomena that are also used to express nonpassive semantics, it is important to clearly define the variable context. We only included dynamic, central BE-passives in our dataset. These typically denote events rather than states, and while passive They were arrested is ungrammatical with gradation adverbs such as very, stative copular They were frightened combines with gradation adverbs, indicating that frightened functions like an adjective rather than a verb. As central BE-passives are also non-reciprocal, we included constructions like They were loved in our dataset but not They were engaged/married as only the latter combines with to each other. With respect to the GET-passive, similar criteria apply: instances that allow for a gradation adverb such as He got (very) worried were excluded as the participle is an adjective. We also excluded constructions with reflexive or reciprocal semantics, such as He got shaved and They got married, and unclear instances in which a reflexive interpretation was possible. In the following example, either an external agent is sorting them out or the subjects are actively doing the sorting themselves:
(4) $\ldots$. and they're getting sorted out. (ICE-GB, S2A-006)

English passives can also take the indirect object of a related ditransitive construction as their subject. This holds also for GET-passives, as example (5) shows.
(5) ... my sister got given a hamster once for her birthday by a family that was moving away. (ICE-CAN, S1A-053)

Tests for passive-hood would lead us to expect that the lexical use of GET (in the sense of 'obtain') and the passive use cannot occur in a coordinated verb phrase. However, ICE-NZ yields the following example, which we included in our set of GET-passives:
(6) We went to a lovo and he got food poisoning, and badly bitten by mosquitoes. (ICE-NZ, W2F-011)

In manually post-editing the data, we excluded a number of false positives, both erroneously retrieved instances as well as those that did not fit our definition of the dependent variable. Some false positives from the spoken part of the corpora are due to repetition or planning errors, in which case the retrieval algorithm misidentified the repetition of the catenative or the second verb as the lexical verb potentially forming a passive, as in (7) and (8). Online spoken production occasionally leads to a change in catenative before the lexical verb is selected, as in (9) and (10); such instances were not included in our dataset:
(7) Well it's been it's been functioning as a hotel also uh apparently. (ICE-PHI, S1B-038)
(8) I suppose if you're in a country that's leading the world or starting to get become really prosperous ... (ICE-AUS, S1B-014)
(9) ... we get we are separated from the English speaking people ... (ICE-IND, S1A-010)
(10) ... a lot of these uh brands will get will be stolen or cheated ... (ICE-JAM, S1B-051)

The algorithm retrieved instances where BE/GET did not form a complex verb phrase with the participle. This kind of false positive is illustrated in (1) as well as (11)-(15):
(11) Mr Moore said land-holders could still be liable for court costs involved in defending their leases against claims. (ICE-AUS, W2C-008)
(12) In thematic terms it would be how trapped the characters become in their lives and the roles that are determined for them by others, usually parents. (ICE-NZ, W1A-004)
(13) It gets red when activated. (ICE-SIN, S1A-008)
(14) The whole process is thus streamlined and clients get processed results much more quickly. (ICE-HK, W2A-033)
(15) you've got to actually have built i think. (ICE-NZ, S1A-068)

Our definition of the BE:GET-passive led us to exclude further false positives. In example (16), the participle functions as an adjective as the sentence could easily be rephrased as We were then unprepared ... . On the same grounds we excluded example (17), which does not qualify as a passive despite the by-phrase that could potentially be taken to encode the external agent. ${ }^{6}$ The participles in (18) and (19) can combine with an adverb like very or completely, so function as adjectives. This also holds for the participle in example (20)a. where the by-phrase, moreover, is the cause of the action rather than a constituent that could function as a subject in an active transitive construction:
(16) We were not then prepared to live within our means as a nation ... . (ICE-IRE, S1B-060)
(17) a. Shipley is undaunted by the prospect. (ICE-NZ, W2B-013)
b. *The prospect undaunted Shipley.
(18) Yeah stuff that everyone knows really well so they can go along and get pissed ... (ICE-AUS, S1A-011)
(19) it's not in the area that i'd like to get involved in. (ICE-NZ, S1A-055)
(20) a. You really get hooked by these astronomical events. (ICE-CAN, W2B-O28)
b. *These astronomical events really hooked you.
c. These astronomical events get you really hooked.

The following examples were excluded because BE and GET here function as catenatives in stative/resultative constructions rather than dynamic passives:
(21) Both of them were covered in spatters of a clear substance that looked like Clearasil gel. (ICE-GB, W2F-002)
(22) ... he was totally changed actually ... (ICE-IND, S1A-010)
(23) ... we've got to get finished by Christmas. (ICE-GB, S1B-029)

A complication for the delineation of the variable is added by the fact that, particularly in contact varieties of English, BE is also used to form perfects (Werner, 2016), which makes (24) potentially ambiguous between a passive and a perfect reading. Such potentially ambiguous instances were excluded from our dataset:
(24) When the solution of gelatinized starch is cooled. (ICE-HK, W1A-019)

Finally, BE/GET + participle are also used in a broad number of idiomatic contexts, such as BE/GET used to, get rid of, get stuffed in the sense of 'go away', get carried away, get hooked or get fed up.
(25) This was not a situation the East Germans were used to; ... (ICE-GB, W2F-012)
(26) ... Rosie sort of said oh well get stuffed. (ICE-AUS, S1A-045)
(27) we're going to get rid of that wood anyway. (ICE-CAN, S1A-005)
(28) I don't get carried away with huge transit mixer business ... (ICE-AUS, W1B-030)
(29) I just got hooked on it. (ICE-JAM, S1A-062)
(30)
... I got fed up with his brother ... (ICE-PHI, S1A-057)

The BE-passives were annotated by two authors, each. Inter-annotator agreement (based on the Kappa coefficient, Carletta, 1996) was high at around 80.8\%. Additionally, we were conservative in our decision to include BE-passives and excluded instances where one coder had raised doubts. The GET-passives were all coded by the first author (two rounds of coding for consistency) and double-checked by the second author. We provide the complete dataset at https://osf.io/dx5bz/.

## 3.3 | Statistical modelling

We fit a Generalised Mixed Model Tree (glmertree) to our data. This approach combines the linear mixed-modelling approach with a decision tree and can be easily implemented in the glmertree package available in R (Fokkema \& Zeileis, 2019). The advantage of this approach is that decision trees provide a straightforward way of interpreting the interactions of predictor variables in a model (see Fokkema et al., 2018) while the mixed-modelling approach allows us to include the verb lemma as a random effect. ${ }^{7}$ Since fitting the glmertree with all predictor variables failed to work, we first fit a Random Forest (RF) using the party package in R (Strobl et al., 2009) to determine which of the predictor variables were significant. For the glmertree, we then started out with the first four significant predictors from the RF (namely VARIETY, REGISTER, ANIMACY, SEMANTICS), which did return a valid model and proceeded to add the other predictors in the order they were returned in the RF. We test for model fit with Somers2. The glmertree returned a good model fit with VARIETY, REGISTER, ANIMACY, SEMANTICS and TENSE (see subsection 4.2), but failed to work with any of the other predictors added into the model. We provide the R codes we used for fitting the RF and glmertree at https://osf.io/dx5bz/.

Table 2 gives an overview of the variables we include in the RF as well as the random effect included in the glmertree. Level codes in brackets were used to improve the legibility of the glmertree. We comment on the operationalisation of those factors that are not straight forward.

For the verb lemma, we chose to normalise spelling variation to BrE , that is words ending in -ize or -or were coded as -ise and -our across all varieties. In cases where there were two verbs in a conjoined verb phrase, we annotated the first one, as in the following instance where V_LEMMA is review:
(31) All these decks have been reviewed recently or were borrowed to aid the exploration of differences in sound quality between transports. (ICE-GB, W2B-040)

With respect to register, we use the macro categories from ICE, which are essentially a combination of the mode of production (speech vs. writing) and formality (a cline from the most informal, that is, dialogues, to the most formal, printed texts). A more fine-grained analysis is not really warranted given the small sub-samples for some categories (for example, telephone conversations comprise of 10 samples against the 90 face-to-face conversations).

As pointed out in Section 2, ASPECT (simple vs. perfect vs. progressive) is likely to have an effect on the choice of the GET- over the BE-passive, both for diachronic reasons (recency of the progressive passive) and potential influence

TABLE 2 Summary of variables for the BE:GET passive alternation in ICE.

| Variable | Label | Levels |
| :--- | :--- | :--- |
| Catenative | CATENATIVE | BE, GET |

of language contact (importance of aspect marking in the main substrate for IndE, Hindi). Note that only modal (32) and finite (33) progressives were coded as progressive because it is in these contexts that two instances of auxiliary BE would occur and the GET-passive offers a strategy to avoid this co-occurrence. ${ }^{8}$ In other words, instances like (34) or (35) were coded as 'nf' (non-finite) and 's' (simple). We further coded for function rather than form in cases where contact varieties had a bare present participle (as in (36)) or used an allograph of been (as in (37)). ${ }^{9}$
(32) Wouldn't she be getting paid for her holidays. (ICE-AUS, S1A-049)
(33) Saudi general said a camp is being set up to house eight thousand refugees. (ICE-IND, S2B-008)
(34) ... I saw men being led to their execution. (ICE-AUS, W1B-006)
(35) But buyers don't have to worry about getting caught. (ICE-HK, W2B-036)
(36) Concept of time has been changed and thus stream of consciousness method has be employed. (ICE-IND, W1A018)
(37) A new full-screen editor to create and modify text files has now being included with DOS 5.0. (ICE-SIN, W2B-031)

With respect to predictor variable MODAL, we coded both core modals (m) and semi-modals (sm), with the latter subsuming Future Time Expressions (FTE) going to/gonna:
(38) ... lawyers for both sides would argue over what evidence could be presented in the trial. (ICE-CAN, S2B-003)
(39) I don't want to get hurt. (ICE-PHI, S1A-018)
(40) I wasn't gonna get paid. (ICE-AUS, S1A-043)

ANIMACY of the subject is a gradient phenomenon. Among the different approaches to the question how best to operationalise this predictor variable, we opt (with slight modification) for the one outlined in Zaenen et al. (2004), a distinction into three categories (human, animate, inanimate), where 'animate' subsumes organisations (collectives of humans, see (38)) and animals, with the latter also applying to viruses and bacteria (Zaenen et al., 2004: 121). As the effect of ANIMACY in linguistics is different from the way it is defined in biology, Zaenen et al. (2004: 121) also included intelligent machines and vehicles in the category 'animate', whereas we decided to code them as 'inanimate'. Instances in which the name of a place (Downing Street Number 1) is used metonymically to refer to the people in the house, on the other hand, are labelled as 'animate' (that is, collectives of humans).
(41) The team who played last week that was the team that apparently got hit twelve times. (ICE-CAN, S1A-031)

While Zaenen et al. (2004) do not explicitly comment on how plants and mushrooms were classified, it makes sense to subsume them under the label 'animate', particularly seeing that viruses and bacteria are included within this category by Zaenen et al. (2004) and in the light of examples such as (42).
(42) I wondered how the owner of the home felt about the apple tree getting poisoned. (ICE-CAN, S2B-039)

Occasionally, the intended subject of a passive has to be inferred, as in the following instance, where it has to be human, as humans typically ride animals, an action that usually involves a certain amount of control.
(43) "There are 100 ways to get hurt in riding steers, and riding bulls," states Johansen ... (ICE-CAN, W2D-020)

With the help of contextual cues, it was possible to assign one of the three category labels (' h , ' $a$ ' and ' I ') to the few instances with omitted subjects in our data.

Another important aspect of the passive alternation is the semantics, the question of whether the GET-passive is more likely to combine with verbs expressing adversative meaning. We encode the semantics as a binary distinction between adversative and neutral/non-adversative meaning. However, we code for semantics on the level of the construct rather than the verb only, taking in the context into account. An example where context is key to interpretation of the semantics of the construct comes from downgrade in (44), which is used in a context where the subject actively tries to bring this change about and thus cannot be read as adversative. However, we decided to code all negated instances of adversative verbs, as in (45), as 'a' despite the fact that the negative particle counteracts the semantics of the verb.
(44) I am trying desperately to get downgraded. (ICE-SIN, W1B-005)
(45) How a lot of people did not get killed is beyond me. (ICE-AUS, W2C-018)

For a prepositional phrase with by to be analysed as a by-agent phrase, it had to be a PP and be conceivable as the subject in a related active rendering of the passive construction. In example (46), the element headed by the preposition by thus does not qualify as a by-agent. Conversely, not all agents are introduced by by, as example (47) illustrates, which we did include among the instances with an overt agent phrase.
(46) ... we get punished by having our the interest on our savings taxed. (ICE-AUS, S1B-030)
(47) ... you do get charged from the firms who run these systems ... (ICE-AUS, S1B-043)

## 4 | RESULTS

## 4.1 | Summary statistics

In addition to the 1500 be-passives ( 150 per variety), we retrieved and annotated a total of 909 GET-passives. Table 3 shows the total number of potential passives (first row) and the number of true positives (second row) across the different ICE components.

As the figures in the second row of Table 3 show, there is no immediate distinction between IC and OC varieties with respect to the overall number of GET-passives: AusE, NZE, CanE as well as IndE yield more than 100 GET-passives, whereas BrE has even fewer than PhilE and SingE.

TABLE 3 Distribution of get-passives across world Englishes.

|  | AusE | BrE | CanE | HKE | IndE | IrE | JamE | NZE | PhilE | SingE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| GET + Ved | 312 | 229 | 342 | 161 | 340 | 333 | 241 | 460 | 229 | 218 |
| GET-passives | 116 | 53 | 122 | 39 | 130 | 82 | 82 | 146 | 70 | 69 |

As far as the distribution of the two passive allostructions across the registers/modes is concerned, we see a complementary distribution, with the BE-passive favouring the written mode at $62 \%(930 / 1500)$ and the GET-passive the spoken mode at $78.98 \%$ (718/909). Within writing, it is interesting to observe that prescriptive influence might have affected the distribution as only $11.1 \%$ of all BE-passives are found in published written texts, whereas $50.9 \%$ occur in unpublished writing. GGET-passives, on the other hand, clearly lean towards the most informal register: 53.9\% occur in spoken dialogues, compared to $25.1 \%$ in spoken monologues. This is in line with previous research.

The overall tendency with respect to tense, aspect and modTAM is one where BE-passives more easily combine with other elements in the VP, which is evidenced by the higher proportion of non-finite catenatives ( $48.7 \% \mathrm{vs} .36 .6 \%$ for GET-passives), perfect passives ( $13.7 \%$ vs. $1.3 \%$ ) and combinations with a modal/semi-modal ( $25.3 \%$ vs. $13.2 \%$ ). The proportion of progressive passives is slightly higher for GET (4.6\%) than for BE (3.4\%), but the difference is not significant ( $p=0.13177$ in a chi-squared test).

With respect to semantic aspects, we also see the expected distribution of the BE-passive favouring inanimate subjects (77.4\%) and the GET-passive favouring human subjects (63.6\%), that is, there is a clear division of labour that reflects the constructional origins of the GET-passive with constructions that have a human, agentive subject. This has the expected repercussions on the co-construction with a by-agent phrase, which is slightly more common with BE- than with GET-passives ( $16.7 \%$ vs. $7.7 \%$ ). The GET-passive also shows the expected preponderance for adversative contexts ( $45.3 \%$ ), but $12.1 \%$ of BE-passives also co-occur with adversative verbs, illustrated in (48)-(50).
(48) Two years later his world fell apart when Mary, 26, and son David, 4, were killed in a car accident. (ICE-AUS, W2B-001)
(49) ... I was once drowned in a river, in the arms of a priest. (ICE-HK, W2F-020)
(50) A nine-year-old boy was raped and killed there. (ICE-JAM, W2C-017)

The example from ICE-HK additionally shows substrate influence from Chinese: in both Mandarin and Cantonese (according to our informants), 'to drown' does not automatically imply death by drowning.

## 4.2 | Modelling constraints on the passive alternation

Figure 2 shows the results of the RF (ntree $=500, m t r y=8$ ) with the ranking of the predictor variables; ${ }^{10}$ Somers2 returned a very good model fit with $C=0.937435$. Figure 2 shows that REGISTER, VARIETY, ANIMACY and SEMANTICS are the top four predictor variables.

Including the first five predictors from the RF in the GLMM returned a valid model with excellent model fit ( $C=$ 0.9452). Adding ASPECT and/or MODAL results in error messages because of the high number of Eigenvalues. In other words, two language-external predictors (REGISTER and VARIETY), two semantic factors (ANIMACY of the subject and (non-)adversative SEMANTICS) and one VP-related predictor (TENSE) turn out to be relevant predictors for the choice between the two passive variants across our ten world Englishes.

The detailed results of the glmertree analysis are provided in the Appendix. Interestingly, it is ANIMACY rather than REGISTER that provides the first split of the data (Node 1), with animate and human subjects on the left of the tree and inanimate subjects on the right of the tree, showing an overall tendency to take GET-and BE-passives, respectively.


FIGURE 2 RF analysis of passive alternation across ICE components - variable importance.

VARIETY, which ranks second in the RF, occurs much lower down in the glmertree. Because of the large number of nodes and world Englishes included in the model, it is necessary to zoom in on the respective sections of the tree plot. At Node 2, the data are split by REGISTER into spontaneous spoken (Node 3) vs. the other registers (Node 8).

Within Node 3, SEMANTICS provides the next split, with 'adversative' contexts showing interaction with VARIETY (see Figure 3): in spontaneous speech, and for most varieties (with the exception of BrE and HKE ), adversative semantics strongly predict the GET-passive (Node 6). In no-adversative contexts across all varieties, GET-passives are alpreferred over BE-passives (Node 7). Notably, the effect of VARIETY at Node 4 does not occur along groupings according to variety type or region as GB and HK are grouped together vis à vis the remaining varieties.

At Node 8, passives with human and animate subjects in spoken monologues and written texts split according to the predictor SEMANTICS again. This time, adversative semantics do not show any interaction with VARIETY: at Node 9, the mode of interaction provides the split in the data, with written texts showing a preference for BE-passives when compared with spoken monologues (cf. Nodes 10 and 11) in Figure 4a. Turning to Figure 4b, we see that in neutral contexts and printed written communication, BE-passives are preferred (Node 13). In monologues and unprinted texts, we observe interaction with VARIETY (Node 14), with only HKE, PhilE and SingE still dispreferring the variant with GET even in more informal communication. Note that again, the effect of VARIETY does not coincide with any regional groupings or type of World Englishes as both IndE and JamE pattern along the same lines as the IC varieties.

If we now turn to the part of the tree that indicates the distributional profile for passives with inanimate subjects, Node 17 shows an early split by REGISTER into spoken vs. written production. The tendency for adversative contexts to strongly favour GET-passives also holds for inanimate subjects in speech (Node 18 in Figure 5).


FIGURE 3 Partial glmertree for passives in dialogues with human and animate subjects.


FIGURE 4a Partial glmertree for passives with human in sm , wp and wu .


FIGURE 4b Partial glmertree for passives animate subjects in sm, wp and wu.


FIGURE 5 Partial glmertree for passives with inanimate subjects in spoken, adversative contexts.

In non-adversative contexts (Figure 6), we see that spoken monologues disprefer GET-passives more than spoken dialogue (Node 20). For both contexts, we see a split by VARIETY (Nodes 21 and 24), but again without any grouping by region, variety-type or matrilect.

Finally, if we turn to the right-most part of the glmertree, we see that for inanimate subjects in written texts, the model shows an early split by VARIETY, with most varieties (Figure 7a) showing additional interaction with SEMANTICS (Node 35), with adversative contexts providing more of an opening for GET-passives in written texts (Node 36),


FIGURE 6 Partial glmertree for neutral passives with inanimate subjects in spoken interaction.


FIGURE 7a Partial glmertree for passives with inanimate subjects in written texts.
which are otherwise dominated (both proportionally and with respect to raw frequencies) by BE-passives (Node 37), as expected.

In written IndE and PhilE, the preference for GET-passives with inanimate subjects and in adversative contexts is more pronounced than in the other varieties (Node 29 in Figure 8). For non-adversative, printed contexts, IndE is somewhat more open to using GET in passives than PhilE (Nodes 32 and 33). In unprinted writing, both varieties are somewhat more open to using GET-passives with inanimate subjects (Node 34). This shows that OC varieties like PhilE and IndE are atuned to the stylistic differences between the two passive allostructions.


FIGURE 7b Partial glmertree for passives with inanimate subjects in written texts (IndE \& PhilE).

Overall, the left-hand side of the tree with human and animate subjects attracts a lot of the GET-passives in our data, whereas the right-hand side of the tree features many of the contexts favouring BE-passives (such as more formal spoken or printed written production). Even though VARIETY is repeatedly returned as a significant predictor in the glmertree, there is no systematic grouping of varieties according to either variety type (IC vs. OC), region (Northernvs. Southern Hemisphere, Asian vs. Non-Asian) or diachronic connection (BrE-based vs. AmE-based varieties).

Finally, turning to the random effect, we can take a look at the verbs that trend strongly towards the GET-passive and those that trend strongly towards the BE-passive (with positive and negative values in the glmertree, respectively). Table 4 lists the 10 verbs found at either end of the spectrum. ${ }^{11}$ Surprisingly, only a few adversative verbs (push and kick) are found to strongly favour the GET-allostruction whereas a greater number (force, remove, cancel, abuse and exclude) are attracted to the variant with auxiliary BE. Our study thus lends further support to those studies (Fehringer, 2022; Bohmann et al., 2023) that have questioned the importance of semantic constraints for the choice between the two passive allostructions

## 5 | DISCUSSION

The RF analysis of the BE:GET-passive alternation in our ICE data shows that, with the exception of the by-phrase, all factors play a role in the choice of catenative, with REGISTER and VARIETY ranking highest. However, in a mixed model with V_LEMMA as a random effect, the semantics of the subject turns out to be the most important predictor variable. Thus, the GET-passive's more agentive origins are still reflected in a greater propensity to be used with human subjects. The BE-passive, in turn, combines more freely with inanimate subjects across all world Englishes in our ICE data. Both constructions repel co-occurrence with an external by-agent.

Somewhat surprisingly, our ICE data do not support the prediction that catenative GET combines more easily with a progressive passive, nor did we find a particular attraction of IndE towards progressive passives. Instead, CanE returned the highest overall number of progressive passives (17). In other words, we found neither the expected long shadow of prescriptive influence in a marked avoidance of progressive BE-passives nor any obvious substrate influence.

TA B LE 4 Most strongly attracted verb lemmas in ICE (adversative verbs in italics).

| V_LEMMA | Value | Catenative (dominant) |
| :--- | :--- | :--- |
| pollinate | 2.2888924 | GET |
| draft | 2.0052142 | GET |
| transcribe | 1.9240397 | GET |
| pay | 1.82570428 | GET |
| realise | 1.77421535 | GET |
| push | 1.76461829 | GET |
| kick | 1.72673255 | GET |
| select | 1.691396 | GET |
| go | 1.68440277 | GET |
| change | -2.4160464 | GET |
| $\ldots$. | -2.1532057 | BE |
| force | -1.9478029 | BE |
| remove | -1.8830197 | BE |
| cancel | -1.7309546 | BE |
| allow | -1.6011761 | BE |
| make | -1.5790581 | BE |
| give | -1.5534554 | BE |
| find | -1.4764696 | BE |
| treat | -1.4711665 | BE |
| abuse |  |  |
| exclude |  |  |
|  |  |  |

The glmertree returns VARIETY as a much lower-ranking predictor variable than the RF. Our multifactorial modelling of the BE:GET-passive alternation across a broad range of world Englishes thus resembles previous research (Szmrecsanyi et al., 2016) in confirming that language-internal factors (in our case subject animacy and semantics of the construction) play a much greater role in the choice of passive construction than VARIETY. However, none of the splits in the glmertree reveal any predictable groupings by variety type (IC vs. OC), area (northern vs. southern hemisphere), or diachronic connection (BrE- or AmE-based). In other words, the prediction that IC varieties are, overall, more attuned to the colloquial origin of the GET-passive does not find support in our ICE data. Only two OC varieties - IndE and PhilE - turn out to be somewhat less sensitive to the GET-passive's colloquial connotations whereas the other OC varieties patterned with the IC Englishes in their tendency to avoid GET-passives in written production. Seeing that VARIETY turns out to be a rather low-ranking and unsystematic factor in the choice between the two passive allostructions, we would not like to take them as a sign of 'the emergence of a unique, region-specific grammar' (Szmrecsanyi et al., 2016: 133). In conclusion, what our case study supports instead is a view whereby the core grammar of most world Englishes is shared and develops in a lock-step fashion along a broadly similar trajectory, with stylistic or semantic localisation effects that are likely to be relatively transient in nature (see Mair, 2015: 124; Hansen, 2018). While the two passive allostructions are largely interchangeable, the main predictor variable (semantics of the subject) still reflects the different origins of the allostructions and surface in the GET-passives preference for human and animate subjects, a factor that plays out in all world Englishes investigated here. Seeing that our data come from a set of ICE components that were collected at the end of the twentieth century, it would be interesting to see whether more recent evidence, for example, from the GloWbE or NOW corpora support our results on a shared world Englishes
grammar of the passive alternation and the notion of converging grammars. We predict that such follow-up studies will show converging trends of language-internal predictors across varieties of world Englishes.

## ACKNOWLEDGEMENTS

Work on this paper was mostly carried out during the autumn semester 2023 when the corresponding author was on research leave at the University of Kyoto. The support of both UZH and Kyoto University is gratefully acknowledged. We also acknowledge the constructive feedback of the two anonymous reviewers on an earlier version of the paper.

Open access funding provided by Universitat Zurich.

## CONFLICT OF INTEREST

On behalf of my co-authors I hereby affirm that there is no conflict of interest.

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## ENDNOTES

${ }^{1}$ See, for example, Hundt (2007: 69-72) or Mitkovska \& Bužarovska (2012) for overlap between GET + participle and middle constructions.
${ }^{2}$ Access to ICE online is by registration and user password, see https://www.ice-corpora.uzh.ch/en/access.html for details.
${ }^{3}$ We initially only retrieved the data for the IC varieties, using a window of five words between the catenative and the participle, as the following regular expressions for the two passive variants show:

Regular expression for potential BE-passives: $\backslash \mathrm{b}\left(\mathrm{be} \_\mathrm{VB} \mid\right.$ was_VBD|were_VBD|being_VBG|been_VBN|are_VBP|am_VBP |is_VBZ) \s+((w+s+)\{0,5\}( $w+$ _VBN)

Regular expression for potential GET-passives: \b(get_VB|got_VBD|getting_VBG|got_VBN|gotten_VBN|get_VBP|


The manual post-editing of the data showed that a window of four words would suffice to-retrieve the relevant GETpassives, and the queries were adapted accordingly for the OC varieties.
${ }^{4}$ The emphasis in the corpus examples has been added throughout. They are given in their original spellings (for instance, all lower-case for the New Zealand component). The code following the corpus label provides information on the text file (see Greenbaum, 1996 for details).
${ }^{5}$ On download from the ICE-Dependency interface, the resulting concordance lines are automatically randomised, facilitating the analysis of a randomized subset of data.
${ }^{6}$ Note that abstract, inanimate prospect would not be a prototypical agent semantically, either.
${ }^{7}$ For a comparison of the standard approach to mixed modelling with the combined approach, see Fokkema et al. (2020).
${ }^{8} \mathrm{In}$ fact, there is not a single occurrence of a modal BE-passive in the progressive in our data.
${ }^{9}$ See Hundt (2016) for a detailed discussion on the matter of the allography between been and being as perfect auxiliaries.
${ }^{10}$ We used bagging, that is, manually set mtry to include all predictor variables for splitting a node (for details, see https:// epub.ub.uni-muenchen.de/59094/1/MA_Hatz.pdf).
${ }^{11}$ For a complete list, see https://osf.io/dx5bz/.

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| | | [19] SEMANTICS in adv: $\mathrm{n}=105$
| | | (Intercept)
||| 0.683933
| || [20] SEMANTICS in neut
| | | | [21] REGISTER in sd
| | | || [22] VARIETY in AU, CA, IN, NZ: $\mathrm{n}=110$
| | | | | (Intercept)
||||| 0.1044477
| | | | | [23] VARIETY in GB, HK, IR, JA, PH, SG: n = 130
| | | | | (Intercept)
| | | ||-1.018943
||||[24] REGISTER in sm
| | | || [25] VARIETY in AU, IN, IR, JA, NZ: n = 151
| | | | | (Intercept)
| | | || -0.9601668
| | | || [26] VARIETY in CA, GB, HK, PH, SG: $n=125$
| | | || (Intercept)
|| |||-3.308755
|| [27] REGISTER in wp, wu
| | | [28] VARIETY in IN, PH
| | || [29] SEMANTICS in adv: $\mathrm{n}=16$
| | | | (Intercept)
|||| 0.8931954
| | || [30] SEMANTICS in neut
|||||[31] REGISTER in wp
| | | | || [32] VARIETY in IN: $\mathrm{n}=68$
| | | || | (Intercept)
||||||-1.385596
|| ||||[33] VARIETY in PH: $\mathrm{n}=49$
| | | ||| (Intercept)
||||||-2.617028
| | | | | [34] REGISTER in wu: $\mathrm{n}=39$
| | | | | (Intercept)
| | | || -0.1647182
| || [35] VARIETY in AU, CA, GB, HK, IR, JA, NZ, SG
| | | | [36] SEMANTICS in adv: $\mathrm{n}=54$
| | | | (Intercept)
||||-1.657665
| | | | [37] SEMANTICS in neut: $\mathrm{n}=616$
| | | | (Intercept)
| | | | - 3.308332
Number of inner nodes: 18
Number of terminal nodes: 19
Number of parameters per node: 1
Objective function (negative log-likelihood): 712.8622


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