Research Article

A multivariate analysis of the structural variability of existential noun phrases

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Abstract: The literature on there-existential construction (e.g. 'there are no graves, son') is extensive, especially those showing the complexity involved in its internal structure, meaning and interpretation. Whereas very little is known about its internal structure variability, and how that might provide important contributions to the question of complexity. The present study takes on this task by providing a corpus-based structural variability account of the internal structure of English *there*-existential construction, showing that the complexity involved in the processing of meaning of there-existential construction is related to the variability of its internal structure. Drawing on empirical evidence from a lesser known variety of English representing Indian variety of English, the study shows that the complexity underlying the meaning and interpretation of *there*-existential is related to its internal structure. With a focus on the varying degree of its noun phrase (NP), the study finds that the structural complexity of the NP is related to the semantic complexity of the overall clause structure. Also, it is shown that quite a number of linguistic factors interact in influencing the internal structure and meaning of there-existential construction.

Keywords: *There*-existential construction, existential noun phrase, complexity, structural variation, corpus evidence

1 Introduction

There are many studies attempting to account for the complexity characterising the structure and meaning of there-existential constructions such as (1)-(2). Many of these studies have failed to consider how insights from a structural variability account can provide important contributions. Since there-construction can be realised in varying degree, structurally, then such structural variation can then provide some clues as to the question of meaning and interpretation. One consensus in these studies (Williams 1994, Moro 1997, Hazout 2004, McCloskey 2014, McNally 2011, 2016) is that the complexity characterising the meaning and interpretations of existential construction arises from the 'non-canonical' structural relationship that exists between its expletive *there* and that of its internal noun phrases (NPs, such as *talk, employment, modification, rubber stamp* in 1-2).

(1a)   There is much *talk about merit* these days. <ICE-IND: W2D-012#39:2>

(1b)   So there is no *employment*. <ICE-IND: W1A-011#125:5>

(2a)   Here there is *large modification*. <ICE-IND: W1A-019#237:4>

(2b)   Hence, there is no *general rubber stamp that you can use* <ICE-IND: W1B-025#158:1>

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For instance, consider that in *BTX stamp is rubber stamp that you can use* the syntactic and semantic status and values of *rubber stamp that you can use* are clear, unlike in 2b. In other words, a predicate is conventionally expected to have its own arguments with which they share syntactic, semantic, and pragmatic correspondences, which existentials usually lack. To this there have been different proposals. Improving on Williams (1994), who had earlier asserted that the expletive *there* is syntactically restricted to a subject position, and therefore could not be conceptualised as a predicate or functioning as such, Moro (1997) argued otherwise, proposing an "inverse copular sentences" in which the expletive is conceptualised a predicate. Hazout (2004) unified these two proposals, arguing that the NPs (i.e. the entities introduced in these constructions) be conceptualised as predicates rather than the expletive.

One way to test out Hazout's proposal (2004) will be to accept them as predicates and show the extent to which they compare, in terms of structural variability, with conventional predicates. For instance, previous studies (Brato 2020, Schilk and Schuab 2016, and Akinlotan and Housen 2017) have shown that such predicate or subject complement NPs exhibit a high degree of structural variability, which can contribute to resolving ambiguity. Starting from this line of thought, the present study, relying on corpus-based empirical evidence, complements previous studies on *there*-existential constructions by providing the first basic bivariate/multivariate structural variability account of the existential NP (i.e. the predicate NPs or the NPs in the subject complement of there-existential constructions) in the light of 10 relevant internal and external variables developed from the literature.

For instance, existential NPs in (1)-(2) are realised in different structural configurations that can be classified as Headnoun type (for example, *employment*), headnoun + postmodifier (*much talk + about merit*), premodifier + headnoun (*large + modification*), and lastly, premodifier + headnoun + postmodifier (*general + rubber stamp + that you can use*). Among other things, it will be shown whether complex existential NPs such as pre + post type, contribute to resolve problems of meaning and interpretation. Also, the study introduces new or unknown factors that might well turn out to be crucial considerations in this quest for the elusive existential model. Additionally, the study presents corpus-based empirical data from lesser-known variety of English representing Indian English. As interference-driven variety of English, it is expected that some regional variability will come to light. The present study therefore contrasts with previous studies on English there-existentials where data are mainly either unauthentic or from established varieties. Whereas significant variability has been shown from existentials in Irish (McCloskey 2014), Italian (Cruschina 2012), Hausa, Chamorro, Hebrew and Spanish (Creissels 2014).

2 Internal and external structural variation of *there*-existential constructions

Existential constructions have been studied crosslinguistically and remain a problematic sort of construction for linguistic theories. Also, this problematic nature of existential construction has been shown to be present crosslinguistically (Creissels 2014, McNally 2011, 2016, Cruschina 2012, McCloskey 2014). Many scholars have made different attempts at conceptualising this sort of construction. Also, many accounts of its structure and meaning have been provided. Many of these accounts have some common grounds. One, it is agreed that existential constructions, irrespective of the language in which they occur, are highly variable, both structurally and semantically (McCloskey 2014). For instance, Cruschina (2012) explicated on

the nature of Italian existential construction, while McCloskey (2014) provided the nature of Irish existentials in context.

Creissels (2014) conducted a large typological study of 256 languages, asserting that a good number of these languages have some sort of existential predicates that are different from other languages. More specifically Creissels (2014) studied and found that languages such as Chamorro, Hebrew and Spanish are more likely to prefer verbal predicates to other predicates such as BE-verb (e.g. *is, are, are, was*). Also, Creissels (2014) showed that this structural choice of the predicate is related to the semantic function of the actual existential clause that produces them. In other words, some predicates (verbal or BE) are more likely to be used for positive or negative existentials. Following this line of thought one can then assume that English existential constructions, just any other constructions such as the genitive, dative, or participle placement, could further exhibit different degrees of variation and complexity depending on what variety of English produces them.

Hence, the present study will provide the first basic corpus-based variational account of the internal structure of the existentials from a lesser known variety of English representing Indian English. Also, as Creissels (2014) has shown, the different structural components of the existential construction can vary depending on their semantic and pragmatic values. As such, the most important structural component in English existential is that of its *pivot*, which represents the entity or referent introduced. As can be extracted from (3) and (4), *fires* and *several theories about the distribution and origin of comets* respectively function as the NPs, the *pivots*, the entities which serve as the referents being introduced.

(3)   And now there are fires everywhere. <ICE-IND: W2F-019#21:1>

(4)   There are several theories about the distribution and origin of comets. <ICE-IND: W2B-022#44:1>

While existentials from different languages such as Irish, Italian, Spanish, Hebrew, English have been investigated from different perspectives, no prior studies have provided corpus-based empirical evidence showing the extent to which the most important syntactic unit (i.e. the pivot *NP*) vary structurally. As Creissels (2014) showed, the internal structure of existentials can indeed provide some important information with which the semantic ambiguity underlying them can be resolved. Hence the present study will provide the first structural variationist account of the existential NP, showing how different internal and external linguistic factors converge and diverge to influence their configurations, which can in turn reflect on the semantic and pragmatic processing of the actual existential construction.

For instance, the referents/entities expressed in (3) and (4) are realised in different structural configurations. While *fires* in (3) is produced as a simple-structured NP in the form or Head noun alone, *several theories about the distribution and origin of comets* in (4) is produced as a complex-structured NP consisting three different syntactic components representing determiner (several) + headnoun (theories) + postmodifier (*about the distribution and origin of comets*). Creissels (2014) has shown that the choice of verbal or copular predicates relates to the semantic value of the actual existential construction. Then, it can be expected that the choice of a simple or a complex existential NP will, among many other things, provide us with insights on how to resolve the complex nature of the meaning and interpretation of English existentials.

Indeed the focus on the NP in this paper follows from many of the debates in the literature. The search for the syntactic and semantic values of what we call NP herein has generated

different accounts and models (Williams 1994, Moro 1997, Hazout 2004, McNally 2011, Bentley et al. 2013). Many of these accounts originated from the orientation that the syntactic and thematic values of the existential NP could not be simply worked out just as it is with other non-existential constructions. In other words, a predicate is conventionally expected to have its own arguments with which they share syntactic, semantic, and pragmatic correspondences. For instance, this is not the case for *fires* and *several theories about the distribution and origin of comets* in (3) and (4) respectively. Compare (3) and (4) to *a divisive man* in *The President is a divisive man*, which clearly makes the structure, meaning and interpretation straightforward. Accordingly, *a divisive man* is the predicate to the subject argument *The President*. Whereas arguments such as *the President* is semantically missing in (3) and (4). Such problematic nature of existential construction has earned its conceptualisation as 'non-canonical' construction, according to McNally (2011), and as a sort of construction with 'special semantics'.

Moro (1997) provided an "inverse copular sentences" account where the expletive *there* can be considered a predicate, and that it contributes to the meaning and interpretation of the overall construction. Whereas Williams (1994) had earlier asserted that the expletive *there* is syntactically restricted to a subject position, and could not be conceptualised as a predicate or functioning as such. Hazout (2004) attempted to unify these two proposals. Hazout (2004) argued that the NPs (i.e. *fires* and *several theories about the distribution and origin of comets*) be conceptualised as predicates, and "that agreement with the preceding verbal form is a manifestation of the generally attested relation of subject-predicate agreement applying, in this case, between a predicate nominal and an expletive subject'. Following from Hazout (2004) the present study will conceptualise existential NP as predicates or subject complement noun phrases which are expected to exhibit a high level of structural variability (Brato 2020, Schilk and Schuab 2016, and Akinlotan and Housen 2017).

From a corpus-based structural variationist perspective, NPs, irrespective of their syntactic functions or semantic values, have been categorised in different ways. Noun phrases can be classified as simple or complex, depending on the different syntactic components involved. According to Brato (2020), Schilk and Schuab (2016), and Akinlotan and Housen (2017), NPs can be identified and classified as shown below in Table 1.

Table 1

NP structural types by their syntactic components

	NP type	Examples
1	Head noun alone (i.e. H type)	Such as 'fires' in *And now there are **fires** everywhere.*
2	Premodifier + head noun (i.e. pre type)	Such as 'eternal glory' in *there is **eternal glory***
3	Premodifier + head noun + post modifier (i.e. pre + post type)	Such as 'a serious headache that comes with leadership' in *there is **a serious headache that comes with leadership***
4	Head noun + postmodifier (i.e. post type)	Such as 'empathy in nature' in *there is **empathy in nature***

Table 1 shows different four structural types of the NP identified and followed in the present study. According to findings in these previous studies, selection among these four possibilities can be constrained by a number of factors. For instance, the more formal the text is, the more the likelihood for a choice of complex. Hence, existential NP in academic text will be expected

to produce more complex ones than student writings. Also, a complex existential construction is expected to produce a complex existential NP. As Criessels (2014) has showed, we expect to show some kind of relationship between the verbform and ensuing NP. One can expect that BE-verb will attract a complex-structured entity. In order to provide a comprehensive account, the present study will not test out these expectations but also test out new and unknown variables, which are expected to shed new light on the internal nature of existential constructions.

3   Method: data, variables, and annotation

Data for the study are extracted from the written section of the Indian component of the International Corpus of English (ICE). ICE consists of several spoken and written materials collected from different regions of the world, with a view to allowing for comparative studies of English worldwide. Varieties of English currently represented in ICE include those from the USA, Britain, Canada, Indian, Nigeria, Singapore, and many more. The spoken and the written sections of each component consist of material drawn from different text types. For this study only the written section was used. The written section consists of text types representing student essays, examination writings, social letters, business letters, academic writings, non-academic writings (humanities, social sciences, natural sciences and technology), reportage (press news report), instructional writing (administrative and skills & hobbies), persuasive writing (press editorials), and creative writing (novels & stories). It is expected that each different text type will produce varying structure of existential constructions, including varying degree of noun phrases, which are the most important syntactic unit of this sort of special construction.

(5)   There are so many war <ICE-IND: W1A-018#169:4>

(6)   There has not been a reply to my letter. <ICE-IND: W1B-006#178:1>

(7)   I have eaten there and have no complaints <ICE-IND: W2B-017#114:2>

All *there*-constructions are extracted from all of these text types, using AntConc. All of these constructions are manually read to show they express existential meanings. Existential meaning requires that an assertion is made about the existence or non-existence of an entity, which can be an abstract or concrete entity. For example, (5) and (6) express existential meanings, while (7) does not. Example (7) is a *there* usage for anaphoric function, and such usage is excluded from the analysis presented. Hence, 925 existential usages are then read, and analysed the NPs in the subject complement syntactic function. In the literature, existential constructions are non-canonical, which is exemplified by the intense controversy as to what is the syntactic status of the NP in the predicate positions (such as *a reply to my letter* and *so many war* in 5 & 6). So, in the present study, the extent to which its structural variability compares with canonical NP in the same position such as subject complement motivates study. Following 10 variables collected from the literature, including those variables that have been shown to motivate the meaning and interpretation of existential clause and different structural patterns of NP in canonical constructions, the extracted data are thus annotated accordingly.

EXISTENTIAL CLAUSAL TYPE: The structural complexity of the parental existential is classified as simple-structured consisting of one independent clause such as 8 or as complex-structured consisting of more than one independent clause such as 9.

(8)   So there are bad effects of them. <ICE-IND: W1A-004#96:2>

(9)   There are large enough stock-pile of atomic bombs today which are thirsting to destroy whole world. <ICE-IND: W1A-002#95:2>

VERBFORM: The verbform responsible for expressing the existential meaning is classified as BE-verb such as *are* in 8 and 9, as lexical such as *appears* in 10, HAVE such as *had* in 11, or modal such as *can* in 12.

(10)   Thus there **appears** to be a fairly small and constant proportion of the country's agricultural exports. <ICE-IND: W1A-007#26:1>

(11)   The <indig> Tillana </indig> brougt the concert to a most fulfilling end, a point at which the young <w> dancer's </w> costume was like a wet sheath, for there **had** been no break for costume change, but the audience felt a warm glow at the thought that the future of our arts was safe even if there are a handful of young dancers like priyadarshini Govind around. <ICE-IND: W2D-012#62:2>

(12)   Below that, it is so hot there **cannot** be the sudden slip that causes quakes. <ICE-IND: W2B-032#29:1>

SENTENCE FORM: The sentence form in which the existential construction appears is annotated for, as declarative such as 12, interrogative such as 13, or exclamative such as 14.

(13)   Is there a similar parallel in any of the other industries or occupations ? <ICE-IND:W2A-033#33:1>

(14)   There are so many things to do at office that he could hardly breath!

NEGATION: Each construction is annotated as expressing a negation such as 15 or not (16)?

(15)   So there are not no more employment opportunity. <ICE-IND:W1A-011#127:5>

(16)   There are 5 instars. <ICE-IND:W1A-019#75:1>

ENTITY COMPLEXITY: Each construction is annotated in terms of how many referents or entities are being talked about. Entity can be simple/single/one such as in 17 where existence of only one entity *places* is being asserted. Whereas in (18), entity is complex/double, as existence of two entities *anecdotes,* and *memories* are asserted.

(17)   There are many interesting places to see. <ICE-IND:W1B-011#204:1>

(18)   There are so many anecdotes and memories associated with the brave, generous and incomparably wise and magnanimous late Satyasheel Panchwagh that it would call for a really gifted writer to do justice to it all. <ICE-IND:W1B-001#84:1>

DEFINITENESS/SPECIFICITY: Entity is classified as being indefinite, such as *waterfalls* in (19) and definite, such as *two goals* in (20).

(19)   There are some waterfalls <?> waterlips </?> etc.

(20)   In this there are two goals. ICE-IND: W1A-011#169:7>

FRAMING: The proportional nature of existential construction means that speaker can add subjective comments to support their claims. This is not always the case, however. Providing a

subjective comment to the underlying structure of existential constructions adds both to the external and internal structure of existential constructions. First, they allow the speaker to 'sell' better the proposition. Second, they contribute to the structural complexity of the construction itself. Example (21) is annotated as framed because *surely* is used to reflect on the meaning and interpretation of the entire clause. That is, the use of *surely* is extra existential comment that is meant to support the speaker's proposition that *there aren't any dangerous species*. Whereas (22) is annotated as *not framed* because there is no such cognitive push for the proposition being expressed. Infact, in a real world scenario, one would have expected *surely* to appear with (22) rather than (21) because the proposition expressed in (23) is more *surely* than proposition expressed in (21).

(21)   But surely there aren't any dangerous species. <ICE-IND: W2F-004#99:1>

(22)   There are potential risks to health from wastes. <ICE-IND: W2A-037#62:1>

TENSE: If the proposition is expressed as current, on going, present, the construction is annotated as present, such as (23). If the proportion is expressed as past, the construction is annotated as past, such as (24).

(23)   There is a greater degree of indoor activity. <ICE-IND:W1A-008#80:1>

(24)   There was not much of a crowd there at the time. <ICE-IND:W2F-006#11:1>

EMBEDDING: In the corpus, after all existential constructions are retained, it was observed that a good number of existential usage of *there* embeds *anaphoric* usage. In another, it could be existential usage embedding another existential usage. Of course such pattern will have effect on the structural and semantic complexity of the overall construction, so a binary classification is made for embedded (such as 25) and Notembedded (such as 26). Example 25b is existential usage + anaphoric usage, whereas 25a embeds at multiple levels.

(25a)   There in family if there is fightings amongst parents and often there occur they say of the participation between, or kill saying I will kill you, or there is often saying of divorce.<ICE-IND: W1A-011#66:3>

(25b)   Instead, there is a road there now. <ICE-IND:W2F-006#66:1>

(26)   However, there is a subtle difference. <ICE-IND:W2D-011#79:3>

Having annotated all of these 925 existential constructions, bivariate and multivariate analyses are carried out using SPSS. The statistical evidence that emerged from these analyses are then theoretically contextualised in the lights of literature. The results, including detailed procedures, are presented in the following sections.

3.1 Results: bivariate and multivariate

In this section results of the usage and structural type are provided. The contexts of relationship where we might expect different usages of *there* and ensuing structural realisations being simple or complex are provided. First, the results relating to bivariate analyses are presented, which is the followed by logistic regression model. As previously mentioned, there are 925 tokens of *there* constructions considered in the analyses. All analyses are conducted using SPSS. Table 2 shows the overall distributions relating to usage and structural types. As can be seen in Table

2, a set of bivariate analyses are conducted on the 10 independent variables using chi square test of independence.

Before undertaking a multivariate analysis in the form of multiple logistic regression, Pearson 2-sided chi square results for each bivariate analysis are provided. There are six signification relations representing text type, negation, entity complexity, and definiteness, tense and *there*-clausal type. In other words, significant relations are found between NP structural type and text type $\{\chi2\ (18) = 109.536\ p < 0.0000\}$; NP structural type and negation $\{\chi2\ (3) = 47.205\ p < 0.0000\}$; NP structural type and entity complexity $\{\chi2\ (3) = 20.909\ p < 0.0000\}$; NP structural type and definiteness $\{\chi2\ (3) = 25.597\ p < 0.0000\}$; NP structural type and tense $\{\chi2\ (3) = 28.909\ p < 0.0000\}$; NP structural type and *there*-clausal type $\{\chi2\ (3) = 20.909\ p < 0.0000\}$.

In other words, the structure of existential NPs is very much related to these variables. To some reasonable extent we can clearly explain when and where we might find different NP structures such as (determiner) + head noun, premodifier + headnoun + postmodifier, premodifier + head noun + postmodifier. The structure of existential NPs has not been studied within a variationist perspective so no expectations could be used as baseline for these results. Given the syntactic, semantic, and pragmatic constrains of NPs within the existential constructions, then it is important to provide empirical evidence showing the nature of structural variability of existential NPs.

Since the present study is the first study providing such basic information about the structural variability of existential NPs, then the context of variations found here in the study is best compared to those contexts of variations reported for NPs in other canonical constructions. For instance, text type and clausal structural type are variables which Akinlotan and Housen (2017), and Schilk and Schuab (2016) have also found explaining the structural realisations of the NP in canonical constructions.

Table 2

Predictors and structural types of existential NP

	H		pre+post		post		pre		Total	
	n	%	n	%	n	%	n	%	n	%
Variables										
Clausal type										
simple	62	28	63	29	70	32	25	11	219	100
complex	116	17	206	29	351	50	32	5	705	100
Textype										
popular	24	13	65	35	89	46	11	6	192	100
interactional	20	19	30	29	43	42	10	10	103	100
media	15	11	40	30	72	55	5	4	132	100
academic	13	10	55	43	54	42	7	5	129	100
literary	58	46	10	8	52	42	5	4	125	100
business	6	11	21	39	25	46	2	4	54	100
student	42	22	45	24	86	45	17	9	190	100
Verbform										
BEverb	149	19	228	30	351	45	46	6	774	100

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modal	19	22	21	24	39	44	9	10	88	100
lexical	6	27	7	39	7	32	2	9	22	100
HAVE	4	10	13	32	24	59	0	0	41	100
Sentence Form										
declarative	170	19	263	29	387	45	49	6	853	100
interrogative	8	35	6	26	8	35	1	4	23	100
exclamative	0	0	0	0	1	100	0	0	1	100
Negation										
notnegated	112	16	242	34	311	44	44	6	709	100
negated	66	31	27	13	110	51	13	6	216	100
Entity complexity										
simple	135	21	169	26	318	49	32	5	654	100
complex	43	16	100	37	103	38	25	9	271	100
Definiteness										
indefiniteness	104	16	216	33	291	45	42	6	653	100
definiteness	74	27	53	20	130	48	15	6	272	100
Framing										
Notframed	126	19	193	29	306	46	34	5	659	100
Framed	52	20	76	29	115	44	23	9	266	100
Tense										
Present	121	17	233	33	311	44	50	7	715	100
Past	57	27	36	17	110	52	7	3	210	100
Embedding										
NotEmbedded	167	20	250	29	387	45	49	6	853	100
Embedded	11	15	19	26	34	47	8	11	72	100
TOTAL	**178**	**19**	**269**	**29**	**421**	**46**	**57**	**6**	**925**	**100**

More specifically, as can be seen in Table 2, existential NP realised in the most complex form involving a premodifier and a postmodifier is less likely to be found in literary text (8%). On the other hand such complex NP structure is most likely to be found in academic text (43%), then business writings (39%), followed by popular writings (35%). Not surprisingly, H-type, which is the most simplest structural type, is most likely to be found in literary text (46%) but least likely in academic (10%), then business (11%), and media (11%), followed by popular (13%). This variability explained by academic and non-academic texts supports findings in Akinlotan and Housen (2017), and Schilk and Schuab (2016).

Unlike significant relations found in variables representing text type, negation, entity complexity, definiteness, tense and *there*-clausal type, insignificant relations are found with variables representing verbform, sentence form, embedding and frame. Following Person chi square tests, insignificant relationships are found between NP structural type and verbform $\{\chi2 (9) = 11.642\ p < 0.234\}$; NP structural type and sentence form $\{\chi2 (6) = 4.942\ p < 0.551\}$; NP structural type and embedding $\{\chi2 (3) = 3.986\ p < 0.263\}$; and that of NP structural type and frame $\{\chi2 (3) = 4.218\ p < 0.239\}$. In other words, these statistically insignificant variables provide lesser explanatory powers as to where and when we might find different structural types of existential NPs. Given that there are no prior expectations with which these results can be contrasted, then it is important to consider the qualitative worth of these variables in terms of

special conditions underlying existential constructions. That would suggest that not reaching statistical significance does not necessitate a complete lack of explanatory power.

(27)   There are many interesting places to see. <ICE-IND: W1B-011#204:1>

(28)   Thus there appears to be a fairly small and constant proportion of the country's agricultural exports. <ICE-IND: W1A-007#26:1>

For instance, *verbform* (Consider BEverb *are* in (27) and lexical *appears* in (28)) is a strong qualitative factor with which *there-construction* can be easily identified as expressing existential meaning or not. Relatedly, as can be seen in Table 2, sentence form still provides important contextual information regarding where we might find different NP types. For instance, declarative existential constructions are likely to produce NP with only postmodifier (45%) than with premodifier + postmodifier (29%). Of course in the vast literature discussing the structure of existential construction nothing is known about sentence form of existentials, let alone to how such constraint relates with the structural realisation of the referent/entity being talked about. A multinomial regression model is conducted to evaluate the statistical significance of all the ten predictors, using a 5% significant level as a cut off. Such a model allows us to see the competition among these predictors in interactional terms, showing much wider context beyond bivariate analyses. Table 3 show the full model showing the relationship between four different structural types of existential NPs (i.e. Head noun alone, pre + head, pre + head + post, and head + post) and the ten predictors under examination.

Table 3

A multinomial regression result for the full model: H type is treated as the reference category

NP type: Pre + post	B	(SE)	Sig	ExpB	95%CI	
Intercept	-.522	4559.584	1.000			
TEXT TYPE	-.191	.049	**.000**	.826	.751	.909
CLAUSAL TYPE						
Simple clause	-.519	.234	**.027**	.595	.376	.942
VERBFORM						
BEverb	-.129	.598	.830	.879		
Modal	-.819	.670	.222	.441		
Lexical	-.633	.832	.447	.531		
SENTENCE FORM						
Declarative	-.116	4559.583	1.000	.891		
Interrogative	-1.254	4559.583	1.000	.285		
EMBEDDING						
NotEmbedded	.015	.425	.972	1.015		
NEGATION						
Not negated	1.219	.331	**.000**	3.383	1.768	6.471
ENTITY COMPLEXITY						
Single referent	-.509	.242	**.035**	.601	.374	.965
DEFINITENESS						
Indefiniteness	.477	.289	.100	1.611		
FRAMING						
Frame	.103	.231	.655	1.109		
TENSE						
Present	1.243	.258	**.000**	3.465		

NP type: post	B	(SE)	Sig		ExpB	95% CI	
Intercept	17.610	.949		.000			
TEXT TYPE	-.120	.045	**.007**		.887	.813	.968
CLAUSAL TYPE							
Simple clause	-.887	.214	**.000**		.412	.271	.626
VERBFORM							
BEverb	-.475	561	.397		.622		
Modal	-.872	.618	.159		.418		
Lexical	-1.388	.796	.081		.250		
SENTENCE FORM							
Declarative	-.16.257	.539	**.000**		8.702E-8	3.027E-8	2.501E-7
EMBEDDING							
NotEmbedded	-.071	.374	.850		.932		
NEGATION							
Not negated	.280	.271	.302		1.323		
ENTITY COMPLEXITY							
Single referent	-.006	.228	.977		.994		
DEFINITENESS							
Indefiniteness	.305	.260	.241		1.356		
FRAMING							
Frame	.080	.207	.698		1.083		
TENSE							
Present	.395	.209	.059		1.484	.986	2.234

NP type: pre	B	(SE)	Sig	ExpB
Intercept	-14.350	9870.015	.999	
TEXT TYPE	-.120	.072	.097	.887
CLUSAL TYPE				
Simple clause	.497	.336	.139	1.643
VERBFORM				
BEverb	14.521	1061.904	.989	2025752.817
Modal	14.740	1061.904	.989	2521433.575
Lexical	14.782	1061.904	.989	2628867.633
SENTENCE FORM				
Declarative	-512	9812.724	1.000	.599
Interrogative	-1.926	9812.724	1.000	.146
EMBEDDING				
NotEmbedded	-1.185	.529	**.025**	.306
NEGATION				
Not negated	.153	439	.727	1.166
ENTITY COMPLEXITY				
Single referent	-1.004	.357	**.005**	.366
DEFINITENESS				
Indefiniteness	.621	.417	.137	1.860
FRAMING				
Frame	-414	.333	.213	.661
TENSE				
Present	1.155	.451	**.010**	3.175

Table 3 presents the results of the model that evaluates all of the variables in the study, which unlike bivariate analyses presented in Table 2, present us with a fuller understanding of the predictive strengths of each variable competing to influence NP structural choices. As can been seen in Table 3, some variables are significant while others are insignificant. Note that text type is considered as covariate in this full model. First, text type has been shown to explain different contexts relating to different structural types of the noun phrase (Akinlotan and Housen, 2017;

Schilk and Schaub 2016). Also, text type as an independent variable is rather a continuous linguistic variable.

Model diagnostics show that the full model is statistically significantly and to some extent fits the data {-2 Log Likelihood = 1274.434; χ2 (39) = 169.310, p < 0.000}. This means that the full model is statistically significant and predicts the dependent variable better than the intercept-only model. Likewise, the goodness-of-fit is insignificant as the Pearson chi square results show {χ2 (972) = 1047.634, p < 0.046}. The likelihood ratio tests, which sum up the overall performance of each predictor in the full model, show that five predictors are statistically significant. In other words, in a competition of influence involving ten predictors, five predictors representing *text type* {-2 Log Likelihood = 1290.181; χ2 (3) = 15.747, p < 0.001}; *clausal type* {-2 Log Likelihood = 1303.407; χ2 (3) = 28.973, p < 0.000}; *negation* {-2 Log Likelihood = 1291.000; χ2 (3) = 16.566, p < 0.001}; *entity complexity* {-2 Log Likelihood = 1289.569; χ2 (3) = 15.134, p < 0.002} and *tense* {-2 Log Likelihood = 1303.359; χ2 (3) = 28.924, p < 0.001} are found to have effects that are statistically significant, thereby exerting predictive strengths that provide more explanatory powers than the other predictors.

Hence, the other five factors representing verbform, sentence form, embedding, definiteness, and framing are statistically insignificant and thus provide little explanation to the variation accounted for in this full model. On the other hand, while such overall performance of each predictor in the full model is important, it does not show the specifics and the behaviour of how different categories within each predictor exert influence, which is shown in Table 3. In other words, as can be seen in Table 3, a much wider dimension into how different categories making up the predictor is shown. For example, the scenarios showing how the two groups *single* and *multiple* in the predictor *entity complexity* specifically behave in exerting influence towards different NP structures are shown in Table 3.

(29)   There are *certain laws governing the natural phenomena*. ICE-IND:W1A-015#6:1

(30)   Then there are *reptiles, amphibians & fishes which feed on the insects* & bring their number to a low level. </p> <ICE-IND: W1A-017#82:2>

(31)   In all there are *seven inset-stories*. <ICE-IND:W2A-008#12:1>

(32)   There are no *digressions*.   <ICE-IND:W1A-018#136:3>

As can be seen from Table 3, certain predictors through their categories such as text type (p = .000), simple clause (p = .027), negation in existential clause (p = .000), single reference/entity (p = .035), present tense (p =.000), declarative sentence form (p = .000), and embedded usage of *there* (p = .025) can provide specific contexts where we might find different structures of existential NPs. Note that the reference category is H (headnoun or determiner + headnoun, see 32). The first set of coefficient estimates refer to *NP type pre + post* which structurally refers to (determiner) + pre + head + postmodifier configuration (see 29). The second set of coefficient estimates refer to *NP type post* which structurally refers to (determiner) + head + postmodifier configuration (see example 30). The third set of coefficient estimates refer to *NP type pre* which structurally refers to (determiner) + pre + head configuration (see 31).

Furthermore, it can be noted that these statistically significant predictors vary in predictive strengths across the three different NP structural possibilities. For instance, only categories representing simple clause (clausal type) and present tense (tense) are statistically significant

across the boards. In other words, two predictors representing clausal type (simple-structured existential sentence) and tense/currency of the assertion/referent being made/referred to within the existence clause structure (present tense) are capable of showing structural choices in all the four NP structural possibilities. Such predictive strength is not found for equally significant predictors text type, negation, entity complexity, and embedding. Infact text type does not reach statistical significance for *NP type pre*, even though it does for *NP type post* and *pre + post*.

In addition, predictors text type, clausal type, negation, entity complexity, and tense are statistically significant at 5% explaining the variation between realising H and pre + post NP structural types. For instance, holding all other predictors constant, if existential clause is produced as a simple-structured clause, H type is more likely to be preferred to pre + post type. Likewise, when the existential construction is not negated (for example, see 'no' in 32), a premodifier + head + postmodifer structure rather than H is likely to be realised. Also, pre + post structural type is less likely when the existential construction expresses one conceptual entity rather than two or more. As expected, existential constructions having two items as its referent are likely to produce them in pre + post NP structural type. On the other hand, when existential construction expresses negation (i.e. asserting the absence or non-existence of an entity), the NP is likely to be realised in pre + post type.

Also, if the existential construction expresses assertion or presence of an entity in a present tense mode (i.e. ongoing versus completed), the referent is likely to be realised as a pre + post type. The expectation for the text type is also met. Existential constructions in academic text are likely to produce pre + post structural type rather than H type. As for a choice between H and head + postmodifier structural type, the structural complexity of the existential also matters. As can be seen, if the existential construction is simple-structured, the referent is likely to be produced as a H type. Relatedly, the sentence form of the existential construction (i.e. being declarative, interrogative or exclamative) is also significant. As can been seen, a declarative existential construction is less likely to produce a head + postmodifier type. Instead, a head noun alone NP structural type is more likely to be produced by a declarative existential construction.

Again, the tense of the existential expression is also related to a choice between these two NP structural types. An existential construction expressed in ongoing, current, or present tense is likely to produce an head noun + postmodifier NP structural type. In relation to the choice between Head noun and premodifier + head noun type, only predictors present and clausal types are significant. Unlike the previous contexts where text type is significant, the predictor text type is statistically insignificant in this case. As can been seen, text type does not seem to explain well when and where we might have a premodifier + headnoun type rather than a head noun type, or vice versa. Whereas, tense remains an important predictor explaining structural choices across the three contexts. In this context of head noun versus premodifier + head noun, it can be seen that premodifier + headnoun is likely to be produced rather than H type.

Following this full model, the predictors representing verbform, definiteness, and framing are statistically insignificant. In our bivariate analyses we have found these predictors, including embedding, to be statistically significant. In other words, the full model correlates with the bivariate analyses. Nevertheless, if we consider the predictive strengths of only the significant predictors, we are able to see a clearer picture regarding how these so-called significant predictors compete with one another for influence. Hence, in other to further test out the predictive strengths of these significant predictors a reduced model in which only the statistically significant predictors are considered is undertaken. In this reduced model seven significant predictors representing text type, clausal type, tense, negation, entity complexity,

sentence form, and embedding are considered. Table 4 shows the coefficients estimates from the reduced model.

Table 4

A reduced model for NP structural type. Head noun is treated as a success

NP type: Pre + post	B	(SE)	Sig	ExpB	95%CI	
Intercept	-.287	4542.290	1.000			
TEXT TYPE	-.184	.048	**.000**	.832	.758	.914
NEGATION						
NotNegated	1.524	.265	**.000**	4.588	2.730	7.712
ENTITY COMPLEXITY						
Simple entity	-.518	.232	**.025**	.596	.379	.938
CLAUSAL TYPE						
Simple clause	-.532	.232	**.022**	.587	.379	.938
SENTENCE FORM						
Declarative	-.232	4545.290	1.000	.793		
Interrogative	-1.215	4542.290	1.000	.297		
TENSE						
Present	1.163	.251	**.000**	3.199	1.956	5.233
EMBEDDING						
Notembedded	-.083	.417	.843	.921		

NP type: post	B	(SE)	Sig	ExpB	95% CI		
Intercept	17.398	.713	.000				
TEXT TYPE	-.122	.044	**.005**	.885	.812	.965	
NEGATION							
NotNegated	.472	.200	**.019**	1.603	1.082	2.374	
ENTITY COMPLEXITY							
Simple entity	-.041	.220	.852	.960			
CLAUSAL TYPE							
Simple clause	-.900	.213	**.000**	.407	.268	.618	
SENTENCE FORM							
Declarative	-.16.323	.534	**.000**	8.145E-8	2.862E-8	2.318E-	7
TENSE							
Present	.336	.202	.096	1.400	.942	2.079	
EMBEDDING							
Notembedded	-.121	.317	.744	.886			

NP type: pre	B	(SE)	Sig	ExpB	95% CI	
Intercept	.011	9867.650	1.000			
TEXT TYPE	-.103	.071	.144	.902		
NEGATION						
NotNegated	.527	.365	.149	1.695		
ENTITY COMPLEXITY						
Simple entity	-.826	.336	**.014**	.438	.227	.846
CLAUSAL TYPE						
Simple clause	.514	.334	.123	1.672		
SENTENCE FORM						
Declarative	-.631	9867.650	1.000	.532		
Interrogative	-2.028	9867.650	1.000	.132		
TENSE						
Present	1.233	.440	**.005**	3.433	1.451	8.124
EMBEDDING						
NotEmbedded	-1.236	.522	**.018**	.290	.104	.808

Just as the full model, this reduced model is also statistically significant {-2 Log Likelihood = 775.764; χ2 (24) = 148.849, p < 0.000}. This means that these predictors are able to show structural variability underlying existential NPs. However, unlike the full model, the goodness-of-fit is significant as the Pearson chi square results show {χ2 (387) = 472.797, p < 0.002}.

The likelihood ratio tests show that five out of the seven predictors are statistically significant. Predictors embedding and sentence form are insignificant, which means their predictive strengths have been outweighed by others. Note that two predictors are significant in the full model. So overall, predictors *text type* {-2 Log Likelihood = 790.915; χ2 (3) = 15.151, p < 0.002}; *entity complexity* {-2 Log Likelihood = 806.236; χ2 (3) = 12.913, p < 0.005}; *negation* {-2 Log Likelihood = 814.267; χ2 (3) = 38.502, p < 0.000}; *tense* {-2 Log Likelihood= 804.646; χ2 (3) = 28.881, p < 0.000} and *clausal type* {-2 Log Likelihood = 806.236; χ2 (3) = 30.472, p < 0.000} have more explanatory powers than predictors embedding and sentence form.

Meanwhile Table 4 shows the details of how each category within these predictors contribute to their overall predictive strengths. It can be seen that these five predictors are also significant in the full model, and a comparison of their behaviour in the two models shows some similarities and differences that enhance our understanding of the structural variation underlying these existential NPs. For instance, the same predictors and their categories that explain the variation between H and and pre + h + post in the full model also retain their potencies explaining the variation between H and and pre + h + post in the reduced model. In other words, this pattern of consistency in predictive strengths shows that the likelihood of existential constructions realising H or pre + h + post is strongly related to them (consider NP type: pre + post in the full model to the reduced one). Whereas this is not the case for other possible scenarios.

In the choice between H and h + post structural type as shown in Table 4, the predictor *negation* is significant. Whereas in the full model, this predictor is not. This means that the predictive strength in the full model is overshadowed by the effects of other similar predictors. As can been seen in Table 4, existential constructions which are not negated (compare 35 to 36; *no* in 35 negates the existence of the referent *graves* whereas 36 affirms the existence of the referent *paths to the truth*) are likely to configure head noun + postmodifier NP type rather H type. Similarly, the predictor *tense* which was significant in the full model becomes insignificant in the reduced model. Meanwhile, the category *declarative* in the predictor

sentence form retains strong predictive strength both in the full and reduced model. Such retention of predictive strength shows that existential constructions are very much unlikely to be realised in an interrogative or exclamative forms.

(33)   Is there An Indian Way of Thinking ? <ICE-IND: W2A-008#115:1>

(34)   There is an Indian way of thinking.

(35)   There are no graves, son. <ICE-IND: W2F-013#227:2>

(36)   There are thousands of paths to the truth, <ICE-IND:W2B-019#41:1>

Of course existence constructions can be realised as interrogative or exclamative, but the odd is low. Consider that (33) is an interrogative existential that can be transformed into a declarative form such as (34). As can been seen, the coefficient estimate for the likelihood of declarative existential construction realising pre + h + post rather than H type is very low.

3.2 Existential NP and there-existential constructions

The corpus results presented show that existential NP is highly variable and strongly motivated by five factors representing text type, tense, negation, entity complexity, and clausal type. The results suggest that existential NP (for example, see *three different mesophases* in 37) are structurally variable, volatile, conditioned, and constrained just any other noun phrases in all other constructions.

(37)   There are three different mesophases. <ICE-IND: W1A-020#122:6>

It appeared the syntactic positioning of existential NP is related to its structural variability and complexity. According to previous findings such as Akinlotan and Housen (2017), Schilk and Schuab (2016), subject complement noun phrases are more likely to be realised as complex NP (i.e. more likely to have a premodifier and a postmodifier) rather than as simple one (i.e. head noun alone). Then existential NPs, which are syntactically destined for a subject complement position, are thus expected to exhibit higher degree of variability and complexity much more than we found in the corpus results. This is more so because the expletive *there* has no semantic value. This semantic burden is thus passed onto the existential NP, such that the NP is expected to embody and perspectivise the *expletive* semantic emptiness with its own semantic and pragmatic values. This is the nature of the complex conceptual interface between syntactic and semantic properties of existential constructions.

According to McNally (2011, 2016), existential construction is a 'non-canonical' construction, which means that this sort of construction deviates from traditional constructions for reason of structure and complex meaning and interpretation. Such complexity involved in processing this sort of construction has been termed 'special semantics'. In other words, the internal structure and meaning of existential constructions exhibit unusual syntactic and semantic characteristics that make its meaning and interpretation more complicated than the traditional sentences. Many syntactic features of existential constructions have been highlighted as motivations for this semantic complexity. One crucial syntactic factor is that existential construction can exhibit definiteness restriction (McNally 2011, Moro 1997, McCloskey 2014,

Bentley et al. 2013), a semantic factor that distinguishes whether *there-construction* has an existential meaning or not.

(38)   There is John in the room

(39)   There is one John in the room

Definiteness or specificity as a semantic factor is crucial to existential construction in two ways. First, *there*-construction such as (38) expresses grammatical and semantic definiteness which affects its existential meaning. Whereas (39) expresses indefiniteness which infuses existential meaning. Second, the presence or absence of a determiner, which is essentially the internal component of the existential NP, scopes over the entire meaning and interpretation of the existential clause. No statistical evidence is found for the factor of grammatical/semantic definiteness/specificity. As Table 2 shows, irrespective of the structural type, existential NP is expected not to express specificity. Where grammatical definite is used, it appears more a syntactic ornament than a semantic one.

Statistical evidence shows that there is a relationship between semantic dimensions of existential constructions and the ensuing existential NP, especially with regards to its structural variability and complexity. As the reduced model in Table 4 shows, there is statistical evidence showing that when existential construction expresses a positive semantic dimension, such as (42) and (43), the ensuing NP is more likely to be structured as a head + postmodifier type rather than as a H type. Consider that (42) and (43) express presence (i.e. positive) and contain no such items as *no* which distinguishes (40) and (41) as expressing a different semantic dimension (i.e. negative one) from (42) and (43).

(40)   Truly there was no concept of shame in this society. <ICE-IND: W2F-007#123:1>

(41)   There was no glow of sun-rise in the east. <ICE-IND: W2F-018#40:1>

(42)   There is money to be made there. <ICE-IND: W2F-019#57:1>

(43)   There is Kohl on the tide of history. </p> <ICE-IND: W2B-008#64:1>

More often than not discussions about the structure, meaning and interpretation of existential construction almost always pay no attention to such semantic dimension. The extent to which such pattern is relevant to any semantic model accounting for the complexity involved in the 'special semantics' of existential will need to be well worked out, perhaps with more empirical evidence further testing out the finding here. Of course if the NP is the most important syntactic component of the existential construction (for instance many structural account of the internal structural of existentials classify its NP as 'pivot', see McNally 2011, 2016), then whatever kind of positive syntactic, semantic, and pragmatic relationship it has with any other elements, such as negation in this case, must be considered in any adequate semantic-pragmatic model accounting for its complex meaning and interpretation.

Unlike previous studies, the present study provides some statistical evidence showing that there is some kind of relationship between the structural complexity of ensuing NP and the overall semantic complexity of the existential construction. As Table 2, 3, & 4 show, existential constructions can vary in structure, and such variation is to some degree related to a number of factors such as entity complexity. As (44) and (45) show, existential constructions can have

different degrees of semantic complexity, depending on the number of entities presented therein. For instance (44) refers to one entity *flood* whereas (45) refers to two entities (1) *groups of superiors* and (2) *sub-ordinates*. In essence, (45) presents more cognitive challenges for organising, and processing than (44) does. Such cognitive challenge means that (45) can be organised and processed in three different possible ways.

(44)   Recently there is flood. <ICE-IND:W1B-011#77:1>

(45)   There are Groups of Superiors and sub-ordinates. <ICE-IND:W1A-013#48:2>

(46)   There are groups of superiors and sub-ordinates *in any workplace*

First, it can be organised as semantically unrelated entities where Groups of Superiors (*entity 1*) is not related to sub-ordinates (*entity 2*). Two, it can be organised and processed as hierarchical where either entity can be subcategory of the other. Thirdly, it can be organised and processed as a contrast where entity 1 is meant to perspectivise entity 2, or vice versa. As the corpus result show, especially as Table 4, entity complexity (i.e. existential constructions having one or more referents) is related to the structure of ensuing NP, and consequentially the overall complexity. For instance Table 4 shows that when existential construction such as (44) is realised the referents are likely to be realised without premodifier and postmodifier (i.e. more information which can be crucial for the identification of the referent in the real world by the hearer/audience is missing).

Consider that (45) has a postmodifier (see *in any workplace* in 46), then the likelihood for ambiguity as highlighted above is reduced. Since existential NP, which can vary from simple to complex structure, is the pivot of existential construction, then the extent to which existential construction is cognitively challenging can be very much related to it. It appears to suggest that the more complex the existential NP is, the less complex is the meaning of its parental existential clause. This serves to say that existential NP is a resolution device for its existential construction. This is more so because existential NP often lacks grammatical definiteness which, if compensated at the premodification and/or postmodification levels raises to reduce the complexity involved in the meaning and interpretation of the entire existential construction.

4   Conclusion

The study provides the first basic corpus-based variationist account of the structure, meaning and interpretation of English existential noun phrase from a lesser-known variety of English. Almost all previous accounts of the English existential constructions have focused on providing a semantically driven model of this special kind of construction. Such a search for an elusive semantic and interpretation model has resulted into a dearth of empirical-based structural accounts. For instance the study provides empirical evidence, supported with statistical evidence, to show that existential NPs, which are supposedly non-canonical NPs, are not too structurally different canonical NPs. In other words, the specialness of the existential construction does not greatly prevent its most important syntactic component from being volatile, just as it would be in non-special constructions.

Of all the 10 variables considered, five variables representing text type, negation, entity complexity, tense, and clausal type are found explaining the variation in existential NP. For instance the variable representing text type, which has been shown to influence variation in

'canonical' NP is also found to be statistically significant. Additionally, following the statistical evidence for the variables representing negation, tense, entity complexity, and clausal type, then an adequate semantic model for English existentials will do well to factor their effects in. More importantly the study shows that the semantic complexity of the overall existential construction is very much related to the structural complexity of the ensuing NP. That is, a complex-structured existential NP is more likely to produce a *cognitive device* with which a relatively simple processing of the overall existential construction can be undertaken.

Nevertheless, since this is the first corpus-based variationist account of existential NP, then more empirical evidence might be required to further test out the extent to which these statistically significant variables converge and diverge in different varieties, contexts, and the like. Note that most studies on English existentials have often drawn their data from interference-free/established/native varieties. Hence all of the variables tested herein, and much more, might be further considered in such interference-free/native/established varieties. What the present study has shown is that the specialness of existential construction is more a matter of its meaning and interpretation, and less of its internal structure, especially as it concerns its most important syntactic component, the *pivot*. On the other hand, the study also provides some perspectives to the question of the syntactic status of existential NP. According to many accounts in the literature (Williams 1994, Moro 1997, and Hazout 2004), since the expletive *there* is semantically empty, then the syntactic status of existential NP becomes fuzzy.

Following corpus results presented herein, if we compare the overall behaviour of these 'non-canonical' NPs, especially in terms of its structural variability and complexity (for example, H type is far simpler to premodifier + head + postmodifier) to those similar canonical NPs in previous studies (Akinlotan and Housen 2017, Schilk and Schuab 2016), then it can be said that these two kinds of NP are of the same syntactic value, and can as such, be classified as predicate/subject complement NPs. In other words, these non-canonical NPs behave just as subject complement NPs in canonical constructions, and can be classified as predicate, just as Hazout (2004) has proposed.

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