

An Exceptive Account of ‘Unless’ Clauses: Corpus Evidence

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Abstract

This paper provides corpus evidence to demonstrate that ‘unless’ clauses function like exceptive constructions (ECs). It adopts Galal et al. (2019) classification of ECs into two categories: paradigmatic ECs (connected/regular exceptive) and hypotactic ECs (free exceptive). The current analysis applies this classification to ‘unless’ clauses to examine their behavior. Corpus evidence shows that unless clauses consistently occupy a fixed position relative to their antecedent, similar to paradigmatic ECs. However, the two constructions differ in that ‘unless’ clauses occur before the antecedent regardless of the position of the consequent (the statement), whereas paradigmatic ECs occur after the antecedent. Additionally, unless allows both universal and non-universal quantifiers, with universal quantifiers being more commonly used. Regarding coordinating sequences, ‘unless’ accepts coordination similar to hypotactic ECs. Some statistical analyses of the use of ‘unless’ conditionals in two native corpora—the Contemporary Corpus of American English (COCA) and the British National Corpus (BNC)—are presented. These analyses show that ‘unless’ is more frequently used in BNC, suggesting a characteristic of British English. Results demonstrate that this construction is more common in the written proportions of COCA, whereas it is more frequently used in the spoken portions of BNC. ‘Unless’ conditionals are more often used with a free verb in the from-combination and are rarely used with Types II and III (counterfactuals), supporting the notion that unless does not typically occur with counterfactuals.

Keywords: Unless Clauses, Paradigmatic ECs, Hypotactic ECs, Corpus-Based.

1. Introduction

Corpus-based approach

The current analysis is a corpus-based study that tests theories related to meanings and characteristics of unless clauses. Corpus-based approach uses corpora to examine a theory in order to validate or to refute it through analyzing patterns of use, in this case, native users of English. The current work attempts to test some assumptions related to unless; whether it is a regular/connected exceptive or a free exceptive construction. Therefore, it adopts an approach proposed by Galal et al., (2019) that subsumes exceptive constructions (ECs) into: paradigmatic (regular/connected exceptive) and hypotactic (free exceptive) based on dependency analysis. They

conclude that markers in paradigmatic ECs are coordinating conjunctions, whereas markers in hypotactic ECs are subordinating conjunctions. Thus, the present work tries to apply this binary classification on unless conditionals to figure out which category it belongs to.

Data is obtained from two native corpora: Contemporary Corpus of American English (COCA) and the British National Corpus (BNC). Corpus tools and techniques are used to show how unless clauses are used in context, such as frequency analysis and concordance. Frequency analysis is the most basic statistic method used in corpus linguistics, which is divided into: raw frequency that counts the number of instances of a certain word, item or phrase in a specific corpus. This type of frequency doesn't provide evidence about language use in a corpus. The second type is normalized frequency that refers to frequency in relation to other values in a corpus as a proportion of the whole. In other words, it refers to the frequency of unless, for instance, in relation to the total number of words in the corpus. The current analysis employs the normalized frequency to show comparable results between both corpora under examination (COCA and BNC).

Meanings and characteristics of unless clauses

The connective unless is generally presented as the negative counterpart of the truth conditional conjunction if (as in, q unless p : $= \neg p \rightarrow q$). **P** is the antecedent clause, and **q** is the consequent clause, unless clauses, as 'You will not pass the exams unless you work harder', is supposedly equal to 'If you don't study harder, you will not pass the exams. However, it is argued that there are many empirical problems with this interpretation. It is suggested that the illocutionary meaning of unless is preserved better by using an only if expression, such as 'you will pass the exams only if you study harder' (Fillenbaum, 1986).

Furthermore, it is claimed that presenting if not and unless as equivalents in many EFL textbooks results in ungrammatical sentences or changing the meaning of conditional sentences (Celce- Murcia & Larsen –Freeman, 1999). Several scholars offer alternative analyses of [unless p , q], such as: [if not p , q] (Brée, 1985), [except if p , q] (Geis, 1973), [only if not p , q] (Clark and Clark, 1977), [only if p , not q] (Fillenbaum, 1986), [if and only if not p , q] (Comrie, 1986). In addition, von Stechow (1994) proposes that unless is "a subtractive or exceptive operator on quantifier domains". In other words, unless and but are semantically parallel.

Each interpretation is appropriate to a certain class of unless clauses depending on some factors (Declerck & Reed, 2005): (a) the semantic interpretation to read unless as an equivalent to except if, (b) the pragmatic interpretation of unless as an equivalent to except iff (iff means if and only if), (c) the syntactic integration of unless into its matrix clause (d) and the positive and negative polarity of the q and p . Moreover, Declerck and Reed propose that when unless is used in "imaginary" sentences, it has the meaning closest to except if, but when unless is used in "counterfactual" clauses, it is essentially equivalent to if not.

Some researchers present syntactic and semantic analyses of unless clauses, to draw on different meanings they bear. Within the framework of generative grammar, Jespersen (1961) argues that unless is derived from the incorporation of [+ neg] features associated with the conditional conjunction if, resulting in replacement of if not with unless (if not = unless). However, Jespersen does not make clear where the knot is located: is it in the p or in the q clause. Therefore, he does not make clear whether (1a) and (1b) or (1a) or (1c) are semantically equivalent. Geis (1973) suggests that the [+neg] feature must be associated to if: it is located in p clause not in the q clause. Therefore, (1a) and (1b) are related.

1. a. I will leave, unless you leave.
- b. I will leave, if you don't leave.
- c. I won't leave if you leave.

Geis also claims that treating unless as an equivalent to if not is incorrect for several reasons. First, unless clauses and if-clauses obviously differ with respect to their tolerance with indefinites such as any and every: that is, indefinite pronouns (specifically any and ever) appear in if clauses, but they don't occur in unless clauses as in (2a-d). Furthermore, Nadathur (2013) also claims that negative polarity items (NPIs), such yet, are not used within the domain of unless clauses because they are inherently negative as in (2e).

2*I will be angry, unless you give anyone a necklace.

I will be angry, if you don't give anyone a necklace.

2*I will be happy, unless you ever hit me again.

I will be happy, if you don't ever hit me again.

(Geis, 1973)

2*Mary will be angry unless Bill has called yet. (Nadathur, 2013)

Penka (2015) defines negative polarity items (NPIs) as “words or expressions that can only occur in a limited set of environments, prototypically in the scope of negation”. Avilio (2009) adds that NPIs must be “accompanied by a negative licensing context”, whereas the negative licensing context can be an utterance which occurs within the scope of a negative operator such as not or no (4a-b). However, in other cases NPIs are licensed without any visible negative operator. For example: “*I saw anybody” and “I didn't see anybody” (Penka & Zeijlstra, 2010). Semantic interpretation of licensing NPIs, proposed by Ladusaw (1979), suggests that NPIs are licensed based on downward entailment (DE), which refers to contexts under negation, where entailment is from the general to the specific. For instance (Penka, 2015):

3. John doesn't have a dog.

John doesn't own a poodle.

It has been suggested that NPIs can also occur in other environments that don't include negation (Avilio, 2009; Giannakidou, 2011; Penka, 2015; Penka & Zeijlstra 2010). NPIs occur within the scope of conditionals, specifically in the antecedent without requiring the existence of negative operator. The table below lists these types (Penka, 2015):

Table (1): Environments that license NPI without explicit negative operator

Scope of semi-negative quantifiers and adverbs like few, at most, rarely, hardly etc	John hardly ever says anything
Complement clauses of “negative” predicates like doubt	I doubt that anyone saw anything.
Clauses headed by without	Sue left without telling anyone.
Clauses headed by before	I doubt that anyone saw anything.
Relative clauses modifying a universal quantifier	Everyone who saw anything should report to the police.

Antecedents of conditionals	If the burglar left any traces, we will find them.
Comparison clauses	Fred is more intelligent than anyone I ever met.
Questions	Did you see anything unusual last night?

Another syntactic difference between if conditionals and unless clauses is that if can be modified by only, even and except but unless cannot. Only, even and except originate in the deep structure as modifiers of the conditional conjunction if, and the integration of [+ neg] into if is blocked when these modifiers are present. In other words, when if is modified by only, even and except, if cannot be negated by not. Moreover, these modifiers occur (even, only and except) in sentence-initial position in the deep structure, then they are associated with if through attachment transformation (Geis, 1973). Such claim suggests that if not and unless are not equivalent. Further elaboration related to modifiers with if in the result and discussion section, which displays the actual use by English native users. Hall (1964) maintains that both if and unless occur in the deep structure as a conditional conjunction, and the relation between them is simply being two members of the same lexical class.

Other differences between if not and unless presented in literature are: First, unless- clauses don't correlate a then- clause as if not-clauses do. Second, unless clauses don't occur in counterfactual conditionals. Third, they don't license Negative Polarity Items (NPIs). Fourth, they cannot be used in questions, (Geis, 1973). Yet, Brée (1985) presents some corpus examples (the Brown Corpus) to show that unless- clauses can be used with questions. Von Fintel (1994), on the other hand, mentions that these examples are of rhetorical questions:

1. How can we have a good city unless we respect morality?
2. Unless God expected a man to believe the Holy Scriptures, why has he given them to him?

Finally, they cannot be coordinated as in ‘*Laila will come unless she is busy and unless her mom invites her as well’ (Dancygier, 1998; Geis, 1973 ; von Fintel, 1994): that is, there is only “one exceptional circumstance that conditions the matrix clause” and having two unless -clauses will lead to contradictions.

Exeptive unless

Witzenhausen (2017) suggests that unless clauses define the circumstance under which a certain situation does not hold or happen. Supporting the exeptive approach of unless clauses, presented by Geis and von Fintel, Witzenhausen proposes that unless clauses express positive exeptive meaning. The exeptive meaning of unless is suggested by many scholars (Dancygier & Sweetser, 2005; Geis, 1973; Montolio, 2000; Zuber, 1999; von Fintel, 1994). It is argued that unless is closer to except if rather than if not. Zuber (1999) associates unless clauses to exclusion phrases. Dancygier (1985) maintains that in [q unless p], unless basically negates q not p. She adds that when using [q unless p], the user intends to assert the q statement as well as to examine the circumstances under which q (consequence) may not hold.

In addition to that, von Fintel (1994) considers unless as a member of an exeptive class such as but. He formalized this account depending on Geis' claim that unless performs as except if. That unless expresses the uniqueness set of situations under which q doesn't hold, such as (4) which means that if there is a group of circumstances for all which John will succeed, then no

circumstance under which John goofs off might be included. Whereas in the case of if not, success happens only in the absence of goofing off.

(4). John will succeed unless he goofs off.

Von Fintel (1993) defines uniqueness as "the set of exceptions to a quantified sentence D (A) P is the smallest set C such that D (A-C) P is true". In other words, C is the exception set that has the smallest set in case it is subtracted from the quantifier domain, and then the "quantification" turns to be true, because of the domain subtraction statement and the uniqueness condition.

Nadathur (2013) assumes that unless is more than an equivalent of if not, especially when the uniqueness meaning in some unless- clauses arises. He argues that uniqueness is related to unless pragmatically, rather than semantically. That is, uniqueness is context sensitive. Nadathur (2013) proposes that the formal semantic meaning or entailment of unless "cannot be reinforced or negated without causing redundancy or contradiction". Example in (5.a-b) show that uniqueness allows both. Yet, according to 8.a-b, uniqueness is weaker than entailment.

(5) a. John will leave unless Bill calls, and he will stay if Bill does call.

b. John will leave unless Bill calls, but he may leave in any case.

Since the uniqueness of circumstances under which q might not hold are context-sensitive, and it can be contextually cancelable. Nadathur explains that in (6.a-b).

(6) a. John cheated unless he wrote his own questions.

b. John cheated unless he wrote his own questions and his own answers.

(6.a) expresses uniqueness of exception reflected by unless, i.e., there was no cheating if John did write his own questions. Let's assume that it is demanded that John should present answers too, and then (9.a) lost the uniqueness exception. Yet, (6.a) is still acceptable; John may have written his own questions, but he did cheat. Therefore, understanding the uniqueness meaning of unless clauses is not fixed, since it depends on pragmatic context of the communicative situation. Thus, uniqueness is pragmatic. To unify the pragmatic characteristics of unless with the exceptive approach, Nadathur (2013) suggests that depending on the conditional strengthening and exceptive approach is a well-organized way to do that.

To understand to which category unless belongs, there is a need to differentiate between two types of exceptives: regular exceptives (also called connected, bound or exceptive markers) such as but, and a weaker category of free exceptives (also called exception phrases) such as except for.

(7) Except for John, every student attended the meeting.

Regular exceptives and free exceptives determine the quantifier domain. Nevertheless, regular exceptives identify the "unique smallest exception set", whereas free exceptive define "an exception set", i.e., free exceptives lack a uniqueness category (Nadathur, 2013). Von Fintel (1993) categorizes unless as a regular exceptive rather than a free one for two reasons: i. Regular exceptives only come with universal quantifiers such as: every, no, always and never. He states that using partial quantifiers as: most, few, usually and rarely indicate an exceptive meaning and there is no need to use them instead of universal quantifiers which completely identify the uniqueness meaning of the exception. Therefore, since free exceptives lack uniqueness, they can

occur with partial quantifiers. ii. Von Fintel claims that non- coordination of regular exceptives is a “uniqueness derived property”. While free exceptives that lack uniqueness can be coordinated.

(8) a. ? John will succeed unless he goofs off and unless he sleeps through the final.

b. Unless he goofs off, and unless he sleeps through the final, John will succeed.

However, Nadathur explains that considering unless as a regular exceptive makes both 11.a-b is unacceptable. Thus, coordination supports classifying unless as a free exceptive. Regarding the clause order in (8.a –b), it might be to pragmatic reasons.

Another contrast between regular and free exceptives (Hoeksema, 1995) is that regular exceptives are used to modify noun phrases; therefore, they occur in sentence- final position (9.a -b). Whereas free exceptives are sentential modifiers (as sentential adverbs), thus they occur in sentence-initial, sentence-medial and sentence-final positions (10.a-c).

9. a. Everybody but Diana was invited.

b. Everybody was invited but Diana.

c. *But Diana, everybody was invited.

10.a. Everybody except for Diana was invited.

b. Everybody was invited except for Diana.

c. Except for Diana, everybody was invited.

Secondly, the behavior of only poses ungrammaticality with regular exceptives (as *only students but John was invited), while using only with free exceptives is acceptable (cf. Except for John, only students were invited). Hoeksema (1995) explains that is due to the fact that "only being an adverb and not a determiner, takes widest scope in the noun phrase". That is, only must be the farthestmost operator. Third, the adverb never as a temporal modifier cannot be used with free exceptives which don't contain a temporal expression (Hoeksema, 1995).

As previously discussed, this analysis adopts the binary classification, of ECs and applies it over unless conditionals, proposed by Galal et al., (2019) to answer the following:

1. Do unless conditionals perform like the paradigmatic ECs or do they act like hypotactic ECs?
2. What is the position of unless clauses in relation to their antecedents? And in relation to the consequence statement? What are the implications of that positioning?
3. Can unless conditionals be used in coordinated sequencing?
4. In addition to that, this paper presents some frequency analysis of use of unless clauses in COCA and BNC to find out if this construction is more commonly used by natives in the spoken form or the written form.

2. Methodology

Whether it is considered as an independent discipline of linguistics or just being a methodology of linguistic research and analysis, corpus linguistics (CL) provides better understanding of how language is actually used, through studying large samples of naturally

occurring language using computers. Corpora are essential resource of authentic language use. Corpus evidence tests native intuitions about grammar and vocabulary usage, because these intuitions are sometimes untrue. Besides that, corpora provide information about the differences between spoken and written forms of language, they also provide information about linguistic patterns based on frequency analysis. Further, corpora give us more insight about the preferred context in which some words, expressions or structures are used, such as the licensing of NPIs that requires negated environments. It is important to mention that corpus analysis depends on quantitative and qualitative analyses.

Quantitative methods basically depend on frequency analysis of items (counting the number of times a word appears in a corpus), and this is known as raw frequency or the simple frequency count. However, when comparing two or more corpora, to see if a word is more common in one than the other, raw frequency is insufficient, because corpora do not have the same size. Therefore, we need to use normalized frequency or normed count. For example, *very* occurs in the spoken subsection of COCA about 195.000 times, and in the written subsection about 198.000 times. Accordingly, it seems that this adverb is more commonly used in the written subsection. However, using raw frequency does not provide accurate results because the written subsection in COCA is larger than the spoken one. In this case, there is a need to use the normed count (normalized frequency) which shows that *very* is used 2543 times for every million words in the spoken subsection, whereas it appears 673 times in the written subsection. Accordingly, *very* is significantly used in the spoken form of American English (Bennett, 2010).

Data is obtained from Contemporary Corpus of American English (COCA) and the British National Corpus (BNC) that are available on corpus.byu.edu. BNC is also accessible through: <http://www.natcorp.ox.ac.uk/using/index.xml> (for simple searches), or from <http://bncweb.lancs.ac.uk/bncwebSignup/user/login.php> (for more advanced searches). COCA is also available on <http://www.americancorpus.org/>.

The Corpus of Contemporary American English (COCA) is the largest, genre-balanced corpus of English. It has been designed and constructed to be a monitor corpus, to study changes in English over different periods of time (1990-2019). It is continually updated by adding 20 million words each year. Now it includes about one billion words and evenly divided into eight different genres: spoken, fiction, popular magazines, newspapers, academic journals, web (Genl), web (blog) and TV/Movies genre. The following table shows in details different sections in COCA including information about the size of each subsection, number of texts and types of texts included in each one.

For the purposes of this study, spoken proportion of this corpus is calculated by counting the number of words in TV/Movie and spoken genres ($127.396.932 + 129.293.467 = 256.690.399$ words), whereas the rest of the genres (fiction, magazine, newspapers, academic, web (Genl) and web (Blog)) are considered as the written proportion counting for 746.199.355 words. To compare between these two main sections (spoken and written), analysis is based on the normalized frequency to show if there are significant differences in use of *unless* clauses.

Genre	# texts	# words	Explanation
Spoken	44,803	127,396,932	Transcripts of unscripted conversation from more than 150 different TV and radio programs (examples: All Things Considered (NPR), Newshour (PBS), Good Morning America (ABC), Oprah)
Fiction	25,992	119,505,305	Short stories and plays from literary magazines, children's magazines, popular magazines, first chapters of first edition books 1990-present, and fan fiction.
Magazines	86,292	127,352,030	Nearly 100 different magazines, with a good mix between specific domains like news, health, home and gardening, women, financial, religion, sports, etc.
Newspapers	90,243	122,958,016	Newspapers from across the US, including: USA Today, New York Times, Atlanta Journal Constitution, San Francisco Chronicle, etc. Good mix between different sections of the newspaper, such as local news, opinion, sports, financial, etc.
Academic	26,137	120,988,361	More than 200 different peer-reviewed journals. These cover the full range of academic disciplines, with a good balance among education, social sciences, history, humanities, law, medicine, philosophy/religion, science/technology, and business
Web (Genl)	88,989	129,899,427	Classified into the web genres of academic, argument, fiction, info, instruction, legal, news, personal, promotion, review web pages (by Serge Sharoff). Taken from the US portion of the GloWbE corpus.
Web (Blog)	98,748	125,496,216	Texts that were classified by Google as being blogs. Further classified into the web genres of academic, argument, fiction, info, instruction, legal, news, personal, promotion, review web pages. Taken from the US portion of the GloWbE corpus.
TV/Movies	23,975	129,293,467	Subtitles from OpenSubtitles.org, and later the TV and Movies corpora. Studies have shown that the language from these shows and movies is even more colloquial / core than the data in actual "spoken corpora".
	485,179	1,002,889,754	

Figure (1): Chart 1: Number of texts, words and types of texts included in different sections of COCA (Davies 2008-2019)

The British National Corpus (BNC) is about 100 million words, including collections of texts of written and spoken. BNC is created to represent a wide range of sections and genres of British English variety, from the later part of the 20th century. The written part of the BNC is about 90% including: fiction subsection which is about 17 million words (e.g., academic books and popular fiction,), Popular magazines genre consists of 16 million words (e.g., published and unpublished letters and memoranda), newspaper subsection is made up of 11 million words (e.g., extracts from regional and national newspapers, specialist periodicals and journals for all ages and interests), Academic is about 16 million words (such as: school and university essays and many other academic texts) and other resources that include 30 million words (corpus.byu.edu:2018). The spoken part of BNC has a much wider range of spoken sub-genres. It includes 10% from several sources: unscripted informal conversation (recorded by volunteers selected to represent different ages, regions and social classes so that data is demographically balanced), collections of different contexts, ranging from formal business or government meetings to radio shows and phone-ins. Fiction, magazine, newspapers, academic, non- academic and miscellaneous genres are considered as the written proportion in the current study counting for 85.800.000 words, while the spoken subsection is about 10.000.000 words.

3. Data analysis and discussion

Frequency analysis

In this section, some frequency information about the use of unless clauses in the target corpora are introduced, to reveal the normed frequency of use in the spoken and written forms of English, as well as cross different sections of both corpora.

SECTION	ALL	BLOG	WEB	TV/M	SPOK	FIC	MAG	NEWS	ACAD	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19
FREQ	88625	17350	16775	14332	8723	7943	8721	8230	6551	10086	9868	9311	8770	8135	8330
WORDS (M)	993	22.1	21.5	22.1	21.8	20.4	21.8	20.9	20.6	24.1	25.4	25.3	24.9	25.1	24.9
PER MIL	89.25	779.60	780.21	646.70	399.66	387.95	399.71	390.68	316.04	419.16	385.91	367.13	349.67	323.64	332.59
SEE ALL SUB-SECTIONS AT ONCE															

Figure (2): Chart 2: Frequency of distribution of unless conditionals cross sections of COCA from 1990 to 2019

As chart (2) displays, the total count of unless in COCA is 88625 times, about 89.25 pm in all sections. This frequency is distributed in eight subsections (spoken, fiction, popular magazines, newspapers, academic journals, web (Genl), web (blog) and TV/Movies). As explained before, the spoken proportion of this corpus (COCA) includes two subsections: spoken and TV/Movie genres. Therefore, frequency analysis demonstrates the following points:

- unless conditionals recorded 89.25 pm in COCA and 106.68 pm in BNC, which might mean that unless conditionals are a characteristic of British English.
- unless counted for 89.82 pm in the spoken proportion, whereas it counted for 409.29 pm in the written proportion of COCA. Thus, we can assume that this construction is a feature of written American English.
- Moreover, unless conditionals recorded 126.85 in the spoken subsection and 108.9 pm in the written proportion of BNC. So, it is used more commonly in the spoken form.
- It is most employed on the web (Genl)(780.21 pm) and least in academic subsection (316.04 pm) of COCA.
- According to timeline analysis, there was a slight decrease in use of unless clauses in COCA from 419.16 pm (1990- 1994) to become 332.59 pm (2015- 2019).
- On the other hand, unless conditionals are most commonly used in academic subsection (156.02 pm) and least in newspaper genre (81.50 pm) of BNC. It is important to mention that BNC does not provide a timeline analysis of use as COCA does.
- An interesting contrast illustrates that unless conditionals are least used in the academic subsection of COCA (316.04 pm), while it is most used in the academic subsection of BNC (156.02 pm). Yet, the normed frequency in COCA is still higher than the one in BNC.

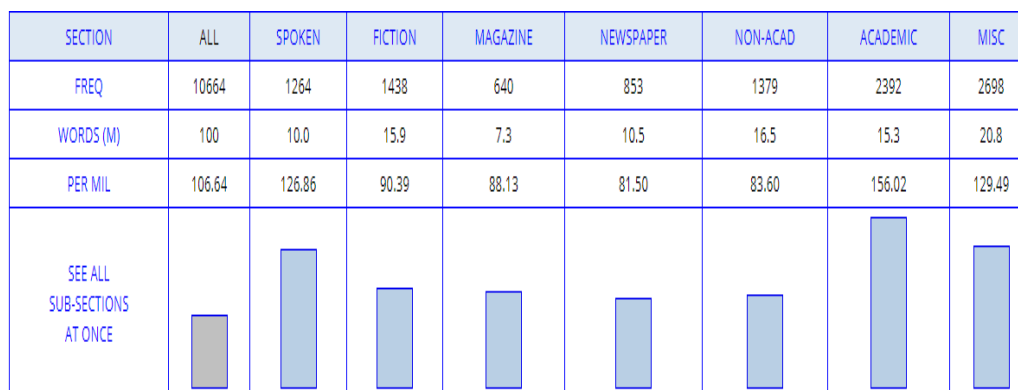


Figure (3): Chart 3: distributional frequency of use of unless conditionals in BNC:

There is a need for further qualitative research to analyze the properties of unless conditionals used in written and spoken forms to find out if there are differences in use of this construction by speakers and writers, to study the most canonical and non-canonical types used and what pragmatic reasons stand behind such uses by natives.

Verb form combination in unless clauses

A narrowed corpus collected from COCA and BNC counting for 600 lines, which were manually checked. 418 lines were included after excluding incomplete examples. The findings showed that verb form-combination with unless clauses as the following: 104 concordance lines used with type I, 17 lines with type II, 9 lines with type III, 99 lines with zero type, 16 lines with mixed types (I & II), and 173 lines with free verb combination in the protasis (antecedent) and the apodosis (consequence). As the results demonstrate, native users utilize free verb combination more commonly than any other verb forms. In addition to that, the least verb form combination used is with types II & III (hypothetical or counterfactuals). The following table illustrates those types.

Table (2): verb form combinations in the protasis and apodosis in unless conditionals in the narrowed corpora with examples:

Type	Verb form in protasis	Verb form in apodosis	Example
Zero	-Simple present	simple present	-Unless you're early, you lose your chance to meet her. [spoken, BNC]
	-present simple		-I won't see him graduate from high school. I mean, unless I'm 102. [spoken, COCA]
Type I	-present continuous present	-Will + base form of the verb -other modal verbs in the present form (can, may and so on)	-You won't see Eartha Kitt maybe at all unless I 'm doing photography or something like that. [spoken, BNC] -Unless a patient has gone through treatment for chemical dependency,

	-perfect simple		they can't get a transplant. [spoken COCA] -Unless they've been holding back on him, there will be more work to be done. [spoken, COCA]
	-present perfect continuous		
Type II	-simple past		-I would never do that to you unless you did it first. [spoken, BNC] -It wouldn't be a real hamburger unless the ketchup was dripping. [spoken, COCA] -I wouldn't feel safe to report, anything unless I could assure my own career safety. [spoken BNC]
	-Past continuous	modal verbs such as: would might, should and could	
	-could, would other modal verbs in the past		
Type III	-Past participle	Would (could/might) have+ past participle	-Someone would not have had unless they had been here to see it. [spoken, COCA] -He could not have been stopped any other way? Not unless the police would have arrested him. [spoken, COCA]
	-would + past participle		
Mixed	i. simple past (past continuous0	would have +Past participle or other modal verbs in past perfect aspect as could have+ past participle	It would have been pretty unless we were standing in it. [spoken, BNC]
	ii. Past perfect (had+ past participle)	would/should/could/might/ought to+ base form of the main verb	It could hint everything-- from everything from your personality to your intellect to your facial attractiveness, unless you have had some sort of [..] [spoken, COCA]

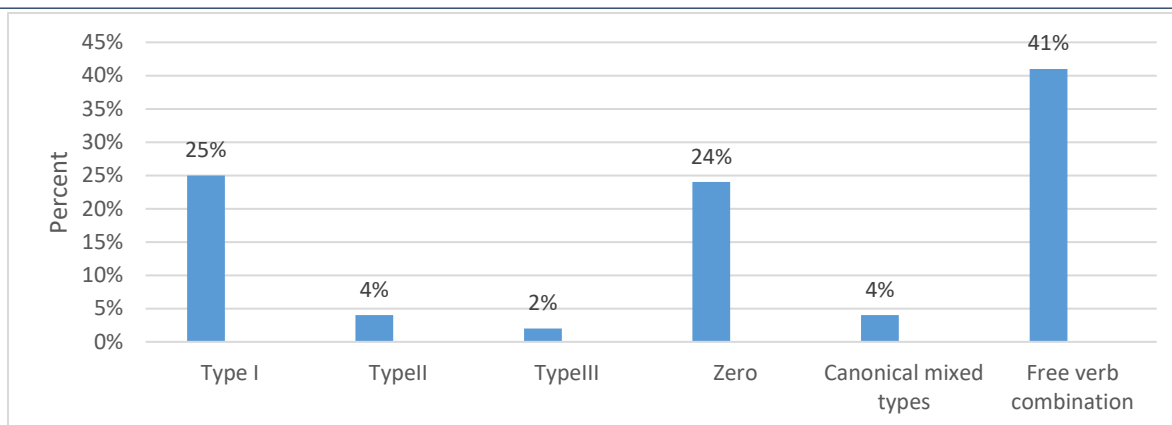


Figure (4): Chart (4): percentage of use of different verb form-combination in unless clauses:

Canonical types (Types I, II & III) with **unless** accounted for 31%, zero type accounted for 24% and mixed types accounted for 4% of the total number of the occurrences in the sample corpus.

In accordance with the results, unless clauses are rarely used with counterfactual and hypothetical type, which agrees with assumptions presented in the literature related to unless conditionals. Free verb combinations with unless clauses (this type shows free verb form variation in both protasis and apodosis, which does not follow the verb form combination in the aforementioned types, see table 2) accounted for 41% of the narrowed sample. For instance:

11. Unless Trump can get there. I could never see this happening but hypothetically [...]

[Spoken, COCA]

12. But unless you have that information and those reports in front of you, he would have been criticized to say why did you act like this so impulsively without having the facts and evidence? [Spoken, BNC].

Acceptance of quantifiers within the domain of unless clauses: universal and non- universal quantifiers

This paper adopts the exceptive account of unless conditionals and follows the classification of exceptive construction proposed by Gala et al (2019), which subsumes exceptive constructions into: paradigmatic exceptive constructions that syntactically act as coordination (but and except), and hypotatic exceptive constructions that behave as subordination (except for). This classification depends on the syntactic analysis provided by using Universal Dependencies (UD). Thus, the researcher attempts to test the behavior of unless specifically the position of unless in relation to its antecedent, the acceptance of universal and non- universal quantifiers and coordination construction.

13.a. Every day but/except Sunday it was raining.

b. Except for Sunday, it was raining every day. (Gala et al, 2019)

The marker (except) and the following noun, which is the excepted element form together the exceptive phrase (EP) such as except Sunday (13.a.), whereas every day is the antecedent. The antecedent of the connected exceptive allows universal (every) and non-universal quantifiers, whereas free exceptive allow non- universal quantifiers (most, few and many) and quasi-universal

quantifiers (the majority) (Galal, 2019, Galal & Kahane, 2018, García Álvarez, 2008).

The findings show that unless allows universal quantifiers more than non-universal ones. It is important to mention, only quantifiers within the domain of unless they are included (quantifiers within the domain of the consequence clause are not included). Every, all, always and no within unless domain recorded 1042 occurrences in COCA, whereas non- universal quantifiers occurred 72 times only. Both frequencies are low in comparison with the total norm frequency of unless in the corpus. Yet, unless acts more like paradigmatic ECs than hypotactic ECs. Every modifies the object of a preposition (14), as an adjective (inside the VP) (15). All and no come within the VP (modifying the object as in 16 and 17).

14. I like working for him, but accountability is meaningless unless it's for everybody whether it's the leader of a network or the leader of the free world [.....] [spoken, COCA]

15. It is impossible to rule out this form of bias unless we try including every possible alternative. [Academic, COCA]

16. Unless you understand all the fundamentals of farming, you're going to be blindsided at some point in time.[Blog, COCA]

17. These perches aren't cheap by the wildest stretch of the definition unless money is no object to you. [Magazine, COCA]

Non-universal quantifiers modify the subject (18 & 21), the object (19) and prepositional phrases (20).

18. US Airways' executives, meanwhile, had warned for weeks that a second Chapter 11 filing would be needed unless all or most unions approve new concessions by Sep [] [Newspaper, COCA]

19. Concrete entombment won't be effective unless the most dangerous materials are removed. [Academic, COCA]

20. There was no point trying to repack unless she dumped most of the water and drank from the river at Cole, which, according to Pedro, was clean and safe.[FICTION, COCA]

21. But it will probably continue unless a few federations and some players show the guts to stand alongside her (Peer). [Newspaper, COCA]

22. I like to keep multiple income streams coming in and this doesn't allow you to do that unless you have so many titles that it doesn't matter. [Blog, COCA]

23. Otherwise, folks get further polarised and stop considering the arguments put forward by other posters, unless they usually agree with them anyway. [Blog, COCA]

Furthermore, only one instance with usually was found in COCA in the domain of unless conditionals (23) and no instances with the quantifier rarely. In accord with the finding, unless acts more like paradigmatic ECs (connected/ regular exceptive).

The linear position of the exceptive phrase:

Galal et al (2019) suggest that paradigmatic exceptive must be after the antecedent: EP can occur contiguously (24.a) or non-contiguously (24.b) after its antecedent. Thus, EP in the

paradigmatic exceptive is not allowed in the fronted position (before the antecedent) as in (25.a-b) cannot occur before the antecedent.

24 a. All children, except one, grow up.

b. The discount applies to everything except fuel.

25 a *Except the weather, everything was great.

b.* Everything was, except the weather, great. (Galal et al, 2019)

On the other hand, hypotactic exceptive (free exceptive) can occur before the antecedent, after it or within the VP. Free exceptive markers always followed by a NP

26. a. All data except for Head Start data are from the U.S. Department of Labor [...].

b. Everything is right except for the Price.

c. Except for killings, all crimes drop in Duterte's 1st year.

d. No one was, except for the man who played him, Marion Morrison. An actor and man with true grit. (Galal et al, 2019, 167)

The position of unless is tested in relation to its adjacency to the antecedent. The findings indicate that unless conditional always occurs before the antecedent. The narrowed corpus obtained from COCA and BNC, includes 1856 concordance lines: 1047 lines from COCA and 809 from BNC. The results show that unless clauses are more commonly used in [q, unless p] order (final position) in spoken subsections of COCA accounting for 72% and 56% in BNC (see chart 3). Thus, unless conditionals behave as relative clauses that they act as a dependent clause containing obligatorily a NP and a VP, but cannot stand alone (Bhatt & Pancheva 2002).

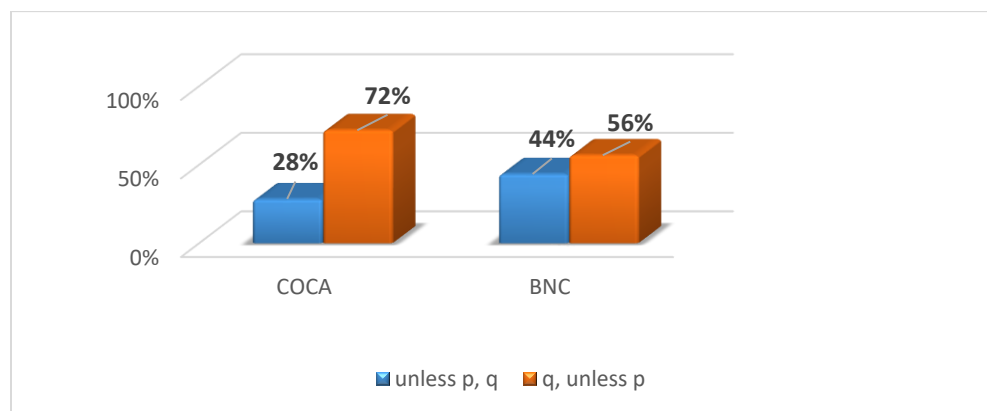


Figure (5): Chart (5): percentage of occurrence of [unless p, q] form and [q, unless p] in the narrowed corpora

It has been argued that unless clauses most commonly follow the main clause. In her unpublished study Taub (1991) studies a sample from the Wall Street Journal included twenty-eight examples. She finds out that twenty-seven unless clauses are used in [q, unless p] order, whereas only one instance is used in [unless p, q] order. Most of unless clauses occur in [q, unless p] order (final position), the p and q clauses are separated by a comma. A similar result asserted by Hasselgård (2016) who analyzes material from the Varieties of English for Specific Purposes

data base (VESPA), representing Norwegian advanced learners of English, and the British Academic Written English corpus (BAWE), representing English L1 students in British universities. Hasselgård argues that unless clauses occur only in [q, unless p] order. It is important to mention that unless conditionals in Hasselgård's study are very few, accounting for 4 clauses only in both corpora. Thus, why unless is usually used in the [q, unless p] order?

Dancygier and Sweetser (2005) propose that unless is used as a conjunction to “present an afterthought or a reservation, or even to start a new line of exceptive reasoning”. That might be the reason why unless is mostly used in a final position. Furthermore, they argue that unless establishes an abnormal alternative (marked) meaning with the q (consequence) statement. Therefore, unless clause is unnecessary to the processing of q (whose immediate interpretation is already accessible within its own context). Below are some examples.

27. The President could not suspend it unless it was in our national interest and unless it was going to promote democracy in Cuba. [COCA, spoken]

28. She's not going to win the authenticity, the integrity, the honesty thing unless she has issues. [BNC, spoken]

The speakers in the previous example (27 & 28), at the beginning, assert q without an explicit relation to unless clause, to which they are adding q (consequence). Moreover, unless also expresses an exceptive meaning, regardless of whether the meaning introduced is predictive, epistemic, speech act or generic. It is notable that the q- clauses could stand on their own whether they are assertions, speech acts or generic statements. However, Dancygier and Sweetser demonstrate that depending on the syntactic level is not enough to consider whether unless clauses are sentence- initial or sentence- final, because “an exception to previously built mental-space structures which are relevant at the new stage of the reasoning, whether or not those structures are expressed in a preceding and syntactically connected q-clause”. In other words, the exceptive meaning of unless is not forwarded to the following q, but the meaning presents an afterthought implied in the whole earlier reasoning.

Therefore, we can say that the linear position of unless and paradigmatic ECs is a fixed location in relation to their antecedents, however, unless always comes before its antecedent (which is a NP and a VP (PP), whereas paradigmatic ECs occur after the antecedent. In addition to that, unless does not have a free positioning like free exceptive.

Can unless clauses be coordinated?

Searching COCA, only 1161 concordance lines were generated representing both the spoken and written sections. After manual analysis only 117 are included. These 117 examples represent coordinated unless clauses using two conjunctions: and & or as well as multiple unless clauses, with one consequent (q statement), that are connected by punctuation marks, specifically a comma and semicolon. Accordingly, unless clauses are rarely coordinated which proves assumptions presented in literature related to this characteristic of this type of clauses. Search results demonstrate that native users employ multiple unless clauses: two, three, four or five with one q statement, either coordinated using two conjunctions: and & or. Or by using multiple unless clauses with one q statement by punctuation marks such as comma and semicolon. Even though coordinated unless conditionals are not a common pattern in English, yet explanation for such use is required. In contrast, Galal et al (2019) report that no instance of coordinated paradigmatic ECs

is found, confirming the assumption that they cannot be coordinated in English, while hypotactic ECs can. But no frequencies were provided to show if this pattern (coordinated hypotactic ECs) is common or rare.

It is important to mention that some concordance lines included 3, 4 or 5 unless-clauses which have the same q- clause (consequent) as in (29) and (30).

29. And this is something we should not do unless we have a clear-cut strategic objective and unless we can define what the outcome of this will be and unless we are directly challenged, which we, at this moment, are not. [COCA, Spoken]

30. He says he wants to forbid new troops, quote, "unless they have adequate training and unless they have adequate equipment. 'His point is, yes, we'll give you the troops, but they've got to have X and Y and Z for it to happen. [COCA, spoken]

The results demonstrate that unless clauses are coordinated using and 22 times in COCA. The frequency of use of coordinated unless clauses is clearly very low comparing to the enormous size of COCA, however, corpus- based data show that this type of clauses is possible to be coordinated.

31. You cannot pursue the study of literature or, for that matter, any other academic discipline, as these subjects have traditionally been conceived, unless you believe that there are valid criteria of assessment of quality and unless you also believe that it is possible to teach your students to tell the differences between high and low quality in works of literature and other cultural products. [COCA, Academic]

32. But it should by now be obvious also that we will not survive unless that science and technology is thoughtfully applied and unless our lust for more knowledge and more powerful toys is tempered with a larger and longer view of our values, needs, and desires than simple adherence to the scientific method can provide. [COCA, Magazine]

33. They had to release him unless they could prove he was dangerous and unless they could prove that he had a continuing mental disorder. [COCA, Spoken]

So, how can we interpret the meaning of coordinated unless clauses? The meaning of unless requires "uniqueness of the exceptional circumstance" (Geis, 1973; von Stechow, 1994). Previous examples (23.a to 23.d) define two exceptions which validate q- clause, but neither exception is unique; therefore, there will be a contradiction. In 23.a, having an adequate training cannot be the only exceptional circumstance which forbids sending new troops as having the adequate training too, which is also the only exceptional circumstance. Thus, the uniqueness exceptive meaning will clash.

Declerck and Reed (2000) add that native speakers use coordinated unless clauses. Therefore, we need another explanation for such use. They assume that coordinated unless clauses could be acceptable when the fulfillment of one exception is enough to validate q or when considering the two exceptions as one set that has to be fulfilled at once. So, we can say that being adequately trained is enough to send troops, or being adequately equipped is sufficient by itself to send troops. Another reading that might make (23.a) acceptable is that both adequate training and adequate equipment form together a unique set of exception that should be fulfilled at the same time, which helps to avoid contradiction and save the uniqueness of the exceptive meaning.

In addition, unless semantically contains an Iff reading: [q unless p] equates [q except iff p]. Declerck and Reed (2000) propose that “the conditional perfection implicature promotes the idea of a set of cases forming a unique exception (referred to in p or the antecedent)”. In other words, (23.a-23. d) where unless is not interpreted as except iff, it is unacceptable because it contradicts the conditional perfection implicature not because it is semantically deviant. In the case of unless clauses coordinated using or, it is argued that exceptions in two or more coordinated unless clauses don’t need to be valid at the same time. Further, according to data analysis, or is the most common used conjunction to join more than one unless clause accounting for 57 sentences cross subsections, most frequently used in spoken followed by fiction subsections.

Dancygier and Sweetser (2005) add that unless bears a semantic alternativity feature which might explain the acceptability of coordinating unless clauses using or. That is each coordinated unless clause represents a hypothetical alternative scenario or choice that are equally true or untrue. For example:

34. At first it didn't matter that he had no telephone, I saw him every morning and every evening unless he had to go hauling or selling in his father's truck too early and too late. Or unless Mrs. Welche pressed me about staying after school to practice my speech. Or unless Folami stuck to me like warm mush and asked too many questions, unless Akin spied, unless Wanda used her sixth sense. [COCA, Fiction]

35. It just turns out that there is no way that you can actually do that unless he voluntarily does it or unless he commits a crime. [COCA, Spoken]

36. We cannot release water outside those entitlements unless it is requested by a state or unless it is part of a scheduled release to Mexico. [COCA, Academic]

37. It seems the foreign memories don't come to mind unless something triggers them, or unless you actually think about them. [COCA, Fiction]

38. Some marketers go further and declare the era of the straight-ahead ad that touts price or product quality dead; spots no longer work unless they make people laugh or bond emotionally with the brand, or unless they somehow share a sophisticated wink with the viewers. [COCA, Magazine]

39. In Illinois case law, Chicago teachers cannot be dismissed unless they have failed to improve after a remediation period of 45 days or unless they are deemed "irremediable. [COCA, Newspaper]

4. Conclusion

This investigation provided some statistical analysis of use of unless clauses in two native corpora, and tested verb form combinations in the protasis and the apodosis. Furthermore, the current work presented a discussion in favor of the exceptive account of unless and adopted Galal et al (2019) related to the classification of ECs constructions and applied that over unless clauses. In accord with the findings, unless acts more like paradigmatic ECs (connected exceptive) than hypotactic (free exceptive). However, a contrast with the findings of (Galal et al, 2019) who assume that paradigmatic ECs are categorized syntactically as coordinate conjunction. The present analysis considers unless as a subordinate conjunction, agreeing with Geis’ analysis of conditional clauses as being relative clauses, which cannot stand by themselves and require a main clause to

provide meaningful statements. Unless allows universal quantifiers more than non-universal quantifiers, this indicates that unless clauses act like paradigmatic ECs. A point of difference proven by corpus evidence is that unless clauses can be coordinated unlike paradigmatic ECs. Therefore, unless clauses are having an exceptive conditional meaning. They act more like paradigms, more than hypotactic.

Conflicts of interest statements

All authors declare that they have no conflicts of interest.

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