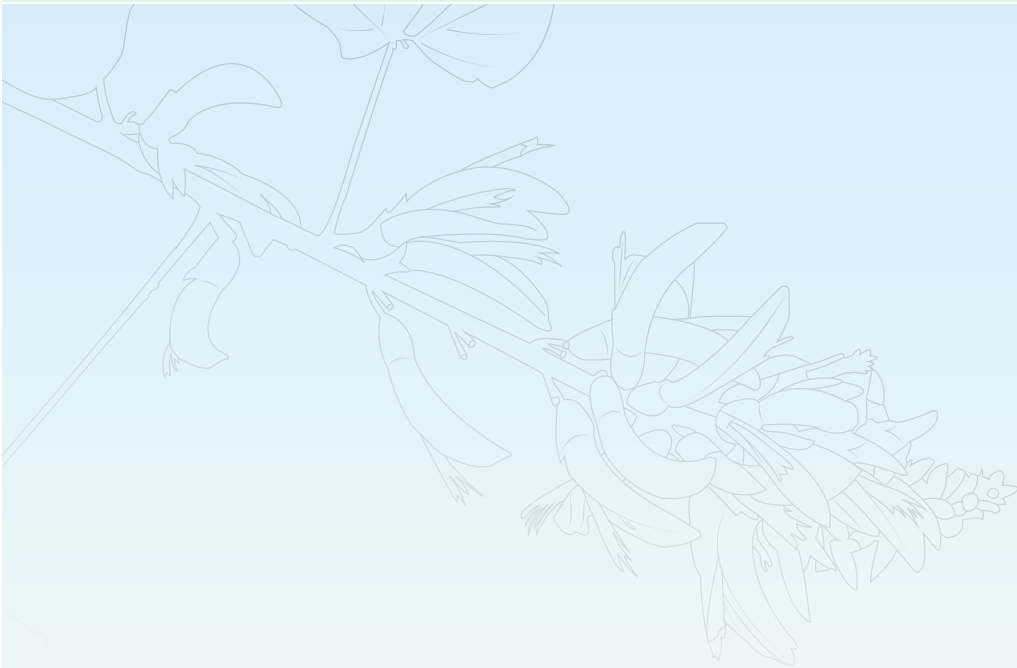


Interpretations of Agents in Temporal Adverbial Clauses Used in Academic Writing: Sociolinguistic Implications

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Abstract

This current study examined the sociolinguistic implications of variants and agents in temporal adverbial clauses in academic prose. While previous studies focused more the temporal adverbial clauses in semi-formal texts, such as novels and news, this research paper sheds light on the study of temporal adverbial clauses in academic prose in order to support English as a Foreign Language learners' (EFL) academic writing. The method in this study was purposive sampling. The data were 30 applied linguistics research articles including 234 items of temporal adverbial clauses. The analysis of grammatical variants was conducted following Aarts (2020). The framework for temporal adverbial clauses includes finite, non-finite and verbless clauses. The interpretation of agents in temporal adverbial clauses is based on Kearns' (2011) semantic principle of compositionality. Results revealed patterns in the use of temporal adverbial clauses, showing that non-finite temporal adverbial clauses were the most frequent variant, accounting for 64.10% of the data. The anonymous agents in these clauses can be interpreted as teacher–learner pairs and researcher–participant pairs. The findings of this study can be explained by the no-null-subject parameter (Radford, 2023). The omitted subject in the temporal adverbial clauses is co-referential with a subject in the adjacent context. Finally, the sociolinguistic implications of temporal adverbial clauses in applied linguistics research articles reflect underlying dimensions of gender, power, and social distance embedded in these structures.

Keywords: Sociolinguistic Implications, Agents, Adverbial Clauses, Academic Prose

Introduction

The problem that many EFL learners face difficulties is academic writing especially when they are asked to submit a thesis before their graduation. Writing adverbial clauses is a major problem as there are various forms, such as finite adverbial clauses (i.e., *after Peter had dinner, he took a bath*), non-finite adverbial clauses (i.e., *after having dinner, he took a bath*) and verbless adverbial clauses (i.e., *I would ask to delete this message if possible*) [1]. Moreover, the reduced adverbial clauses are the most confusing part for EFL learners.

Although it is possible for the subjects of adverbial clauses to be reduced, the subject in the English language is crucial and is required in all clauses [2]. This description complies with the *no-null-subject parameter* in English. The sentence structures in English are not always written as simple sentences as in the pattern that S becomes VP and NP. It is important for the learners to know how to detect the subject of reduced clauses that are combined with an independent clause to form a complete sentence, such as (1).

(1) *After taking the subject KOR101*, KOR102 is considered to be studied in the next semester.

Example (1) is made up of a non-finite clause, where the subject of the sentence is omitted. The omission of the subject in non-finite clauses is syntactically known as *control constructions*, where the covert subject is replaced by PRO [2]. Therefore, this study examines the semantic interpretations of the anonymous agents and variants of temporal adverbial clauses in English.

(2) *After the study of FRN101*, John hesitated to take FRN102.

(3) *After taking FRN101*, John hesitated to take FRN102.

(4) *After John took FRN101*, he hesitated to take FRN102.

Example (2) is a verbless adverbial clause. Example (3) is a non-finite clause. However, example (4) is a finite adverbial clause. This study explains why one variant could be used over the other. This study, therefore, interpreted the null-subject adverbial clauses in academic writing in English.

Once shedding the highlight to ESP, different genres have their own preferences of structural use. Genre is defined as categories of texts, such as novels, news articles and academic prose [3]. While previous studies selected the genre of non-formal texts, such as news and novels [4]. This study contributes to the field by focusing on the study of temporal adverbial clauses in applied linguistics research articles. Most students have been faced with difficulty when they are instructed to write the final academic project before their graduation. Some students would like to have their first research paper published for the benefit of their higher education, but they are rejected several times. Therefore, the examples in this study could be used as a guideline for the use of language form quality published articles. There are

three objectives for this study, (1) to study the frequency of the variants of temporal adverbial clauses in applied linguistics research articles, (2) to interpret the agents in temporal adverbial clauses in applied linguistics research articles, (3) to discuss the sociolinguistic implications of the agents in temporal adverbial clauses in applied linguistics research articles. The significance of the study is given to how structures are contextually used in academic prose and more authentic examples were given to EFL learners to study.

Literature Review

Markedness Theory

Markedness is a linguistic theory that seeks the marked form and unmarked form in grammatical patterns [5]. The marked form is an irregular form, which requires certain techniques for the language users to recall the form to use it, whereas the unmarked form is the regular form where there are systems and rules for the user to follow. In addition, the unmarked form is used more frequently and productively [6].

A number of previous studies followed this linguistics theories to understand markedness. For example, *preposition stranding* is perceived as an uncommon form in English, and it is interpreted as ungrammaticality in English.

(5) *Which house do you live in?

(6) In which house do you live?

Example (5) shows that the prepositional phrase *in* is left at the end of the sentence, which is syntactically coined as *orphanage* [2]. This violates the rule of pied-piping, referring to the splitting of the head and complement. The orphanage of prepositional phrases is interpreted as a marked form in English. The preposition merged with its head as in (6) is a common one, whereas prepositional stranding is an uncommon one. It is used in unconventional settings, such as spoken language.

In addition, markedness theory was applied to study different forms of infinitive clauses in English [7]. The variants of infinitive clauses in their study were *to*- infinitive clauses and gerunds that were used as verb phrase (VP) complements, such as (7)-(8).

(7) Anne likes *to play tennis*.

(8) Anne likes *playing tennis*.

While example (7) represents the variants of *to*- infinitive clause, example (8) is the variant of gerund, interchangeably known as *-ing* form. Both variants could be used in the same position as VP complement of the transitive verb *like*. The results of the study showed that the variant of *to*- infinitive clauses was highly productive in usage, which showed the use of approximately 80 percent. This means that the use of *to*- infinitive clause is an unmarked

form, but the *-ing* form is a marked form due to the preferences of a certain English variety, such as American English.

However, the benefit of the different forms in markedness theory is that they can be used for replacement of the same form in an adjacent area called *horror aequi principle* [8]. Cognitively, as English language users fear the repetition of the same words many times in their writing, the semantic principle of composition, such as synonyms and antonyms play an important role for this reason. Apart from open categories of lexical items, the closed categories of lexical items in English also follow this system and rule to avoid using the same form in an adjacent area, such as (9)-(11).

(9) Peter texted a message to Susan *to try to connect to* the internet again.

(10) Peter texted a message to Susan *to try connecting to* the internet again.

(11) Peter texted a message to Susan *to try and connect to* the internet again.

Examples (9)-(11) show how the horror aequi principle is applied in use. The forms of *and*, *to* and *-ing* are linguistic variants in this context. Although the infinitival *to* as in *try to* in (9) is a standard version, using this form results in the repetition of the same form in adjacent areas. To sum up this point, markedness theory is relevant to horror aequi principle in that the irregular form is applied if the unmarked form is repetitively used in adjacent areas. While previous studies applied the markedness theory to study the frequencies of null-subject control construction in British and American English [7], this current study shed light on null-subject adverbial clauses.

Form, Meaning and Genre

This section highlights form, meaning and genre in use. In terms of form, the concept of time is crucial in English [9]. While time is actualized at the finite verb such as *-s* and *-ed*, other forms of temporality are addressed via lexical items, such as *before*, *after* and *until*.

(12) James had his dinner *before he went to bed*.

(13) *When James had his dinner*, his wife took a bath.

(14) James worked hard for the whole week *until he felt sick*.

In example (13), the actions of having dinner and taking a bath are coincidental. In example (14), the feeling of being sick happened at the end of the week after being a workaholic person. Therefore, adverbial clauses of temporality indicate pre-while-post events according to their independent clauses [10].

However, the challenging part for the use of adverbial clauses of temporality is that grammar is their variants including finite adverbial clauses, non-finite adverbial clauses and verbless adverbial clauses.

(15) *When you need emergency help, call 911.*

(16) *When having an accident, call 911.*

(17) *When in trouble, call 911.*

Example (15) shows the variant of finite adverbial clauses. Nevertheless, example (16) is a non-finite temporal adverbial clause. The adverbial clause of temporality in (17) is a verbless adverbial clause. The current study seeks the marked form and unmarked form of temporal adverbial clauses in academic writing.

Form and meaning should be encouraged to study simultaneously. Semantic principle of compositionality is defined as the word order in clauses which has an impact on the meaning and truth value [11]. For example, the sentence *Tom hit Jerry* is different from *Jerry hit Tom*. In prescriptive grammar, the pronouns *Tom* and *Jerry* are classified as either the subjects or the objects of the sentence. On the other hand, generative semantics does not provide the function of word order in this way. See the semantic principle of compositionality in generative linguistics through the following example.

(18) *Tom hit Jerry.*

Tom as in (18) is the agent, referring to the one who instigates the action. *Jerry* is the theme, referring to the one who receives the energy of a certain action [11]. Hence, the operational definition of agent in this study is the doer of a lexical verb in finite, non-finite and verbless adverbial clauses and in the main clauses. This study applies this principle to interpret the agent in temporal adverbial clauses when the subject is omitted.

Academic prose is a genre that refers to academic writing, which is a formal register [12]. The academic prose in this study refers to applied linguistics research articles. This genre of writing is considered reliable and a valid source because it can be set as an example of academic writing in English. When submitting a research article to be published, it has to go through several steps. The first step is the initial consideration by the editor-in-chief who makes a judgement whether the paper could be submitted to be reviewed or not. If the academic research paper has reached the standards of publication once screened, it is sent to be reviewed by several experts. The experts' comments will either be returned to the author or the paper is rejected. The revised version is then sent to check the use of academic language before it is finally published. This process ensures the quality of content validity and language use in each publication. Language use in this genre could be used appropriately to reach the target of people in this community.

Sociolinguistically, the sociolinguistic concepts address language in use. Sociolinguistics is the study of language and societies. Various indicators are taken to be considered at the same time when language use is taken into consideration. The factors could be language

and gender, language and power, and language and distance. It is believed that males and females have different styles of speaking and the selection of word choice. People who are in higher social status are likely to select different word choices from those in a lower status. In terms of distance, the distance between the two speakers depends on their proximity. For example, a student calling their teacher by their position and name such as Professor Jackendoff implies the relationship between the two interlocutors. It is presumed that the null-subject adverbial clauses is due to the writers' gender concealments.

Related Previous Studies

While previous studies focused on the use of adverbial clauses of temporality in English for everyday use, this study fills the gap by focusing on academic writing in English [14]. How adverbial clause are applied in English fiction is examined to seek the common patterns of *elliptical subordinate adverbials* [14], such as (19)-(20).

(19) *When sad*, I always read a book.

(20) *When eighteen*, he looked a lot like his father.

Verbless adverbial clauses in this study are an unmarked pattern in English fiction due to two reasons [14]. The first reason is explained in the conversational style of writing. Fiction contains conversational dialogue and spoken language. The second reason is that novels and fiction in English are considered to be written in an informal register. The subject is omissible if it is co-indexed with the subject in the main clause. For example, the pronoun / in (19) is the same person as the subject in the matrix clauses.

The adverbial clauses of temporality were studied in news articles [16]. The study employed the British component of the International Corpus of English (ICE-GB). The genre in this study is news articles in English. The number of adverbial clauses that were studied was 118 tokens. Although the adverbial clauses can be placed in different positions, such as the initial position and the final position of the sentence, the adverbial clauses in English news were usually placed in the final position at approximately 75 percent. This is evident in (21).

(21) Yesterday, *after the 80-acre farm became 'unexpectedly available'*, moves were being made to ensure he gets the chance to buy it without fear of outside competition [16].

Example (20) is expressed via the form of finite adverbial clause. Since the context of the news was about the royal family, the finite adverbial clause was used to increase the formality of the text.

To sum it up, most previous studies paid attention the studies of adverbial clauses concerning iconicity of sequence, this study contributed something new to the field by focusing on agents.

Methodology

Data Collection

The data were collected from applied linguistics research articles. There were several inclusion criteria for the data collection. The first one is the reputability of international research articles (17). The international academic research journal in this study was only indexed in Q1 SCOPUS databases. The second criterion was that the research articles had to be up-to-date. The quality of being up-to-date is defined as articles which were published within the past five years including 2021-2025.

There were two research journals included in this study, including *Journal of English for Specific Purposes* and *System*. The two journals were selected as SCOPUS website addressed that they had near similarity index concerning *about journal*. The number of research articles in this study was 30 articles: 15 each. This number was considered appropriate to be used in applied linguistics research articles to study the features of language [18]. The 30 research articles provided 234 tokens of temporal adverbial clauses to study their variants. The 234 tokens were manually extracted to ensure the length of data collection. The intercoder reliability was ensured by asking for double check with three English colleagues. An example of data collection is demonstrated below.

(22) Finally, given the prominence and very real threats of science-related misinformation on social media, research should further explore how scientists effectively combat misinformation *when communicating with the public* [19]

The adverbial clause of temporality in the above example is used in the form of non-finite adverbial clause.

Data Analysis

The method of data analysis in this study was textual analysis, focusing on form, function and genre [15]. The semantic interpretations of agents [11, 20]. Agent is the semantic role in linguistics that refers to the actors or people who instigate the action. For example, *Mary cried*. The pronoun in this context is interpreted as the agent who performs the action of crying, called *a crier* [2].

There were three variants of temporal adverbial clauses to study including finite adverbial clauses, non-finite adverbial clauses and verbless adverbial clauses. The first variant is finite adverbial clause of temporality as in (23).

(23) *After Peter had his dinner*, he watched a movie.

After Peter had his dinner, which is placed in the initial position, is a finite adverbial clause of temporality. The sentential composition in (23) is the subject *Peter* and the finite verb *had*. The object of the sentence is *his dinner*. The whole clause is merged with the

temporal adverbial connector *after*. The complementizer phrase (CP) *Peter had dinner* is merged with the prepositional phrase (PP) *after*. The second variant is non-finite adverbial clauses of temporality. The example of this variant is given in (24).

(24) *After having dinner*, Peter watched a movie.

After having dinner is a non-finite adverbial clause. The sentential composition of this clause is the non-finite clause *having dinner* that is merged with the prepositional phrase *after*. However, It violate generative grammar concerning the no-null-subject parameter [2]. In the English language, the subject cannot be null and is required in all clauses. The subject of the temporal adverbial clause in (24) is covert and it is co-referential with subject in the independent clause. The same subject and its case marking is not required to be spelt out twice for the sake of economy principle. The third variant of temporal adverbial clauses is verbless adverbial clauses, such as (25).

(25) *When in Rome*, visit the Vatican City.

The temporal adverbial connector *when* is merged with the prepositional phrase *in Rome*. The subject of the clause is omitted as well as the auxiliary verb *are*. The criteria for judging the unmarked form of temporal adverbial clauses in this textual analysis is frequency [5, 21] . The was the model to answer the research question one. If the form reached the highest frequency, it is interpreted as an unmarked variant. The model to answer the research question two is the null-subject parameter in English [2]. This parameter was used to the interpretation of the omitting subject in this study. The sociolinguistic implication follows the principle of language, gender and power [22]. The conceptual framework of the data analysis was shown below.

Markedness Theory [5]

Sociolinguistics; Language and Power[22]

Syntax; Null-Subject Parameter [2]

Figure 1. Linguistic Model for Data Analysis in this study

The conceptual framework of Figure 1 allows us to gain insight into the power of language users hidden in sentence structures focusing on adverbial clauses. This is the new contribution in this study.

Table 1. Data Analysis of Temporal Adverbial Clauses in Academic Prose

Form	Example
Finite Temporal Adverbial Clause	(26) <i>When English pre-service teachers participate in collaborative DST</i> , they exhibit a shared dedication to fulfilling the set objectives. Throughout this process, they actively cultivate critical and creative thinking skills [23].
Non-Finite Temporal Adverbial Clause	(27) <i>After obtaining the texts</i> , each text was cleaned using regular expressions to remove newlines, carriage returns, Japanese punctuation, and the unicode character [24].
Verbless Adverbial Clause	(28) <i>Before formal administration</i> , we piloted the questionnaire with 30 students from the target population to examine its length, wording and content [25].

The different forms of temporal adverbial clauses were counted by the mode of frequencies and converted into percentage via descriptive statistical analysis. Finally, the results of the study were reported and discussed.

The Results

Research Question 1

This section presents the results of the current study. This section answers the first research question “What are the frequencies of temporal adverbial clauses in applied linguistics research articles?

Table 2. Frequencies and percentages of temporal adverbial clauses

Variants of Temporal Adverbial Clauses	Frequency	Percentage
1. Non-finite adverbial clause	150	64.10
2. Finite adverbial clause	64	27.35
3. Verbless adverbial clause	20	8.55
Total	234	100

Table 2 reveals results of temporal adverbial clauses in applied linguistics articles. The highest percentage of temporal adverbial clauses is non-finite adverbial clauses at 64.10 percent. The second place is the form of finite adverbial clause at 27.35 percent. The lowest percentage of temporal adverbial clauses is the form of verbless adverbial clauses at only 8.55 percent. Examples of non-finite temporal adverbial clauses are given in the following section.

Research Question 2

2. What are the agents of temporal adverbial clauses in applied linguistics research articles?

Non-finite Temporal Adverbial Clauses

This section provides examples of non-finite temporal adverbial clauses that are used in the genre of the selected applied linguistics research articles.

(29) *When* PRO *implementing DST in language classrooms*, teachers were advised to consider several pivotal factors [23].

(30) By critically evaluating the feedback GPT generates, teachers can also promote students' self-regulated learning ability *when* PRO *using AI tools* [26].

(31) *After* PRO *receiving feedback from the instructor on the outlines of their video stories*, the groups proceeded with their DMC projects. In the final lessons, students presented their projects orally using PowerPoint slides [27]

(32) The intensive classes offer L1-French students the opportunity to rapidly increase their English cultural and linguistic knowledge for one year *before* PRO *joining the mainstream British Section* [28].

(33) Students also reported being nervous *when* PRO *speaking in front of each other and one was nervous speaking English when the facilitator was observing her* [29].

Examples (29)-(34) represent non-finite temporal adverbial clauses used with the adverbial connector *when*, *after* and *before*. Reduced adverbial clauses are used to omit the subjects of the clauses. The subjects of the dependent clauses share the same subject as the independent clause. For example, the covert subject, represented by PRO in (29) is *teacher*. The covert subject in (30) is *learners*. The covert subject in (32)-(33) is *students*.

Non-Finite Adverbial Clauses

Aside from the that, the non-finite temporal adverbial clauses in the selected applied linguistics research articles are commonly found to be used with passive constructions, such as (34)-(36).

(34) Rules are established to guide the game play, such as the interaction with the audience required and the time limit during the presentation. *When a role-playing group is faced with challenges and disagreements*, it is crucial for group members to collaboratively address these obstacles in this collective activity. For instance, they may encounter uncertainties in word choice. [23]

(35) This metric evaluates the reduction in impurity or entropy of a node within the tree structure *when a predictor variable is used to partition the data* [30].

Examples (34)-(35) show passive constructions of finite temporal adverbial clauses. The use of passive constructions allows the writer to omit the agent, or the one who instigates the action. There are several reasons why the agents in passive voice are omitted such as, an unknown agent, an unimportant agent, a concealed agent and a widely known agent. The last reason is the reason to explain why the agent in non-finite temporal adverbial clauses in applied linguistic research articles are omitted. The agent is widely known as either the participants, the teachers or the researchers of the study.

Verbless Adverbial Clauses

This section provides the semantic interpretations of anonymous agent in reduced temporal adverbial clauses.

(36) *After_t the training*, students were asked to complete a homework assignment that involved writing the introduction section of a research article in their own discipline [31].

(37) *Before_t the interviews*, each participant was asked to sign the consent form [32].

Examples (36)-(37) represent verbless adverbial clauses. The anonemous agents are interpreted as participants in the study as in Table 3.

Table 3. Semantic interpretations of agentless temporal adverbial clauses

Semantic Interpretations of Covert Agents	
Teachers	Learners
(38) <i>When PRO introducing the rating scale of academic writing to early-university students</i> , teachers may clarify how it is different from general English writing in high school in the highlights of knowledge contribution, stance-making and source use [25].	(39) If learners read every text available, they would have read enough to meet this proposed threshold while PRO reading texts between the 5000- and 6000-word levels [24].
Researchers	Participants
(40) <i>After PRO cross-checking</i> , the authors discussed the coding results and confirmed necessary changes, resulting in a percentage agreement of 100% [27].	(41) <i>While PRO incorporating DST into language instruction</i> , participants also expressed potential contradictions in simplifying complex vocabulary to make the meaning more accessible without compromising the story content [23].

Table 3 shows agentless temporal adverbial clauses in the selected applied linguistics research articles. The covert agent, PRO, are interpreted as two groups of entities, which are learners-teachers and participants - researchers. The verbs that are used in the context go

well with the agent. For example, the reader and the speaker are the learners. The roles of introducer and implementer are the teachers. The roles of obtainer and checker are the researchers.

Discussion

According to the framework of generative syntax and semantics [2, 11], the major results in this study reveal the secrets of the temporal adverbial clauses in applied linguistics research articles.

1. Syntactically, this genre of applied linguistics articles showed that the variant of non-finite temporal adverbial clause is more productive than the others.

2. Semantically, this genre of applied linguistics articles showed that the anonymous agents in the reduced form of temporal adverbial clauses are interpreted as a pair of learners-teachers and a pair of participants-researchers.

3. Sociolinguistically, omitting the subject is interpreted as power and gender concealment.

Markedness Theory

The marked form of different variants refers to an uncommon form, where the unmarked form of variants refers to the common form [21]. Based upon their usage of temporal adverbial clauses in applied linguistics research articles, the unmarked form of temporal adverbial clauses is *non-finite adverbial clauses*. On the other hand, the marked form of temporal adverbial clauses in the applied linguistics research articles are finite temporal adverbial clauses and verbless temporal adverbial clauses. The common use of non-finite temporal adverbial clauses could be explained by three main linguistic reasons, *no-null-subject parameter* and *horror aequi principle* [8] and spoken language [22]. The markedness Theory explains the subject omission in non-finite, verbless adverb clauses in your study. Generative syntax provide explanation why a subject (Specifier of TP) exists in the underlying structure (due to no-null-subject constraint), but it is deleted via syntactic processes to derive its surface representation.

No-Null Subject Parameter

The English language is a *no-null-subject parameter* [33, 2]. The subject in English is required in all clauses. Omitting the subject in English leads to ungrammaticality of the sentence. This statement is applicable with a simple sentence as in S-VP NP. However, academic writing is a genre that the writers apply a more complex structure, such as adjective clauses and adverbial clauses. The complex sentences in English that are merged between dependent clauses and independent clauses have different patterns of usage. Both adjective

clauses and adverbial clauses offer the syntactic structure of reduced clauses in prescriptive grammar for EFL learners to study [34]. However, they do not know when and why one variant should be used. This study provided the answer that reduced temporal adverbial clauses are used with independent clauses where the subject in the matrix clause is co-referential.

(42) Therefore, the ideal self has higher motivational power than the ought-to self *when learners highlight personal progress* [25].

(43) *When this research was conducted*, the first author was the instructor of the latter two classes [35].

The finite adverbial clauses in applied linguistics are used when the agent in the independent clauses cannot be detected such as (42). The finite clauses are used with temporal adverbial clauses if they are passive constructions as in (43) due to a widely known subjects.

Horror aequi principle

Horror aequi principle referring to the avoidance of the same form is surrounding areas [8]. This is the reason to explain the form and function of non-finite adverbial clauses in the applied linguistics research articles. The anonymous agents in temporal adverbial clauses are a pair of students-teachers and participants - researchers. It is widely known that the agent who instigates the action as planned in methodology is the English language learner, known as the participant of the study. Repeating the participants in the study again and again makes the writing sound repetitive and unprofessional. The writer places their information into other structures where the subject could be co-referential, such as non-finite clauses and a widely known subject structure as in passive constructions.

Spoken Language

Spoken language is defined as a form of communication that is produced by an articulation system. Normally it is shorter and simpler than the written version [22]. Verbless temporal adverbial clauses are a common variant of spoken register. The lowest frequency of verbless adverbial clauses as in (49) can be explained by the reason of spoken language.

(44) *After* _t *several attempts*, he gets exhausted while changing, only to end up in bed [36].

The lowest frequency of verbless temporal adverbial is sociolinguistically explained by the reason of colloquialization. As such, it is not prevalent to be used in academic writing.

Sociolinguistic Implications

Being anonymous is the key concept of conducting research studies in the present time. For ethical considerations, it is necessary for the researchers to keep the information

of the learners and the participants highly confidential. This confidentiality includes many factors. Using non-finite temporal adverbial clauses could conceal the participants genders as in (45).

(45) This practice was inconsistent across different chat sessions and *when PRO analyzing the same text* [26].

Not only does example (45) represent the unmarked pattern of non-finite temporal adverbial clauses, but it also has sociolinguistic implications in that the analyzer' gender is hidden to avoid the bias of the data analysis that can be detected by the reviewer. In some international journal as indexed in SCOPUS, they have to show the percentage how many academic papers written by male and female scholar are published. This shows gender equality. Different genders, such as males and females, have different perspectives towards the world [22]. The same objects could be analyzed differently by different genders. For example, an older female teacher may interpret the use of technology in classroom as having weaknesses when compared with a young male teacher. Therefore, not only does the covert subject PRO hide the agent, but the agent's gender is also hidden. Thus, some researchers may exploit this sentence structure to conceal important information.

Language and power are another sociolinguistic concept where the language is used to show power over others [37]. Based upon the observation of temporal adverbial clauses, when the analysis is done by a group of researchers, the pronoun *they* and *we* are spelt out to emphasize. This is known as language and power symbolized into (+p). Doing this would be interpreted as the analysis of the study going through consensus by a panel of researchers. This suggests the writers' power over a reviewer.

(46) Even more, the concept of reality starts reshaping *when researchers are involved more in qualitative research as a social practice* [38].

Example (46) shows a finite temporal adverbial clause. The agent *researchers*, which has the marker of plurality shows a number of researchers that is more than one. The numbers can affect the process of reviewing as each reviewer may accept the results of revising each theoretical concept more easily when compared with only one researcher. The spelling out of the agent in finite temporal adverbial clauses could suggest distance (+D) among people in the same field or people outside the field, referring to the agreement and norms of academic people in the same community such as (47).

(47) *After we produced a codebook for each teacher*, we analyzed their codes against each other to develop themes [39].

Example (48) shows a finite temporal adverbial clause. Although the pronoun *we* in the temporal adverbial clause could be omitted, the spelling out is interpreted as (-D) as

the people in the same community of teachers. This implies that they are believable and trustable.

Table 4. Semantic interpretations of (+agent) and (-agent) in temporal adverbial clauses

-Agent	+Agent
Learners-Teachers	+Power
Participants-Researchers	-Distance

Table 4 concludes the reasons for having covert and overt subjects in temporal adverbial clauses in the applied linguistics research articles. The covert subjects denote widely known agents, such as participants and researchers. On the other hand, the overt subjects denote power, but the reduction of distance between the researchers and the readers imply that they are the same community, leading to trustworthiness and believability.

Comparison with Previous Studies

When comparing the results of the current study with those of previous studies, the use of temporal adverbial clauses of temporality in English for everyday use, such as English novels and news are different from academic prose, especially in applied linguistics articles. The structure of temporal adverbial clauses in English novels is usually written in sequential order where the subject of the adverbial clause is spelt out with different case marking systems, such as *he*, *she*, *it*, and *they* to avoid confusion. This is because a story consists of many characters (Leláková & Belúchová, 2020). This factor is different from research articles as the agents are usually a pair of teachers and student or the researcher and participants. Dropping the agents in temporal adverbial clauses might not have a big impact on the readers’ understanding of the text.

In terms of form, the temporal adverbial clauses which were applied in English fiction are *elliptical subordinate adverbials*, such as (48)-(50), non-finite temporal adverbial clauses are the unmarked form in applied linguistics articles.

(48) *When sad*, I always read a book.

(49) *When eighteen*, he looked a lot like his father. (Novel in English)

(50) *When PRO implementing DST in language classrooms*, teachers were advised to consider several pivotal factors [23].

Elliptical subordinate adverbials or verbless adverbial clauses is an unmarked form in English fiction due to the conversational style of writing as well as an informal register. However, the unmarked form of temporal adverbial clauses in the applied linguistic articles is due to a higher level of text formality.

Conclusion

The current study examined the syntactic variants and the semantic interpretations of the anonymous agents in temporal adverbial clauses in the applied linguistics research articles. The three research questions in this study were answered.

Non-finite temporal adverbial clauses are a variant that is interpreted as an unmarked variant in the applied linguistics research articles. This interpretation follows the frequency of language use in academic writing in present-day English. They are used generally as anonymous agents which are predicted as researchers-participants and teachers-learners. This general use supports why the frequency of non-finite temporal adverbial clauses is higher than the other variants. On the other hand, finite temporal adverbial clauses are interpreted as the marked form, which is an uncommon pattern, in the applied linguistics researcher articles. There are specific reasons when the form is selected to be used. The reasons are sociolinguistic factors. They are used specifically for the reason of reducing the distance between the writers and readers and the increment of power towards a reviewer.

Temporal adverbial clauses as non-finite clauses comply with economy principle due to limited pages and word counts in submitting manuscripts. The subject in the position of Spec T is not required to be spelt out, which reduces the workload of the brain. The covert subject in non-finite temporal adverbial clause is co-referential with the subject in the main clauses, so the writers do not need to pay attention to monitor the case marking of the subject where the researchers should be modified into *they*.

Even though the prevalent use of temporal adverbial clauses in the applied linguistics research articles are revealed, the results in this study could not be generalized to other genres, such as novels, newspapers and magazines. For future study, studying concessive adverbial clauses or adverbial clauses of comparison in the genre of compare and contrast would contribute something new to the field.

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