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The Use of *-ly* Adverbs in Novice and Expert Writing: A Comparative Corpus-Based Analysis of TICLE, LOCNESS, and BNC Corpora

Yabancı Dil olarak İngilizcede -ly Belirteçleri: TICLE, LOCNESS ve BNC Derlemleri ile Karşılaştırmalı bir Çalışma

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ABSTRACT

Adverbs play a central role in structuring discourse, conveying speaker stance, and modifying propositional content. *-ly* adverbs constitute up to 55% of common adverbs and are frequently used in academic prose. Attaining a nuanced grasp of adverbial usage in learner English, and of how closely Turkish learners' patterns align with native-speaker norms, is crucial. In this regard, this paper examines the use of *-ly* adverbs by Turkish EFL learners of English in comparison to native speakers. The investigation relies on two corpora of novice academic English: The Turkish International Corpus of Learner English (TICLE) and the Louvain Corpus of Native English Essays (LOCNESS), and one corpus of expert academic English: BNC (British National Corpus), representing learner and native speaker writing. The frequencies, lexical choices, and the distribution of *-ly* adverbs were analyzed across three corpora. In addition, syntactic functions of the identified *-ly* adverbs were classified according to Quirk et al. (1985) and Hasselgård's (2015) classifications. The analysis reveals that Turkish EFL learners rely on a narrower range of *-ly* adverbs, frequently using those associated with spoken rather than academic discourse, whereas native expert writers demonstrate a more varied and academically appropriate adverbial repertoire. Additionally, Turkish learners underuse most *-ly* adverb categories, particularly adjuncts and disjuncts, while overusing conjuncts and intensifiers. These findings highlight the gap between native and non-native academic writing, emphasizing the need for explicit instruction in the use of adverbials to develop a more advanced academic style.

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ÖZ

Zarflar, söylemin yapılandırılmasında, konuşur tutumunun iletilmesinde ve önermesel içeriğin dönüştürülmesinde merkezi bir işlev üstlenir. Yaygın zarfların yaklaşık %55'ini oluşturan *-ly* ekli zarflar ise akademik metinlerde son derece sık kullanılmaktadır. Öğrenci İngilizcesinde zarf kullanımının inceliklerini kavramak ve Türk öğrencilerin kullanım kalıplarının anadil konuşuru normlarına ne ölçüde yaklaştığını belirlemek büyük önem taşımaktadır. Bu bağlamda, çalışma, anadili Türkçe olan İngilizce öğrencilerinin *-ly* belirteçlerini kullanımlarını, İngilizce anadil konuşan deneyimli yazarlarla karşılaştırmalı olarak incelemektedir. Araştırma, deneyimsiz (öğrenci) yazarların İngilizce akademik metinlerini içeren iki derlem Uluslararası Türk Öğrenci İngilizcesi Derlemi (TICLE) ve Louvain Anadil Olarak İngilizce Deneme Derlemi (LOCNESS) ile deneyimli yazarların İngilizce akademik metinlerini içeren bir derlemden İngiliz Ulusal Derlemi (BNC - British National Corpus) elde edilen veriler temelinde yürütülmüştür. Üç derlemden yer alan metinlerdeki *-ly* belirteçlerinin sıklıkları, sözcüksel tercihleri ve dağılımları çözümlenmiştir. Ayrıca, belirlenen *-ly* belirteçlerinin sözdizimsel işlevleri Quirk vd. (1985) ve Hasselgård'ın (2015) sınıflandırmalarına göre öbeklenmiştir. Yapılan çözümleme, Türkçe konuşan İngilizce öğrencilerinin, *-ly* belirteçlerinde daha dar bir sözcük dağarcığına sahip olduklarını ve genellikle akademik söylemden ziyade konuşma diline özgü belirteçlere sıkça başvurduklarını ortaya koymuştur. Buna karşın, anadil konuşan deneyimli yazarlar daha çeşitli ve akademik bağlama daha uygun bir belirteç dağarcığı sergilemiştir. Ayrıca, Türkçe öğrencilerin *-ly* belirteçlerinin çoğu işlevsel sınıflamada, özellikle belitecimsi ve tümce belirteci daha az kullandıkları, bağlak ve pekiştirici ulamlarını ise fazla kullandıkları görülmüştür. Bu bulgular, anadil ve yabancı dilde yazılan akademik metinler arasındaki farkları ortaya koymakta ve İngilizce öğrencilerinin daha ileri düzey bir akademik biçem geliştirebilmeleri için belirteç kullanımına yönelik açık öğretimin önemini vurgulamaktadır.

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Introduction

The study of advanced learner language reveals that deviations from native speaker norms often concern finer aspects of lexico-grammar and style (Lorenz, 1998, p. 53). One such aspect is the use of adverbs, which serve diverse syntactic and semantic functions and contribute significantly to textual cohesion and rhetorical style. Adverbs represent a highly versatile and heterogeneous word class, complicating their definition and classification. Quirk et al. (1985, p. 438) note that adverbs are often characterized negatively, as items that do not fit the definitions of other word classes. Despite this definitional challenge, adverbs play a central role in structuring discourse, conveying speaker stance, and modifying propositional content. Previous research has demonstrated that adverb usage varies across registers (Biber et al., 1999, p. 545; Tottie, 2002, p. 168) and differs between native and non-native speakers (Granger, 1998; Granger & Rayson, 1998; de Haan & van der Haagen, 2013).

Recent research on adverbs in learner English has highlighted notable differences in lexical frequency, syntactic functions, and discourse roles between native and non-native speakers. Studies have shown that learners tend to overuse a restricted set of *-ly* adverbs, particularly those with modal and intensifying functions, while underusing others, such as phrase-modifying and metadiscursive adverbs (Granger, 1998; Aijmer, 2002; Hasselgård, 2009a). Additionally, native speakers exhibit greater lexical diversity and a higher type-token ratio, indicating a more varied and flexible use of adverbials (Granger & Rayson, 1998).

For practical and methodological reasons, this study focuses on *-ly* adverbs, a formally distinct subset that can be systematically retrieved from corpora. *-Ly* adverbs, which constitute up to 55% of common adverbs and are frequently used in academic prose (Biber et al., 1999; Granger & Rayson, 1998). Additionally, Huddleston & Pullum (2002) state that *-ly* adverbs exhibit a wide range of functional roles and appear within all major syntactic categories of adverbials. The investigation examines both lexical and syntactic aspects of adverb use. Lexically, the study explores the frequency of different *-ly* adverbs and the extent of lexical variation within each corpus. Syntactically, the *-ly* adverbs are categorized into six functional classes, following Quirk et al. (1985) and Hasselgård (2015, p. 3):

- “-adjunct adverbial (e.g., *locally, phonologically, significantly*)
- disjunct adverbial (e.g., *briefly, probably, unexpectedly*)
- conjunct adverbial (e.g., *alternatively, finally, namely, secondly*)
- focus adverb (e.g., *mainly, only*)
- approximator (e.g., *approximately, roughly*)
- modifier in adjective or adverb phrase (e.g., *statistically significant, fairly soon*).

This classification provides insight into whether learners employ adverbs in the same functional roles as native speakers.

The present study investigates the use of *-ly* adverbs in the written production of Turkish learners of English, comparing their usage to that of native English speakers. The analysis is based on three corpora: the Turkish International Corpus of Learner English (TICLE), the Louvain Corpus of Native English Essays (LOCNESS), and the British National Corpus (BNC).

In this regard, the study aims to address the following research questions:

1. How frequent are *-ly* adverbs in TICLE, LOCNESS, and BNC corpora, and what lexical items are utilized?

2. What are the syntactic functions (classes) of the *-ly* adverbs? Are the same functions found in the three corpora?

By addressing these questions, the study aims to contribute to a deeper understanding of adverb use in learner English and the extent to which Turkish learners approximate native speaker norms. Additionally, it seeks to identify patterns of overuse, underuse, or misuse that may be indicative of interlanguage features or transfer effects from the learners' L1.

Review of Literature

Research on adverb usage in learner English has consistently highlighted differences in lexical diversity, syntactic functions, and frequency distributions between native and non-native speakers. Early studies, such as Hasselgren (1994) identified notable differences in intensifier usage of Norwegian learners of English in comparison to native speakers, with learners over-relying on a limited set of core vocabulary items. In a similar vein, Lorenz (1998), examined the modification of adjectives by adverbs in corpora of German learners of English and observed that learners excessively used adjective-intensifying devices, often creating an impression of overstatement. However, rather than amplifying meaning, learners demonstrated a lower frequency of high-degree adjuncts and a higher occurrence of low-degree adjuncts, indicating a tendency toward understatement rather than exaggeration. While certain adverbs were heavily overused, adverbs functioning as modal markers, disjuncts, amplifiers, and temporal adverbials were notably underused (Lorenz, 1998).

This overuse of a narrow lexical repertoire has been identified as a recurring characteristic of learner English, particularly in relation to *-ly* adverbs functioning as modifiers (Granger, 1998). In her comparison of French speaking learners of English and native speakers within the ICLE corpus, Granger (1998) found that modifying *-ly* adverbs were significantly more frequent in native speaker writing, with L1 users exhibiting a higher type-token ratio. These adverbs constitute a “particularly rich category of collocation”, noted by Granger (1998, p. 147), resulting from the intersection of semantic meaning, vocabulary selection, and stylistic conventions. This suggests that native speakers employ a wider range of modifying adverbs, whereas learners tend to over-rely on a smaller set.

Aijmer (2002) and Hasselgård (2009) further demonstrated that modal adverbials (disjuncts) are overused among Swedish and Norwegian learners, respectively. Aijmer (2002) attributes this pattern to contrastive differences between English and Swedish, where epistemic modality is more commonly realized through a disjunct in Swedish, whereas English tends to express the same meaning via modal auxiliaries (Aijmer, 2002). This suggests that language transfer plays a critical role in learners' adverbial choices.

In addition to intensifiers and modal adverbs, adverb placement has also been a focus of research. Osborne (2008) demonstrated that learner adverb placement often reflects typological patterns from their L1, grouping learners based on Romance versus Germanic language backgrounds. While L1 transfer was evident, learners also produced ungrammatical patterns that were not directly attributable to either their L1 or the target language.

Another key area of investigation concerns metadiscursive adverbs, such as conjuncts and code glosses. Ädel (2006) examined metadiscourse in Swedish learner English and found that sequential conjuncts (e.g., secondly) appeared more frequently in British LOCNESS essays than in learner writing, while Swedish learners overused certain code glosses, such as *namely*. This suggests that learners may exhibit preferences for particular discourse markers, which could influence the coherence and organization of their texts.

Granger & Rayson's (1998) comparison of French speaking learners of English learners and native speakers showed that French learners overused adverbs, but this overuse was

confined to a few lexical items, while other adverbial categories (*amplifiers, disjuncts, etc.*) were underused. In contrast, Aijmer (2002) found that Swedish learners overused modal adverbials, attributing this overuse to linguistic differences between Swedish and English. Hasselgård's (2014) research on Norwegian learners revealed a similar tendency to overuse adverbials, reflecting L1 transfer.

Granger (1998) further emphasized that *-ly* adverbs function as a rich category of collocations, where native speakers exhibit greater lexical variation than learners. Similarly, Lorenz (1998) found that German learners of English tend to overuse adverbial modifiers, often resulting in a perception of overstatement in their writing. Studies on learner corpus data, including Granger & Rayson (1998) and Osborne (2008), have shown that while learners frequently employ adverbs, their distribution across syntactic functions differs from that of native speakers, with notable underuse of disjuncts, conjuncts, and phrase-modifying adverbs. Furthermore, contrastive analyses, such as Aijmer (2002) and Hasselgård (2009; 2014), suggest that L1 influence plays a crucial role in shaping learner adverbial preferences, often leading to overuse of modal adverbs and direct translations from the L1. Against this backdrop, the present study examines the use of *-ly* adverbs in Turkish learner English, focusing on their lexical frequency, syntactic classification, and functional distribution compared to native speaker usage.

Hasselgård (2015), investigated the use of *-ly* adverbs in advanced learner English, comparing Norwegian learners of English (VESPA - learner corpus) with native speakers (BAWE - native academic writing corpus). The study examined lexical frequency, collocational patterns, and syntactic functions of *-ly* adverbs, categorizing them as *adjuncts, disjuncts, conjuncts, focus adverbs, approximators, or modifiers*. The findings indicate that while learners make few grammatical errors, they exhibit significant frequency differences compared to native speakers. Learners overuse modal adverbs (e.g., *probably, clearly*) but underuse phrase-modifying adverbs and most adjunct types. Moreover, native speakers demonstrate a broader lexical repertoire, using a wider variety of *-ly* adverbs across different functions. The study suggests that learners rely on a restricted set of core vocabulary items, particularly in the use of intensifiers, which may be influenced by L1 transfer or a lack of awareness of academic register conventions.

Given the insights from earlier studies, by examining *-ly* adverbs across TICLE, LOCNESS, and BNC, the present study seeks to contribute to a more nuanced understanding of *-ly* adverb use in advanced learner English, particularly regarding lexical frequency, syntactic distribution, and functional preferences between learner and expert academic writing.

Methodology

Corpora

This study draws on three corpora of written academic discourse: the Turkish International Corpus of Learner English (TICLE), the Louvain Corpus of Native English Essays (LOCNESS), and a sub-corpus of academic papers from the British National Corpus (BNC). TICLE and LOCNESS contain argumentative essays produced by novice academic writers, representing L2 and L1 English users, respectively. In contrast, the BNC sub-corpus consists of expert academic writing, specifically published research papers in the field of social sciences. A detailed breakdown of the corpora is presented in Table 1 below.

Table 1: The three corpora used in the study: TICLE, LOCNESS, BNC

Corpus	TICLE	LOCNESS	BNC
English	L2	L1	L1
Academic Level	Novice	Novice	Expert
Source	Argumentative Essays from Turkish undergraduate students (the Cukurova University, the University of Mustafa Kemal and Mersin University)	Argumentative Essays from British students' A-level essays and British university students' essays	Academic written published miscellaneous (social sciences)
Time	2009	1991-95	1985-1993
Register	Students' Essays	Students' Essays	Academic Papers
Size: tokens	199,532	155,904	482,148
Number of texts	280	147	-

The TICLE corpus, compiled from higher intermediate to advanced Turkish learners of English (B2 level according to the CEFR), comprises 280 argumentative essays with a total of 199,532 words (Can, 2009). LOCNESS serves as a native speaker reference corpus, containing argumentative essays written by British and American students (Granger, Dagneaux, & Meunier, 2009). For this study, a subset of British A-level and university essays was selected, amounting to 155,904 words. Lastly, a sub-corpus of academic papers published in social sciences was extracted from the BNC, totaling 482,148 words. The corpora were analyzed using Sketch Engine (2023 version), a state-of-the-art corpus management and text analysis tool. This platform facilitated the extraction and comparison of lexical bundles across the three corpora, enabling a systematic investigation into the phraseological features of novice and expert academic writing.

Cut-off Points

Determining an appropriate frequency cut-off point is a critical methodological step in lexical bundle research, ensuring that the identified sequences reflect recurrent patterns rather than idiosyncratic language use. Previous studies have applied varying frequency thresholds, ranging from ten occurrences per million words (Biber et al., 1999; Biber, 2006) to forty occurrences (Biber, Conrad, & Cortes, 2004). In smaller corpora, lower cut-off points are often used (Biber et al., 1999), although such decisions typically draw on existing literature rather than empirical standardization.

Alternative selection criteria have been proposed. For instance, Hyland (2008) suggests a percentage-based approach, requiring lexical sequences to appear in at least 10% of texts in a given corpus. Similarly, Biber and Barbieri (2007) recommend setting a minimum occurrence threshold across three to five different texts, filtering out text-specific sequences to ensure the extracted bundles reflect broader discourse trends.

Following these established methodological conventions, after extracting the *-ly* adverbs from the corpora, cut-off points were set: 5 for TICLE and LOCNESS, and 10 for the BNC corpus, due to differences in corpus size. The *-ly* adverbs were then classified according to their syntactic functions following Quirk et al. (1985) and Hasselgård's (2015) taxonomies.

Type/Token ratio

The Type-Token Ratio (T/T ratio) is a widely recognized measure in lexical frequency research, used to assess lexical diversity and richness in both native and learner corpora. By analyzing T/T ratios, researchers can evaluate lexical variation across different writer groups, offering insights into the phraseological complexity of learner writing.

The T/T ratio is calculated using the following formula, where word type refers to the number of distinct lexical items in the corpus, and word token represents the total number of words:

$$\text{T/t ratio} = \frac{\text{Number of word types} \times 100}{\text{Number of word tokens} \times 1}$$

The resulting T/T ratio always falls within the range $0 \leq T/T \leq 1$. A higher T/T ratio indicates greater lexical variation, reflecting a richer vocabulary and more diverse phraseological structures. Conversely, a lower T/T ratio suggests less lexical variation, which may indicate a reliance on formulaic or repetitive structures in learner writing.

Syntactic functions of *-ly* adverbs

Adverbs serve multiple syntactic and pragmatic functions in discourse, operating at both the clause and phrase levels. At the clause level, adverbs function as adverbials, while at the phrase level, they can act as modifiers within adjective and adverb phrases (Quirk et al., 1985). In this study, *-ly* adverbs are categorized into six primary functions, based on Quirk et al.'s (1985) and Hasselgård's (2015, p. 3) categorizations:

Adjuncts (e.g., *locally, significantly, phonologically*) – Indicate where, when, how, or why an action occurs.

Disjuncts (e.g., *briefly, probably, unexpectedly*) – Express speaker stance, including modal, evaluative, and evidential meanings.

Conjuncts (e.g., *alternatively, finally, namely, secondly*) – Serve as text organizers, linking ideas across sentences.

Focus adverbs (e.g., *mainly, only*) – Highlight a specific part of the clause, often functioning as exclusives or particularizers.

Approximators (e.g., *approximately, roughly*) – Indicate imprecision or approximation in numerical or categorical expressions.

Modifiers (e.g., *statistically significant, fairly soon*) – Modify adjectives or adverbs, expressing intensification, downtoning, hedging, or descriptive specification.

Each functional category, except approximators, is further subdivided into semantic subcategories following Quirk et al. (1985) and Hasselgård (2015). *Adjuncts*, the most frequent adverbial type (Biber et al., 1999), include manner, frequency, time, and respect adjuncts. *Disjuncts* are classified into modality, evidentiality, comment, and style functions, while conjuncts provide logical and discourse cohesion. *Conjuncts* (e.g., *alternatively, finally, namely, secondly*) function as text organizers, linking ideas across sentences. *Focus adverbs* are categorized into exclusives (e.g., *only, merely*) and particularizers (e.g., *mainly, especially*). *Approximators* indicate imprecision or approximation in numerical or categorical expressions. Finally, *modifiers* of adverbs include intensifiers, downtoners, hedges, and descriptors, reflecting a gradation of meaning from certainty to approximation.

This classification framework allows for a detailed analysis of learner and native speaker differences in adverb usage across TICLE, LOCNESS, and BNC, providing insights into lexical choices, syntactic preferences, and discourse strategies.

Findings

Firstly, the frequencies of *-ly* adverbs in three corpora have been provided along with the most frequent ones. And then, the syntactic functions (classes) of these adverbs have been categorized. After the categorization, the frequencies have been compared and contrasted in terms of overuse and underuse across three corpora. The detailed findings that address each research question are presented below.

The frequency of the *-ly* adverbs in the TICLE, LOCNESS, and BNC corpora

When examining the frequency of *-ly* adverbs, Turkish EFL learners used these adverbs the least frequently (505 tokens), followed by novice L1 writers (931 tokens) and expert writers (4002 tokens). The types and tokens of *-ly* adverbs in the TICLE, LOCNESS and BNC corpora summarized in Table 2 below.

Table 2: Basic frequencies of *-ly* adverbs in TICLE, LOCNESS and BNC

	Types	Tokens	Type/Token ratio	<i>-ly</i> adv per 100,000 words
TICLE	33	505	6.53	253
LOCNESS	70	932	7.51	597
BNC	127	4000	3.17	829

T/t ratio= Type/token ratio; percentage of number of *-ly* adverbs (types) in total of words (tokens) in each corpus.

The total number of *-ly* adverbs in BNC is significantly higher compared to TICLE and LOCNESS. Normalized frequencies suggest that *-ly* adverbs are underused by non-native speakers compared to native speakers. Moreover, novice L1 writers tend to overuse *-ly* adverbs compared to expert L1 writers. The highest type/token ratio appears to be in LOCNESS with 7.51, and TICLE follows it with a ratio of 6.53. And lastly, the ratio in BNC seems to be 3.17. The lower type/token ratio of *-ly* adverbs in the BNC compared to the other two corpora can be attributed to the nature of academic writing and the more advanced proficiency of the expert writers in the BNC corpus.

A lower type/token ratio suggests that while the overall token frequency is higher, the variety of adverbs (types) used is more constrained. This might be due to the reason that precision and clarity are prioritized over lexical variety in academic writing. Expert writers tend to use a smaller set of highly frequent adverbs repeatedly to ensure clarity and conciseness, as academic writing requires accuracy, consistency, and unambiguous expression. Academic writing often features frequent use of core lexical items that function to structure the discourse or emphasize certainty and precision, such as *particularly*, *especially*, and *clearly*. These adverbs are used repeatedly to achieve coherence and cohesion in academic texts. This pattern contrasts with the writing of novice L1 and L2 learners, who often use a broader range of adverbs but with less precision or functional consistency, leading to a higher type/token.

The most frequently used *-ly* adverbs across the three corpora are listed in Table 3, with token counts provided in the brackets.

Table 3: The most frequent *-ly* modifiers

Corpus	Adverbs
L1 Expert (BNC)	<u>Only</u> (f: 473), particularly (f: 170), <u>especially</u> (f: 116), clearly (f:109), usually (f: 100), normally (f: 98), <u>recently</u> (f: 88), currently (f: 68), <u>simply</u> (f: 64), <u>probably</u> (f: 64)
L1 novice (LOCNESS)	<u>Only</u> (f: 161), <u>especially</u> (f: 49), <u>probably</u> (f: 28), <u>simply</u> (f:27), <u>really</u> (f: 26), certainly (f: 26), increasingly (f: 22), <u>recently</u> (f: 20), surely (f: 20), eventually (f: 19)
L2 novice (TICLE)	<u>Only</u> (f: 110), <u>especially</u> (f: 56), easily (f: 34), <u>really</u> (f: 34), mostly (f: 27), firstly (f: 19), unfortunately (f: 16), physically (f: 15), <u>probably</u> (f: 14), completely (f: 13)

Table 3 shows the most frequent *-ly* adverbs used in the three corpora. The number of adverbs used by L1 writers, both novice and expert, is higher than those shared by L2 novice writers (*only*, *really*, *especially*, *probably*), suggesting that native speakers use a wider range of adverbs. The adverbs *only*, *probably*, and *especially* (underlined in the table) are common across all three corpora. Unique adverbs found in the BNC corpus, particularly among expert writers, include focus adverbs (*particularly*), modal adverbs (*clearly*), and frequency adjuncts (*usually*, *currently*, *normally*).

Additionally, the most commonly used *-ly* adverbs represent a higher percentage of the total *-ly* adverbs in TICLE than in BNC. For instance, *only* accounts for 19.3% of all *-ly* adverbs in TICLE, compared to 11.8% in BNC. This indicates that Turkish EFL learners rely on a smaller set of known adverbs, whereas native speakers exhibit more lexical variety.

Further analysis shows that L2 writers preferred modifiers typically associated with spoken registers, such as *deeply*, *unconsciously*, *practically*, *thirdly*, *presently*, *incredibly*, *physically*, and *economically*. These modifiers were not prevalent in LOCNESS or BNC, reinforcing the idea that Turkish EFL learners may rely on conversational patterns more than academic writing conventions.

Moreover, 65 out of 127 adverbs in BNC are unique to expert academic writers and do not appear in TICLE or LOCNESS. Examples include *frequently*, *occasionally*, *gradually*, *adequately*, *commonly*, *significantly*, *considerably*, *specifically*, *similarly*, and *respectively*. For instance, examples extracted from the BNC corpus include “*these findings was not adequately explained*” and “*were respectively indicated in the diagrams.*”

In order to have an in-depth understanding in each corpus, the syntactic classes of *-ly* adverbs in each corpus were categorized following Hasselgård’s (2015) classification that have been presented in the following section.

The syntactic functions (classes) of the *-ly* adverbs and their comparison across three Corpora

To gain a deeper understanding of adverb use in each corpus, the *-ly* adverbs were categorized into six syntactic classes which are *adjuncts*, *disjuncts*, *conjuncts*, *focus adverbs*, *approximators*, and *modifiers*, following Quirk et al.’s (1985) and Hasselgård’s (2015) classifications. Their distribution across the corpora is presented in Figure 1.

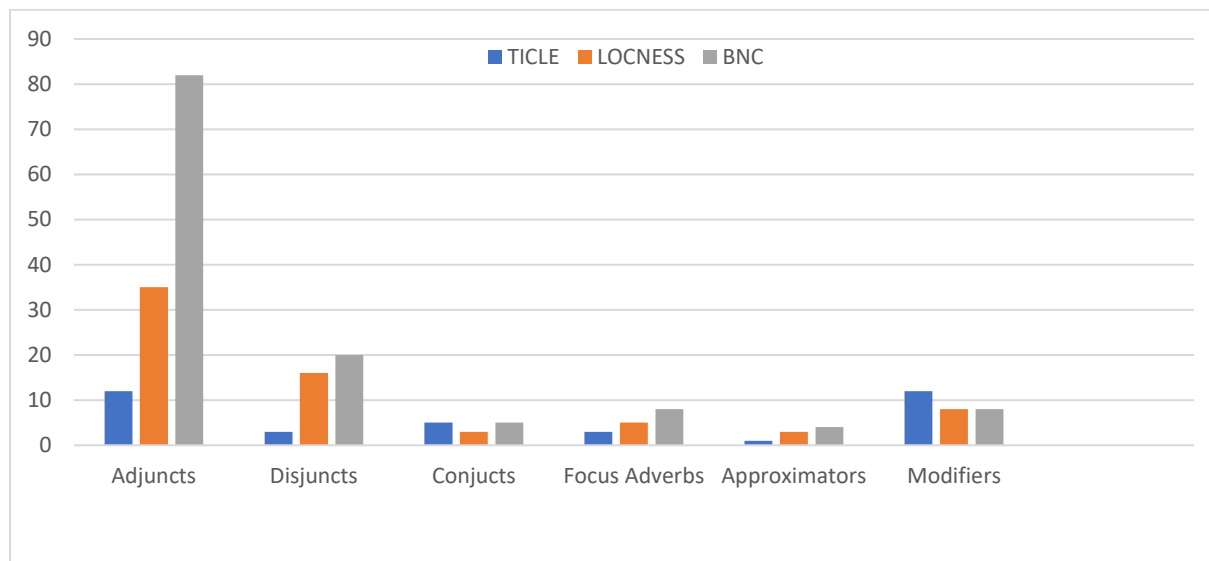
Figure 1: Syntactic classes of *-ly* adverbs

Figure 1 displays a similar distribution of syntactic classes in all three corpora. Adjuncts, disjuncts, and modifiers are the most frequently used classes across all three corpora. The most common function in all three corpora is adjunct adverbial. Expert academic writers show the highest usage of *-ly* adverbs in adjuncts, conjuncts, and approximators. Novice L1 writers exhibit a balanced use of *-ly* adverbs but prefer disjuncts and modifiers. In contrast, Turkish EFL learners use adverbs the least frequently, with a significant underuse across categories compared to the native speakers.

This pattern may be explained by examining the distribution of the individual syntactic classes of adverbs across the three corpora and the frequency differences relative to corpus sizes. Log-likelihood analysis was conducted to compare frequencies across the corpora.

Table 4: The log-likelihood results of classes of *-ly* adverbs of TICLE and LOCNESS

Classes of <i>-ly</i> Adverbs	Freq. in Corpus TICLE	Freq. in Corpus LOCNESS	Log-likelihood	Sig.
adjuncts (<i>easily, usually</i>)	88	366	258.37	0.000*** -
disjuncts (<i>clearly, possibly</i>)	34	208	185.65	0.000*** -
conjuncts (<i>finally, consequently</i>)	56	35	1.09	0.296 +
focus adverbs (<i>mainly, merely</i>)	144	239	53.07	0.000*** -
approximators (<i>partly, approximately</i>)	11	22	6.95	0.008** -
modifiers (<i>highly, extremely</i>)	172	62	30.22	0.000*** +
TOTAL	505	932	255.99	0.000*** -

+ indicates overuse in TICLE relative to LOCNESS,

- indicates underuse in TICLE relative to LOCNESS

Turkish EFL learners underuse most classes of *-ly* adverbs compared to novice L1 writers, with significant differences across categories except for conjuncts. This underuse suggests different adverbial usage patterns between L1 and L2 learners.

Table 5: The log-likelihood results of classes of *-ly* adverbs of LOCNESS and BNC

Classes of <i>-ly</i> Adverbs	Freq. in Corpus LOCNESS	Freq. in Corpus BNC	Log-likelihood	Sig.
adjuncts (<i>easily, usually</i>)	366	2122	142.30	0.000*** -
disjuncts (<i>clearly, possibly</i>)	208	640	0.00	0.949 +
conjuncts (<i>finally, consequently</i>),	35	83	1.67	0.196 +
focus adverbs (<i>mainly, merely</i>)	239	870	5.14	0.023* -
approximators (<i>partly, approximately</i>)	22	111	4.89	0.027* -
modifiers (<i>highly, extremely</i>)	62	174	0.42	0.515 +
TOTAL	932	4000	86.72	0.000*** -

+ indicates overuse in LOCNESS relative to BNC,
- indicates underuse in LOCNESS relative to BNC

Novice L1 writers significantly underused adjuncts, focus adverbs, and approximators compared to expert academic writers. revealing that novice L1 writers struggle to produce adverbs as varied as expert academic writers.

Table 6: The log-likelihood results of classes of *-ly* adverbs of TICLE and BNC

Classes of <i>-ly</i> Adverbs	Freq. in Corpus TICLE	Freq. in Corpus BNC	Log-likelihood	Sig.
adjuncts (<i>easily, usually</i>)	88	2122	946.20	0.000*** -
disjuncts (<i>clearly, possibly</i>)	34	640	257.46	0.000*** -
conjuncts (<i>finally, consequently</i>),	56	83	7.67	0.006** +
focus adverbs (<i>mainly, merely</i>)	144	870	127.77	0.000*** -
approximators (<i>partly, approximately</i>)	11	111	30.00	0.000*** -
modifiers (<i>highly, extremely</i>)	172	174	63.50	0.000*** +
TOTAL	505	4000	849.93	0.000*** -

+ indicates overuse in TICLE relative to BNC,
- indicates underuse in TICLE relative to BNC

When compared to expert academic writers, Turkish EFL learners significantly underuse *-ly* adverbs, except for conjuncts and modifiers. Interestingly, modifiers were more frequent in TICLE, a pattern similar to the findings of Hasselgård (2015) on Norwegian learners' writings.

During the analysis, unique adverb usage emerged across the three corpora. Turkish EFL learners used adverbs like *deeply, physically, economically, theoretically, logically, mentally, psychologically, unconsciously, practically, terminally, mostly, presently, strongly, and incredibly*. These adverbs typically describe manner, evaluation, or sequential order, with a possible focus on describing detailed characteristics and actions, which might stem from learners' reliance on spoken language patterns.

In contrast, adverbs in LOCNESS revealed a notable presence of evaluative adverbs, such as *morally* and *genetically*, suggesting a focus on ethical and biological contexts likely driven by the argumentative nature of the essays in the corpus. This emphasis on evaluative adverbs highlights the role of personal judgment and moral reasoning in novice writers' argumentation.

Adverbs in the BNC corpus show a more comprehensive and balanced use, with a focus on formality, precision, and detailed descriptions. Unique adverbs such as *formally* and *literally* reflect a formal and descriptive academic style, emphasizing clarity and precision. This suggests that expert writers tend to employ more varied and contextually appropriate adverbs, aligning with their need to convey complex ideas with accuracy.

Discussion and Conclusion

The analysis reveals that Turkish EFL learners rely on a narrower range of adverbs, often resorting to conversational or spoken register adverbs, while native speakers, particularly expert writers, demonstrate a broader and more varied use of adverbs, reflecting their higher lexical proficiency and familiarity with academic conventions.

Starting with the *-ly* adverbs, the frequency of *-ly* adverbs are underused by non-native speakers compared to native speakers. Turkish EFL learners rely on a smaller set of known adverbs, whereas native speakers exhibit more lexical variety. Moreover, novice L1 writers tend to overuse *-ly* adverbs compared to expert L1 writers. This finding aligns with Granger's (1998) study on the French component of the ICLE corpus, which revealed that *-ly* adverbs were more frequent in the L1 corpus than in the learner corpus, with a higher type-token ratio for native speakers. However, the results differ from Hasselgård's (2014) study, which found that *-ly* adverbs were more frequent in the English of Norwegian learners than in native English.

Regarding the type-token ratio across the three corpora, LOCNESS exhibits the highest ratio, followed by TICLE, with BNC showing the lowest ratio. As Granger (1998) and Biber et al. (1999) note, expert academic writers tend to rely on a set of prefabricated expressions, many of them being repetitive adverbs. This reliance on recurring lexical patterns can reduce the type/token ratio as expert writers use a core set of lexical items for specific rhetorical purposes, such as providing clarity, making arguments, or presenting evidence.

In terms of the repertoire of *-ly* adverbs, Turkish EFL learners predominantly used modifiers typical of spoken register (i.e. *presently*, *incredibly*, *physically*, *economically*) rather than written academic registers. This pattern echoes findings by Granger and Rayson (1998) and Biber (2006), who noted that L2 writers often employ structures that lack the appropriate academic register style. In contrast, expert writers exhibit typical of academic discourse patterns, as evidenced in studies like Biber and Gray's (2010), where expressions such as *other equally important aspects of the play*, *the potentially narrow binding powers of economic obligation* are more prevalent.

In addition, Turkish EFL learners utilized much less and limited number of adverbs while native speakers use more varied vocabulary in their productions, leading a significant difference in the adverb usage. This concurs with the study of Mala (2020) who analysed the *-ly* modifiers of Czech EFL learners in the VESPA-CZ corpus and concluded that "...compared to expert writers, novice writers rely on a more restricted range of adverbs, which they use frequently (p. 79)". Moreover, unique uses of evaluative adverbs in both TICLE and LOCNESS may be attributed to the nature of argumentative essays, which highly consists of personal judgment and moral reasoning in argumentative writing.

The syntactic categories of the *-ly* adverbs revealed that *adjuncts*, *disjuncts*, and *modifiers* are the most frequently used classes across all three corpora. The most common

function in all three corpora are *adjunct* adverbials. Expert academic writers show the highest usage of *-ly* adverbs in *adjuncts*, *conjuncts*, and *approximators*. Novice L1 writers exhibited a balanced use of *-ly* adverbs but prefer *disjuncts* and *modifiers*. In contrast, Turkish EFL learners use adverbs the least frequently, with a significant underuse across categories compared to native speakers. This finding does not concur with Hasselgård's (2014) study regarding the use of adverbials by Norwegian learners of English, which was attributed to the higher frequency of adverbials in Norwegian compared to English.

Expert academic writers consistently exhibited the highest usage of *-ly* adverbs across most syntactic categories, particularly *adjuncts*, *conjuncts*, and *approximators*. This reflects a more elaborate and nuanced writing style, typical of expert discourse, as evidenced in previous studies (Biber & Gray, 2010). Novice L1 writers showed a balanced use of *-ly* adverbs, with a notable preference for *disjuncts* and *modifiers*, indicating their focus on evaluative commentary and intensity. In contrast, Turkish EFL learners exhibited the lowest frequency of adverb usage, confirming the findings of Granger (1998), Hasselgård (2015), and Mala (2020). The one of the two classes of *-ly* adverbs which have been overused by Turkish learners were *conjuncts* (e.g., *finally*, *consequently*), which was consistent with the patterns observed in Mala's (2020) study of Czech learners. Another overused class was *modifiers* (e.g., *highly*, *extremely*) in TICLE, a pattern similar to the findings of Hasselgård (2015) on Norwegian learners.

While this study is primarily descriptive, its scope could be broadened to examine adverbs beyond those ending in *-ly*. A more in-depth examination of individual semantic categories of adverbs or adverbials would benefit from expanding the scope beyond *-ly* adverbs. This would require the use of tagged corpora, but such an approach would provide a more comprehensive view of adverb usage in learner writing.

The findings of the study may inform the teaching academic English, particularly in enhancing lexical variety, improving collocational knowledge, and increasing the overall complexity of learner writing. An effective *-ly* adverb instruction should begin with a function-based approach, grouping items according to stance (e.g., *arguably*, *clearly*), manner (*carefully*, *rapidly*), and sequencing or linking functions (*consequently*, *subsequently*) and illustrating each with contrasting corpus examples drawn from both novice and expert texts. Teachers can then raise learners' awareness of typical overuse and underuse by visualising frequency gaps and setting revision "quotas." After pointing out the differences in both novice and expert uses, collocation instruction should follow so that these adverbs should be provided within their contexts. Concordance-based tasks with highly frequent combinations should be provided to the learners. To develop autonomy, learners can build a small corpus of their own drafts alongside expert models, run keyword or frequency checks on *-ly* adverbs, and annotate each instance as *necessary*, *redundant*, or *missing*.

Additionally, the instruction should include genre-specific checklists since genre mediates adverb choices. Finally, explicit teaching along with data-driven learning should be integrated into the curriculum so that these practices can guide learners from instinctive adverb insertion toward deliberate, audience-appropriate deployment that mirrors expert usage. Such findings of similar studies should be taken into account while preparing curriculums for English language learners.

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