ADVERB PLACEMENT IN LEARNER WRITING: THE EFFECT OF LINGUISTIC FEATURES, CROSS-LINGUISTIC TRANSFER, AND REGISTER

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ABSTRACT

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Due to their syntactic mobility, adverbs lend themselves well to first-language (L1)-related syntactic transfer studies (Hasselgård, 2015); however, there is a limited body of research looking into what other factors may influence adverb placement. Moreover, very few studies go beyond the realm of well-known Germanic and Romance languages. The present study is a partial replication of Larsson et al.'s (2020) work and revisits the question of whether adverb placement can help us detect L1 transfer; it also looks at the possible effect of linguistic variables (e.g., presence/absence of an auxiliary), extralinguistic variables (e.g., native-speaker (NS) status, L1 background), and register. The study looks at L1 German, L1 Turkish, and NS data with the aim of seeing whether the findings from Larsson et al. (2020) can be replicated with German and native-speaking students from a different register; it also extends our knowledge by looking at L1 Turkish use, a language that is very different from English typologically.

The data were obtained from two different corpora; the International Corpus of Learner English (ICLE), the Louvain Corpus of Native English Essays (LOCNESS) and were coded manually based on the coding scheme from Larsson et al. (2020). The study looks at the following 15 epistemic adverbs (Granath, 2005): *maybe, probably, possibly, really, simply, actually, apparently, certainly, clearly, definitely, evidently, obviously, perhaps, surely,* and *of course.*

The results show that German learners behaved more native-like compared to their Turkish counterparts who overused the clause initial position (e.g., ***probably*** she is here) and underused the clause-medial positions. Similar to Larsson et al.'s (2020) findings, the main predictors of adverb placement are linguistic rather than extralinguistic; although some traces of L1 transfer were detected with the Turkish data. Moreover, register seems to have a moderate effect when the German and NS use are compared with those of the original study.

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1. Introduction

The immense universe of adverbs renders their definition and categorization problematic. Indeed, "[i]t is tempting to say simply that the adverb is an item that does not fit the definitions for other word classes" (Quirk et al., 1985, p. 438, cited in Hasselgård, 2015). As the "garbage can" of words, adverbs lend themselves well to diverse and in-depth linguistic analyses due to their broad range of semantic, syntactic, and discoursal functions. Adverb use has been found to vary across different registers and linguistic contexts, and it has been reported that they "can distinguish the language of learners from that of native speakers of English" (Hasselgård, 2015, p. 164). In addition, as the preferred syntactic position of an adverb may differ depending on the word-order rules of different languages, further study of adverb placement could help us understand learner language better and be able to detect possible first-language (L1) transfer, as explained below. Specifically, single-word adverbs tend to be highly mobile within a clause, and can be located in initial, medial, and end position (Larsson et al., 2020).

Adverb placement in English has been shown to depend on certain linguistic factors, one of which is the absence/presence of an auxiliary (Buaillon et al., 2020). When adverbs modify a predicate with an auxiliary, they tend to be placed either before or after the auxiliary verb. One common finding across studies is that no matter what the variety, the register or the mode is, adverb in the post-auxiliary position is a more likely occurrence (Buaillon et al., 2020). For example, 'I would probably call it more community' is often more frequent than 'I probably would call it more community'. Similar findings were reported for learner writing by Larsson et al. (2020), which compared adverb placement trends of a learner group of Germanic and Romance language speakers with native speaker (NS) and expert writer corpora. They also identified two other linguistic factors that were particularly important for predicting adverb

placement: verb type (e.g. intransitive, linking/copular) and the adverb itself. (e.g. *maybe* was found to occur more in the initial position).

The present study is a partial replication study of Larsson et al. (2020), which looked into learner use of epistemic adverbs and investigated traces of L1 transfer. L1 transfer refers to the instances when learner's inter-language (IL) (use of the target language) includes features which bear similarities to the features of their first language (Jarvis, 2000, cited in Paquot, 2013). In addition to the linguistic features mentioned above, they also investigated the predictive power of extra-linguistic factors such as NS status and L1 background. Their written corpora included student term papers, theses and published research articles written by NS and a variety of different L1 populations namely French, Spanish, Norwegian, Swedish, German and Dutch. They found that the main predictors of adverb placement are linguistic rather than extra-linguistic and they observed very limited evidence of L1 transfer.

While relatively rich in coverage, the current state of the art for adverb studies is limited to analysis of an ever-repeating list of the same language families, most notably Western-European languages. To address this gap in literature, this study will look into Turkish learners' use of adverbs and their placement in academic writing. Unlike Germanic languages which bears strong resemblances, (Larsson et al., 2020) Turkish is a typologically distant system from English, which may yield interesting findings with regards to linguistic transfer in adverb placement. As one of the L1 groups of Larsson et al. (2020), German is also included in this study to see if the findings of German and NS patterns can be replicated in this study as well, but on a different register. As stated by Porte (2012), the primary aim in replicating research should be "repeating it in a particular way to establish its stability in nature and eliminate the possible influence of artifacts or chance findings" (p. 4, as cited in Porte &MacManus, 2019). Inclusion

of German will also allow for comparing the adverb placement trends of Turkish and German students with NS patterns as well as with each other in order to detect any discrepancies resulting from L1 interference. As a rule of thumb, a true linguistic transfer analysis could only be conducted with the involvement of multiple L1s (Granger, 2015).

Similar to English, sentential and attitudinal adverbs in Turkish also tend to be highly mobile in their positioning (Üzüm, 2021). Despite this similarity between Turkish and English, the considerable variation in the syntactic word order between the two languages (Turkish, S-Obj-V) still makes the native-like distribution of adverbs a problematic issue among Turkish learners of English. German, although quite similar to English in many aspects of the syntax, has more in common with Turkish when it comes to word order, (Üzüm, 2021) so is also likely to generate non-native like uses of adverbs. In this study, the adverb placement trends of both Turkish and German L1 speakers will be examined for the sake of discovering more about cross-linguistic transfer.

Furthermore, register has been found to be an important, but understudied, predictor of adverb placement (Larsson et al., 2021). Register is defined as language variation determined by different situational uses for achieving a variety of communicational purposes (Biber & Conrad, 2019). “Linguistic features tend to occur frequently in a text because they are particularly well-suited to the purposes and the situational context of the register” (Biber & Conrad, 2019, p.6). In response to the call for increased focus on register made by Larsson et al.’s (2021) paper, another way in which I intend to extend the findings of the original study is to incorporate a different university register into the investigation of adverb placement. Unlike the replicated study of Larsson et al., (2020), which focused on disciplinary writing (e.g., term papers), the present study looks at argumentative essays taken from Louvain Corpus of Native English Essays

(LOCNESS) for the NS students and International Corpus of Learner Language (ICLE) for the Turkish and German students. Argumentative essays as a university register are often associated with personal stance markers (Biber & Conrad, 2019). Therefore, the adverbs analyzed in this study are expected to be extensively used in argumentative essays due to their stance marking features. Argumentative essays are also known to be more similar to personal-spoken registers than informational written ones, which may also yield different distributional preferences from what was found by Larsson et al., (2020).

This study aims to compare the adverb placement trends of NS vs. NNS accompanied by Turkish NNS vs. German NNS to see which linguistic, extra-linguistic (L1 transfer) and register-related factors will predict learners' adverb positioning and to what extent. Following the original study, I will use the compiled list of epistemic adverbs: *maybe, perhaps, probably, surely, clearly, actually, apparently, definitely, certainly, evidently, obviously, possibly, really, simply* and *of course,* (Granath, 2002, cited in Larsson et al., 2020) due to the assumption that the discoursal function of the adverb is the major predictor in its positioning (Dupont, 2019, cited in Larsson et al., 2020). As the design of the present study is such that there are differences vis-à-vis Larsson et al.'s (2020) study both when it comes to register and L1 background (thus making it difficult to tease apart the effect of each of them for the L1 Turkish data), L1 German and L1 English data were included in an attempt to look specifically at the effect of register. That is, in having two of the L1 groups be the same as the original study, I am able to directly compare my results to those of Larsson et al. (2020). The following three research questions guide this study:

- RQ1: What linguistic and extra-linguistic factors could predict learners' placement of the listed adverbs?

- RQ2: To what extent does L1 transfer explain learners' placement of the listed adverbs?
- RQ3: When the results are compared to those of Larsson et al. (2020), is there a discernable register effect?

2. Background

Section 2 will provide background for the project. First, *Section 2.1* will explain the stance marking feature of epistemic adverbs. Then, *Section 2.2* will present a framework for adverb placement and summarize the previous research on the subject. *Section 2.3* will discuss register as a potential predictor. Finally, *Section 2.4* will detail some typological differences between the L1s included in this study to trace a possible cross-linguistic transfer.

2.1 Semantic and Discoursal Functions of Epistemic Adverbs: Stance Marking

Considering that this study investigates the use of epistemic adverbs, it is worth mentioning an increasing interest in the study of linguistic features used for the expression of stance in academic writing (Ferreria, 2018). The broader category of epistemic adverbs is stance adverbials (Biber, 2006). There are a wide range of ways to convey stance relating to the speaker's or the writer's 'personal feelings, attitudes, value judgements and assessments (LGSWE, p.966, cited in, Biber, 2006). One way of expressing it is the use of stance adverbials. Stance adverbials have a scope over the entire clause. In other words, they provide comment on the content and style of the complete proposition (Biber et al., 1999, p.764). (*Obviously,* you don't have to come to class on May eighth. *Maybe*, someone mentioned this in speaking about it. The sort of gossip *certainly* should be condemned. Women were *actually* superior to men in some respects).

Taking a look at literature on the use of stance adverbials, Pérez-Paredes and Bueno-Alastuey (2019) investigated the general patterns of use regarding certainty adverbs *actually, obviously* and *really*. He found a list of deviations from the native model across various L1 groups in their spoken production. NS writers were found to be the only group who used all of the adverbs (a*ctually, obviously, really)* frequently and a certain underuse of the adverb

obviously was reported among all NNS groups. More native-like performance of German students both in their adverb placement and the frequency rates of the use of *really* in comparison to the Chinese and Spanish L1 backgrounds may potentially be attributed to their mother tongue's typological similarities to English language. Ferreria, in her 2018 study was motivated by the hypothesis that non-native students use stance expressions more frequently and in a rather limited fashion than their native-speaking peers. Contradictory to this hypothesis, she found that her L1 speakers used stance adverbials more frequently than L2 advanced speakers of English in their university writing assignments. She also observed a similarly limited range of use for both of the groups.

As can be realized, the majority of the corpus research into stance adverbials has remained mostly confined to academic writing, with an overwhelming focus on frequency, over-use/under-use analysis and the level of variety in the repertoire of NS and NNS speakers of English. The general research trend, although inclined towards writing, obviously lacks a focus on adverb placement and the inclusion of typologically distant language families.

2.2 Adverb Placement

The position of the adverb is determined relative to the clause element it is embedded in; therefore, it needs to be examined within the context of a clause (Hasselgård, 2010, p. 40). For the study of adverbial placement, what is needed is a verb as the center of the clause in finite or non-finite form. This makes it possible to describe the position of the adverb in relation to the verb phrase (Hasselgård, 2010, p. 40). This sentence below offers the possible 'slots' for English adverb placement: (i)They (ii) have (iii) been (iv) discussing (v) the choice of wallpaper (vi).

That is, in English, adverbs tend to be positioned prior to the subject (i), between the subject and the verb phrase (ii), between two auxiliaries (iii), before the auxiliary and after the main verb (iv), between the verb phrase and the following obligatory part (v) or at the end of the clause (vi) (Hasselgård, 2010, p. 41). Epistemic stance adverbials are known for their mobility within the clause (Biber et al., 1999, p. 854) which generates a variety of distributional options illustrated above.

There are two major lines of research investigating the adverb placement in English, both of which attempt to identify the linguistic and extra-linguistic variables that may predict the position of the adverb within a clause. While the first group is concerned with the variation in NS use across different geographical regions and in vernaculars, the second one extended its scope to learner use.

Starting with the first body of research; Waters (2013), Buaillon (2020) and Granath (2002) looked into variations in adverb placement to find out what the reasons could be for their different positioning in English. They examined the subject in relation to the regional varieties of English such as British vs. American, Toronto vs. York to gain a deeper insight and a broader

understanding of the reasons for the changes happening in users' preferences for different adverbial positioning.

All these three studies have some findings in common. First of all, linguistic variables were identified as major predictors in adverb placement rather than social factors such as the speaker's age, gender, class or ethnicity. Secondly, defined as the unmarked form, the post-auxiliary position was observed to be strongly preferred in all varieties of English with pre-auxiliary remaining rather infrequent at the rates of below three percent; specifically in York and Toronto. However, Buaillon (2020) and Waters (2013) signaled the exception of 'modal+ have' structures where the pre-auxiliary form is favored over the other. Simply put, when a modal is preceded by an auxiliary as in the case of 'It might have escaped'., the occurrence of pre-auxiliary placement of the adverb seems remarkably higher.

Moreover, Granath (2002) and Waters (2013) concluded that the adverb type is another major predictor for the adverb placement since the temporal/functional adverbs (e.g. *usually/often)* are found less frequently in the pre-auxiliary position compared to the modal/predicational category such as *probably, possibly;* the latter also quite rarely reported in the final position, but predominantly observed in the initial as it is usually the case with the specific examples of *maybe* and *perhaps.* This finding may have something to do with their primary function of conveying the speaker attitude and judgement of what has been expressed. Finally, Granath (2002) interprets the overall patterns in adverb placement in relation to the communicative function rather than text category or variety of English. This specific finding of her study reinforces the moderating effect of register on adverb placement; which will be covered in detail in the following section of this paper.

Downing (2001) conducted a detailed examination of the adverb *surely* with respect to its pragmatic and discourse functions of evidentiality; expressing surprise, disbelief or doubt as well as stance marking. The research motive was to see to what extent the type of stance or attitude would be determined by the position of *surely* and the personal pronoun it occurs with. As a means to this end, an initial total of 6345 concordance lines of *surely* with subject personal pronouns were compiled from British National Corpus (BNC) spoken and written data to be later converted into a sub-corpus on the criteria of three positions as I preceding the pronoun, M following the pronoun or the auxiliary, and F as clause final. Diani (2008) also adopted a similarly narrow research focus concentrating on *really* as an emphasizer along with its frequency, meaning and use analysis across academic speech and writing. The relevant textual data of three academic registers were obtained from four different corpora in the form of lectures (Michigan Corpus of Academic Spoken English, MICASE), book reviews (Linguistic Book Review Articles, LIBRA) and research articles, to compare the position of the adverb. *Really* resembled *surely* in its functions of expressing certainty, reliability, limitations of a statement and attitudinal stance of the speaker (Conrad & Biber, 2000, as cited in Diani, 2008), so lent itself to parallel findings to those of the Downing (2001).

The results of these two studies indicate that both adverbs when occurring in the initial position act like sentence adverbials and serve the purpose of communicating the speaker or the writer's evaluation of the truthfulness of information expressed by the statement. On the other hand, the mid position qualifies more as a modifier. This shared finding further reinforces the idea that the position, syntactic role and discourse function of the adverb closely interact with one another (Diani, 2008). The more frequent initial use of *really* in speech than in writing

indicates register as an important moderator in adverb placement. Downing (2001) also reported the initial *surely* as having the highest frequency of co-occurrence with the pronoun 'you'.

To summarize, the findings of the first group of studies list the presence/absence of auxiliary, the type of adverb and their varying discourse functions as some major reasons why the position of the adverb changes in English.

As for the second group of research in literature, motivated by Learner Corpora Research (LCR) conventions, they looked into the adverb placement in learner production. LCR is defined as the study of "the systematic collections of authentic, continuous and contextualized language use (spoken and written) by L2 learners stored in electronic format" (Callies & Paquot,2015, as cited in LeBruyn & Paquot, 2021, p. 1). The driving motive for the compilation of Learner Corpora was to enhance the existing corpus collection with learner varieties (Granger, 1993, cited in LeBruyn and Paquot, 2021) to eventually perform contrastive interlanguage (learners' use of the target language) analysis (CIA). CIA refers to the contrastive analysis of two language varieties (Cosmos, 2018). In our context, it means the comparison of native language with learner language and comparison of two learner languages.

The immense range of prospects regarding the position of single word adverbs presumably create certain challenges for second language learners due to the varying word order structures of World languages (Hasselgård, 2015). The mastery of English adverb placement is also known to be one of the last in the order of acquisition (if any successful acquisition takes place); a case which may be either susceptible to or completely independent from the first language of the learner (Cosmos, 2018). Considering the widespread use of epistemic adverbs in both speech and writing as well as the importance of conveying one's own stance for the successful completion of different tasks (i.e. professional and university registers such as

argumentative essays, persuasive writing, response papers, and reviews) L2 learners should gain mastery in the appropriate use of those epistemic adverbs (Biber, 2006). To investigate the above-mentioned challenges which may stem from the first and second language differences and detect any possible issues related to L1 transfer, the following line of research has been carried out. Almost all of the studies reviewed here followed the methodology of Contrastive Interlanguage Analysis (CIA), (Granger, 2015).

To give an overview of the body of research, while there is certain evidence indicating L1 transfer issues in adverb placement, linguistic-related factors obviously outweigh NS or NNS status. In addition, the study interest remains mostly confined to Germanic and Romance languages. The work of Larsson et al. (2020) investigated the distributional preferences of epistemic stance adverbs across different modes in relation to the abovementioned language families. Osborne (2008) looked into adverb placement and came across traces of L1 transfer in a group of Spanish, Italian and French learners' modelling verb raising (Verb-Adv-Obj order); a form of non-standard use in English.

Both White (1991) and Osborne (2008) looked at the contrasting rules of adverb movement between French and English language. They found that the resulting potential learnability problem for French L1 learners of English possibly stem from L1 interference (White, 1991). Although adverbs in both languages are quite mobile in terms of their positioning within the clause, English has certain restrictions. For example, an adverb placed between the verb phrase and the direct object is often not considered standard use (e.g. Mary watches probably TV) when compared to French where this occurrence called 'verb raising' is syntactically allowed. Based on the hypothesis that French L1 speakers are likely to transfer adverb placement norms of their mother tongue to English, White (1991) intended to find out

whether explicit information about the ungrammaticality of verb raising would make a difference. He wanted to see if form-focused instruction and error correction was effective to help a group of 6th grade, 12 -year old students in avoiding the 'verb raising' patterns in English.

Osborne's (2008) study, had the same research focus as White's (1991), but Osborne extended the scope of analysis by incorporating a variety of L1 backgrounds (French, Spanish, Italian, Russian, Polish, Czech, Bulgarian, Finnish, German, Dutch and Swedish) into his quest. He pursued a corpus-based methodology to compare the adverb placement trends in the written productions of post-intermediate level learners with that of native speakers, as well as with one another. The argumentative essays available in the two corpora for NNS (Chambery Corpus for French and ICLE for 11 different L1s) and two for NS (Essay Bank and LOCNESS) were annotated based on the clausal position (initial, pre-verbal, final and v-adv-object/verb raising) of a selected list of adverbs. Osborne's major findings were that the speakers of first languages which allow verb raising (e.g., French, Spanish, Italian…) were more prone to utilizing SVAO order than those of others. However, the instances of SVAO were also reported in the NS data as well as in the production of learners whose L1 do not have obligatory verb raising. This finding suggests that although traces of L1 interference were found, it cannot be the sole variable predicting learners' adverb placement since a set of linguistic factors are also at play such as heavy noun phrase (NP) shift and verb-adverb collocations as in the example of '…the university takes very seriously its responsibility to justify these contributions through continued excellence in research and teaching.'. In this particular case, the presence of both a heavy NP and a strong semantic link between the verb and the adverb makes it necessary to follow the 'verb-adv-obj' order since otherwise the separation of multi word verb 'take seriously' would make the sentence meaningless by also violating the end- weight principle. Therefore, a combination of linguistic

(semantic and phraseological associations among components of the verb phrase (Osborne, 2008)) and extra-linguistic factors (L1 backgrounds and NNS status) appear to be interacting with each other in predicting learners' adverb positioning.

Larsson et al.'s (2020) study, both confirms and contradicts Osborne's (2008) findings in different aspects. In their large-scale investigation of epistemic (e.g. *probably, possibly, really, maybe*…) adverb placement in EFL academic writing (theses, term papers) across five different L1 backgrounds (Swedish, German, French, Spanish and Italian), Larsson et al., (2020) wanted to see whether first language transfer is still in effect in advance learners' language production, and to what extent. As a result, they carried out a manual coding procedure of 15 selected adverbs on the basis of a set of linguistic variables such as the absence/presence of auxiliary, clause type, verb type, subject type, object type, and subject-object length to explore their predicting power on the adverb placement. This study mainly differs from others with its huge emphasis on the interaction between linguistic variables and their impact on the adverb positioning.

As indicated in the *Introduction Section*, their findings highlight 'the presence /absence of auxiliary, verb type and the lexis (the adverb itself, e.g. *maybe* predominantly having the initial position) as the primary predictors of the adverb clausal positioning. However, no convincing evidence of L1 transfer was noted in learner writing, which was interpreted to be a direct result of the participants' high proficiency level. The inclusion of linguistic factors into the investigation reveals the limited discriminatory power of non-native status in learners' observed adverb placement patterns. In parallel to the findings of Osborne (2008) who spotted verb raising instances with speakers of Romance languages, Larsson et al. (2020) also identified similar cases with French and Spanish speaking learners, yet those instances remained negligible in size and

extent. Moreover, similar to Osborne (2008), verb raising extended to the use of other L1 speakers as well, suggesting it could be more of a developmental feature but not necessarily a trace of L1 transfer (Larsson et al., 2020). One more reason for Osborne's (2008) study detecting verb raising could have resulted from the assumption that learners were not yet at the stage of English mastery in adverb use, unlike the advanced proficiency group of the Larsson et al. (2020), who displayed a more natural, appropriate performance. Moreover, the investigated registers and L1 backgrounds were different, so the results of the two studies may not be fully comparable. However, these studies still offer valuable insights into adverb placement in learner writing.

Overall, the above group of studies looked into adverb placement in learner writing. In line with the first group in their findings, they also listed the following linguistic variables: presence/absence of auxiliary, the verb type, the adverb itself, heavy NP shift and adverb-verb collocations as having a stronger predictor power than L1 influence. What is common among them is a comparative analysis of NS versus NNS trends in their written production regarding the latter group's observed deviations from the former, with the former acting as a reference point. Although previous studies on adverb placement somewhat inform us about the major factors impacting the distributional preferences of adverbs; a certain gap in literature still remains regarding what the situation could be when comparing findings with a typologically different language.

To address this gap, Cosmos (2018) called upon the stage the two languages (Chinese and Turkish) to gain a deeper insight into any possible L1 transfer.

In his dissertation, Cosmos (2018) analyzed the position of 20 stance adverbs (taken from Biber et al., 1999 framework e.g. *probably, maybe, perhaps…)* in argumentative essays written

by university students whose L1s are namely Norwegian, Turkish and Chinese. Similar to Larsson et al. (2020), the research motive was to identify the adverb placement patterns in learner use and to observe the extent of learner groups' native-like behavior as well as any traces of cross-linguistic transfer.

Although there was no compelling evidence of a negative L1 transfer in his qualitative analysis, the quantitative analysis yielded significant results. Norwegian learners mostly opted for the medial (M) position followed by initial (I), while Turkish and Chinese learners overused (I) position and underused (M) compared to native speaker preferences. Amongst all the L1 groups, Norwegian students behaved most like native speakers, which can be explained by the fact that Norwegian as a Germanic language, belongs to the same family as English. Although Cosmos (2018) study implies that typological distance is actually a determiner in learners' adverb positioning, one major limitation to his findings is that no linguistic variables (e.g. presence/absence of auxiliary, verb type, clause type) were taken into consideration in his research design. Therefore, his findings of a possible L1 transfer for Chinese and Turkish learners or the Norwegian learners' more appropriate behavior in adverb placement cannot be solely attributed to a possible trace of L1 influence. The same is true for Pérez-Paredes and Bueno-Alastuey (2019) who reported a more native-like behavior of German learners than the Spanish and Chinese group in their adverb placement patterns. Despite their inclusion of Chinese, as a different L1 family member, they did not consider the impact of linguistic predictors on learners' distributional preferences. Although their findings provide hints of a possible effect of L1 transfer with typologically different languages, the impact of linguistic factors remain unexplored.

To address these gaps, this study follows the methodology of Larsson et al. (2020) in its focus on investigating the effect of linguistic factors (e.g. presence/absence of auxiliary, verb type) in addition to that of L1 transfer. Based on their findings, I expect to observe linguistic factors as being an important predictor in the findings of this study as well. However, due to the fact that Turkish is typologically a more distant language from English than the languages in previous studies (as will be explained later in Section 2.4 on typological differences), the extralinguistic factors (L1 background, NS status) may also prove to be important, confirming what has been reported by Cosmos (2018) and Pérez-Paredes and Bueno-Alastuey (2019).

2.3 Use of Adverbs: Register

Several studies have pointed to the importance of register in learner writing. For example, in their 2021 study, Larsson et al. reported register to be the most important predictor, overriding other variables of NS-NNS status or L1 background. Their involvement of two other corpora into the analysis (research papers and published scientific articles) along with argumentative essays has indicated that while the former group is featured by topic-centered, factual linguistic devices, the latter is marked with personal stance expressions (2021). With respect to L2 writers, research shows that L2 academic writing tends to bear the marks of a personal, speech-like style through the use of linguistic features such as first-second person pronouns, let's imperatives, and overuse of epistemic modal adverbs e.g. *certainly, maybe* compared to their L1 counterparts (Larsson et al., 2021). Likewise, Goulart (2020) observed a tendency among L2 students' overall stance marking regarding more of their personal opinions over that of others. In her study where she compared the linguistic choices made by L1 and L2 learners in different university registers, she also found communicative purpose as a more important predictor than NS status. These findings are in line with what was found by Larsson et al., (2021).

The differences among the academic written registers lie in their communicative purposes. While essays integrate and present information from different sources, argumentative essays do the same while adopting a personal stance. Research papers, on the other hand, include no stance expressions, but incorporate more informational content (Biber & Conrad, 2019). All sorts of stance marking expressions including stance adverbs are encountered in personal-spoken registers more than informational-written ones (Biber et al., 2016; Pérez-Paredes & Bueno-Alastuey, 2019). Although they are a sub-category of academic writing, the communicative purpose of an argumentative essay has more overlap with the personal spoken registers. Thus,

they may follow a different pattern due to their inherently-personal nature and features borrowed from both ends of the continuum.

Despite the growing interest in corpus research with respect to the analysis of features in learner writing, the scope of the research has mostly remained limited to the L1- related factors and the variations resulting from different proficiency levels. 'Register' and its moderating effect on learner writing has barely received any attention. In the rare occurrence that register is studied, the analysis tends to revolve around one and the same register of argumentative writing, making it quite hard to draw general conclusions about the subject of inquiry (Larsson et al., 2021). In response to the call for more research on register differences, this current study will compare the results of adverb placement in student argumentative essays to those of Larsson et al. (2020) who looked into adverb placement in student term papers, theses and research articles.

Considering the sharp contrasts in their above-mentioned communicative purposes, I expect that the findings of this study in comparison to the original will once again find register as an important predictor in learner writing. Therefore, I hypothesize obtaining different results from Larsson et al. (2020) study due to the integration of a different register into the investigation. I assume both the NS and German L1 students in the current study will make use of the listed stance adverbs more in I and E positions, which are commonly associated to the spoken personal registers (Larsson et al., 2020). I also expect them to use the listed stance adverbs more frequently than reported by Larsson et al. (2020) since argumentative essays may require more use of stance expression than disciplinary writing does.

2.4 Typological Differences between Turkish, German, and English

As mentioned in the *Introduction Section*, of all the written texts of this study, the ones produced by learner groups come from Turkish and German L1 backgrounds. The written command of epistemic adverbs is closely linked to the junction of word order, information organization and stance marking; hence, their use is likely to pose certain challenges for a variety of L1 populations due to the typological differences existing among different language families (Larsson, 2017). In this section, a brief summary of typological features of Turkish and German will be covered relating to their sentence word order and adverb placement rules. This will hopefully shed more light upon the interpretation of findings regarding to see any effect of a possible L1 transfer.

In Turkish, the primary principle is 'the qualifier precedes the qualified' e.g. the adjective precedes the noun and the adverb precedes the verb e.g. **Ç*abuk*** *işi bitirdi.,* literal translation, *Quickly, he finished the work* meaning *He finished the work quickly* (Lewis, 2000, p. 237). However, with the S-O-V (subject-object-verb/predicate) as the unmarked form, major constituents are allowed to occur in any position as long as each constituent is in definite form (Göksel & Kerslake 2006, 343, cited in Cosmos, 2018). To add further one research study on the flexibility of word order in Turkish showed that, although the unmarked sentence order is S-O-V, only 50 percent of them seemed to follow that sequence (Slobin & Bever, 1982). As for epistemic adverbs, in majority of cases, their position happens to be the at the very beginning of the sentence as Initial (I) or Medial 1 (following the subject) (Göksel & Kerslake, 2006).

The common I position is a direct result of the adverb's tendency to interchange positions with the subject as in the example of ***Belki*** *ben bu gece* İngilizce *çalışacağım* as translated literally: ***Maybe*** *I tonight English will study,* meaning ***Maybe,*** *I will study English tonight.*

Although relatively rare, the E position can also be observed in certain cases since it is not at all ungrammatical due to the immense flexibility of word order system in Turkish e..g. *Ben bu gece* İngilizce *çalışacağım* ***belki.*** Literal translation: *I tonight English will study* ***maybe,*** meaning *I will study English tonight,* ***maybe*** (Göksel & Kerslake 2006, 343, as cited in Cosmos, 2018).

Although the common rule is that the stressed word falls right before the verb, there is also ultimate freedom to place the stress on any constituent preferred and the stressed constituent can occur anywhere before the predicate. (Göksel & Kerslake 2006, 343, cited in Cosmos, 2018). For example, a sentence consisting of a subject, a verb and an object meaning 'Ali is selling the house', holds the possibility of six different combinations in addition to reserving all the options for the adverb to be placed in between as in the beginning (I), in the middle inserted anywhere within the constituents (M1, M3) and in the end (E) (Göksel & Kerslake 2006, p. 343).

1. Ali evi satıyor. (Ali the house is selling)
2. Evi Ali satıyor. (The house Ali is selling)
3. Ali satıyor evi. (Ali is selling the house)
4. Evi satıyor Ali. (The house is selling Ali)
5. Satıyor Ali evi. (Is selling Ali the house)
6. Satıyor evi Ali. (Is selling the house Ali)

Taking the example of the stance adverb 'probably' meaning 'muhtemelen' in Turkish, it can potentially be inserted in the positions I, M1, M3 and E, which will be grammatical in all combinations as seen below.

1. **Muhtemelen** Ali evi satıyor. (Probably Ali is selling the house) (I)
2. Ali **muhtemelen** evi satıyor. (Ali probably is selling the house) (M1)

3. Ali satıyor **muhtemelen** evi. (Ali is selling probably the house) (M3)
4. Ali evi satıyor **muhtemelen.** (Ali is selling the house probably). (E)

As for the absence of any post auxiliary M2 position in Turkish examples, the English correspondent of which is *Ali is probably selling the house,* the primary reason for that is mainly typological. As an agglutinative language, Turkish grammatical system forms words through the principle of agglutination, not through the use of auxiliary verbs or modals (Lewis, 2000). For example, with only the addition of the suffix -yor to the bare infinitive -sat, 'satiyor' instead of 'is selling', or 'satabilir' instead of 'may/can/could sell' or 'satmalı' instead of 'should/must sell', the meaning of progressive aspect and modality is expressed. Therefore, Turkish language has no direct equivalent of such auxiliaries as *am, is, are, doesn't, will, may, should, must, was, were,* etc., which can have consequences for the Turkish learners' adverb placement in different patterns from NS models. Hypothetically, in lacking the M2 position in their L1, Turkish English speakers may avoid it and accordingly display certain underuse cases relating to all forms of M positions M1, M2, M3. For the same reason, they may overuse I alternatively since it is the default form in Turkish as well as an acceptable use in English. This hypothesis is reinforced further by Cosmos (2018), which was the only study on stance adverb placement of Turkish speaking learners, found I position overused while M was underused by Turkish students.

German, which operates on a sentence order system rather similar to Turkish (Subj-Obj-Verb), could have the epistemic adverb occurring both in the clause initial (I) and in two of the medial positions (M1, M2), falling somewhere between the subject and the verb (Üzüm, 2021). E.g. *1. **Wahrscheinlich** Hans diesen Roman las/gelesen hat. (Probably Hans read this novel) 2. Hans **wahrscheinlich** diesen Roman las/gelesen hat. (Hans, probably read this novel) 3. Hans diesen Roman **wahrscheinlich** las/gelesen hat. (Hans this novel probably read)* (Üzüm, 2021).

Moreover, its varied case marking system allows for considerable flexibility for the epistemic adverb placement having clause-final (E) as the only marked position exclusive to a handful of limited contexts in spoken language (Larsson et al., 2020). German is also a verb-second (V2) language, which leads the subject and the verb to be inverted when the adverb is clause initial positioned. Such cases automatically impede the M1 position and instead create M2 and M3 positioning of the adverb (Larsson et al., 2020) E.g. *Ich **finde** eigentlich, dass sie einen tollen Job gemacht hat. (Translates as 'I think **actually** she did a great job' instead of 'I actually **think** she did a great job')*. Similar to Larsson et al. (2020), this study also hypothesizes that German learners may avoid clause final E and M1 positions for the reasons explained above.

Given the peculiarities regarding both Turkish and German typological features, in the present study, I hypothesize to spot certain L1 related deviations of use in two of the learner groups. However, English as a Germanic language bears more resemblance to German than Turkish. Therefore, it is hypothesized that German L1 group will behave more native-like in their adverb placement trends than their Turkish counterparts whose L1 is typologically more distant to English. Therefore, based on previous literature and analysis of typological differences between the languages investigated, I predict that Turkish learners will underuse M positions and overuse I, while German learners will avoid M1 as well as clause final E as indicated below in *Table 1.*

Table 1

Predictions about syntactic L1 transfer. X indicates possible underuse cases.

Transfer type	Subtype	Turkish	German
Syntactic	I		
	M1	X	X
	M2	X	
	M3	X	
	E		X

Apart from the typological differences, as will be explained in the following Section, the level of proficiency is also taken into consideration as a potential predictor in learners' adverb placement. Having the Turkish group be slightly less proficient, I hypothesize to report more deviation and less nativelike behavior regarding their adverb placement trends compared to the more advanced population of German L1 speakers.

3. Corpora and Method

Section 3.1 introduces the corpora used in the study. The method is explained in *Section 3.2.*

3.1 Corpora

In order to explore the differences between learner and native students' adverb placement in argumentative written texts, two different corpora were used. The German and Turkish texts are taken form International Corpus of Learner English (ICLE), sampling the production of third-to fourth grade university students. As for the reference corpus, The Louvain Corpus of Native English Essays (LOCNESS) provides argumentative essays written by American and British university students.

ICLE is a type of corpus representing a wide range of mother- tongue backgrounds. The database of this study consists of argumentative essays written by a group of Turkish and German undergraduate university students (as indicated in the *Table 2* below), whose age range is 18-19. Their proficiency level of English varies from B2 and lower to C1 and C2 according to CEFR results provided by the meta-data of ICLE (Granger et al., 2020). According to the metadata, while 19 of the 20 German speakers belong to the advanced levels of C1 and C2, as for Turkish speaking students, only 4 of them were categorized at level C1. The remaining 16 of these learners were labeled at a B2 proficiency or lower (Granger et al., 2020). This gap in the

proficiency levels of Turkish and German L1 populations will be considered in the analysis of their adverb placement patterns (see *Section 4*).

Table 2

Overview of the material used in this study

	Written Argumentative Essays	
Subsets	Words	Files
NS	324,304	925
German	232,219	620
Turkish	200,601	462

As for LOCNESS, it provides the benchmark for this study. It contains 168,400 words of argumentative and literary mixed essays written by American university students and another 155,904 words of argumentative and literary essays written by British students. As mentioned before, this is a partial replication study of Larsson et al. (2020). Their corpora included untimed term papers and research articles by expert writers. Despite their common use in register analysis, argumentative essays were chosen purposefully for this study to see the effect of register on adverb placement against the results of Larsson et al. (2020). As hypothesized earlier in *Section 2.4*, different university registers are likely to yield different patterns in adverb placement. In *Section 4*, a discussion will follow in comparison to Larsson et al. (2020) findings to see a possible effect of register on learner adverb placement trends.

For the NS subset 124 of the tokens, for German 97 and for Turkish 81 of the files were excluded from analysis on the basis of their phrase modifying (1) or manner adverb (2) status.

(1) […] I would probably feel **really** good, **really** financially stable and …

(LOCNESS_USARG.txt)

(2) […] This effect has been studied for many years and several well-documented experiments show the effect **clearly.** (LOCNESS_alevels8.txt)

In total, 801 of the tokens from the NS data, 523 from the German data and 381 from the Turkish data were included and coded manually for adverb position and other linguistic variables as outlined below. The results were normalized per 100,000 words.

3.2 Method

3.2.1 Frameworks for L1 transfer Analysis

This study pursues the same approach followed by Larsson et al. (2020) in terms of investigating first language transfer. Similar to the original study; this study also adopts Granger's (2015) Contrastive Interlanguage Analysis (CIA). CIA classifies interlanguage analysis into two categories: Interlanguage (IL) and Reference Language (RL) (Larsson et al., 2020). In this study, two different sub-corpora, the Turkish and German subsets of ICLE function as the IL varieties while the NS student corpora LOCNESS serves as the RL (Larsson et al., 2020).

As emphasized before by Granger (2015) framework in the Introduction Section, it is critical not to limit the analysis to IL vs. RL but also involve more than one IL to be able to compare different IL varieties (speakers of different L1s) with one another. A systematic analysis of L1 transfer could only be possible with multiple L1s included in the investigation (Larsson et al., 2020). Therefore, the adverb placement trends of two different L1 groups as German and Turkish will be closely inspected against NS.

By following the footsteps of the original study, this study also borrows from Paquot's (2007) adaptation of Jarvis (2000) (cited in, Larsson et al., 2020). As explained in Larsson et al.

(2020), three types of comparisons will be carried out as intra-IL group, inter-IL group and IL vs. L1 comparison to detect language transfer. If a specific use in adverb placement (such as the use of *really* in M1 position, as in She *really* wants to attend the conference) is found to be consistent in the IL of one particular L1 group but not in the ILs of other L1 groups, and if this feature is also present in those speakers' L1s, then it is concluded that this might be due to L1 transfer (Larsson et al., 2020).

3.2.2 Classifying Adverb Placement

Similar to the original study and as explained in section 2.2, for the adverb placement classification, Hasselgård's (2015) framework of clausal positions was used. According to this classification, there are four different clausal positions for the adverb.

Clause initial (I) position refers to the place before the subject as exemplified in (3) or before the verb in inverted sentences (V-S). The other I cases may involve the placement of the adverb in a subordinate or a coordinate clause as in (4). In such cases, the adverb simply follows the conjunction (Quirk et al., 1985, p. 491, as cited in Larsson et al., 2020).

(3) […] **Actually**, the flag was set up the day after the civil rights movement started.

(LOCNESS_USARG.txt)

(4) […] but **apparently** some people just do not have to obey the law.

(ICLE_TRKE2016.txt)

Clause medial positions have three different variations. While M1 refers to the position of the adverb anywhere between the subject and the verb phrase (5), M2 corresponds to the place right after the auxiliary verb and before the verb phrase (6). As for M3, it occupies the position between the verb phrase and some other obligatory element such as an object, predicative or an obligatory adverbial (7) (Hasselgård, 2010, p. 42, as cited in Larsson et al., 2020). The clause

final position E, refers to the place which comes after all the obligatory elements in a clause (8) (Quirk et al., 1985, p. 498; Hasselgard, 2010, p. 42, as cited in Larsson et al., 2020).

(5) […] But their intrusion upon traditionally male territory **definitely** goes over the top.
(ICLE_GEAU3093.txt)

(6) […] He would **certainly** be a very viable candidate. (LOCNESS_USARG.txt)

(7) […] I think women were **certainly** strong enough to weather male attitudes of that day…
(LOCNESS_USARG.txt)

(8) […] Her voice was a surprise, **actually** as it was soft and tiny…(ICLE_GEAU1004.txt)

This study followed the same coding scheme as Larsson et al. (2020), so the same solutions were applied to the problematic or exceptional cases. For example; the tokens with a non-finite clause (9), and with finite clause that do not have a subject (10) were coded as I, since it is difficult to distinguish between I and M in such cases (Larsson et al., 2020). Regarding the cases where relative pronoun substitutes the subject, the position was coded as exemplified in (11), which is coded as M1. Moreover, clauses with split infinitives were treated as clauses with a null subject and the adverb was coded as having M1 or M2 position (Larsson et al., 2020), for example (12) was coded as M1.

(9) […] They also however interact with each other, making the arguments of the other more credible or **maybe** discounting other's arguments and thus swaying the audience to one side.
(LOCNESS_BRSUR1.txt)

(10) […] Being allowed to visit a course with about thirty people you surely will get to know new fellow students who will help you with your problems or **of course** also will be willing with great enthusiasm to go in a pub or cafeteria in your spare time. (ICLE_GEAU1075.txt)

(11) […] The first part of this quote deals with abortion which **obviously** has many ethical consequences considering the debates currently going on. (LOCNESS_USARG.txt)

(12) […] The reporter, Alecia Swasy was researching material to **possibly** write the story… (LOCNESS_USARG.txt)

The subject extraposition and existential there were also treated the same way as the original study and the adverbs were coded in accordance to their position to 'there' and 'it' since these two were considered as syntactic subjects (Larsson et al., 2020). Samples (13) and (14) were coded as M3.

(13) […] At universities there are **certainly** useful degrees to prepare a person for teaching a language. (ICLE _TRCU1061.txt)

(14) […] "What do you read my lord?" Polonius asks Hamlet, to a future teacher of English it is **of course** obvious that we would rather use the progressive form in this context… (ICLE_GEAU3023.txt)

3.2.3 Coding Procedures

To identify the linguistic predictors of the clausal position of an adverb, this current study focused on only a set of the linguistic variables from the original study of Larsson et al. (2020). As mentioned in the Introduction Section, regarding the linguistic variables, the following tokens from the original study *maybe, perhaps, probably, surely, clearly, actually, apparently, definitely, certainly, evidently, obviously, possibly, really, simply* and *of course* were manually annotated according to their position within the clause, subject type, verb type and the presence/absence of auxiliary in the clause. These features were chosen because they were found to be among the most important linguistic predictors of the original study. The coding scheme prepared by Larsson et al.'s (2020) study was used as a reference guide for this study. The

adverbs are coded under the titles of Initial (I), Medial 1 (M1), Medial 2 (M2), Medial 3 (M3) and End (E) position.

As seen in the *Table 3*, the subject type covers the alternatives of a noun phrase, clause (-ing, -to, clauses, that clauses, relative clauses etc.), pronoun and zero subject (omitted subjects in non-finite clauses or ellipted subjects in finite clauses). Auxiliary features were coded on a YES/NO dichotomy on the basis of a presence or absence of the auxiliary verb. The following linguistic features were considered as auxiliary: Auxiliary forms of 'be', 'do' and 'have', full modals (can, could, may etc.), and marginal modals (need to, have to, ought to etc. (Quirk et al, 1985, p.138, as cited in Larsson et al., 2020)) as was the case in the original study. Verb type includes different categories of verb valency. While mono transitive verbs are followed by a direct object (S-V-O: He ate the cake), intransitive verbs do not require any obligatory element (S-V: He died) (Quirk et al., 1985, p.53, as cited in Larsson et al., 2020). Ditransitive verbs are complemented by one direct and one indirect object in the clause (S-V-DO-IO: She gave the pen to the student). On the other hand, the complex transitive verbs are followed by an object and then by either an object complement (S-V-O-C: They call this bridge a passage to other world) or by an obligatory adverbial (S-V-O-A: She threw the flowers out of the window). The linking/copular verb category includes those clauses where the verb precedes a complement (S-V-C: She is very smart) or an obligatory adverbial (S-V-OA: She is at home now).

Table 3

Overview of the linguistic features

Features	Levels
Subject Type	Noun Phrase
	Clause
	Pronoun
	Zero subject/omitted subject (e.g. non-finite clauses)
Auxiliary	Yes
	No
Verb Type	Transitive
	Intransitive
	Linking/Copular
	Ditransitive
	Complex Transitive

3.2.4 Manual coding and inter-rater reliability

A total of 1705 tokens were coded manually by the author of the study based on the coding scheme developed by Larsson et al., (2020). Each token was extracted and coded using the concordance line so that I could see the full clause. Although it was time consuming, the manual coding process went smoothly for three major reasons. First of all, having the coding scheme available was a great convenience. Secondly, I had the chance to discuss the problematic tokens with my supervisor, who was also the first author of Larsson et al., (2020) study. Finally, only 4 of the selected features from the original study were coded in relatively small size corpora.

To ensure that the coding was as reliable as possible, an inter-rater reliability test was conducted once all the coding was completed by the first rater. Another graduate student of Applied Linguistics with Turkish L1 background coded 50 randomly selected tokens. To assess the agreement between coders statistically, Cohen's kappa was used. Ranging from 0 to 1, the scores between 0-0.20 means poor agreement, 0.20-0.40 refers to fair agreement, 0.41-0.60 indicate moderate agreement, 0.61-0.80 means substantial and 0.81- 0.1 suggest almost perfect agreement (Landis & Koch, 1977). The statistical tests were run on *R* (R Core Team, 2023) and

the *R* package *irr* (version 0.84.1; Gamer et al., 2012). As seen in the *Table 4* below, we achieved quite a high reliability score, all features with almost perfect agreement except for verb type 0.735; z=7.9 which resulted in substantial agreement.

Table 4

Kappa scores for linguistic features

Linguistic Feature	Fleiss' kappa score	*z*	Landis & Koch's scale
Subject Type	0.9681	10	Almost perfect agreement
Auxiliary	0.882	6.44	Almost perfect agreement
Verb Type	0.735	7.9	Substantial agreement
Position	0.947	12	Almost perfect agreement

To wrap up, *Section 2* of the project has detailed the background for adverb placement and provided a summary of relevant literature, and *Section 3* has presented the Corpora and Methods. Moving forward, *Section 4* will now entail the results of the study and an integrated discussion.

4. Results and Discussion

A total of 2,007 adverb instances constituted the entire dataset, but with 302 of them being excluded due to modification of the phrase, manner adverb status, lack of clarity, or incorrect grammatical expressions, 1,705 valid tokens remained and were further analyzed based on the coding scheme of Larsson et al.'s (2020) study.

In *Section 4.1*, the discussion focuses on the three strongest linguistic predictors that impacted the distributional preferences (presence/absence of auxiliary, verb type and subject type). L1 transfer and the extent to which it played a role in learners' adverb placement is also detailed in this section. *Section 4.2* presents the results of descriptive statistics on the effect of another linguistic predictor: the adverb (lexis). Finally, *Section 4.3* elaborates on the effect of register with respect to frequency rates and clausal position of the adverb.

4.1 Results on the effect of linguistic features and L1 transfer

This section covers a discussion on research questions 1 and 2: "What linguistic and extra-linguistic factors could predict learners' placement of the listed adverbs?" and "To what extent does L1 transfer explain learners' placement of the listed adverbs?

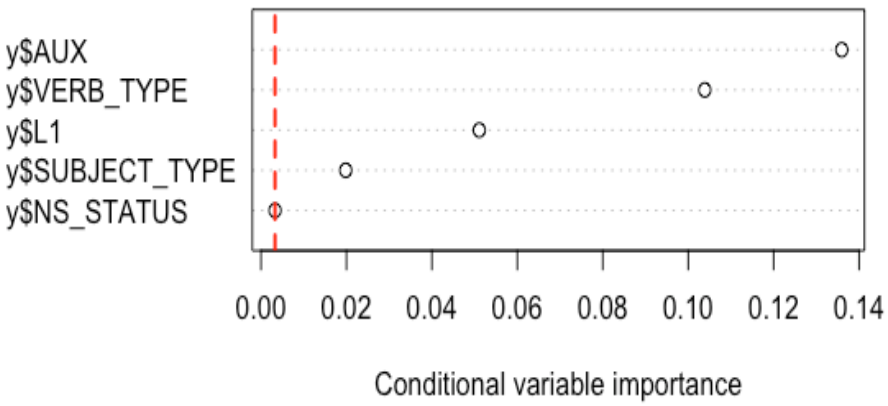
To address the first research question, a Random Forest (RF) was fitted; the conditional variable importance of list of predictors here can be found in Figure 1. RFs are statistical methods developed to help the researcher interpret the relationships between one given response variable (numerical or categorical) and its multiple predictors (Levshina, 2015). The conditional variable importance means that the algorithm simply tests if any of the variables are associated with the given response variable and identifies the variable which has the strongest association with it (Levshina, 2015). The technique is particularly useful in interpreting high-order, complex

interactions when there is a small sample size but a large number of predictors involved in the data-set, making the use of para-metric methods problematic (especially multiple regression) (Levshina, 2015). RFs are simply "non-parametric tree structure models which uncovers the effect of each predictor in relation to all other predictors" (Levshina, 2015, p. 291). In this study, several predictors, both linguistic and extra-linguistic and their impact on the response variable (the position of the adverb) have been calculated by the model.

The RF in *Figure 1* provides an overview of the predictors which impacted the position of the adverb in a descending order. As seen below, the most important predictor presence/absence of auxiliary is located at the top (0.13), followed by verb type (0.10,) L1 background (0.05) and subject type (0.02) respectively. It should be noted that adverb as a predictor is not included here due to the skewedness of the data. However, the possible effects of this predictor will be investigated later in the discussion through descriptive statistics results.

Figure 1

Conditional variable importance of a Random Forest of the I, M1, M2, M3 and E positions



Presence/absence of auxiliary as the major determiner in adverb placement is closely in line with previous literature as found by both Larsson et al., (2020) and the preceding body of research in adverb studies of Waters (2013), Buaillon (2020) and Granath (2002). In cases where the auxiliary verb is present, the common trend in English is inclined towards a post-auxiliary M2 position over M1 or M3. We can see this pattern in data samples (15), (16) and (17) below.

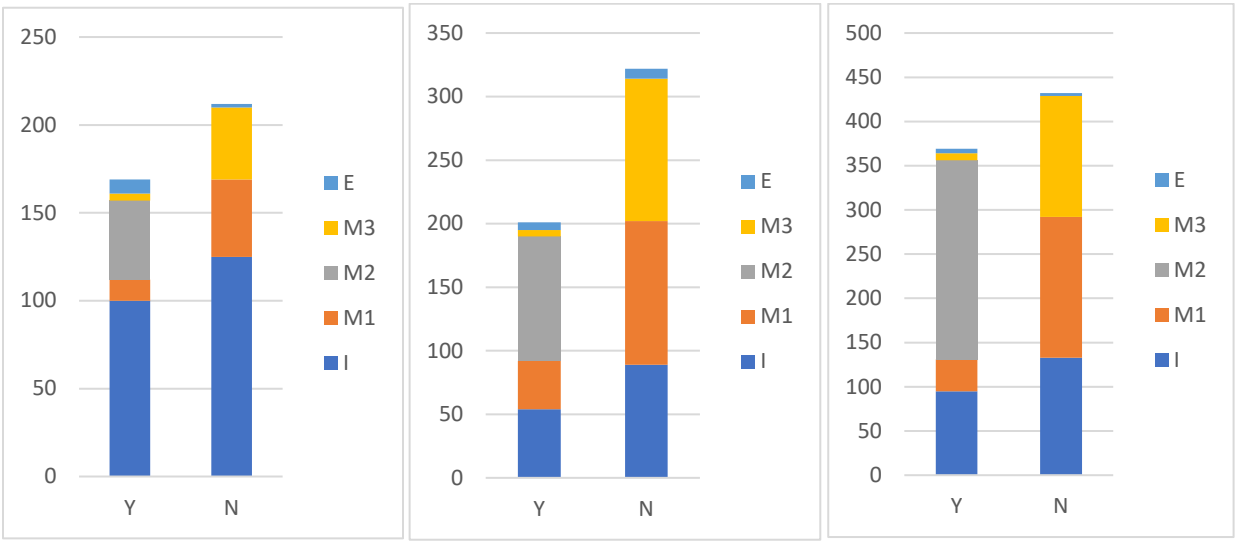
(15) […] it can **actually** be a rewarding experience […] (LOCNESS_BRSUR1.txt)

(16) […] one advantage will **definitely** be that my chats on the phone won't be exposed to the public any longer. (ICLE_ GEAU1023.txt)

(17) […] Anybody who says that he did not believe in money is **probably** lying because without money you cannot realize whatever you want and people are happy as long as they do the things they like. (ICLE_TRCU1048.txt)

Figure 2

Adverb placement in the presence/ absence of auxiliary, data normalized per 100.000



Turkish Results German Results NS Results

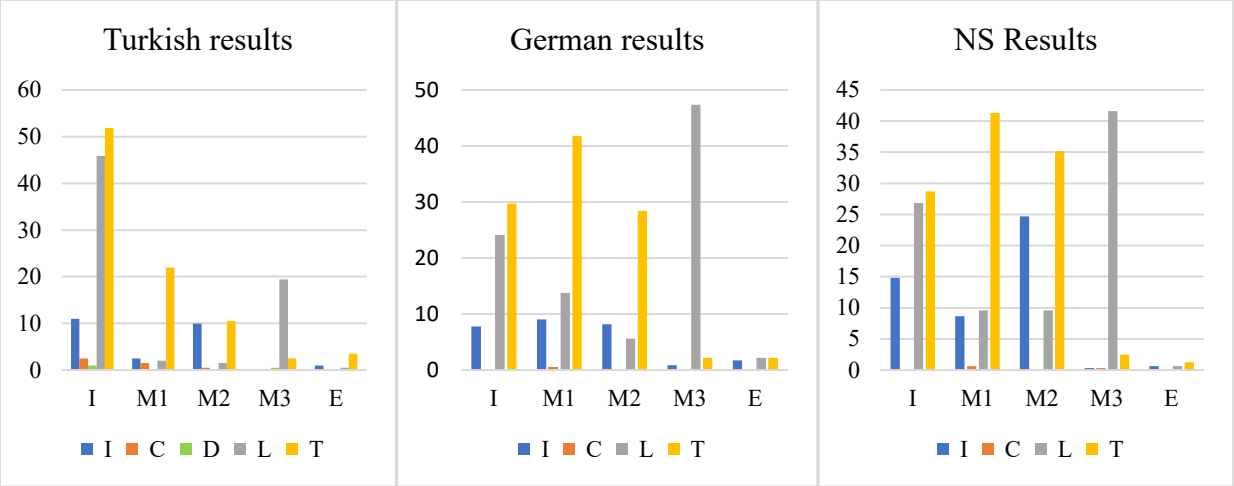
As observed in *Figure 2*, presence/absence of auxiliary plays a critical role in the adverb positioning. It is also worth noting that presence of an auxiliary is a prerequisite for M2 post-auxiliary position. In other words, in the absence of an auxiliary, M2 position is not an option; however, in auxiliary present cases, M2 is the preferred position.

Although this picture shows once again the relatively strong power of linguistic factors over the NS status or L1 transfer, the dominance of the I position in Turkish data creates a unique pattern even in auxiliary present cases. L1 status of Turkish speakers seems to result in a behavior different from two of the other groups. L1 status is a type of extra-linguistic predictor, and it is also highly relevant for transfer issues. Therefore, a discussion on the effect of L1 will be covered later in this Section to address RQ2 and to see the effect of transfer on learners' adverb placement choices. Before moving onto that, I will focus on the 'verb type' as the other linguistic factor.

RF results have detected the verb type as the second major variable affecting adverb positioning (with a conditional variable importance of 0.10). The most outstanding pattern seems to be the strong prediction of M3 position if there is a linking verb, which was often observed especially in the German and NS data as seen in *Figure 3.*

Figure 3

Adverb placement according to the verb type, data normalized per 100.000



It seems that, when the verb valency is linking, the adverb tends to be placed between the verb and the following obligatory element as seen in Examples (18), (19) and (20) below. This seems like a common pattern followed by all groups.

(18) […] The constant belief is that good can come from bad is not **actually** inspiring but leads to a constant flow of disasters. (LOCNESS_BRSUR2.txt)

(19) […] It is **obviously** indispensable for a society to build a common ground for its education… (ICLE_GEAU3064.txt)

(20) […] From my point of view, spending the budget for improving the general wealth of the country is **certainly** much more prior to spending it for a criminal sentenced to life imprisonment. (ICLE_TRCU1104.txt)

However, German and NS use bear more similarities in terms of applying this model. Turkish data stood out having a higher frequency for I position, even in clauses with a linking

verb; although M3 is the second most frequent option. In Turkish learner corpus, the common tendency to prefer I position is distinctive, and usage of Turkish speakers seems to display deviation from the two other L1 groups. As seen in the example (21), although placing the adverb 'apparently' in clause initial position is not an example of misuse, the M3 alternative where the adverb occurs after the linking verb before the obligatory element as 'All of these experiments are **apparently** useless' would be a more expected version. Similarly, with regards to the examples (22) and (23), 'Money is **perhaps** the worst invention.' And 'Women and men are **certainly** equal…' would be closer to NS and German speakers' adverb placement choices.

(21) […] **Apparently**, all of these experiments are useless. (ICLE_TRKE2065.txt)

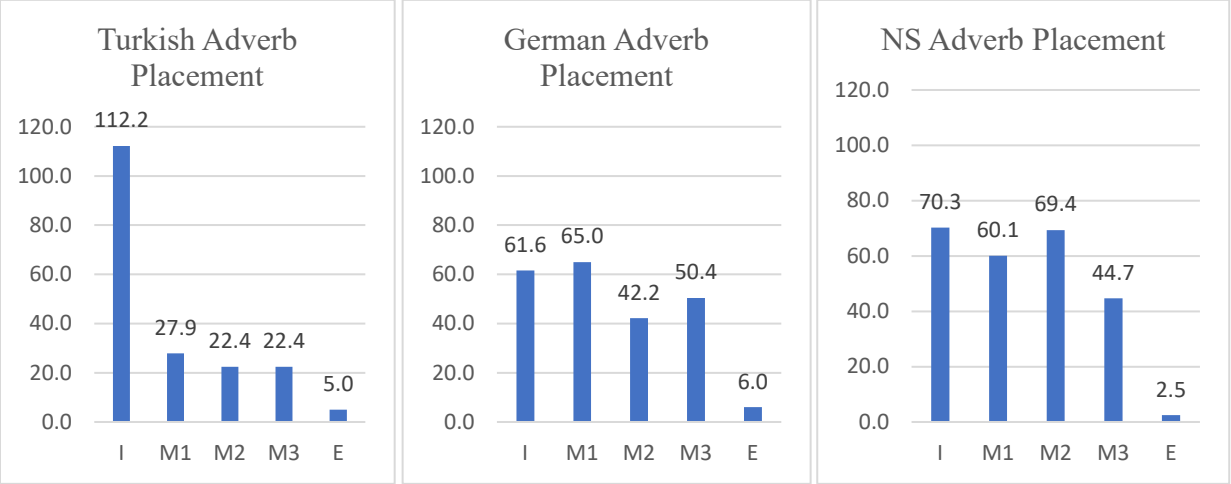
(22) […] **Perhaps**, money is the worst invention of the world. (ICLE_TRCU1049.txt)

(23) […] **Certainly,** women and men are equal and inequality between women-men is based on creation features of this two sex. (ICLE_TRCU1157.txt)

This obvious tendency of Turkish learners to opt for I position even in circumstances when other L1 groups do not display the same behavior leads the discussion to the third most important predictor on adverb placement: L1 background. Below, I address the second research question: To what extent does L1 transfer explain learners' placement of the listed adverbs?

Figure 4

Adverb placement across different L1s, data normalized per 100.000



As the bar charts in *Figure 4* illustrate, in Turkish learners' adverb placement patterns the most preferred position seems to be I, followed by different M positions with a considerable gap in between. Given that the I position is extremely more frequent than all other alternatives, this may have varying underlying reasons. As hypothesized earlier, it is a general tendency among Turkish learners to opt for the clause-initial position mainly for typological reasons. Having the I as the default position in their first language where the adverb replaces the subject (Göksel & Kerslake, 2006, p.337) they may have felt encouraged to formulate similar uses in English as seen in examples (24) and (25) below.

(24) […] **Probably,** the lessons that are given by most universities are useful for the people who want to be an expert. (ICLE_ TRME3031.txt)

(25) […] **Certainly,** it's not the only reason for deficiencies of tutors and university programs. (ICLE_ TRCU1069.txt)

Turkish, has a considerably more flexible word order than English, which makes almost all combinations possible depending on where the speaker would like to place the stress or distinguish new information from the background information; hence changing the meaning as a result of many possible arrangements (Göksel & Kerslake 2006, p.337). When it comes to English, this is not the case. Despite the great mobility of stance adverbs, unlike Turkish, English has certain tendencies in adverb placement depending on the presence/absence of auxiliary. Moreover, as explained earlier, the auxiliary verb system works quite differently in Turkish and there is actually no structure corresponding to the English auxiliary system, which makes it even harder for the Turkish L1 students to get a feel for a natural, native-like adverb distribution (Buz, 2016).

In the face of all these dissimilarities, many students are left with the choice of following what formal instruction has dictated, which often make things even more complicated. What is suggested by coursebooks is usually to place the adverb after the auxiliary (M2 position) or the copula 'be' (M3 position) in affirmative sentences. (e.g. I will **probably** work tomorrow. She is **definitely** at home. He is **usually** late.) However, in the absence of auxiliary and negative cases, what is advised is placing the adverb between the subject and the verb (M1 position) (e.g. He **obviously** enjoys surfing. She **clearly** does not want to talk. The **probably** won't attend the meeting (Crace and Acklam, 2006)). When all these factors are taken into consideration, Turkish speaking students may have overused the I position just to be on the safe side. In an alternative scenario, positioning the adverb in one of the medial positions would mean creating different complications and increasing the likelihood of generating inappropriate uses. Even when there is an auxiliary present in the clause, Turkish learners made clause initial uses where M2 would also be possible and even sometimes more expected as seen in samples (26), (27), ad (28) below.

(26) […] … **perhaps** he will commit a crime or use drugs. (ICLE_TRCU1098.txt)

(27) […] **Probably,** they will be unemployed. (ICLE_TRCU1094.txt)

(28) […] **Perhaps,** they will find the best solution for both themselves and the patient. (ICLE_TRCU1081.txt)

To summarize, Turkish L1 speakers' comparatively high-frequency use of clause initial position and lower frequency of medial positions confirms the hypothesis earlier made based on the similar usage patterns found in Turkish. It could be concluded that some traces of cross-linguistic transfer are visible considering the deviations in adverb placement regarding Turkish learners. The findings also reveal striking differences between German and Turkish learners' adverb positioning tendencies. Although both language groups hold NNS status, they obviously did not behave alike. While all three groups have a noticeably high preference for clause initial position, German and NS students also made substantial use of three medial positions unlike Turkish learners who made much less frequent use of them. It also appears that the results of this current study confirm the findings of Cosmos (2018) who also reported Turkish L1 speakers' overuse of I position compared to their Norwegian counterparts, who mostly opted for M and behaved more native like. Similar to this study, Cosmos involved Chinese and Turkish speaking groups in his research as members of different language families in addition to Norwegian and obtained results that resonate with this present study. Norwegian and English are both Germanic languages, therefore, similar patterns of adverb placement mostly in M positions are observed in all of the NS, German and Norwegian learner data, which could be accounted for the typological similarities they share.

The results are also similar to Pérez-Paredes and Bueno-Alastuey's (2019) study, which examined stance adverb use across NS and NNS data and revealed a more native-like performance of Germans in their adverb distributional preferences compared to Chinese and Spanish learners. All in all, the findings of the current study seem to corroborate rather than contradict previous literature.

Looking at the German and NS data, though having I position was similarly frequent in both groups, there does not seem to be any overreliance on it. All M positions are moderately used with M1 being the most preferred by German speakers and M2 by NS students. It is also worth noting a slightly less frequent use of M2 in the former group against the latter. However, the entire picture puts Turkish pattern in a different place. In contrast to Larsson et al., (2020) study, which reported no specific L1 group (Germanic and Romance languages) deviating significantly from the NS model, these findings highlight the importance of investigating typologically different languages to learn more about cross-linguistic transfer. Otherwise it may go unnoticed, especially for learners with a high proficiency level who have already mastered target-like adverb use.

Apart from typological differences, the clause initial preference of Turkish learners may also be due to their rather low proficiency level compared to German L1 group. As stated in *Section 3.1* on Corpora, an overwhelming majority of German learners are at C1 and C2 level, while only one fifth of Turkish students are at C1 and the rest has B2 and lower proficiency according to the meta-data reports of ICLE (Granger et al., 2020). Osborne's (2008) study on adverb placement also revealed that post-intermediate learners were not yet at the level of appropriate clausal positioning of the adverb. Therefore, caution should be taken not to attribute the results solely to the typological differences of Turkish language, but the possible impact of a

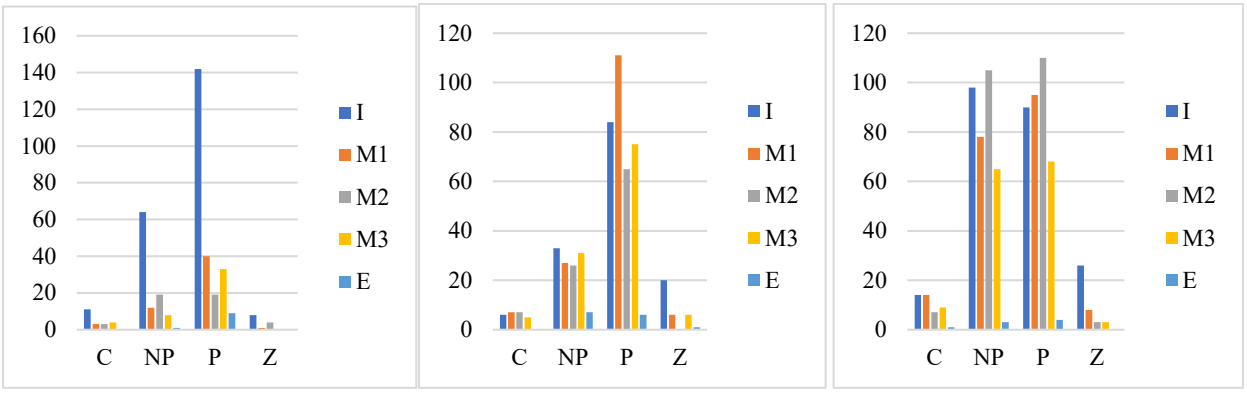
limited language proficiency should also be considered. To wrap up, as a result of the transfer issues, complexities of the formal instruction and their rather low proficiency level, Turkish learners may have strategically chosen to play it safe by overusing the clause initial position. In other words, the overall picture could be an outcome of their avoidance of risk taking as discussed previously. Because the unmarked position for the epistemic adverb is I in Turkish language, this may have provided them with the comfort zone in the unfamiliar environment of English.

Moving onto the E position, it is barely used by all of the three L1 groups, which could be explained by the effect of register. Larsson et al.'s (2020) study similarly reported clause final E position quite rare in their written data unlike the comparatively high frequencies observed in the spoken mode. This makes us associate E position with spoken English and dissociate it form written, university registers. In other words, mode/register appears to be another significant predictor in adverb positioning regardless of first language or NS status.

Finally, on the topic of linguistic predictors, the RF results revealed subject type ranks as the fourth most impactful (see *Figure 1*). Although other subject types (nominal, clausal, pronominal) do no more than reflecting the general tendencies of each L1 group, which are simply I for Turkish, M1 for German and M2 for NS, Z makes a difference by assigning I for all groups as the most preferred. Resonating with Larsson et al., (2020), which found a close association with I position and subject-less clauses, the same seems to be the case in this study. Moreover, other positions were also well-represented (Larsson et al., 2020) as observed in *Figure 5* below. All L1 groups opt for I position (29) and Turkish data aside, both German and NS also make occasional uses of all M positions: M1(30), M2 (31) and M3 (32) in zero subject instances.

Figure 5

Adverb placement according to the subject type, data normalized per 100.000



Turkish Results German Results NS Results

(29) […] All you can do is to face it and **maybe** get to like it as a faithful companion.

(ICLE_GEAU1105.txt)

(30) […] Maybe it is necessary to be hurt by a norm in order to **really** be able to stand up against… (ICLE_GEAU3065.txt)

(31) […] All EEC laws apply to all members and therefore even though something may not be British law it stands in our country and can **actually** be enforced here by European court.

(LOCNESS_BRSUR3.txt)

(32) […] A single Europe will surely mean a loss of sovereignty for Britain, assuming we take sovereignty to mean **simply** freedom for a country's national government…

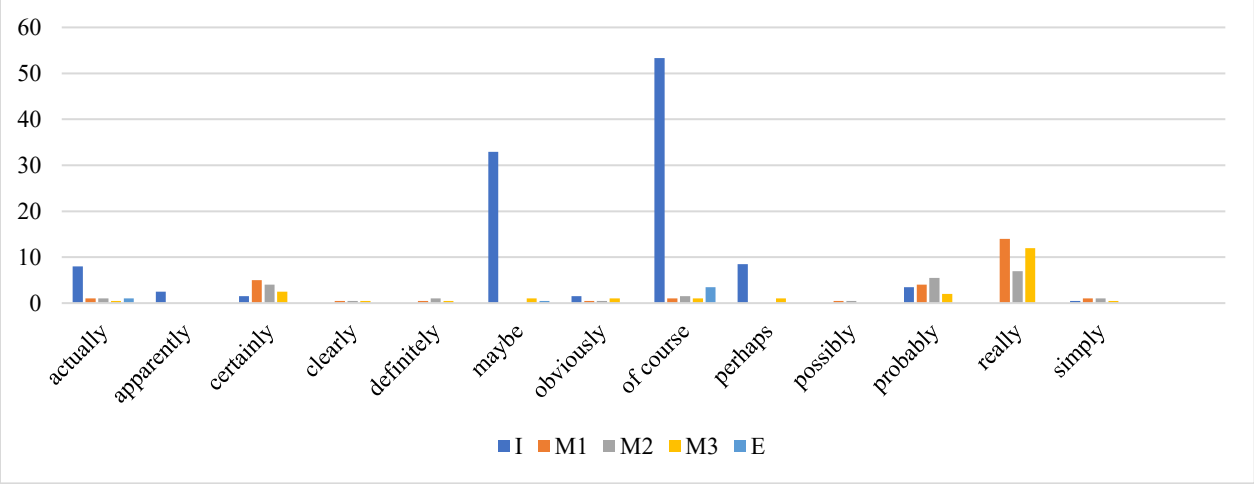
(LOCNESS_BRSUR3.txt)

4.2 Results on the effect of the adverb (the lexis)

This section entails some descriptive statistic results on the predictive power of the adverb in adverb placement. The quite limited range of adverbs used by Turkish learners is strikingly visible in the adverb dispersion patterns displayed by *Figure 6. Of course* seems to be the most popular choice followed by *maybe*, both of which tend to occur overwhelmingly in I position. *Evidently* and *surely* are two of the adverbs used by only NS groups.

Figure 6

Adverb dispersion in Turkish L1 group, data normalized per 100.000



The range of adverbs used by German learners increases dramatically, as seen in *Figure 7.* The scale of variety for German speakers falls somewhere between Turkish and NS data on the continuum. They have apparently used a wider range of adverbs than Turkish, but less than NS students, as observed below in *Figure 8.*

Figure 7

Adverb dispersion in German L1 group, data normalized per 100.000

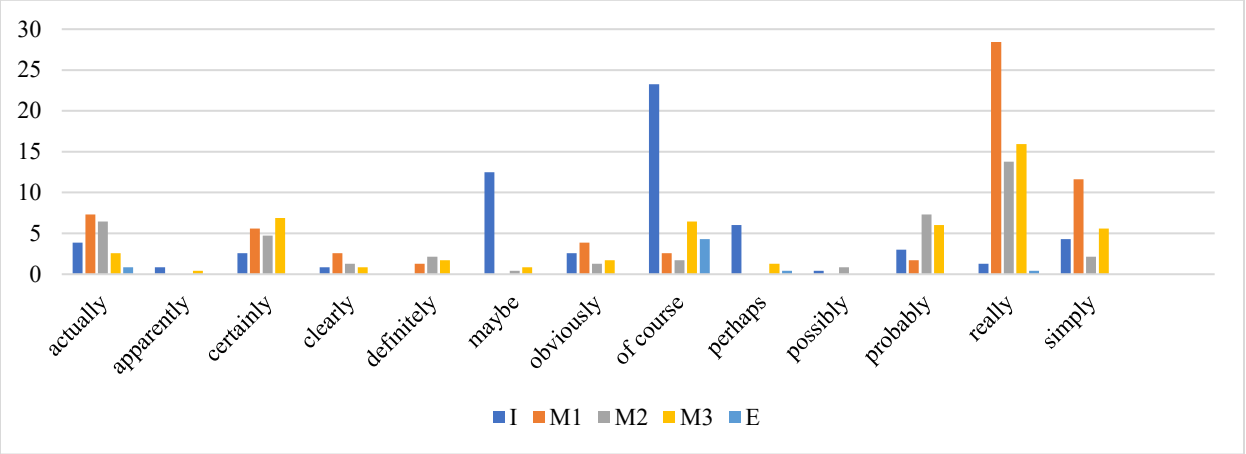
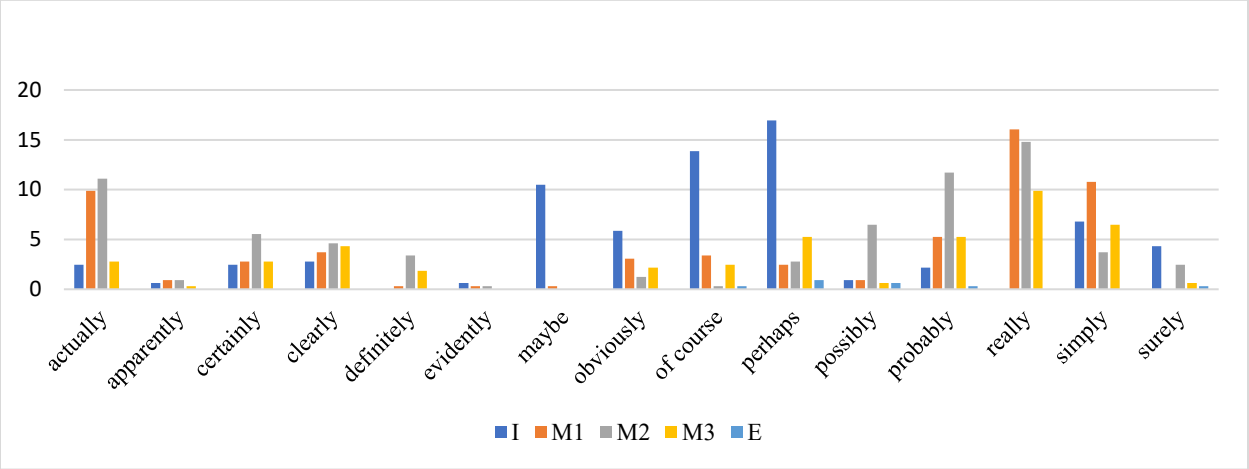


Figure 8

Adverb dispersion in NS group, data normalized per 100.000



Taking a close look at dispersion, individual adverbs create unique trends. For example, *maybe* is used consistently in clause initial position regardless of the L1 background. Similar observations were made by Larsson et al.'s (2020) study with regards to the case of m*aybe* being placed predominantly in I position. The same is true for *of course d*espite its occurrence in all

positions; its occurrence in clause initial significantly outnumbers other alternatives. *Perhaps* has the same tendency to occur in I in most cases. In the original study, *maybe* was preferred in clause initial position in 84 % of cases followed by *of course* 38 % and *perhaps* 37 %. After *maybe, of course* ranks the second and *perhaps* ranks as the third most common adverb in the I position. This draws a striking parallelization vis-à-vis the findings of this study. Clause initial position seems to be strongly associated with: *maybe, of course a*nd *perhaps*. The adverb itself (the lexis) seems to have a role in the appearance of these patterns. However, the proportional preferences for I position differs significantly between two of the studies. In Larsson et al., (2020), *of course* and *perhaps* are preferred in M positions more frequently than clause initial, contrasting the findings of this study where they occur in I more than half of the cases. On the contrary, *really* is hardly ever positioned in clause initial, even in Turkish data. It could be described as a medial adverb with a high preference for M1. The case of *really* in M1 seems to be a German pattern, so an overall German tendency to opt for M1 is worth mentioning

Putting the Turkish group aside, a close inspection of M positions in German data in comparison to NS reveals a slight overuse of M1 and an underuse of M2 by German speakers. Two specific hypotheses were formulated with respect to German L1 speakers in Section 2.4. The first one was a possible avoidance of M1 due to verb-second (V2) cases peculiar to Germanic languages. The second was an underuse of E position since it is the unmarked word order in German. The results conflict with both of the hypotheses. Quite surprisingly, Germans appear to have used M1 and E positions at highest rates in the entire dataset. It should also be noted that even in auxiliary present cases M1 retains its strong presence. Below are some German data samples (33), (34) of M1 where M2 would be more expected (see Figure 2).

(33) […] you **actually** can try out whatever you want to try and there are enough people taking care for you… (ICLE_GEDR1022.txt)

(34) […] it **obviously** would be a catastrophe if anything would happen to that wonderful automobile. (ICLE_GEAU3038.txt)

However, a closer look into the data reveals that negation could be a reason for M1 position, even in auxiliary present cases across all three L1 groups. This might have linguistic-related reasons as observed in (35), (36), (37) and (38).

(35) […] I **actually** can't see what that woman has in common with the type of woman I tried to give you a realistic description of. (ICLE_GEAU4004.txt)

(36) […] but it **certainly** didn't lack personality. (ICLE_GEAU3013.txt)

(37) […] they **obviously** do not realize the consequences of these actions.

(LOCNESS_USARG.txt)

(38) […] Although I **actually** do not know the content of it or why it is so important to me to be a teacher, I have to take this exam and… (ICLE_TRCU1066.txt)

During manual coding, no distinction was made between declarative and negative sentences. As long as the token had an auxiliary present with or without 'not' (e.g. can or can't, do or don't, didn't etc.), it was coded as an 'auxiliary present' case. However, presence or absence of negation (not) seems to have made some difference in users' adverb placement choices. In negative statements, they occasionally chose M1 position over M2.

Going back to dispersion of adverbs, special cases of certain adverbs will be discussed here. While *actually, certainly, clearly, simply,* and *of course* are used in all positions (except for

Turkish), *probably, possibly, really, actually* are preferred mostly in M2. This indicates the frequent co-occurrence of such adverbs with an auxiliary. On the other hand, *simply* and *really* strongly correlate with M1 position. Turkish learners seem to have a problem with *actually.* They overuse it in I position, even in instances where forms of M could be a more appropriate choice. Unlike other L1s, Turkish students developed unique patterns of use with *actually* and significantly deviate from target-like use. All positions for *actually* are much better represented in NS and German data.

Definitely appears only in medial positions and becomes visible only in German and NS data. Turkish learners have a relatively limited lexical repertoire of adverbs. The same is true for the frequency of use as well. According to results obtained from data normalized per 100,000, while NS total number of adverb use is 247, it is 225 for Germans and only gets as high as 189 for Turkish learners. NS seemingly used the widest range of adverbs with highest frequencies, followed by two NNS groups as German and Turkish respectively. Checking previous studies on adverb overuse-underuse analysis, similar results were reported by Hasselgård (2015) and Pérez-Paredes and Bueno-Alastuey (2019).

Remembering the hypotheses introduced in the table of predictions in *Section 2.4*, the Turkish learners' overall underuse of M positions is confirmed as seen in the *Table 5* below. German L1 speakers behaved quite the opposite of expectations since they preferred M1 and E positions at the highest rates among all three L1 groups. Their C1 and C2 advanced levels of English proficiency may be the reason for their target-like mastery of adverb use, overriding any possibility of transfer issues. As for Turkish data, some traces of L1 transfer seem to be present given that I position as the unmarked form in Turkish is overused. Moreover, since M2 does not have a corresponding Turkish use due to lack of auxiliary verb in grammar, this probably makes

all other forms of M also disfavored by Turkish speakers. As a result, it would be easy to conclude that L1 transfer is at play for Turkish L1 group but not for German because of Turkish being typologically more different from English. However, considering that these two L1 groups have varying English proficiency levels; the results may not only be due to L1 transfer.

Table 5

Checking predictions about syntactic L1 transfer. √ indicates confirmed, X unconfirmed predictions.

Transfer type	Subtype	Turkish	German
	I		
Syntactic	M1	√	X
	M2	√	
	M3	√	
	E		X

As reported by Larsson et al.'s (2020) study, advanced level learners of English do not seem to struggle with creating natural, appropriate usage patterns in adverb placement, which might be the case for German L1 group of this study as well.

4.3 Results on the effect of register

This section addresses research question 3: When the results are compared to those of Larsson et al., (2020), is there a discernable register effect?

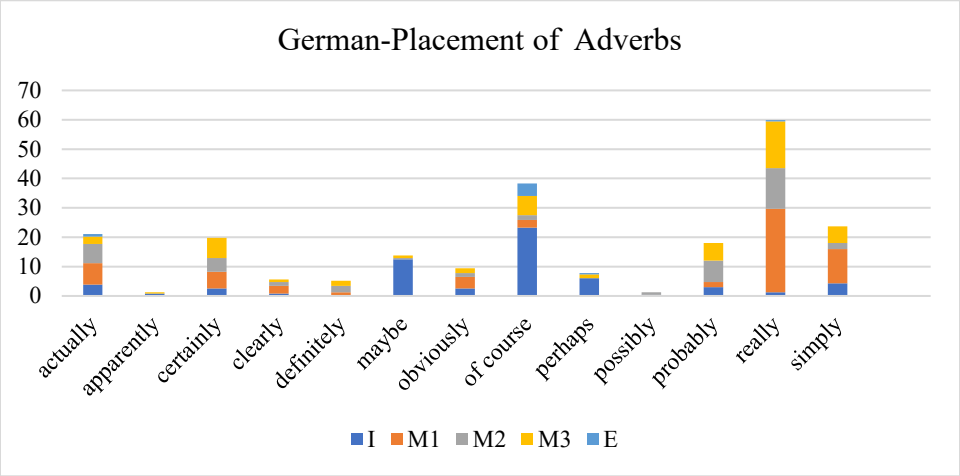
As explained earlier, the corpora of this study consist of student argumentative essays in contrast to the disciplinary writing samples of the Larsson et al., (2020) (theses, term papers, research articles). With respect to the features regarding NS and German L1 populations being the same, the main difference between these two studies lies in register; although some could argue that there might be proficiency differences too. I hypothesized earlier that different

registers are likely to yield different results in adverb placement or frequency rates. Based on this assumption, a discussion on the effect of register will follow.

When it comes to overall positional distribution of the adverbs, Larsson et al. (2020) study reported three of the medial positions (M1, M2, M3) as more frequent than the clause initial (I) in written data for German and NS groups (except for *maybe)*. By contrast, the findings of this study indicate a relatively higher preference for I. As seen below in *Figures 9* and *10*, in addition to *maybe,* two other adverbs (*of course* and *perhaps*) also have occurred in I most frequently.

Figure 9

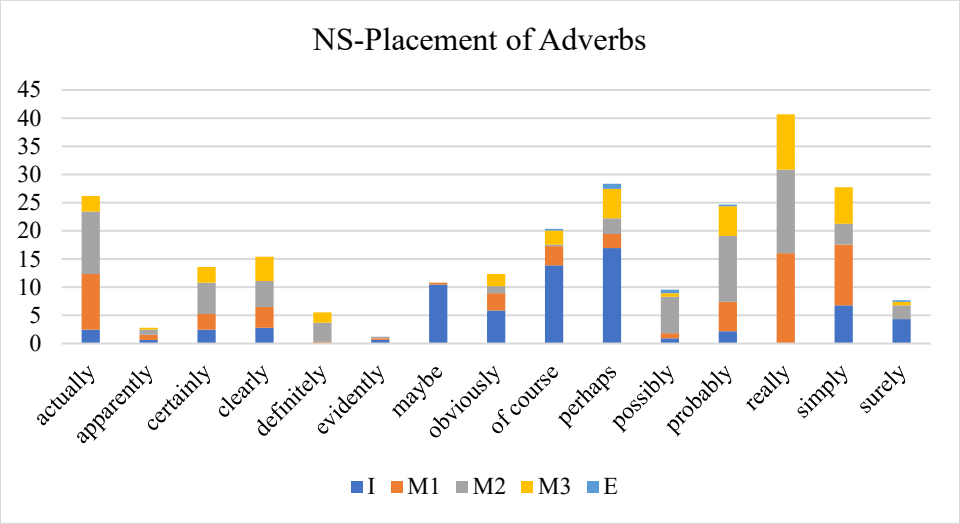
Placement of adverbs in German group, data normalized per 100.000



It should be noted that in this section, only German and NS data are sampled from both studies to make the results comparable.

Figure 10

Placement of adverbs in NS group, data normalized per 100.000



Clause initial positioning of adverbs is associated more with spoken mode. This is supported by the fact that I position was observed to be common only in NS spoken production in Larsson et al., (2020). However, a similar tendency for I is reported in this study with written texts. This could be explained by the register differences between two studies. For example, while a response to an argumentative essay requires heavy reliance on background knowledge and personal experience, theses and term papers dictate synthesis and textual borrowing. In other words, the written corpora of the original study must be loaded with informational content aiming to explain concepts to the reader by expositing, describing and interpreting facts (Biber & Conrad, 2019). Argumentative essays, by contrast, have rather personal motives of disseminating attitudinal knowledge or expressing stance, feelings and opinions. They are more similar to personal, spoken registers than informational, written ones in their communicative purposes, which makes them more subject to the I position of the adverb as in (39) and (40).

(39) […] **Apparently,** crime can be quite profitable if one has the right agent.

(LOCNESS_USARG.txt)

(40) […] **Actually,** we should see the universities as an instrument to shape our life.

(ICLE_TRCU1066.txt)

The clause final (E) position seems to be the least preferred alternative in both studies. Larsson et al., (2020) reported a clear avoidance of E in their written data, yet a comparative preference for it in spoken data. Only 16 instances of E position in the written data-set caused researchers to disregard E position in their analysis. Similar to clause initial (I), clause final (E) is also associated more with spoken registers (Larsson et al., 2020). This, to some extent, can justify the relatively more frequent instances of clause final position in the results of this study compared to Larsson et al.'s (2020). Argumentative essays, being closer to personal, spoken registers than informational writing must have allowed for higher rates of E position. As seen in the example (41) below, the purpose of the text for the writer to share their personal opinion and convince the reader accordingly rather than inform in a neutral manner.

(41) […] The far more interesting type is the modern show jogger, **of course.**

(ICLE_GEAU3079.txt)

In addition to the positional preferences for the adverbs, the overall frequency rates also display striking differences between the German and NS groups of both studies as displayed in Table 6.

Table 6

Adverb frequency of use across positions Larsson et al. (2020) vis-à-vis the current study, data normalized per 100,000.

Position	I	M1	M2	M3	E	Total
Larsson et al., (2020) (NS)	14	27	18	22	0	81
This study (NS)	70	60	69	74	2.5	275
Larsson et al., (2020) (German)	34	47	40	32	0.77	153
This study (German)	61	65	42	50	6	224

As seen in *Table 6,* both German and NS speakers made considerably more frequent use of epistemic adverbs in their written production compared to Larsson et al., (2020) (Larsson, personal communication, March 15, 2023). The rates of use are more than doubled in NS data, and almost doubled in German data in all positions except for M2, which look quite similar in two of the studies (42 for the original study, 40 for the current one). Given that the two NS and German groups of both studies are alike in other variables such as L1 background and English proficiency, the noticeable gaps in the frequency of use could be explained by register differences between the two written corpora. The population of the current study felt the need to use the listed epistemic adverbs more frequently to communicate their stance, judgement and evaluation of a given topic. Argumentative essay prompts require writers to express their attitude, propose a statement, and argue for it through the use of stance marking features. Epistemic adverbs of this study (*probably, possibly, really, maybe…*) are types of linguistic features that convey stance; thus, serve the communicative purpose correctly. On the other hand,

the written corpora of Larsson et al., (2020) consist of informational writing (term papers, theses, research articles), which borrow knowledge and facts from external sources by citing, integrating and synthesizing them instead of relying on writers' personal point of view or stance. In other words, these two university registers have different situational contexts. This seems to be the major reason for the frequency differences of epistemic adverbs, even in the data belonging to the same L1 groups of both studies. Once again, as for variation in writing, the moderating effect of register has been proven to be in effect regardless of NS or L1 status (Larsson et al., 2021).

5. Conclusion

This present study has investigated the clausal positioning of 15 epistemic adverbs in learner and NS written production. The focus was on the comparison of Turkish and German L1 groups to see what extent they would display native-like behavior and to what extent their varying degrees of typological differences would play a part in their adverb placement patterns. Therefore, Larsson et al.'s (2020) work on learner adverb placement has partially been replicated in this current study's methods and design. The analysis considered the effect of linguistic and extra-linguistic factors while tracing a possible cross-linguistic transfer. Moreover, the results have been compared against the original study to see the effects of a different register. In line with Larsson et al.'s (2020) findings, linguistic factors (presence/absence of auxiliary, verb type and adverb) were found to be more important predictors of positional distributions of the adverbs. However, L1 transfer seems to have made a bigger effect in this study (exclusive to Turkish data) than Larsson et al., (2020) reported.

Certain differences have been detected between Turkish and German L1 learners' adverb placement patterns. While Turkish group overused clause initial I and underused M positions, German group behaved more native-like by making use of all three M positions in a rather similar fashion followed by NS production. The overall difference reveals a certain level of cross-linguistic transfer with respect to Turkish learners since the grammar indicates I as the unmarked form for Turkish adverb placement. Other typological differences between Turkish and English language (absence of an auxiliary, different word order) may also account for a less target like use. These findings support previous studies of Cosmos (2018) and Pérez-Paredes and Bueno-Alastuey (2019) on adverb placement, both of which also reported similar deviations

from NS patterns with learners of typologically distant languages (Turkish and Chinese) compared to German and Norwegian L1s.

The effect of register has also been investigated vis-à-vis the findings of Larsson et al. (2020) in NS and German data. It has been observed that for both L1 groups, the written data of the current study (argumentative essays) involves higher frequency use of the listed adverbs than the original study. This study has also reported more instances of clause initial I and final E positions, which are often associated with spoken, personal registers. Although differences in the communicative purposes of argumentative essays and university disciplinary writing (term papers, theses, research articles) may account for this variation in adverb placement, one needs to be cautious in interpreting the findings as purely register-related. Both studies reported three specific adverbs: *maybe, of course* and *perhaps* occurring in I position most often, which could be about these adverbs themselves. As put forward by Larsson et al., (2020), this study also noted considerable inter-lexical differences in both NS and learner writing, which once again emphasizes the importance of taking lexis (the adverb itself) into consideration during instructional practices on adverb placement as well as materials development and assessment.

One limitation to this study is not having a precise idea about the proficiency levels of German and Turkish L1 learners. The corpus metadata states that while the majority of subset of rated texts in both L1 German and L1 Turkish texts are rated as B2 or C1 on the CEFR scale, the German L1 group can be expected to have slightly higher proficiency overall. However, as not all texts in the corpus are rated, the data does not allow for further investigation of it. The adverb placement analysis of German and Turkish L1 groups have been made on the assumption that they are mostly comparable; however, in the face of the discrepancies of use between the two different groups, more research needs to be done to see the effect of proficiency on adverb

placement. The same is true for taking the linguistic factors into account for future studies. Linguistic predictors having a more discriminatory power over NS status or L1 background once again underlines the importance of not limiting adverb studies to transfer issues. In addition, this research may offer valuable insights into the adverb placement choices of NNS groups who come from typologically distant L1 backgrounds in reference to NSs and other NNSs whose L1 bears more resemblance to English. The findings may inform the teaching of epistemic stance adverbs to both of the NNS populations.

As a final remark, this study aims to contribute to the descriptive grammar literature and therefore does not offer specific recommendations for teachers. Despite all categorizations and rules of adverb placement in grammar, there seems to be extensive variation regarding English learner and NS use. Since adverbs are at the intersection of word order and information structuring, adverb placement is considered to be a key feature to discovering language variation as well as distinguishing learner use form NS use, (Hasselgard, 2015; Larsson et al., 2020) which makes it worthy of the attention of both future pedagogical and research practices.

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