Language Exploration 2025, 1(2), 2970.
https://doi.org/10.59400/le2970

Article

Mixed speech of an early simultaneous bilingual: A longitudinal single case study on Turkish English Bilingualism

Nalan Şan[1,2]

[1] Istanbul Technical University, Istanbul 34467, Turkey; nalan.bozoglu@gmail.com, nalansan@itu.edu.tr
[2] Applied Linguistics, Bahçeşehir University, Istanbul 34353, Turkey

CITATION

Şan N. Mixed speech of an early simultaneous bilingual: A longitudinal single case study on Turkish English Bilingualism. Language Exploration. 2025; 1(2): 2970.
https://doi.org/10.59400/le2970

ARTICLE INFO

Received: 18 May 2025
Revised: 22 May 2025
Accepted: 27 May 2025
Available online: 18 June 2025

Abstract: Early bilingualism suggests that children can simultaneously acquire and differentiate between two different grammars, vocabularies and phonological systems when exposed to those from infancy. In this acquisition process, children make countless codemixing decisions. The present longitudinal and cross-sectional research aims to identify and analyze the main linguistic components in the mixed speech of such an early simultaneous bilingual child, Serdar in Turkish and English so as to reveal the underlying rationale for his codemixing decisions. The main techniques of data collection are verbal recording, observation, note taking and storytelling in this study. The data includes nine transcriptions of spontaneous informal talks, interactions during games, interactions while reading and ten transcriptions of stories as well as 427 mixed utterances (3247 words in total) of the child and their contexts from mother's logs between June 2020 and May 2021. The results demonstrated a need to extend the existing framework of reference for codemixing rationale in the bilingualism literature to include a new dimension, namely preference of the matrix language for idiomatic and metaphorical expressions. According to the findings, Turkish is the matrix language in Serdar's bilingualism indicated by a 2.37-fold increase in his utterances predominantly in Turkish syntax with occasional English words inflected with Turkish suffixes. Even though Turkish is the matrix language in 72% of all his mixed utterances, the child also uses English syntax even though his acquisition of English, as the non-matrix language, is relatively slower.

Keywords: early simultaneous bilingualism; mixed speech; translanguaging; longitudinal research; Turkish English bilingualism; single case study; matrix language

1. Introduction

Wei [1] describes an early bilingual person as someone who has acquired two languages early in childhood. Wei [1] also asserts that bilinguals tend to mix languages in the same sentence, a phenomenon referred to as codemixing. Even though there are various different studies that link bilingual children's mixing of elements from their two languages with a unitary underlying language system [2,3], recent evidence suggests that children's mixing may be related to mixed input by parents [1,4]. One reason for codemixing is the lack of expressions included in the language that is being used [5].

Code mixing is quite common in early bilingual children due to several different reasons according to Hoffmann [6] who summarizes the main reasons as follows: (1) If the child has acquired a linguistic item merely in one language but not yet in the other one, he or she may use the only linguistic tool he has available in order to express a certain lexical or grammatical meaning; (2) if the child cannot retrieve a linguistic item from his memory temporarily, he or she will probably fall back on an equivalent (closest) form in the other language; (3) if a linguistic item is more complicated, or

less prominent, in one language, the child might use the corresponding one from the other; (4) the child will frequently resort to mixed production as a result of frequent exposure to mixed input. Nevertheless, the underlying factors of codemixing may not be limited to these phenomena, which is why this study can further shed light on the existing literature related to the translanguaging decisions of early simultaneous bilingual children.

2. Literature review

2.1. Early bilingualism

There is accumulating evidence that suggests children can acquire and differentiate between two different grammars, vocabularies and phonological systems when exposed to those from infancy [7–10]. However, when children are exposed to two different languages from infancy, they will inevitably hear less of each especially when compared to the children that are exposed to merely one language from birth. This doesn't prevent these bilingual children from acquiring both languages though. In several studies [9,11] the ease of early bilingual acquisition in children is regarded as proof for the innateness of language, grammar in particular, as well as an indication of language acquisition being independent from effects of input variation. One inevitable conclusion is that children possess a remarkable skill to acquire multiple languages simultaneously especially if they are exposed to both languages from birth. Despite overwhelming evidence for innatism, decreased linguistic exposure due to early bilingualism can cause the child to adopt only one of the two languages as his or her matrix language. This is one of the essential phenomena that is explored in this study.

Despite the comparably slow rate of their acquisition, Petitto et al.'s study [8] as well as Petitto and Kovelman's study [9] indicate that early bilingual children are similar to monolingual children when we consider the ages at which these children reach the fundamental milestones of language development such as uttering their first words, creating their first two-word compounds, achievement of a 50-word lexicon etc. The grammaticality of their utterances is also comparable, i.e., use of finite verbs, pronominal subjects and negation [12]. On the other hand, three other studies investigated vocabulary and grammatical development in young bilingual children and the results showed correlation within languages though not across languages [13–15]. Therefore, even though grammatical development is also closely associated with the amount of English exposure these children have, it is also likely to be slower in early bilingual children.

Even though the vocabulary development in each language of bilingual children has been found to be within the normal range of variation for monolingual children in early studies [16], results of recent and large-sample studies point out the smaller English vocabularies of bilingual children when compared to their monolingual peers [17–22]. Nevertheless, it is also essential to mention the lack of any serious current claim that bilingual children are confused in their capability to acquire a language. As a matter of fact, in three different studies that have utilized measures of combined vocabularies in bilingual children, the bilingually developing children are comparable to the monolingually developing children [16,23,24].

2.2. Translanguaging and code mixing in early bilingual children

According to García [25], bilingualism is by no means "monolingualism times two" or "a bicycle with two balanced wheels," however, it is "more like an all-terrain vehicle," (p. 71) wheels of which "extend and contract, flex and stretch, making possible, over highly uneven ground, movement forward that is bumpy and irregular but also sustained and effective" (p. 45). This analogy depicts a really vivid picture of bilingual children's language acquisition process because forward movement is sometimes definitely bumpy, irregular, and unbalanced, but it is also sustained and effective. That is probably why, these children take full advantage of translanguaging defined by Canagarajah [26] as "the ability of multilingual speakers to shuttle between languages, treating the diverse languages that form their repertoire as an integrated system" (p. 401). García [25] included not only the diverse languages but also varieties of the same language in this intermingling process called translanguaging. As a matter of fact, today translanguaging can be regarded not merely as a language practice of bilinguals and multilinguals, but also as a pedagogical approach to facilitate literacy and language development both in early bilingual children and bilingual education. For instance, Williams [27] and Baker [28] use the term translanguaging to define pedagogical practices during which pupils listen to or read a lesson, a text in a book or an excerpt in a particular language and proceed to improve their work in another language.

Code mixing is quite common in early bilingual children due to several different reasons according to Hoffmann [6] who summarizes the main reasons as follows: (1) If the child has acquired a linguistic item merely in one language but not yet in the other one, he or she may use the only linguistic tool he has available in order to express a certain lexical or grammatical meaning; (2) if the child cannot retrieve a linguistic item from his memory temporarily, he or she will probably fall back on an equivalent (closest) form in the other language; (3) if a linguistic item is more complicated, or less prominent, in one language, the child might use the corresponding one from the other; (4) the child will frequently resort to mixed production as a result of frequent exposure to mixed input.

In another case study of bilingual children's mixed speech, Smith [29] also reported the occurrence of mixed speech. English and Chinese were mixed in this case. He concluded that because the parents spoke to the children in both languages, there was no clear demarcation between the two.

Tabouret-Keller [29] also studied the mixed speech of a child from working class background. The father was an early simultaneous bilingual from birth in French and German while the mother spoke an Alsatian German dialect as well as French as a late consecutive bilingual. Both parents mixed both languages in speaking to their child, which is quite similar to the current case in this study. By two years of age, the child had her own French than German lexicon while 60 percent of her sentences were comprised of mixed utterances. Tabouret-Keller also concluded that the child became aware of the fact that she was speaking two languages at the age of 5. This is also the same for Serdar, the subject of this study who has become aware that, unlike most of his peers, he spoke both English and Turkish after he turned 5.

The third similar case study reporting mixed speech of an early bilingual is

presented by Berling [29]. He worked on his own son's acquisition of English and Garo, a non-Indo-European language of the Bodo group of Tibeto-Burman. The child was exposed to only English until he came to India at 1:4. Then, he was increasingly more exposed to monolingual Garo speakers and Garo became his dominant language. At the age of 2:9 he had acquired separate phonemic systems for the vowels in the two languages even though the consonant systems never got differentiated. He kept using the Garo consonants as replacements for the English ones. His morphological development in Garo was also more advanced when compared to that of English. Before he turned 2, he had already learned the verb suffixes marking the past, future, and imperative. Adverbial affixes interrogative suffixes noun endings and numerals followed shortly after. Furthermore, the child integrated English vocabulary into Garo and added Garo endings to English words. The roots of his words were always in English, even though the suffixes -ko (direct object marker) and -aha (past tense), word order and phonology were in Garo. After a while, when he started forming English sentences, he inserted Garo words into them and added English inflections to these Garo words. In addition, the child apparently never confused word order between the two languages.

The mother spoke English to the child while the father spoke English and Garo during their stay in India. The child was 3:4 and fluent in Garo when they left India. After they got back to the US, his father attempted to speak Garo with his son on different occasions, which was apparently not enough to maintain the language. He had difficulty even with simple Garo words within the first six months in the novel environment.

2.3. Types of early childhood bilingualism

Romaine [29] categorized early childhood bilingualism into six types, the characteristics of which can briefly be summarized as follows in **Table 1**:

Table 1. Types of early childhood bilingualism.

Type 1: One person-one language Each parent has a different heritage language, but each also has some proficiency in the other's language to some extent. One of the parents' heritage language is the dominant language in the community and each parent speaks his or her own heritage language to the child from birth.
Type 2: Non-dominant home language/one language-one environment The parents have different heritage languages. The heritage language of one parent is the dominant language of the community and both parents speak the non-dominant language to the child, who is completely exposed to the dominant language only outside his or her home.
Type 3: Non-dominant home language without community support Both parents have the same heritage language. The dominant language is not the heritage language of the parents. Both parents speak their shared language to the child.
Type 4: Double non-dominant home language without community support The parents have two different heritage languages. The dominant language is different from either of the parents' heritage languages. Each parent speaks his or her own language to the child from birth.
Type 5: Non-native parents Both parents have the same heritage language. The dominant language is the same as that of the parents. One of the parents always speaks to the child in a language that is not his/her heritage language.
Type 6: Mixed languages Both parents are bilingual. Some parts of community can also be bilingual, and parents code-switch and mix languages when speaking to the child.

The current case can be categorized as type six early childhood bilingualism since both parents are bilingual and they have also switched and mixed languages when speaking to the child since birth. Even though Turkish is the dominant language in the country, the social circle of the family mainly consists of early, late and emergent bilinguals who frequently switch and mix the two languages at their will. The research questions of this study are also as follows:

- What are the main linguistic components that mark Serdar's mixed speech?
- What language patterns does Serdar mix in terms of syntax, morphology and lexicon while code-mixing and translanguaging?
- Which factors shape the translanguaging decisions of the child?

3. Bilingual context of the child

Serdar's father, Jonah is a late consecutive bilingual (Turkish-English) while his mother, Nil is also a late sequential bilingual (Turkish-English). Both parents are native Turkish speakers with English as an additional language. Serdar was 5 years old when the data was collected. He is an early simultaneous bilingual from birth. Both parents are quite proficient in English and Turkish and they have spoken both languages to the child from birth. He had a Turkish caretaker (monolingual) for a year (between the ages of 1:5 and 2:5 with only 3.5–5 h of exposure to monolingual Turkish a day).

Both parents have switched languages based on context since the birth of the child. The daily amount of English exposure was approximately 2–4 h of parental interaction. His father switched between Turkish and English through topic shifts, while his mother frequently engaged in a lexical insertion process, embedding English words into Turkish sentences. In addition, she often did inter-sentential code switching between Turkish and English. In other words, she alternated between the two languages in a single discourse; after uttering a sentence in Turkish, she could continue in English or vice versa. The family also changed the language they spoke based on their immediate surroundings. For example, since the grandmother (from the father's side) and the grandparents (from the mother's side) couldn't understand English, the family (Jonah, Nil, and Serdar) mostly spoke Turkish when they were around so as not to offend them in any way. Serdar was well aware that both of his parents could speak both languages; hence, he hasn't assigned any of the two languages to a single parent. That is to say, he associates both languages with both parents. While speaking at home, he mostly primes to the language of the interlocutor interchangeably. The interlocutor can be his mother speaking English or his father speaking Turkish; this doesn't make a difference to him.

When Serdar watches cartoons, animated movies or plays computer games, these are always in English because the parents want to maximize his exposure to the English language. He has several different board games in English. *Zingo* and *Guess Who* are his favorites. He never plays those games in Turkish. However, there are some activities that he prefers to do only in Turkish. For instance, he loves riddles, but he wants them to be asked only in Turkish. For instance, "boş gider dolu gelir, ağzımıza hoş gelir (kaşık)" (It comes full, but leaves empty-handed. It brings different delights-Answer: Spoon) is among his favorite riddles. When the parents watch

movies or TV shows (mostly from Netflix) in their leisure time at home, they prefer to watch them in their original languages (with subtitles when necessary). Nevertheless, Serdar reacts negatively when the original language of a film or TV show is different from English and Turkish since he can't read the subtitles.

As for the books, the family has a bilingual library. Serdar chooses several books to be read to him by his parents on a daily basis. He usually chooses both English and Turkish books (usually an even number for each). Whoever has more free time on that particular day, his father or his mother reads all the books to him. He doesn't mind his mother reading in English or his father in Turkish. However, he gets agitated when his mother starts consecutive translation (reading a Turkish book in English or vice versa). He proclaims, "Mama, that is a Turkish book, why are you reading in English?" He memorizes the contents of his books in the language they are written, and he wants them to be read in that language only.

During the storytelling episodes, Serdar hesitated a lot to allow for thinking as he kept adding new characters and events to his stories. He codemixed between Turkish and English as his stories unfolded. He always sounded enthusiastic to tell his stories as his mother encouraged him to finish once he started a new story.

While the data was collected, both parents spoke predominantly Turkish with the researcher while some codemixing between Turkish and English was also observed. Turkish was the matrix language for Serdar as it was more often used in the family and seen as more prestigious and practical for the child since all the other relatives were monolingual Turkish speakers.

4. Research method and data collection tools

The four main techniques of data collection are verbal recording, observation, storytelling and note taking in this study. The researcher systematically observed and recorded the development of Serdar's linguistic performance, especially his spontaneous speech and storytelling from June 2020 to May 2021 on a weekly basis. There are 19 recordings which include various different instances of interacting with books, talk during a game, spontaneous informal talk in addition to different instances of storytelling. The data also includes notes from his mother's log, whenever she heard him producing mixed speech, she added his utterances and their context in her log. In total, there are 427 mixed utterances (3247 words) in this log. We used the note-taking technique because it was simply impossible to record each and every mixed utterance of the child during the research period. The inclusion of each utterance's context was essential to better understand the nature of his code mixing and translanguaging.

In order to establish credibility, the setting and the particular context of both the child and the family are described in rich detail in part 2.3 (Types of early childhood bilingualism) and part 3 (Bilingual context of the child). Thick descriptions of the emerging overarching themes can also be found in the fifth part of this research. The main purpose of such "deep, dense and detailed accounts" called thick descriptions [30] is to create verisimilitude [31]. These thick descriptions are relevant to all types of qualitative research [32]. Furthermore, ample descriptive data is provided throughout this study so as to ensure transferability [33].

Extensive interpretive commentary is also provided by the researcher throughout

the presentation and discussion of the findings to incorporate reflexivity [34] as a validity procedure in this study. In addition, "validity-as-reflexive-accounting" principle is also applicable because both raw and coded data was visited "over and over again to see if the constructs, categories, explanations, and interpretations make sense" [35] (p. 339).

The primary data of this study is twofold: first, in the form of 427 utterances (3247 words) that contain language mixing (Turkish-English) from the mother's log; second, as dialogues and stories (19 different recordings). For the first data set, a descriptive linguistic analysis was first conducted to scrutinize the mixed utterances from the mother's log at various different linguistic levels, such as syntax, morphology, and lexicon. The main purpose of this linguistic description was to clarify the nature of the mixed languages used by the subject. Then, the data was color-coded as the beginning stage of data analysis in the initial coding process [36]. Then, through focused coding, the color-coded data was categorized in terms of thematic or conceptual resemblance [36]. When grouping these linguistically analyzed and color-coded sentences under the overarching themes of frequently repeated morphological patterns, sentence structures, and double meaning-making, inductive thematic analysis was adopted. According to [37], inductive thematic analysis involves a process of coding the data without trying to fit it into a pre-existing coding frame or the researcher's analytic preconceptions. Only after an adequate number (at least twenty-three different utterances within similar contexts) of systematically repeated translanguaging patterns were observed, these were grouped under each overarching theme. Since the frequency counts were significant to reach conclusions at a more micro level [38], content analysis was conducted as well.

Table 2. Spradley's semantic relationships [39].

1: X is a kind of Y
2: X is a place in Y
3: X is a part of Y
4: X is a result of Y
5: X is a cause of Y
6: X is a reason for Y
7: X is a place for doing Y
8: X is used for Y
9: X is a way to do Y
10: X is a stage or step in Y
11: X is a characteristic of Y
12: X is a place for doing Y

The second set of data, including the storytelling data and other spontaneous conversations, was analyzed using Spradley's [39] patterns of semantic relationships shown in the **Table 2** to uncover the reasons behind the child's translanguaging decisions. This pattern was chosen because it fits any culture or situation [39], and the items in the data set could be substituted into the phrases in it. The storytelling method was specifically selected to gather data so as to open a free and creative space for the

subject to use his full language repertoire [40]. During storytelling, the mother never introduced new characters or items into the story. She merely mirrored her son's language preference and asked confirmatory, or follow-up questions strictly based on what he had just said to encourage the unfolding of the events in each story. In other words, she merely provided minimal encouragement so as not to interfere with his translanguaging decisions.

5. Results

In order to answer the first and second research questions related to the main linguistic components and the language patterns that mark Serdar's code-mixing and translanguaging, 427 different utterances from the mother's log were analyzed. Some of these utterances were comprised of several sentences that belong to the same context. The data also included 3247 words. Translanguaging patterns and components used by the subject are indicated in parts5.1, 5.2, and 5.3, while the factors that shape translanguaging decisions of the subject (the third research question) are explored in 5.4 using 19 transcriptions of interacting with books, talk during a game, spontaneous informal talk, and storytelling.

5.1. Frequently-repeated morphological patterns

Serdar often adds Turkish morphological endings to English stems in otherwise Turkish sentences as indicated by the following Sample-Utterances **Table 3**. These Turkish inflections include possessive markers, prepositions, case markers, adverbial and tense markers. Even though there are one or two English words inflected with Turkish suffixes, the rest of these sentences are in Turkish as in the following examples. The linguistic analysis is included under each utterance.

Table 3. Sample utterances.

Utterances	Context	Interlocutor	Date
Ben baba değilim, dökemem **s**oap'u. I CANNOT lift it. **Analysis:** He adds the Turkish accusative suffix, -u to the English noun, soap	He wants his father to lift the big liquid soap container and pour some of it into the dispenser	Father	June 2020
Bakayım **living room'da** yer var mı? **Analysis:** He adds the Turkish locative suffix, -da to the English collocation, living room.	He wants to open the box of his huge puzzle. He needs a lot of space to do that puzzle.	Father	June 2020
Why did you, neden bana bırakmadın **lift'me** işini? Because I am just a little bit strong? **Analysis:** He adds the Turkish derivational suffix, -me that turns a verb into a noun to the base form of an English verb, lift.	He sees his mother trying to lift the big toy box. He wants to help, but he thinks he is not strong enough.	Mother	June 2020

As a general pattern, he always uses the base form of the verbs and singular forms of nouns in English whenever he adds Turkish suffixes. It is also important to note that all of these Turkish suffixes are inflectional, not derivational. The subject also pays attention to the Turkish rules of vocal harmony while adding these inflectional suffixes to the English pronunciations of the base forms. As for the density, the average monthly density of such utterances has increased 2.37-fold during the last four months of the last 12 months as shown in the below Density **Table 4**. This particular increase, coupled with the fact that 309 (slightly more than 72%) of all his mixed utterances

(427 in total) in the mother's log are predominantly in Turkish syntax shows that Turkish is the matrix language in his bilingualism, that is, one language as the main or base language into which elements from the others are embedded [41].

Table 4. Density of the child's utterances.

Total density for the first eight months	Average density per month	Total density for the last four months	Average density per month	Increase
64	8	76	19	2.37-fold

5.2. Frequently-repeated sentence structures

As shown in the following Sample-Utterances in **Table 5**, Serdar also inserts Turkish words into English sentences. He always inserts the Turkish word into the correct place in the English sentence. That is to say, he pays attention to the English word order even though one or two words are Turkish in these sentences. On the other hand, he adds the English plural marker -s to the base forms of Turkish nouns in only two instances: *paras* (moneys) and *sürpriz yumurtas* (surprise eggs). Thus, he rarely inflects these Turkish words with English suffixes.

The below Density **Table 6** also revealed that the frequency of such utterances actually decreased 0.35-fold over the last four months. This indicates that even though there is a slight decrease, the child still uses English syntax as the matrix, which is a sign of simultaneous bilingualism.

Table 5. Sample utterances.

Utterances	Context	Interlocutor	Date
You can give me some **bardak**, I couldn't find it. **Analysis**: The Turkish noun, bardak (glass) is inserted into the correct place in the English sentence. The Turkish word is not pluralised though.	He is talking to his father, but he can't remember the English word for bardak.	Father	June 2020
I will pick up **kılçık**. **Analysis**: The Turkish noun, kılçık (fishbone) is inserted into the correct place in the English sentence. The word is not inflected.	He is trying to pick the fish bones.	Father	July 2020
This is dark blue but this is **açık** blue. **Analysis**: He inserts the Turkish adjective, açık (light) into the correct place in the English sentence.	He is offering his father two shades of blue while coloring together.	Father	July 2020
It looks like green web and **mor** web. **Analysis**: He inserts the Turkish adjective, mor (purple) into its correct place in the English sentence.	He is pointing at the colorful spider's webs in his book.	Father	July 2020

Table 6. Density of the child's utterances.

Total density for the first eight months	Average density per month	Total density for the last four months	Average density per month	Decrease
73	9.2	24	6	0.35-fold

5.3. Double meaning making

Serdar often tries to reinforce what he wants to say by repeating the exact same, or similar utterances in both languages successively as shown in the following Sample-Utterances **Table 7**. There are 23 such utterances in total. Out of these 23 utterances, the father was the interlocutor in only 3 of them while the mother was the interlocutor in 19 of them. In the remaining one, mother's late bilingual friend was the interlocutor.

Since the father was working abroad during the last four months of the data collection period, there was a 1.84-fold increase in double meaning making as revealed by the below Density **Table 8**.

Table 7. Sample utterances.

Utterances	Context	Interlocutor	Date
Çünkü nereye gitçeğini bilmiyor ki. He don't know where he go. A bit here. This side. **Analysis**: The Turkish sentence translates as "because he doesn't know where he will go."	He is playing with his toy cars.	Father	July 2020
Bak geçiyor, it goes away. **Analysis**: The Turkish sentence translates as "Look, it is passing."	He is pointing at the garbage truck that he sees through the window.	Mother	July 2020
Sen çocuk değilsin zaten. You are not a boy. You are a human. **Analysis**: The Turkish sentence translates as "You are not a kid."	He objects when his mother wants to share his candy.	Mother	August 2020

Table 8. Density of the child's utterances.

Total density for the first eight months	Average density per month	Total density for the last four months	Average density per month	Increase
12	1.5	11	2.75	1.84-fold

5.4. Translanguaging decisions

So as to answer the third research question related to the factors that shape the child's translanguaging decisions, Hoffman's [6] framework of reference for codemixing rationale was used and the emerging sub-themes include (1) incomplete acquisition of a linguistic item, (2) retrieval problems, (3) avoidance of complicated linguistic items, (4) mixed production due to mixed exposure. Nevertheless, a fifth sub-theme of (5) preference of the matrix language for idiomatic and metaphorical expressions was also quite prominent even though these aren't mentioned in Hoffman's framework.

(1) Incomplete acquisition of a linguistic item: The subject makes use of whatever linguistic tool is available in his repertoire. If he has not acquired an item in one of the target languages, he merely codemixes to use the already acquired lexical and grammatical items. For instance, in the Sample-Utterances **Table 9**, as he has not acquired the lexical items; "too far away" "collide head-on" "run out of gas" "tow truck" and the grammatical aspect of tag questions yet, he resorts to their Turkish equivalents. The fact that he cannot use any of these lexical and grammatical items in English throughout all the data sets indicates the instance of incomplete acquisition. In the last example, the Turkish notion of "mahalle" to mean all the people living in a certain district does not exist in English. Thus, he just inserts the Turkish word into the English sentence.

Table 9. Sample utterances.

Story 2 (20.02.2021) Nil: Yes, what else? Serdar: And the little ghost was going a town. **But he, it was, ... çok uzaktı orası**.
Story 3 (28.02.2021) Serdar: His name is No. Nil: OK. That's a very weird name, but go on. Serdar: And he was going all of the traffic. When there is traffic, he go, … üstüne geliyor arabaların, the man does that.
Nil: Why did he stop? Serdar: **Because … arabanın benzini bitti sonunda**. Nil: He ran out of gas in the middle of the road? Serdar: Hı hıı, and **then some çekici comed and saved him. He goed where he need to go. It put him there**.
Serdar: **It was weird, de mi**? Nil: Of course it is. And then?
Story 8 (17.04.2021) Serdar: **It's funny, de mi**?
Story 7 (05.04.2021) Nil: Were the family scared because of the alien? Serdar: Yes, all of the family. **They will kill all of the mahalleyi**.

(2) Retrieval problems: As shown in **Table 10**, when the child has difficulty in retrieving a linguistic item especially in English (non-matrix language) from his memory temporarily and he wants to keep up with the flow of the conversation, he uses its Turkish (matrix language) equivalent as in the following examples. He is actually capable of using the lexical items; "get old" "secretly" "steal" "dig" "gold" "burn" "space" as he used these on several occasions during the data collection period. However, his pressing need to keep up with the pace of the conversation causes him to have a temporary inability to retrieve the items from the non-matrix language and, hence he falls back on his matrix language for quicker access.

Table 10. Sample utterances.

Story 1 (14.02.2021) Nil: She died??? How did she die? Serdar: **She … (a long pause) Yaşlandı, eeeee nasıl olabilir**.
Story 2 (20.02.2021) Nil: He was making cushions? Serdar: All the time, **he is getting and gizli gizli in the shop çalıyor**.
Story 4 (05.03.2021) Nil: He was a little boy? OK. What happened to Buddy? Serdar: And then she slept on his house. **He do … kazdı ground'u**.
Nil: What was in the treasure chest? Serdar: **Altın işte, ne olcak**.
Story 5 (12.03.2021) Nil: And then what happened? Serdar: All of the police died because **she … yaktı police station'ı, that's why**.
Story 8 (17.04.2021) Nil: What does he do? What is his job? Serdar: **Go to the uzay**.

(3) Avoidance of complicated linguistic items: As indicated in **Table 11**, the child often chooses to simplify a certain grammatical aspect and he prefers the less

complicated version of any lexical or grammatical item from the two languages. In the first two examples below, as he has difficulty in formulating the noun clauses, "it (the map) showed where the treasure was" and "Do you know what his name was?" in English, he prefers their Turkish versions. This difficulty to formulate noun clauses in English is also evidenced by his inconsistent and often inaccurate use of the English noun clauses in the data set. In the third example below, the subject could not formulate the grammatical structure, adjective + enough + to do something and prefers the Turkish equivalent of "old enough to play (org games)". The fourth example reveals his struggle to formulate a time clause in English, which is also evidenced by his inconsistent use of time clauses in English throughout the data.

Table 11. Sample utterances.

Story 4 (05.03.2021) Nil: What was on the map? Serdar: **It it (stammers and thinks) … hazine nerde olduğunu gösteriyordu**.
Story 6 (25.03.2021) Serdar: He has a friend ama adını unuttum. Nil: That's why he can't call him? Serdar: hı hı. And she remember the name. When it was nine o'clock. **Adı neydi biliyon mu**?
Nil: But little boys and little girls shouldn't play org games. Serdar: **The little boy was yeterince büyüktü oynamak için**. That's why they get it.
Story 7 (05.04.2021) Nil: Yangın çıkmadı demiştin ama? Serdar: **Gunshot işte aşağı gelince there was a fire**.

(4) **Table 12** demonstrates that the subject also resorts to double meaning making and translanguaging as he is frequently exposed to mixed language input especially by his mother who often repeats the exact same utterance in both languages while talking to the child. Therefore, as seen in the following example utterances, the child often feels the need to repeat the meaning in both languages consecutively.

Table 12. Sample utterances.

Story 2 (20.02.2021) Nil: OK, thank you very much. Serdar: **You, sen want more stories**?
Story 4 (05.03.2021) Nil: **They got rich**? Serdar: **Zengin oldular**. End of the story.
Story 6 (25.03.2021) Serdar: Ama sonra the two boys grow up and the boy get a big man sonra. The Mario was a big man too, and the girl was a big man too. **And they played org games**. **Org game'i de çok oynadılar**. End of the story.
Story 7 (04.05.2021) Nil: With the alien? What happened to the alien? Serdar: No, yalnızca. Bi de **alien boş bir tane yerde insan oldu**. **She did transform**. There was nothing

(5) Preference of the matrix language for idiomatic and metaphorical expressions: The subject uses a limited range of idiomatic and metaphorical expressions in his daily life. However, it is striking to note that almost all of these expressions are

in his matrix language. He utters only one idiomatic expression frequently and consistently in English which is also indicated in the following Sample-Utterances **Table 13**.

Table 13. Sample utterances.

Idiomatic and metaphorical expressions in Turkish
Serdar: **Helak olduğum** için gözlerim öyle kızarık. (My eyes are red because I have come undone.)
Serdar: **Dengesiz dengesiz hareketler** yapıyor. (He is acting like a deranged person.)
Serdar: **Karpuzlama** basket attım. (I threw the ball as if I was throwing a watermelon.)
Serdar: I'll take the remote and close it **insan gibi**. (I will turn of the TV using the remote-as opposed to unplugging- like a decent person.)
Serdar: You cheated. **Dağlara taşlara atttın** gene topu. (I threw the ball too far away.)
Serdar: **Ayıklarız** seni robotçuk! (We will defeat you little robot!)
Serdar: Baba bitirmen **yıl sürdü**! (Daddy, it took you ages to finish!)
Serdar: **Morning'in körü** şu an! (It is way too early in the morning at the moment!)
Serdar: Şimdi de buraya **oturasım geldi**. (I now feel like sitting here.)
Serdar: **Yakamdan çık** anne! (Get off me, mama!)
Serdar: **Amanın** çok tatlı bunlar! (How cute are these!)
Idiomatic and metaphorical expression in English
Serdar: Mama, this **tastes like paper**! Yemem ben bunu.

6. Discussion

The analyses of Serdar's mixed utterances and translanguaging patterns from the mother's log at the above-mentioned morphological, syntactical, and lexical levels clearly indicate that the code mixing and translanguaging occur at all linguistic levels at the age of 5:9. He may have a single lexical and syntactical system in his mind for both languages, Turkish and English. Despite using a single system for both languages, a 2.37-fold increase in the child's use of predominantly Turkish syntax with occasional English words inflected with Turkish suffixes indicates that his acquisition of the Turkish syntax is comparatively fast and efficient. In addition, 309 (slightly more than 72%) of all his mixed utterances (427 in total) are predominantly in Turkish, which shows that Turkish is the matrix language in his bilingualism, that is, one language as the main or base language into which elements from the others are embedded [41].

Further evidence of the child's preference for the comfort of his matrix language accumulated when the semantic relationships were being scrutinized so as to uncover the determining factors in his translanguaging choices. He falls back on his matrix language (1) when there is incomplete acquisition of a particular grammatical and linguistic item in English, (2) if a certain English grammatical structure is too complex for him to use it in a consistently accurate manner, (3) in case he wants to keep up with the fast pace of the conversation and cannot easily retrieve an item from his non-matrix language. As a matter of fact, all of these reasons for codemixing except for keeping up with the pace of the conversation have previously been identified by Hoffman [6] as quite common in early bilingual children. However, in this study there is another intriguing rationale behind the subject's preference for his matrix language: he displays a marked tendency to use Turkish for idiomatic and metaphorical expressions which are also reinforced in various different contexts inside and outside of his home not only by the social circle of the family but also by the Turkish media he is exposed to. This particular result is in line with another longitudinal study of an early

simultaneous bilingual child, Maya who was also raised in Turkish society [42]. The researchers emphasize that Maya admits certain difficulties in English which are related to vocabulary, and idiomatic expressions in particular.

The findings also indicate that the child resorts to double meaning-making strategies, especially while talking to his mother, who has been working as an English teacher for the last fourteen years and frequently code-switches between English and Turkish to get her message across in her lower-level classes and in her personal life out of habit. This double meaning-making increased 1.84-fold over the last four months of the data collection period because the father was working abroad and the child was predominantly exposed to his mother's speech. This phenomenon also provided further evidence for the subject's mixed production due to mixed exposure. Serdar's selective use of the double meaning-making strategy, especially when talking to his mother, is congruous with Quick et al.'s findings [43], which have shown that many of the linguistic units that the bilingual child uses (74%) correlate with units in the child-directed speech by the parents, which implies the fact that bilingual children form their code-mixed utterances based on both concrete lexical strings and partially schematic patterns they have previously heard. This finding is also in accordance with both the theory of child bilingualism type 6 (mixed languages) suggested by Romaine [29] and Fauziati's [41] research, which revealed that another early simultaneous bilingual child with bilingual parents who frequently use a communication strategy of code switching and code mixing has no clear demarcation between Indonesian and Javanese.

Another significant finding of this study is that Serdar frequently chooses to add Turkish inflectional suffixes to the base form of English words while he rarely adds English suffixes to Turkish words. The fact that Turkish is an agglutinative language, and the amount of Turkish input is relatively higher (the family lives in Istanbul) may have caused the child to acquire the Turkish inflectional suffixes earlier than the ones in English. This finding is in line with a previously mentioned result: Turkish is the matrix language into which elements from the English language are gradually embedded. Also highlighted in the literature review of this study, exposure-based accounts of language acquisition in bilingual children [44–49] demonstrate that early bilingual children typically need more time than monolingual children to acquire the two languages that they are exposed to because the amount of exposure is less for each language. In Serdar's case, the amount of exposure to English is by no means comparable with Turkish.

7. Conclusion

The findings of the current study showed that Turkish is the matrix language for Serdar and the rate of language acquisition is slower in English when compared to Turkish. Hoff et al.'s research [50] also highlighted that the rate of language acquisition is slower for children that are exposed to two languages instead of only one. Thus, it is no surprise that Serdar's rate of acquisition of English, which has already been identified as his non-matrix language, is relatively slower. The results also demonstrated a need to extend Hoffman's [6] framework of reference for code-mixing rationale to include a fifth dimension to his existing framework, namely

preference of the matrix language for idiomatic and metaphorical expressions. A clear implication of this result is that early simultaneous bilingual children may experience difficulty in idiomatic and metaphorical expressions in the language to which they are relatively less exposed within their immediate surroundings. This particular result sheds light on why idiomatic expressions, which are considered to behave like bound morphemes, show a strong tendency to be uttered monolingually [1].

Acknowledgments: I would like to thank my dear son, Selim Şan, from the bottom of my heart for all the precious moments that we got to spend together as I collected the data of this research. It is the moments like these that make life worth living.

Institutional review board statement: Not applicable.

Informed consent statement: Informed consent was obtained from all subjects involved in the study.

Conflict of interest: The author declares no conflict of interest.

References

1. Wei L. Dimensions of bilingualism. In: The bilingualism reader. Routledge; 2020. pp. 3-22.
2. Keller M. Compositionality: Evidence from Code-Switching. Formelhafte Sprache. 2020; 3: 197-222.
3. Leopold W. A child's learning of two languages. In: Georgetown University Round Table on Languages and Linguistics. Washington, DC: Gerogetown University Press; 1954. pp. 19–30.
4. Genesee F. Early bilingual language development: one language or two? In: The Bilingualism Reader. Routledge; 2020. pp. 320–335.
5. Salsabila, Siregar I, Sosrohadi S. Analysis of Code Mixing in Jerome Polin Youtube Content "Nihongo Mantappu." International Journal of Linguistics, Literature and Translation. 2021; 4(12): 01-08. doi: 10.32996/ijllt.2021.4.12.1
6. Hoffmann C. An Introduction to Bilingualism. London: Longman; 1996.
7. Kovács ÁM, Mehler J. Flexible Learning of Multiple Speech Structures in Bilingual Infants. Science. 2009; 325(5940): 611-612. doi: 10.1126/science.1173947
8. Petitto LA, Katerelos M, Levy BG, et al. Bilingual signed and spoken language acquisition from birth: implications for the mechanisms underlying early bilingual language acquisition. Journal of Child Language. 2001; 28(2): 453-496. doi: 10.1017/s0305000901004718
9. Petitto LA, Kovelman I. The bilingual paradox: How signing-speaking bilingual children help us to resolve it and teach us about the brain's mechanisms underlying all language acquisition. Learning Languages. 2003; 8(3): 5-18.
10. Werker JF, Byers-Heinlein K. Bilingualism in infancy: first steps in perception and comprehension. Trends in Cognitive Sciences. 2008; 12(4): 144-151. doi: 10.1016/j.tics.2008.01.008
11. Gleitman LR, Newport EL. The invention of language by children: Environmental and biological influences on the acquisition of language. In: Language: An invitation to cognitive science, 2nd. The MIT Press; 1995. pp. 1-24.
12. Paradis J, Genesee F. Syntactic Acquisition in Bilingual Children. Studies in Second Language Acquisition. 1996; 18(1): 1-25. doi: 10.1017/s0272263100014662
13. Conboy BT, Thal DJ. Ties Between the Lexicon and Grammar: Cross-Sectional and Longitudinal Studies of Bilingual Toddlers. Child Development. 2006; 77(3): 712-735. doi: 10.1111/j.1467-8624.2006.00899.x
14. Marchman VA, Martínez-Sussmann C. Concurrent validity of caregiver/parent report measures of language for children who are learning both English and Spanish. Journal of Speech, Language, and Hearing Research. 2002.
15. Parra M, Hoff E, Core C. Relations among language exposure, phonological memory, and language development in Spanish-English bilingually developing 2-year-olds. Journal of Experimental Child Psychology. 2011; 108(1): 113-125. doi: 10.1016/j.jecp.2010.07.011
16. Pearson BZ, Fernández SC. Patterns of Interaction in the Lexical Growth in Two Languages of Bilingual Infants and Toddlers. Language Learning. 1994; 44(4): 617-653. doi: 10.1111/j.1467-1770.1994.tb00633.x

17. Byers-Heinlein K, Gonzalez-Barrero AM, Schott E, et al. Sometimes larger, sometimes smaller: Measuring vocabulary in monolingual and bilingual infants and toddlers. First Language. 2023; 44(1): 74-95. doi: 10.1177/01427237231204167
18. Bialystok E, Feng X. Language proficiency and its implications for monolingual and bilingual children. Language and Literacy Development in Bilingual Settings. 2011; 121-138.
19. Thordardottir E, Rothenberg A, Rivard ME, et al. Bilingual assessment: Can overall proficiency be estimated from separate measurement of two languages? Journal of Multilingual Communication Disorders. 2006; 4(1): 1-21. doi: 10.1080/14769670500215647
20. Bialystok E, Luk G, Peets KF, et al. Receptive vocabulary differences in monolingual and bilingual children. Bilingualism: Language and Cognition. 2009; 13(4): 525-531. doi: 10.1017/s1366728909990423
21. Vagh SB, Pan BA, Mancilla-Martinez J. Measuring Growth in Bilingual and Monolingual Children's English Productive Vocabulary Development: The Utility of Combining Parent and Teacher Report. Child Development. 2009; 80(5): 1545-1563. doi: 10.1111/j.1467-8624.2009.01350.x
22. Marchman VA, Fernald A, Hurtado N. How vocabulary size in two languages relates to efficiency in spoken word recognition by young Spanish-English bilinguals. Journal of Child Language. 2009; 37(4): 817-840. doi: 10.1017/s0305000909990055
23. Patterson JL. Comparing bilingual and monolingual toddlers' expressive vocabulary size. Journal of Speech, Language, and Hearing Research. 2004.
24. Patterson JL, Pearson BZ. Bilingual Lexical Development: Influences, Contexts, and Processes. In: Bilingual language development and disorders in Spanish-English speakers. Paul H. Brookes Publishing Co.; 2004. pp. 77–104.
25. García O. Bilingual education in the 21st century: A global perspective. John Wiley & Sons; 2011.
26. Canagarajah S. Codemeshing in Academic Writing: Identifying Teachable Strategies of Translanguaging. The Modern Language Journal. 2011; 95(3): 401-417. doi: 10.1111/j.1540-4781.2011.01207.x
27. Williams C. Evaluation of teaching and learning methods in the context of bilingual secondary education (Spanish). [PhD thesis]. University of Wales, Bangor, Wales; 1994.
28. Baker C. Biliteracy and transliteracy in Wales: Language planning and the Welsh National Curriculum. In: Hornberger N (editor). Continua of biliteracy: An ecological framework for educational policy, research, and practice in multilingual settings. Clevedon, UK: Multilingual Matters; 2003. pp. 71–90.
29. Romaine S. Bilingualism. Oxford: Blackwell; 2000.
30. Denzin NK. Interpretive interactionism. Newbury Park, CA: Sage; 1989.
31. Creswell JW, Miller DL. Determining validity in qualitative inquiry. Theory Into Practice. 2000; 39(3): 124-130.
32. Younas A, Fàbregues S, Durante A, et al. Proposing the "MIRACLE" Narrative Framework for Providing Thick Description in Qualitative Research. International Journal of Qualitative Methods. 2023; 22. doi: 10.1177/16094069221147162
33. Drisko JW. Transferability and generalization in qualitative research. Research on Social Work Practice. 2025; 35(1): 102-110.
34. Olmos-Vega FM, Stalmeijer RE, Varpio L, et al. A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. Medical Teacher. 2022; 45(3): 241-251. doi: 10.1080/0142159x.2022.2057287
35. Patton MQ. Qualitative evaluation methods. Newbury Park, CA: Sage; 1980.
36. Saldaña J. The coding manual for qualitative researchers. Sage; 2021.
37. Braun V, Clarke V. Can I use TA? Should I use TA? Should Inotuse TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. Counselling and Psychotherapy Research. 2020; 21(1): 37-47. doi: 10.1002/capr.12360
38. Wilkinson S. Women with Breast Cancer Talking Causes: Comparing Content, Biographical and Discursive Analyses. Feminism & Psychology. 2000; 10(4): 431-460. doi: 10.1177/0959353500010004003
39. Spradley JP. The ethnographic interview. Fort Worth, TX: Harcourt Brace; 1979.
40. Flynn EE, Hoy SL, Lea JL, et al. Translanguaging through story: Empowering children to use their full language repertoire. Journal of Early Childhood Literacy. 2019; 21(2): 283-309. doi: 10.1177/1468798419838569
41. Fauziati E. Mixed speech of an early bilingual child: a case study on Javanese-Indonesian bilingualism. Kajian Linguistik dan Sastra. 2008; 20(2): 121-130. doi: 10.23917/kls.v20i2.4961
42. Şenaydın F, Dikilitaş K. Exploring child bilingual identity in Turkish context: a single case study. International Journal of Bilingual Education and Bilingualism. 2019; 25(1): 131-147. doi: 10.1080/13670050.2019.1639130

43. Quick AE, Hartmann S, Backus A, et al. Entrenchment and productivity: The role of input in the code-mixing of a German-English bilingual child. Applied Linguistics Review. 2019; 12(2): 225-247. doi: 10.1515/applirev-2019-0027
44. Gathercole VCM, Hoff E. Input and the acquisition of language: Three questions. Blackwell handbook of language development. Wiley; 2007. pp. 107-127.
45. Oller DK, Eilers RE. Language and literacy in bilingual children. Multilingual Matters; 2002.
46. Cychosz M, Villanueva A, Weisleder A. Efficient estimation of children's language exposure in two bilingual communities. Journal of Speech, Language, and Hearing Research. 2021; 64(10): 3843-3866.
47. Smolander S, Laasonen M, Arkkila E, et al. L2 vocabulary acquisition of early sequentially bilingual children with TD and DLD affected differently by exposure and age of onset. International Journal of Language & Communication Disorders. 2020; 56(1): 72-89. doi: 10.1111/1460-6984.12583
48. Segal D, Kavé G. Exposure duration is the main determinant of bilinguals' vocabulary knowledge. Applied Psycholinguistics. 2024; 45(6): 1000-1015. doi: 10.1017/s0142716424000389
49. Azpilicueta-Martínez R. Exposure or age? The effect of additional CLIL instruction on young learners' grammatical complexity while performing an oral task. Language Teaching Research. 2024. doi: 10.1177/13621688241303250
50. Hoff E, Core C, Place S, et al. Dual language exposure and early bilingual development. Journal of Child Language. 2011; 39(1): 1-27. doi: 10.1017/s0305000910000759