

Dialogue strategies for... cómo se dice entrenamiento de vocabulario?

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Abstract

We carry out a small-scale empirical study of a dialogue strategy (conversational pattern) found in second language learner dialogues where a language-assisting teacher is present, allowing learners to pick up new words and train on them while maintaining a conversation. We also provide a formal model of the observed conversational pattern including several frequently occurring variants, as well as a demonstration implementation which is able to reproduce the most common variant of the pattern.

1 Introduction and previous work

We are interested in dialogue strategies for vocabulary training in second language learner's dialogues. By finding and analysing recurring patterns in human-human dialogues, we hope to provide a solid empirical basis for the implementation of dialogue strategies in dialogue systems for second language learning.

Varonis and Gass (1985) provide a model for the negotiation of meaning, where the flow of a conversation is described as a linear progression which is interrupted when the communication between the interlocutors is ineffective, causing a “push-down” effect in the normal flow and preventing it from moving forward. These interruptions are the result of a trigger followed by a response, where the response serves to indicate a lack of understanding of (or other problem related to) the trigger. For the conversation to resume its linear progress, some negotiation of meaning must take place. An example (from *ibid.*) is shown below:

A: yeah. How long . . . will you be? will you be staying?

B: I will four months (trigger)

A: four months?

B: stay four months here until April

B's answer to speaker A's initial question is not understood properly by A, thus triggering both speakers to try to reach a mutual understanding in order to return to the main topic of the conversation.

Svennevig (2018) provides a CA (Conversation Analysis) style description of a conversational practice used by L2 speakers in acquiring new technical terms in the course of everyday workplace interaction on a construction site. Word search sequences contribute to disrupting the ordinary flow of the conversation. A word search sequence is described as the process by which the learner struggles to produce a full utterance, and is caused by a lack of vocabulary in the target language, thus motivating a request for assistance.

The learner's problems to complete the utterance could be accompanied by pauses and/or hesitation (Schegloff et al., 1977), and in some cases we find clues to indicate the missing information such as descriptions or code-switched explicit questions addressing how to say a specific word in the target language (Greer, 2013). As a collaborative word search sequence, the interlocutor is also involved, being responsible for providing the missing information after which the conversation prior to the interruption is resumed.

When the term is provided, it is repeated, displaying the L2 speaker's ability to pronounce the word. This repeat is treated as a request for confirmation by the L1 speaker, who often also provides further repeats of the word in question. See Figure 1 for an example. When searching for an L2 word that they cannot remember or do not have in their vocabulary, the speaker combines verbal and embodied means (such as gestures) to indicate the missing word and ask the interlocutor what it is called in Norwegian.

Using the terminology of Schegloff et al. (1977), the dialogue patterns described by Varonis and Gass are cases of other-initiated repair, whereas

1 TOM: e::h o::g (1.9) på khele tak,
 e::h a::nd (1.9) on whole roof,
 2 (1.1) ((TOM points to picture on brochure))
 3 TOM: ru:r, OG OG hva heter det på norsk. ((points out the window))
 pipes, AND AND what's it called in Norwegian.
 4 NIL: >ja häng[ränna.<]
 yeah gutter.
 5 DAG: [ja] ränn- [jaja
 yeah gutt- yeah yeah
 6 TOM: [ja
 yeah
 7 TOM: og den,
 and that,
 8 DAG: ja,
 yeah,
 9 (0.6)
 10 TOM: o:g tretti år garan (.) [ti:re,
 a:nd thirty years warran (.) ty
 11 DAG: [ja,
 yeah,



Figure 1: Dialogue example reproduced from Svennevig (2018)

those described by Svennevig are cases of self-initiated other-repair. Both these dialogue patterns can be expected to occur in second language learner dialogue, and the work presented here started out looking for the type of pattern identified by Varonis and Gass in second language learner corpora. However, such examples were fairly rare; instead, we found several instances of a pattern similar to that described by Svennevig, and attention shifted to this pattern.

This paper combines a small-scale empirical study of a conversational pattern similar to that described in Svennevig (2018) in second language learner dialogues. We also provide a simple computational model and a demonstration implementation which is able to reproduce the most common variant of the pattern. We believe such an implementation can be a very useful addition to conversational systems for second language learners. In Section 2, we describe the corpora and tools used, and then move on to the corpus study in Section 3. The formal model resulting from the corpus study is presented in Section 4, and the implementation based on the formal model is explained in Section 5. In Section 6, we provide conclusions and in Section 7 we describe future work.

2 Resources

The dialogue excerpts used in this paper were extracted from two different second language learner spoken corpora, namely, the European Science Foundation Second Language Databank (ESF)¹ and the Barcelona English Language Cor-

pus (BELC)². Both corpora belong to the SLABank collection³, a part of TalkBank responsible for providing corpora in order to study the field of second language acquisition and learning.

2.1 ESF

This database collects spontaneous conversations between adults of different nationalities that are learning a second language, including Dutch, English, German and Swedish, and native speakers of those languages. It should be noted that only those conversations where English is the target language were used in this study.

A wide range of topics are covered in these conversations, from descriptions and role-plays to cultural activities. In addition to the transcripts, audio files are also available, which is useful in understanding conversational contributions in cases where the context provided by the transcript is insufficient.

2.2 BELC

The BELC corpus collects speech recordings of Spanish students between the ages of 8 and 18 who are learning English as a second or even third language (Catalan is also spoken in the area where the research was conducted). This corpus contains transcripts of spoken dialogues from four different tasks: written composition, role-play, oral narrative, and oral interview. The dialogue extracts used in this study come from the role-play task, where a pair of students are presented with a real-life

¹<https://slabank.talkbank.org/access/Multiple/ESF/>

²<https://slabank.talkbank.org/access/English/BELC.html>

³<https://slabank.talkbank.org/access/>

situation where some negotiation takes place in the target language.

Importantly, there is also an investigator present, providing language support when needed. The investigator interacts with the subject using the target language, although it is shown that the investigator also knows the subject's mother tongue and resorts to it if necessary⁴.

2.3 TalkBank browser and SCoRE

In order to access and collect the data, both the TalkBank Browser and SCoRE were used. The former is a browsable database that lets you navigate through transcripts from various corpora as well as watching or listening to any audio or video files attached to them, if available.

SCoRE⁵ is a tool for browsing dialogue corpora, originally intended to search the British National Corpus (BNC) but now also able to access other corpora. The web interface allows the user to easily search a corpus with the help of regular expressions. While SCoRE was the main tool for browsing the ESF corpus to collect data, the TalkBank Browser provided access to the corpus' audio files. As for the BELC corpus, the TalkBank Browser was the platform used to navigate through it.

3 Corpus study

This section begins by addressing the process of data collection, from the sources to the methods used to gather the dialogue excerpts. Next, the steps for annotating the data together with a new taxonomy designed for this study are presented.

3.1 Data collection

In an initial exploratory phase, we originally searched for examples similar to those found by Varonis and Gass (1985), but these turned out not to be frequent in our material. Instead, we found numerous occurrences of interaction similar to those found by Svennevig (2018). However, the examples we found were also different from Svennevig's in an important respect. Since an investigator was typically present to provide language support, the

⁴It should also be noted that in some cases we also find *two* investigators who complement each other in order to play the same role within the conversation. These examples, although scarce, were included in this study since they did not differ in structure (or otherwise) from the more common dyadic interactions. When including these examples, we did not distinguish between the two investigators.

⁵<http://www.eecs.qmul.ac.uk/imc/ds/score.unstable/>

learner did not need to go beyond verbal communication to ask for missing words; instead they could ask the investigator using their own first language. Hence, instead of embodied means of indicating a missing word, we found code-switching interactions.

In the data collection phase beyond the initial exploratory phase, we therefore collected dialogue excerpts where a production problem together with code-switching take place. We understand a production problem as those cases where learners fail to find the necessary term or expression in the target language. By code-switching we here mean that in order to get help to find the correct word, they switch to their mother tongue⁶.

A number of search expressions were used to make the search for proper dialogue examples more efficient. Given that we are looking for situations where the learner is unable to provide a certain term or expression in the target language, hypothetically we could expect a question from the learner concerning the missing information. Hence, we used some sentences in both the target language (English) and the first languages (Italian, Spanish, Catalan) spoken by the subjects in the cited corpora that could serve to identify those potential examples: "how do you say", "come si dice", "cómo se dice", "com es diu". In addition, we searched for clarification ellipses, i.e. turns that repeated a word from the previous turn and that were understood as questions⁷ using the regular expression:

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*|^_1?.$
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This expression can be read as "A turn containing some thing (a word or expression), followed by another turn starting with that same thing followed by a question mark"⁸. The search process resulted in a collection of 40 suitable dialogue extracts.

⁶The term code-switching is generally defined as "the ability on the part of bilinguals to alternate effortlessly between their two languages" (Bullock and Toribio, 2009). However, in this study code-switching will not be associated with the subject of bilingualism since we deal with second language learners who are still far from becoming proficient in the target language. For this reason, a more appropriate definition of the linguistic phenomenon in the context of this project would be the process of alternating between the native language and the target language mainly due to an insufficient knowledge of the language being learned.

⁷Utterances interpreted by the transcriber as questions are transcribed as ending with "?".

⁸We originally searched for clarification ellipses to capture examples similar to those of Varonis and Gass (1985). However, the search string was also of help in identifying dialogue excerpts similar to those found by Svennevig (2018).

3.2 Data annotation

The target dialogue extracts were manually annotated using a taxonomy of dialogue acts that was created for the purpose of this work but based on previous related taxonomies (Varonis and Gass, 1985; Bondarenko, 2019; Howes et al., 2019; Myrendal, 2019)⁹. Table 1 below shows a detailed description of the annotation tags that make up the taxonomy. We use the following abbreviations:

- S, S1, S2: speaker
- INV: Investigator (teacher)
- SUB: Subject (learner)
- L1: learner’s first language
- L2: target language that learner is acquiring
- M: word or phrase in L2 that learner is missing

A sample of 10 dialogue transcripts as well as a description of the annotation tags and some instructions were provided to two annotators in order to ensure inter-rater reliability. Fleiss’ kappa test showed a score of 0.812 which indicates good agreement. An example of an annotated dialogue excerpt is shown in Table 2.

4 Formal model

Based on the annotated corpus of dialogue excerpts, we analysed dialogue act sequences looking for recurring patterns with the goal of providing a simple formal model, preferably in the form of a finite state automaton. We found that while a wide variety of dialogue act sequences were used to initiate the repair sequences, they thereafter largely followed a predictable pattern with some minor variations. We therefore split the formal model into two phases where the initial phase (Ask+Info) is separated out from the overall model.

As seen in Figure 2 the formal model presents a finite state automaton with a total of six states, with S and F being the initial and final state respectively. Each action performed by both the subject and the investigator represents the transition from one state to the next one.

State S to 1: The transition between the initial state and state 1 corresponds to the initial ‘Ask + Info’ phase, which includes some way of asking for a translation of a missing word, about which

⁹The dialogue act taxonomy used here makes a number of fine-grained distinctions that are beyond the scope of more general dialogue act annotation schemas like DAMSL (Core and Allen, 1997) or the ISO standard (Bunt et al., 2017).

some information is provided (typically, it’s L1 form). We will describe this phase further in Section 4.1. Lines 104 and 105 in the example in 2 above provide an example of behavior in this transition. Specifically, the subject is unable to find the word “traghetto” in English (i.e. “journey”), and consequently he/she asks “what’s the name?” of the word in the target language.

State 1 to 2: In this transition the missing information is provided by the investigator as Table 2 shows in line 106 in 2.

State 2 to 3: The subject repeats the information (line 107 in 2) given in the previous state as a way to (a) practice the correct pronunciation and (b) reinforce the acquired knowledge and/or even (c) let the investigator know that the conversation can now proceed.

States 3 to 4 & 4 to 3: These transitions are an optional repetition of M by both the investigator and the subject. This behaviour can take place once or several times, as long as the investigator considers that this repetition is necessary for the subject’s proper acquisition of the new information before the conversation can continue. Lines 108 and 109 in 2 illustrate the optional transitions.

State 3 to F: Once the subject successfully repeats the new information, the investigator accepts the subject’s contribution to the conversation (line 110 in 2). This can be done overtly using a verbal acknowledgement, or silently¹⁰. At this point the main conversation is ready to resume (line 111 in 2).

4.1 First stage of the model, Ask+Info

Now we will focus on describing patterns in the ‘Ask+Info’ stage of the model, that is, dialogue act combinations observed in our dialogue extracts during the transition between the initial state and state 1.

After annotating our data, we found that some tag combinations were more common than others. We refer to the annotations of such sequences as compound tag. Table 3 collects all compound tags identified more than once in the data. It is important to note that the patterns presented here are only based on the dialogue excerpts analyzed in this study and therefore, other possible patterns that

¹⁰Because we are lacking video recordings of the interactions, we do not know if acknowledgement was provided gesturally, e.g. using a head nod.

Tag	Description	Example utterances
AskL1	SUB asks for word using L1	S: ¿Cómo se llama? <What is the name?> S: ¿Cómo es? <How is it?>
AskL2	SUB asks for a word using L2	S: What is the name?
IndAskL1	SUB indirectly asks for a word using L1	S: no sé el nombre <I don't know the name> S: no sé cómo se dice <I don't know how to say it>
IndAskL2	SUB indirectly asks for a word using L2	S: I don't know what the name is. S: I don't remember how to say the word.
SearchL2	SUB (unsuccessfully) searches for a word or phrase in L2	S: The price of food is... eer... is... S: I only read books and... er... S: We bought tomatoes and... mm...
ProvL1	SUB provides the L1 translation of M	S: ...mesa <table> S: ...¿niña? <girl?>
ProvL2	INV provides M in L2	S: It's called a table.
ProvDesL2	SUB describes M in L2	S: This thing you use for brushing your hair
Rep	INV repeats M	L: Mobile phone T: Mobile phone ←
Test	SUB tries pronouncing M	T: It's called a sprinkling can. L: Sprinkling can. ←
TestC	SUB tries using M in context	T: It's called a sprinkling can. L: We took the sprinkling can to water the plants. ←
Ack	S2 acknowledges previous utterance by S1	S1: We went to the park on Friday. S2: mhm

Table 1: Dialogue act annotation schema

Line	Speaker	Text	Annotation	Stage
104	SUB	yeah... and during the... traghetti <journey>.	SearchL2 + ProvL1	1
105		what's the name?	AskL2	1
106	INV	journey.	ProvL2	2
107	SUB	journey?	Test	2
108	INV	journey.	Rep	2
109	SUB	journey.	Test	2
110	INV	mm.	Ack	2
111	SUB	during the journey.	TestC	2

Table 2: Annotation of dialogue liean24i.1.cha

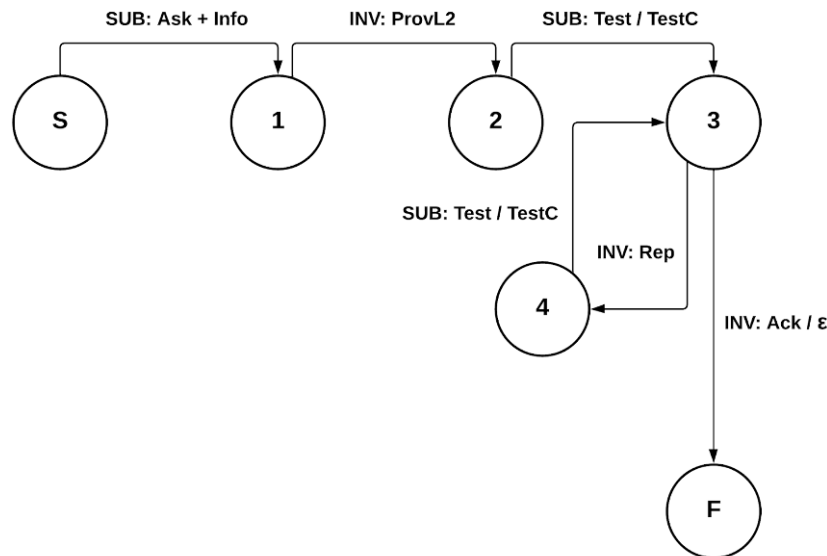


Figure 2: Final-state diagram representing a recurring pattern found in the data.

have not been observed in the data are not ruled out.

Most repair-initiating sequences in our data include signs of a production problems, usually in the form of hesitation sounds (“erm”, “err”, “uh”). However, it also happens that the subject immediately asks a question without having attempted to produce an utterance first. Consequently, some patterns are very similar, with the only difference being whether they include this initial (unsuccessful) attempt to produce a whole utterance in the target language.

When asking for help with finding a word, the subjects in our data prefer to do it explicitly, as we have seen in previous examples (“how do you say...?”). However, there are also instances where an indirect question is used instead (e.g. “I don’t know what it is called”). Interestingly, direct questions tend to be formulated in the learner’s L1, while indirect questions are frequently phrased in L2, the language being learned.

A distinction can be made between excerpts where the missing term/phrase is provided by the subject in the mother tongue (ProvL1) and those where there is no mention of it. This may be due to the word having been mentioned earlier in the conversation, or being inferable from the context. However, it is also possible that in these cases the learner relies on gestural cues (such as pointing at an object), similar to the behaviour described by Svennevig (2018). Indeed, such references

are sometimes included in the transcriptions¹¹ (S=SUB, I=INV):

- S: from the. whats name? [makes gesture for ground floor]
 I: ground? ground floor ground floor.
 S: ground floor mm.
 I: okay good.

Some excerpts show how the subject might opt not to specify the missing word explicitly (no ProvL1) but instead using a verbal description:

- S: so he didnt he didnt like it.
 I: why?
 S: no because my mm <pause> mh come si dice <whats it called> my principal my chief i dont know.
 I: m boss.
 S: my boss <pause> understand er if mm he you pay for me <pause> ...

4.2 Second stage of the model

As mentioned, there is a clear recurring pattern occurring from the moment the subject receives the requested information by the researcher, through the subject’s learning of such information, to the time the investigator acknowledges that the acquisition process is complete and the conversation can move forward. Table 4 collects these patterns and

¹¹<https://sla.talkbank.org/TBB/slabank/Multiple/ESF/EngItal/an/lean13g.cha>

Compound tag	#	Example
SearchL2 + AskL1 + ProvL1	8	Young... <unclear> woman is erm. . . Come si dice ragazza alla pari? <how do you say au pair girl?>
AskL1 + ProvL1	5	Come si dice in inglese pioggia? <how do you say rain in English?>
ProvL1 + AskL1	3	Ah no pan, mayonesa, ¿cómo se dice? <ah not bread, mayonnaise, how do you say it?>
SearchL2 + ProvL1 + AskL1	2	I don't know maybe they they oh dio <oh god> <pause> rubare <steal> come si dice? <how do you say it?>
SearchL2 + IndAskL2	2	And er he er <pause> and him <breath> <pause> try to break the door but is impossible <pause> the black boy <pause> has one idea for go in the kitchen from er the window with one er <pause> I don't know the name.
SearchL2 + AskL2	2	From the <pause> what's name?
AskL1	2	Come si dice in inglese? <how do you say it in English?>
IndAskL1 + ProvL1	2	Non so come si dice piu basso <I don't know how to say lower>
SearchL2 + AskL1 + ProvDesL2	2	No because my mhm <pause> mhm come si dice? <how do you say it?> my principal my chief I don't know

Table 3: Collection of Ask+Info stage tag combinations that were found more than once in the dialogue extracts.

their frequency of appearance in the 40 dialogue extracts. The model fully (100%) covers the dialogue extracts.

The most repeated structure is the sequence ProvL2 + Test + Ack, present in 40% of the data.

S: and straight on in the <pause> street er <pause> the <pause> come si dice la strada principale <how do you say the main road>.

I: the main road. [ProvL2]

S: mh the main road. [Test]

I: mh. [Ack]

Slightly different to this pattern is ProvL2 + TestC + Ack (at 20%), where the subject is testing the new information in context. That is, the subject does not just repeat the provided information but uses it to continue the conversation:

S: mm <pause> <pause> ma mi scorde sempre come si dice la porta <i always forget how to say door>.

I: door. [ProvL2]

S: mm door <pause> <pause> er <pause> <pause> no open. [TestC]

I: yeah. [Ack]

We may note that in the top 5 patterns in phase 2, Test and TestC are equally frequent at 50% each (40+10% and 20+22.5+7.5%, respectively). Moreover, in 22.5% of dialogue extracts we find

a TestC not followed by any verbal acknowledgement from the investigator. We may speculate that the lack of acknowledgement (which was observed much more often after TestC than after Test) could be related to the fact that the subject is demonstrating a correct acquisition of the new information by using it in an utterance, and therefore, if the investigator finds it satisfactory, overt verbal acknowledgement can be omitted.

S: <pause> <pause> come si dice <what is it called> three three.

I: <laugh> .

S: m eh <pause> m er.

I: steps. [ProvL2]

S: three steps. [TestC]

I: where?

5 Relation to Traum's (1994) model

It may be instructive to compare our model to Traum's (1994) finite state model of grounding. The model proposed here is to be seen as an amendment to Traum's model, rather than a replacement. Whereas Traum's model is intended as a general account for grounding in dialogue, we are only concerned with a special case.

A full summary of Traum's model is beyond the scope of this paper, but see Table 5 for the complete state transition diagram. For those familiar with the model, we want to point out that there seems to

State 1 - 2	ProvL2	ProvL2	ProvL2	ProvL2	ProvL2
State 2 - 3	Test	TestC	TestC	Test	Test
State 3 - 4	-	-	-	Rep	Rep
State 4 - 3	-	-	-	Test	TestC
State 3 - F	Ack	Ack	ε	Ack	Ack
#	16	8	9	4	3
%	40%	20%	22.5%	10%	7.5%

Table 4: The 5 most common patterns found in the second stage of the model

be a fairly straightforward mapping of our special-purpose dialogue acts to the more general ones in Traum’s account:

- **SUB: Ask + Info → ReqRepair(I):**
Asking for a missing word seems to be a straightforward case of self-initiated (other-) repair. Such requests for repair are abbreviated *ReqRepair* in Traum’s model, and *I* is the initiator of the utterance, corresponding to SUB in our model.
- **INV: ProvL2 → Repair(R):**
Providing the missing word seems to be a case of repair from the responder *R* (INV in our model).
- **SUB: Test/TestC in state 2 → Continue(I):**
Continue is used in Traum’s model for continuing an utterance by providing further lexical material (words). Traum gives no particular import to continuations meant to test SUB’s mastery of the problematic word, but we do.
- **INV: Rep → ReqRepair(R):**
Here, interestingly INV’s repetition can be seen as a request from INV for SUB to provide (further) repair. The logic is that INV wants SUB to again repeat the problematic word to make sure SUB sufficiently masters the pronunciation.
- **SUB: Test/TestC in state 4 → Rep(I):**
Again, we distinguish testing a word from simply continuing speaking.
- **Acknowledgement:**
This works the same in both models, although we allow that the vocabulary training episode may end without explicit acknowledgement from the responder (INV)¹².

¹²Traum’s model requires acknowledgement from the responder before a discourse unit (roughly, an utterance) can be considered complete. This is not incompatible with our model, as long as one admits that a vocabulary training episode may end before the final discourse unit involved in the episode is complete.

Next act	In state						
	S	1	2	3	4	F	D
Initiate(I)	1						
Continue(I)		1			4		
Continue(R)			2	3			
Repair(I)		1	1	1	4	1	
Repair(R)		3	2	3	3	3	
ReqRepair(I)			4	4	4	4	
ReqRepair(R)		2	2	2	2	2	
Ack(I)				F	1	F	
Ack(R)		F	F			F	
ReqAck(I)		1				1	
ReqAck(R)				3		3	
Cancel(I)		D	D	D	D	D	
Cancel(R)			1	1		D	

Table 5: Traum’s (1994) finite state model of grounding

We leave a full integration of our model with Traum’s for future work. However, we note that at least on one critical point, our model seems to go substantially beyond Traum’s, namely with regard to when a request for repair by the initiator (SUB in our model) is allowed. Traum only allows ReqRepair(I) after some response from the responder R: “...we will also want to allow the possibility of a repair request *after some sort of response by the responder.*” (ibid, p. 37; our italics). Concretely, this shows up as an empty space in state 1 for ReqRepair(I) in Tabel 5, meaning that this dialogue act is not allowed in this state. Only in state 2 to F, after a ReqRepair from R, is ReqRepair(I) allowed. In contrast, in our data we frequently find repair sequences initiated (using Ask+Info) by SUB (corresponding to I in Traum’s model) without any preceding response from INV. Whether this occurs also outside of vocabulary training interactions is a question for future research.

6 Implementation

The idea behind the implementation was to reproduce a dialogue strategy frequently observed in our data and embed it in a vocabulary training activity in the second language classroom. Through a conversation, the learner has the opportunity to put into practice the lexicon already acquired and/or even extend it. In this case, the dialogue focuses on vocabulary related to food where the main topic of the conversation revolves around what the learner has had for breakfast. By (verbally) interacting with the dialogue system, the learner is able to reinforce the acquired knowledge of the target language but also learn new lexical items.

For our implementation,¹³ we used statecharts (Harel, 1987) which allows to describe the complex behavior of a system using an extended finite state notation. In addition, we chose to work with XState¹⁴ for the model implementation. It is a JavaScript library designed to interpret finite state machines and statecharts in a way defined by Harel and W3C SCXML standard (Barnett et al., 2015). In our case it is a natural way to utilise the interactional structures that we discovered and expressed in a form of finite-state machine in a spoken dialogue system.

The fact that we deal with code-switching in our dialogue excerpts makes it crucial to rely on a bilingual ASR (Automatic Speech Recognition) so that the dialogue system can handle a conversation where the learner alternates between both the first and second language. This is made feasible by setting two individual ASRs with separate confidence scores, corresponding to the native and the target language. In our implementation, Spanish and English are taken as the user's first and target language respectively. At the moment the system can provide translations of single words from a predefined L1-L2 dictionary.

An example dialogue with the system could go as follows:

- S: What did you have for breakfast?
U: I had toast with... cómo se dice queso?
S: Cheese.
U: Cheese?
S: Uh-huh. Did you have anything else?

We believe that the implemented model could

¹³https://github.com/guscarrian/breakfast_demo

¹⁴<https://xstate.js.org>

be used as a tool in the language classroom for practising new words in the context of simulated everyday practical conversations such as making reservations, buying travel tickets, checking in at a hotel, etc..

7 Conclusions and future work

The main goal of the current study was to investigate dialogue strategies for vocabulary learning that could be found in second language learner corpora, and that could be useful in a dialogue system for second language training. The formal model encapsulates a general strategy used among learners at the time of acquiring new vocabulary in the second language, when in the presence of a teacher who can offer language assistance.

We found that learners ask for the L2 word/expression they need, either explicitly or implicitly. Additionally, code-switching occurs frequently as part of these requests. Once the new word/expression is introduced, learners work on repeating it as part of the strategy for acquiring new vocabulary.

The proposed model is based on data from students of English with a poor linguistic competence where the described production problems were common. The vocabulary building activity is designed for learners of a second language at early stages where linguistic support is often needed due to the lack of knowledge in the target language. However, whilst production problems may not be as frequent among advanced learners, the strategy described seems to be still applicable to any learner regardless of their level of linguistic competence. Ultimately, despite the fact that the findings of this study are relevant to the field of second language learning, other research areas could also benefit from them.

Future work includes extending the implementation to cover more variants of the patterns observed in the repair initiation (phase 1). We would also like to explore larger quantities of data provide an even stronger empirical footing. Also, conducting a human evaluation within the second language learning context would be a key component in future attempts to evaluate the model's performance. We would also like to confirm the applicability of the model to other language pairs, and in particular involving second languages other than English.

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