REPAIR BEHAVIOUR OF ADVANCED GERMAN LEARNERS IN THE BERLIN MAP TASK CORPUS

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Keywords: disfluencies, repairs, learner speech, BeMaTaC, multi-layer annotation

1. DISFLUENCIES IN NON-NATIVE SPEECH

How do learners (L2) differ from native speakers (L1) when speaking disfluently? We will discuss this question for the use of self-repairs [10], henceforth called repairs, based on spoken corpus data.

Disfluencies such as repairs, filled pauses, truncations, prolongations etc. occur in about 6% of every 100 words uttered in spontaneous speech [3]. While disfluencies are widely accepted in L1 speech, they are sometimes regarded as problematic in L2 speech. Comparing the disfluencies of L1 and L2 speakers may instead lead to a better understanding of the adaptation processes of learners in different stages of interlanguage, when some features of the target language have not yet been acquired. For example, a non-native-like articulation of filled pauses may contribute to the so-called *foreign-soundingness* of L2 speech [7]. Reflections of the underlying L1 articulation system can often be observed, e.g. in the articulation of the filled pause *äh* [ɛː] in German as *euh* [œː] in L2 German with a background of L1 French [6]. However, a foreign-sounding articulation constitutes only a part of what defines non-native speech. In addition to grammatical and lexical differences, a non-native-like proficiency is often detected by the use of deviating speech patterns and frequency distributions. It has been stipulated that learners produce disfluencies more frequently than native speakers. In a corpus study of 50 interviews with advanced German learners of English, 84% use significantly more filled pauses than native speakers [4]. However, it remains unclear whether this is merely caused by higher cognitive processing costs. It may as well be that "speakers have a strong inclination to transfer their pause profile from L1 to L2 performance" [8, p. 270]. With this in mind, we predict that repairs in L2 German show the some kind of transfer. We will examine this hypothesis using the Berlin Map Task Corpus.

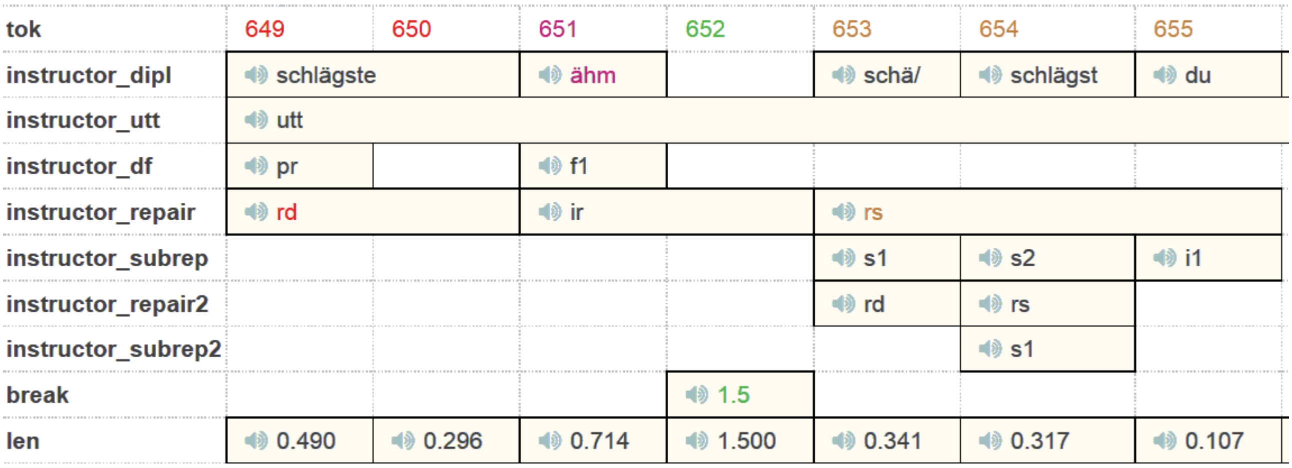
2. THE BERLIN MAP TASK CORPUS

The Berlin Map Task Corpus (BeMaTaC; https://u.hu-berlin.de/bematac) is a freely available corpus of spoken German. It consists of an L1 subcorpus recorded with native speakers of German and an identically designed L2 subcorpus with advanced speakers of German as a foreign language (to date, all learners in the corpus are native speakers of English and have test scores equivalent to ECFR level C1 or above).

BeMaTaC uses a map-task design, where one speaker (the instructor) instructs another speaker (the instructee) to reproduce a route on a map with landmarks [1]. The speakers cannot see each other and are thus unable to communicate non-verbally. The dialogues are recorded with two separately placed microphones and a video showing the drawing hand of the instructee. Transcriptions are consistently tokenized and time-aligned. Instead of inline annotations, BeMaTaC is using a multilayer standoff architecture [9]. This allows for a wide and easily extendable range of different annotations layers. These include layers for general disfluencies, repairs, repair sub-classifications and silent pauses. Extensive and anonymized metadata are provided with every dialogue. In learner dialogues, this also includes proficiency levels, surveyed by means of a C-Test [5], as well as the details of L2 acquisition.

In its pilot release (all data in this abstract are based on the 2013-02.1 release), BeMaTaC has 12 L1 dialogues with a total of 66 minutes and 13891 tokens and 5 L2 dialogues with a total of 77 minutes and 5155 tokens. Token counts are based on the diplomatic transcription which includes all verbal utterances, including filled pauses and truncated words. Contractions such as *haste* (*have-you*) are counted as one token only. Non-verbal utterances such as laughter and silent pauses are excluded. Disfluencies make up for 8.8% in native speakers and 14.7% in learners (we exclude unfilled pauses in this abstract). The corpus is accessible via ANNIS [13], an open-source browser-based search and visualization tool for deeply annotated corpora (http://annis-tools.org; for access-

Figure 1: Reparanda (*rd*), interregna (*ir*) and reparantia (*rs*) on *instructor_repair* and substitutions (*s*), repetitions (*r*) and insertions (*i*) on *instructor_subrep*, Engl. *turn-you uhm tu/ turn you*.



ing corpora that are publicly available see https://korpling.german.hu-berlin.de/annis3).

3. REPAIRS

Repairs consist of an original utterance (*reparandum*) and a replacement (*reparans*) [11]. Anything additional in between, e.g. filled or silent pauses, is called *interregnum*. Reparantia often subsume other disfluencies such as repetitions or truncations, as shown in Fig. 1 (following https://u.hu-berlin.de/schlaegste recreates the corpus query). The interregnum of the instructor is filled with *ähm* followed by a silent pause of 1.5 s. As L2 speakers usually need more processing capacity and working memory [12], we can predict that they should produce more filled pauses, as seen in [4]. Thus, learners should also use more repairs with interregna.

In a study about the structure of repairs of L1 and L2 German speakers in BeMaTaC, advanced learners with a competence level of C1 and above do not differ from native speakers in the frequencies of their repairs [2], cf. Table 1. The fact that they do not use more repairs with interregna than native speakers may indicate that either their planning capacity or their disfluency patterns are well adapted to the target language.

If there is no evidence for differences between L1 and L2 speakers in their repair frequencies, what is it that drives the appearance of interregna? A mixed-effects model in the study above suggests that repetitions and substitutions in the reparandum reduce the probability of interregna ($\beta = -.74$, SE $= .15$, $z = -4.78$, $p < .001$), as opposed to insertions. It seems that the information structural processing of what can be seen as 'new' information is as challenging for non-natives as it is for native speakers. On the other hand, repeating or substituting what could be considered salient material tends to produce a higher amount of repairs without interregna, both for L1 and L2 speakers.

Table 1: Frequencies of repairs in BeMaTaC.

	N	per token
L1 repairs	245	0.0265
L2 repairs	261	0.0265

Thus, the same repair behaviour of the two groups might in fact be driven by constraints that apply language-internally and reflects the ease of repeating or modifying linguistic material as opposed to adding something new.

4. SUMMARY

We investigated the repair behaviour of L1 and advanced L2 speakers in a corpus of spontaneous speech. The results of this study imply that a native-like use of disfluency patterns can be achieved, at least for the number of repairs and within-repair behaviour. The resource employed for this study can easily be used and extended for future research in learner speech.

5. REFERENCES

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