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The Influence of Regional Differences of Native German Speakers on the L2 English Pronunciation of Selected Phonetic Features

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Abstract

Pronunciation, as an aspect of non-native accent, is one of the most noticeable aspects of English as a Foreign Language. Age of learning may have an impact on whether nativelike pronunciation can be attained. Furthermore, standard as well as regional dialects may have an influence on pronunciation through cross-linguistic influence. This project aims to gain a better understanding of possible regional variations in native German speakers' English pronunciation by examining the production of specific consonants. The project is framed by the discussion of English as a Second Language compared to English as an International Language and whether learners' wishes should be considered. The analyses undertaken in this project are based on 26 individually structured interviews, which included a production task of 14 sentences each containing a specific consonant sound. No significant difference between German regions was discovered, which may largely be due to the low number of participants and a selection bias discovered during the project.

1. Introduction

Communication in a multilingual world demands people to speak the Lingua Franca, English, to communicate internationally (Hickey, 2019). This is also the case for an ever-increasing number of native German speakers, who speak English in international contexts, even though many may not be comfortable doing so (Mollin 2019) and oftentimes display a noticeable foreign accent. Table 1 below displays typical features of German accented English as mentioned by Hickey (2019), Chamson (2016) and Smith et al. (2009).

Table 1: Examples of feature errors

Feature error	**Example**	**Standard pronunciation**	**German accented pronunciation**
Elision of /g/ after /ŋ/	finger	fi[ŋg]er	fi[ŋ]er
Voicing of /s/ following /l/, /n/ or /r/	insist	in[s]ist	in[z]ist
Final devoicing	cab	ca[b]	ca[p]
Fortition of dental fricative /ð/or /θ/	this	[ð]is	[z]is/[d]is
Merging of /v/ and /w/	very	[v]ery	[w]ery

For an extended time, learners have been taught to approximate native English as closely as possible, but recently an ideological shift towards intelligibility has been made (Bøhn & Hansen, 2017). Still, many native German learners of English value native English speech (Smith et al., 2009) and wish to attain a native-like pronunciation and accent (Tsunemoto & McDonough, 2020).

Bøhn and Hansen (2017) report that although pronunciation is a feature of many speech assessments, the body of research surrounding it is recent. Additionally, while national data on German accented English as a Foreign Language (EFL) are abundant, no data is available that focuses on the possible influence of differences in German dialects on German accented English. The aim of this project is to gain a better understanding of regional variation of accented English pronunciation. The project therefore focuses on the following:

- A possible connection between native German speakers' English pronunciation of the aforementioned contrasting features of pronunciation
- Possible regional differences that might also occur in these speakers' L2 speech

Finally, the project will conclude in a discussion on whether the pronunciation of German speakers of English should be improved upon and how this could be done.

The project is guided by the following two research questions:

RQ1: How nativelike do participants produce selected phonetic features?

RQ2: How do regional differences affect the performance of participants in producing the selected phonetic features?

1.1 Phonetic and Phonological Features of German and English

Hickey (2019) describes how English and German consonant phoneme inventories overlap: both languages have voiceless aspirated plosives and are non-rhotic in their standard forms. Despite these overlaps, the consonant inventories of the two languages also differ in a number of ways. For example, the German language does not use the dental fricatives /θ/ and /ð/ or the bilabial approximant /w/, whereas the English language does (Hickey, 2019). This may result in substitution by German speakers of English. Chamson (2016) describes that both the syllable-initial underuse of /w/ and hypercorrection of /v/ can be found in German speakers of English. An example of this can be found in table 1 above. The hypercorrection of the labiodental fricative /v/ is mostly encountered among younger, more experienced, and more proficient speakers of English (Chamson, 2016).

Additionally, Hickey (2019) describes how phonotactic differences between English and German may result in foreign accented pronunciation. For example, in Standard English, the velar plosive /g/ is sometimes realised after the velar nasal sound /ŋ/, while this is not the case in German. Often native speakers of German therefore use the German pronunciation in an English context (see example in table 1). Furthermore, there are sequences of sounds, which are pronounced differently in German. A common example is the voicing of the alveolar fricative /s/ following the sonorants /l/, /n/ and /r/ (Hickey, 2019). This is the case in words such as 'impulses', 'insist' and 'reversing', that Germans often pronounce with a 'soft S', when speaking English. Lastly, a phonological rule of German is the

final devoicing of bilabial, alveolar, and velar plosives (Hickey, 2019). Therefore, German speakers often pronounce word- or syllable-final /b/ as /p/, /d/ as /t/ and /g/ as /k/. These features of German-accented English will be the contrasting features in focus in this project.

1.2 English in German-speaking Regions

A common model of language learning characterises it in three distinct types: (1) native language learning, (2) second language learning, and (3) foreign language learning (Mollin, 2019). In this project, English in German-speaking regions will be viewed as EFL, according to the definition by Lambelet and Berthele (2015), who state that a foreign language can be characterised as a language learned outside the region where it is spoken. Despite some scholars arguing that English in German-speaking regions is gaining importance, Mollin (2019) argues that this is not the case, as a Eurobarometer study found that only 56% of Germans consider themselves fluent enough in English to conduct a conversation.

English is taught as a foreign language in primary schools today (Hickey, 2019). The curricula of the individual Federal states are based on a document by Kultusministerkonferenz (KMK) (2012) about the educational standard for foreign languages. The KMK holds that discursive abilities, which are understood as an ability to understand and communicate, are an essential goal of foreign language learning. Furthermore, the goal is that students can use the foreign language in a way that is target-oriented in terms of content, linguistically sensitive and differentiated, appropriate to the addressee and pragmatically appropriate. The KMK also states that standard languages are the point of reference for evaluation.

1.2.1 Regional Differences

Mollin (2019) hypothesises that there may still be noticeable regional differences in the proficiency of German speakers of English. This is based on currently unavailable data by Education First in 2017 (see appendix 1) whose tests revealed that the eastern German federal states generally scored lower in linguistic proficiency than the western German federal states. Regional differences may, however, also be affected by other factors, such as level of education, international mobility, residence in urban/rural areas, and age (Mollin, 2019). Additionally, Jurančič Petek found that "pronunciation of a second (L2) or foreign language (FL) is not influenced only by the standard variety of the first language (L1), but also by the L1 dialect of the speaker's place of origin" (2014, p. 45).

1.3 English as a Lingua Franca

The nativeness approach to EFL has in recent years attracted increasing criticism. Jenkins (2002) argues for a paradigm shift from English as a Foreign Language to English as an International Language based on the fact that there are more non-native English speakers than native English speakers worldwide, making it more likely that non-native speakers find themselves speaking with other non-native speakers. Therefore, Jenkins (2002) suggests moving away from what Bøhn and Hansen (2017, p. 56) define as nativeness in language teaching: a principle where "it is both feasible and desirable for L2 learners to achieve nativelike pronunciation". Instead, Jenkins (2002) suggests

moving towards what Bøhn and Hansen (2017) define as intelligibility: a principle that aims for learners to simply making themselves understood. This, Jenkins (2002) suggests, could be done utilising a Lingua Franca Core, which is a collection of specific pronunciation features that are crucial to intelligible production.

Though Bøhn and Hansen (2017) find that the nativeness principle is often criticised for being unattainable, and foreign accent seemingly does not always impede intelligibility, other researchers find that L2 learners themselves often desire to attain nativelike pronunciation (Tsunemoto & McDonough, 2020) and have more positive attitudes towards teachers with native accents (Tsang, 2020). Crowther et al. (2015) name stereotyping, harassment and job loss as consequences of speaking with a non-native accent, which may also influence learners' attitudes. Lindemann (in Trofimovich & Isaacs, 2017) echoes the problem of systematic bias against non-native accent by both native and non-native listeners, who evaluate speakers with heavy accents as being less intelligent and having attained lower levels of education.

2. Data and Methods

The following section describes the methods used in the present project. First, the characteristics of the participants will be described in detail, and a description of the materials used in the project will follow.

2.1 Description of Participants

26 native speakers of German participated, of whom 17 were women and nine were men. 23 participants had exclusively learnt German as their first language, while two were German-Turkish bilinguals and one was bilingual in German and English. The latter participant was excluded from the analysis due to not having learnt English as a foreign language. The remaining 25 participants had an average age of approximately 36 years (range: 19 to 72 years), all had English as their first L2 and were first exposed to the language in school. The participants were selected based on convenience sampling, with some contacts to participants generated through postings in international groups on a social media platform and other contacts generated through German family friends. Mackey and Gass (2016) describe convenience sampling as a method of non-random sampling of participants. In convenience sampling the participants who happen to be available are chosen, which has the disadvantage of easily leading to bias, and therefore not being representative of the population.

2.2 Description of Materials

The participants partook in structured individual interviews that consisted of three parts. Interviews can be used to assess participants' proficiency or the status of their acquisition (Nunan 1992), and it is reported that this asymmetry will also affect the language used in the interview (Van Lier as cited in Nunan, 1992). The interview guide applied to this study is summarised here below.

In the first part of the interview, information on the participants' background such as age, first language, birthplace, and schooling was requested. In the second part, the participants were asked to

provide information on their opinion of accent, specifically, which characteristics of German accent they notice, their opinion on the German accent, and perception of their own accent and proficiency. The last part consisted of a production task, in which participants were asked to read aloud 14 English sentences. The sentences and the features in focus can be seen in table 2 below. The production task was chosen to ensure obtaining speech samples of the linguistic features in question, which participants may have avoided in other parts of the interview by using a different form (Mackey & Gass, 2016).

Table 2: Production task guide

Feature errors	**Sentence**
Elision of /g/ after /ŋ/	Women tend to live **longer** than men. He kept his **finger** on the trigger. There was not a **single** person inside the house.
Voicing of /s/ following /l/	These **impulses** are often unconscious.
Voicing of /s/ following /n/	I **insist** on paying for the damage.
Voicing of /s/ following /r/	Practice **reversing** the car.
Final devoicing	I took a **cab** to the airport. Every **seed** is a potential plant. The **dog** jumped over the fence. The **bed** has a metal frame.
Fortition of dental fricative /ð/	I lost my job earlier **this** year.
Fortition of dental fricative /θ/	Cut the vegetables into **thin** strips.
Merging of /v/ and /w/	I know **very** little about him. Cold pipes **weep** in hot weather.

2.3 Description of Procedures

The participants who volunteered to partake in the study through the postings on social media were contacted through the platform. To achieve informed consent, each participant was sent a document containing information about the interview, as well as information on consent. It was requested that the participants read the document and confirmed that they had understood it prior to the interview.

The interviews were held with the help of the video communication software Zoom and the audio was recorded using the software's recording function. Issues can arise in the possible visual anonymity and missing normal social frameworks (James and Busher, 2012). This is not considered to be a problem in the present study.

3. Analysis of Collected Data

To answer RQ1 and provide data for the following analyses, all answers given in the first and second part of the interview were coded into categories. The words containing the contrasting features were transcribed for every participant with the features being transcribed phonetically.

The correct pronunciation of the different sounds was established according to Received Pronunciation (RP). Hickey (2019) considers RP the traditional target accent taught in German schools. In the project, the sounds in focus did not vary between RP and Standard American English (SAE), therefore no distinction between the two standard accents was necessary for the analysis.

In preparation for the transcription of target sounds, participants were anonymised and the words in focus were separated from the remaining audio data to decrease recognisability. Additionally, the first half of every sound set was coded again, after finishing the entire set to correct for biases.

After the transcription of the participants' pronunciation of the contrasting features, the author rated the pronunciation. Target-like pronunciation was awarded one point, while non-target-like pronunciation was awarded zero points. The average score for each participant, as well as the range of scores for all participants, was calculated.

To answer RQ2 and examine whether regional differences had an impact on the participants' pronunciation, the participants were divided into four regional categories. German-speaking regions, excluding Switzerland, were divided as follows:

Table 3: German-speaking regions

Region	**Federal states of Germany and Austria**
Southern Germany and Austria	Baden-Württemberg, Bavaria, Burgenland, Carinthia, Lower Austria, Salzburg, Styria, Tyrol, Upper Austria, Vienna, Vorarlberg
Eastern Germany	Brandenburg, Mecklenburg-Vorpommern, Saxony, Saxony-Anhalt, Thuringia
Berlin	Berlin
Northern and Western Germany	Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatine, Saarland, Schleswig-Holstein

The categories of southern Germany and Austria, and Northern and Western Germany were established according to commonly accepted regions of German dialect. The category of Eastern Germany was established according to former German Democratic Republic, since the former divide is still a noticeable feature of German culture (Wolf in Hickey, 2019). Berlin was established as a separate category, as there are multiple presences of English in Berlin (Heyd & Schneider in Hickey,

2019). The average pronunciation score of the production data for each area and the standard deviation was calculated.

4. Presentation of Results

In the following section, the results of the data analysis will be presented so that data addressing RQ1 is listed before that for RQ2.

4.1 Pronunciation

To answer RQ1 the participants' pronunciation scores were compared. The scores are presented in appendix 2. The scores were distributed over a range between 0.43 to 1.00, with the average score being 0.75.

To gain more understanding of the data, the average scores of each feature error category was calculated, as can be seen in table 4. The average scores vary between 0.61 and 0.94. It seems that participants had overall more difficulty with the pronunciation of /g/ after /ŋ/ and final devoicing.

Table 4: Comparison of pronunciation of features

Feature errors	**Average score**
Elision of /g/ after /ŋ/	0.61
Voicing of /s/ following /l/, /n/ and /r/	0.80
Final devoicing	0.65
Fortition of dental fricative /ð/ and /θ/	0.94
Merging of /v/ and /w/	0.90

RQ1 can be answered as follows: given the large differences between scores, there seems to be a great variance between the participants' performance in the pronunciation of the different sounds. Additionally, it is clear that participants struggle more in some categories, while performing well in others.

4.2 Pronunciation in Relation to Regional Differences

RQ2 was "How do regional differences affect the performance of participants in producing the selected phonetic features?". The average scores across the regions, Southern Germany and Austria, Eastern Germany, Northern Germany, and Berlin, are presented in figure 1. Table 5 below shows the distribution of participants across the selected German regions.

Table 5: Participants per region

Region	**Number of participants**
Southern Germany and Austria	6
Eastern Germany	2
Berlin	2
Northern and Western Germany	15

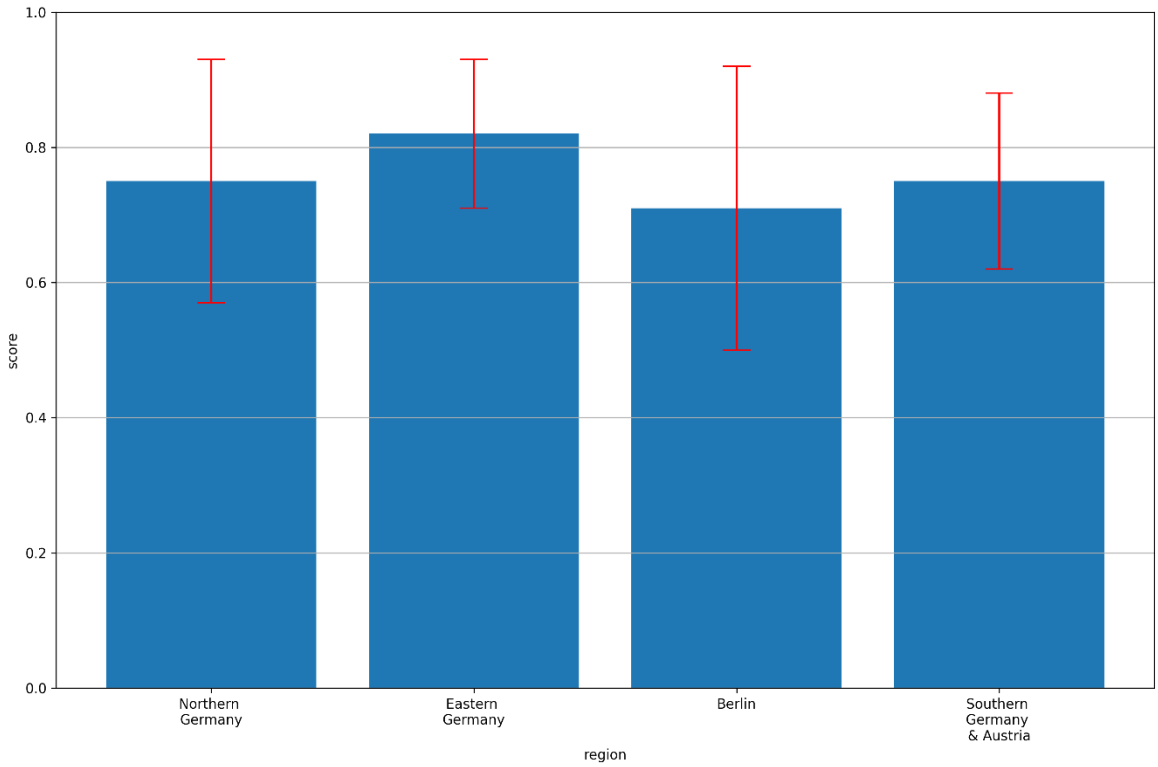

Figure 1: Average score across German-speaking regions.

Figure 1 shows that speakers from eastern Germany score the highest with a score of 0.82, while speakers from Southern Germany and Austria and Northern Germany both score 0.75, and speakers from Berlin score slightly lower with 0.71. It is notable that the two regions with higher numbers of participants score the same. In all regions, the standard deviation is higher than 10%. Since all regions score high scores in this analysis, RQ2 can be answered as follows: there does not seem to be a major difference in the participants' performances in the pronunciation of different sounds, when looking at possible regional patterns.

5. Discussion

The following section will discuss the methods used in the project, and the results obtained from the data followed by a general discussion of whether the pronunciation of German speakers of English should be improved upon and how this could be done.

As indicated in the data and methods section, 26 participants were interviewed for this project. More participants would likely have yielded results that are more representative of the population. While Ladefoged (2003) suggests to interview six participants of each sex, Beitin (2012, p. 244) holds that "theoretical saturation is becoming the most common approach to sample size", though the concept is not elaborated upon. Since various categories in the analyses only contain one or two participants, it becomes evident that theoretical saturation is not reached.

Over the course of the project, it also became evident that a bias in the sampling of the participants may have been an issue. The participants were contacted in one of two ways: (1) through postings in international groups on social media, or (2) through German family contacts. None of the participants contacted through social media knew the author before the interview. The participants who were contacted through German acquaintances, however, all knew the author before the interview. The former group had an average score of 0.79, while the latter group had an average score of 0.67. Potential participants, who did not know the author in advance, may have avoided participating due to the lack of rapport. Conversely, participants knowing the author in advance may have been more comfortable resulting in higher scores that they otherwise would. Nunan (1992) describes that interviews create asymmetrical relationships between the interviewer and the interviewee, which can lead to the interviewee's different language use or speaking in a different manner. This may be avoided to an extent by building rapport with the interviewees, though the bias may not completely disappear. Therefore, the result should be viewed as a product of the method to a certain extent.

The average age of the participants who did not know me in advance was 28.6 years (range 19 - 52), while the average age of the participants who did know me in advance was 48.7 years (range 30 - 72). Mollin (2019) mentions that there may be large differences between younger and older native German speakers of English, so the fact that the group of acquaintances was an average of 20 years older than the group of non-acquaintances may be a contributing factor to the lower mean pronunciation accuracy score obtained for the group acquainted to the interviewer.

Production tasks are a point of discussion in Tsunemoto and McDonough (2020), who hold that production tasks can be more suitable for investigation of pronunciation, as they control for lexical and grammatical accuracy. While the production task allows for comparison of the participants' scores, it may not reflect existing issues in the native German pronunciation of English sounds. Due to the time constraints in this project a more exploratory method was not selected, though the collected data could be analysed in this way in a future project. The specific contrasting features that informed the selected target phonemes were chosen to represent both common and less common characteristics of German L2 English. The study could be repeated with other contrasting features to investigate whether these yield similar results.

In addition to the production task, it may have been useful to measure the overall proficiency of the participants. Lambelet and Berthele (2015) suggest Cloze tests, self-assessment, or proficiency evaluations to this end. A Cloze test would have entailed a short text in which certain words, or parts of words, are removed and must be inferred by the participants.

Due to the ongoing pandemic, the collection of data had to take place online. As previously mentioned, the interviews were held on the video communication software Zoom. Smith et al. (2009) suggest that the production and perception of final devoicing is more complex than simply deeming an utterance 'voiced' or 'devoiced', and categories such as 'fully voiced', 'partially devoiced', and 'fully devoiced' should be established. This may also be the case with the other sounds of the production task. Due to the poor sound quality of the software and noise interference, these more fine-grained categories could not be established, and a simpler 'target-like/non-target-like' categorisation was adopted.

Mackey and Gass (2016) suggest that having only one person to code a set of data or not reporting inter-rater reliability measures may result in a study being undermined. In this project, having multiple people to code and rate the data was not possible, therefore no data on inter-rater reliability is available. However, measures were taken to avoid biases as described in the method section.

The results of the analysis of the participants' pronunciation show that there was a major difference between the participants' scores, and thus, between their pronunciation. These results are in line with Johnson's (2017) reports that the degree of success in foreign language learning varies greatly.

As presented in the introduction, Mollin (2019) states that there may be regional differences in the proficiency of native German speakers of English. The only data to lend support to this hypothesis is currently unavailable data from Education First (see appendix 1), that showed Eastern German federal states to score lower than Western German federal states. This would be in line with Jurančič Petek's (2014) hypothesis that pronunciation of an L2 may also be affected by dialectal features of L1. The analysis of the scores divided into regional areas revealed some variation, but no clear trend. The standard deviations of all categories are more than 10%, which indicates a great variance among the participants and less reliable results.

Though the results of the analysis of regional differences were inconclusive, a general difference in the pronunciation scores of the participants could be seen from the answers to RQ1. Additionally it was found that participants pronounced some features more correctly than others. Specifically, participants struggled more with the pronunciation of /g/ after /ŋ/ and final devoicing, while performing better on the other features. This leads to the question whether these varying results in the pronunciation of contrasting features of English and German, that are markers of a typical German accent, call for an intervention during L2 instruction.

The paradigm shift from English as a Foreign Language to English as a Lingua Franca, described in the introduction, aims for using a principle of intelligibility in language teaching instead of a principle of nativeness (Bøhn & Hansen, 2017). To this end, Jenkins (2002) has designed what she terms the Lingua Franca Core. The Lingua Franca Core, for example, states that /θ/ and /ð/ should not be the target of pedagogical intervention, as these sounds have a low functional load.

While this Lingua Franca Core considers the functional load as an important factor in the design of a framework for language learning, it does not consider the learners' wishes, which differ from the current intelligibility principle (Tsang 2020; Tsunemoto and McDonough 2020; Smith et al. 2009). It could be argued that the learners' wishes mostly stem from the English as a Foreign Language paradigm and the status of RP as the target accent in classrooms (Hickey 2019). The reasons for learners' wishes wanting to attain native-like pronunciation could be the focus of further investigation. A solution could be to consider the functional load of specific sounds, learners' wishes to attain a certain accent, and education on a wider range of accents in the design of a framework for language learning.

6. Conclusion

This project aimed to investigate what influence regional differences of native German speakers could have on the L2 English pronunciation of selected phonetic features to support awareness of accent that could ultimately lead to more acceptance of non-native accents. The research focused specifically on the pronunciation of five features of German accent, some of which were more common, such as the pronunciation of /θ/ and /ð/, while others were less common, such as the voicing of /s/ after /l/, /n/, and /r/. In RQ1 it was found that participants overall pronounced some features with more ease than others (see table 4). The pronunciation data obtained through a production task in 26 structured individual interviews was compared with the participants' reports of region of birth.

The project found that there were notable differences between the scores of participants. Further, the project did not find any major regional variation between the scores of the participants. Due to a lack of sufficient number of participants, these trends were not measured for each region. Another issue was a source of bias in the selection of the participants that became evident during the analysis. The reliability of the results are therefore not granted though some insight into national German trends could be gained.

Due to the previously mentioned issues with the data, it is evident that more research could be done to answer the question of regional pronunciation differences, as well as accent more generally, and overall proficiency. While the methods used in this project were appropriate, they could be supplemented with a Cloze test when including a greater number of participants.

Another avenue of research could be the investigation of other contrasting features, such as vowels, or a more exploratory approach, in which case the data of the current project could be re-analysed.

Finally, as a more general conclusion of the project, I propose a framework for language learning comprising the theoretical advantages of teaching English as a Lingua Franca and taking into consideration learners' wishes of obtaining a specific accent as well as educating them on a wider range of accented English.

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