

Phonetic Analysis of German Songs

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ABSTRACT

In learning German listening skills through songs, difficulties may arise due to singers' diverse pronunciation, referred to as a phonetic phenomenon. This study discusses phonetic phenomena in German songs using phonological processes theory of Assimilation (assimilation), *vokalische Auslösung des [r]* ([r] vocal triggering) elision, and *Aphärese* (apheresis) by Bouchara and Baalla. This study aims to analyze phonetic phenomena in German song lyrics, identify the frequency of these phenomena according to the phonological processes, and examine the differences in phonological processes in German songs in different genres. Coverage of this study is limited to phonetic phenomena that occur in the lyrics. The quantitative and qualitative research methodologies are employed in examining the following corpora: *So wie jetzt* by *Revolverheld* (pop), *Meer sein* by Silbermond (rock), and *Vermissten* by Juju (feat. Henning May) (hip-hop/rap). This study reveals that the most common phonological process is elision. On the other hand, the least is the [r] vocal triggering. These four phonological processes are used to synchronize the lyrics with melody, rhythm, and tempo; facilitate pronunciation, and make the lyrics sound more flowing.

Keywords: *Phonetic, Phonology, Phon, German song*

1. INTRODUCTION

Almost everybody loves music. Music is commonly used as an effective medium in learning a language, including German. According to Kusumawati [1], music is divided into two, namely vocal music (human voice) and instrumental music (the sound of a musical instrument). Melody and lyrics are essential elements in vocal music. Song lyrics are words or text that accompany a melody [1], while a melody is a series of notes in a sequence that are sounded sequentially [2].

Spoken language is used in singing and speaking. In singing, vocals are often held for up to a few seconds in the vocal channel. Even so, it cannot be denied that the vocal channels also change due to articulation. The composition in singing determines the freedom to create pitch, volume, and speed. Therefore, singers use other ways of expression that are not practiced in speaking: deliberate modulation, vibrato, and other distinctive styles that listeners can enjoy [3]. The use of colloquial language in the lyrics also causes phonetic phenomena to change or remove phons. However, as non-native German speakers, difficulties may arise when learning German through songs, for instance, understanding the lyrics due to their diverse pronunciation that leads to phonetic phenomena.

The theories used in this article are the theory of phonological processes mentioned by Bouchara and Baalla [4]: *Auslautverhärtung/Neutralisierung* (neutralization), Assimilation (assimilation), Gemination (gemination), *die vokalische Auslösung des [r]* (the [r]

vocal triggering), and Elision (elision). This study's coverage is limited to phonetic phenomena in the form of assimilation, the [r] vocal triggering, elision, with the addition of apheresis because these processes are found in the lyrics of the corpora. These theories are employed in examining *So wie jetzt* by *Revolverheld* (pop), *Meer sein* by Silbermond (rock), and *Vermissten* by Juju (feat. Henning May) (hip-hop/rap). This article does not examine the meaning nor conduct further research on understanding the meaning of the sound that listeners heard. This study is limited to analyzing phonetic phenomena in the lyrics—not phonological—even though the theory used is called "phonological process". In explaining the sound, the term "phon" is used. However, the term "phoneme" is also used in the expert's theory if they use the term "phoneme" in their explanation. The authors analyze how phonetic phenomena exist in German songs and the effect of these phonetic phenomena.

2. JUMPING INTO THE POOL: A BRIEF EXPLANATION OF ASSIMILATION, VOCAL TRIGGERING OF THE [r], ELISION, AND APHRESIS

2.1. Assimilation

Febriyanti [5] describes assimilation as the pronunciation of a sound similar to the sound before or after maintaining speaking speed. Native speakers often make changes to their speech—such as changes in speed

and emphasis—so that messages can be conveyed well without perfect articulation (ibid.). In assimilation, instead of removed, the phon is changed. Hall [6] believes that assimilation can be progressive or regressive.

Progressive

"When the features of a phoneme are modified by the features of the phoneme immediately before it" [7]. In other words, progressive assimilation occurs when the sound that is formed assimilates with the previous sound.

a → b

For example, when /ə/ in a word is omitted, /n/ which is nasal alveolar can be assimilated with labial sounds and velars that come after that sound [6]

/n/ → /m/

Lippenstift ['lɪpmʃtɪft]
haben ['ha:bm]

/n/ → /ŋ/

linken ['lɪŋkɪŋ]
Wagen [v'a:ŋ]

Regressive

Progressive assimilation is influenced by the preceding sound, whereas regressive assimilation is otherwise. Regressive assimilation is a change in phoneme characteristics influenced by the next sound in a word [7].

a → b

/n/ → /m/

bin mit [bɪmmɪt]

/d/ → /b/

jedem [j'e:bm] [8]

2.2. The [r] vocal triggering (Die vokalische Auslösung des [r])

In a syllable ending in "r", the consonant [r] is often changed to a vowel [ɐ] which contains [ɔ] and [a] sound. This phenomenon can be found in the words *Mutter* [mʊtɐ] and *weiter* [vaɪtɐ]. Because this study's analysis is according to the phonetic transcription (not letters), the data chosen are the ones which the phonetic transcription of the *Standardaussprache* (standard pronunciation) ends in [r]. *Standardaussprache* is the pronunciation of the standard German sound "recognized" in Germany; used as a "standard" because native speakers understand it and proven practical for use in communication [3]. Therefore, words in the example mentioned above were not included in the analysis because their standard transcription already ends in [ɐ].

2.3. Elision

Elision is the total removal of one or more sounds in a word or phrase as an effort to make the word or phrase

easier to pronounce [5]. Bouchara and Baalla [4] describe elision as the removal of one or more phonemes. They divided elision into three, namely schwa-Elision, /t/ - Elision, and omission of final consonants (*Ausfall von Konsonanten*).

Schwa-Elision

In linguistics, schwa is symbolized by /ə/. Schwa is found in many German words, for example in the word *haben* /'ha: bən/, *kaufen* /'kaʊfən/, and *leben* /'le:bən/. Bouchara and Baalla [4] revealed that schwa would disappear in unstressed syllables, especially those ending in -el, -en, em (after plosives and fricatives). Examples include:

- *haben* [ha:bn]
- *laden* [la:dn]
- *Kabel* [ka:bl]

They group schwa-elision into two:

1. *Apocope*, namely the removal of the vowel at the end.
Example: *ich sage* → *ich sag '*
2. *Syncope*, namely the removal of the middle vowel.
Example: *reden* → *redn*

/t/ - Elision

This type of elision often occurs when [t] is located in the middle of a *Dreiergruppe* word. *Dreiergruppe* is a word that consists of three parts, for example, consonants-vowels-consonants. Examples:

Glanz [nts] → [ns] and *Antwort* [ntv] → [nv]

Omission of Final Consonants (Ausfall von Auslautkonsonanten)

The 'loud' sounds like the voiced plosive usually found at the end of a word (German: *Laute im Wortauslaut*) is often omitted. This phenomenon is often found in songs and daily conversations in German. Example:

und → [ʊnt] → [ʊn]
vielleicht → [fi'laɪçt] → [fi'laɪç]

2.4. Apheresis (Aphärese)

Duden [9] online defines apheresis as removing a sound or syllable at the beginning of a word. In contrast to Bouchara and Baalla [4], who express syncope and apocope as a type of schwa-elision, Skandera and Burleigh [10] categorize syncope, apocope, and apheresis as types of elision based on their locations, because they play a role in eliminating sounds or syllables. However, the theory from Bouchara and Baalla [4] is set as the main reference, therefore apheresis is separated from elision in this study. The apheresis in writing is supported by an

apostrophe, but it can also be without an apostrophe. Some examples of apheresis are the following:

wie es ist → wie's ist
auf das → aufs

3. DIVING DEEPER: THE PHONETIC ANALYSIS OF THE CORPORA

3.1. So wie jetzt

So wie jetzt is a song written and performed by a band from Hamburg, Germany, called Revolverheld. This pop song is one of their flagship songs on the album *Zimmer mit Blick*, released in 2018. *So wie jetzt* is a song that has a tempo of 149 BPM (beats per minute). According to BBC Bitesize [11], the tempo is the song's beating speed based. With a tempo of 149 BPM, this song is a song with allegro or fast tempo. In *So wie jetzt*, Revolverheld invites their listeners to enjoy life to the fullest without fear and without caring about other people's opinions; life may not be predictable, but we can do anything we want despite all the odds. Since being published on March 4, 2019, on their YouTube channel, *So wie jetzt's* music video has been watched nearly 2 million times. For the analysis, the lyrics of *So wie jetzt* are taken from the YouTube channel Revolverheld [12] and the phonetic transcriptions are based on the Langenscheidt online dictionary [13]. In the song lyrics, 6 assimilations, 4 the [r] vocal triggerings, 18 elisions, and 5 aphereses are found.

Assimilation

Assimilation is caused by coarticulation (*die Koartikulation*). Coarticulation is a term for parallel anticipatory movements performed by articulators. This anticipation occurs when the articulator (for example the tongue or lips) has moved to the next position when a sound is formed [6]. Assimilation is associated with austerity in speaking, minimizing the effort and muscle movement to pronounce words. This is mostly found in quick and casual conversations.

Changing sound in assimilation is in the form of pronouncing sounds similar to the sound before or after it to maintain speaking speed [5]. In daily conversation—including songs—the pronunciation of sounds is not done slowly and carefully. This results in a change in sound.

Table 1. Assimilation in *So wie jetzt*

Words	Assimilation		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>wagen</i>	[ˈva:gən]	[ˈva:gŋ]	Prog
<i>haben</i>	[ˈha:bən] → [ˈha:bn]	[ˈha:bŋ]	Prog
<i>fragen</i>	[ˈfʁa:gən]	[ˈfʁa:gŋ]	Prog
<i>Schweigen</i>	[ˈʃvaɪgən]	[ˈʃvaɪgŋ]	Prog
<i>leben</i>	[ˈle:bən]	[ˈle:bm] → [ˈle:m]	Prog
<i>Dingen</i>	[ˈdɪŋən]	[ˈdɪŋŋ]	Prog

1. Könnten wir alles *wagen*, denn wir leben jetzt

[ˈva:gən] → [ˈva:gŋ]

The change from [v'a:gən] to [v'a:gŋ] is a change from nasal alveolar [n] to nasal velar [ŋ]. This is because [g] is more like [ŋ] than [n]; both [g] and [ŋ] are nasal velars. Since the previous phoneme influences this change, the assimilation that occurs is progressive assimilation. In German, consonant [ŋ] does not appear at the beginning of a word and always comes after a short vowel [3]. Therefore, [ŋ] often appears in assimilation and elision's results, such as *wagen* [v'a:gŋ], *fragen* [ˈfʁa:gŋ], and *Schweigen* [ˈʃvaɪgŋ].

2. Wir *haben* immer eine Antwort.

[ˈha:bən] → [ˈha:bŋ]

The consonant [n] changes to bilabial [m] because the bilabial sound is more similar to the bilabial [b], which lies behind it. The previous phoneme influences this change, and this also includes progressive assimilation. According to Hall [6], elision can also lead to assimilation: [ə] which is omitted in [ˈha:bən] causes the combination [bn] to change into [bŋ], according to those assimilated with it.

The [r] Vocal Triggering

The [r] vocal triggering is mostly caused by the schwache Form (English: weak form). Schwache Form is an unstressed syllable sound that in connected speech and is often pronounced as schwa [14]. Ebong and Sabbadini [15] reveal that connected speech is a series of sounds that continuously form speech or conversations in spoken language.

Table 2. The [r] Vocal Triggering in *So wie jetzt*

Words	The [r] Vocal Triggering	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>werden</i>	[ˈve:rdən]	[ˈve:gdŋ]
<i>für</i>	[fy:r]	[fy:ɐ]
<i>Fremdwort</i>	[ˈfʁɛmtvɔʁt]	[ˈfʁɛmvɔʁt]
<i>Tinder</i>	[tʌndər]	[tʌndɐ]

1. Geduld ist *für* uns ein *Fremdwort*

[fy:r] → [fy:ɐ]
[ˈfʁɛmtvɔʁt] → [ˈfʁɛmvɔʁt] → [ˈfʁɛmvɔɐ:t]

According to Krech et al. [3], after short vowels (except for the affix <-er, er-, her-, ver-, zer->), most sounds [r] are vocalized (pronounced like a vowel a). This phenomenon is called *Vokalisierung* in German. *Fremdwort* is a case of total assimilation that converts [r] on Wort into a vowel [ɐ] or even a long vowel: *Fremdwort* [ˈfʁɛmtvɔʁt] → [ˈfʁɛmvɔʁt] → [ˈfʁɛmvɔɐ:t]. Meanwhile, since the beginning, *für* contains long vowels, but the [r] has vanished because the word is not stressed in the lyrics.

2. *wir können werden, was wir wollen*

[ˈve:rdən] → [ˈve:ɾd̥n]

The word *werden* is not stressed on the song, so the [r] is released and changed into a vocal [ɾ]. The word *werden* is also a part of the *schwache Form* list that usually appears in German [6].

Elision

Elision has more than one type, namely schwa-Elision, /t/-Elision, and final consonants' omission (*Ausfall von Auslautkonsonanten*). Schwa-elision—the omission of /ə/ when there is no emphasis on the word—appears more often than the other two elisions in the lyrics. The song *So wie jetzt* is a song with tight lyrics and a fast pace: there are not many pauses changing from one word to another, resulting in many elisions.

Table 3. Schwa-Elision in *So wie jetzt*

Words	Schwa-Elision		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>hab</i>	[ha:bə]	[ha:b]	Apocope
<i>werden</i>	[ˈve:rdən]	[ˈve:ɾd̥n]	Syncope
<i>haben</i>	[ˈha:bən]	[ˈha:bn̩] → [ˈha:bm̩]	Syncope
<i>wollen</i>	[ˈvɔləŋ]	[ˈvɔln̩]	Syncope
<i>besonderes</i>	[bəˈzɔndərəs]	[bəˈzɔndrəs]	Syncope
<i>unsere</i>	[ˈʊnzərə]	[ˈʊnzrə]	Syncope
<i>fangen</i>	[ˈfaŋən]	[ˈfaŋn̩]	Syncope
<i>könnten</i>	[ˈkœntən]	[ˈkœntn̩]	Syncope
<i>wagen</i>	[vˈa:gən]	[vˈa:gŋ]	Syncope
<i>anderen</i>	[ˈʔandəʁən]	[ˈʔandəʁn̩]	Syncope
<i>boosten</i>	[ˈbu:stən]	[ˈbu:sn̩]	Syncope
<i>großen</i>	[ˈgʁo:sən]	[ˈgʁo:sŋ]	Syncope
<i>lamentieren</i>	[ˈlamɛnti:rən]	[ˈlamɛnti:rŋ]	Syncope
<i>können</i>	[ˈkœnən]	[ˈkœnŋ]	Syncope
<i>jeden</i>	[ˈjɛdən]	[ˈjɛdn̩]	Syncope
<i>leben</i>	[ˈle:bən]	[ˈle:bm̩] → [ˈle:m̩]	Syncope

1. *Ich hab 1000 Mal gehört*

Grammatically, the correct conjugation for *haben* in the above sentence is *ich habe*. However, the singer pronounces it *hab'* instead of *habe*; muting the /ə/ sound so that the lyrics fit the song's melody and rhythm. *Hab'* is also a word commonly used in colloquial German.

habe [ha:bə] → hab [ha:b]

Because elision occurs on the vowel /ə/ at the end of the word, *hab* belongs to the apocope. Hall [6] reveals that apocope is very common in daily conversations, but not in formal conversations.

2. *wann fangen wir zu leben an*

[ˈfaŋən] → [ˈfaŋn̩]

Pronunciation "deviation" is done deliberately to match the lyrics with the rhythm and melody of the song. Elision occurs on the vowel /ə/ in the middle, making it a syncope type elision.

The majority of schwa-elision found is syncope. In the lyrics, *So wie jetzt* does not tell about "I" (the

songwriter/ singer) or other people, but instead it contains an invitation to enjoy the moment and live without fear. That way, an appropriate point of view is the plural first-person perspective: *wir*. This causes the number of verbs ending in [ən] such as *fangen, haben, können, könnten, and wollen*, which are prone to syncope. The phonological process of apocope is only found once in this song's lyrics because apocope usually occurs in the verb conjugation *ich*.

Table 4. /t/ - in *So wie jetzt*

Words	/t/ - Elision	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>boosten</i>	[ˈbu:stən]	[ˈbu:sn̩]
<i>Antwort</i>	[ˈantvɔt]	[ˈanvɔt]

1. *wir sind Individualisten und boosten uns bei Tinder hoch*

2. *wir haben immer eine Antwort*

The consonant [t] in *Antwort* is a member of the *Dreiergruppe*, so it does not need to be voiced. There is a lag between the alveolar plosive [nt] and labiodental frikativ [v] in [ˈantvɔt] because [t] is 'muting' the sound. Therefore, [ˈanvɔt] is more comfortable to sing. Coarticulation also occurs in [an]; when the sound [an] is being formed, the articulator is 'getting ready' to sound [v].

Table 5. Omission of Final Consonants in *So wie jetzt*

Words	Omission of Final Consonants	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>jetzt</i>	[jetst]	[jets]
<i>und</i>	[ˈʔont]	[ˈʔon]
<i>nicht</i>	[niçt]	[niç]
<i>sind</i>	[zint]	[zin]
<i>ist</i>	[ist]	[is]
<i>ankommt</i>	[ˈʔan,kɔmt]	[ˈʔan,kɔm]

In German, pronouns, articles, auxiliary verbs (German: *Hilfsverb*), prepositions, conjunctions, adverbs, and numerals are usually unstressed (depending on the context and sentence). As mentioned earlier, the words that are not stressed are called *schwache Form*. There are several examples of the word *schwache Form* mentioned by Hall [6].

1. *so wie jetzt wird's nie wieder sein*
2. *obwohl dein Herz noch lange nicht so weit war*
3. **und** *wir können jeden Schritt im Voraus planen*
4. *wir sind alle was Besonderes*
5. **ist** *doch Schweigen unser Gold*

Sentence [1] and [2] containing adverbs, [3] containing conjunctions, and [4] as well as [5] containing auxiliary verbs have [t] as the final consonant. Based on the example presented by Hall [6], the majority of *schwache Formen* are one-syllabic words. The analysis

data reinforce this: *jetzt, nicht, und, sind* and *ist* consist of only one syllable. From this analysis, it can be concluded that when [t] as the final consonant is not stressed, its role will be weakened, and it will not even be pronounced at all (omitted). In addition, the omission of final consonants is also driven by word-class and the number of syllables.

Aphesis

Table 6. Aphesis in *So wie jetzt*

Words	Aphesis	
	Phonetic Transcription of Words	Phonetic Transcription of Data
ch	[ɪç]	[ç]
darauf	[ˈda:raʊf]	[ˈdraʊf]
wird's	[vɪrt] [ɛs]	[vɪrts]
auf's	[aʊf] [da:s]	[ʔaʊfs]
übern	[ˈy:bɐ] [den]	[ˈy:bɛn]
war's	[va:ɐ] [ɛs]	[vaʁs]
könnt uns	[kœnt] [uns]	[kœntns]

1. doch wenn es wirklich **drauf** ankommt

[ˈda:raʊf] → [ˈd:raʊf]

Drauf comes from the adverb *darauf*. In colloquial language or *Umgangssprache*, speakers often lose the vowel [a] in the front so that *drauf* is more commonly used. According to Duden [16], *darauf* is used to indicate the location of an object: “auf dieser Stelle, auf dieser Unterlage, auf diesem Gegenstand” or in English “at this place, at this foundation, on this object”. However, *wenn es drauf/ darauf ankommt* is actually an idiom (German: *Redensart*) which means *wenn es wirklich wichtig wird; wenn es criticalch / gefährlich wird* [17]. Idioms are commonly found in daily conversations, radio (songs), novels, newspapers, magazine articles, and books about travel [18]

2. lass dich endlich **auf's** Leben ein

[aʊf] [da:s] → [aʊfs]

Auf's/ auf's is a combination of *auf* (preposition) + *das* (article). In German, every class of words—including prepositions and articles—is so essential that these combinations are common. Aphesis occurs in *das*: [da] which lies in the front is omitted and leaves [s] combined with the previous word, *auf*. This compounding produces a shorter word *aufs* but does not change its function in the sentence. Another combination of prepositions + articles found in *So wie jetzt*'s lyrics is *übern: über* (preposition) + *den* (*akkusativ* article).

3. und doch nie **übern** Tellerrand

[ˈy:bɐ] [den] → [ˈy:bɛn]

Übern is a combination of *über* (preposition) + *den* (*akkusativ* article). Combining these two word classes plus the vocalization (German: *Vokalisierung*) in the consonant [r] to [ɐ] makes it sound like *üben*.

3.2. Meer sein

Meer sein is a song by Silbermond, a rock band from Saxony, Germany. The band has been actively producing six albums since 2002, they are *Verschwende deine Zeit* (2004), *Laut gedacht* (2006), *Nichts passiert* (2009), *Himmel auf* (2012), *Alles auf Anfang 2014-04* (2014), and *Schritte* (2019). *Meer sein* is one of their flagship songs on the album titled *Laut Gedacht* whose lyrics encourage people who feel alone and despair. This rock song has vivace or upbeat tempo, which is 167 BPM. Although it has been released since 2006, *Meer sein*'s music video was only uploaded in 2014 on their YouTube channel and watched 466,756 times [19].

Assimilation

Table 7. Assimilation in *Meer sein*

Words	Assimilation		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>ham</i>	[ˈha:bn]	[ˈha:m]	Prog
<i>viel mehr</i>	[fi:l] [me:ɐ]	[fimeɐ]	Reg
<i>schweigen</i>	[ˈʃvaɪgən]	[ˈʃvaɪgŋ]	Prog
<i>ertragen</i>	[ɛɐ̯ ˈtʁa:ɡŋ]	[ɛɐ̯ ˈtʁa:ɡŋ]	Prog
<i>sagen</i>	[ˈza:ɡŋ]	[ˈza:ɡŋ]	Prog
<i>zusammen machen</i>	[tsuˈzamən] [ˈmaxən]	[tsuˈzamməxən]	Reg

1. Wir **ham** lang danach gesucht

[ˈha:bn] → [ˈha:bŋ] → [ˈha:m]

As happened to the lyrics *wir haben immer eine Antwort* in the song *So wie jetzt*, the word *haben* in the lyrics above also experiences progressive assimilation. Although the pronunciation of [ˈha:bŋ] is more common, the pronunciation of [ˈha:m] is also frequently found in fast-paced conversations. No exception for fast-paced songs, *haben* is pronounced [ˈha:m] so that the lyrics and vocal melodies are not "left behind" by the rhythm and tempo of the song.

2. Zusammen machen wir alles möglich

[tsuˈzamən] [ˈmaxən] → [tsuˈzamməxən]

Regressive assimilation happens in this sentence. Changing the consonant [n] into [m] is one of the most common regressive assimilation cases. While the pronunciation of [tsuˈzamm] is common in colloquial language or German songs, the standard pronunciation of *zusammen* is [tsuˈzamən]. In these lyrics, the changes are caused by the bilabial [m] sound found in *machen*. At first glance, there is a possibility that the reader will be tricked by the [m] in *zusammen*, thinking that the [m] in the word is what causes the assimilation. However, compared to the lyrics of other songs containing *zusammen*, *zusammen* is not always pronounced [tsuˈzamm]. For example, in the song *Woran glaubst du?* by KLAN, there are lyrics *Nur zusammen halten wir* in shifted by Welt. The *zusammen* before the word *halten*, which has the initial letter *frikativ glottal* [h] is

pronounced [tsu'zamən]. Therefore, it cannot be concluded that the change from [n] to [m] is caused by [m] in the next word. However, the most significant influence of these changes still lies in the speed of the song's tempo and the singing style of the singer.

The [r] Vocal Triggering

In this song, three words that experience the [r] vocal triggering are found: *Wort*, *zuhört*, and *hört*. At first glance, the two words that often appear in the lyrics of this song—*Meer* and *mehr*—are homophonous words that experience this phonological process. According to online Cambridge Dictionary [20], homophones is pronounced the same as another word but has a different meaning or spelling, or both. Indeed, the phonetic transcription of *Meer* and *mehr* is [me:ɐ̯]. Although the consonant [r] is pronounced, [me:ɐ̯] is the standard pronunciation of both words. Therefore, they are not included in the research data.

Table 8. The [r] Vocal Triggering in *Meer sein*

Words	The [r] Vocal Triggering	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>Wort</i>	[vɔrt]	[vɔɐ̯t]
<i>zuhört</i>	[tsu:'hø:ɐ̯t]	[tsu:'hø:ɐ̯t]
<i>hört</i>	['hø:ɐ̯t]	['hø:ɐ̯t]

1. *Wir könnten mehr als nur ein Wort sein*

[vɔrt] → [vɔɐ̯t]

2. *Weil keiner zuhört und auch keiner versteht dich*

[tsu:'hø:ɐ̯t] → [tsu:'hø:ɐ̯t]

3. *Wir machen weiter solange bis die ganze Stadt uns hört*

['hø:ɐ̯t] → ['hø:ɐ̯t]

Just like *Fremdwort* in *So wie jetzt's* lyrics, the three words above contain a short vowel before [r]. In accordance with the explanation from Krech, Stock, Hirschfeld, and Anders [3], the sound [r] will be vocalized after a short vowel.

Elision

Elision (Tilgung) is a process that can be identified by comparing standard language with daily forms [21]. Therefore, there are often some differences in the pronunciation of a word between formal conversations and daily conversations: formal conversations tend to use standard language and pronunciation. In contrast, daily conversations are more relaxed and even remove some phons.

Table 9. Schwa-Elision in *Meer sein*

Words	Schwa-Elision		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>sagen</i>	[za:gən]	[za:gŋ]	Syncope
<i>könnten</i>	['kœntən]	['kœntŋ]	Syncope
<i>sollten</i>	['zɔltən]	['zɔltŋ]	Syncope
<i>steh'n</i>	['fte:ən]	['fte:n]	Syncope
<i>wär'n</i>	['vɛ:rən]	['vɛ:rŋ]	Syncope
<i>gebunden</i>	[gə'bʊndən]	[gə'bʊndŋ]	Syncope
<i>gefunden</i>	[gə'fʊndən]	[gə'fʊndŋ]	Syncope
<i>schweigen</i>	['ʃvaɪgən]	['ʃvaɪgŋ]	Syncope
<i>ertragen</i>	[ɛɐ̯'trɑ:gən]	[ɛɐ̯'trɑ:gŋ]	Syncope

1. *Und du hast wieder gedacht dir wär'n die Hände gebunden*

wären ['vɛ:rən] → wär'n ['vɛ:rŋ]

gebunden → [gə'bʊndən] → [gə'bʊndŋ]

In one line, four words that experience elision are found, they are *hast*, *gedacht*, *wären*, and *gebunden*: *hast* and *gedacht* experience omission of final consonants (more on that later), while *wären* and *gebunden* experience Schwa-Elision. Based on the findings, words containing alveolar phons will experience elision when they meet a schwa followed by [n]. The consonant [r] which is an alveolar trill and [d] which is an alveolar plosive tends to ignore the sound of the schwa afterward.

Table 10. /t/ - Elision in *Meer sein*

Words	/t/ - Elision	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>ganze</i>	['gantsə]	['gansə]
<i>nichts</i>	[nixts]	[nixs]

1. *Wir machen weiter solange bis die ganze Stadt uns hört*

2. *Und alles wär nichts*

Both *ganze* and *nichts* are *Dreiergruppe* words with a consonant [t] in the middle. The changes that these two words experiences are *ganze* [nts] to [ns] and *nichts* [xts] to [xs].

Table 11. Omission of Final Consonants in *Meer sein*

Words	Omission of Final Consonants	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>ist</i>	[ɪst]	[ɪs]
<i>sind</i>	[zɪnt]	[zɪn]
<i>nicht</i>	[niçt]	[niç]
<i>und</i>	[ʊnt]	[ʊn]
<i>denkst</i>	['deŋkst]	['deŋks]
<i>gehst</i>	[ge:st]	[ge:s]
<i>gedacht</i>	[gə.'daxt]	[gə.'dax]
<i>lasst</i>	[last]	[las]
<i>sagst</i>	[za:kst]	[zaks]
<i>lost</i>	['lɔ:st]	['lɔ:s]
<i>hast</i>	[hast]	[has]

1. *Und du hast wieder gedacht dir wär'n die Hände gebunden*

[ʊnt] → [ʊn]

[hast] → [has]

[gə.'daxt] → [gə.'dax]

Although the standard pronunciation of *gedacht* is [gə.'daxt], in daily German conversation, [t] is often omitted. The same thing happens to fast-paced songs like *Meer Sein*. *Gedacht* is pronounced [gə.'dax] because *dir*—which has the initial alveolar plosive sound [d]—comes after this word. The consonants [t] and [d] are both alveolar plosives, so [t] is assimilated, making the transition from one word to another easier and creating a "flowing" impression in the singing.

1. *Lasst uns ein Meer sein*

lasst [last] → [las]

2. *Du gehst nach draußen und denkst es ist unmöglich*

[ge:st] → [ge:s]

['denkst] → ['denks]

Denkst, es, and ist are three words containing the fricative alveolar [s]. If the plosive consonant [t] is not removed, the pronunciation of the next words runs the risk of intermittent. To prevent this, singers can "combine" the three words into one like ['denksəs].

1. *Auch wenn du sagst es geht nicht*

[za:kst] → [za:ks]

[niçt] → [niç]

Stefanie Kloß (vocalist of Silbermond) removes the consonant [t] in *sagst*. Omitting the [t] also prevents the singer from intermittent pronunciation. As a result, the singer seems to combine the word *sagst* with *es* to produce the sound [zaksəs].

Aphoresis

Table 12. Aphoresis in *Meer sein*

Words	Aphoresis	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>mehr als</i>	[me:ɐ̯] [als]	[meɐ̯ls]
<i>bringen ins</i>	['brɪŋən] [ɪns]	['brɪŋəns]

In writing, aphoresis is often characterized by shortening the words that stand side by side with an apostrophe as the mediator [22]. However, over time, apostrophes are no longer used in common words or phrases. After making the phonetic transcription of *Meer Sein's* lyrics, several phrases that do not explicitly experience aphoresis are found. However, after the phonetic transcriptions are made, it is revealed that the singer removes the sound at the beginning of the word

and combines it with the previous word. The following are some of the aphoresis phenomena found.

1. *Denn wir kann mehr als ein Wort sein*

[me:ɐ̯] [als] → [meɐ̯ls]

2. *Wir bringen ins Rollen was lange schon verstaubt ist*

bringen ins ['brɪŋən] [ɪns] → ['brɪŋəns]

The phenomena of aphoresis as above are similar to regressive assimilation. The difference lies in the removed phons: assimilation removes the phon at the end of a word and combines the word with the word after it, whereas aphoresis removes the phon at the beginning of the word and combines it with the previous word.

In the three lyrics above, the singer "summarizes" the syllables so that the lyrics match the melody, rhythm, and tempo of the song. If syllable summarization is not performed, the melody does not match the singer or songwriter's wishes, resulting in an excess syllable impression. Words that are too dense in a fast-paced song can also cause pronunciation to get tangled.

3.3. *Vermissten*

Juju—born as Judith Wessendorf—is a German Moroccan rapper. Since she was 14 years old, Juju has been rapping as a hobby. Juju became known since forming hip-hop duo group SXTN with Nura in 2014. *Von Party zu Party* is their most successful song with 38 million views since two years of being uploaded on YouTube. In 2018 Juju and Nura decided to separate and start their solo careers. Even though she has only had one year of career as a solo rapper, Juju had won the MTV Europe Music Awards for Best German Act in 2019.

This study analyzes one of her songs titled *Vermissten*. *Vermissten* was produced by Krutsch—a music producer from Berlin—and was one of the hit songs on her first album, *Bling Bling*. In this song, Juju collaborates with Henning May, vocalist of the rock band *AnnenMayKantereit*. *Vermissten* tells about the longing felt by two people who were once lovers. Even though they had had good times together, their relationship foundered and now they are very tormented by the feelings and the fact that their relationship has ended. This song has 90 BPM tempo which is included in the Andante tempo: a fairly slow-like-walking-speed tempo. But because this is a rap/ hip hop song, the word breaks and the transitions from one word to another on this song are fast.

Vermissten's music video has garnered nearly 44 million views since it was uploaded on 3 May 2019 on Juju's YouTube channel, namely *jujuvierundvierzig* [23]. The lyrics of *Vermissten* by Juju feat. Henning May are taken from Genius [24].

In the lyrics, there is no phenomenon of the [r] vocal triggering found. On the other hand, the number of elisions increases sharply compared to the previous two

songs. 6 assimilations, 29 elisions, and 1 apheresis are found.

Assimilation

In the lyrics of *Vermissten*, six assimilation processes are found, those are the verb *ablenken*, *rumzuschweben*, *irgendwelchen*, and the other three occurring on the same word, namely *Augen*: there is one as an independent noun and two which are part of compositum. The web page *mein-deutschbuch.de* describes compositum or in German is called *Kompositum* (plural: *Komposita*) as several words (at least two words) combined into one new word [25]. Usually, the German compositum consists of noun + noun, verb + noun, adjective + noun, and adverb + noun. The two composita found in the lyrics of this song are a combination of noun + noun.

Table 13. Assimilation in *Vermissten*

Words	Assimilation		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>Augen</i>	[ˈaʊgən]	[ˈaʊgŋ]	Prog
<i>Augenblick</i>	[ˈaʊgənblik]	[ˈaʊgŋblik]	Prog
<i>Augenringe</i>	[ˈaʊgŋ, ʁɪŋə]	[ˈaʊgŋ, ʁɪŋə]	Prog
<i>ablenken</i>	[ˈap, lɛŋkən]	[ˈʔap, lɛŋkŋ]	Prog
<i>rumzuschweben</i>	[ʁʊmtsuˈfve:bŋ]	[ʁʊmtsuˈfve:bŋ]	Prog
<i>irgendwelchen</i>	[ˈɪrgŋt, vɛlçən]	[ˈɪrgŋ, vɛlçən]	Prog

1. *Unsre beiden Augen, weil das Leben zu uns fair war*
Augen [ˈaʊgən] → [ˈaʊgŋ]
2. *Wie ich dich in diesem schieß Augenblick?*
[ˈaʊgənblik] → [ˈaʊgŋblik]
3. *Augenringe spi, Oegeln sich in meinem Glas*
[ˈaʊgŋ, ʁɪŋə] → [ˈaʊgŋ, ʁɪŋə]

Just like *Schweigen* and *wagen* in *So wie jetzt's* lyrics, the change from [ˈaʊgən] to [ˈaʊgŋ] is also a change from nasal alveolar [n] to nasal velar [ŋ]. This change is influenced by the plosive consonant velar [g] that comes before [ə]. However, because this word also experiences elision, [ə] is not pronounced so [g] connects with [n]. Assimilation in this word is classified as progressive assimilation. Other words that experience progressive assimilation are *Augenblick* and *Augenringe*. Although the two words are composita, assimilation only occurs in the word *Augen*; the nouns *Blick* and *Ring* do not result in assimilation to the words.

The [r] Vocal Triggering

In this song, no word that experiences the [r] vocal triggering. Although the lyrics contain many words that carry consonants [r] such as *Meersalz* [ˈme:ʁ, zalts], *vermissen*, and *oder* [ˈʔo:dɐ], the standard pronunciation of these words does use the vowel [ɐ] so it is not included in the analysis.

Elision

Elision is optional, depending on the speed of speech, rhythmic environment and comfort [26]. This means that when singer A pronounces *ablenken* with the pronunciation [ˈap, lɛŋkən], it does not mean that singer B sings the lyrics wrong if they pronounce them [ˈʔap, lɛŋkŋ].

Table 14. Schwa-Elision in *Vermissten*

Words	Assimilation		
	Phonetic Transcription of Words	Phonetic Transcription of Data	Type
<i>Augen</i>	[ˈaʊgən]	[ˈaʊgŋ]	Prog
<i>Augenblick</i>	[ˈaʊgənblik]	[ˈaʊgŋblik]	Prog
<i>Augenringe</i>	[ˈaʊgŋ, ʁɪŋə]	[ˈaʊgŋ, ʁɪŋə]	Prog
<i>ablenken</i>	[ˈap, lɛŋkən]	[ˈʔap, lɛŋkŋ]	Prog
<i>rumzuschweben</i>	[ʁʊmtsuˈfve:bŋ]	[ʁʊmtsuˈfve:bŋ]	Prog
<i>irgendwelchen</i>	[ˈɪrgŋt, vɛlçən]	[ˈɪrgŋ, vɛlçən]	Prog

1. *Guck mir zu, ich füll' ab heut alleine meine Brieftasche*
fülle [ˈfylə] → füll' [ˈfʏl], heute [ˈhɔɪtə] → [ˈhɔɪt]
2. *Und ich wart' auf ein Signal*
warte → wart' [ˈvartə] → [ˈvart]

The number of apocopes in the lyrics is far more than in the lyrics of the previous songs. This is due to taking a singular first-person point of view, so that many conjugation verbs used are for the singular first-person ich.

3. *Weißt du noch, als wir am Meer war'n?*
waren [ˈva:ʁən] → war'n [ˈva:ʁŋ]

Many syncopes are found because in some parts of the lyrics, the singer uses the conjugation verb for *wir* while reminiscing together. Syncopes are also found in infinitive verbs and plural nouns.

Table 15. /t/ - Elision in *Vermissten*

Words	/t/ - Elision	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>nichts</i>	[nixts]	[nixs]
<i>nachts</i>	[naχts]	[naχs]

1. *Nur noch ein letztes Mal, doch das ändert nichts*
nichts [nixts] → [nixs]
2. *Es ist nachts, ich bin wach und ich denk' an dich*
nachts [naχts] → [naχs]

Both *nachts* and *nichts* are a *Dreiergruppe* words that have [t] as the middle consonant. Even *nichts* is one of the words used as an example by Bouchara and Baalla [4].

Table 16. Omission of Final Consonants in *Vermissten*

Words	Omission of Final Consonants	
	Phonetic Transcription of Words	Phonetic Transcription of Data
<i>und</i>	[ˈʔont]	[ˈʔon]
<i>ist</i>	[ɪst]	[ɪs]
<i>Schwerkraft</i>	[ˈʃveːɐ̯kʁaft]	[ˈʃveːɐ̯kʁaf]
<i>Schmerzhaft</i>	[ˈʃmɛʁʃaft]	[ˈʃmɛʁʃaf]
<i>Duft</i>	[dɔft]	[dɔf]
<i>nicht</i>	[nɪç]	[nɪ]
<i>bleibt</i>	[ˈblaɪbt]	[ˈblaɪb]
<i>jemand</i>	[ˈjeːmant]	[ˈjeːman]
<i>irgendwelchen</i>	[ˈɪɡʁɪtˌvɛlçən]	[ˈɪɡʁɪtˌvɛlçən] → [ˈɪɡʁɪtˌvɛlçən]

1. *Ich vermiss dich, vermiss ohne **Schwerkraft***

[ˈʃveːɐ̯kʁaft] → [ˈʃveːɐ̯kʁaf]

2. *Mit dir rumzuschweben, der Absturz war so **schmerzhaft***

[ˈʃmɛʁʃaft] → [ˈʃmɛʁʃaf]

3. *Mal sehen, ob der **Duft** noch **bleibt***

[dɔft] → [dɔf]

[ˈblaɪbt] → [ˈblaɪb]

Although nouns, adjectives, and verbs are not included in the class of words included in the *schwache Form* list referred by Hall [6], it is possible that their final consonants may eliminate words from the three-word classes in daily conversations or songs. Verbs that often have the final consonant removed are those that end in [t], namely the conjugation verbs *er, sie, es, and du*.

Aphesis

The phenomenon of apheresis only occurs once in this song. The key to apheresis is removing the phon or front letter of a word, so that it is possible for words that only have one syllable to experience apheresis.

Table 17. Apheresis in *Meer Sein*

Words	Aphesis	
	Phonetic Transcription of Words	Phonetic Transcription of Data
'n	[aɪn]	[n]

1. *Ich hab' dich geh'n lassen wie 'n Feiglingein*

[aɪn] → 'n [n]

This phenomenon can occur due to the speed of speaking (or in this case singing). As a result, *ein* is not emphasized and seems to be just "crossed", causing the word to switch to *schwache Form*. The original phonetic transcription [aɪn] becomes [n].

4. CONCLUSION

Based on the analysis, it is discovered that assimilation, the [r] vocal triggering, elision, and apheresis are found in these three songs. The following is the frequency with which phonological processes occur in the data: the same word that occurs in different parts of the song (for example, in the verse and chorus) is counted more than once, depending on which part of the song it appears; while the same word that appear in the same part of the song (for example appears in verse more than three times or reappears in verse 2) are still counted once.

Table 18. Phonological Processes in *So Wie Jetzt*

	Meer sein			
	Assimilation	The [r] Vocal Triggering	Elision	Aphesis
Verse	4	2	19	1
Pre-chorus	1	1	3	1
Chorus	2	0	6	0
Total	7	3	28	2

Table 19. Phonological Processes in *Meer Sein*

	So wie jetzt			
	Assimilation	The [r] Vocal Triggering	Elision	Aphesis
Verse	4	4	18	3
Chorus	2	0	6	2
Bridge	1	0	5	1
Total	7	4	29	6

Table 20. Phonological Processes in *Vermissten*

	Vermissten			
	Assimilation	The [r] Vocal Triggering	Elision	Aphesis
Verse	5	0	27	1
Chorus	1	0	5	0
Total	6	0	32	1

From the tables, we can see that the most common phonological process found is elision, while the least is the [r] vocal triggering. This is due to the absence of complicated requirements for elision to occur. In addition, elision itself is divided into several parts: Schwa-Elision, /t/-Elision, and omission of final consonants, so it is "susceptible" for elision to occur. Besides, in order to trigger the [r] to occur, a word must have a consonant [r]; this requirement alone limits the occurrence of this phonological process. In addition, many words actually experience the [r] vocal triggering but the standard phonetic transcriptions of those words have changed [r] into [ʁ], thus they are not included in the analysis.

The highest frequency of occurrence of phonological processes occurs in verse, namely 29 times in the song *So*

wie jetzt, 26 times in *Meer sein*, and 33 times in *Vermissten* with 88 appearances in all songs. Compared to other parts of the song, most lyrics are in the verses, especially since each song has two verses that most of them have different lyrics from another. However, there is no clear pattern for the appearance of assimilation, the [r] vocal triggering, elision, or apheresis. In other words, there is no standard determining the occurrence of each phonological process; the occurrence of these phonological processes is random, depending on the words used in the lyrics, the speed of speech (or in this case singing), and the rhythm and melody of the song. It does not rule out that the phonological process also occurs due to the singers' singing style and dialect. The following are the differences in the phonological process that occurs in the three songs in the three different genres.

Table 21. Differences

Differences		
<i>So wie jetzt (pop)</i>	<i>Meer sein (rock)</i>	<i>Vermissten (hip hop/rap)</i>
7 assimilations, 4 [r] vocal triggerings, 29 elisions, 6 aphereses: the most diverse data of phonological processes.	7 assimilations, 3 [r] vocal triggerings, 28 elisions, 2 aphereses: all phonological processes are found, but not as many and varied as <i>So wie jetzt</i> .	6 assimilations, 0 [r] vocal triggering, 32 elisions, 1 apheresis: no [r] vocal triggering at all, because all words ending in [r] already have <i>Standardausprache</i> [e].
The tempo and transition are not as fast as <i>Meer Sein</i> , but one elision apocope is found.	Both the tempo and the transition from one word to another in the lyrics are fast, but there is no elision apocope at all.	Has the slowest tempo compared to the other two songs, but the transition from one word to another is fairly fast and the singing style of the singer is more "relaxed" so that syncope and apocope elision are mostly found in this song.

The phonological process of elision occurs mostly in *Vermissten*. In hip-hop/rap songs, the transition from one word to another in the lyrics are faster than in the pop and rock songs, so singers also rely on their speaking speed automatically. In order to keep the lyrics sound, the singer cut phons a lot. That is why apocope elision and omission of final consonants are found more in *Vermissten* than in *So wie jetzt* and *Meer sein*.

Apocope elision is only found once in *So wie jetzt* and even not one in *Meer sein*. However, nine words that experience apocope are found in *Vermissten*. The number of apocopes in *Vermissten* is caused by the lyrics that often take singular first-person point of view, the transition from one word to another is fairly fast, and the singer's singing style is also more "relaxed". Although there is no definite pattern regarding the occurrence of elision, singers of these three songs tend to omit schwa in words that end in consonant [n]. This results elision in almost all words ending in [n] or words in the infinitive form.

However, again, the phonetic phenomena in these songs can be reflexed, meaning that the singers may not have done it on purpose. Even so, the assimilation, the [r] vocal triggering, the elision, and the apheresis that occur still have functions, i.e., synchronizing the lyrics with the melody, rhythm, and tempo; making it easier to pronounce; and making the lyrics sound more flowing.

AUTHORS' CONTRIBUTIONS

Conceptualization, methodology, formal analysis, material preparation, and visualization were performed by Tiara Annisa Adhi Moulidhanty. Julia Wulandari reviewed the draft of the manuscript and supervised the findings of this work. All authors discussed and approved the final manuscript.

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