



Onomatopoeia in German Verb Suffixes

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ABSTRACT

This article falls within the framework of lexical semantics and word formation and includes a theoretical framework and an empirical study based on a literary corpus. It aims to analyse onomatopoeia in German verbs with the suffixes ‘-(e)(n)’ and ‘-(e)r(n)’ and to study the behaviour of these verbs in the corpus. The corpus of reference has been extracted from *Der goldne Topf* by E.T.A. Hoffmann. Due to the richness of the content concerning these verb suffixes, the author has already carried out a study about the iterative aspect of these suffixes in this literary work, and the present paper aims to extend the research with the analysis of the onomatopoeic verbs in it. Specifically, the following topics will be addressed. 1) What is onomatopoeia? 2) What is the relationship between these German verb suffixes and onomatopoeia? 3) How is the frequency of appearance of these suffixes in relation to onomatopoeia quantified in the corpus? 4) What semantic and morphological characteristics are shown by the suffixed verbs that express onomatopoeia? The current study presents a theoretical framework with the aim of analysing onomatopoeia and its relationship with German word formation. Taking this theoretical framework into account, in the empirical part of the study, the corpus is qualitatively and quantitatively analysed, and conclusions are drawn bearing in mind the function of the verbs with the suffixes of interest. R software was used for pre-processing the text needed for generating the corpus. Excel was used for analysis.

Keywords: Onomatopoeia, Semantics, Suffixes, Word Formation, Corpus

1. Introduction

This study falls within the framework of lexical semantics and word formation. The function and frequency of appearance of onomatopoeia in German verbs ending in the suffixes ‘-(e)l(n)’ and ‘-(e)r(n)’ will be examined. The following analysis is performed on the selected verbs above aiming to:

a) find out the possible relations between the onomatopoeic meaning and the verbal forms; b) carry out a semantic classification; c) conduct a morphological classification; d) identify the possibility for producing onomatopoeic verbs for both suffixes; e) analyse the frequency of appearance of these types of verbs.

The analysis is based on a corpus of verbs from *Der goldne Topf* by E.T.A. Hoffmann. This literary work was chosen precisely for the high number of such verbs that it contains. This kind of verbs is related to the prose of Hoffmann and to the content of the narrative: the connection with nature and supernatural stories. The current study is organised as follows. Firstly, onomatopoeia is defined and described. Secondly, bearing in mind the existing literature, the article describes the verbs that contain these suffixes and the characteristics of such verbs, with a special emphasis on the ones that have an onomatopoeic meaning. Thirdly, the corpus is analysed, with a focus on the features noted in the theoretical framework. The conclusion of this study proves the relationship between the verbal suffixes and their onomatopoeic meaning.

2. Methodology

This paper is based on the empirical analysis of the corpus extracted from *Der goldne Topf* by E.T.A. Hoffmann. The methodological process for the analysis is as follows:

For converting the book in pdf to txt format file, the R package ‘pdftools’ was used and the library ‘tokenizers’ for splitting the text in tokens.

Firstly, all the verbal forms with suffixes ‘-(e)l(n)’ and ‘-(e)r(n)’ were collected. For the extraction of the tokens with suffixes ‘-(e)l(n)’ and ‘-(e)r(n)’, the R Package ‘stringr’ was used. This package enables the handling of strings and is included in ‘Tidyverse’ collection (Cf. Rühlemann, 2020).

The sample after pre-processing with R included 222 tokens. Fourteen substantives were removed from this sample.

Excel was used for the classification of parts of speech and the analysis of frequencies. The number of instances in the corpus was 208 (111 with ‘-(e)r(n)’ and 97 with ‘-(e)l(n)’). The source sample of the current analysis took into account the number of total instances (tokens) since the aim was to carry out a study of the frequency of appearance of each suffix.

Secondly, once all the instances were collected, both types of suffixes were classified, and those having an onomatopoeic meaning were selected. Out of the 208 verbal forms, the result of the selection was: 55 verbs (types) have an onomatopoeic meaning, 33 with ‘-(e)r(n)’ as a suffix and 22 with ‘-(e)l(n)’.

In the following, qualitative and quantitative analyses of the corpus are carried out in order to research the onomatopoeic meaning of these verbs.

1. The meaning of verbs is studied to verify whether an analogy exists between them while considering the vowel type, as described by Hempel (1980) and Muylaert (2001).

2. In addition, the verbs are classified from a semantic perspective, considering the type of sound they express and the context in which they are produced, as in Lohde (2006).

3. Similarly, morphological analysis is carried out to verify how many of the examples from the corpus are derived from an interjection (Rodríguez Guzmán, 2011), whether Umlaut is used (Kühnhold & Wellmann, 1973, p. 23), and whether the instances found can be segmented. It will also be determined whether there are nouns derived from these verbs (Fleischer & Barz, 2007).

4. Similarly, from a quantitative perspective, the analysis will establish the number of instances of each suffix the corpus includes.

By following the described steps above, definite conclusions can be made as regards the characteristics of these verbs in the corpus.

2.1. Design of the investigation

The present paper is a non-experimental and observational study (Herrera Soler, Martínez Arias & Amengual Pizarro, 2011, p. 19), which means variables are not manipulated, but the researcher only focuses on recording and measuring them. Therefore, the conclusions must contribute to the explanation of the phenomenon of the research. In this case, the elements of the corpus are recorded, analysed, classified and measured to verify to what extent they match the models suggested by the current literature on this respect. In addition, it is a cross-sectional research since the corpus elements are collected at a moment within a limited timeframe. In this research, a study over the course of time is not relevant because it aims to check the status of the verb suffixes contained in a literary work at any given time. The measurement is quantitative, based on the number of times this type of verbs appears in the corpus.

3. Theoretical framework

3.1. Definition of onomatopoeia

The term onomatopoeia can be extrapolated from two disciplines: word formation, the background research field of the current article, and rhetoric, given that onomatopoeia can be understood as a stylistic figure. The current study will deal with the general meaning of onomatopoeia, and then go on to analyse the usage in German verbs. In other words, it focusses on how onomatopoeia generally works, and how it works in the specific case of German verbs.

Onomatopoeia is a general phenomenon for all languages. Yule, (³2008, p. 8) considers a hypothesis regarding the origin of language based on the concept of natural sounds. According to this concept, primitive words could have been imitations of the natural sounds that people heard around them. For example, if they heard /'koku:/ (<CU-CÚ>), this sound was used to designate the object that produced the sound. The fact that all modern languages contain words the pronunciation of which appears to imitate sounds from nature could be considered to be an argument in support of this hypothesis, referred to as the "bow-wow" theory¹. While on the one hand, onomatopoeia (i.e., the imitation of natural sounds) occurs in all languages, meaning that it is difficult to determine the origin

1 British philologist Friedrich Max Muller proposed it in the 19th century.

of the names of the things in our world —most things— that do not make sounds, something even more difficult in the case of abstract entities. On the other hand, according to this theory, only the “names” of entities could be designated (Yule, 2008, p. 8).

Alvar Ezquerra (2008, p. 16) points out that onomatopoeia is the conversion of natural sounds into a word the signifier of which imitates extra-linguistic reality. Symbolic onomatopoeia, that is words that do not imitate real sounds but rather represent sensations and affective perceptions, also occurs. Alvar Ezquerra also views interjections as forms of onomatopoeia, considering them just affective exclamations, such as the voices used for calling people or urging animals to move. (Alvar Ezquerra, 1998, p. 2008)

With his definition, Lewandowski (1976, II, p. 454) highlights the double aspect of this phenomenon both as an imitation and as a resource for word formation:

Onomatopöie 1. Nachahmung von Naturlauten (von Begleitgeräuschen von Naturprozessen, Tierlauten). 2) Wortbildung durch Nachahmung der Naturlaute bzw. durch relative Affinität mit natürlichen Erscheinungen, durch Lautmalerei, durch den natürlich gegebenen Zusammenhang von real Bezeichnetem und sprachlichem Zeichen. Die einzelnen Fälle bilden eine Skala von Lautnachahmung bis Lautsymbolik (d.h. von Nachahmung bis Setzung), z. B. ‚Wörter‘, die mit ihrer Lautung auf das hinweisen, was gemeint ist: ‚wau-wau‘, ‚mäh-mäh‘, ‚kikeriki‘, ‚Kuckuck‘, ‚quak-quak‘; lautmalende Nachschöpfung: ‚gurren‘, ‚grunzen‘, ‚knurren‘, ‚surren‘, ‚gackern‘, ‚blöken‘, ‚rieseln‘, ‚flitzen‘, ‚Blitz‘, ‚Gruft‘, ‚Höhle‘. Genauere Beobachtung zeigt, dass der Lautkörper nur ein ungefähres Abbild des natürlichen Geräusches ist; es werden ziemlich willkürlich relevante Lautmerkmale gewählt, die nicht die ganze Schallfülle wiedergeben können, sondern von ihr abstrahieren. Aufschlussreich ist der interlinguale Vergleich [...], der trotz der konventionellen graphischen Wiedergabe den arbiträren bzw. zeichenhaften Charakter der Bildungen verdeutlicht. (Lewandowski, 1976, II, p. 454)

Given that each person perceives a particular sound in terms of his or her own language, in each language, imitative sounds appear to correspond to different realities in an arbitrary manner. Onomatopoeia, however, supposes an exception to the arbitrariness of the linguistic sign. According to Saussure (1967 [1916]), the linguistic sign is arbitrary because there is no relationship between signifier and signified. The

relationship is purely arbitrary. For example, the signifier 'B-A-U-M' does not presuppose the signified of 'Baum'. We designate an object 'Baum' as a result of convention. Onomatopoeia constitutes an exception to this rule. In this case, there is a relationship between the signifier and the signified. Cruse (1986, p. 34) refers to onomatopoeic words which are held to 'resemble' their referents auditorially, but the degree of objective similarity may be very low.

Ullmann (1965, p. 9-107) and Baldinger (1977, p. 34) distinguish two types of motivation (similitude between signifier and signified): Firstly, they give phonetic motivation which includes onomatopoeia. Onomatopoeia can be classified as: primary onomatopoeia (imitation of the sound by means of the sound 'tick-tock', 'crack', 'whizz', and secondary onomatopoeia which does not bring to mind the sound, but other experiences such as movements, physical or moral qualities is associated with some connotations: 'sloth', 'grumpy'. Secondly, they deal with morphological motivation (compounds and derivatives) and semantic motivation (metaphor) in which there is not a big bond between signifier and signified.

An example related to this last point is the empirical study by Heinz Wissemann (1954), who performed experiments to determine the expressions used to refer to different noises, such as hammering on a scale, shaking a beer bottle, or splitting wood. Based on these experiments, Wissemann arrives at a series of conclusions describing how onomatopoeic expressions are produced in relation to how speakers perceive sounds.² Erben (³1993, p. 19) similarly explains the difficulty of expressing the denominations of noises with onomatopoeia, the only exception being baby talk, in which linguistic creations mix with playful creations in an experimental way. Erben comments as follows:

Aufschlussreich ist auch eine Äußerung von Tucholsky: „mir fehlt ein Wort. Ich werde ins Grab sinken, ohne zu wissen, was die Birkenblätter tun. Ich weiß es, aber ich kann es nicht sagen. Der Wind weht durch die jungen Birken; ihre Blätter zittern so schnell, hin und her, dass sie...was? Flirren? Nein, auf ihnen flirrt das Licht; man kann vielleicht allenfalls sagen: die Blätter flimmern...aber es ist nicht das. Es ist eine nervöse Bewegung... Was man nicht sagen kann, bleibt unerlöst“. Selbst Poeten, welche die Wirklichkeit schärfer zu fassen, unentdeckte oder verstellte

2 However, according to Baldinger, when onomatopoeic words obtain an idiomatic meaning, they follow the same development as the other groups, this is, through phonetic changes they can lose their onomatopoeic sense (Baldinger, 1977, p. 34).

Wirklichkeit zu erhellen trachten, will offensichtlich Wortschöpfung ohne Anschluss an vorhandene Sprachelemente, die man höchstens variieren, isolieren oder experimentierend neu kombinieren kann, nicht gelingen. (Erben, ³1993, p. 19)

Hempel (1980, p. 14) describes onomatopoeia as the oldest linguistic expression used to designate a given real phenomenon, and with good reason. For example, in Spanish baby talk, *guagua* means 'dog'. Initially, primates carried out the imitation of acoustic perception. Such representations were symbols of the first reaction to sounds. Such expressions became less relevant once man chose the path of language, which delineates reality according to the intellectual viewpoint, not according to the senses. Onomatopoeia, however, found its role and its resulting reproduction in the acoustic sphere. As regards German verbs, Hempel finds a similarity between certain verbs that denote noises that come from natural spheres. Low-pitched noises are expressed with a certain type of vowel ('dunkel' – back),³ e.g., 'brummen', 'summen', 'surren', 'rauschen', and 'brausen'. In contrast, a different type of vowel is used for high-pitched noises ('hell' – front), e.g., 'flüstern', 'wispern', 'wimmern', 'klirren', 'schwirren', 'zischen', 'pfeifen', and 'schleifen'. Hempel highlights an example from Goethe: "Da pispert's und flistert's und schwirrt" (Goethe, Hochzeitslied), – für lautes Getümmel setzt Goethe a-Bildungen ein: "Nun dappelt's und rappelt's und klappert's im Saal." (Hempel, 1980, p. 16)

Muylaert (2001, p. 617) also observes a relationship between noise types and the consonants used to produce them:

In der Bildung der Onomatopoetika gibt es eine bestimmte Regelmäßigkeit, die keinesfalls zufällig zu sein scheint. Es heißt, die verschiedenen Konsonanten mit ihren Artikulationsstellen im Artikulationsapparat würden Sinngruppen bilden. So würden sie Verschlusslaute b, p, g, die mit einer plötzlichen Sprengung der Lippen verbunden sind, einen bestimmten Gewaltausdruck bzw. Stöße mit den dazugehörigen Geräuschen ausdrücken. Die Sibilanten wiederum erinnerten an Pfeifen und Zischen [...]. Das Phonem /k/ mit seinen verschiedenen Schreibweisen würde die Geräusche beim Stoßen, Zusammenkrachen und zerbrechen charakterisieren. (Muylaert, 2001, p. 617)

3 Muylaert (2001, p. 617) also describes the differentiation of vowels according to ,hell' (front) and ,dunkel' (back): "Die von ihm hell bezeichneten Vokale werden im vorderen Bereich des Gaumens gebildet. Alle anderen sind dunkle Vokale, unabhängig davon, ob sie nun im hinteren Teil des Gaumens oder in Höhe des Gaumensegels artikuliert werden." Depending on how a vowel is used, the sounds will be different, as noted by Hempel (1980, p. 16).

Muylaert (2001, p. 619), however, concludes that onomatopoeic expressions gradually distance themselves from the original acoustic perception that motivated them. This phenomenon occurs because initially the expressions are typically transcribed as monosyllables or repetitions, but at a more advanced stage, often become nominalisations that differ in kind from the original terms: 'Klack – das Klacken – das Geklacker'. Thus, these formations frequently lead to the creation of neutral forms with the prefix *Ge-* (e.g., 'Gebrüll', 'Gebell', 'Gerede', 'Gemurre').

Duden (2009, p. 599) distinguishes between onomatopoeic animal sounds and noises of a different nature: "Knall, Schuss: 'peng', 'boing'; Klingeln: 'klingeling'; Einsatzwagen: 'tatütata'; Uhr: 'tick, tack'; Herz: pulsierendes oder schlagendes Geräusch: 'bum, bum'". Onomatopoeias can be doubled, multiplied, or extended depending on the nature of the noise they denote. In addition, they can be autonomous, that is, they can form phrases on their own. According to Duden, the function of onomatopoeia is not to express feelings but simply to imitate sounds. Duden (2009, p. 599) distinguishes adverbial onomatopoeic expressions as a subclass that occupies the position of an adverb from the syntactic viewpoint: "die Adverb[ial]onomatopoetika imitieren das Geräusch schneller, abrupter Bewegungen und dienen der Bezeichnung plötzlicher Handlungen, 'Sie kam herein und schwupp!', 'Nahm sie sich ein Brötchen', 'Er betrat den Raum und zack!', 'Fiel er zu Boden.'" (Cf. Sánchez Hernández, ²2020, p. 157).

Rodríguez Guzmán (2011, p. 125-128) vindicates the independent nature of onomatopoeia and therefore, due to its syntagmatic function and morphological characteristics, its consideration as a word class, like interjections. In this regard, this author notes the scarce literature on the subject and the benefit of including onomatopoeic words in dictionaries along with the other word types they are used with to produce (e.g., 'miau-miauen').⁴

Another aspect that should be considered is onomatopoeia as a rhetorical or stylistic figure. Mayoral (2005, p. 92) refers to the definition of Nebrija (1981, p. 222): "*Cuando*

4 Authors such as Muylaert have previously considered the inclusion of onomatopoeic words in dictionaries: "*Der Petit Robert* (1965) definiert wie folgt *Clac* (französisch) und 'Klack' (Deutsch): Ausruf zur Wiedergabe eines spröden Geräusches, eines Knallens, während Wahrig (1968): 'Klack' definiert als: Ausruf, wenn etwas breiiges, Dickflüssiges zu Boden fällt, was jedoch den festgestellten Anwendungsbeispielen nicht entspricht." (Muylaert, 2001, p. 618). Similarly, currently, there are dictionaries in which such terms are designated as instances of onomatopoeia, and information is provided regarding their origin and relationship with interjections or other terms, for example, the *Digital Dictionary of the German Language* (DWDS).

fingimos [formamos] algún nombre del son que tiene alguna cosa"; In other words, onomatopoeia constitutes one of those procedures whereby a poet may carry out "*esa licencia en el dominio de la neología léxica*". In addition, Ottmers (1996, p. 179) introduces terms from comic strips that use ellipsis: 'klatsch', 'plumps', 'zacks'.

As observed, the phenomenon of onomatopoeia covers a wide spectrum of aspects in linguistics. Onomatopoeia can include different grammar categories; some authors vindicate their status as a proper grammar category. Onomatopoeic words having one or another vowel may affect their meaning. Besides, onomatopoeia can be classified according to the type of sound they reproduce. Onomatopoeia can be lexicalized, so they can lose their onomatopoeic character. All the above are characteristic features of onomatopoeia.

3.2. Verbs in '-(e)l(n)''-(e)r(n)' with onomatopoeic meaning

Firstly, in this section the characteristics of verbs with both suffixes will be analysed. Secondly, we will focus on the onomatopoeic meaning of such verbs. From a morphological perspective and according to Helbig & Buscha (1987, p. 27-37), verbs containing the suffixes '-(e)l(n)'; '-(e)r(n)' are regular verbs the conjugation of which deviates slightly from normal conjugation. This deviation occurs principally in the first person singular and plural, and third person plural of the present indicative (e.g., 'ich handle', 'ich klingle'; 'wir handeln', 'sie rudern').

From the perspective of word formation, Duden (2009, p. 708) views such verbs as the few verbs prone to taking a suffix. According to Duden, the suffix '-(e)r(n)' ('blinkern', 'zwinkern') is not productive i.e., it is not used to form verbs. In contrast, the suffix '-(e)l(n)' is used to form new verbs in German and continues to be productive: 'menscheln', 'sporteln'.

Denominal verbs or adjectives are used as bases. As for verbal bases, the two suffixes '-(e)l(n)' and '-(e)r(n)' are used. These verbal bases can be simple: 'lachen – lächeln'; 'blinken – blinkern'. Donalies (2005, p. 122) also mentions occasional formations, such as 'grinseln', 'unkeln', and 'warteln'.

As was the case with verbal bases with '-(e)l(n)', nominal bases with the suffix '-(e)l(n)' are less productive: 'kriseln', 'radeln', and 'sporteln' (Duden, 2009, p. 708). According to

Fleischer & Barz (2007, p. 309), there are no verbs ending in ‘-(e)r(n)’ with a nominal base. Exceptions include ‘dreckern’ and ‘kleckern’. These exceptions represent conversions in which the suffix is part of the root (‘hungern’, ‘trauern’) or plural forms with a nominal base (‘blättern’, ‘gliedern’, ‘löchern’) (Fleischer & Barz, 2007, p. 309). According to Fleischer & Barz (2007, p. 310), verbs of this type often have a simple base except in cases such as ‘eifersüchteln’.

In addition, these formations frequently have an ‘Umlaut’ (Erben, 1975, p. 72). According to Kühnhold & Wellmann (1973, p. 23), 90% of denominal derivatives have an Umlaut on the radical vowel, and there are few exceptions to this rule (‘radeln’, ‘schnapseln’, ‘wursteln’). As for deverbal formations, no regularity is observed in this regard: ‘hüsteln’, ‘spötteln’, and ‘töpfeln’ but ‘hangeln’, ‘brummeln’, and ‘krammeln’ (40% do not have an ‘Umlaut’).

Certain verbs ending in ‘-(e)l(n)’ derive from adjectives, such as ‘absürdeln’, ‘müdeln’ (Glück & Sauer, 1997, p. 85), and ‘geistreicheln’ (GWDS, 1999 nach Duden, 2009, p. 709). Fleischer & Barz (2007, p. 316) also mention ‘-(e)l(n)’ in the case of two durative verbs: ‘ähneln’ and ‘kränkeln’, where the second verb can also be explained as deverbal. The examples ‘frömmeln’, ‘blödeln’, and ‘klügeln’ adopt their meaning as follows (for the case of ‘frömmeln’): ‘fromm sein’ or ‘sich so benehmen, als sei man fromm’.

Kühnhold & Wellmann (1973, p. 116) observe a difference in syntactic rection in formations such as ‘etwas deuten’ and ‘an etwas deuteln’; ‘jemanden lieben’ and ‘mit jemandem liebeln’; ‘etwas zünden’ and ‘mit etwas zündeln’.

For Naumann (1972, p. 57), verb formation through the use of suffixes implies a much less important process than when verbs are formed using prefixes. According to him, verb formation through the use of ‘-el-’ or ‘-er-’ means an extension of the verb suffix ‘-en’: “Erweiterung des einzigen verbalisierenden Suffixes ‘-en’ durch zusätzliche, davorgestellte Suffixe (‘-el-’: ‘deuten’/‘deuteln’, ‘-er-’: ‘blinken’/‘blinkern’ [...])” (Naumann, 1972, p. 57).

Fleischer & Barz note a considerable number of verbs with ‘-(e)l(n)’ that express the imitations of sounds and cannot be segmented. That is, their bases are not ‘Grundmorpheme’, such as ‘babbeln’, ‘bimmeln’, ‘buddeln’, ‘gammeln’, ‘krabbeln’, ‘kribbeln’, ‘hätscheln’, ‘lispeln’, ‘muddeln’, ‘munkeln’, ‘nuscheln’, ‘quabbeln’, ‘quasseln’, ‘quakeln’, ‘pickeln’,

'pinkeln', 'rappeln', 'sabbeln', 'schwappeln', 'schunkeln', 'tätscheln', 'torkeln', 'watscheln', 'wimmeln', and 'zappeln'. In addition, a large number of non-segmentable onomatopoeic formations are documented with the suffix '-(e)r(n)', such as 'bibbern', 'blubbern', 'giepern', 'gluckern', 'knabbern', 'knattern', 'knistern', 'knuspern', 'labern', 'plappern', 'poltern', 'rattern', 'räuspfern', 'sabbern', 'schlabbern', 'schlittern', 'schmettern', 'schwabbern', 'wimmern', and 'wispern'. There are verb pairs that are not differentiated, such as 'babbeln' – 'babbern', 'sabbeln' – 'sabbern', although 'wimmeln' – 'wimmern' constitutes a different case. (Fleischer & Barz, 2007, p. 349)

Lohde (2006, p. 269) considers there are a larger number of onomatopoeic formations with '-(e)r(n)' than with '-(e)l(n)' and adds others to those cited by Fleischer & Barz, 2007, such as 'flüstern', 'ballern', and 'kichern'. It should be noted that most of the sounds that these verbs denote are well delimited and that these verbs have precise meanings. In German, there is always a differentiating verb, for example, 'rattern' (repetitive metallic noise, such as a train departing) compared with 'knattern' (the noise of a motorcycle).

4. Results and Discussion

The corpus of the current study contains 208 verbs that end with the suffixes '-(e)r(n)' or '-(e)l(n)'. A total of 111 of the verbs are formed with the suffix '-(e)r(n)' and 97 by '-(e)l(n)'. According to Lohde (2006, p. 269), verbs ending in an '-(e)r(n)' suffix are more productive than verbs with an '-(e)l(n)' suffix. Of these verbs, 55 have an onomatopoeic meaning: 22 '-(e)l(n)' verbs and 33 '-(e)r(n)' verbs.

4.1. Semantic and morphological analysis of the corpus in formations with -(e)l(n)

There are 22 examples of verbs formed with the suffix '-(e)l(n)'. The page and line of the corpus in which the verbs occur are provided in parentheses. As we are also interested in productivity, repetitions have also been considered. For those cases in which the meaning of the verb cannot be inferred, the context in which the verb is used is provided.

Table 1: Onomatopoeic verbs in ‘-(e)l(n)’ in the corpus

Verb	Page/line	Context
‘murmeln’	(90, 17)	voice
‘umschnüffelt’	(94,29)	(‘Mops’) noise
‘lispeln’	(97,1)	noise
‘zischelt’	(97,12)	(‘Abendwind’) noise
‘raschelt’	(97,12)	(‘der Tau’) noise
‘lispelte’	(97,28)	(‘die Natur’) noise
‘risceln’	(99,25)	noise
‘raschelnd’	(99,26)	noise
‘prasselnd’	(103,25)	noise
‘murmelnd’	(108,17)	voice
‘murmelte’	(138,2)	voice
‘lispelte’	(148,10)	(Veronika) voice
‘säuselten’	(152,2)	voice
‘lispelnden’	(158,19)	(‘Kristalklängen’) noise
‘prasselnd’	(168,23)	(‘glühendes Metall’) noise
‘lispelte’	(195,22)	(Veronika) voice
‘prasseln’	(199,2)	(‘Flammermassen’) noise
‘säuselte’	(203,21)	voice
‘stammelte’	(213,28)	(,der Konrektor‘) voice
‘risceln’	(223,28)	(‘Büsche’) noise
‘umsäuseln’	(223,32)	voice
‘sprudeln’	(224, 2)	noise

In absolute values, out of the 22 instances, 9 refer to the human voice, whereas 13 verbs correspond to noises in various contexts (here, ‘zischelt’ is understood as a noise (‘Abendwind’)). The verb ‘lispeln’ is occasionally understood as a noise (‘Es fing an zu flüstern und zu lispeln’ 97,1). In other instances, it refers to the human voice (lispelte 148,10). Therefore, the fact that more verbs are used in noise contexts than in relation to the human voice noted.

The most frequently used vocalic phonemes are /u/, /i/, /a/, and the diphthong <äu>. In certain cases, the vocalic alternation aiming to highlight the acoustic nature of the text is remarkable: ‘raschelnd’, ‘risceln’. A parallelism according to noise type, such as that found by Hempel (1980, p. 156), could not be established. That is, there are noises that are light to high-pitched, such as ‘lispeln’ or ‘zischeln’, and noises that are lower, such as ‘rascheln’ although there is also ‘risceln’. These verbs, such as those in the phrase ‘risceln und rascheln’, are forms that appeared in the 19th century, e.g., ‘sich mit Geräusch bewegen, überhastete Bewegungen machen’ (DWDS, s/v: ‘rascheln’).⁵

5 *Digitales Wörterbuch der deutschen Sprache*, <https://www.dwds.de/wb/rascheln>. Retrieved from 8 August 2022.

No parallelism with the consonants like that noted by Muylaert (2001, p. 617) could be established. It is true that sibilants are tied to sounds that express whistling ('zischelt'). Muylaert claims that plosive consonants are linked to more violent noises. In the corpus, however, few plosive consonants were found. The corpus is formed by verbs that do not express very violent noises.

In addition, as shown by Muylaert (2001, p. 619), different types of nominalisation can be found: 'das Lispeln' (105,10), 'das Gelispel und Geflüster' (97,4), as well as variants of certain verbs without the suffix: 'zischelt' (97,12) / 'zischend' (103,25).⁶

The only formation presenting 'Umlaut' is 'säuseln', which adopts this form as an iterative and diminutive form of 'sausen' (DWDS). According to Kühnhold & Wellmann (1973, p. 23), 90% of denominal derivatives have an Umlaut on the radical vowel, and there are few exceptions to this rule ('radeln', 'schnapseln', 'wursteln'). As for deverbal formations, they present no regularities. These findings do not contradict what was affirmed by Kühnhold & Wellmann (1973, p. 23), who only applied this characteristic (with few exceptions) to denominal formations.

The following can be stated as for the corpus instances related to interjections, according to DWDS:

1. 'zischeln': does not relate to a specific interjection, but DWDS qualifies the sound 'Zischlaut' as "(zischendes) Geräusch als Ausdruck des Missfallens (Anfang 19. Jh.)" DWDS s/v: 'zischeln'.⁷
2. 'prasseln': this verb is not directly related to an interjection although it originates in "frühhd. 'Brast' 'Geräusch wie von brechenden Dingen', auch 'Hochmut', 'Stolz', 'Pomp'"; also from Old English: 'brastlian' ein krachendes Geräusch von sich geben, prasselnd, knisternd brennen'. (DWDS s/v: 'prasseln').⁸

4.2. Semantic and morphological analysis of the corpus in formations with '-(e)r(n)'

A total of 33 verbs are formed with the suffix -(e)r(n). In the following, we proceed as we do in the previous section. Here, the verbs with their locations in the text and their specific contexts are presented.

6 'Zischeln' and 'zischen' have a difference of syntactic rection (cf. Kühnhold & Wellmann, 1973, p. 116).

7 *Digitales Wörterbuch der deutschen Sprache*, <https://www.dwds.de/wb/zischeln>. Retrieved from 8 August 2022.

8 *Digitales Wörterbuch der deutschen Sprache*, <https://www.dwds.de/wb/prasseln>. Retrieved from 8 August 2022.

Table 2: Onomatopoeic verbs in -(e)r(n) in the corpus

Verb	Page/line	Context
'plätscherten'	(93,8)	('die Wellen des Elbstroms') noise
'flüstern'	(96,32)	('die Natur') noise
'flüstern'	(97,21)	('der Abendwind') noise
'flüsterte'	(97,28)	('die Natur') noise
'knißterte'	(99,27)	('Feuer') noise
'kicherten'	(102,16)	('Bürgermädchen') voice
'knißternde'	(103,26)	('Strahlen') noise
'knißternden'	(103,30)	('Funken') noise
'plätscherte'	(105,8)	('Ruder') noise
'herausgeflattert'	(116,9)	('Drache') noise
'umflatterten'	(116,28)	('Vögel') noise
'stotterte'	(122,9)	('Anselmus') voice
'flatterten'	(133,8)	('Überrock') noise
'klippert'	(139, 22)	('es klippert und klappert') noise
'klappert'	(139,22)	noise
'flatterte'	(144,4)	('Rabe') noise
'plätschernd'	(151,33)	('Kristallenstrahlen') noise
'plappern'	(152,14)	('Anselmus') voice
'umflattern'	(152,24)	('Vögel') noise
'hervorflatterte'	(153,8)	('Papagei') noise
'knißternde'	(163,30)	('Funken') noise
'flattert'	(166,5)	('Haar') noise
'schnatterten'	(168, 2)	voice
'flatterten'	(173,21)	('Vögel') noise
'flatternde'	(176,24)	('Gewand') noise
'flatterten'	(196,14)	('Sperlinge') noise
'knißterndem'	(206,31)	('Feuer') noise
'flatterte'	(207,6)	('Papagei') noise
'knißternde'	(207,18)	('Flammen') noise
'flatterte'	(208,27)	('Papagei') noise
'knißterte'	(222,14)	('Flamme') noise
'flüstern'	(223,5)	('Blätter') noise
'plätschern'	(224,1)	('Quelle und Bäche') noise

Regarding the 33 examples formed with the suffix '-(e)r(n)', the following can be stated. As was the case with the verbs formed with the suffix '-(e)l(n)', in most instances, these formations have natural forces, animals, and objects, but not people as their subject. In absolute values, only four verbs have a person as subject: 'kicherten', 'stotterte', 'plappern', and 'schnatterten'. In addition, these verbs are used to refer to ways of speaking and expressing oneself. In this aspect, there is no major difference between the verbs with the suffix '-(e)l(n)' and those ending in '-(e)r(n)'. The two verb types share another aspect in that they are frequently repeated in the text.

Regarding the radical vowels of the verbs found in the corpus, it is a fact that here the type of noise emitted varies depending on the vowel used (Hempel, 1980, p. 156). For example, 'plätscheren', 'flattern', 'plappern', 'stottern', and 'schnattern' could designate lower-pitched noises, different in any case from those designated by 'flüstern', 'knistern' and 'kichern'. An exception would be 'klippert und klappert', a phrase the components of which mean practically the same thing despite having different radical vowels. 'Klappern' is related to 'klappen': "mnd. *klapperen*, Iterativbildung zu lautmachendem 'klappen'" (DWDS, s/v 'klappern').⁹ In the 16th century, 'klippern' was associated with the sound of horses: "aber auch ,klippern' allein, schon im 16. jh. oberd. *quadrupedans sonitus, das trappen und klipperen der rossen*" (DWB, s/v 'klippern').¹⁰ As it may be seen in the case of 'klippern und klappern', there is a large number of verbs with a precise meaning in German.

Regarding the consonants of the verbs, it is again the case that plosive consonants do not predominate, with the exception of the phoneme /k/, in agreement with Muylaert (2001, p. 617). This phoneme is used in expressions that describe the sound of one thing banging against another ('knistern', 'klippert', 'klappert').

There are also nominalized formations with this suffix, such as 'das Flüstern' (105, 10) (Muylaert, 2001, p. 619).

The analysis of the corpus also shows that in the case of verbs in '-(e)l(n)' and in the case of verbs in '-(e)r(n)', there are formations the roots of which cannot be segmented (Fleischer & Barz, 2007, p. 349). In particular, verbs ending in '-(e)r(n)' which contain preverbs or 'Zusätze' that present the type of noise in different forms depending on the 'Zusatz': 'umflatterten', 'herausgeflattert', and 'hervorflatterte'.

Among the verbs with an 'Umlaut' in their radical vowel (Kühnhold & Wellmann, 1973, p. 23), 'flistern' stands out. This verb is mentioned by the DWDS as the origin of 'flüstern' and is found in the Grimms' dictionary (DWB).¹¹ In the case of 'flüstern', therefore, it is a deverbal formation. As stated by Kühnhold & Wellmann, no regularity can be applied.

9 *Digitales Wörterbuch der deutschen Sprache*, <https://www.dwds.de/wb/klappern>. Retrieved from 8 August 2022.

10 'klippern', in: *Deutsches Wörterbuch von Jacob Grimm und Wilhelm Grimm*, Erstbearbeitung (1854–1960), digitalisierte Version im Digitalen Wörterbuch der deutschen Sprache, <https://www.dwds.de/wb/dwb/klippern>. Retrieved from 8 August 2022.

11 In: *Deutsches Wörterbuch von Jacob Grimm und Wilhelm Grimm*. Erstbearbeitung (1854–1960), digitalisierte Version im Digitalen Wörterbuch der deutschen Sprache, <https://www.dwds.de/wb/dwb/flistern>. Retrieved from 8 August 2022.

Concerning the conservation of an ‘Umlaut’, the case of ‘plätschern’ is different (see above-mentioned corpus). The DWDS traces it back to interjections:

‚pflatsch‘, ‚platsch‘, ‚flatsch‘: ‚plumps‘, lautmalend für ein schallendes, klatschendes Geräusch (16. Jh., wohl älter); in der Doppelung (mit Sekundärablaut) ‚plitsch-platsch‘. ‚Platsch‘ m. ‚Flatsch(en)‘ m. ‚Flatsche‘ f. ‚das Hingeklatschte, großer Fleck, (feuchter) Haufen, Klumpen, Kuhfladen, Schlag, Ohrfeige‘ (17. Jh.). (DWDS, s/v: ‘plätschern’)¹²

5. Conclusions

One of the main conclusions drawn from this study is the extremely subjective value of onomatopoeia as regards the sound such expressions reproduce. This sound depends on the characteristics of each language. This phenomenon constitutes a relevant issue for subsequent studies of a comparative nature.

In addition, the relevance of these verb types in a prose expressing a deep relationship with nature is demonstrated in Hoffmann’s text. It was therefore no mistake that the author adopted this type of lexicon.

Focusing on the verbs with the suffixes under study, other conclusions can also be drawn:

- Although Duden (2009:708) says that ‘-(e)r(n)’ suffix is not productive, in the corpus, the suffix ‘-(e)r(n)’ is more productive than the suffix ‘-(e)l(n)’, which coincides with Lohde (2006, p. 269). In relative values, out of the total sum of verbs, 26.4% have onomatopoeic meaning (55 verbs). 22 of these (10.5%) are cases of ‘-(e)l(n)’ suffixation and 33 (15.8%) ‘-(e)r(n)’ suffixation. Therefore, the number of verbs formed by ‘-(e)r(n)’ is greater than the number of verbs formed by ‘-(e)l(n)’, in agreement with Lohde (2006, p. 269).
- The previously noted subjectivity causes the substantial difficulty of classifying noise types. This task is less complicated in the case of sounds of the human voice, where verbs have a more specific meaning. Other verbs occur in a certain context: ‘flüstern’, ‘lispeln’: ‘nature’; ‘prasseln’, ‘knistern’: ‘fire’.

¹² *Digitales Wörterbuch der deutschen Sprache*, <https://www.dwds.de/wb/plätschern>. Retrieved from 8 August 2022.

- Another relevant finding is that both the verbs ending in ‘-(e)r(n)’ and those that end in ‘-(e)l(n)’ are found more in the context of nature than that of the human voice. Thus, in relative values, out of the verbs with ‘-(e)l(n)’, 40.9% refer to the human voice, whereas 59% have a subject found in nature. Out of the verbs in ‘-(e)r(n)’, 12.1% have a human being as their subject, whereas 87.8% have a non-human subject.
- Many repetitions appear in the corpus, which is remarkable. In fact, the text repeatedly uses the same verbs, which coincides with the previously presented idea that the lexicon used was carefully chosen by its author. That the number of verbs related to natural noises is greater than those that describe the human voice is also consistent with the context in which the text was produced, whereby nature also plays a fundamental role in the text and for its protagonist.
- The analysis of this corpus confirms Muylaert’s theory (2001, p. 619) that such verbs become increasingly distant from the interjections that originally motivated them (we only found the case of ‘plätschern’), and, instead, the nouns ‘das Lispeln’ (105, 10) and ‘das Gelispel und Geflüster’ (97,4) emerge.
- In contrast, the analysis shows that in many cases, the suffixed verb coexists with the verb that does not contain a suffix (‘zischelt’ (97,12) / ‘zischend’: (103,25)) (Naumann, 1972, p. 57) with a difference of syntactic rection (Kühnhold & Wellmann, 1973, p. 116).
- The analysis of the corpus also corroborates Hempel’s (1980, p. 16) assertion that there exists a relationship between the vowel used and the meaning of the verb, albeit with some exceptions in both the ‘-(e)l(n)’ and the ‘-(e)r(n)’ suffixes. The corpus instances ‘knistern’, ‘klippert’, ‘klappert’ also show the relationship between /k/ and the sound of an impact, thus giving proof to Muylaert (2001: 617). Muylaert (2001: 617) also stated that there was a relationship between the fricative consonants (sibilants) /s/ and /z/ and whistling. The presence in the corpus of verbs such as ‘zischeln’ is proof of this statement.
- A robust generalization regarding the ‘Umlaut’ in the corpus cannot be offered because too few examples were found. The verbs ‘säuseln’ and ‘flüstern’ can be regarded as deverbal formations. ‘Plätschern’ constitutes the only case originating from an interjection.

While limited in time and space to explore the corpus of Hoffmann fully, this study has enabled, more in-depth knowledge of one of the least-studied aspects of German word formation: verbal suffixing. The dearth of studies in verbal suffixing is perhaps

because of the fact that verbal suffixing does not have the same variations and characteristics as verbal prefixing. With this study, however, many of the characteristics of these types of verbs have been researched in a real text. Subsequent studies could involve German-Spanish comparative research, in which the function of onomatopoeia in the two languages and the resources that each language uses to express it could be analysed.

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