

Sound symbolism in J.R.R. Tolkien's constructed language Quenya: A pilot study

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Abstract EN:

In inventing languages, J.R.R. Tolkien was fascinated not only by phonaesthetic pleasure (Tolkien 2023: 536) but also by sound symbolism (Tolkien 2020: 24), i.e., the fitting relationship between words' sounds and their meaning. Tolkien felt to have been most successful in implementing these ideas in his Elven language Quenya (Tolkien 2020: 23). While recent research supports Quenya's high aesthetic appeal (Beinhoff 2023; Mooshammer et al. 2023), few quantitative studies appear to have been published on sound symbolism in Quenya.

Taking into account the role of phonaesthetics and assuming that sound symbolism may relate to semantic valence, words with positive denotations can be expected to be perceived as more aesthetically appealing than those with negative denotations. To investigate sound symbolism within Quenya, an online experiment was conducted in which 35 participants unfamiliar with Quenya rated 20 randomised audio stimuli of Quenya words with either positive or negative denotations in terms of aesthetic appeal on a 6-point Likert scale. To examine the influence of native language, approximately half the participants were German L1 speakers and half were Japanese L1 speakers. Statistical analysis using *t*-tests revealed that overall, words with positive denotations were rated as significantly more appealing than words with negative denotations. This contrast was present in both participant groups but more distinct in German L1 speakers than in Japanese L1 speakers.

These findings suggest that Tolkien may indeed have been successful in encoding sound symbolism in Quenya by aligning phonaesthetic appeal with semantic valence. The different results across the two rater groups point to cross-linguistic differences in perceived sound-meaning associations. These results may not only contribute to the growing body of research on

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the reception of constructed languages but may also open new research paths in the fields of phonaesthetics and sound symbolism.

Keywords: phonaesthetics, sound symbolism, iconicity, constructed languages, Tolkien, Quenya

Abstract DE:

J.R.R. Tolkien war bei der Erfindung von Sprachen nicht nur fasziniert von phonästhetischem Gefallen (Tolkien 2023: 536), sondern auch von Lautsymbolik (Tolkien 2020: 24), also der passenden Beziehung zwischen dem Klang von Wörtern und ihrer Bedeutung. Tolkien war der Ansicht, diese Ideen am erfolgreichsten in seiner Elbensprache Quenya umgesetzt zu haben (Tolkien 2020: 23). Während rezente Forschung die hohe ästhetische Attraktivität von Quenya bestätigt (Beinhoff 2023; Mooshammer et al. 2023), scheinen nur wenige quantitative Studien zur Lautsymbolik in Quenya veröffentlicht worden zu sein.

Unter Berücksichtigung der Rolle der Phonästhetik, sowie in der Annahme, dass Lautsymbolik mit semantischer Valenz zusammenhängen könnte, ist zu erwarten, dass Wörter mit positiver Denotation als ästhetisch ansprechender wahrgenommen werden als solche mit negativer Denotation. Um die Lautsymbolik in Quenya zu untersuchen, wurde ein Online-Experiment durchgeführt, in dem 35 Teilnehmende ohne Vorkenntnisse des Quenya 20 randomisierte Audiostimuli von Quenya-Wörtern mit entweder positiver oder negativer Denotation hinsichtlich ihrer ästhetischen Attraktivität auf einer 6-stufigen Likert-Skala bewerteten. Zur Untersuchung des Einflusses der Erstsprache waren etwa die Hälfte der Teilnehmenden deutsche L1-Sprecher:innen und die andere Hälfte japanische L1-Sprecher:innen.

Die statistische Analyse mittels t-Tests ergab, dass Wörter mit positiver Denotation insgesamt signifikant ansprechender bewertet wurden als Wörter mit negativer Denotation. Dieser Unterschied zeigte sich in beiden Gruppen, war jedoch bei deutschen L1-Sprecher:innen stärker ausgeprägt als bei japanischen.

Diese Ergebnisse deuten darauf hin, dass Tolkien dabei erfolgreich gewesen sein könnte, Lautsymbolik in Quenya zu verankern, indem er phonästhetische Attraktivität auf semantische Valenz abstimmte. Die ungleichen Ergebnisse der beiden Bewertungsgruppen weisen auf sprachübergreifende Unterschiede in wahrgenommenen Klang-Bedeutungs-Assoziationen hin. Diese Resultate tragen nicht nur zur zunehmenden Forschung zur Rezeption konstruierter Sprachen bei, sondern können auch neue Forschungsansätze in den Bereichen Phonästhetik und Lautsymbolik anstoßen.

Keywords: Phonästhetik, Lautsymbolik, Ikonizität, konstruierte Sprachen, Tolkien, Quenya

1. Introduction

1.1. Background

English author and philologist J.R.R. Tolkien is best known for writing the High Fantasy books *The Hobbit* and *The Lord of the Rings*. The vastness of the legendarium he created extends beyond mere stories: He also invented several languages along with their historical development for his fantasy world, or rather, as Tolkien himself put it, he created a world to give his invented languages a home (Tolkien 2023: 382), going so far as to call *The Lord of the Rings* “largely an essay in ‘linguistic aesthetic’” (Tolkien 2023: 319). Owing to the intricacy of his invented languages, Tolkien is said to have paved the way for constructed languages in the modern Sci-Fi and Fantasy genre (Tolkien 2020: 129-133).

1.2. Phonaesthetics

Tolkien’s main incentive to invent languages was, according to himself, “to give pleasure to [him]self by giving expression to [his] personal linguistic ‘aesthetic’” (Tolkien 2023: 536). Rather than only focussing on the utilitarian purpose of languages as some of his contemporaries did in the invention of international auxiliary languages such as Esperanto (Tolkien 2020: li, lxiv), Tolkien preferred to approach language invention also as a form of art (Fimi 2018: 22-23; Tolkien 2020: li, 18). As such, Tolkien was not only interested in the mechanisms of language and language change but also in the beauty of language. The “pleasure in articulate sound” Tolkien described to feel (Tolkien 2020: 18) is commonly referred to as *phonaesthetics* (Crystal 1995). Tolkien claimed that sounds and words-forms could evoke a sense of phonaesthetic pleasure in people, even if – or perhaps especially if – they were not familiar with their meaning (Tolkien 2020: 16-17). Based on his interest in phonaesthetics, one of Tolkien’s aspirations in inventing languages was to achieve “beauty in word-form” (Tolkien 2020: 16, 23).

Tolkien’s High Elven language Quenya in particular was designed to comply with his preferences in phonaesthetics. He described it as “the one language which has been expressly designed to give play to my own most normal phonetic taste” (Tolkien 2020: 26). It was, therefore, to some degree inspired by natural languages of which Tolkien admired the sound. He explained that phonologically, Quenya drew from Latin and was refined with elements from two other languages that gave him “‘phonaesthetic’ pleasure”, namely Finnish and Greek (Tolkien 2023: 265). Combined, these influences create the sound aesthetic typical of Quenya, which Tolkien considered to be particularly appealing (Tolkien 2020: 23).

The phonaesthetic quality of Quenya seems to elicit a positive response not only in Tolkien but also more generally among native speakers of German. In previous research on the aesthetic appeal of constructed languages, Mooshammer et al. (2023: 17) found that out of twelve different constructed languages from the genre of Sci-Fi and Fantasy such as *Game of Thrones’* Dothraki, *Star Trek’s* Klingon, or *Avatar’s* Na’vi, Tolkien’s Quenya received the highest ratings in terms of aesthetic appeal from German L1 speakers. To German L1 speakers, Quenya thus seems to be a beautiful language, as Tolkien intended.

Whether this evaluation also applies to non-German L1 speakers remains to be examined in greater detail. Studies by Beinhoff (2023) and Mooshammer et al. (2023) investigated the aesthetic perception of different constructed languages among L1 speakers of, respectively, German, English, and Spanish (Beinhoff 2023), and German, Japanese, and Mandarin (Mooshammer et al. 2023). While English, German, Spanish, and Japanese L1 speakers rated Quenya and its sister language Sindarin as the most appealing, Mandarin L1 speakers preferred Ursula K. Le Guin's Kesh (Beinhoff 2023; Mooshammer et al. 2023). This suggests that aesthetic judgments of constructed languages may depend on the raters' language background.

Such cross-linguistic differences in aesthetic perception may be explained by the *mere-exposure effect* (Zajonc 1968), which posits that unfamiliar stimuli are initially disliked but become more appealing with repeated exposure. Assuming that this is the case, constructed languages that contain elements, e.g., phonemes or phoneme sequences, from a rater's L1 or other known languages may be evaluated more positively than those that contain more unfamiliar elements (cf. Mooshammer et al. 2023: 11). Hence, differences in, for example, the phoneme inventory or the phonotactics of participants' L1 may lead to different aesthetic evaluations of constructed languages. It is therefore plausible that individuals with a language background similar to Tolkien's may share his phonaesthetic preferences, while those from other linguistic backgrounds may have different tastes. In light of this, Mooshammer et al. are currently repeating their 2023 experiment, this time aiming to reach speakers from a broader range of language backgrounds, e.g., Italian, Hungarian, Russian, Georgian, Turkish, Arabic, etc., to gain more insight into the connection between native language and aesthetic evaluation of constructed languages (Mooshammer et al. 2023: 27).

1.3. Sound symbolism

Apart from phonaesthetics, Tolkien was also fascinated by "word-form in relation to meaning (so-called phonetic fitness)" (Tolkien 2020: 24), or, as he named it in his constructed language Quenya, *lámatyáve* (Pesch 2009: 333). The term *phonetic fitness*, more commonly and therefore also henceforth referred to as *sound symbolism*, describes the felicitous relationship between the sounds of a word and the word's meaning. Although this notion stands in stark contrast to Ferdinand de Saussure's conception of the linguistic sign as arbitrary (1916) – a view that is prevalent in modern linguistics (Anderson 1998: 15-21) – there are studies suggesting that people do, in fact, agree that some word forms fit certain concepts better than others.

Leaving aside onomatopoeia, a well-known example of sound symbolism would be the *bouba/kiki-effect* (Ramachandran & Hubbard 2001), alternatively also known as the *maluma/takete-effect* (Köhler 1929). In an experiment which asked participants to name a round and a spiky shape either *bouba* or *kiki*, the majority of participants assigned the artificial word *bouba* to a round shape, whereas *kiki* was assigned to a spiky shape. Similarly, when Edward Sapir (1929) asked participants to name a small and a large table either *mil* or *mal*, most people opted for naming the small table *mil* and the large table *mal*. Apart from visual shape (Köhler 1929; Ramachandran & Hubbard 2001) and size (Sapir 1929), dimensions that have been established to

be associated with speech sounds include speed (Cuskley 2013), personality traits (Sidhu et al. 2019), emotional arousal (Aryani et al. 2020; Lev-Ari & McKay 2023), taste (Spence & Gallace 2011), and colour (Kim et al. 2018).

While academic research on sound symbolism was not as advanced in Tolkien's lifetime, Tolkien was reportedly familiar with the work of Sapir and other contemporaries investigating sound symbolism such as Leonard Bloomfield or Otto Jespersen (Tolkien 2020: lv). Tolkien was curious to explore the compatibility between sound and meaning himself in his constructed languages (Tolkien 2020: 24), noting that he felt "delight" at "establishing novel relations between symbol and significance" (Tolkien 2020: 32). However, he never explicitly detailed the principles by which he tried to establish sound symbolism in his constructed languages (Annear 2020: 13). Existing scholarly analyses have suggested that sound symbolism in Tolkien's languages may be based on concepts such as size (Annear 2020: 13; Fimi 2008: 91; Rausch 2013), distance, luminosity, colour, and temperature (Rausch 2013). One dimension that might be linked to sound symbolism that has not been explored yet is *valence*, i.e., the positivity or negativity of the concept denoted by a linguistic sign.

1.4. Aims

Building on Tolkien's assertion that his constructed language Quenya had "reached a highish level both of beauty in word-form considered abstractly, and of ingenuity in the relations of symbol and sense" (Tolkien 2020: 23), this study aims to examine a specific aspect of his language design: the possible connection between sound symbolism and valence. While prior research has established Quenya's high aesthetic appeal among various L1 speaker groups (Beinhoff 2023; Mooshammer et al. 2023), few quantitative studies have been devoted to the more subtle phenomenon of sound symbolism in Quenya (cf. Annear 2020; Rausch 2013), and none seem to have explored a possible link between sound symbolism and valence. This study, therefore, investigates whether Tolkien's aesthetic and symbolic intentions extend to sound symbolism grounded in valence.

If Tolkien in fact succeeded in creating Quenya as a language that possesses the sound symbolism he desired, then, on a very basic level, it could be assumed that Quenya words with a positive denotation should sound more aesthetically appealing than those with a negative denotation. This expectation rests on the assumption that phonaesthetics may be linked to semantic valence of a referent in a sound-symbolic manner.

To investigate this, Quenya words with either positive denotations, as, for example, *vanimalda* 'exceptionally beautiful', or negative denotations, as, for example, *ulca* 'evil', were rated in terms of aesthetic appeal by participants who were not familiar with Quenya. The results show whether there is a significant difference in the ratings of the aesthetic appeal of Quenya words with positive and negative denotations. If so, this provides tentative evidence that Quenya displays some degree of sound symbolism on the basis of phonaesthetic appeal and semantic valence.

Furthermore, ratings from two different participant groups were collected: German L1 speakers and Japanese L1 speakers. As mentioned before, both German and Japanese L1 speakers had judged Quenya to be a language of high aesthetic appeal in prior studies (Beinhoff 2023; Mooshammer et al. 2023). German and Japanese are two languages that are not related, typologically different, and also different in terms of phonotactics and phoneme inventory, which lays an interesting foundation for investigating cross-linguistic differences in aesthetic evaluations. The respective ratings of German L1 speakers and Japanese L1 speakers were compared to test for the effect of native language on phonaesthetic judgements, which would also influence perceptions of sound symbolism based on phonaesthetic appeal and valence. Lastly, literature-based suggestions on why some words might be judged to be more aesthetically appealing than others will briefly be discussed. These are intended for illustrative purposes only and are not used to draw inferential conclusions.

2. Methods

2.1. Procedure

The experiment was part of a larger testing session investigating differences in judgements of aesthetic appeal of linguistic phenomena between German and Japanese L1 speakers. It was preceded by two rating tasks that focussed on consonant clusters and succeeded by a questionnaire in which participants were asked to provide demographic information such as age, gender identity, and native language. The total duration of the testing session was around 15 minutes. The instruction language was English.

Participants were first informed about the setup of the experiment and advised to use headphones. They were told that they would be played stimuli from a constructed language. This was inspired by Mooshammer et al. (2023: 13), who noted that participants might have qualms about rating stimuli negatively if they believed them to come from natural languages. For the concept of a constructed language to be understood by participants, the term *invented language* was chosen.

After receiving instructions for the experiment, participants were first played all stimuli in alphabetical order. This was done so that participants could acquaint themselves with the stimuli and would later be able to rate them in relation to one another. Next, participants were played one stimulus at a time. After each stimulus, they were asked to rate the stimulus on a 6-point Likert scale (Likert 1932) according to how aesthetically appealing they found it, ranging from 1 (not appealing at all) to 6 (very appealing). Participants gave their ratings by pressing the numbers located above their keyboard. After rating the stimulus, participants were asked whether the word reminded them of anything, such as a word from a natural language. If that was the case, they were asked to type their association into a response field and indicate which language it was from. The aim of this association test was two-fold: Should participants recognise a particular word and be familiar with its meaning, their ratings would not be taken

into account since this could be a confounding factor, e.g., a word with a negative denotation might be rated as less appealing due to the participant's knowledge of its meaning. Additionally, this was a way to learn whether participants' ratings were in some way influenced by similar lexemes from languages they were familiar with.

The stimuli were presented in randomised order. After rating all stimuli, participants were asked whether they had recognised the language. If so, they were asked to name the language. This was done so that the ratings of participants familiar with Quenya could be excluded to avoid confounds.

2.2. Participants

Participation was voluntary, and participants were told that they could abort the experiment at any point. After being briefed about the procedure and future data processing, participants gave informed consent. 46 participants finished the entire testing session. Three of these were excluded from the data analysis because they showed little to no variation in their ratings, e.g., rating all stimuli with 2. Three participants were excluded because they indicated a native language other than German or Japanese. Lastly, five participants had to be excluded because they had correctly identified the language in general or individual stimuli as either Quenya, Elvish, used in *The Lord of the Rings* or invented by Tolkien. 35 participants remained for the data analysis, 20 of which identified as female, and 14 as male¹. 15 participants were German native speakers and 19 were Japanese native speakers. Participants' age ranged from 10 to 89. Most participants were between 20 and 29 years old.

2.3. Stimuli

The stimuli were chosen from *Das große Elbisch Buch* (Pesch 2009), which includes a Quenya-German dictionary (265-441). There were two conditions: words denoting positive concepts and words denoting negative concepts. Per condition, ten Quenya words were chosen (see Appendix, Table 1), making it a 1x2 factorial design. Positive stimuli largely came from the semantic domains of light (e.g., *calima* 'luminous', *rilma* 'shimmering light') or beauty (e.g., *vanimalda* 'exceptionally beautiful', *varanda* 'awe-inspiring, sublime'), while negative stimuli mostly relate to death (e.g., *loico* 'corpse', *nahtan* 'I slay/beat someone to death') or wrongdoings (e.g., *ongwe* 'crime', *saucare* 'misdeed'). *Das große Elbisch Buch* was also consulted for pronunciation guides (Pesch 2009: 76-79). The selected stimuli were carefully enunciated in a neutral tone by a 31-year-old female speaker and recorded using Maono AU-PM421 condenser USB microphone set and Windows Sound Recorder (Microsoft Corporation 2018). Prior to being added to the experiment, the recorded m4a files were converted to ogg files using the online tool M4A to OGG Converter (FreeConvert 2024).

¹ Coincidentally, the ratings of two participants who indicated that they identified as other/diverse had to be excluded because they had both recognised the language.

2.4. Data collection and analysis

The online experiment was developed with the help of Theresa Matzinger in OpenSesame (Mathôt et al. 2012) and hosted on the JATOS server MindProbe (Lange et al. 2015). The resulting data file was cleaned in Microsoft Excel (Microsoft Corporation 2024). Computations were done in Posit Cloud (Posit team 2023), using the Tidyverse package (Wickham et al. 2019) and a pre-coded script (Matzinger 2022) that was slightly adapted.

The statistical measures calculated include mean ratings per condition with 95% confidence intervals (CIs), both for all participants combined and separately for German and Japanese L1 speakers respectively. Mean ratings of individual stimuli, also with 95% confidence intervals, were calculated in the same way. *t*-tests were performed to determine whether the difference in mean aesthetic ratings between the conditions, i.e., positive versus negative valence, was statistically significant. Statistical significance was determined by evaluating *p*-values and confidence intervals from these tests.

3. Results

Participants' ratings showed a significant difference between the aesthetic judgement of Quenya words denoting positive concepts (mean $3.49 \pm \text{CI } 1.28$) and Quenya words denoting negative concepts (mean $3.01 \pm \text{CI } 1.16$), as is visualised in Figure 1. This significance was confirmed by a *t*-test ($t(671.51) = -5.13, p < .001$).

The difference in rating between the two conditions was more pronounced in German L1 speakers (positive: mean 3.73 ± 1.33 ; negative: mean 2.95 ± 1.17), see Figure 2. The *t*-test showed that the difference was highly significant for German L1 speakers ($t(293.25) = -5.36, p < .001$). In the ratings of Japanese L1 speakers, the difference in aesthetic judgement of the two conditions was less pronounced (positive: mean 3.31 ± 1.21 ; negative: mean 3.06 ± 1.15), see Figure 3. The *t*-test revealed that the difference was only marginally significant ($t(377.09) = -2.04, p = .042$).

The mean ratings of individual stimuli show that the stimulus judged to be most aesthetically pleasing was *elenya* 'stellar, of the stars' (mean $3.91 \pm \text{CI } 1.22$), whereas *hloima* 'poison, poisonous substance' was rated least aesthetically pleasing (mean $2.71 \pm \text{CI } 1.12$). The full list including all stimuli can be consulted in Table 2. German L1 speakers rated *lindale* 'music' highest (mean 4.27 ± 1.22) and *hloima* lowest (mean $2.53 \pm \text{CI } 1.06$), see Table 3, while Japanese L1 speakers preferred *ilvana* 'perfect' (mean $3.84 \pm \text{CI } 1.50$) and disliked *ongwe* 'crime' (mean 2.32 ± 0.82), see Table 4. All tables can be found in the appendix.

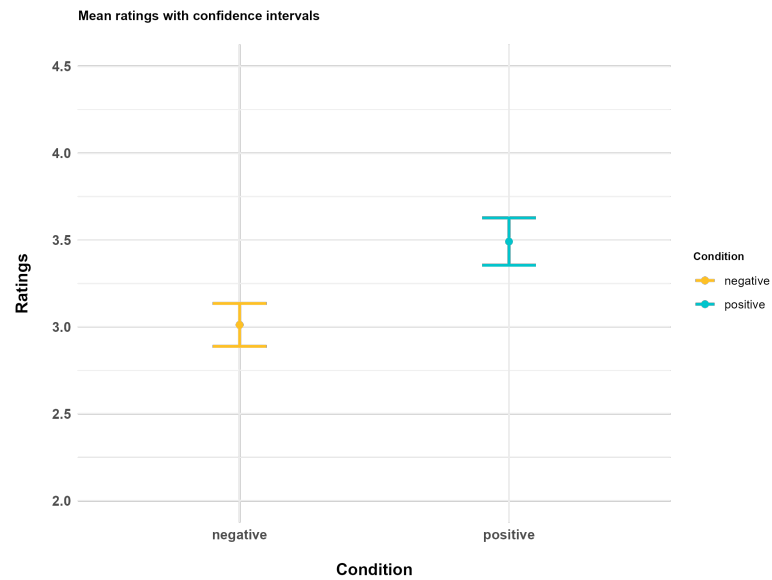


Figure 1. Overall mean perceived aesthetic appeal of Quenya words with positive (turquoise) and negative (yellow) denotations. Whiskers indicate 95% confidence intervals.

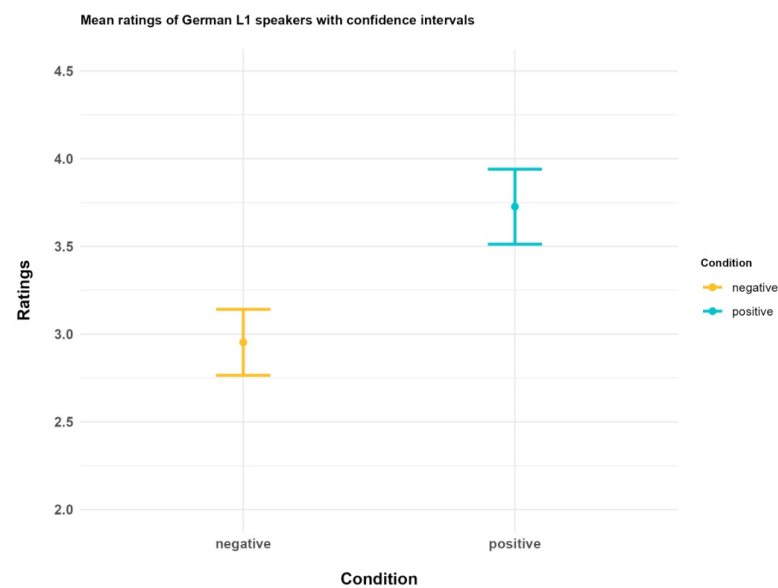


Figure 2. Mean perceived aesthetic appeal of Quenya words with positive (turquoise) and negative (yellow) denotations by German L1 speakers. Whiskers indicate 95% confidence intervals.

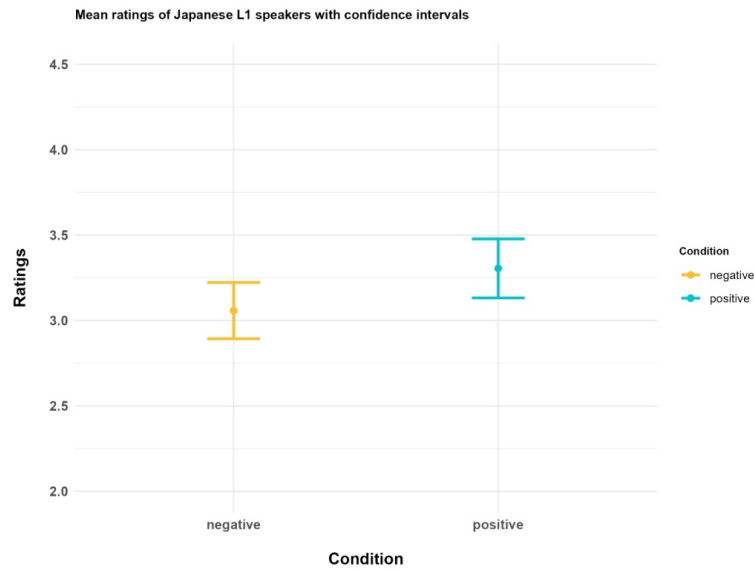


Figure 3. Mean perceived aesthetic appeal of Quenya words with positive (turquoise) and negative (yellow) denotations by Japanese L1 speakers. Whiskers indicate 95% confidence intervals.

4. Discussion

Overall, words from Tolkien’s constructed language Quenya denoting positive concepts were rated significantly higher in terms of aesthetic appeal than those denoting negative concepts. This suggests that Tolkien, even within a language that is judged to be aesthetically pleasing in general (Beinhoff 2023; Mooshammer et al. 2023), effectively created suitable relations between sound and meaning by combining phonaesthetically pleasant linguistic signs with positive meanings and phonaesthetically unpleasant linguistic signs with negative meanings, thus linking phonaesthetics to valence. These findings are interpreted as indicating that Tolkien was successful in his effort to design Quenya as a language that, at least to some extent, displays sound symbolism.

The difference in the ratings of stimuli with positive denotations and negative denotations respectively was found to be more prominent in native speakers of German. While Japanese L1 speakers preferred Quenya words with positive denotations to those with negative denotations, the difference in the ratings of the two conditions was only marginally significant. Given that Tolkien was first and foremost a speaker and learner of Germanic languages, or, more broadly, of Indo-European languages – with the exception of Finnish – (Robbins 2013: 184; Tolkien 2023: 213), it is plausible that the phonaesthetic judgements of German L1 speakers would align more closely with Tolkien’s than those of Japanese L1 speakers as German L1 speakers likely have a language background more similar to Tolkien’s. While Tolkien apparently believed his phonological preferences to be subjective (Robbins 2013: 188), it seems that German speakers at least agree with his phonaesthetic inclinations.

A possible explanation for this could be Zajonc’s mere-exposure hypothesis (1968), which was further developed by Sluckin et al. (1983), who conceptualised liking in relation to the novelty/familiarity continuum as an inverted U curve. According to this model, people tend to judge unfamiliar stimuli as unappealing. The more exposed people are to a particular stimulus, the

more they will grow to like it. At one point, however, after over-exposure to a stimulus, they will judge it to be unpleasant again. In terms of languages, this implies that people prefer languages that are “distant but familiar” (Kogan & Reiterer 2021: 15), i.e., languages that are familiar to them but are still recognisably different from their native language. This framework seems to align with the results obtained in the present study: Approximately 70% of participants indicated that at least one positive stimulus (which tended to be rated highly in terms of aesthetic appeal, especially by German L1 speakers) reminded them of Italian or Spanish (e.g., Quenya *lindale* ‘music’, Spanish *linda* ‘beautiful’) – languages that tend to be perceived as aesthetically appealing, especially by Central Europeans (Reiterer et al. 2020). This association with Romance languages is consistent with Tolkien’s own account of Quenya being inspired by Latin (Tolkien 2023: 265), the language from which Romance languages such as Italian or Spanish descend. For German-speaking participants, greater familiarity with modern Romance languages due to geographical proximity, exposure in secondary education, and language relation might account for the stronger positive evaluation. In contrast, the stimuli may have evoked less familiarity for Japanese L1 speakers, which could explain the slightly poorer ratings Quenya words received from Japanese L1 speakers as well as the reduced significant difference in the ratings of positive and negative words.

The effects of the relation between familiarity and liking also seem to be reflected in the ratings of individual stimuli. Participants tended to dislike words containing sounds with which they were likely unfamiliar. For example, Japanese speakers rated the words *nahtan* and *rohta*, both containing the voiceless velar fricative /x/, which is not part of the Japanese phoneme inventory (Kubozono 2023: 12), as unappealing. In contrast, *nahtan*, which is similar to the German word *Nacht* ‘night’, was the only negatively-valenced word to appear in the top ten ratings for German L1 speakers. Both Japanese and German speakers disliked *hloima*, which contains the voiceless lateral fricative /ɬ/, a sound that does not occur in the phoneme inventory of either language (Kubozono 2023: 12). Generally, Japanese speakers tended to rate stimuli containing consonant clusters poorly, which might be explained by their lack of familiarity with them due to the restrictive phonotactics of Japanese.

Apart from being of interest to Tolkien scholarship, the findings of this study also contribute to broader areas of research such as constructed languages, phonaesthetics, and sound symbolism. Constructed languages are a currently growing research field, with particular attention being paid to their aesthetic appeal as perceived by different audiences and the potential ideological implications of such perceptions (Beinhoff 2023; Mooshammer et al. 2023). The interest in phonaesthetics and sound symbolism in constructed languages is also prevalent within the conlang community itself: In a survey conducted by Beinhoff (2015: 11-15), creators of constructed languages cite phonaesthetics and sound symbolism as key aspects that they pursue in inventing languages. The present study shows that even subtle phonaesthetic nuances within one constructed language are not only possible but also, perhaps unconsciously, perceptible to laypeople. However, the implications of this study may not only be of relevance to constructed languages. The indication of a possible link between sound

symbolism, phonaesthetics, and semantic valence may open up interesting new research paths for both constructed and natural languages.

5. Limitations

As a student paper as well as a pilot study, the present study is of course not without limitations. In a more elaborate design, one could, for example, work with a larger set of stimuli and incorporate a phonological analysis of Quenya words with positive and negative valence, similar to Mooshammer et al. (2023), who examined the phonological features of various constructed languages. It would also be beneficial to conduct a follow-up study with a larger and more diverse participant pool, including speakers of additional native languages, as Mooshammer et al. are currently pursuing (2023: 27). Given that several participants assumed the stimuli to be Italian or Spanish, it would be particularly interesting to investigate how native speakers of Romance languages evaluate Quenya words. Since Quenya was strongly influenced by Finnish, collecting ratings from Finnish L1 speakers could also provide valuable insights. Lastly, as Tolkien was a native speaker of English, the ratings of English L1 speakers would further enrich the analysis.

Regarding the experimental design, Quenya's sound symbolism and the link between phonaesthetics and valence could also be explored in a between-subjects design. One group could rate stimuli based on aesthetic appeal, while another group could be asked to indicate whether they assume the stimuli to have a positive or a negative meaning. This approach could help determine whether people have intuitions about semantic valence and how these intuitions relate to aesthetic judgements. More generally, future research could test the relationship between phonaesthetics, sound symbolism, and valence using an artificial language to enhance generalisability.

Finally, although ratings of individual stimuli were calculated and reported, these were intended for descriptive purposes only and were not used to draw inferential or generalisable conclusions. As such, while multiple comparisons may increase the risk of inflated Type I error, i.e., the null hypothesis being rejected when it is in fact true, as was pointed out by a reviewer, this concern is limited in the present study. The key statistical comparisons between conditions and language groups were hypothesis-driven and not subject to correction, whereas the stimulus-level results should be interpreted cautiously and viewed as exploratory. A follow-up study would, however, benefit from more sophisticated statistical modelling, allowing for a more robust and nuanced interpretation.

6. Conclusion

The aim of this paper was to determine whether J.R.R. Tolkien effectively integrated the concept of sound symbolism in his constructed language Quenya, as was his intention. To investigate this, it was assumed that sound symbolism might be manifested through the relationship between phonaesthetics and semantic valence: Words with positive denotations should then be perceived as more phonaesthetically appealing than words with negative denotations. Overall,

the results of this study are interpreted to confirm that Tolkien was indeed successful in establishing a sense of sound symbolism in his constructed language Quenya by aligning sound and meaning based on a possible connection between phonaesthetics and valence. Nevertheless, Quenya's sound symbolism seems to be more distinctly perceived as such by native speakers of German than native speakers of Japanese, which could be attributed to the similar language background German L1 speakers and Tolkien share. This indicates that there might be cross-linguistic differences in how associations between sounds and meanings are perceived.

As academic interest in both constructed languages and phonaesthetics is currently increasing, this study contributes to ongoing research on people's perceptions and aesthetic evaluations of different languages. By focussing specifically on the aesthetic appeal of stimuli from a single constructed language, sound symbolism as realised through phonaesthetics and valence was tentatively investigated. Follow-up studies with more participants from various language backgrounds and a more elaborate experiment design could offer valuable insights not only into the perceived sound symbolism of constructed languages but also sound symbolism as related to phonaesthetics and valence more broadly.

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Appendix

condition	stimulus	word class	transcription	German translation	English translation
positive	calima	adjective	/ˈka.li.ma/	hell glänzend	luminous
positive	elenya	adjective	/eˈlen.ja/	sternig, zu den Sternen gehörig	stellar, of the stars
positive	ilvana	adjective	/il.ˈvan.ja/	vollkommen	perfect
positive	lindale	noun	/ˈlin.da.le/	Musik	music
positive	namarië	interjection	/naˈma.ri.e/	lebewohl, sei wohl	farewell, be well
positive	rilma	noun	/ˈril.ma/	schimmerndes Licht	shimmering light
positive	tinde	noun	/ˈtin.de/	Funkeln	sparkle/twinkle
positive	vanimalda	adjective	/va.ni.ˈmal.da/	überaus schön	exceptionally beautiful
positive	varanda	adjective	/va.ˈran.da/	erhaben	awe-inspiring/sublime
positive	vilvarin	noun	/ˈvil.va.rin/	Schmetterling	butterfly
negative	hloima	noun	/ˈtoɪ.ma/	Gift, giftige Substanz	poison, poisonous substance
negative	loico	noun	/ˈloɪ.ko/	Leiche	corpse
negative	mausta	noun	/ˈmaʊ.sta/	Zwang	compulsion
negative	Melkor	proper noun	/ˈmel.kor/	er, der in Macht/Gier steht	he who arises in might/greed
negative	nahtan	verb (inflected)	/ˈnax.tan/	ich erschlage	I slay/beat someone to death
negative	naraca	adjective	/ˈna.ra.ka/	harsch, gewalttätig	harsh, violent
negative	ongwe	noun	/ˈoŋ.gwe/	Verbrechen	crime
negative	rohta	noun	/ˈrox.ta/	Schuld, Sünde	debt, sin
negative	saucare	noun	/ˈsaʊ.ka.re/	Fehlthat	misdeed
negative	ulca	adjective	/ˈul.ka/	böse, schlecht, boshaft, falsch	evil, bad, malicious, wrong

Table 1. Quenya words used in the experiment including word class, transcription, German translation from *Das große Elbisch Buch* (Pesch 2009: 265-441), and English translation, sorted by condition and alphabetically.

ranking	stimuli	condition	mean_ratings	sd_ratings	ci_lower	ci_upper
1	elenya	positive	3.91	1.22	3.49	4.34
2	ilvana	positive	3.82	1.40	3.33	4.31
3	lindale	positive	3.79	1.34	3.33	4.26
4	vanimalda	positive	3.74	1.38	3.25	4.22
5	varanda	positive	3.68	1.12	3.29	4.07
6	loico	negative	3.44	1.21	3.02	3.86
7	namarie	positive	3.41	1.23	2.98	3.84
8	vilvarin	positive	3.35	1.37	2.88	3.83
9	melcor	negative	3.35	1.70	2.98	3.73
10	calima	positive	3.32	1.12	2.93	3.71
11	nahtan	negative	3.15	1.21	2.73	3.57
12	tinde	positive	3.06	1.20	2.64	3.48
13	naraca	negative	3.06	1.10	2.68	3.44
14	saucare	negative	3.00	1.28	2.55	3.45
15	mausta	negative	2.97	1.00	2.62	3.32
16	ulca	negative	2.88	1.15	2.48	3.28
17	rohta	negative	2.85	1.18	2.44	3.27
18	rilma	positive	2.82	1.03	2.46	3.18
19	ongwe	negative	2.71	1.14	2.31	3.10
20	hloima	negative	2.71	1.12	2.32	3.10

Table 2. Overall mean perceived aesthetic appeal of each Quenya word with standard deviation and 95% confidence intervals, ranked from highest to lowest rating.

ranking	stimuli	condition	mean_ratings	sd_ratings	ci_lower	ci_upper
1	lindale	positive	4.27	1.22	3.59	4.94
2	varanda	positive	4.27	1.03	3.69	4.84
3	elenya	positive	4.20	1.21	3.53	4.87
4	vanimalda	positive	4.00	1.46	3.19	4.81
5	ilvana	positive	3.80	1.32	3.07	4.53
6	calima	positive	3.67	1.23	2.98	4.35
7	vilvarin	positive	3.67	1.35	2.92	4.41
8	nahtan	negative	3.53	1.30	2.81	4.25
9	namarie	positive	3.33	1.50	2.50	4.16
10	loico	negative	3.20	1.26	2.50	3.90
11	ongwe	negative	3.20	1.32	2.47	3.93
12	rilma	positive	3.13	1.19	2.48	3.79
13	melcor	negative	3.07	1.03	2.49	3.64
14	tinde	positive	2.93	1.28	2.22	3.64
15	mausta	negative	2.87	1.13	2.24	3.49
16	saucare	negative	2.87	1.36	2.12	3.62
17	naraca	negative	2.80	1.15	2.17	3.43
18	rohta	negative	2.73	0.96	2.20	3.27
19	ulca	negative	2.73	1.03	2.16	3.31
20	hloima	negative	2.53	1.06	1.95	3.12

Table 3. Mean perceived aesthetic appeal of each Quenya word by German L1 speakers with standard deviation and 95% confidence intervals, ranked from highest to lowest rating.

ranking	stimuli	condition	mean_ratings	sd_ratings	ci_lower	ci_upper
1	ilvana	positive	3.84	1.50	3.12	4.57
2	elenya	positive	3.68	1.20	3.10	4.26
3	loico	negative	3.63	1.16	3.07	4.19
4	melcor	negative	3.58	1.07	3.06	4.09
5	vanimalda	positive	3.52	1.31	2.90	4.16
6	namarie	positive	3.47	1.02	2.98	3.97
7	lindale	positive	3.42	1.35	2.77	4.07
8	naraca	negative	3.26	1.05	2.76	3.77
9	varanda	positive	3.21	0.98	2.74	3.68
10	tinde	positive	3.16	1.17	2.60	3.72
11	saucare	negative	3.11	1.24	2.51	3.70
12	vilvarin	positive	3.11	1.37	2.44	3.77
13	calima	positive	3.05	0.97	2.58	3.52
14	mausta	negative	3.05	0.91	2.61	3.49
15	ulca	negative	3.00	1.25	2.40	3.60
16	rohta	negative	2.95	1.35	2.30	3.60
17	hloima	negative	2.84	1.17	2.28	3.40
18	nahtan	negative	2.84	1.07	2.33	3.36
19	rilma	positive	2.58	0.84	2.18	2.98
20	ongwe	negative	2.32	0.82	1.92	2.71

Table 4. Mean perceived aesthetic appeal of each Quenya word by Japanese L1 speakers with standard deviation and 95% confidence intervals, ranked from highest to lowest rating.