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Esperanto, Klingon and Toki Pona: Evaluating non-speaker perceptions of the orthographic and phonological characteristics of three popular constructed languages

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Introduction

There are by now hundreds of constructed languages – according to Michael Adams and David Peterson their number may amount to a figure approximating one thousand (Adams 2011: 2; Peterson 2015: 8) and is still growing. For some of them, printed publications are available, whereas others are relegated to the Internet. Of these languages, only the following have been assigned an official ISO code to date:

Afrihili, Interlingue (Occidental), Romanova, Kotava, Interlingua, Sindarin, Brithenig, Lojban, Klingon, Medefaidrin, Láadan, Toki Pona, Dutton World Speedwords, Lingua Franca Nova, Talossan, Esperanto, Neo, Volapük, Ido, Novial, Balaibalan, Interglossa, Quenya and Blissymbols (KreativeCorp, ConLang Code Registry).

Only nine of these languages have their own Wikipedia page: Esperanto, Ido, Interlingua, Interlingue, Kotava, Lingua Franca Nova, Lojban, Novial and Volapük (List of constructed languages with Wikipedias, Wikipedia); however, Toki Pona, for now, has its own alternative Wikipedia-like website called Wikipesija.

Constructed languages or conlangs have been classified in different ways (see Coluzzi 2022, Gobbo 2017). The three main categories according to the List of Constructed Languages in the English version of Wikipedia (List of constructed languages, Wikipedia) are: auxiliary languages developed for international communication, such as Esperanto or Interlingua; artistic languages invented to be used in literature or cinema by certain characters

from different ages or different worlds, such as Klingon (Star Trek) or Na'vi (Avatar); and engineered languages (philosophical or experimental) developed to test a hypothesis or to experiment with novel linguistic features, such as Lojban or Toki Pona.¹

For this study, three of these languages were chosen for appraisal. The selected languages, which are probably the most popular and widely-used of those listed above,^{2 3} represent each of the main categories described: Esperanto, as the best-known auxiliary language; Klingon, as a popular example of an artistic language; and Toki Pona, the engineered or philosophical language that seems to have the largest number of users at the moment according to the number of subscribers on Facebook, Reddit, and Discord (Toki Pona, Wikipedia).

One of the two purposes of this article is to evaluate how ordinary people, in this case university students in Malaysia who do not know anything about these languages, perceive the three languages when hearing them or seeing them in the written form for the first time. The other purpose is to determine whether these perceptions match to some extent the intentions and original ideas of their creators and other users.

All three languages can be written and are normally written using a version of the Latin script. As a matter of fact, Esperanto does not have its own orthography and thus can only be written using the Latin script, though it must be complemented with a couple of diacritics, but both Klingon and Toki Pona also have their own peculiar scripts, even though they are less often used. As a matter of fact, the Klingon script known as *pIqaD* is just a display script, whereas Toki Pona has more than one non-Latin script at its disposal, though *sitelen pona*, the glyphs created by the inventor of Toki Pona Sonja Lang and introduced in

¹ This very informative Wikipedia page lists another six minor categories: controlled languages (e.g. Basic English or Globish), visual languages (Blissymbols and Gestuno), ritual languages (e.g. Eskayan), alternative languages (Brithenig and Wenedyk), micronational languages (Talossan) and personal languages (e.g. Lingua Ignota or Balaibalan).

² I am using the term “user” here and not “speaker” as these languages, particularly Toki Pona, tend to be written (especially on social media) rather than spoken. There are many Tokiponists, in fact, who know the language well and use it profusely, but only online, not having anybody around with whom to speak it.

³ For example, as of April 2023, Esperanto had 27,075 subreddit members, Toki Pona 14,756, and Klingon 2031 (information provided by Sonja Lang in a personal communication).

her book “Toki Pona: The language of good” (2014), are the most popular ones. For this research *pIqaD* and *sitelen pona* were used for Klingon and Toki Pona, whereas there was no option other than to use the Latin script for Esperanto. As stated above, based on the respondents’ perceptions, this study tried to determine whether the choice of phonemes and scripts on the part of the inventors of these languages was a happy one, in that the main purpose and ideas behind the creation of these languages as seen by their inventors are in some way reflected in the sounds and writing systems adopted and developed. After this introduction and some background information about these three constructed languages, this article will introduce the methodology employed, which consisted of two tests based on association of ideas. One test focused on the sound of the three languages and employed a verbal-guise technique, while the other focused on the scripts of these languages. The respondents were asked to provide words or brief sentences indicating what the sound of the languages and their scripts evoked in their minds, as will be explained in the methodology section. After the results are presented, they are discussed with reference to neuropsychological research on shapes. Considering the limitations of this study, it cannot be considered more than preliminary research, but still it seems to show that the choices of phonemes and writing systems were indeed happy and effective ones in that they seem to evoke images and ideas very similar to those envisaged by the inventors of these languages and by some of their active users, particularly in the case of Klingon and Toki Pona.

Background information

Esperanto was created in 1887 by Lazarus Ludwig Zamenhof (1859-1917), a multilingual ophthalmologist from Białystok, then part of the Russian Empire and now part of Poland. It was created to be a neutral and easy second language that might allow communication among people speaking different languages. The goal was to enhance understanding among peoples of different linguistic and cultural backgrounds, and to lead to peace, harmony, and

interethnic and international friendship. As Zamenhof proclaimed in one hymn: “May the enmity of the nations fall, fall, now is the time! All humanity must unite itself into a family” (Smith 2011: 32, Okrent 2009: 97). Esperanto never became the international auxiliary language that its creator envisaged, this place having been taken by English, but it is still alive and thriving, and is currently spoken by perhaps around 100,000 people all around the world (Esperanto, Wikipedia). The vocabulary is based on European languages, particularly Romance and Germanic, and the writing system makes relatively frequent use of the *hacek* diacritic (and the circumflex accent on the U), which gives Esperanto a rather Eastern European look.

Klingon, on the other hand, was created by American linguist Mark Okrand and first heard in the 1984 film of the Star Trek saga “Star Trek III: The Search for Spock”. Klingon is the language of the homonymous fictional alien race. The Klingons are a warrior race, ruthless and brutal, but with their own code of honour. Their language was therefore created to sound “harsh, guttural, and alien”, like their speakers, as Okrent explains (2009: 266), with multiple stops, one uvular affricate, and two velar fricatives (Okrand et al. 2011: 116-119), i.e. phonemes that are found in German and Russian (the velar fricative) for example, or Arabic (uvular and glottal stops and velar fricatives), thus incidentally underlining their links with three languages that are often seen as “harsh”, partly because they are associated in the West with, in the case of the first two, the enemies in the Second World War and during the cold war and with, in the case of the latter, Islamic terrorism. The Klingon script (*pIqaD*), on the other hand, was designed by the Astra Image Corporation and is just a display alphabet, as explained above, a script featuring “sharp letter forms—used as a testament to the Klingons' love for knives and blades” (Klingon language, Wikipedia).

Finally, Toki Pona (which means “simple or good language” in English) is a minimalist language created by Canadian linguist Sonja Lang in 2001. It is a very simple

language that makes use of a vocabulary of only 137 words that can be combined to express many meanings. It has a significantly reduced phonetic inventory that comprises just nine consonants and five vowels, which may recall Austronesian languages spoken on islands in the Pacific Ocean such as Hawaiian. Toki Pona's key words "simple" and "natural" are very much based on the original Taoist ideas found in the *Dao de Jing*. It is a language that shuns the complexities of our society and our natural languages in order to help us simplify our thinking: "If many of life's problems are created by our excess thoughts, then Toki Pona filters out the noise and points to the centre of things" (Lang 2014: 12). Toki Pona can be written using several writing systems, but it is most commonly written in Latin characters and in *sitelen pona*, the writing system using pictographic glyphs which was developed by Sonja Lang and consists of 137 glyphs corresponding to the Toki Pona 137 words.

Methodology

As mentioned in the introduction, the tests for this research were based on association of ideas. In addition, a modified version of the verbal-guise technique was employed for the test based on spoken examples. To my knowledge, only one study like this one has been published before, based on Ashlie Devenney's research (2017). That study also made use of the verbal-guise technique, but differed in that the reaction to the languages examined was measured through Likert scales which included only four qualities to be rated: kindness, attractiveness, intelligence and honesty. In addition, Devenney's study only focused on the sound of the languages looked at, not their writing systems, and on historical stereotyping. The only language that that study and the present one have in common is Klingon.

A number of students, both undergraduate and postgraduate and all enrolled in courses at the Universiti of Malaya in Kuala Lumpur, were asked to listen to three excerpts of three languages they had never heard before, the names of which were not revealed (Esperanto, Klingon, and Toki Pona, in that order). Photocopies were handed out to the

students in their own classes. They were asked to indicate their major, their age and their ethnic group. Underneath, on the same page, only three sentences appeared: track 1, track 2 and track 3, with some space under each sentence. Three short samples of a duration of 25-35 seconds were then played to the students twice, and they were asked to write down any word or sentence that the sound of each language evoked. I highlighted the fact that they were to focus on the sound of the language and not on the quality of the speakers' voice or any other factors. Despite this, as the results showed, some of the words written down appear to refer to the speaker or his voice, and not the sound of the language itself. Other words, however, were clearly related to the languages. This is one of the limitations of this research. Ideally, a matched-guise technique should have been used, but I found it impossible to find someone who could speak Esperanto, Klingon, and Toki Pona fluently. Probably such a person does not even exist. In the case of the verbal-guise technique, different speakers are used, but ideally, to achieve a good degree of reliability as suggested by Dragojevic and Goatley-Soan (2022), the speakers are matched on various demographic factors and on extraneous vocal characteristics not of interest in the study, and multiple speakers are used to represent each variety of interest. Unfortunately, of these recommendations, only the matching of gender (they were all males) was possible. After much research on the Internet, I found just three video clips on YouTube in which the languages were spoken clearly, without a strong accent, fluently and, to the best of my knowledge, correctly. As a matter of fact, the only language I could check relatively well was Toki Pona, but the sources of the other languages seemed to me to guarantee a good level of accuracy. The Esperanto and Toki Pona clips were found on Wikitongues (<https://www.youtube.com/watch?v=Ynx3JxV5U6I> and <https://www.youtube.com/watch?v=oPqQEDIMQyc>), whereas the Klingon sample came from YouTube, where I found a clip in which an online German Klingon teacher was speaking the language (<https://www.youtube.com/watch?v=a9NSj6jXOwE>). The Esperanto

and Toki Pona speakers' voices matched relatively well as they are both very young speakers, whereas the Klingon speaker was more mature. In addition, in Wikitongues the two speakers spoke rather freely, as if they were being interviewed, whereas the clip in Klingon was a translation of a passage of dialogue from a novel which the speaker had memorized (quite skillfully, it seemed to me). In addition, the latter clip had some music in the background, even though it was very soft. I was not able to find any other clearly spoken and adequately lengthy Kingon sample without any background music. It must be noted that all these factors may have influenced the respondents' perceptions. Still, I made sure that the parts I extracted from the clips sounded as complete sentences and did not have any clear reference to the respective languages, at least as far as Esperanto and Klingon are concerned. As for Toki Pona, the name of the language was uttered a few times in the clip, so I could not eliminate it. It must be said, however, that the phrase "toki pona", as explained above, can simply mean "good/simple language" or even "speak well", so I left it in, which seemed reasonable considering that none of the respondents knew anything about this language. 72 valid sheets were collected and analyzed. The respondents were mostly female and Malaysian, but quite a large group were Chinese nationals from the People's Republic of China who are studying here. The ethnic groups the respondents belong to are as follows: 19 non-Malays (mostly Malaysian Chinese, but also from other local minorities), 34 Malays, 17 Han Chinese from the People's Republic of China, and two others (one French and one Arab).

As far as the second test is concerned, one sentence was written for each of the three languages, with Toki Pona written in *sitelen pona*, Esperanto in Latin script, and Klingon in *plqaD*. The sentences were written in that order on a separate sheet handed out to the students, with space under each sentence to write the words which each script evoked. The fonts had a similar size, and the sentences were written in black. The sentences in Esperanto and Klingon were taken from Wikipedia, whereas the one in Toki Pona was an original script

Results

As expected, the students wrote down many different words while listening to the three tracks. However, some students wrote the same words as their classmates or at least close synonyms, while many other words provided by students belonged to the same broad semantic area. In any case, I decided to include in the analysis only the words/synonyms that had at least 5% of occurrences, as can be seen in the following tables. Words that were synonyms or whose meaning was very close were grouped together. Degree adverbs were not included.

Words	Occurrences
Spanish	8
Soft, sad/sorrow/gloomy	5
Italian, European language, interview	4

Table 1. Track 1 (Esperanto).

As table 1 shows, for as many as eight students listening to Esperanto, it evoked the Spanish language. I am not sure whether any of them had studied Spanish, but it seems they recognized the Romance or Western element in Esperanto. In fact, four students provided the word “Italian”, and another five “European language”. The names of other western languages were also provided, such as French (3 occurrences), Russian (3 occurrences), and Portuguese (3 occurrences). Two students provided a more generic “South American language”; one wrote “North American language” and another one wrote that the language sounded as if it was “between Romance and Asian”. Still other students wrote down: Middle Eastern language, Thai, Chinese, Arabic, African, Latino, Indian, and Asian accent. It should be remembered that all but one of the students were Asian, and most of them were only acquainted with English, on top of Malay, Chinese and/or Tamil and other local languages. In

any case, the Esperanto lexicon has its roots in European languages, “predominantly Romance, with a large proportion of Germanic, and a smaller admixture of Slavic, Greek, and others” (Smith 2011: 34).

Five students perceived Esperanto as “soft”, another five thought it was “sad/gloomy” or evoking “sorrow”, and four students wrote “interview”. I suspect that in these cases the students were describing the voice and tone they heard rather than the language itself. In any case, a few other rather positive adjectives were mentioned, such as “gentle” (3 occurrences), “calm” (3 occurrences), “polite” (2 occurrences), and “mild”.

Words	Occurrences
German/Germanic	12
Strong/hard/tough	11
Throat/epiglottal/sore throat/guttural sounds, advertisement/commercial	8
Russian	5
Romantic, story-telling	4

Table 2. Track 2 (Klingon).

As far as Klingon is concerned, the word that the students provided the highest number of times was “German/Germanic”, probably due to the frequent velar fricatives they heard in the clip. Next came the adjectives “strong/hard/tough”, with as many 11 occurrences; these are words that are often used to describe German by non-speakers. Related to some of the phonemes used in Klingon are the words “throat/epiglottal/sore throat/guttural sounds” as well, which were chosen by as many as eight students. “Russian”, another language that showcases the velar fricative as does German, had five occurrences. Interestingly, four students found the language (or the speaking voice) “romantic”, and the same number described what they heard as “storytelling”. It is also interesting to note that

only one respondent provided the word “Arabic”, considering the presence of phonemes that are used in that language as well. This might have to do with the fact that Arabic is the sacred language of Islam, the official religion of Malaysia, which does not sound harsh to most Malaysians, particularly to Malays who are Muslim. In line with the choice of the adjectives “strong/hard/tough” noted above, other adjectives and nouns that Klingon evoked included the following: dominant (3 occurrences), aggressive (2 occurrences), intimidating (2 occurrences), war (2 occurrences), army, wolf, saliva, dungeon, cringe, brutish, powerful, scary, spooky, creepy, terrifying, stern, rough, killer, attack, revenge, violent, push, orders, horrible, harsh, thunder, coerce, drama. All these belong to a kind of “dark” semantic area related to violence, war, power and fear. It is equally interesting that quite a few respondents provided words that are related to history and the past: ancient/old/old story (3 occurrences); Vikings, with whom the Klingons have been compared (2 occurrences); historical, Middle Ages, pirates, and old English. In short, many students perceive Klingon as an old language that sounds harsh and evokes images of horror, war, fear and domination.

Words	Occurrences
Italian	9
Soft, quick/fast/brisk/in a rush	7
Polite/kind	6
Clear, friendly, rhythmic	5
French, Japanese, Asian language, happy/cheerful	4

Table 3. Track 3 (Toki Pona).

Toki Pona was perceived in quite a different way from Klingon. Among other things, the languages written down by the students are those which most people would normally

consider nice, romantic and soft, such as Italian (9 occurrences), French, and Japanese (4 occurrences each), in which a clear alternation of simple consonants and vowels are present (particularly in Japanese) and in which most words end in a vowel (particularly Italian and Japanese). Another four students simply provided the sentence “Asian language” without specifying. Six students considered Toki Pona, or more probably its speaker, polite/kind (6 occurrences), whereas another four saw it as happy/cheerful (which, again, might refer to the speaker). As many as seven students wrote “soft”, whereas the same number of students provided the adjectives “quick/fast/brisk/in a rush”, which clearly refer to the speaker, who was talking rather fast. Other “positive” words provided were “clear” and “friendly”, written by five students each, the same number that found the language or the way it was spoken “rhythmic”. In addition to all these rather “positive” words, many others were provided that shared the semantic area related to happiness, cuteness and good: fun (3 occurrences), gentle (3 occurrences), nice (2 occurrences), relaxing/relaxed (2 occurrences), good, approachable, pleasant, cheerful, cute, light-hearted and sunshine. What is very interesting was also the number of times that words related to some exotic indigenous tribe living on some island or in the jungle occurred: tribal/tribe (2 occurrences), indigenous (2 occurrences), Tagalog (2 occurrences), exotic language, African language, language from Papa New Guinea, Indian, jungle, island, tropical area, Dora the Explorer. This might be due to the phonetic similarity of Toki Pona with some Polynesian languages such as Hawaiian. Whether referring to languages they thought exotic or simply “nice”, three students wrote “Korean” (a very popular language in Malaysia) and two “Spanish”. Another two students wrote “simple”.

As can be observed and as mentioned before, some of the words seem to be describing the voice and imagined look of the speakers, but others seem to me genuine descriptions of the sound of each language. Sometimes the descriptions were more technical and objective, while at other times they were more subjective.

Moving on to the test on the scripts, it seemed easier for the students to provide words that each script evoked. Here are the results of the test:

Words	Occurrences
Symbols	23
Cute	19
Ancient language	10
Funny	8
Children/childish, shapes	7
Cheerful/happy, interesting, love/lovely	6
Emojis	5
Egypt/pyramids, unique, confusing/confused	4

Table 4. Sitelen Pona.

Starting from the Toki Pona glyphs, if we exclude the words “symbols” (23 occurrences), “shapes” (7 occurrences) and “emojis” (5 occurrences), which are just descriptions of what the characters look like, the adjective “cute” is the one that was mentioned the most by the students, as many as 19 times. This is in line with how Toki Pona is often described, by its inventor as well (Okrent 2009: 286). Another often-mentioned adjective was “funny” (8 occurrences), which is another adjective often used to describe the language by its inventor and other users (Okrent 2009: 286). Similar adjectives with a positive meaning that the students mentioned are the following: childish (or children, 7 occurrences), cheerful/happy (6 occurrences), interesting (6 occurrences), lovely (or love, 6 occurrences), unique (4 occurrences). Interestingly, ten students perceived the script as belonging to an “ancient language”, whereas for another four it recalled Egypt or pyramids, probably for their relative resemblance to Egyptian hieroglyphs. All in all, the associations

are all positive, apart from the adjectives “confusing/confused” that four students wrote down. As a matter of fact, many other words and sentences with a positive meaning were provided, such as: pretty, bubbly, adorable, light-heartedness, lifting the mood, and sunny, but only once each. Related to “children/childish” were also the nouns “cartoon/animation” (2 occurrences) and “kindergarten”.

Words	Occurrences
French, normal, simple/easy	7
Formal	6
Readable	5
Italian/Italian dialect, German, European, familiar	4

Table 5. Esperanto.

As partly expected, the Latin script for Esperanto did not evoke any noticeable associations, as it is a script that is considered “normal”, being used, among many other languages, for both Malay and English, the most widely spoken languages in Malaysia. Only a couple of students noticed the diacritics and suggested a relation to some Eastern European writing systems. As a matter of fact, the words provided most often were “normal” (7 occurrences), “simple/easy” (7 occurrences), “readable” (5 occurrences) and “familiar” (4 occurrences). Other similar words and phrases were provided: usual (2 occurrences), every day, common, nothing special, and predictable. However, six students considered the script “formal”. The most common associations were with other European languages: French (7 occurrences), Italian (or Italian dialect, 4 occurrences), German (4 occurrences), and a more general “European” (4 occurrences). Interestingly, as shown above, most of the roots in Esperanto come from Romance and Germanic languages. Other languages were also provided: Spanish (3 occurrences), Latin (3 occurrences), Portuguese, Balkan, Croatian/Bosnian, Russian,

Greek, and Scandinavian. These are all languages or groups of languages that have influenced Esperanto, particularly as far as the lexicon and the writing system are concerned.

Words	Occurrences
Ancient/old/historical/arcane	23
Hard/difficult	9
Mystery/mysterious	8
Scary/spooky/intimidating	6
Cave, sharp	5
Alien/from another planet/space, Egypt, fire, complex/complicated, bold	4

Table 6. *pIqaD*.

Unlike for Esperanto and similarly to *sitelen pona*, *pIqaD* also provided several associations. If we exclude the adjectives “hard/difficult” (9 occurrences), which seem to describe the subjective opinion of the students regarding the difficulty of reading, writing or perhaps learning the script, as well as the adjectives “complex/complicated” (4 occurrences), “sharp” (5 occurrences) and “bold” (4 occurrences), which probably describe the script itself, which is thick and has many sharp angles, all the other words provided seem to be quite easily relatable to the Klingon race and its culture as portrayed in *Star Trek*, even though none of the students had any idea about the Klingons or the films that portrayed them. Perhaps the least relevant adjectives might be “ancient/old/historical/arcane”, which is what the written characters looked like to as many as 23 students, and “Egypt” (4 occurrences), which in its turn can be related to something old and historical. However, the Klingon race is supposed to be an old one, and their script “historical”, so these descriptors might be less irrelevant than at first it may seem. Eight students found the script “mysterious”, including one who wrote “mystery”, whereas six thought it was “scary/spooky/intimidating”, like the Klingons

themselves. Five students provided the words “cave”, which possibly, like “ancient/old/historical/arcane” above, recalls ancient times when people inhabited caves, or perhaps refers to something dark and mysterious. Four students wrote “fire”, something that can be seen as related to war, destruction, or perhaps ancient times. The most relevant words provided by four students were “alien/from another planet/space”, which all refer to the Klingons not being from our planet. In addition to the words that at least four students provided (5%), other students wrote many words that conveyed negative meanings related to evil, monsters and demons: evil (2 occurrences), grim, brutal, monsters, vampires, Satan, devilish. All these words describe how the Klingons are portrayed in the movies, especially in the early ones.

Discussion

Looking at the answers provided by the students, it appears that their perceptions of both Klingon and Toki Pona, both in the spoken and written forms, seemed overall to be aligned with the way both the inventors of these languages and many of their learners and users envisaged them. And this seems to me particularly interesting considering that the respondents did not know anything about these languages and belong to cultures that are quite different from the Western one in which Toki Pona and Klingon were created (North America). It appears that Sonja Lang and Mark Okrand managed to convey just what they intended to when they came up with their languages, as the languages seem to project, phonetically and orthographically, the characteristics they had in mind. I am not sure whether, when creating her language, Sonja Lang had a prototypical speaker in mind as David Peterson recommends (Peterson 2015), but considering that she has stated that Toki Pona is “fun and cute [...] one could almost imagine a race of cartoon creatures speaking in Toki Pona” (Okrand 2009: 286), and that the meaning of the language itself is “good/simple language”, we can conclude that her choice of sounds and *sitelen pona* characters was indeed

optimal. Evidently the main reasons Sonja Lang created this minimalist language, i.e. that it “filters out the noise [excess thoughts] and points to the centre of things” and “promotes mindfulness” (Lang 2014: 12), cannot possibly be perceived through its phonology, nor can the simplicity and minimalism it is based on, but that is another story.

As far as Klingon is concerned, its creator had a clear and definite image in mind of the speakers of this language, in addition to a few words that had already been created by James Doohan, one of the actors in the *Star Trek* saga, which Okrand had to incorporate into the language he was creating (Okrent 2009: 267, Okrand et al. 2011: 113). He knew that the language had to be “harsh, guttural, and alien” (Okrent 2009: 266), and represent “Klingons’ character, who are direct, aggressive and violent” (Malvárez Ocaña & Curell Gotor 2020: 21). According to Lisa Davidson, a professor of linguistics at New York University, “people tend to refer to languages with sounds primarily made in the back of the vocal tract as ‘harsh-sounding’” (Cronim 2013, in Devenney 2017: 7). In addition, “languages with exceedingly guttural sounds will cause the listener to perceive the language more negatively than they would perceive a language without this linguistic feature” (Devenney 2017: 8).⁴ So in this case, too, we can say that Klingon fulfilled its goal perfectly – many of the respondents in this study did perceive Klingon as a guttural and “strong” language. The script, too, seems to be in line with the spoken language in its scary and alien look.

As for the reasons *sitelen pona* looks so cheerful and cute and *pIqaD* scary and intimidating, we can draw on some neuropsychological research that has been carried out on shapes, including fonts. This research, in fact, has demonstrated that certain shapes and contours are very much ingrained in our psyche and even in our old mammalian brain, and specifically the amygdala, part of the limbic system (Coluzzi 2021: 106). In fact, “curve-

⁴ Even though it is hardly scientific and was made mostly for entertaining purposes, I found this clip on YouTube very interesting as far as the reaction to/perceptions of Klingon is concerned: <https://www.youtube.com/watch?v=8D7ezNslK0>.

shaped letters are considered calming, whilst angular-shaped letters evoke anxiety” (Hyndman 2016: 68). According to Van Leeuwen, “‘roundness’ can readily be seen as a metaphor for ‘organic-ness’, ‘natural-ness’, ‘femininity’ and other related concepts” (Van Leeuwen 2005: 140), whereas “angularity [can come to signify] ‘abrasive’, ‘harsh’, ‘technical’, ‘masculine’, and so on” (Van Leeuwen 2006: 149).

Psychological research has shown that round shapes are normally perceived as being more appealing (see for example Bar & Neta 2006 and 2007, Bertamini et al. 2016), possibly in part because of their connection with that part of the natural world which is not perceived as dangerous (like most flowers, fruit and leaves), and are normally associated with happiness and safety (Oyama 2003, Palumbo et al. 2015). Round characters are, therefore, seen positively, whereas sharp, angular lines tend to be liked less than round lines and tend to suggest anger, threat and danger (Oyama 2003, Bar & Neta 2006 and 2007, Palumbo et al. 2015).

Bar and Neta’s research (2007), for example, has shown that:

In agreement with this hypothesis [that the bias towards liking sharp-angled objects significantly less than curved objects stems from an elevated perception of threat conveyed by sharp object features], the amygdala shows significantly more activation for the sharp-angled objects compared with their curved counterparts. [...] In conclusion, our findings indicate that humans like sharp-angled objects significantly less than they like objects with a curved contour, and that this bias can stem from an increased sense of threat and danger conveyed by these sharp visual elements. (Bar & Neta 2007: 2199, 2200).

All these findings are perfectly in line with the responses given by the students, as *sitelen pona* includes many round signs, whereas *plqaD* is angular and spiky. No wonder then that the students assigned many positive associations to the first and many negative ones to the second. This highlights what was affirmed above, i.e., that the choice of scripts was rather

successful as these do reflect some of the characteristics of Toki Pona and of the Klingons respectively.

So far, we have discussed Toki Pona and Klingon at length, but what about Esperanto? The reasons it was created cannot really be perceived or envisaged through the sounds of the language, and even less through its writing system, which does not differ much from those of many European languages. How could ideas of an international neutral second language that would promote friendship among the peoples of the world ever be expressed through phonology? In spite of this, the sounds of Esperanto were perceived rather positively by the respondents (apart from the five students who found it, or its speaker, “sad” and “gloomy”), so the language does sound attractive and friendly to an extent, and the mentioning by the students of so many languages does in some way show its internationality.

Conclusions

Whereas auxiliary languages such as Esperanto were created to be a bridge among peoples and languages, providing human beings with a relatively neutral language with no great powers behind it that could help peoples of different origins and languages to communicate with each other, artistic and engineered languages were created with a less “practical” purpose, even though with equally clear and precise ones, whether the intention was to be the language of a fictional race like the Klingons or to test a hypothesis or some specific linguistic features such as linguistic minimalism, as in the case of Toki Pona. In the first case, the way the language looks or sounds may be relatively unimportant, as long as it is simple enough, regular, not too biased towards one particular language, and easy to learn. Something similar could also be said about Toki Pona: in theory, the way it sounds or looks should not be of great concern as long as its minimalist ends are fulfilled. However, behind the idea of “good and simple” (“pona”), one can also see ideas of “small” and “cute”, which inevitably lead to a language whose phonology can be perceived as happy and friendly. In addition,

“hard” and guttural sounds are not easy to pronounce for one who is not used to them. I believe that Toki Pona would not have been so successful if it had included any such sounds. On the other hand, even though this is a stereotype, a fierce and aggressive race like the Klingons would have probably sounded ridiculous if they had spoken in a soft manner. In short, if Toki Pona had included even just one or two of the “harsh” Klingon phonemes, and Klingon had had a phonology like that of Toki Pona, this would have been perceived as rather contradictory and neither language would have enjoyed the success it has. The same could be said about *sitelen pona* and *pIqaD* – round and friendly-looking characters would not have suited Klingon, and angular and spiky letters would have looked very odd for Toki Pona. In conclusion, we can say that each of the three creators was successful in his or her own way, as this research has shown that the sound patterns of the three languages they created, particularly when it comes to Klingon and Toki Pona, are perfectly suited to the purposes and ideas of their creators. The same applies to the scripts, i.e. *sitelen pona* and *pIqaD*. Even Esperanto in a way shows its internationality through the way it sounds and looks, and specifically through the words it uses.

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