From Consonants to Curses: An Inspection of Approximants and Swearing Patterns

When we hear the words “cursing” or “swearing,” very rarely is the first thing in our mind something orderly. Instead, these words make us think of a form of visceral, explosive communication that is generally accompanied by some level of negative emotional intensity. While the significance of cursing in one’s vocabulary varies from person to person, the use of profanity has historically been frowned upon[1]– considered *profane* by association with what it conveys. And yet, despite their perceived lack of order, deliberation, and historical integration, swear words in many different languages have similar phonemic features and recurring patterns– patterns rooted in the linguistic concepts of phonology and sound symbolism.

These phonological patterns were first brought to my attention when I read a post from the popular linguistics blog, *Language Log*. While most of the post was about possible correlations between the sounds P, T, and K in English and Sinitic languages, it also included some interesting snippets from a *New York Times* article. One of these snippets stated that curse words in several unrelated languages are “less likely than other words to include the consonant sounds L, R, W, or Y.”[2] This pattern was originally detected in a pilot study that aimed to find whether profanity contained certain categories of sounds more or less frequently than usual language. Previously, many authors made speculations about phonetic patterns in swearing, especially that swear words contained more unvoiced plosives (the sounds P, T, and K) than usual language. This was because unvoiced plosives, like swears, involve short, retortive utterances. This belief, along with other similar hypotheses, has been supported by provisional

[1]David L. Hudson, Jr., "Profanity," The First Amendment Encyclopedia, last modified August 2017, accessed August 5, 2023, https://www.mtsu.edu/first-amendment/article/1143/profanity.; Benjamin K. Bergen, "What Makes a Four-Letter Word?," in *What the F: What Swearing Reveals about Our Language, Our Brains, and Ourselves.* (Hachette UK, 2016), 43, accessed August 5, 2023
[2]Victor Mair, entry posted December 7, 2022, accessed August 3, 2023, https://languagelog.ldc.upenn.edu/nll/?p=57262.

evidence from experiments that found that, for some Indo-European languages, plosives appear slightly more frequently in swears than otherwise. However, these studies often directed themselves toward specific categories of sounds from related languages rather than observing a range of phonemic patterns between unrelated languages.[3] As a result of these studies being so specific, their results were possibly skewed by phonaesthemes, which are words that have similar meanings and phonemic elements by pure coincidence. An example of this would be with the words “gleam,” “glow,” “glint,” and “glare,” all of which start with *gl-* and are coincidentally related to light or vision. In this case, it would be impossible for simple cognitive bias to be a major driving factor for these patterns, as neither light nor sight relates to any particular phoneme other than arbitrarily.[4] Such occurrences could make it so that phonemic patterns researchers identified within a single language or even multiple related languages could be completely coincidental. In this pilot study however, a broader approach was taken, where researchers observed patterns within five unrelated languages (Hebrew, Hindi, Hungarian, Korean, and Russian) instead of focusing on a single sound in a single language. Overall, the only phonemic pattern the study found was that swear words in four of these five languages (excluding Korean), had disproportionately low frequencies of approximants. There was no indication that any other phonemic group appeared more or less than usual, including plosives.[5]

Besides that plosives did not appear more often in a sample size of diverse languages, these findings were not particularly surprising, as both humans and many other animals have been observed to “produce harsh, abrasive sounds when distressed and smooth sounds when

[3]Shiri Lev-Ari and Ryan Mckay, "The Sound of Swearing: Are There Universal Patterns in Profanity?," Psychonomic Bulletin & Review 30, no. 3 (December 6, 2022), https://doi.org/10.3758/s13423-022-02202-0.
[4]Bergen, "What Makes,".
[5]Lev-Ari and Mckay, "The Sound,".

calm and contented."[6] Because curse words are generally uttered as an assertion of distress, it follows that cursing should naturally be quite brusque and explosive, requiring a certain harshness in its sounds. Contrastingly, the approximant sounds L, R, W, and Y, lack this harsh sound. Because they are pronounced "by bringing two articulators close together without them touching as sound leaves the body", they result in a "smooth, vowel-like sound"[7]. It may be for the simple reason that approximant consonants are too soft that they are unfit to be in curse words– but there may also be other inherent qualities acquired through sound symbolism that come into play.

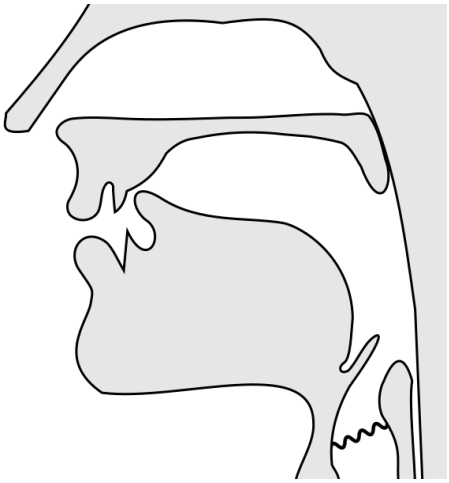

Figure 1. A Schematic Mid-sagittal Section of an Articulation of a Voiced Alveolar Approximant [ɹ]. Used with permission from Creative Commons Attribution-Share Alike 4.0 International file license.[8]

In the abstract of her study *Phonetic Detail and Dimensionality in Sound-shape Correspondences: Refining the Bouba-Kiki Paradigm*, Annette D'Onofrio describes sound symbolism as "the process by which speakers link phonetic features with meanings

[6]Alan Nielsen and Drew Rendall, "The Sound of Round: Evaluating the Sound-symbolic Role of Consonants in the Classic Takete-Maluma Phenomenon.," Canadian Journal of Experimental Psychology / Revue Canadienne De Psychologie Expérimentale 65, no. 2 (June 2011), https://doi.org/10.1037/a0022268.
[7]"Approximant Consonant Sounds," The Sound of English, accessed August 3, 2023, https://thesoundofenglish.org/approximants/.
[8]Tavin Nardog, A Schematic Mid-sagittal Section of an Articulation of a Voiced Alveolar Approximant [ɹ]., illustration, Wikimedia Commons, March 31, 2020, accessed August 4, 2023, https://commons.wikimedia.org/wiki/File:Voiced_alveolar_approximant.svg.

non-arbitrarily. For instance, speakers across languages associate non-words with rounded vowels, like bouba, with round shapes, and non-words without rounded vowels, like kiki, with spiky shapes."[9] In addition, sound symbolism is applicable in the case that a sound and a meaning are *mismatched*. This idea, in adjunct to the idea that the approximant consonant sounds L, R, W, and Y (which in this case are liquids and glides) often serve as softer, vowel-like sound carriers[10], makes it reasonable to deduce that their inherent associations with fluidity and unassertiveness can be accredited to their similar attributes in phonological use. That, in addition to the added perception that approximants are sound-symbolically associated with calm and contentment, further renders them unsuitable for swearing.[11] This perception of approximants has also been observed in people; in the study *The Sound of Swearing: Are There Universal Patterns in Profanity?* by Lev-Ari et al., multiple (minimal) pairs of "pseudo-words", were presented to participants from varying linguistic backgrounds (native speakers of Arabic, Chinese, Finnish, French, German, and Spanish), who were told that one member of each pair was a swear word. The members of each pair only differed in that one contained an approximant whereas the other contained an affricate. This study observed how receptive speakers of various languages were to the sound-symbolic dissociation between approximants and swears. It was found that participants were significantly less likely to choose words with approximant consonants than words with affricate consonants as swears; on average, the words containing affricates were chosen in 63% of trials, whereas the words containing approximants were only chosen in 37% of trials.[12] Below is a more detailed figure of the study's findings:

[9]Annette D'onofrio, "Phonetic Detail and Dimensionality in Sound-shape Correspondences: Refining the Bouba-Kiki Paradigm," abstract, Language and Speech 57, no. 3 (November 15, 2013), https://doi.org/10.1177/0023830913507694.
[10]T. Editors of Encyclopaedia. Britannica, "Liquid," Encyclopaedia Britannica, last modified July 20, 1998, https://www.britannica.com/topic/liquid-phonetics.
[11]Nielsen and Rendall, "The Sound,".
[12]Lev-ari and Mckay, "The Sound,".

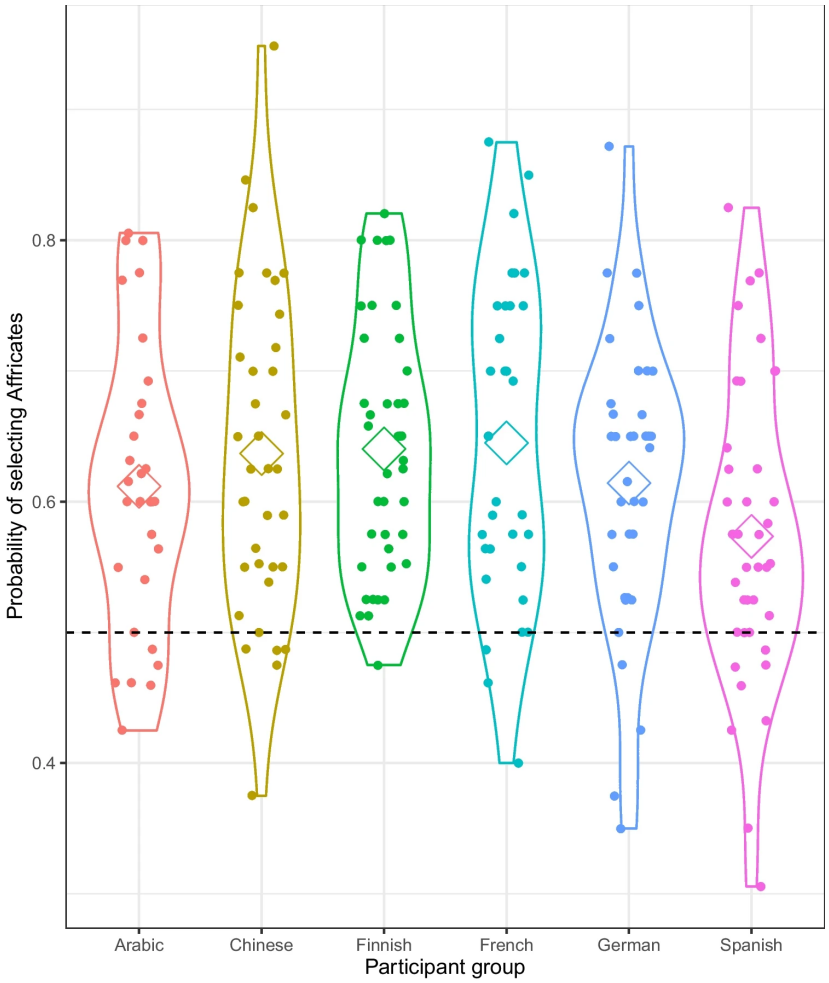

Figure 2. Graph depicting "Proportion of trials in which participants (grouped by native language) identified the word with the affricate rather than the approximant as the swear word. Diamonds depict group averages, and the dashed line denotes chance."[13]

The results of this study further demonstrate the ubiquity of the sound-symbolic association between approximant consonants and cursing, as they support the notion that people view approximants as innately disconnected from swearing, regardless of their linguistic background. Had this experiment been conducted on only one group of people with the same background in language, one could deem the experiment too biased in favor of a single lexicon to capture the popular sentiment regarding the relationships between approximants and swearing.

[13]Shiri Lev-Ari and Ryan McKay, Proportion of Trials in Which Participants (Grouped by Native Language) Identified the Word with the Affricate Rather than the Approximant as the Swear Word. Diamonds Depict Group Averages, and the Dashed Line Denotes Chance., chart, December 6, 2022, https://link.springer.com/article/10.3758/s13423-022-02202-0/figures/2.

However, because so many varying linguistic backgrounds were tested, and yet none particularly seemed to diverge from the general trend, it seems like there is an unarbitrary quality to approximants that distances them from the idea of swearing– a quality that is not attached to any particular cultural lexicon, and instead, pertains to the consonant sounds themselves. By far what was the most surprising to me however was the distribution of the French participant group. As a native speaker of French, I was at first quite skeptical of the study's design– I could easily come up with a list of popular swear words in French that contained approximants, for example, *merde* ("shit") [mɛ**ʁ**də], *ta gueule* ("shut up"; literally means "your mouth") [ta gœ**l**], *salaud* ("bastard") [sa**l**o], and *andouille* ("dumbass"; literally means "sausage") [ɑ̃du**j**]. And yet, the French participants were still very likely to select the affricate pseudo-word. The study actually acknowledges that French was "an exception to the rule that approximants are under-represented in swear words", and that "including French speakers would allow a strong test of the hypothesis of an underlying cognitive bias to associate swear words with a relative dearth of approximants." [14] The fact that native speakers of French, a language with plenty of approximants within its swears, still chose pseudo-words without approximants, conclusively corroborates the strength of the dissociation between approximants and the *general idea of swearing*.

The Language Log post continues by mentioning that "more family-friendly versions of curses often have these sounds added, just like the R in 'shirt' or 'fork.'"[15] Because family-friendly versions of curses are meant to be words that sound somewhat similar to the swear but are still clear parodies of them, a rather subtle sound that has an inherent separation from swear words, *an approximant*, works very effectively for this purpose. For example, in instances such as "frick" [f**ɹ**ɪk] or "flip" [f**l**ɪp] replacing "fuck" [fʌk], or "darn" [da**ɹ**n] replacing

[14]Lev-ari and Mckay, "The Sound,".
[15]Mair.

"damn" [dæm], the original swear word is quite obvious, and yet, the family-friendly versions feel much less shocking. In fact, in a secondary study by Lev-Ari et al., it was robustly demonstrated that "approximants were more frequent in minced oaths than in the original swear words …, indicating that when speakers altered swear words to render them less offensive, they did so by introducing approximants."[16]

In summation, it seems that many of the fundamental patterns in swearing, or rather, *the perception of swearing*, are strongly correlated with phonetic and sound-symbolic properties of approximant consonants. These patterns are quite universal, being observable in many unrelated languages and being sensed by people from many linguistic backgrounds. But while these patterns *could* imply that a large part of languages, through sound symbolism, have acquired similar means of communicating similar ideas, it is important to keep in mind that swearing is relatively distant from normal language– it is driven by much less by deliberation, and more by a need to express harshly negative emotions succinctly. As an additional disclaimer, it is important to keep in mind that even studies by Lev-Ari et al. acknowledge that sound symbolism creates associations that are "probabilistic rather than deterministic."[17] To this point, the evidence presented from these studies is by no means conclusive, but rather serves as a jumping-off point for understanding unique forms of communication such as swearing, and how they are similar around the world.

[16]Lev-Ari and Mckay, "The Sound,".
[17]Lev-Ari and Mckay, "The Sound,".

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