Sound symbolic patterns in Pokémon move names

1. Introduction

Whether sounds and meanings can have direct relationships or not has been a topic of heated debate since the time of Plato, as discussed in the dialogue *Cratylus*. Modern linguistics generally assumes, following Saussure (1916), that the relationships between sounds and meanings are generally arbitrary. However, there is a growing body of evidence that suggests that these relationships can be non-arbitrary; such consistent relationships are now extensively studied under the rubric of sound symbolism (see Dingemanse 2015 et al. for a recent review).

A recent study by Anonymous (2018a) has found that there are sound symbolic patterns in Pokémon names in such a way that those Pokémon characters with longer names tend to be stronger. For example, Pokémon characters with 5-mora names (e.g. *mi-ru-ka-ro-su*) tend to be stronger—and larger and heavier—than Pokémon characters with 4-mora long names (e.g. *hi-m-ba-su*) in terms of their official strength parameters. Anonymous (2018a) relates this observation to the "quantitative iconicity principle" in natural languages in which longer words are associated with larger quantity (e.g. Haiman 1983, 1985). Anonymous (2018a) also found that voiced obstruents in the Pokémon characters' names correlate with the characters' strength parameters; for example, *garagara* is stronger—and again, larger and heavier—than *karakara*. This sound-symbolic relationship is arguably based on the correlation between heaviness/largeness and voiced obstruents, which itself may have an acoustic (Ohala 1983) or articulatory (Shinohara & Kawahara 2016) basis; see also Hamano 1986 for sound symbolic values of voiced obstruents in Japanese in general. Anonymous (2018b, c) found via experimentation that these two sound symbolic relationships are productive in that they can be reproduced in experiments with Japanese speakers, including those who are not very familiar with Pokémon.

Building on these observations made by Anonymous (2018a, b, c), this short paper tests whether the same sound symbolic patterns hold in the moves ("waza or 技" in Japanese) that Pokémon characters use during their battles, in addition to the names of Pokémon characters themselves. The results of the current investigation show that similar patterns found by Anonymous (2018a, b, c) also hold in the names of Pokémon moves, further supporting the role of sound symbolic relationships in Pokémon naming patterns. More generally, the current study provides another case in which there is a non-arbitrary relationship between sounds and meanings (e.g. Dingemanse 2015 et al. and Hinton et al. 2006, cf. Saussure 1916).

2. Method

Generally, the moves that Pokémon characters use are specified for their numerical attack values ("kougekiryoku or 攻撃力" in Japanese). For example, *a-a-mu-ha-m-ma-a* "arm hammer" has the attack value of 100, whereas *a-i-su-bo-o-ru*'s "ice ball" attack value is 30 ("-" represents a mora boundary). In some cases, however, these values are not specified; for example, the class of moves which affects the opponent's status are not specified for their attack values as such. Also, there are cases in which attack values are not determined in absolute terms; e.g., a move whose attack value is twice as much as the attack value of the move that the opponent uses; such cases were excluded from the current analysis. Move names that contain numerical values and alphabet letters in the names (e.g. *10-manboruto* "100,000 volt" and *V-genereeto* "V-generate"), of which

there were four, were also excluded. Finally, since there were two moves whose attack values were above 200, whereas many of the other moves have attack values around or lower than 100 (mean = 74.6, SD = 32.4), these two data points were excluded as outliers. The remaining *N* was 393. Since a Shapiro-Wilk test normality test reveals no deviation from normality (W=0.97, *n.s.*), no transformation was applied to the data.

3. Results

Figure 1 shows the correlation between attack values on the one hand and mora counts in the names (a) and the number of voiced obstruents on the other (b). The red dots represent the average values in each condition, showing general positive correlations between the two dimensions in both panels of Figure 1. Since the observed correlations, especially the one in Figure 1(a), appear to be better represented as a quadratic function, linear regression lines (dotted) as well as quadratic regression lines are provided in the two panels of Figure 1.

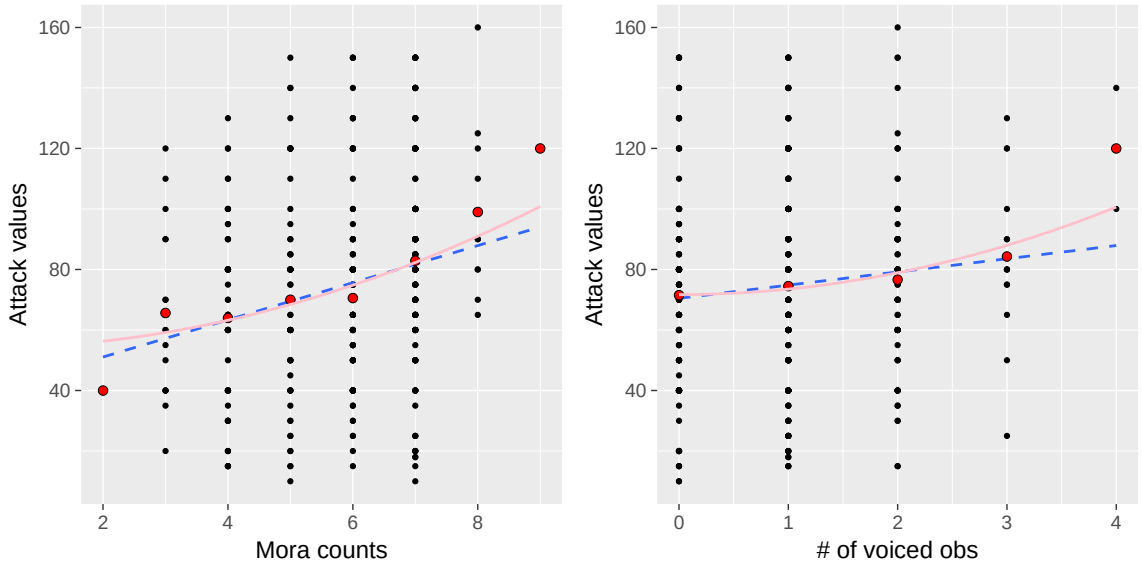

Figure 1: The correlation between attack values and (a) mora counts, and (b) the number of voiced obstruents. The red dots represent the averages in each condition. The linear regression lines, with their 95% confidence intervals, are shown as dashed lines; the quadratic regression lines are shown with solid lines.

Statistically, the slopes of the linear and quadratic regression lines are significantly different from zero in Figure 1(a) (linear: $t(391)=4.94$, $p<.001$; quadratic: $t(391)=5.15$, $p<.001$). The same statistical patterns hold for patterns in Figure 1(b) (linear: $t(391)=2.25$, $p<.05$; quadratic: $t(391)=2.63$, $p<.01$). Therefore, regardless of whether we model the correlation in terms of linear or quadratic regression, there are positive correlations between the attack values of Pokémon moves on the one hand, and the mora counts of their names and the number of voiced obstruents in the names.

4. Conclusion

Overall, the current study offers further support for the view of non-arbitrary, sound-symbolic patterns in Pokémon naming conventions (Anonymous 2018a, b, c); more generally, it supports the view that the connections between meanings and sounds are not always arbitrary (e.g. Hinton et al. 2006, cf. Saussure 1916).

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