

Effects of Cultural Orientation on Emotional Granularity

Onur Keleş & Selen Pekuzun

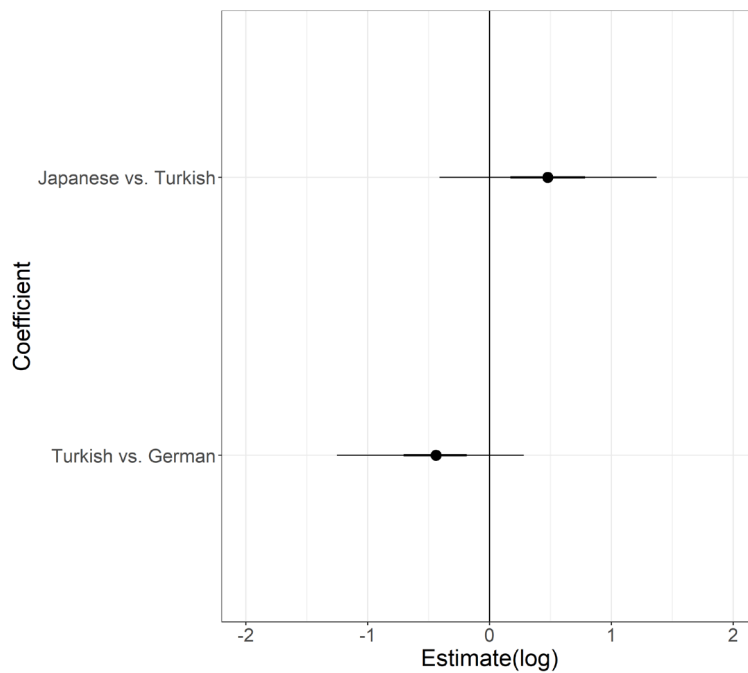
Boğaziçi University

The present study investigates whether L1 Culture affects L2 emotional arousal levels by examining German, Turkish, and Japanese L1 speakers of L2 English through a text-based sentiment analysis. The expression of emotion varies from one culture to another due to cultural regulations and relations, with emotional dominance and submission levels having been positively correlated with emotional arousal (Semin et al., 2002; Warriner et al., 2013). Emotional granularity research posits that in cultures where individualism is the norm, people tend to use high arousal emotion words which are also emotional self-markers (e.g., “excited,” or “furious”). Collectivistic societies most prominently use low arousal (e.g., “calm” or “hopeful”) relationship-markers (Lim, 2016; Taylor et al., 2017). Although the Individualism Index Scores (IDV) proposed by the Hofstede model of cultural orientation rank Germany higher than Japan and Turkey respectively (Hofstede, 1984), the effects of L1 Culture on the L2 emotion word choice in relation to transfer effects have been understudied.

We presently report data from 48 undergraduate students at an English medium university, 23 of whom were L1 Turkish speakers; the rest consisted of 15 German and 10 Japanese L1 speakers. All participants had intermediate L2 proficiency (B1-B2). We used PsyToolkit (Stoet, 2010, 2017) for online data collection. For the text-based sentiment analysis, we designed an online survey including 8 questions, all of which necessitated the elicitation of an intended emotion in response to a story prompt. All participants completed the task in English. We transferred the free-form responses to the Sentiment Analysis and Cognition Engine (Crossley et al., 2017), a Python-run NLP tool for sentiment identification. In line with the Psychoevolutionary Theory of Emotion (Plutchik, 1980), we first identified six Main Emotions and derived twenty-four Emotion Dyads using the EmoLex index (Mohammad & Turney, 2013), and dichotomously determined arousal and dominance levels (High vs Low) using the ANEW index scores (Bradley & Lang, 1999) for each response.

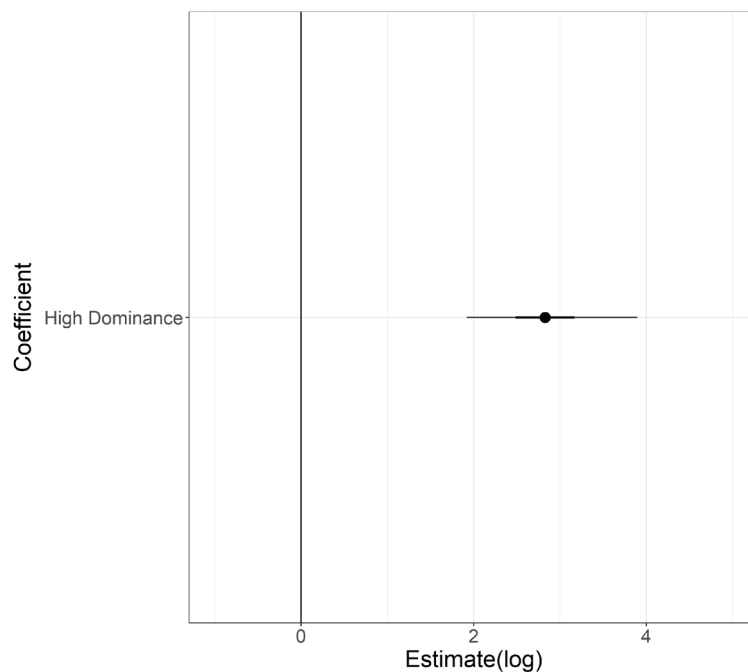
We fit a binomial logistic linear regression model using the brms package (Bürkner, 2018) in R, with Arousal (High vs Low) as the dependent variable. The results of the model show that Japanese speakers of L2 English generated more High Arousal responses compared to Turkish speakers who in turn produced fewer High Arousal emotions compared to German speakers (Figure 1). High Dominance emotions also greatly increased High Arousal responses (Figure 2). This is in line with previous observations in the literature (Semin et al., 2002). We argue that the emotion word choices of our participants reflect the IDV scores for the three countries suggested by the Hofstede model (Hofstede, 1984). This means that their emotional granularity labeling was consistent with the cultural orientation of their L1 Culture, possibly because of transfer effects. We conclude that our findings provide preliminary support for the emotional contexts of learning hypothesis which suggests that language emotionality is dependent upon the context in which the second language is learnt (Caldwell-Harris et al., 2011).

Figure 1. Regression Model for High Arousal by Culture



Note. The point represents the median estimate, the thick line represents %50 credible intervals, and the thin line represents %95 credible intervals.

Figure 2. Regression Model for High Arousal by Dominance



Note. The point represents the median estimate, the thick line represents %50 credible intervals, and the thin line represents %95 credible intervals.

References

- Bradley, M., & Lang, P. (1999). *Affective Norms for English Words (ANEW): Instruction Manual and Affective Ratings*. Bürkner, P.-C. (2018). Advanced Bayesian Multilevel Modeling with the R Package brms. *The R Journal*, 10(1), 395. Caldwell-Harris, C. L., Tong, J., Lung, W., & Poo, S. (2011). Physiological reactivity to emotional phrases in Mandarin—English bilinguals. *International Journal of Bilingualism*, 15(3), 329–352. Crossley, S. A., Kyle, K., & McNamara, D. S. (2017). Sentiment Analysis and Social Cognition Engine (SEANCE): An automatic tool for sentiment, social cognition, and social-order analysis. *Behavior Research Methods*, 49(3), 803–821. Hofstede, G. (1984). *Culture's Consequences: International Differences in Work-Related Values*. SAGE. Lim, N. (2016). Cultural differences in emotion: Differences in emotional arousal level between the East and the the West. *Integrative Medicine Research*, 5(2), 105–109. Mohammad, S. M., & Turney, P. D. (2013). Crowdsourcing a Word-Emotion Association Lexicon. Semin, G. R., Görts, C. A., Nandram, S., & Semin-Goossens, A. (2002). Cultural perspectives on the linguistic representation of emotion and emotion events. *Cognition and Emotion*, 16(1), 11–28. Plutchik, R. (1980). *Emotion: A Psychoevolutionary Synthesis*. New York: Harper & Row. Stoet, G. (2010). PsyToolkit: A software package for programming psychological experiments using Linux. *Behavior Research Methods*, 42(4), 1096–1104. Stoet, G. (2017). PsyToolkit: A novel web-based method for running online questionnaires and reaction-time experiments. *Teaching of Psychology*, 44(1), 24–31. Taylor, P. J., Larner, S., Conchie, S. M., & Menacere, T. (2017). Culture moderates changes in linguistic self-presentation and detail provision when deceiving others. *Royal Society Open Science*, 4. Warriner, A. B., Kuperman, V., & Brysbaert, M. (2013). Norms of valence, arousal, and dominance for 13,915 English lemmas. *Behavior Research Methods*, 45(4), 1191–1207.