

The Wesleyan Word Experience Project- Year 3

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INTRODUCTION

- ❖ Age of acquisition (AoA) and familiarity (Fam) are two determinants of the lexical quality of words. The semantic-locus hypothesis (e.g., Brysbaert et al., 2000) and the developing network hypothesis (Steyvers & Tenenbaum, 2005) posit that AoA has a semantic basis and so should be related strongly to lexical-decision performance. This is consistent with the fact that the first learned information enjoys a processing advantage over later learned information, even when the total number of encounters are equated or made advantageous to the later acquired information (Ellis & Lambon Ralph, 2000; Steyvers & Tenenbaum, 2005).
- ❖ Rated Fam can be thought of as a measure of subjective frequency such that it indexes the experience that an individual has with a given word (Juhasz, Lai, & Woodcock, 2015). Gernsbacher (1984) argued that Fam ratings were particularly important for low-frequency words, because it was difficult to get reliable objective frequency estimates for these words. Juhasz, Lai, & Woodcock (2015) found Fam to be a significant predictor of the LDTs.
- ❖ In this project, we seek to follow how the effect of Fam and AoA on lexical decision time (LDT) and word naming time change through time. We do so by first collecting ratings on AoA and Fam through surveys of PSYC 105 students. We then assess the relationship between the ratings and the two types of word recognition times. There is currently 3 years of data collected between Fall 2019-Spring 2022.

RESULTS

Univariate

- ❖ Year 3 descriptive statistics are shown below

Variable	Mean	SD
AoA F21	4.95	1.14
AoA S22	5.09	1.00
Fam F21	6.00	0.98
Fam S22	5.83	0.96

Bivariate

- ❖ A paired samples t-test was conducted to compare AoA and Fam ratings over time between F19 and SP22
- ❖ The results did **not** show a **significant mean difference** in **AoA ratings** from **F19 to SP22** ($M = -0.024$, $p = 0.073$) or in **Fam ratings** from **F19 to SP22** ($M = 0.025$, $p = 0.092$)
- ❖ Correlations with ELP reaction times are shown below

Variable	LDT Fam	Naming Fam	LDT AoA	Naming AoA
F19	-.560**	-.486**	.584**	.510**
S20	-.540**	-.484**	.575**	.504**
F20	-.543**	-.478**	.588**	.502**
S21	-.532**	-.452**	.589**	.503**
F21	-.531**	-.459**	.585**	.506**
S22	-.555**	-.500**	.591**	.520**

Note: ** = $p < .01$.

METHODS

Participants

- ❖ Participants were students enrolled in Psyc 105 between Fall '21 and Spring '22. Of the total $N = 123$, Fall '21 = 59 and Spring '22 = 64
- ❖ Average participant age was 19 y/o ($M = 18.96$, $SD = 1.93$)
- ❖ Language Background = 87.80% reported English as their primary language
- ❖ Class years = 86 freshmen, 25 sophomores, 5 juniors, 5 seniors
- ❖ Sex = M: 58 and F: 65

Stimuli

- ❖ 499 words were included on the questionnaires in total.
- ❖ Words were selected from the English Lexicon Project (ELP; Balota et al., 2007) and by the researchers.
- ❖ For 446 of the words, word naming times and Lexical Decision Times (LDT) were available in the ELP

Procedure

- ❖ Questionnaires were distributed and completed on Qualtrics.
- ❖ Participants were assigned randomly to one of four versions of the questionnaire.
- ❖ The questionnaire asked participants to rate words based on familiarity and when they first learned the word (AoA) on a scale from 1 to 7.

Data Analysis:

- ❖ The relationship between the AoA, familiarity, and word recognition time was assessed through correlation analyses.

Additional Findings

- ❖ We have tagged various words that illustrate the predicted change in Fam and AoA ratings
- ❖ **“Emoji”** and **“healthcare”** have displayed a consistent **downward trend** in **AoA ratings** over the past 3 years of data collection
- ❖ **“Brunch”, “pocketknife”,** and **“variable”** have all shown a consistent **increase** in **Fam ratings** over the past 3 years of data collection
- ❖ We will continue to monitor the tagged words for both positive and negative trends in AoA and Fam ratings

Summary and Conclusions

Like the previous two years, both Fam and AoA are significantly correlated with LDT and word naming times in Fall '21 (F21) and Spring '22 (S22). Correlations between the two variables and ELP reaction times increased in S22, opposing the expected trend of the correlations decreasing over time. However, given the project's long-term scale, significant correlations to LDT and Naming is still expected to generally decrease over the years as today's population and their experiences with words deviate from those of the ELP participants in 2007.

References

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