

The Emotional Valence of the Words in Picture Books Read in Preschool Settings

Nashrah Pierre-Louis¹, Kaley Tran^{1,2}, Rebecca M. Vasile³, Beth M. Phillips⁴

Department of Psychology, College of Arts and Sciences, Florida State University¹

College of Nursing, Florida State University²

School of Teacher Education, Anne Spencer Daves College of Education, Health, and Human Sciences, Florida State University³

Department of Educational Psychology and Learning Systems, Anne Spencer Daves College of Education, Health, and Human Sciences, Florida State University⁴



INTRODUCTION

- We know from previous corpus-based research that the words in text differ quantitatively and qualitatively from the speech that children hear in their everyday interactions (Dawson et al., 2021; Montag et al., 2015).
- Prior research shows that language utilized in children's picture books differ from everyday speech, often containing more diverse and sophisticated vocabulary (Dawson et al., 2021; Montag et al., 2015).
- However, little is known about how this difference extends to the emotional valence of words found in picture books.
- Emotional valence refers to the pleasantness of a stimulus. There is also emotional arousal which refers to the intensity of an emotion provoked by a stimulus (Warriner et al., 2013).
- Age of acquisition refers to the age at which we learned a word (Kuperman et al., 2012), and this is important to include in these analyses with emotional valence.
- Given that language development is key for later reading and emotional development (Grosse et al., 2021; Dowdall et al., 2020) it is important to understand what kind of emotional vocabulary children are being exposed to during shared book reading.

AIMS

Research Question	Hypothesis
RQ1: What is the continuum of emotional valence in children's picture books?	Children's picture books contain more pleasant than unpleasant emotional words.
RQ2: What is the range of age of acquisition of emotional vocabulary in children's picture books?	The emotional vocabulary will have an age of acquisition of 5 years old and older

METHOD

Classrooms and Teachers:

- ECE classroom observational data were collected across three cohorts of teachers from 2015-2018. Classrooms were in three Southeastern US states and served children ranging from 3 to 5 years olds.
- 3-to-4-year-old classrooms - 19 (22%)
- 4-to-5-year-old classrooms - 31 (36%)
- Mixed age group classrooms - 36 (42%)
- The classroom observations were intended to represent typical classroom activities. 86 teachers' classrooms were observed, and video recorded three times across the school year (i.e., 2 days fall, 2 days winter, 2 days spring) for a maximum of 180 minutes per day (M = 164 minutes, SD = 14 minutes).
- Purposive sampling was used to represent schools that serve moderate to high percentages of children living in poverty.

METHOD

Books:

- During those daily observations, teachers were recorded during their shared book reading interactions. Every title was noted and then condensed into a list ($n = 597$).
- Currently, ($n = 122$) books from this list have been transcribed into a corpus.
- The corpus of picture books was collected through observations of classroom shared book reading encounters.

Training:

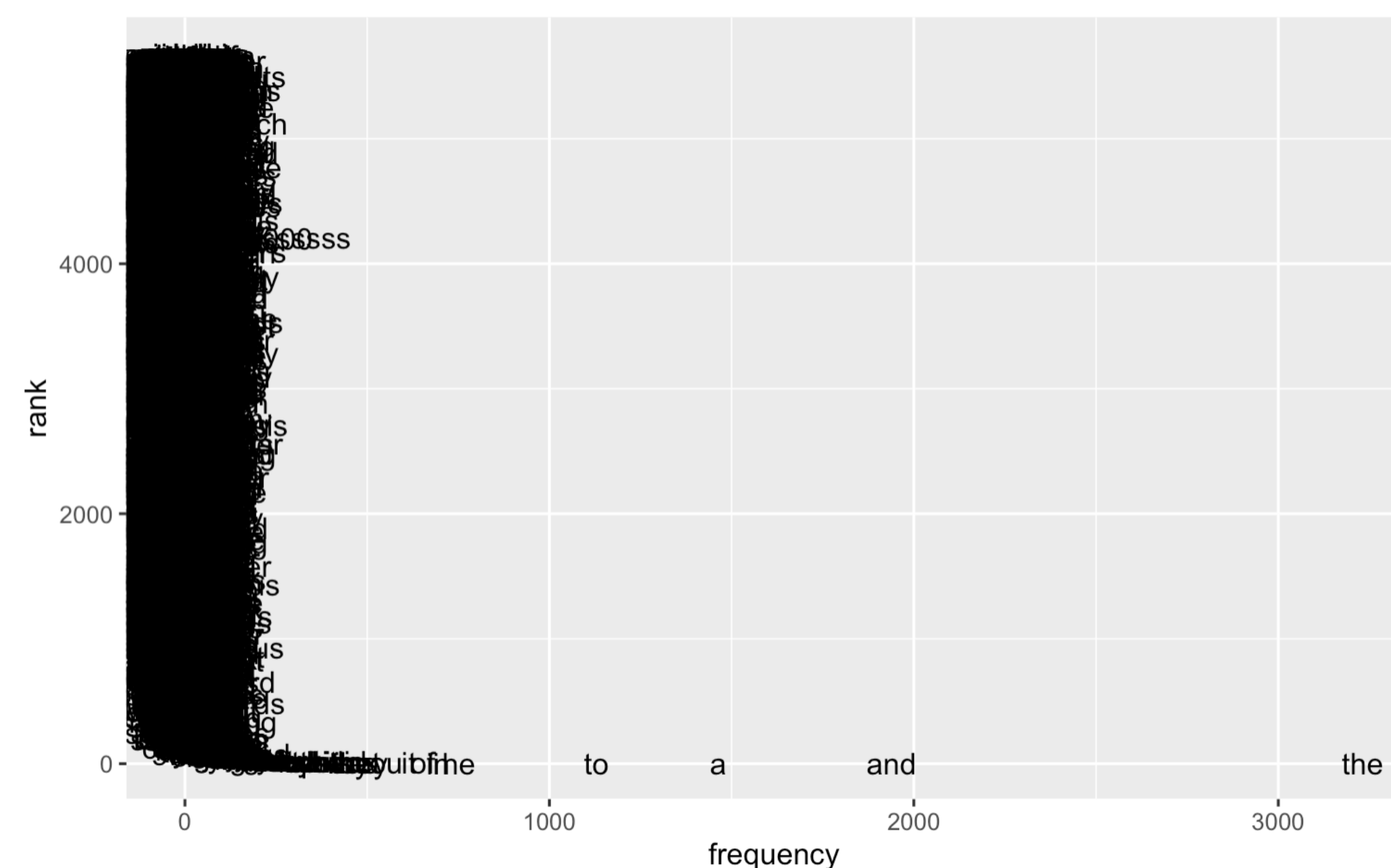
- Using R Studio, the training process involved transcribing practice and reliability books while learning to identify and format key elements.
- Transcriptions were reviewed for accuracy against a master transcriber before transcribing books within the corpus.

RESULTS

Broad Descriptives: Type Token Analysis:

- The full corpus ($n = 122$) has a total of 5,689 types to 55,755 total tokens.
- The most common type in the corpus is the word "the" ($n = 3,232$) followed by "and" ($n = 1,939$).

Type-Token Plot of Full Corpus



The most common word in the corpus is the, following a power-law function pattern.

Broad Descriptives: Psycholinguistic Variables

- Emotional valence and arousal are on a scale of 0-8.5 (Warriner et al., 2013), along with age of acquisition and were available for a total of 1652 types in the corpus.

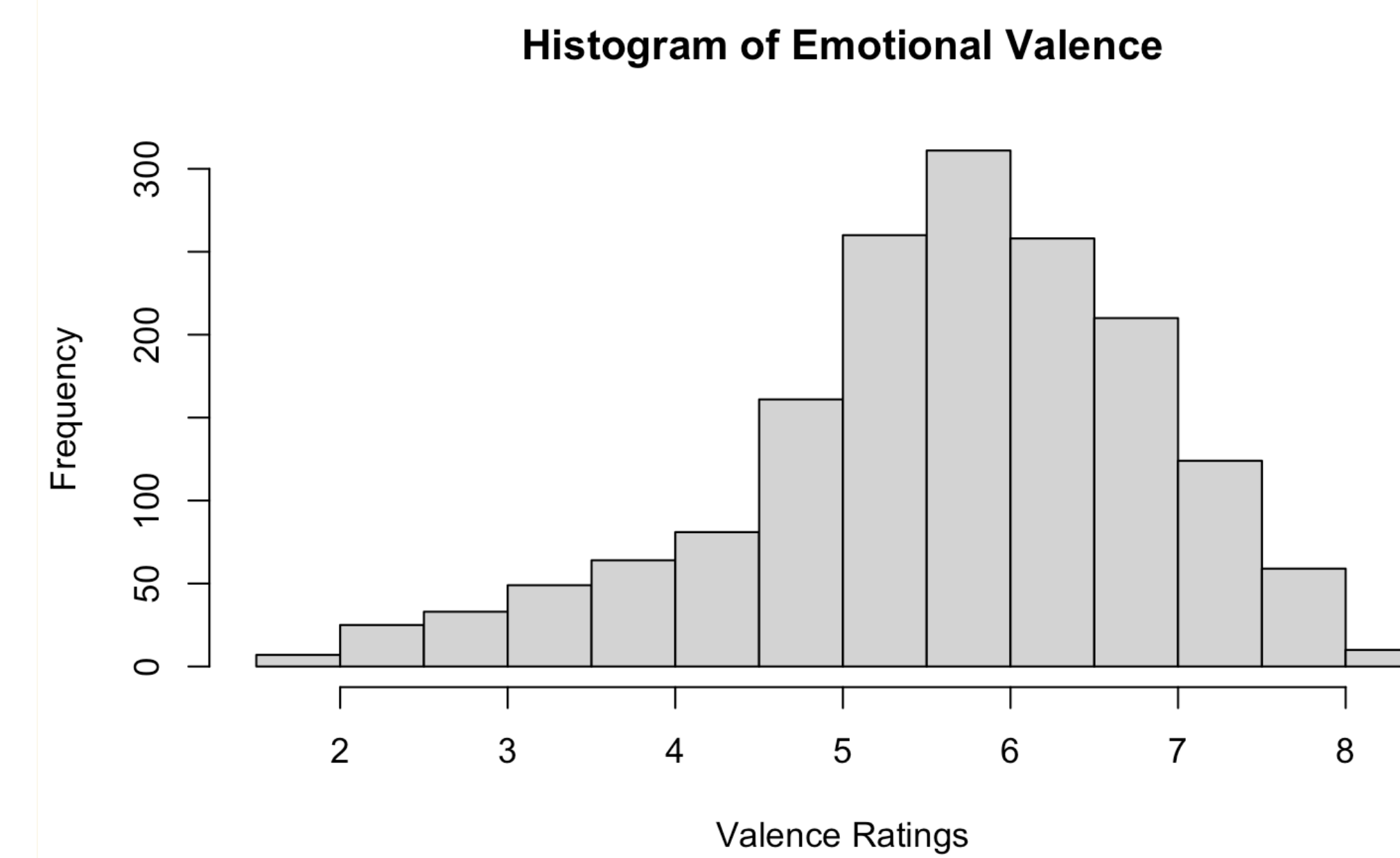
Descriptive Table

Variable	M (SD)	Min	Max
Emotional Valence	5.63 (1.23)	1.67	8.47
Emotional Arousal	4.04 (.92)	1.67	7.24
Age of Acquisition	6.02 (1.98)	1.58	16.2

RESULTS

Research Question 1: Continuum of Emotional Valence

- The emotional valence of the words in our picture book corpus tend to be more pleasant than not, as indicated by the left skewed distribution of valence ratings



742 words fall below the mean valence of 5.63, with the remaining 910 words in the same being at or above the mean.

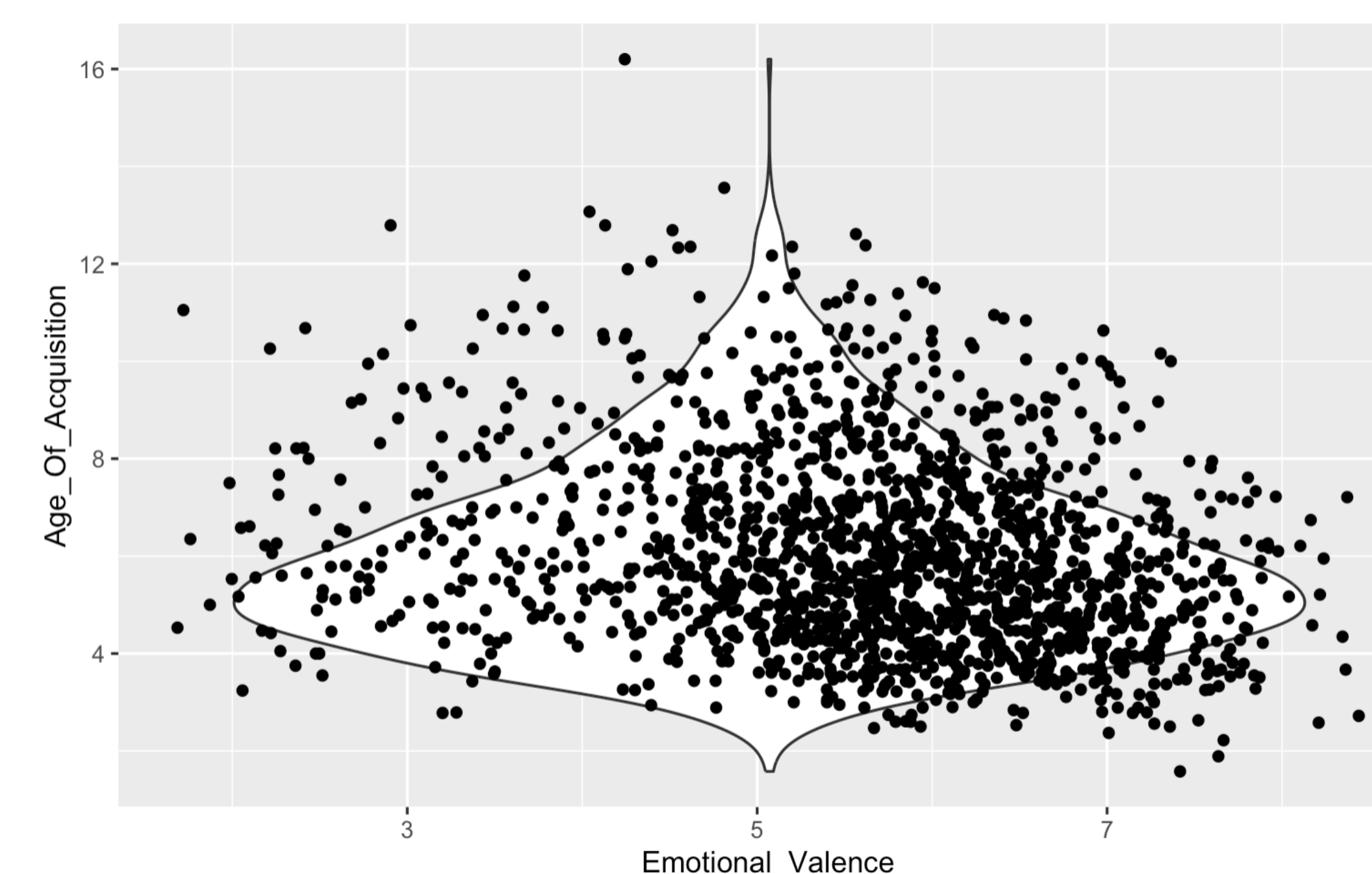
Table of Top 5 Highest Valence Emotion Words

Word	Valence	Arousal	AoA
Happy	8.47	6.05	2.72
Joy	8.21	5.55	6.74
Excited	8.11	6.43	6.21
Peaceful	8.00	4.38	7.22
Love	8.00	5.36	5.17

Research Question 2: Emotional Valence and Age of Acquisition

- The emotional valence and age of acquisition of the words in our sample overlap the most with valence ratings between 5-7 and age of acquisition between 4-8 years old.

Violin Plot of Emotional Valence and Age of Acquisition



A dense cluster is seen with valence ratings between 5-7 and age of acquisition between 4-8 years old.

DISCUSSION

Research Question 1: Continuum of Emotional Valence

- In our sample, there are more words with pleasant valence ($n = 910$) than not pleasant valence.
- This supports our hypothesis that children's picture books would contain more pleasant emotional words.

Research Question 2: Emotional Valence and Age of Acquisition

- In our sample, there appears to be the largest cluster of words with pleasant valence corresponding with an age of acquisition between 4 – 8 years old.
- This supports our hypothesis that the sample of picture books contains emotion words that have an age of acquisition over 5 years old.
- However, given the distribution seen in the violin plot, there is a widespread age of acquisition for the words in this corpus.

Overall, picture books read in early childhood education classrooms contain words that tend to be rated as pleasant and have an age of acquisition at an average of 6 years old.

Given the relationship between emotional vocabulary development and later emotion regulation, it is important to assess components of the language learning environment such as books, to see what kind of emotional language they provide young children.

REFERENCES

Dawson, N., Hsiao, Y., Tan, A., Banerji, N., & Nation, K. (2021). Features of lexical richness in children's books: Comparisons with child-directed speech. <https://doi.org/10.34842/5WE1-YK94>

Dowdall, N., Melendez-Torres, G. J., Murray, L., Gardner, F., Hartford, L., & Cooper, P. J. (2020). Shared picture book reading interventions for child language development: A systematic review and meta-analysis. *Child Development*, 91(2). <https://doi.org/10.1111/cdev.13225>

Grosse, G., Streubel, B., Gunzenhauser, C., & Saalbach, H. (2021). Let's talk about emotions: The development of children's emotion vocabulary from 4 to 11 years of age. *Affective Science*, 2(2), 150–162. <https://doi.org/10.1007/s42761-021-00040-2>

Kuperman, V., Stadthagen-Gonzalez, H., & Brysbaert, M. (2012). Age-of-acquisition ratings for 30,000 English words. *Behavior Research Methods*, 44(4), 978–990. <https://doi.org/10.3758/s13428-012-0210-4>

Montag, J. L., Jones, M. N., & Smith, L. B. (2015a). The words children hear: Picture books and the statistics for language learning. *Psychological Science*, 26(9), 1489–1496. <https://doi.org/10.1177/0956797615594361>

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. <https://doi.org/10.3758/s13428-012-0314-x>

ACKNOWLEDGEMENTS

