WHAT'S LOVE GOT TO DO WITH IT? DEFINING THE SOCIAL CONSTRUCT OF LOVE

Elizabeth Reyes-Fournier¹, Paul Reyes-Fournier², & Robert Reyes-Fournier³

¹Department of Psychology, Keiser University (United States) ²Department of Business Administration, American National University (United States) ³Department of Neuropsychology, SAERA (Spain)

Abstract

The construct of love has been assessed through various self-report questionnaires, yet there is no clear evidence that these measures evaluate the same underlying concept. This study aims to develop a culturally sensitive definition of love through a two-part investigation. The first study examined the validity of eight widely used self-report measures related to love. A total of 565 adults completed the love measures, demographic questions, a 0–100 rating of love, and an open-ended question defining love. Factor analysis revealed inconsistencies, including more factors than originally reported, high collinearity among items, and some items failing to meet inclusion criteria (i.e., loading weight). The second study explored societal attitudes toward love in Western cultures using an Implicit Association Test (IAT). We hypothesized that cognitive load, measured by response latency, would vary based on the categorization of love-related words. A sample of 1,102 individuals from the United States and Europe evaluated 158 words as related to love or not. Results showed that participants identified love-related words more quickly than non-love words. These findings align with Prospect Theory and the Theory of Constructed Emotions, suggesting that love is a cognitively salient and culturally shaped construct. A definition of the socio-linguistic construct of love is offered founded on the statistical findings of these studies.

Keywords: Love, prospect theory, theory of constructed emotions, socio-linguistic affective model of love.

1. What's love got to do with it? Defining the social construct of love

"Love is a many-splendored thing" is a song that speaks of love as something that gives life meaning, a reason to sing, and even something that makes men feel like royalty (Fain & Webster, 1955). The attempt to define love as an integral human emotion has taken many forms. In an attempt to measure this construct, scholars have grappled with the enigmatic concept of love, as evidenced by numerous studies and theoretical models (Hatfield et al., 2011; Graham & Christianson, 2009). Noteworthy among early efforts is Zick Rubin's 1970 study, which differentiated between liking and loving, and further distinguished between compassionate and erotic love. While subsequent research validated these measures (Sternberg, 1997; Sprecher & Regan, 1998; Hendrick & Hendrick, 1989; Rubin, 1970; Sprecher & Metts, 1989), they often presumed their own validity without critically examining if they truly encapsulated love. Moreover, these theories frequently categorized love into various types, such as passionate love versus parental love. Recent research shows that most of these measures have severe statistical flaws (i.e., high collinearity, extra factors, poor construct development) (Reyes-Fournier et al., 2024). This article will present the new findings on love and offer a construct definition founded in statistical findings, neuropsychology, and decision making theory.

2. Introduction

Psychologists regard love as a quintessential emotion, viewed by many as the most typical form of emotional expression (Fehr & Russell, 1984). This idea aligns with the prototypical theory of emotion, which integrates well into evidence-based fields such as cognitive psychology (Clore & Ortony, 1991)— suggesting that our emotions exist because we perceive them to. Conversely, Plutchik's Psychoevolutionary Theory of Emotions (1980) argues that emotions underpin not only behaviors but also shape personality traits and influence pathological processes in both humans and animals. His framework identifies eight fundamental emotions, with love emerging from combinations of joy and trust. Differing from this, Ekman

(1992) identifies only six universal emotions, excluding love, describing emotions as appraisal mechanisms influenced by evolutionary and individual factors, involving both psychological and physiological elements. This ongoing debate raises questions about the nature of emotions: Are they inherent, or merely elements within our broader human experience (Mason & Capitanio, 2012)?

Despite the public reputation that love has, there is little evidence that it is a distinct emotion. Unlike fear, which is innate, immediate, and linked to specific regions like the amygdala and limbic system in the brain (Silva et al., 2016), there is no definitive neural "love spot". Research suggests that neurotransmitters play a role in generating a "cocktail" of chemicals, such as arginine vasopressin, dopamine, and oxytocin, that contribute to the pleasurable or rewarding feelings associated with human connections (Seshadri, 2016). Emotionally, this can be understood within a two-dimensional framework involving core affect (valenced states) and activation (arousal) (Russell & Barrett, 1999). Instead, the evidence supports a model of the brain as predictive, not just reactive, performing allostasis—anticipating needs and initiating processes to meet them. According to Feldman (2017), using Bayesian logic, the brain constructs emotional simulations that society has deemed successful or acceptable, positioning love as an allostatic response that fulfills individual needs. This models fits with Prospect Theory that posits that people make decisions based on the potential value of losses and gains rather than the final outcome, and that people evaluate these losses and gains using certain heuristics (Kahneman & Tversky, 1979). Moreover, the most influential aspects of Prospect Theory is the concept of loss aversion, which suggests that losses are perceived as more significant than equivalent gains. These theories offer a different viewpoint on what love is as a social construct with both positive and negative valenced perspectives.

3. Design

Participants A total of 1,101 adults were recruited through Amazon Mechanical Turk (MTurk) using CloudResearch for this study conducted in January 2024. Participants received \$0.20 for completing the survey, which was administered via the Qualtrics platform. Of these participants, 892 completed latency testing for the words and 231 completed all blocks of the IAT.

3.1. Instruments

Love Lexicon Development: Building data from the Reyes-Fournier et al. (2024), which included participant-provided definitions and language from nine measures, we synthesized a lexicon of 157 words. This lexicon was refined through analyses of word frequency, linguistic similarity cosines, and the removal of non-essential words and articles.

Implicit Association Test (IAT): The IAT was utilized to assess participants' attitudes towards "love words." Following Greenwald et al. (1998), the IAT measures differential associations between two target concepts. In this context, participants were presented with words and asked to categorize them as either "love word" or "not love word" and as "positive love word" or "negative love word." This test captures both the participant's attitudinal bias towards the word and the latency of their response. Words were presented without prior valancing.

3.2. Procedure

Utilizing the 157-word lexicon, words were randomly assigned to categories: "Love Words" or "Not Love Words" for the fourth block of the test, and "Positive Love Words" or "Negative Love Words" for the seventh block. The words were randomly distributed across a seven-block IAT.

The IAT comprised three practice blocks (Blocks 1, 2, and 5) where words were randomly presented on either side of the screen. These blocks aimed to familiarize participants with categorizing target stimuli (Block 1 and 5) and attribute stimuli (Block 2). Blocks 3 and 6 served as practice for the associative tests, with Block 3 associating "Love Words" (left-side response) with "Not Love Words" (right-side response) and Block 6 reversing this for "Negative Love Words" (left) and "Positive Love Words" (right). Each practice block contained twenty trials, while the associative test blocks contained forty trials each. Participants progressed through different sets, with subsequent sets varying the placement of responses (e.g., Set 2 reversed the positions from Set 1, and so on). This design not only tested the association of words with "love" or its valence but also measured the speed of response, indicating implicit attitudes. Per guidelines by Greenwald et al (2003), latencies under 300ms and over 3000ms were ignored.

3.3. Data collection

The test measured both the choice of categorization and the latency of response to each stimulus. Additional details on the IAT setup are available in the appendix, which includes a sample IAT presentation screenshot.

4. Results

This study had an international sample consisting of 1102 participants from North American and the European Union. The participants ranged in age from 18-65+ (18-24, n = 55; 25-34, n = 201;35-44, n = 213; 45-54, n = 248; 55-64, n = 175, 65+, n = 127; over 18 (those who declined to state their age range but affirmed they were over 18), n = 3). Primarily, the language the participants spoke was English (n = 976) and Caucasian (n = 761). The participants reported 19 different birth languages. Most of the participants identified as male (n = 684), heterosexual (n = 825), and currently separated (n = 451).

An independent sample T-test showed a very small effect size in latency between positively valenced words and negatively valenced words (d = .023, 95% CI [.013, .033]). The latency between words identified as love compared to not love showed a very small negative effect size (d = .028, 95% CI [.036, .020]). The latency and the sentiment showed a small negative correlation (r(373078)=.011, p<.001). The word Heart was the word most frequently identified as a positive (89%) and it was identified as a love word 88% of the time. Adore, Lovingness, Romance, and Sweet had the same top frequencies (89%) for words identified as love words. These finding are shown in Figure 1.



Using the sample in which the participants completed all 7 blocks of the IAT, a one-way ANOVA showed a significant effect between groups for words identified as positive, negative, love, and not love (F(3, 5163) = 5.02, p = .002). Post hoc tests using Tukey's HSD indicated that words identified as positive (M = 1425.51, SD = 650.53) resulted in significantly lower latency than non-love words (M = 1531.98, SD = 624.81, p < .001). A one-way ANOVA also showed a significant effect between groups for the various native languages of the participants (F(10, 5156) = 6.95, p < .001). As seen in Figure 2, participants with Vietnamese as their first language had the lowest mean latency (M = 498.57, SD = 90.40) and Russian had the highest latencies (M = 1670.74, SD = 579.52). As a reference, English showed M = 1468.60, SD = 630.47.



Using the Greenwald et al (2003) recommendations for scoring and interpreting the IAT results, a single sample *T*-Test was performed which indicated that there is a medium to large implicit bias effect favoring positive love words over negative non-love words (t(231) = 9.8682, p < .001, M = .50, SD = .78, d = .65).

4. Discussion and conclusion

The results of this study advance the research towards a social linguistic affective model and away from the classic models of evolutionary psychology as it relates to the construct of love. If evolutionary models were to apply to the construct of love, one would expect to see a cognitive latency favoring love, which give an evolutionary advantage. When placed under cognitive load, there was no direct linear difference between the latency to identify positive versus negative love words nor to differentiate between love words.

These findings align more closely with contemporary sociolinguistic models that emphasize the role of language, culture, and social interaction in shaping emotional constructs such as love. The relatively small effect sizes in latency suggest that associations with love-related language are not universally automatic but are likely influenced by individual differences, contextual factors, and linguistic background. This is further evidenced by the implicit bias towards positive love. The moderate implicit bias effect found suggests that, while participants generally favored positive love-related words, this preference is not absolute. The variability in responses—both across language groups and across individual words—highlights the complexity and fluidity of the love construct. This may point toward a more dynamic and culturally embedded understanding of love, as opposed to a fixed, evolutionarily conserved cognitive schema.

The significant differences in response latency by birth language support the notion that implicit affective associations are not fixed but are modulated by cultural and linguistic exposure. For example, the notably faster response times for Vietnamese speakers and slower times for Russian speakers may reflect differences in how love-related concepts are linguistically and culturally framed. A notable result was that the word Heart was associated positively with love more than any other words on this list. This word is purely contextual, with no actionable or behavioral characteristics. Instead, this word is a tokenized representation of love and the association is defined by the cultural norms. Future research could further explore how variables such as relationship history, cultural norms, and even current mood states interact with language to shape affective word processing and implicit associations with love.

References

- Clore, G. L., & Ortony, A. (1991). What more is there to emotion concepts than prototypes? *Journal of Personality and Social Psychology*, *60*(1), 48-50. https://doi.org/10.1037/0022-3514.60.1.48
- Ekman, P. (1992). Are there basic emotions? *Psychological Review*, 99, 550-553. Doi: 10.1037/0033-295X.99.3.550
- Fehr, B., & Russell, J. A. (1984). Concept of Emotion Viewed from a Prototype Perspective. *Journal of Experimental Psychology: General, 113*, 464-486.
- Barrett L. F. (2017). The theory of constructed emotion: an active inference account of interoception and categorization. Social cognitive and affective neuroscience, 12(1), 1-23. https://doi.org/10.1093/scan/nsw154
- Graham J. M., Christiansen K. (2009). The reliability of romantic love: A reliability generalization meta-analysis. *Personal Relationships*, 16, 49-66.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74(6), 1464-1480. https://doi.org/10.1037/0022-3514.74.6.1464
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85(2), 197-216. https://doi.org/10.1037/0022-3514.85.2.197
- Hatfield, E., Bensman, L., & Rapson, R. L. (2011). A brief history of social scientists' attempts to measure passionate love. *Journal of Social and Personal Relationships*, 29(2), 143-164. https://doi.org/10.1177/0265407511431055
- Hendrick, C., & Hendrick, S. S. (1989). Research on love: Does it measure up? *Journal of Personality and Social Psychology*, *56*, 784-794.
- Hendrick, C., Hendrick, S. S., & Dicke, A. (1998). The Love Attitudes Scale: Short Form. Journal of Social and Personal Relationships, 15(2), 147-159. https://doi.org/10.1177/0265407598152001

- Kahneman, D., & Tversky, A. (1977). Prospect theory. An analysis of decision making under risk. *Econometrica*, 47(2), 263-292. https://doi.org/10.21236/ada045771
- Knox, D. (1970). Conceptions of Love at Three Developmental Levels. *The Family Coordinator*, 19, 151. Doi: 10.2307/582445
- Mason, W. A., & Capitanio, J. P. (2012). Basic Emotions: A Reconstruction. Emotion review: Journal of the International Society for Research on Emotion, 4(3), 238-244. https://doi.org/10.1177/1754073912439763
- Plutchik, R. (1980). Emotion: A psychoevolutionary synthesis. New York: Harper & Row.
- Rubin, Z. (1970). Measurement of romantic love. Journal of Personality and Social Psychology, 16, 265-273.
- Seshadri, K. G. (2016). The neuroendocrinology of love. *Indian journal of endocrinology and metabolism*, 20(4), 558-563. https://doi.org/10.4103/2230-8210.183479
- Silva, B. A., Gross, C. T., & Gräff, J. (2016). The neural circuits of innate fear: detection, integration, action, and memorization. *Learning & memory (Cold Spring Harbor, N.Y.)*, 23(10), 544-555. https://doi.org/10.1101/lm.042812.116
- Sprecher, S. & Metts, S. (1989). Development of the "Romantic Beliefs Scale" and Examination of the Effects of Gender and Gender-Role Orientation. *Journal of Social and Personal Relationships*, 6, 387-411.
- Sprecher, S., & Regan, P. C. (1998). Passionate and companionate love in courting and young married couples. *Sociological Inquiry*, 68, 163-185.
- Sternberg, R. J. (1997). Construct validation of a triangular love scale. *European Journal of Social Psychology*, 27, 313-335.