Cognition and Emotion in Narratives of Redemption: An Automated Analysis

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What are Redemptive Narratives?

Stories of challenge, failure or adversity that acknowledge goodness or personal growth that resulted.

Hypotheses

- 1. Redemptive arcs will demonstrate a more positive tone at their end than their beginning.
- 2. Both cognitive and emotional processes play a role in redemptive narratives.

Materials

97 Life narratives of difficult events collected by Brady Jones (Jones, 2018).

Narratives were hand-coded as redemptive or non-redemptive following McAdams et al. (2001).

Emotional Processing

Redemptive narratives are characterized as stories that turn a negative event into a positive outcome. To measure this arc of valence we used a set of terms frequently employed for **sentiment analysis** (Hu and Liu, 2004; positive: *easier; ideal; improve*; negative: *crisis; debt; pain*).

Cognitive Processing

Redemptive narratives are stories that emphasize *moral character.*

To measure this aspect we relied on Moral Foundations Theory (Haidt & Joseph, 2004) which identifies 5 domains of moral reasoning. We used the Moral Foundations Dictionary to identify relevant terms in each domain (Graham et al., 2009; e.g., care: protection; harm: suffered; loyalty: together; betrayal: enemy; Authority: respect; Subversion: protest)

Method: Measuring Valence in a Narrative

- Based on Sagi & Dehghani (2014)
- Words as vectors in a semantic space
- ❖ Data points: Sentences in a narrative
- *Basic measure: Angle between vectors of sentences and terms from the Moral

Foundations Dictionary and sentiment analysis.

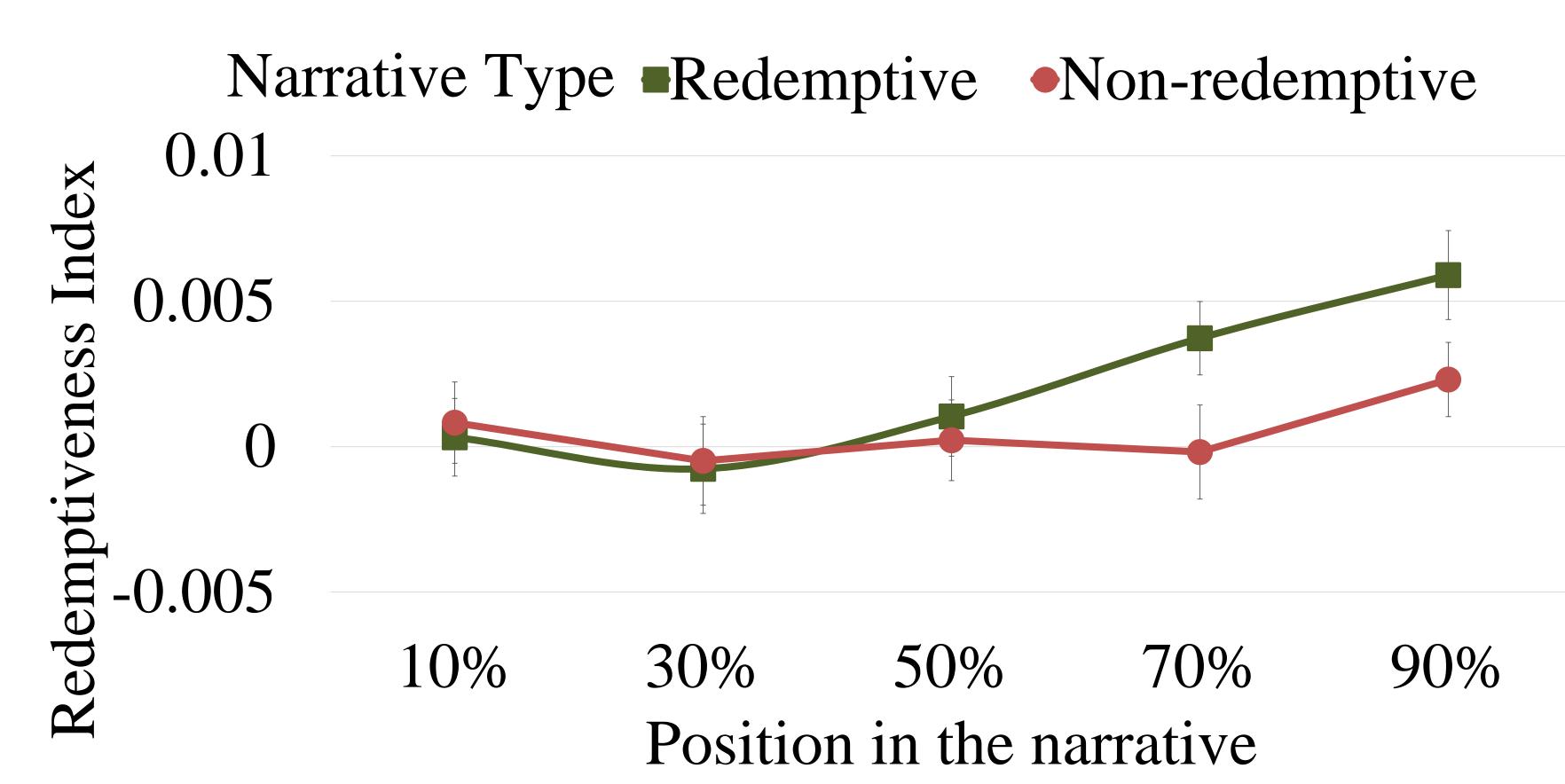
Aggregate measure: The difference between the average of positive valence terms and negative valence terms.

Semantic Spaces

Topicality: Words that occur together likely relate to the same topic.

- Based on *Infomap*. (Takayama et al., 1999; Similar to *Latent Semantic Analysis*, Deerwester et al., 1990)
- The space is based on patterns of word co-occurrence.

Results



- Redemptive narratives showed more increase than non-redemptive narratives. (p < .005)
- This difference is due to increased *negative valence* in non-redemptive narratives, for both cognition and emotion.

Sample Redemptive Narrative

I think the worst time in my life was while I was doing my master's. I lost my mother a month after I started, and the workload and financial worries added on to make things even worse. Midway into the program, the housing market and Lehman brothers tanked, and I could then look forward to graduating with scads of debt into a job market that would be laying off teachers. This time was horrible because it was so overwhelming. I couldn't really process my thoughts and feelings, I spent a lot of time drinking in front of the TV, zoning out. My hair fell out, I gained weight, and getting to sleep at night was difficult at best. This time tested everything in me; the support of my significant other and my friends was the only thing that kept me going. I think I've become a lot more pessimistic and cynical since then, but also more appreciative.

Sentences are colored coded based on redemptiveness (low indices in red, high in green)

Results

- ❖ Narratives of redemption are characterized by a shift in the valence of the text over the course of the narrative.
- These arcs are characterized by reduced negativity at their end.
- Both cognitive (assessment of virtues and vices) and emotional (positive and negative sentiments) combine in these arcs.

Future Studies

- Can automated methods be used to assist hand coding?
- What specific processes are represented in this narratives?

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