

Digital Analysis of Emotions in the Grimms' Fairy Tales

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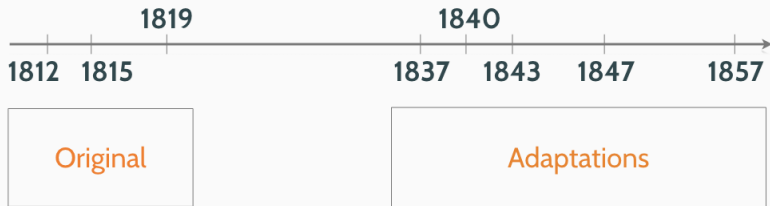
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Grimm Fairy Tales

Children- and Household Tales by the Grimm Brothers



Grimm Fairy Tales

Folk
Tales



Fairy
Tales

Original

Presence
of the 'cruel'
scenes

Adaptations

- Content
- Form

Removal or softening of the
'cruel' scenes

- Simple sentence structure;
- More adjectives, proverbs and direct dialogue;
- Reinforced motives for motion.

Questions

- What is the difference between folk and fairy tales?
- Is the seventh edition (1857) less cruel?

Cruelty = Anger + Contempt + Disgust

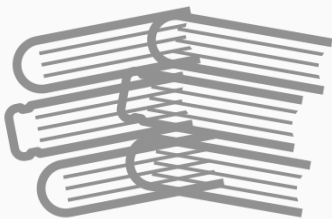
(Matsumoto et al., 2012; Tonnaer et al., 2017)

1. **Basic emotion categories:** anger, contempt, disgust, fear, joy, sadness and surprise (Ekman, 1999).
2. **Polarities:**
 - **Positivity** = joy + surprise
 - **Negativity** = anger + contempt + disgust + fear + sadness
3. **Emotionality** = positivity + negativity

Procedure

German *Children- and Household Tales*

Ed. I (1812/15) & Ed. II (1819)



145 texts

Ed. VII. (1857)



145 texts

1. Automatic emotion detection

- German Emotion Dictionary, (Klinger et al., 2016):
- Frequencies of occurrence of emotion words according to the Ekman seven fundamental emotions

Fairy tales	Anger	Contempt	Disgust	Fear	Joy	Sadness	Surprise	Negativity	Positivity	Emotion Words
The Singing Bone	7	13	7	5	7	7	2	39	9	48
Snow White	16	16	1	20	28	32	5	85	33	118
Rapunzel	5	13	1	9	15	16	0	44	15	59

2. Normalisation of the frequencies

- The length of the text is considered
- Percentages

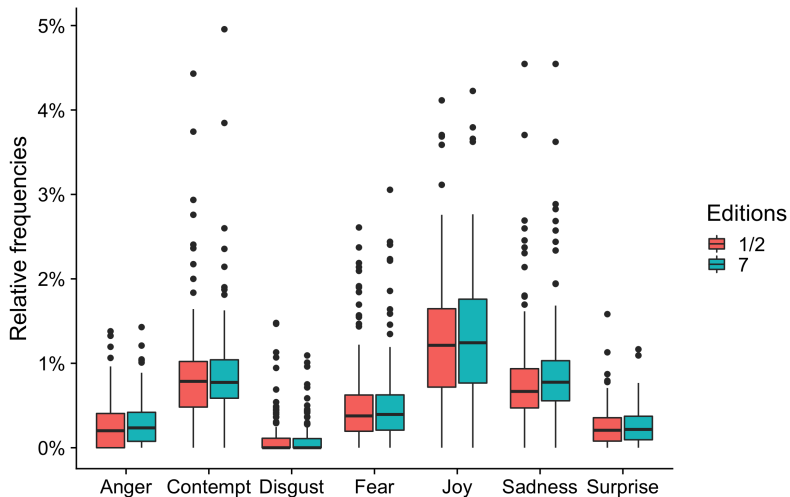
3. Hypotheses Testing

- The paired Wilcoxon Signed Rank Test
- $\alpha = .05$
- $p \leq .05$

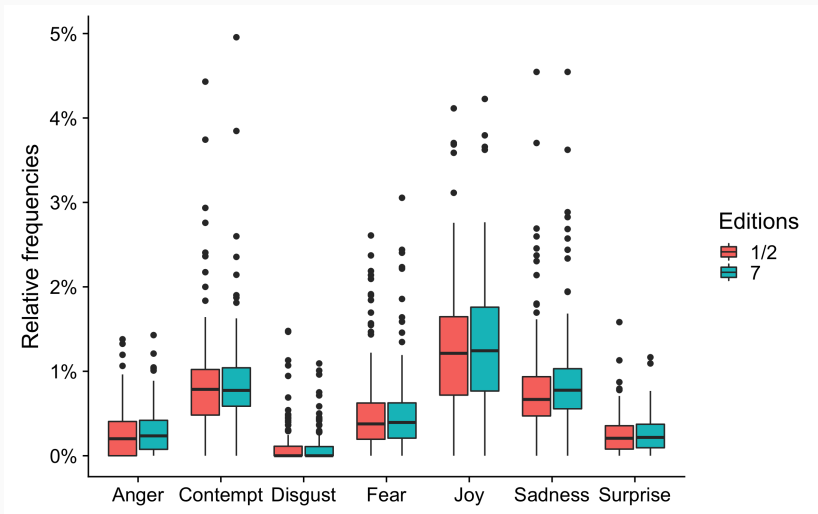
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Results

Emotion Categories

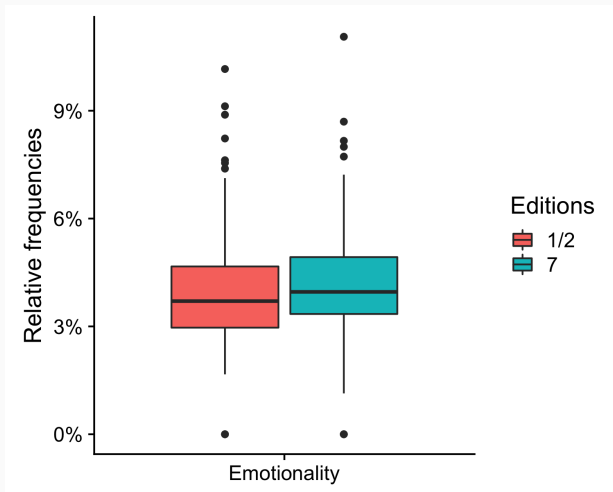


Emotion Categories



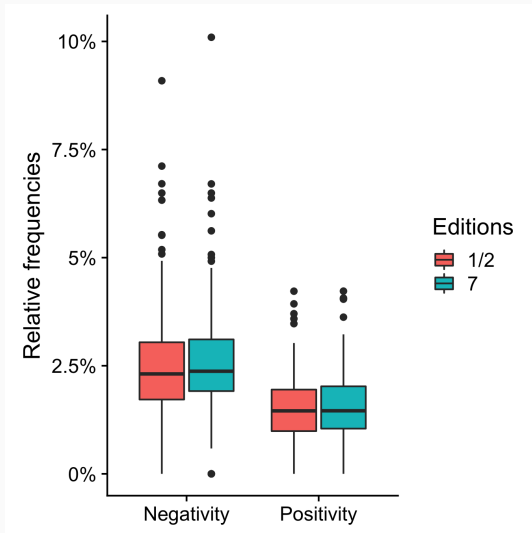
Sadness: $p = .0003$; $r = .2$ (small effect size, 11% difference)

Emotionality



1857: $p = .005$; $r = .16$ (small effect size, 26% of nonoverlap)

Polarities



Negativity: $p = .05$; $r = .11$ (small effect size, 6% of nonoverlap)

Discussion

1. Presence of the all seven emotions

- A basic narrative form
- Knowledge of the human experience (Jones, 1995:5)

2. High frequency of joy words

- The emotion intensities match the folk and fairy tale's structure

3. Sadness

- Correlates with the folk and fairy tale's structure
- Guidance for readers
- Incorporate personal and societies views (Jones, 1995:40).

4. High emotionality in 1857

- Narrative and stylistic transformations
- Children folk tales

Thank You.
Questions?

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