

University of Stuttgart
Germany

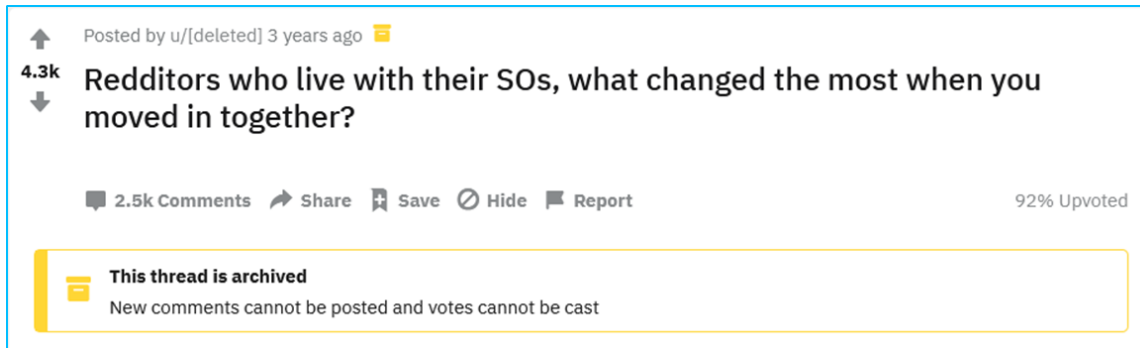
Corpus Creation

Emotion Analysis
Assignment 1

**Felix Bühler
Carlotta Quensel
Max Wegge**

Preparation

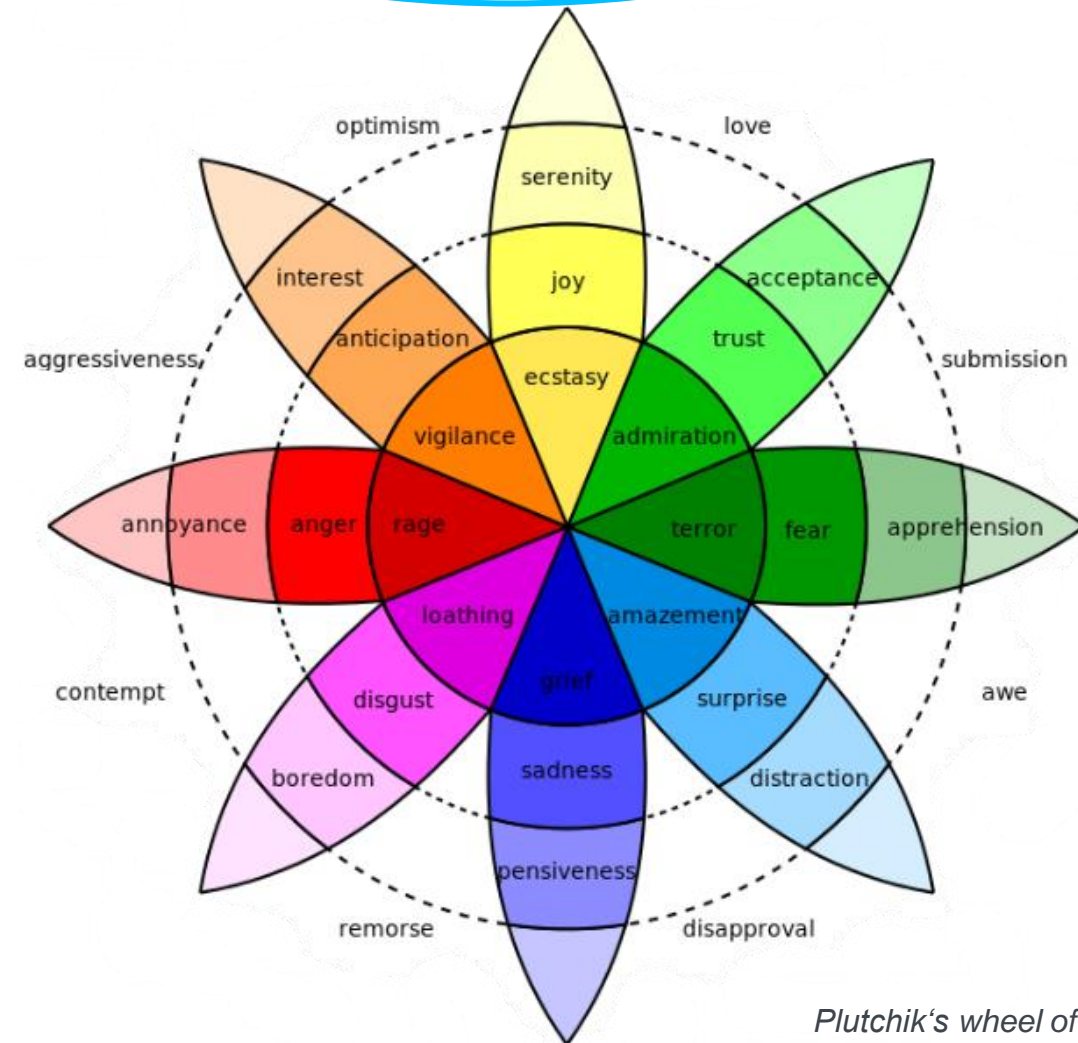
selecting a data source



- topic encourages a variety of emotional responses
- sufficient amount of relevant data
 - ca. 500 stand-alone comments
 - conversations, questions/answers, deleted comments and bots were ignored
- first 100 comments used for annotation

Preparation

choosing an emotion model

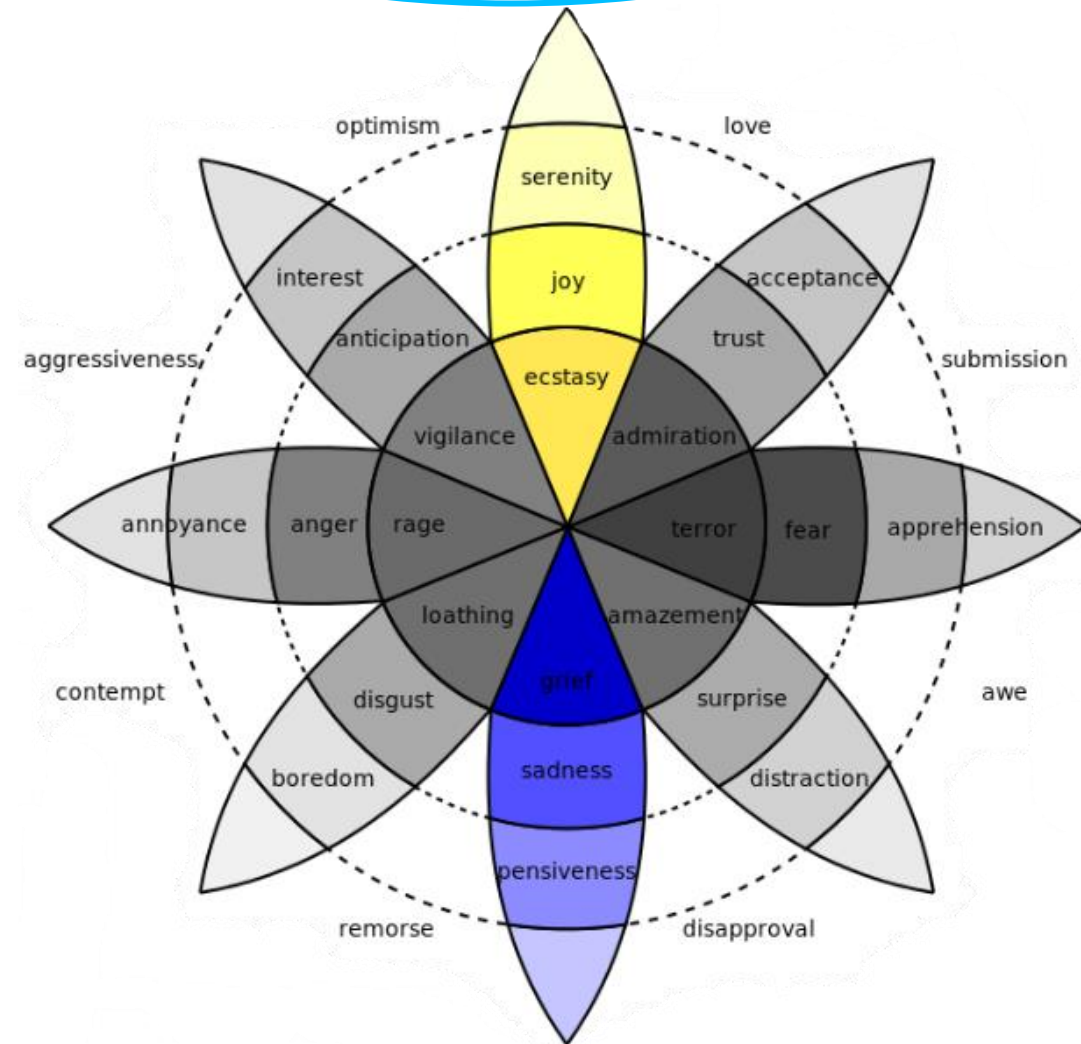


- eight basic emotions
- combinations
- different intensities

Plutchik's wheel of emotions

Preparation

choosing an emotion model

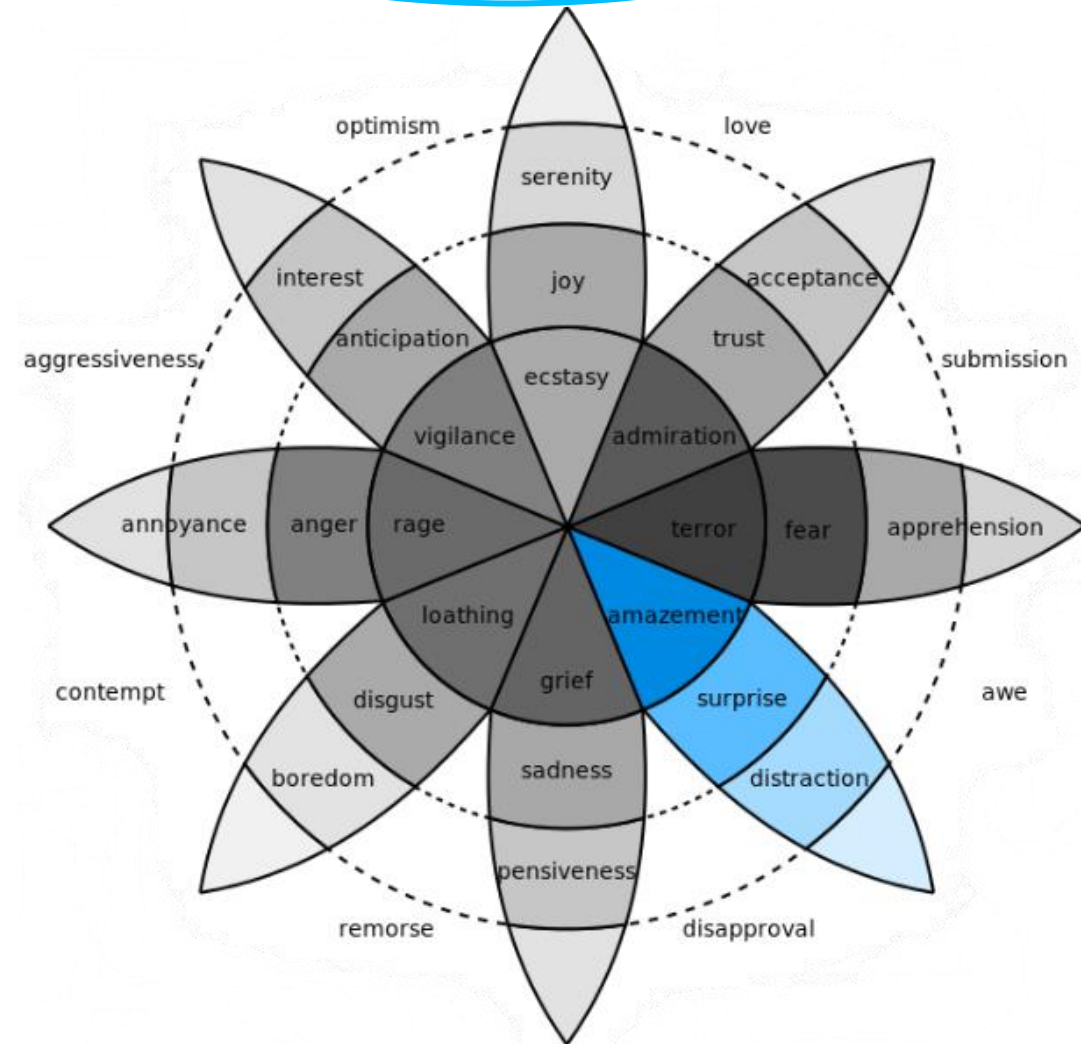


- problems we encountered while annotating:
 - instances containing opposing emotions

[...] When I lived alone, I would [...] have **disordered eating or hours-long crying spells** [...]. I was forced to be a lot more honest about problems [...] and I had to actually fix them. I can't present as ideal an image of myself anymore, but **the person I actually am has improved.**
[ID 002]

Preparation

choosing an emotion model



- problems we encountered while annotating:
 - instances containing opposing emotions

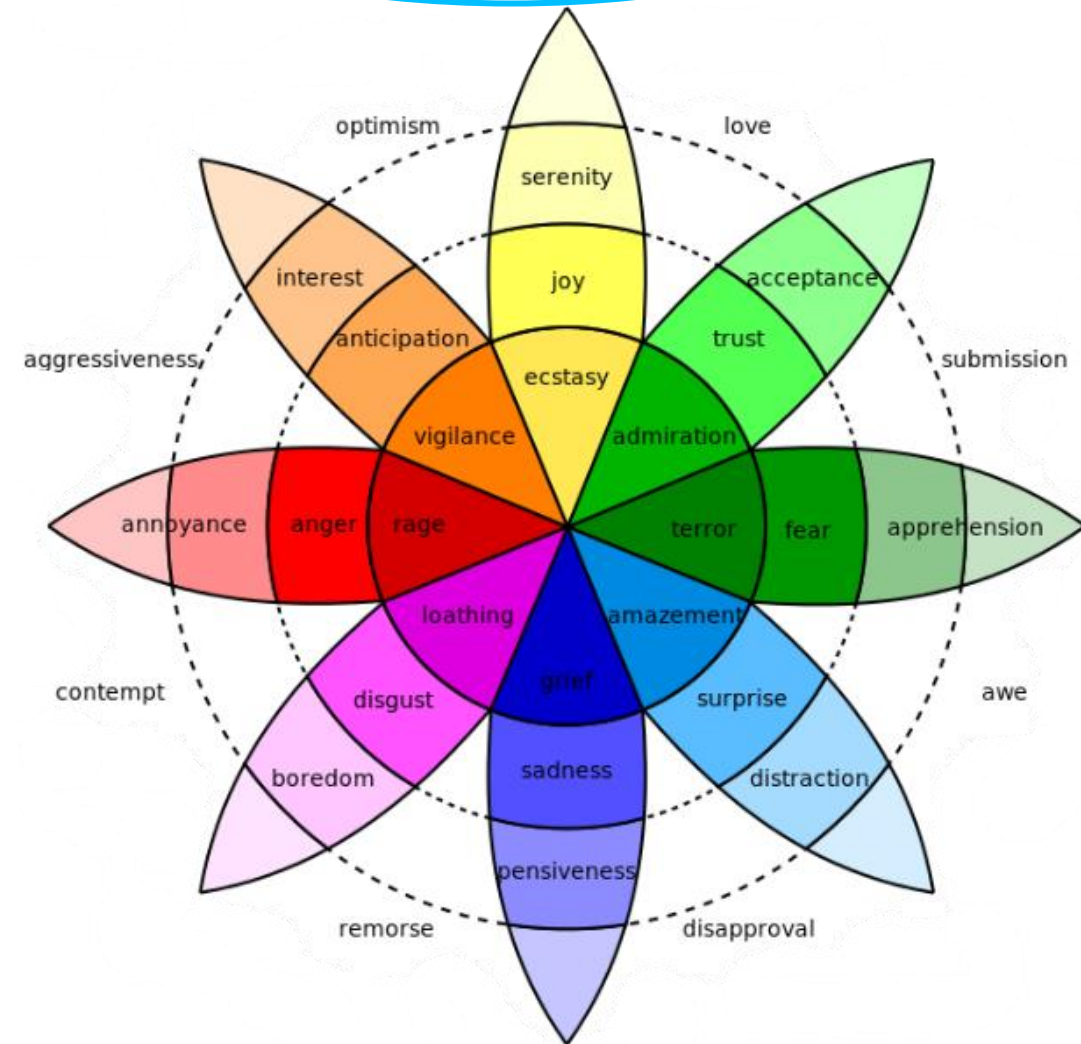
[...] When I lived alone, I would [...] have **disordered eating or hours-long crying spells** [...]. I was forced to be a lot more honest about problems [...] and I had to actually fix them. I can't present as ideal an image of myself anymore, but **the person I actually am has improved.**
[ID 002]

- intensity ≠ emotion in the wheel

My one bedroom apartment seems so much smaller now.
[ID 100]

Preparation

choosing an emotion model

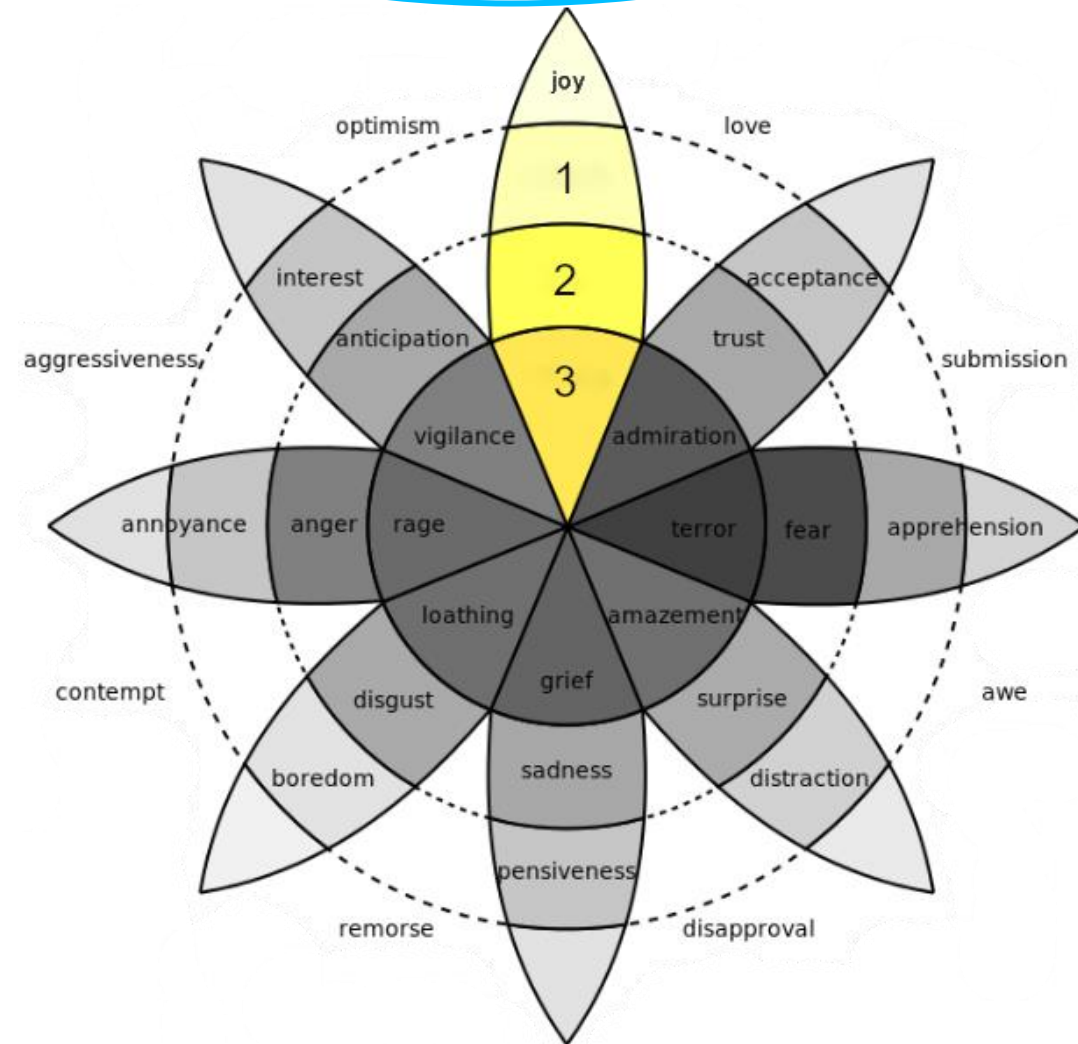


→ adjustments of the model:

- opposing emotions can co-occur
- Intensity scores are separate from Plutchik's wheel

Annotation Task

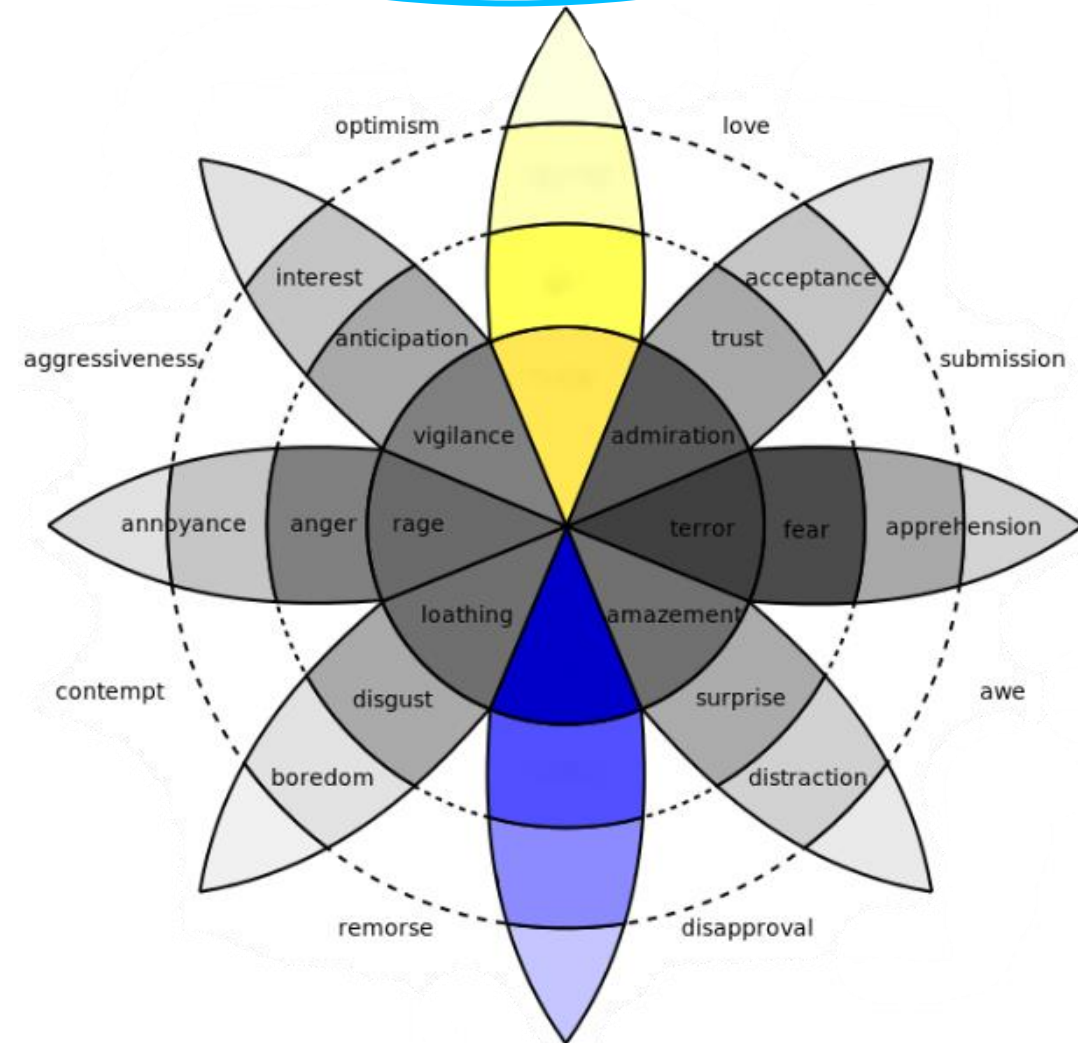
define annotation guidelines



- for every instance, each emotion is assigned a value between 0 and 3

Annotation Task

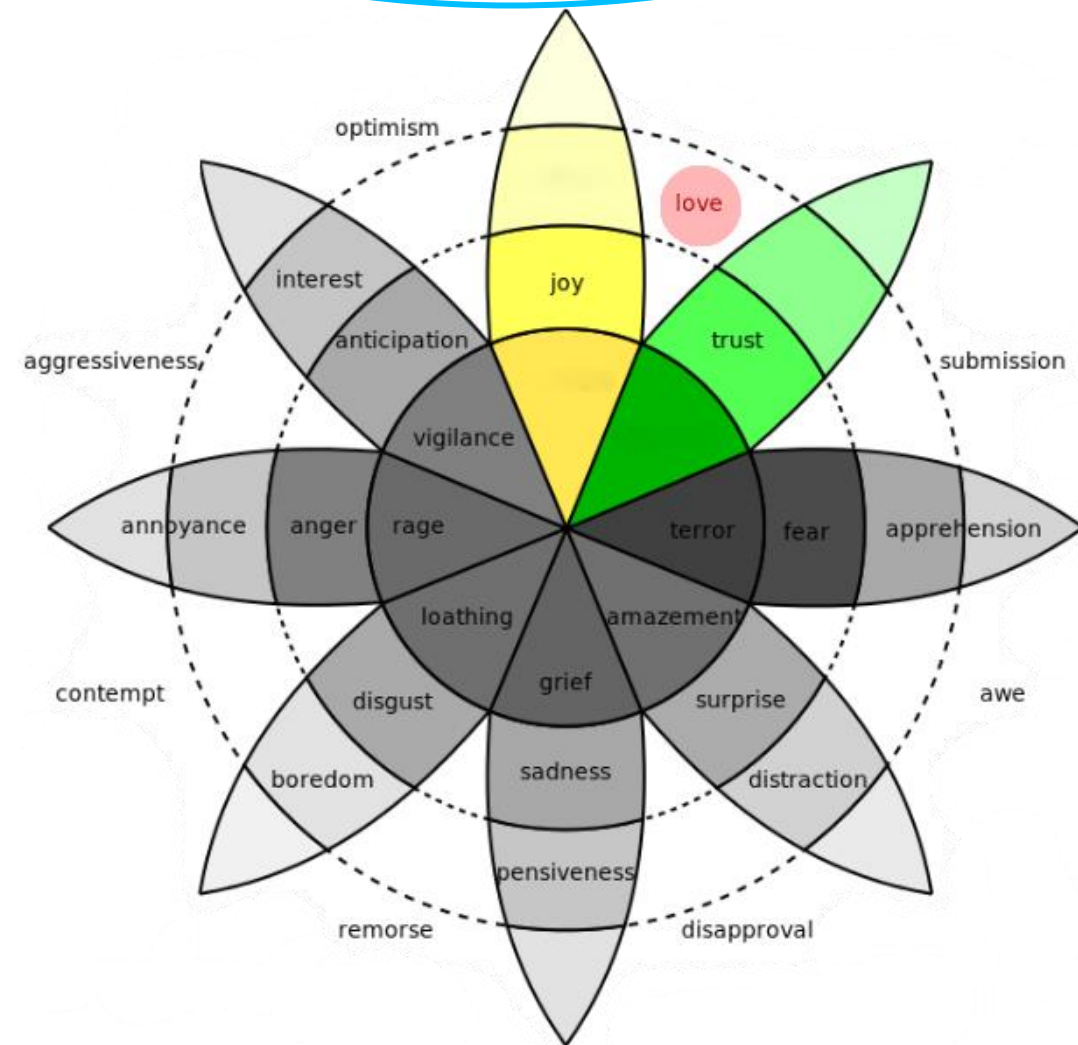
define annotation guidelines



- for every instance, each emotion is assigned a value between 0 and 3
- intensity scores are not linked to the emotion in Plutchik's wheel
- the annotation of one emotion does not exclude its opposed emotion

Annotation Task

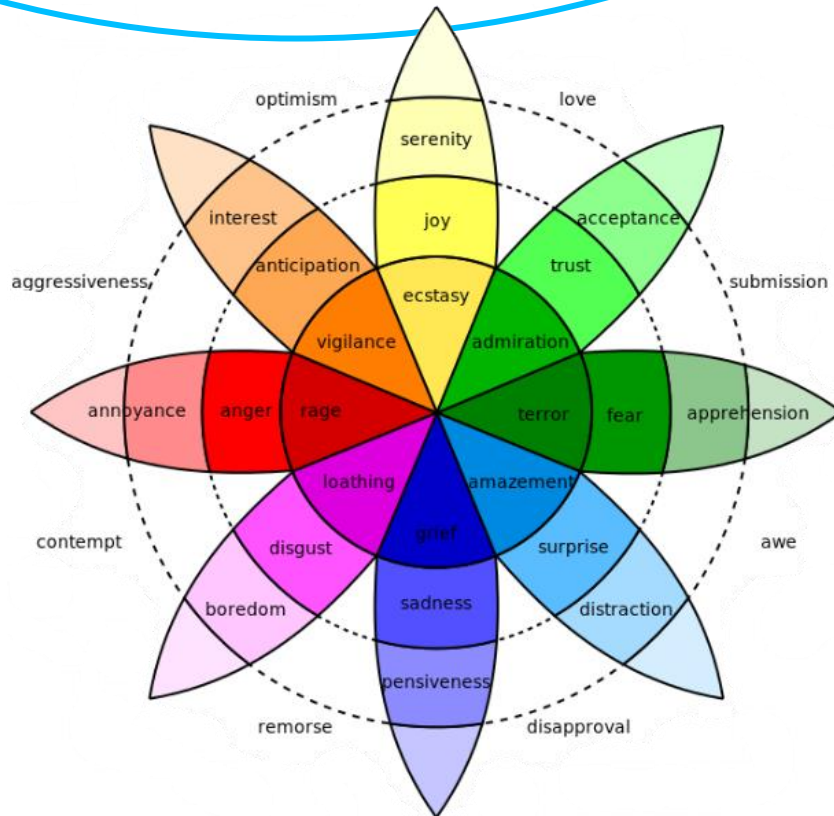
define annotation guidelines



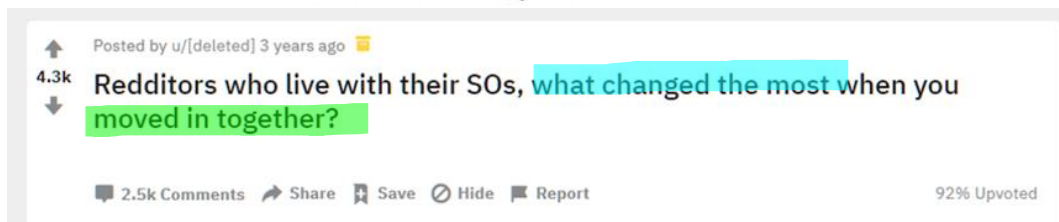
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- emotions are not assigned to trigger combinations

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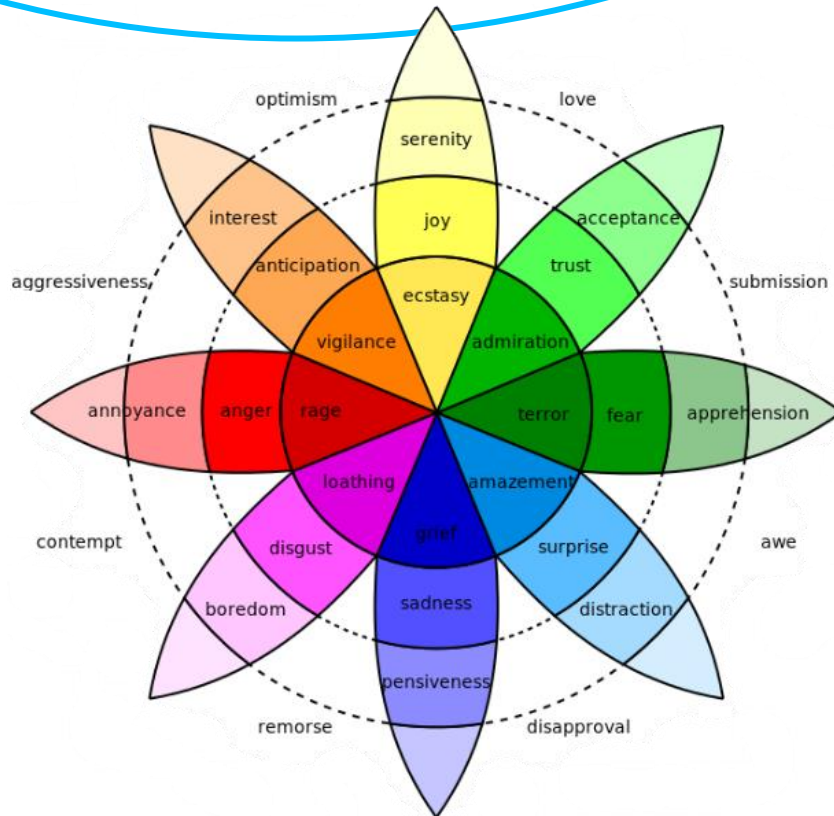


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- emotions that are only implied by the corpus domain but not present in the instance are not annotated



Annotation Task

define annotation guidelines



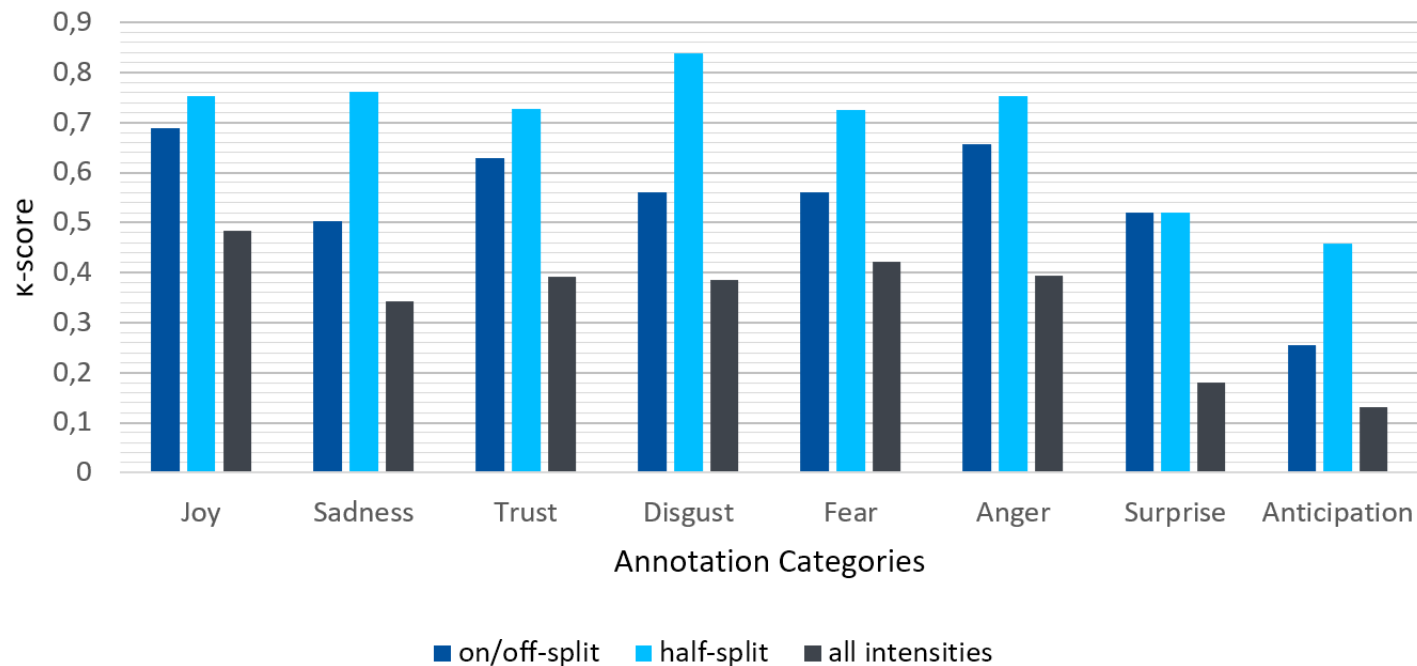
*I remember the first time I tripped over her shoes at my place, it was adorable. A real "I'm not alone," **warm and fuzzy feeling**.*

*That's gone. **She's just a slob now**. [ID 006]*

- for every instance, each emotion is assigned a value between 0 and 3
- intensity scores are not linked to the emotion in Plutchik's wheel
- the annotation of one emotion does not exclude its opposed emotion
- emotions are not assigned to trigger combinations
- emotions that are only implied by the corpus domain but not present in the instance are not annotated
- perspective: described situations/emotions
 - not the author's experience while writing the comment

Evaluation

basis of evaluation



3 possible evaluation splits:

■ on/off-split (binary)

- 0 | 1 2 3

■ half-split (binary)

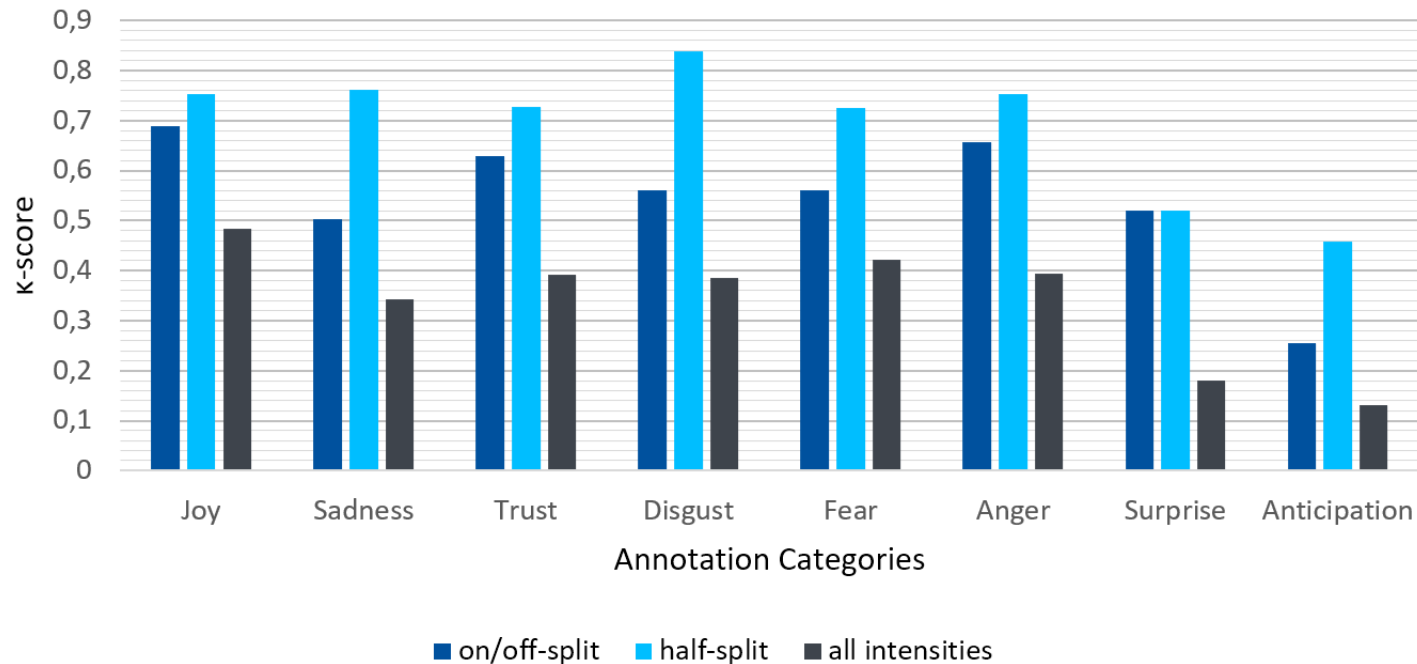
- 0 1 | 2 3

■ all intensities (four-way)

- 0 | 1 | 2 | 3

Evaluation

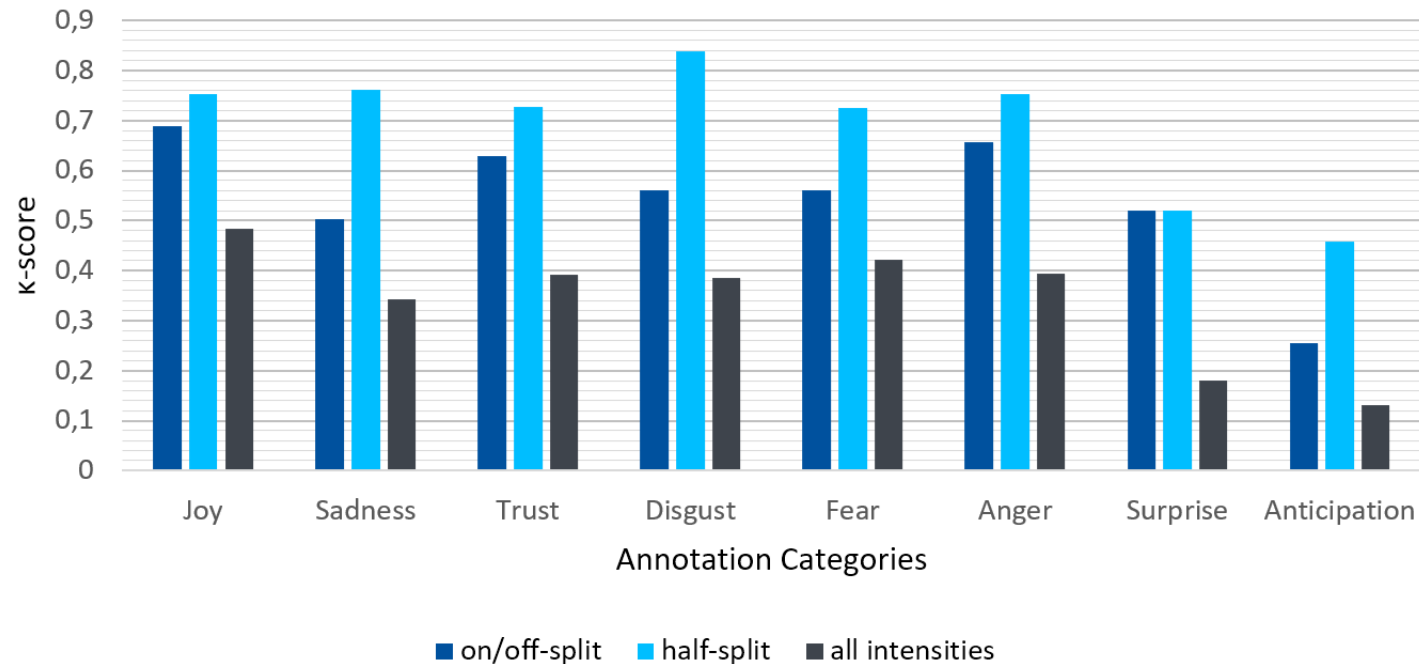
basis of evaluation



- higher agreement on high vs low intensity (■) than presence of emotions (■)
- ➔ half-split is used for all further evaluations

Evaluation

inter-annotator agreement



- highest agreement: disgust
- high agreement: joy, trust, anger
- highest disagreement: anticipation

Evaluation

corpus statistics – quantitative

	Felix	Carlotta	Max	∅ / Emotion
joy	35	28	22	28,33
sadness	11	6	4	7
trust	21	23	16	20
disgust	7	6	2	5
fear	3	3	2	2,67
anger	26	19	19	21,33
surprise	43	24	19	28,67
anticipation	10	15	3	9,33
∅ /Text	1,56	1,24	0,87	

- average number of annotations per text varies between annotators

Number of emotions assigned by each annotator (half split)

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- surprise and joy were tagged the most

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- surprise and joy were tagged the most
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Number of emotions assigned by each annotator (half split)

- average number of annotations per text varies between annotators
- surprise and joy were tagged the most
- fear was tagged the least
- trust and anger were tagged with a similar frequency

Evaluation

corpus statistics – quantitative

	Joy	Sadness	Trust	Disgust	Fear	Anger	Surprise	Anticipation
Anticipation	1	0	1	0	0	1	0	2
Surprise	7	1	2	1	0	3	18	
Anger	1	2	1	1	0	18		
Fear	0	0	1	1	2			
Disgust	0	0	0	5				
Trust	6	1	16					
Sadness	1	5						
Joy	24							

- most frequent average annotations match most frequent individual annotations

Co-annotation of emotions taken from the average of all annotations

Evaluation

corpus statistics – quantitative

	Joy	Sadness	Trust	Disgust	Fear	Anger	Surprise	Anticipation
Anticipation	1	0	1	0	0	1	0	2
Surprise	7	1	2	1	0	3	18	
Anger	1	2	1	1	0	18		
Fear	0	0	1	1	2			
Disgust	0	0	0	5				
Trust	6	1	16					
Sadness	1	5						
Joy	24							

- most frequent average annotations match most frequent individual annotations
- Plutchik's combined emotions
 - love

Co-annotation of emotions taken from the average of all annotations

Evaluation

corpus statistics – qualitative

- annotators only rarely agree on intensity scores
 - more emotions in one instance increase the disagreement across annotators

I really had to cut down on the gaming... like... drastically.

I didn't really go out much except maybe once every other week since drinking is so expensive, and I don't watch tv, so when I wasn't working or in school I would be gaming. Period. That's been my hobby for years. I would spend hours every evening like it was nothing.

Yeah, turns out that makes a woman feel hopelessly neglected and alone after a bit. Sacrifices were made. It was a huge point of contention for a while, but we are much happier now.

[ID 036]

joy

sadness

trust

disgust

fear

anger

surprise

anticipation

Evaluation

corpus statistics – qualitative

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*I really had to cut down on the gaming... like... drastically.
I didn't really go out much except maybe once every other week since drinking is so expensive, and I don't watch tv, so when I wasn't working or in school I would be gaming. Period. That's been my hobby for years. I would spend hours every evening like it was nothing.
Yeah, turns out that makes a woman feel hopelessly neglected and alone after a bit. Sacrifices were made. It was a huge point of contention for a while, but we are much happier now.*
[ID 036]

joy			sadness			trust			disgust			fear			anger			surprise			anticipation		
1	0	2	1	2	1	1	0	2	0	0	0	0	0	0	0	1	1	2	0	1	0	0	1

Evaluation

corpus statistics – qualitative

- other difficult cases:

- irony

Not much changed.

... Until the fire nation attacked.

[ID 076]

- lack of explicit emotions:

The way we organize our books. He likes them to be organized by topic or use, then grouped into subgroups and arranged alphabetically.

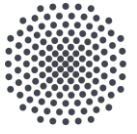
I like things to be arranged by topic, then arranged visually on the shelf so that they're grouped by size and the largest books are near the outside of the shelf (on both ends) moving inward to the smallest. And the heaviest books all have to be on the bottom shelf.

[ID 031]

Evaluation

take away

- findings about our data
 - most frequent emotions: joy, surprise, anger
 - topic/domain impacts the annotation results
- difficulties when annotating emotions
 - emotion annotation is a very subjective task
 - there is no objective measure for emotion intensity
 - despite using guidelines, some instances remain debatable



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**Thank you
for listening!**

Questions?

*We started to hate each other.
[ID 235]*