



SENTIMENT ANALYSIS USING USAS

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4D PICTURE PROJECT

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**Design-based
Data-Driven
Decision-support
(4D) Tools**

*Producing Improved Cancer Outcomes
Through User-centred Research*



A EUROPEAN RESEARCH TEAM

4D PICTURE has a dedicated multi-disciplinary research team, integrating health care research, data science, epidemiology, biostatistics, innovation and design research, health economics, implementation science, social sciences and humanities.



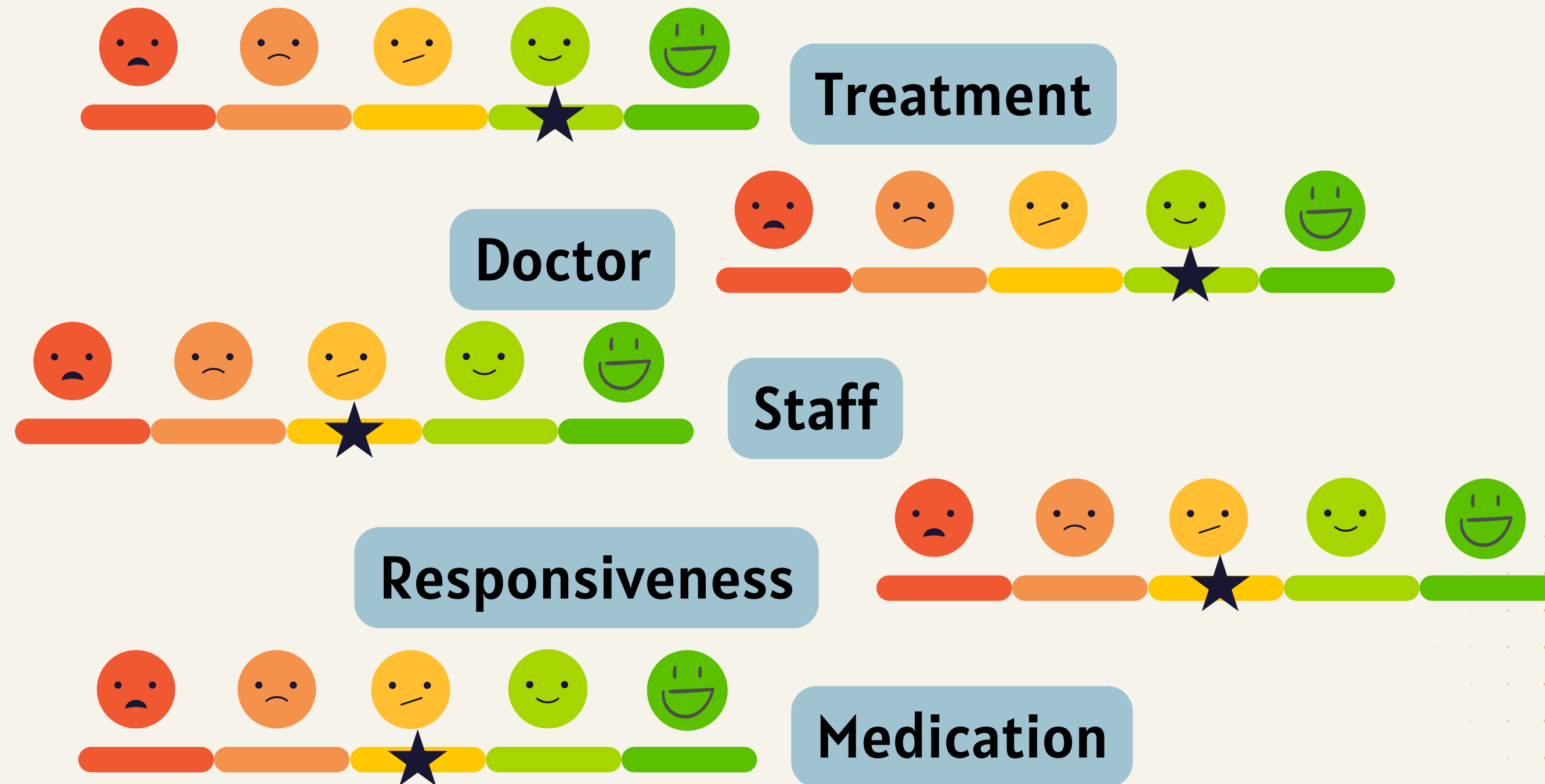
SENTIMENTS

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ASPECT-BASED SA

4



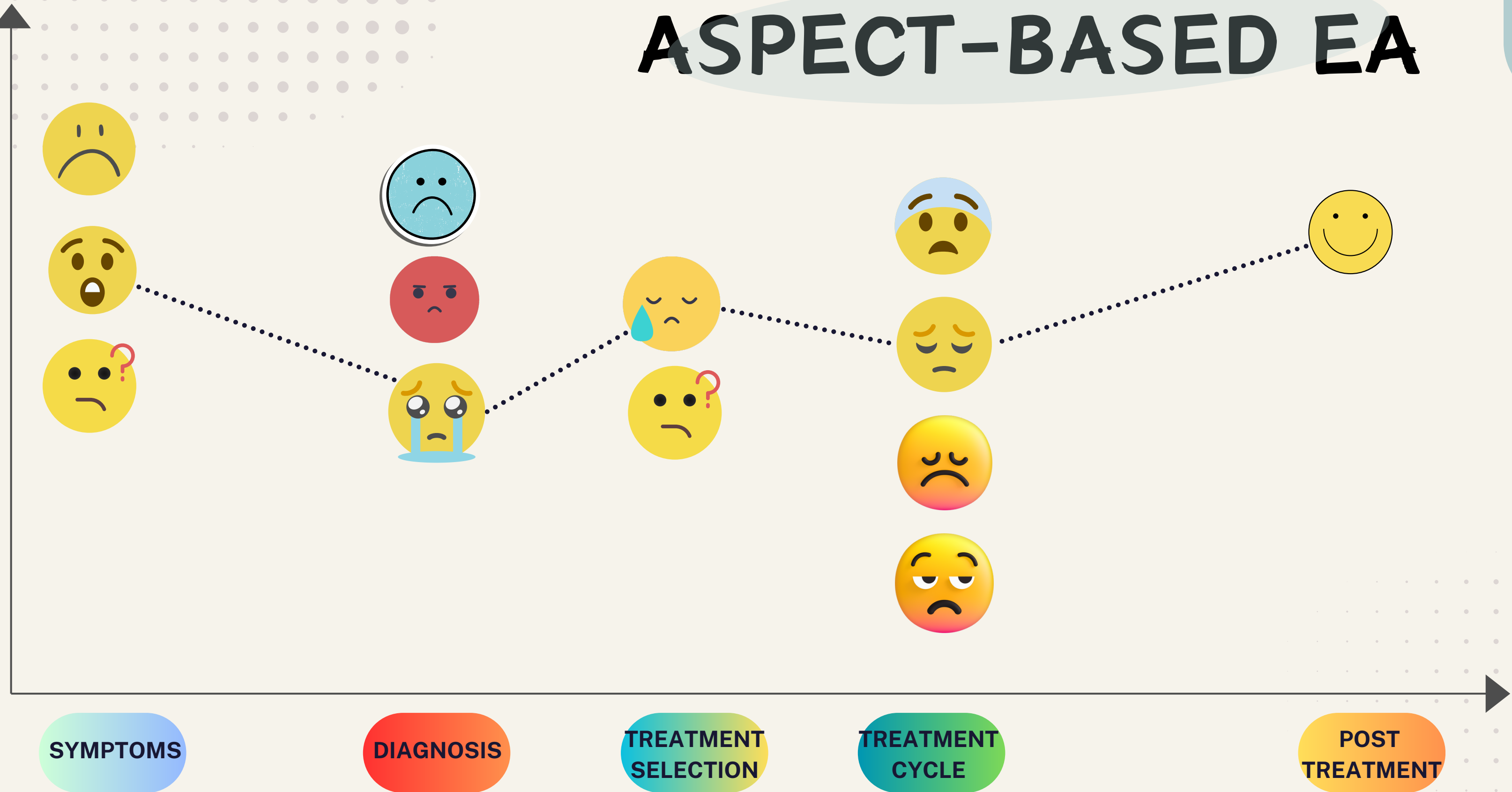
EMOTIONAL ROLLERCOASTER

5



ASPECT-BASED EA

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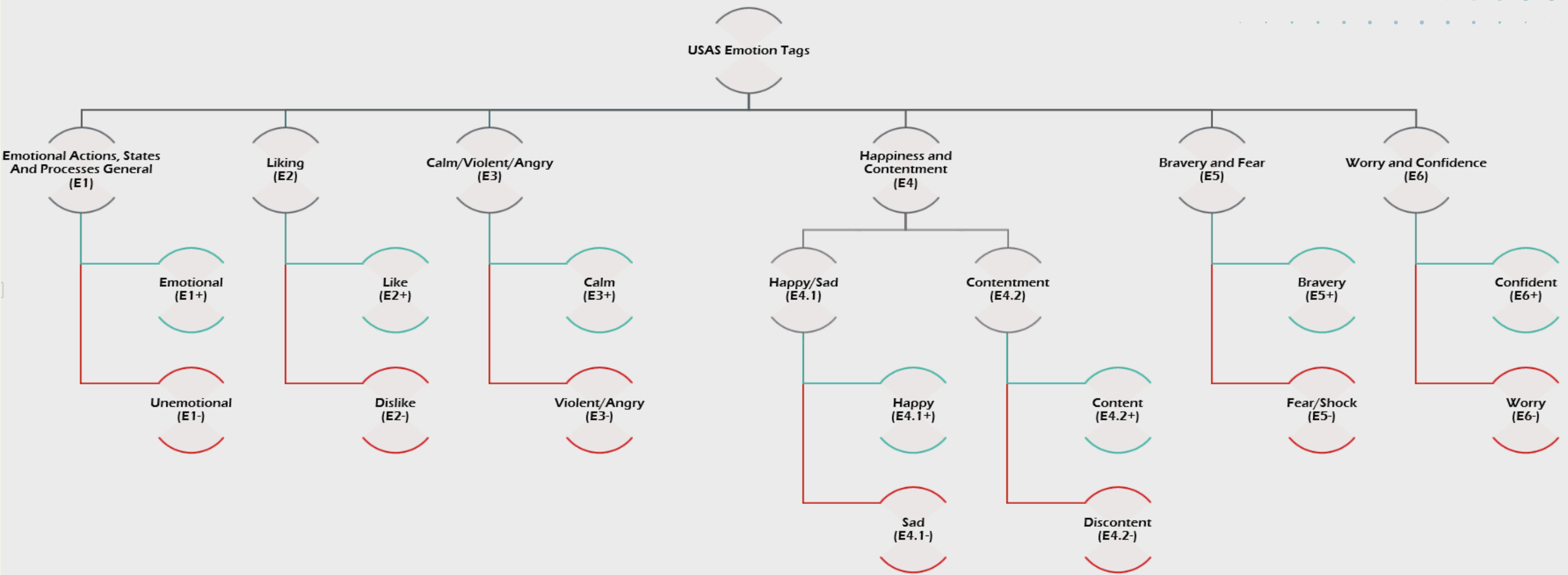
PERSONAL NARRATIVES

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I am a 20 year old AGE guy that just got done with immunotherapy TREATMENT for stage 3 STAGE melanoma. CANCER_TYPE I 'm more or less fine now but dealing with cancer DISEASE has caused me a lot more problems mentally than physically. Even as a little kid I would be absolutely terrified EMOTION ANALYSIS of dying which is probably very common. I used to wake up having constant nightmares EMOTION ANALYSIS of dying and they have stuck with me through life. I used to comfort myself EMOTION ANALYSIS saying that when I was a lot older I would have made peace EMOTION ANALYSIS with it and more or less accepted it. EMOTION ANALYSIS But during the heat of my cancer DISEASE experience I had to get a MRI INVESTIGATIONS on my head PART_OF_BODY since a decently sized SIZE melanoma CANCER_TYPE was found in my lymph node. PART_OF_BODY I had made the mistake of looking up what it ment if the melanoma CANCER_TYPE had reached my brain PART_OF_BODY and I totally broke down. EMOTION ANALYSIS I'm pretty healthy now but the idea of dying young became really real to me. My mental has totally went downhill and I have no idea

My mom was diagnosed with Stage 4 STAGE Metastasized Lung Cancer CANCER_TYPE at age 55. AGE It was bad. She had tumors INVESTIGATIONS in her spine PART_OF_BODY, lungs PART_OF_BODY, and pancreas PART_OF_BODY, and who knows where else. After lots of surgery TREATMENT and chemo TREATMENT, the doctors PEOPLE found that there was nothing they could do, her cancer DISEASE was not going away. However, they told her about a clinical trial TREATMENT that had some promising results for Lung Cancer CANCER_TYPE patients, and she immediately signed up. What did we have to lose ?

USAS SENTIMET CLASSIFICATION MODEL



IMPLEMENTATION

● STEP 1:

Extracting emotion words using USAS emotion tags.

● STEP 2

Sentiment classification model with three classes: Positive, Negative, Neutral
Counting tags with '+' and '-' signs.

● STEP 3

Calculating sentiment probabilities:
Sentence-Level
Text-Level

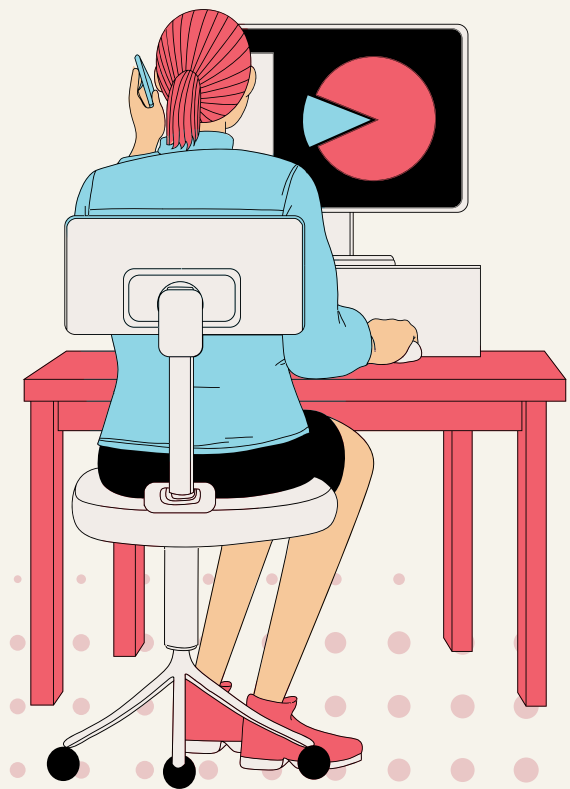
● STEP 4

Emotion Analysis - Sentence Level

● STEP 5

Comparative Analysis using five DL models:

- T5
- DistilBERT
- Roberta
- RobertaGo
- NRClex



Thank you!

