University of Stuttgart
Institute for
Natural Language Processing

Emotion Analysis

Evaluation-based Approaches 2

Dec 13, 2022

Roman Klinger

Outline

Outline

OCC and Appraisal

Appraisal:

- Emotion component process model by Scherer:
  Coordinated process of different subsystems

- Appraisal:
  Cognitive evaluation of event

- OCC: (from the abstract of the paper on the last slide)

  (d) in the OCC account […], appraisals are psychological aspects of situations that distinguish one emotion from another, rather than triggers that elicit emotions;

- OCC is a model that describes constituting factors of emotions

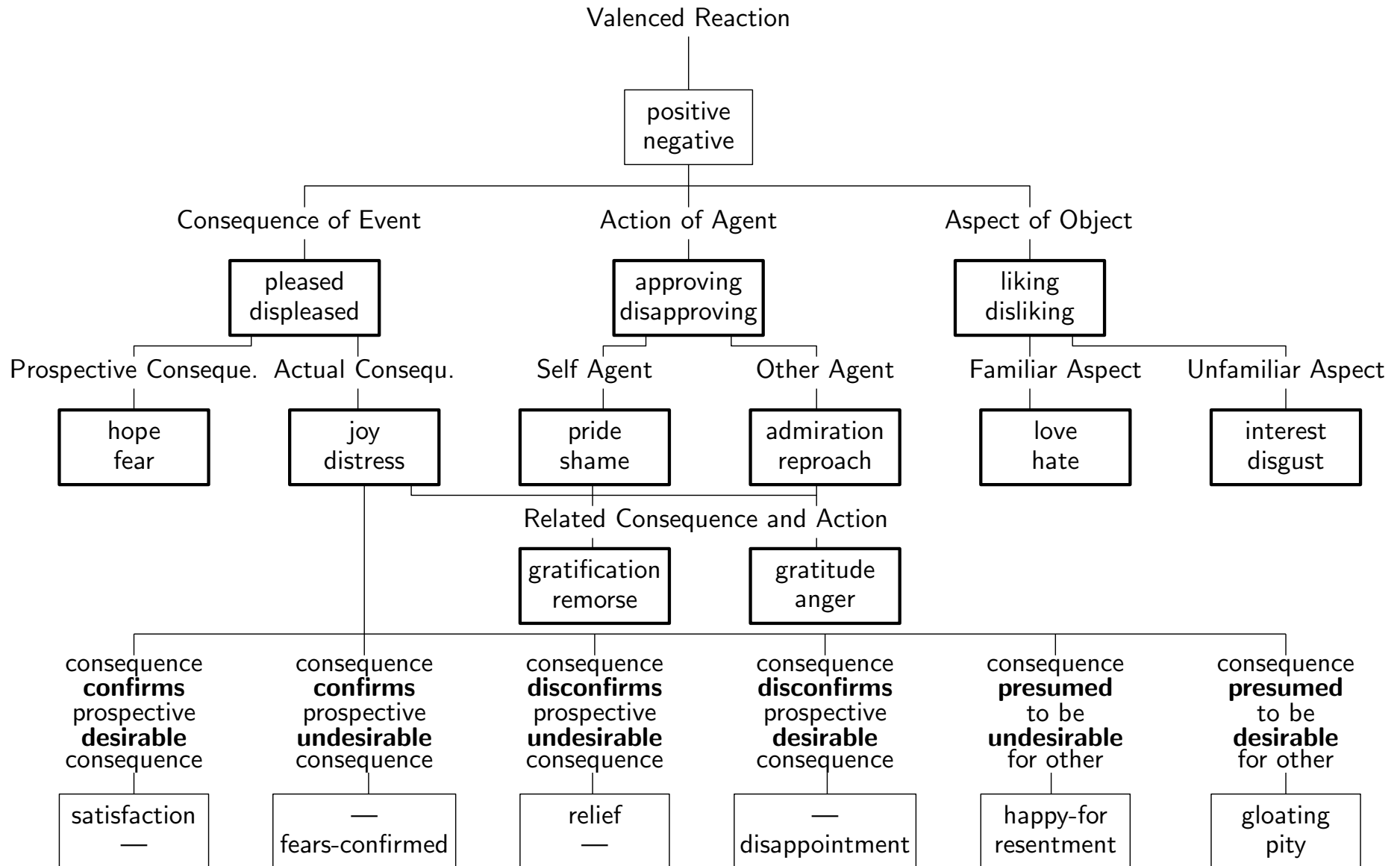# OCC Model
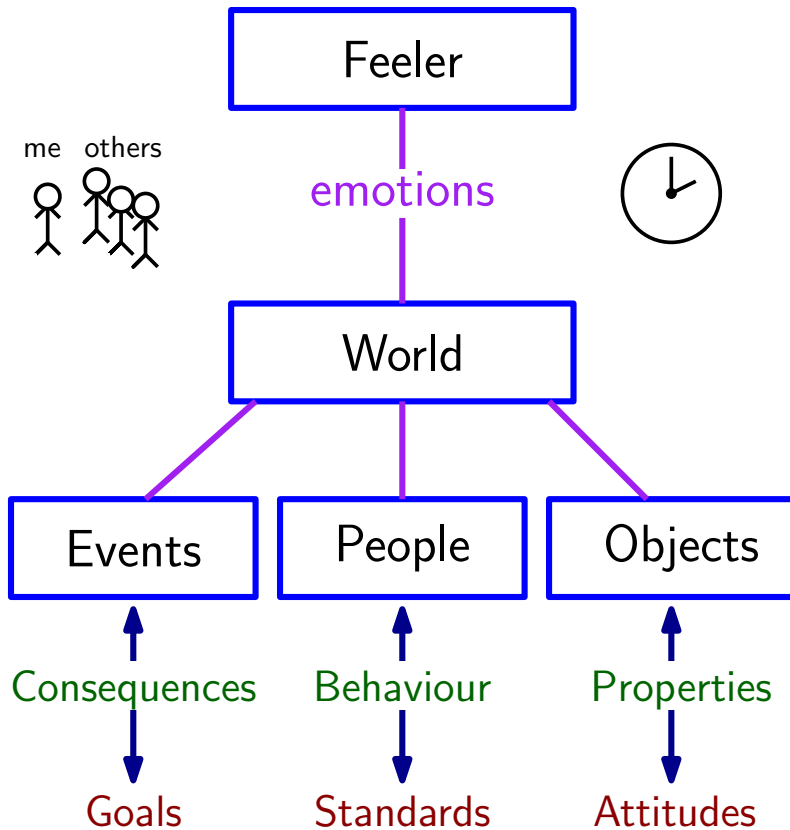
Further components

- Point of view: Different consequences, standards, goals, attitudes.
- Time:
  - Anticipate an event
  - Be afraid about something that could have happened

OCC Redrawn

Valenced Reaction

positive
negative

Consequence of Event — Action of Agent — Aspect of Object

| pleased displeased | approving disapproving | liking disliking |

Prospective Conseque. — Actual Consequ. — Self Agent — Other Agent — Familiar Aspect — Unfamiliar Aspect

| hope fear | joy distress | pride shame | admiration reproach | love hate | interest disgust |

Related Consequence and Action

| gratification remorse | gratitude anger |

| consequence **confirms** prospective **desirable** consequence | consequence **confirms** prospective **undesirable** consequence | consequence **disconfirms** prospective **undesirable** consequence | consequence **disconfirms** prospective **desirable** consequence | consequence **presumed** to be **undesirable** for other | consequence **presumed** to be **desirable** for other |

| satisfaction — | — fears-confirmed | relief — | — disappointment | happy-for resentment | gloating pity |

OCC Text Interpretation

Chapter 4

A Linguistic Interpretation of the OCC Emotion Model for Affect Sensing from Text

Mostafa Al Masum Shaikh, Helmut Prendinger, and Mitsuru Ishizuka

Abstract Numerous approaches have already been employed to 'sense' affective information from text; but none of those ever employed the OCC emotion model, an influential theory of the cognitive and appraisal structure of emotion. The OCC model derives 22 emotion types and two cognitive states as consequences of several cognitive variables. In this chapter, we propose to relate cognitive variables of the emotion model to linguistic components in text, in order to achieve emotion recognition for a much larger set of emotions than handled in comparable approaches. In particular, we provide tailored rules for textural emotion recognition, which are inspired by the rules of the OCC emotion model. Hereby, we clarify how text components can be mapped to specific values of the cognitive variables of the emotion model. The resulting linguistics-based rule set for the OCC emotion types and cognitive states allows us to determine a broad class of emotions conveyed by text.

A Rule-Based Approach to Implicit Emotion Detection in Text

Orizu Udochukwu[(⊠)] and Yulan He

School of Engineering and Applied Science, Aston University, Birmingham, UK
{orizuus,y.he9}@aston.ac.uk

Abstract. Most research in the area of emotion detection in written text focused on detecting explicit expressions of emotions in text. In this paper, we present a rule-based pipeline approach for detecting implicit emotions in written text without emotion-bearing words based on the OCC Model. We have evaluated our approach on three different datasets with five emotion categories. Our results show that the proposed approach outperforms the lexicon matching method consistently across all the three datasets by a large margin of 17–30 % in F-measure and gives competitive performance compared to a supervised classifier. In particular, when dealing with formal text which follows grammatical rules strictly, our approach gives an average F-measure of 82.7 % on "Happy", "Angry-Disgust" and "Sad", even outperforming the supervised baseline by nearly 17 % in F-measure. Our preliminary results show the feasibility of the approach for the task of implicit emotion detection in written text.

Example Rules (à la Shaikh)

"The employee thinks that he might be fired."

Variables:

- **vr**: valenced reaction
  as sentence valence

- **sr**: self reaction
  valence of event≈ desirability

- **pros**: prospect
  valence of verb

- **sp**: self presumption
  valence of event≈ desirability

- **status**
  tense of verb

- **de**: direction of emotion
  other if object is person/pronoun

- If (vr = true & sr = 'displeased' & pros = 'negative' &
  sp = 'undesirable' & status = 'unconfirmed' & de = 'self')
  ⇒ fear

Take Away

- Other Appraisal-motivated approaches
- Appraisal Theories according to Smith/Ellsworth and Scherer
- Text-classification methods that consider these theories

Outline

Assignment 02

Goal: Implement two emotion classification methods and compare them on two corpora

Ideally: Come up with a research question that you would like to answer.

Step 1: Choose corpora

- Decide on two annotated corpora you want to work with.
- Pick those from the data sets mentioned in class or elsewhere (please limit your self to discrete categories)
- You can use your own corpus as a third test corpus
- See Ilias for corpora described in
  `https://www.aclweb.org/anthology/C18-1179/`
- Don't share any resources publicly!

Assignment 02

Step 2: Choose method

- Decide on two out of four approaches:
  1. Dictionary-based
  2. OCC (or other rules)
  3. ML/Feature based
  4. ML/Deep Learning based

Recap
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Assignment 02
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Other Approaches
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Scherer
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Assignment 02

Step 3: Implement

- Implement two emotion classification approaches
  (see step 2)
- Free choice of
  libraries, models, architectures, programming languages

Step 4: Evaluate

- Evaluate your system on two independent hold out data sets
- Evaluate on your corpus (Ass. 01, optionally)

Assignment 02

Step 5: Slides

- Prepare your slides, max 10 minutes, as before
- Content
    - Introduction, Motivation
    - Models/Methods
    - Resources
    - Experimental Setting
    - Results
    - Critical Assessment and Discussion
- (optionally: submit additional file with documentation and/or longer version of the slides)

Assignment 02

Get a grade

Please check:

- Did you properly motivate and explain what you are doing? Why did you chose a particular approach? What would you like to learn from the experiments you are performing?

- Are the slides (+optional additional document) understandable?

- Did you critical reflect on what you were doing? Did you look into the results? What might have gone wrong? Are the results somehow questionable?

- Did you clearly point out own creative ideas, ideally motivated by observations during development? Were these properly explained?

- Do you share sufficient information that we see that the work has been carefully performed? Is that observable from the documentation?

Outline

EmotiNet

EmotiNet: A Knowledge Base for Emotion Detection in Text Built on the Appraisal Theories

Alexandra Balahur, Jesús M. Hermida, Andrés Montoyo, and Rafael Muñoz

Department of Software and Computing Systems, University of Alicante,
Apto. de correos 99, E-03080 Alicante, Spain
`{abalahur,jhermida,montoyo,rafael}@dlsi.ua.es`

Abstract. The automatic detection of emotions is a difficult task in Artificial Intelligence. In the field of Natural Language Processing, the challenge of automatically detecting emotion from text has been tackled from many perspectives. Nonetheless, the majority of the approaches contemplated only the word level. Due to the fact that emotion is most of the times not expressed through specific words, but by evoking situations that have a commonsense affective meaning, the performance of existing systems is low. This article presents the EmotiNet knowledge base – a resource for the detection of emotion from text based on commonsense knowledge on concepts, their interaction and their affective consequence. The core of the resource is built from a set of self-reported affective situations and extended with external sources of commonsense knowledge on emotion-triggering concepts. The results of the preliminary evaluations show that the approach is appropriate for capturing and storing the structure and the semantics of real situations and predict the emotional responses triggered by actions presented in text.

Keywords: EmotiNet, emotion detection, emotion ontology, knowledge base, appraisal theories, self-reported affect, action chain.

- Build knowledge base of annotated triples: subject—action—object →emotional reaction
- Approach: Extract agent, verb, patient with semantic role labeling from emotion corpora; then manually annotate

EmotiNet KB

Action Chain
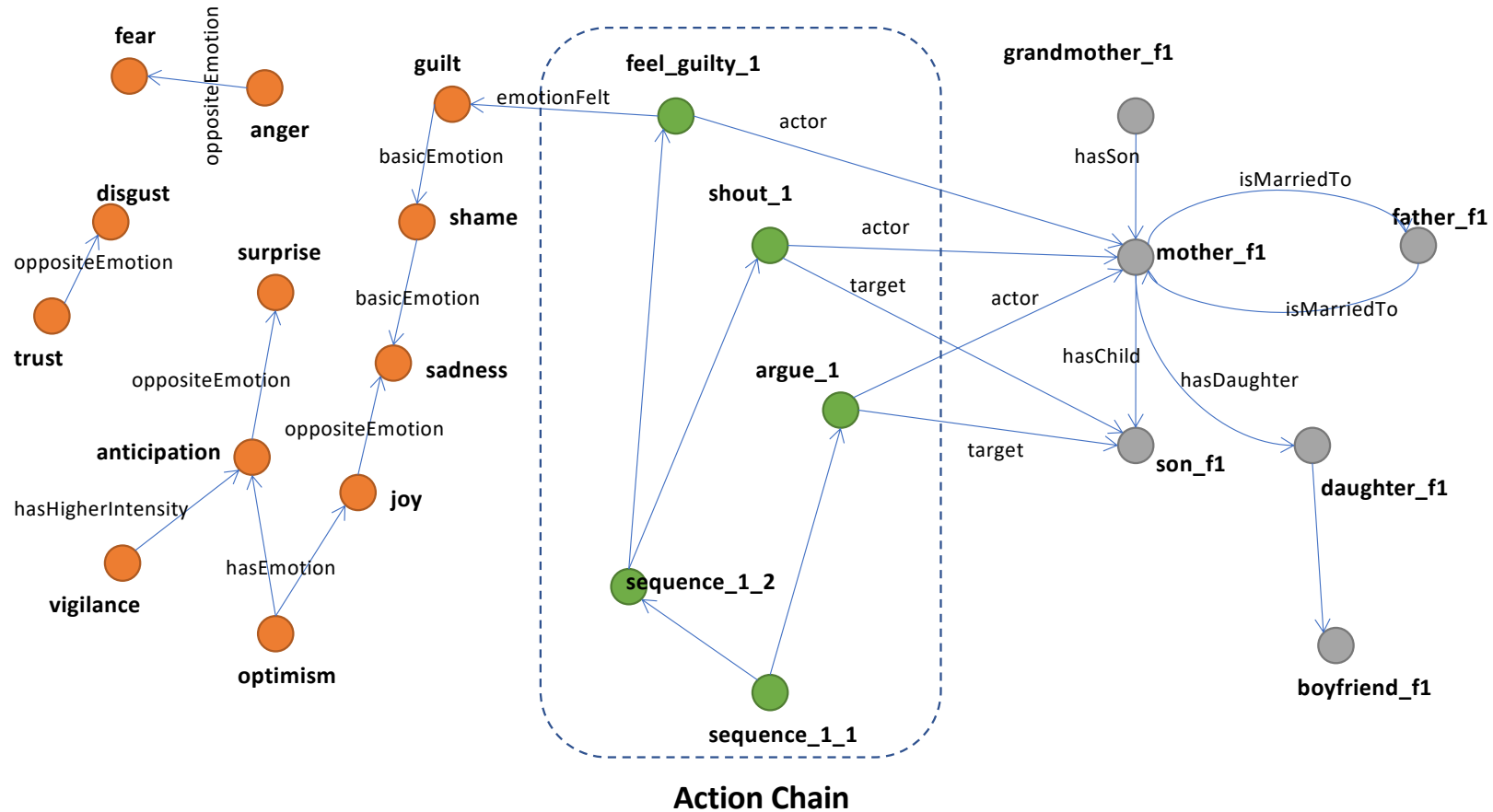
⇒ Complex annotations, interesting resource motivated by event analysis, but appraisal theories are (in my opinion/view) not directly encoded in the model.

Hofmann, 2020:
Appraisal-based Emotion Analysis

Appraisal Theories for Emotion Classification in Text

Jan Hofmann[1], **Enrica Troiano**[1], **Kai Sassenberg**[2,3], and **Roman Klinger**[1]
[1]Institut für Maschinelle Sprachverarbeitung, University of Stuttgart, Germany
[2]Leibniz-Institut für Wissensmedien, Tübingen, Germany
[3]University of Tübingen, Germany
{jan.hofmann,enrica.troiano,roman.klinger}@ims.uni-stuttgart.de
k.sassenberg@iwm-tuebingen.de

Abstract

Automatic emotion categorization has been predominantly formulated as text classification in which textual units are assigned to an emotion from a predefined inventory, for instance following the fundamental emotion classes proposed by Paul Ekman (*fear*, *joy*, *anger*, *disgust*, *sadness*, *surprise*) or Robert Plutchik (adding *trust*, *anticipation*). This approach ignores existing psychological theories to some degree, which provide explanations regarding the perception of events. For instance, the description that somebody discovers a snake is associated with *fear*, based on the appraisal as being an unpleasant and non-controllable situation. This emotion reconstruction is even possible without having access to explicit reports of a subjective feeling (for instance expressing this with the words "I am afraid."). Automatic classification approaches therefore need to learn properties of events as latent variables (for instance that the uncertainty and the mental or physical effort associated with the encounter of a snake leads to *fear*). With this paper, we propose to make such interpretations of events explicit, following theories of cognitive appraisal of events, and show their potential for emotion classification when being encoded in classification models. Our results show that high quality appraisal dimension assignments in event descriptions lead to an improvement in the classification of discrete emotion categories. We make our corpus of appraisal-annotated emotion-associated event descriptions publicly available.

- **Goal 1:** Annotate corpus with appraisal dimensions

- **Goal 2:** Use classifier which predicts appraisal variables to improve emotion classification

- Post-annotation of crowdsourced corpus, following idea of ISEAR (Troiano, 2018)

Hofmann, 2020: Basis is Smith/Ellsworth (1985)

Locations of Emotion Means Along the PCA Components

Emotion	Pleasant[a]	Responsibility/Control[b]	Certain[c]	Attention[d]	Effort[e]	Situational-Control[f]
			Component			
Happiness	−1.46	0.09	−0.46	0.15	−0.33	−0.21
Sadness	0.87	−0.36	0.00	−0.21	−0.14	1.15
Anger	0.85	−0.94	−0.29	0.12	0.53	−0.96
Boredom	0.34	−0.19	−0.35	−1.27	−1.19	0.12
Challenge	−0.37	0.44	−0.01	0.52	1.19	−0.20
Hope	−0.50	0.15	0.46	0.31	−0.18	0.35
Fear	0.44	−0.17	0.73	0.03	0.63	0.59
Interest	−1.05	−0.13	−0.07	0.70	−0.07	0.41
Contempt	0.89	−0.50	−0.12	0.something	−0.07	−0.63
Disgust	0.38	−0.50	−0.39	−0.96	0.06	−0.19
Frustration	0.88	−0.37	−0.08	0.60	0.48	0.22
Surprise	−1.35	−0.94	0.73	0.40	−0.66	0.15
Pride	−1.25	0.81	−0.32	0.02	−0.31	−0.46
Shame	0.73	1.31	0.21	−0.11	0.07	−0.07
Guilt	0.60	1.31	−0.15	−0.36	0.00	−0.29

Note. Scores are standardized.

[a] Pleasantness: high scores indicate increased unpleasantness.
[b] Responsibility/Control: high scores indicate increased self-responsibility/control.
[c] Certainty: high scores indicate increased uncertainty.
[d] Attentional activity: high scores indicate increased attentional activity.
[e] Effort: high scores indicate increased anticipated effort.
[f] Situational control: high scores indicate increased situational control.

Recap
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Assignment 02
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Other Approaches
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Scherer
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Hofmann, 2020: Appraisal Annotation

Most probably, at the time when the event happened, the writer…

- …wanted to devote further attention to the event. (Attention)
- …was certain about what was happening. (Certainty)
- …had to expend mental or physical effort to deal with the situation. (Effort)
- …found that the event was pleasant. (Pleasantness)
- …was responsible for the situation. (Responsibility)
- …found that he/she was in control of the situation. (Control)
- …found that the event could not have been changed/influenced by anyone. (Circumstance)

Hofmann, 2020: Examples

(Attention, Certainty, Effort, Pleasantness, Responsibility, Control, Circumstance)

- when my neighbour started to throw rubbish in my garden for no reason.
  Attention, Certainty, Anger

- to watch someone eat insects on television.
  Certainty, Disgust

- when our kitten escaped in the late evening and we thought he was lost.
  Attention, Certrainty, Circumstance, Fear

- when I took something without paying.
  Certainty, Responsibility, Control, Guilt

Recap
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Assignment 02
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Other Approaches
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Scherer
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Hofmann, 2020: Annotation Results
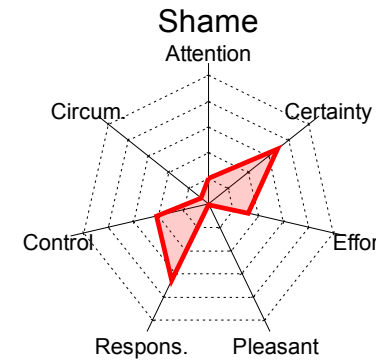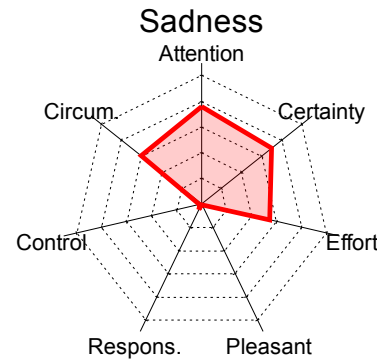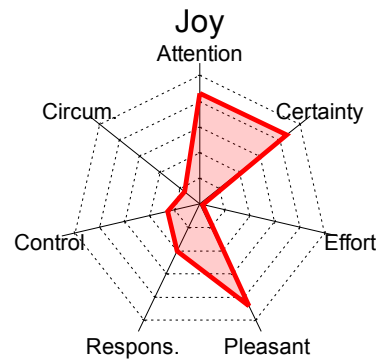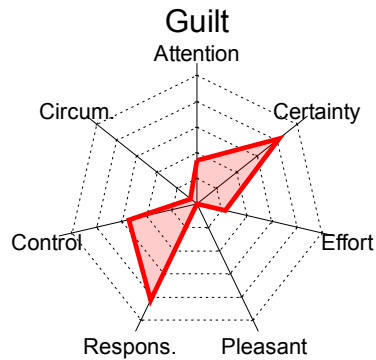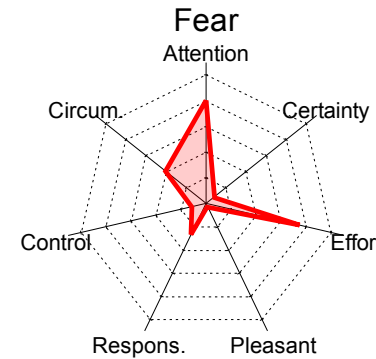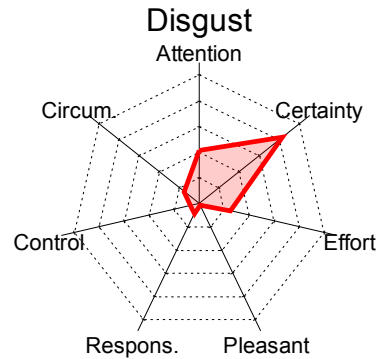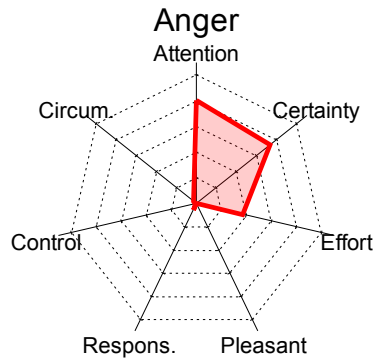
Hofmann, 2020: Inter-Annotator Agreement

	Cohen's κ							
	between annotators				annotator–majority			
Appraisal Dimension	A1/A2	A1/A3	A2/A3	avg.	A1	A2	A3	avg.
Attentional Activity	.28	.24	.41	.31	.50	.76	.66	.64
Certainty	.41	.23	.29	.31	.62	.77	.46	.62
Anticipated Effort	.38	.33	.26	.32	.69	.67	.62	.66
Pleasantness	.89	.88	.90	.89	.93	.96	.94	.94
Responsibility	.68	.57	.63	.63	.80	.88	.76	.81
Control	.65	.56	.52	.58	.84	.81	.70	.78
Circumstance	.52	.32	.28	.37	.80	.69	.49	.66
Average	.59	.48	.52	.53	.77	.82	.70	.76

Recap
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Other Approaches
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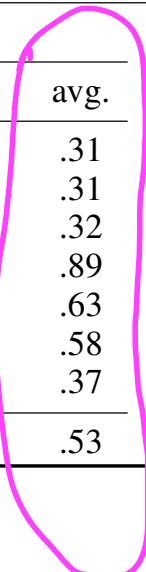
Hofmann, 2020: Modeling
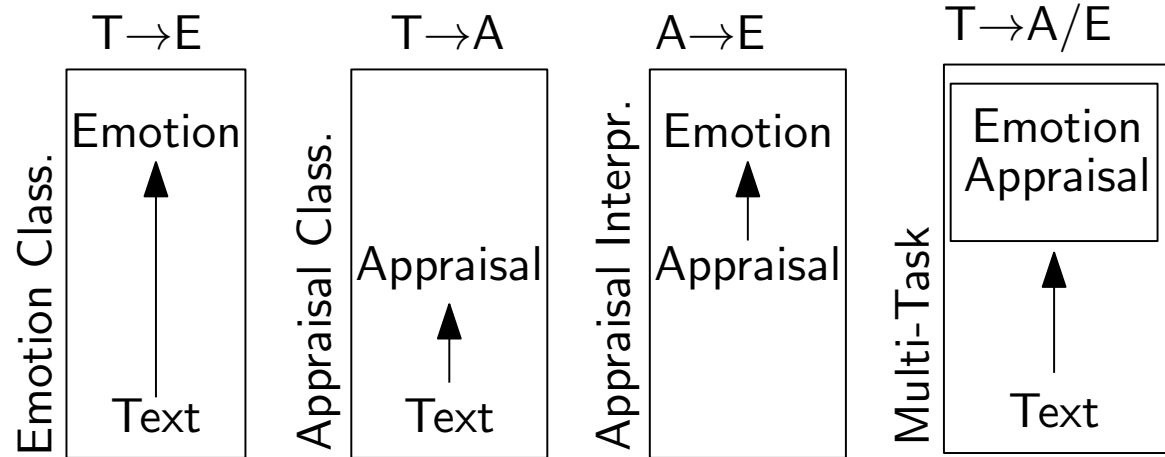
Hofmann, 2020, 2021: Appraisal Prediction Performance

Appraisal	CNN			RoBERTa		
	P	R	F_1	P	R	F_1
Attention	81	84	82	86	90	88
Certainty	84	86	85	87	94	91
Effort	68	68	68	79	77	78
Pleasantness	79	63	70	92	92	92
Responsibility	74	68	71	86	85	85
Control	63	49	55	81	73	77
Circumstance	65	58	61	74	69	71
Macro $\varnothing$	73	68	70	83	83	83
Micro $\varnothing$	77	74	75	84	85	85

Hofmann, 2020: Emotion Prediction Performance (CNN)

| | T→E | | | T→A,A→E | | | A→E (Gold) | | | T→A/E | | | Oracle Ensembles | | | | | |
| | | | | | | | | | | | | | T→A→E + T→E | | | T→A/E + T→E | | |
Emotion	P	R	F$_1$	P	R	F$_1$	P	R	F$_1$	P	R	F$_1$	P	R	F$_1$	P	R	F$_1$
Anger	51	52	52	34	62	44	55	71	62	51	52	52	66	81	73	59	59	59
Disgust	65	63	64	59	34	43	53	48	51	64	64	64	78	68	73	69	66	67
Fear	69	71	70	55	55	55	79	78	78	70	68	69	76	77	77	73	75	74
Guilt	47	42	44	38	50	43	57	70	63	45	42	44	60	63	62	58	54	56
Joy	74	80	77	77	69	72	94	98	96	77	77	77	79	80	80	79	85	82
Sadness	69	67	68	58	40	47	69	63	66	68	68	68	74	70	72	73	71	72
Shame	44	45	45	36	24	29	56	35	43	43	43	43	58	51	54	51	52	52
Macro avg.	60	60	60	51	48	48	66	66	65	60	59	59	70	70	70	66	66	66
Micro avg.			60			48			66			59			70			66

Recap
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Assignment 02
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Other Approaches
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Scherer
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Stranisci, 2022: Roseman/Coping Strategies

- Stranisci et al., LREC 2022: APPReddit: a Corpus of Reddit Posts Annotated for Appraisal
  `https://aclanthology.org/2022.lrec-1.406/`

- First real-world text corpus annotated with appraisal information

- Model following an appraisal theory that has a focus on how people cope with issues.

Recap
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Assignment 02
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Other Approaches
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Stranisci, 2022: Roseman's Model and Coping Strategies

Emotion	Family	Unexpectedness	Certainty	Control	Consistency	Responsibility	Appetitive
Hope	Contacting	−	−	−	+	NA	NA
Joy	Contacting	NA	+	+	+	NA	+
Fear	Distancing	−	−	−	−	NA	−
Distress	Distancing	NA	+	−	−	NA	−
Regret	Distancing	NA	+/−	−	−	$Self$	−
Anger	Attack	NA	+/−	+	−	$Other$	−
Guilt	Attack	NA	+/−	+	−	$Self$	−
Shame	Rejection	NA	+/−	−	−	$Other$	−
Surprise	NA	+	NA	NA	NA	$Circumstance$	NA

Table 1: Examples of interaction between emotions and appraisal according to Roseman (2013)

Stranisci, 2022: Annotation Method

[7p0h3r] Unemployed for a month starting to feel hopeless and really down. Just got two calls for interviews out of nowhere. Had to tell someone!

I've been applying heavily since before being let go at the beginning of December (they found out I was looking and fired me). I've been feeling really down about myself lately and not having much hope. I'd been on several interviews, but passed over for one reason or another. Well, today I got two phone calls for two different positions in my field. I couldn't be happier, and I just had to tell someone!

Was the event expected?	○ NA ○ 1 ○ 2 ○ 3 ○ 4
Is it certain?	○ 1 ○ 2 ○ 3 ○ 4
Is it motive consistent?	○ 1 ○ 2 ○ 3 ○ 4
Does the agent have control on the situation?	○ 1 ○ 2 ○ 3 ○ 4
Who is responsible for the event?	○ self ○ other ◉ both
What is the level of confidence about your annotation?	○ 1 ○ 2 ○ 3 ○ 4

this title does not contain an event   skip   submit

Stranisci, 2022: Inter-Annotator Agreement

APPReddit corpus	Low	High	NA
Unexpectedness	0.43	0.28	0.29
Consistency	0.53	0.36	0.11
Certainty	0.10	0.79	0.11
Control	0.54	0.35	0.11
Responsibility	0.40	0.50	0.10
enISEAR corpus	**Low**	**High**	**NA**
Certainty	0.24	0.76	0
Consistency	0.85	0.15	0
Responsibility	0.62	0.38	0
Control	0.78	0.22	0
Attention	0.33	0.67	0
Effort	0.60	0.40	0
Circumstance	0.76	0.24	0

Stranisci, 2022: Modeling (Bag-of-words SVM

Goal:

- Understanding how well such appraisals can be predicted
- Understanding how (dis)-similar such corpus is from enISEAR (Hofmann)

Training set	Test set	Certainty	Consistency	Responsibility	Control
APPReddit	APPReddit	0.832	0.675	0.688	0.507
enISEAR	APPReddit	0.844	0.450	0.318	0.455
enISEAR	enISEAR	0.684	0.840	0.616	0.685
APPReddit	enISEAR	0.651	0.841	0.551	0.699
APPReddit+enISEAR	enISEAR	0.674	0.870	0.658	0.712
APPReddit+enISEAR	APPReddit	0.832	0.646	0.689	0.510

Table 5: Results of mapping experiments between APPReddit and enISEAR corpus in terms F1-scores.

Outline

Recap
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Assignment 02
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Other Approaches
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Scherer
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Definition of Emotions: Components

Emotion (Scherer, 2005)

Emotions are "an episode of interrelated, synchronized changes in the states of [...] five organismic subsystems in response to the evaluation of a [...] stimulus-event ..."

Event

Components

| Feeling | Expression | Bodily Symptom |
| Action Tendency | Cognitive Appraisal |

Fear

Name

Recap
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Assignment 02
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Other Approaches
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Scherer
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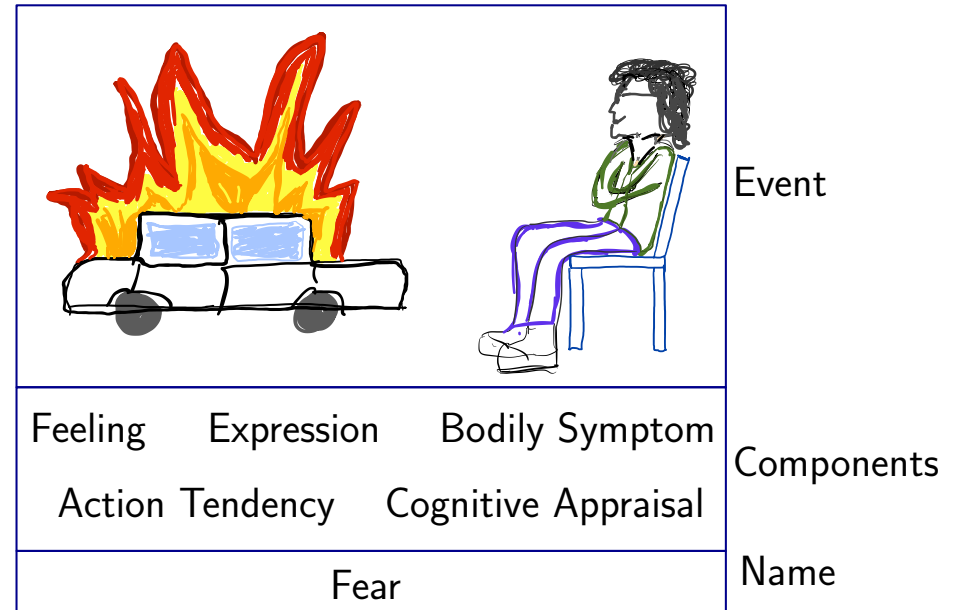
Cognitive Appraisal in Scherer's Component Process model

Event →	Relevance	Implication	Coping	Normative Significance
	Novelty	Causality: agent	Control	Internal standards
	Intrinsic Pleasantness	Goal conduciveness	Adjustment	External standards
	Goal Relevance	Outcome probability	Power	
		Urgency		
		Causality motive		
		Expectation discrepancy		
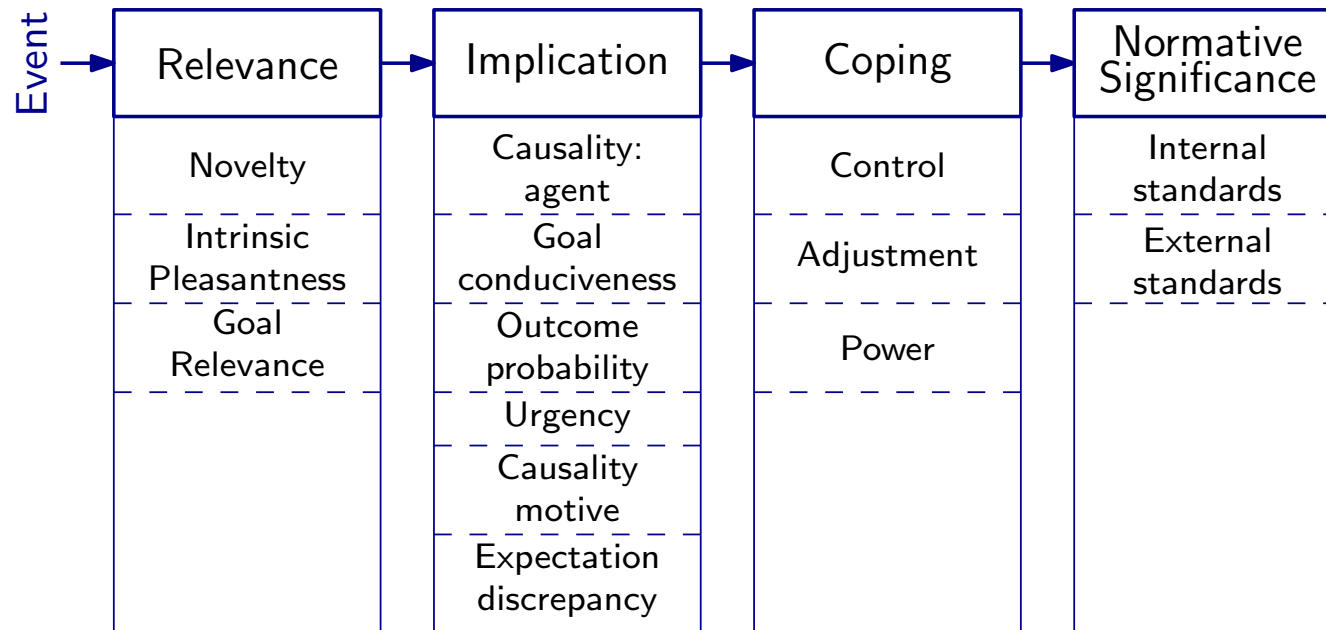
K.R. Scherer (2001). Appraisal Considered as a Process of Multilevel Sequential Checking.

Small Exercise

Please annotate the following two instances
(perspective of underlined entity):

- <u>Our</u> driver will run out of gas in the middle of the highway.

- <u>Mary</u> learns that her husband cheated to win in the lottery.

Relevance	Implication	Coping	Normative Significance
Novelty (1) suddenness (2) familiarity (3) predictability (16) attention* (17) att. removal* **Intrinsic Pleasantness** (4) pleasant (5) unpleasant **Goal Relevance** (6) goal-related	**Causality: agent** (7) own responsibility (8) other's respons. (9) situational respons. **Goal conduciveness** (10) goal support **Outcome probability** (11) consequence antic-ipation **Urgency** (12) response urgency	**Control** (19) own control* (20) others' control* (21) chance control* **Adjustment** (13) anticipated acceptance (18) effort*	**Internal standards compatibility** (14) clash with own standards/ideals **External standards compatibility** (15) clash with laws/norms

(more details starting on page 19 in
`https://arxiv.org/pdf/2206.05238.pdf`)

Recap
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Assignment 02
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Other Approaches
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Scherer
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<u>Our</u> driver will run out of gas in the middle of the highway.
<u>Mary</u> learns that her husband cheated to win in the lottery.

Relevance	Implication	Coping	Normative Significance
<u>Novelty</u> (1) suddenness (2) familiarity (3) predictability (16) attention* (17) att. removal* <u>Intrinsic Pleasantness</u> (4) pleasant (5) unpleasant <u>Goal Relevance</u> (6) goal-related	<u>Causality: agent</u> (7) own responsibility (8) other's respons. (9) situational respons. <u>Goal conduciveness</u> (10) goal support <u>Outcome probability</u> (11) consequence antic-ipation <u>Urgency</u> (12) response urgency	<u>Control</u> (19) own control* (20) others' control* (21) chance control* <u>Adjustment</u> (13) anticipated acceptance (18) effort*	<u>Internal standards compatibility</u> (14) clash with own standards/ideals <u>External standards compatibility</u> (15) clash with laws/norms

Small Exercise Discussion

<u>Our</u> driver will run out of gas in the middle of the highway. *Anger fear surprise*

Relevance	Implication	Coping	Normative Significance
Novelty (1) suddenness (2) familiarity (3) predictability (16) attention* (17) att. removal* Intrinsic Pleasantness (4) pleasant (5) unpleasant Goal Relevance (6) goal-related	Causality: agent (7) own responsibility (8) other's respons. (9) situational respons. Goal conduciveness (10) goal support Outcome probability (11) consequence antic-ipation Urgency (12) response urgency	Control (19) own control* (20) others' control* (21) chance control* Adjustment (13) anticipated acceptance (18) effort*	Internal standards compatibility (14) clash with own standards/ideals External standards compatibility (15) clash with laws/norms

Recap
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Assignment 02
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Other Approaches
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Small Exercise Discussion

Mary learns that her husband cheated to win in the lottery.

Relevance	Implication	Coping	Normative Significance
Novelty (1) suddenness (2) familiarity (3) predictability (16) attention* (17) att. removal* Intrinsic Pleasantness (4) pleasant (5) unpleasant Goal Relevance (6) goal-related	Causality: agent (7) own responsibility (8) other's respons. (9) situational respons. Goal conduciveness (10) goal support Outcome probability (11) consequence anticipation Urgency (12) response urgency	Control (19) own control* (20) others' control* (21) chance control* Adjustment (13) anticipated acceptance (18) effort*	Internal standards compatibility (14) clash with own standards/ideals External standards compatibility (15) clash with laws/norms

(handwritten annotations in pink: "Sadness, Surprise, anger (fear)"; circles around (8) other's respons., (20) others' control, (14) clash with own standards/ideals, (6) goal-related; underline near (15) laws/norms)*

Recap
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Research Questions

Troiano, Oberlaender, Klinger, 2023: Dimensional Modeling of Emotions in Text with Appraisal Theories: Corpus Creation, Annotation Reliability, and Prediction.
`https://dx.doi.org/10.1162/coli_a_00461`

- Can appraisals be annotated reliably?

- Do appraisals help emotion categorization?

Recap
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Other Approaches
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Approach
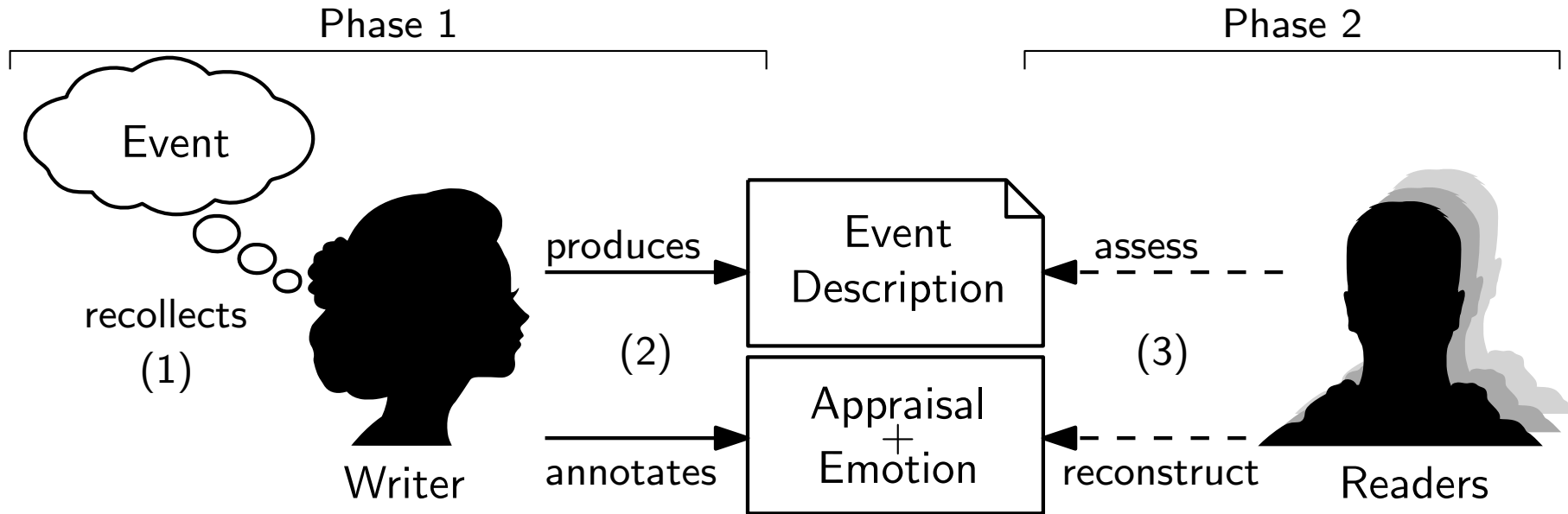
- Production: 550 event descriptions for anger, boredom, disgust, fear, guilt/shame, joy, pride, relief, sadness, surprise, trust, no emotion

Recap
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Questions and Answers

- Do readers agree more with each other than with the writers?
  (does the writer make use of information that the readers do not have)
  - Yes, a bit for emotions; clearly for the appraisals.
- Does it matter if annotators share demographic properties?
  - Females agree more with each other, but men less.
  - People of similar age agree more.
- Does personality matter?
  - Extraverted, conscientious, agreeable annotators perform better.

Setup:

- Filter instances for attribute, compare with F_1/RMSE
- Significance test with bootstrap resampling for .95 confidence interval

Examples (writer/reader/avg. writer–reader agreement as error)

- All writers/readers agree on emotion, high average appraisal agreement

  pride, .65   I baked a delicious strawyberry cobbler

  fear, .84   A housemate came at me with a knife

- All writers/readers agree on emotion, low average appraisal agreement

  disgust, 2.0   His toenails where massive

  fear, 2.1   I felt ... going in to hospital

- All readers agree on the emotion, but not with the writer, high appraisal agreement

  trust, joy, .87   I am with my friends

  anger, fear, 1.1   My waters broke early during pregnancy

- All readers agree on the emotion, but not with the writer, low appraisal agreement

 pride, sadn., 1.7   That I put together a funeral service for my Aunt

Appraisals add additional information to emotion analysis

That I put together a
funeral service for my Aunt

Dimension	Writer	Readers	Δ
Emotion	Pride	Sadness	
Suddenness	4	3.6	0.4
Familiarity	1	2.0	−1.0
Predictability	1	1.8	−0.8
Pleasantness	4	1.0	3.0
Unpleasantness	2	4.8	−2.8
Goal-Relevance	4	2.6	1.4
Chance-Resp.	4	4.4	−0.4
Self-Resp.	1	1.2	−0.2
Other-Resp.	1	1.4	−0.4
Conseq.-Predict.	2	1.8	0.2
Goal Support	1	1.2	−0.2
Urgency	2	3.8	−1.8
Self-Control	5	3.2	1.8
Other-Control	3	2.0	1.0
Chance-Control	1	4.6	−3.6
Accept-Conseq.	4	2.4	1.6
Standards	1	2.4	−1.4
Social Norms	1	1.2	−0.2
Attention	4	4.4	−0.4
Not-Consider	1	3.8	−2.8
Effort	4	4.6	−0.6

Modeling Results

- Classification with RoBERTa-based models

- Appraisal Classification: 75 F_1

- Emotion classification: 59 F_1

- + Appraisals: +2pp F_1
  (+10 for guilt, +6 for sadness)

- + Personality and demographics:
  +3pp F_1
  (ongoing work)
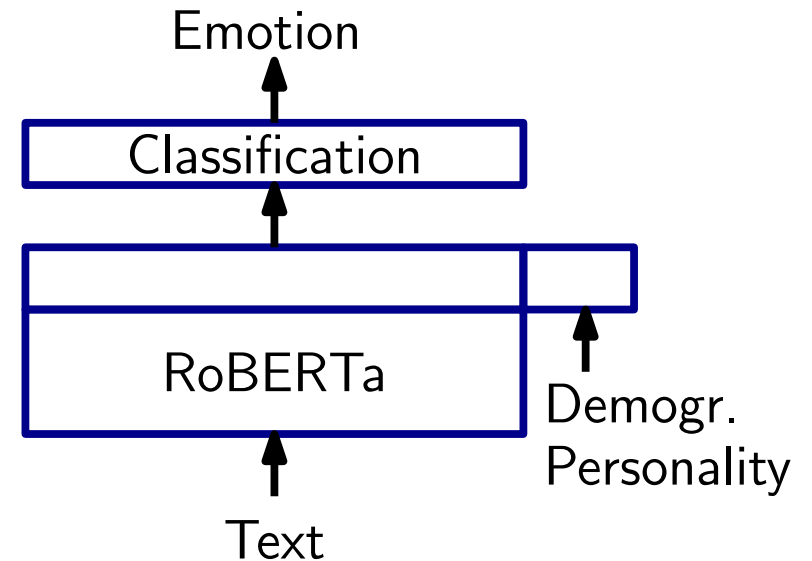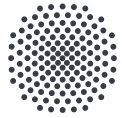
Examples where Appraisals correct the Emotion Classifier

- When my child settled well into school

  trust→relief

- broke an expensive item in a shop accidently

  guilt→shame

- my mother made me feel like a child

  shame→anger

- I passed my Irish language test

  pride→relief

- His toenails where massive

  pride→disgust

Recap
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Assignment 02
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Other Approaches
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Take Away

- Other Appraisal-motivated approaches
- Appraisal Theories according to Smith/Ellsworth and Scherer
- Text-classification methods that consider these theories