



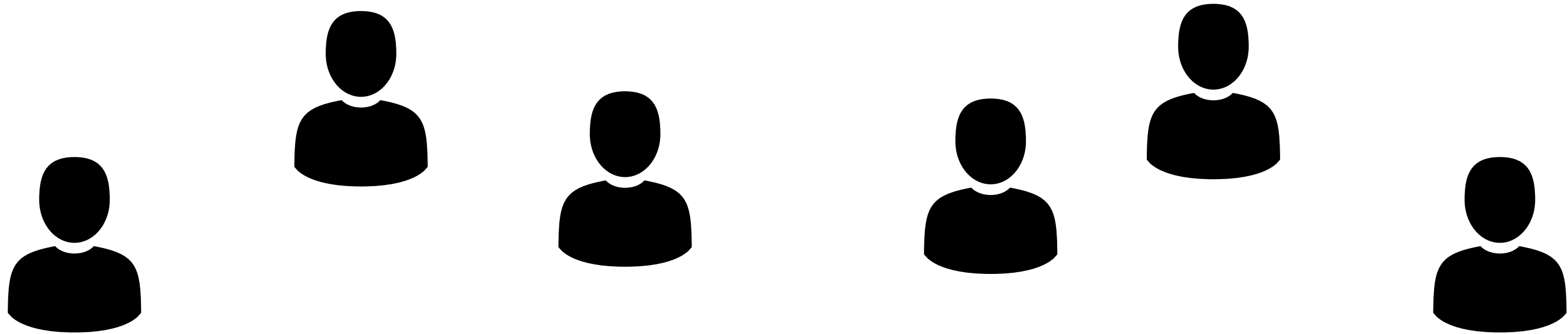
Attitude Analysis: a linguistic-based task for detailed position detection in texts

Jorge Ortiz Fuentes

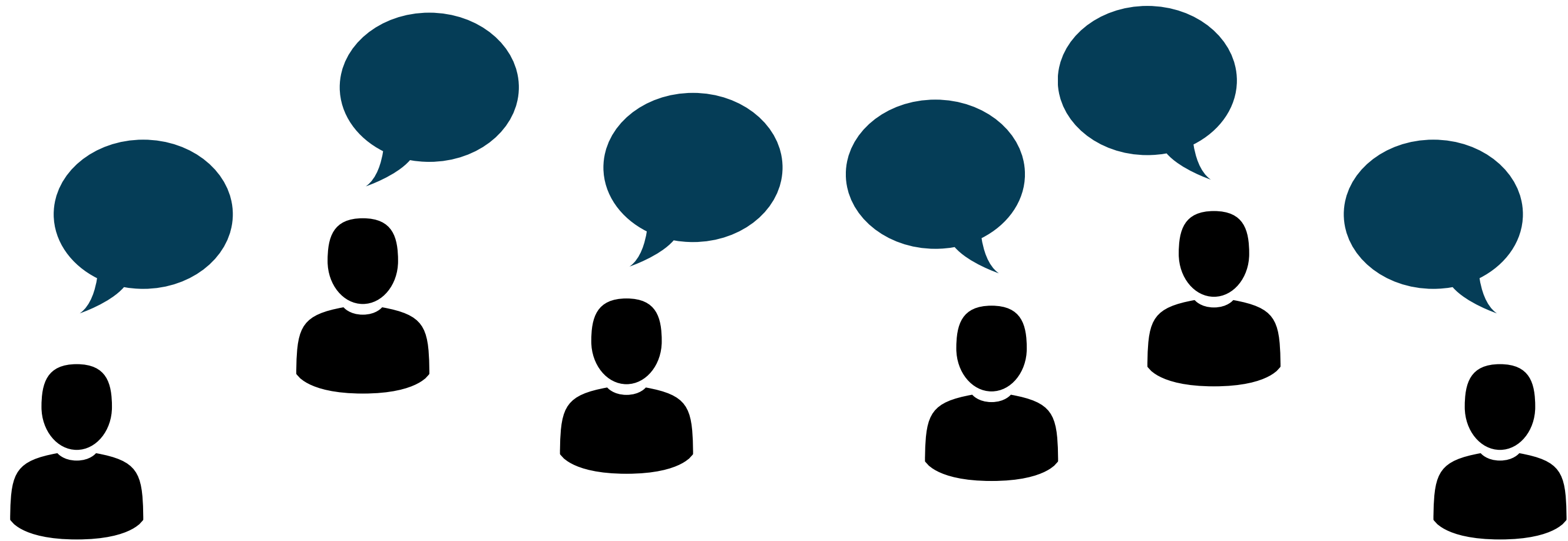
Overview

- 1 Problem
- 2 Some approaches
- 3 Main goals
- 4 Methodology
- 5 Contributions

Problem



Problem



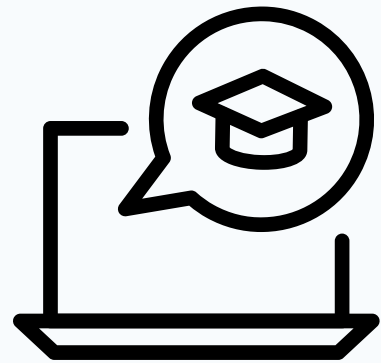


Language is a social behavior

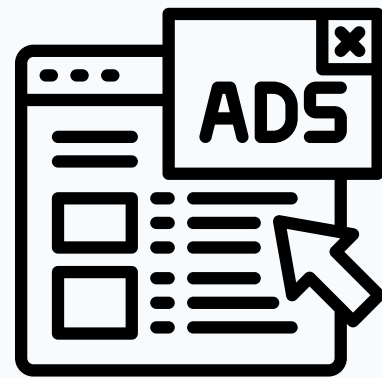
(HALLIDAY, 1978)



Interdisciplinary relevance



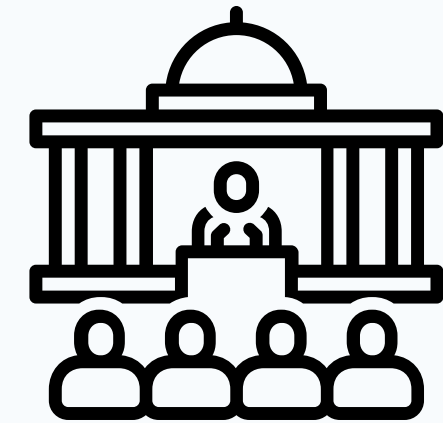
EDUCATION



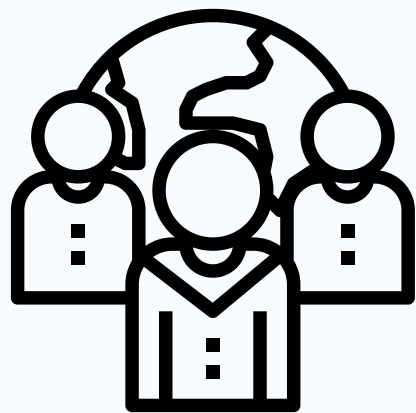
MARKETING



MEDICINE



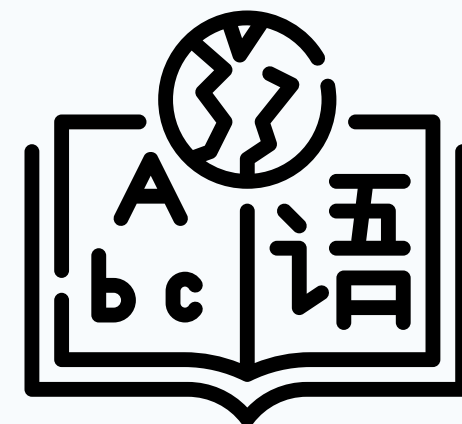
POLITICS



SOCIOLOGY



PSYCHOLOGY

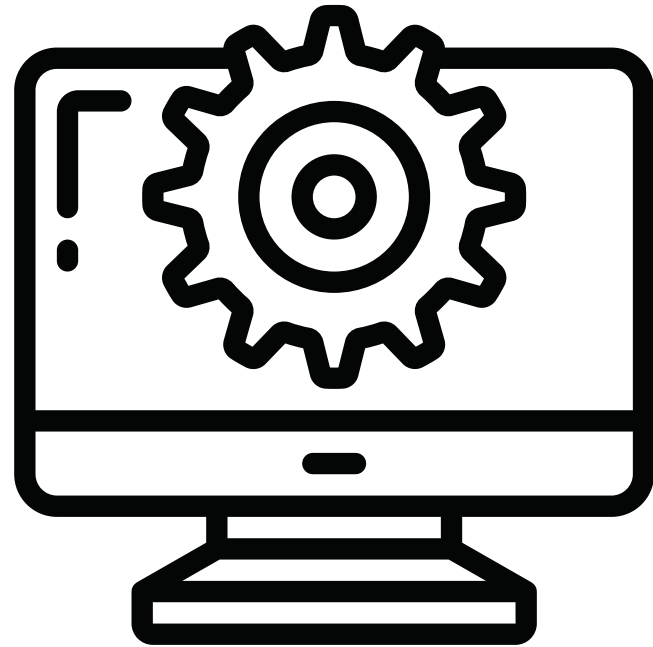


LINGUISTICS



SOCIAL MEDIA

Approaches



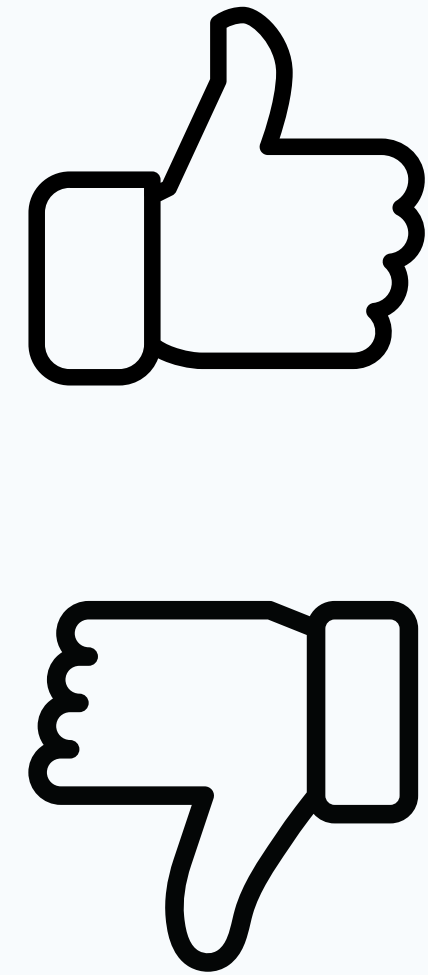
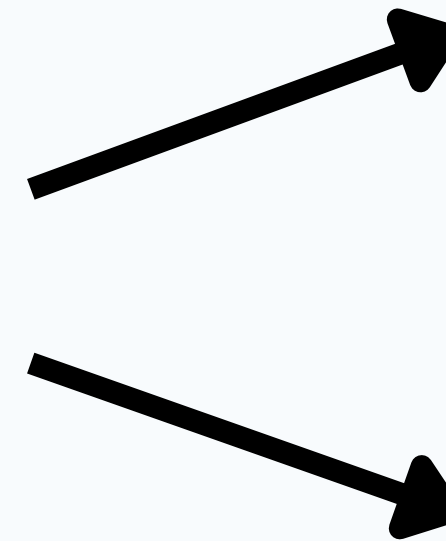
**COMPUTER
SCIENCE**



LINGUISTIC

Computational approaches

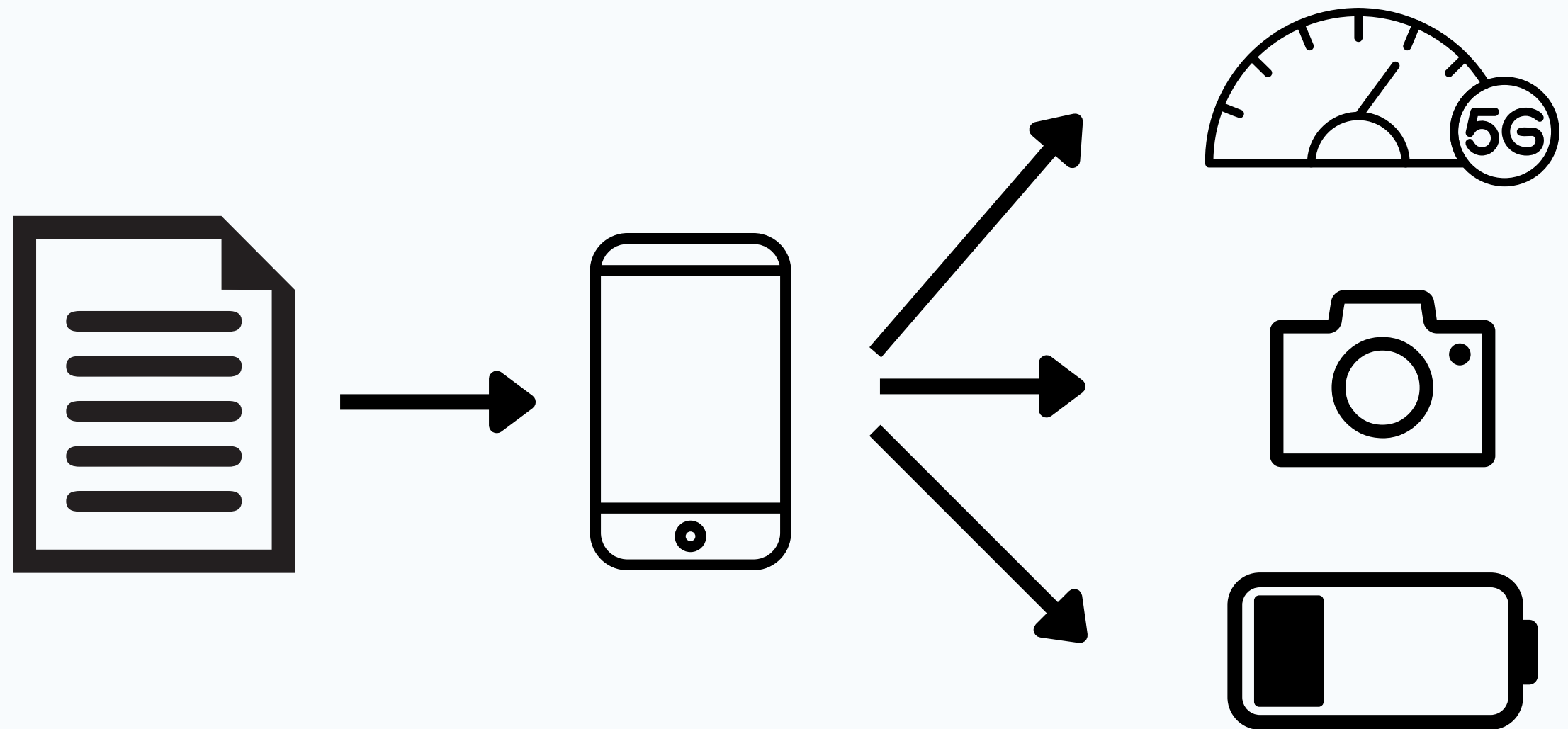
**SENTIMENT
ANALYSIS**



(JURAFSKY & MARTIN, 2019)

Computational approaches

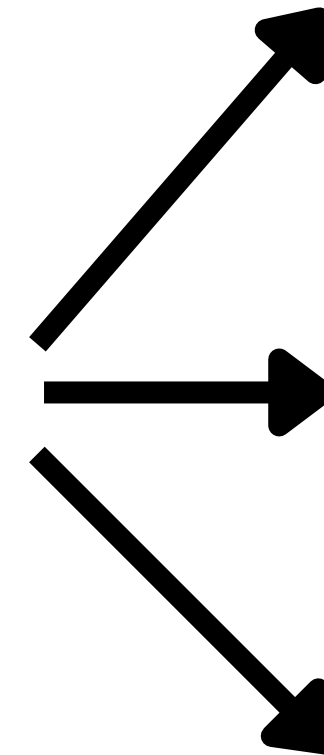
**ASPECT
BASED
SENTIMENT
ANALYSIS**



(PAVLOPOULOS, 2014)

Computational approaches

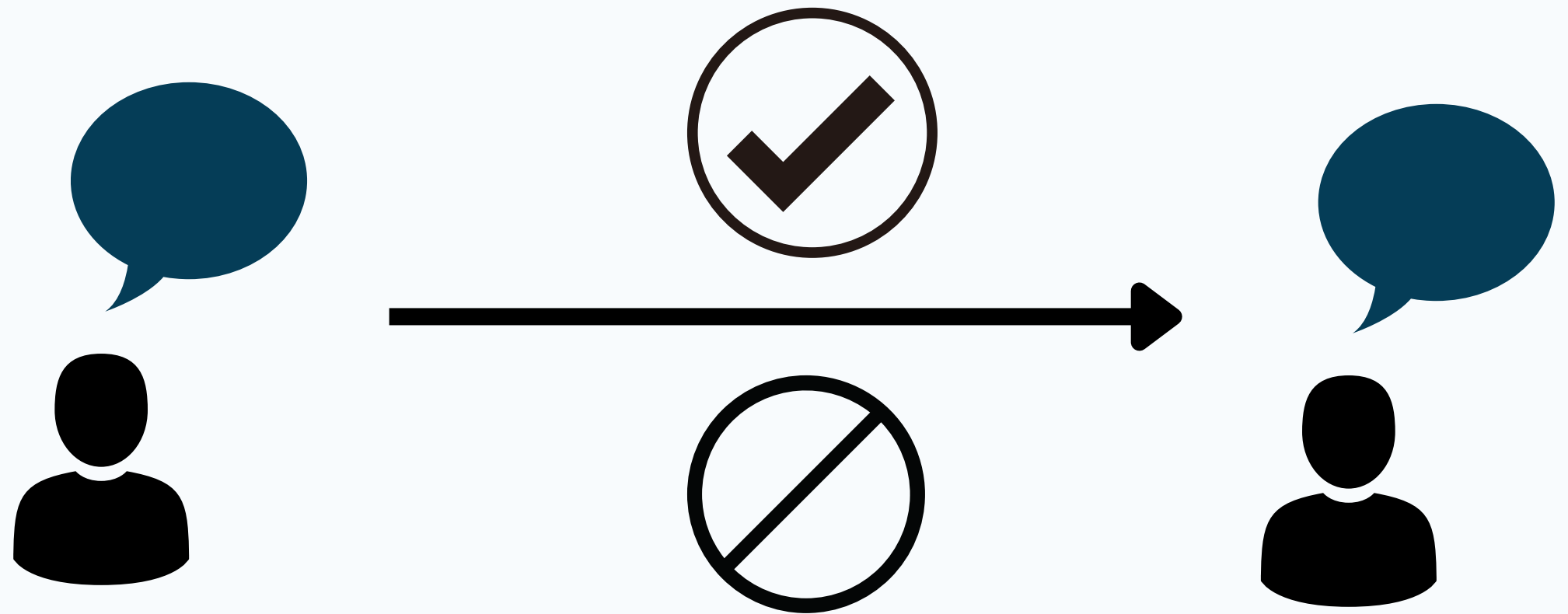
**TARGET
DEPENDENT
SENTIMENT
ANALYSIS**



(JIANG ET AL, 2011)

Computational approaches

**STANCE
DETECTION**



(MOHAMED, ET AL, 2016)

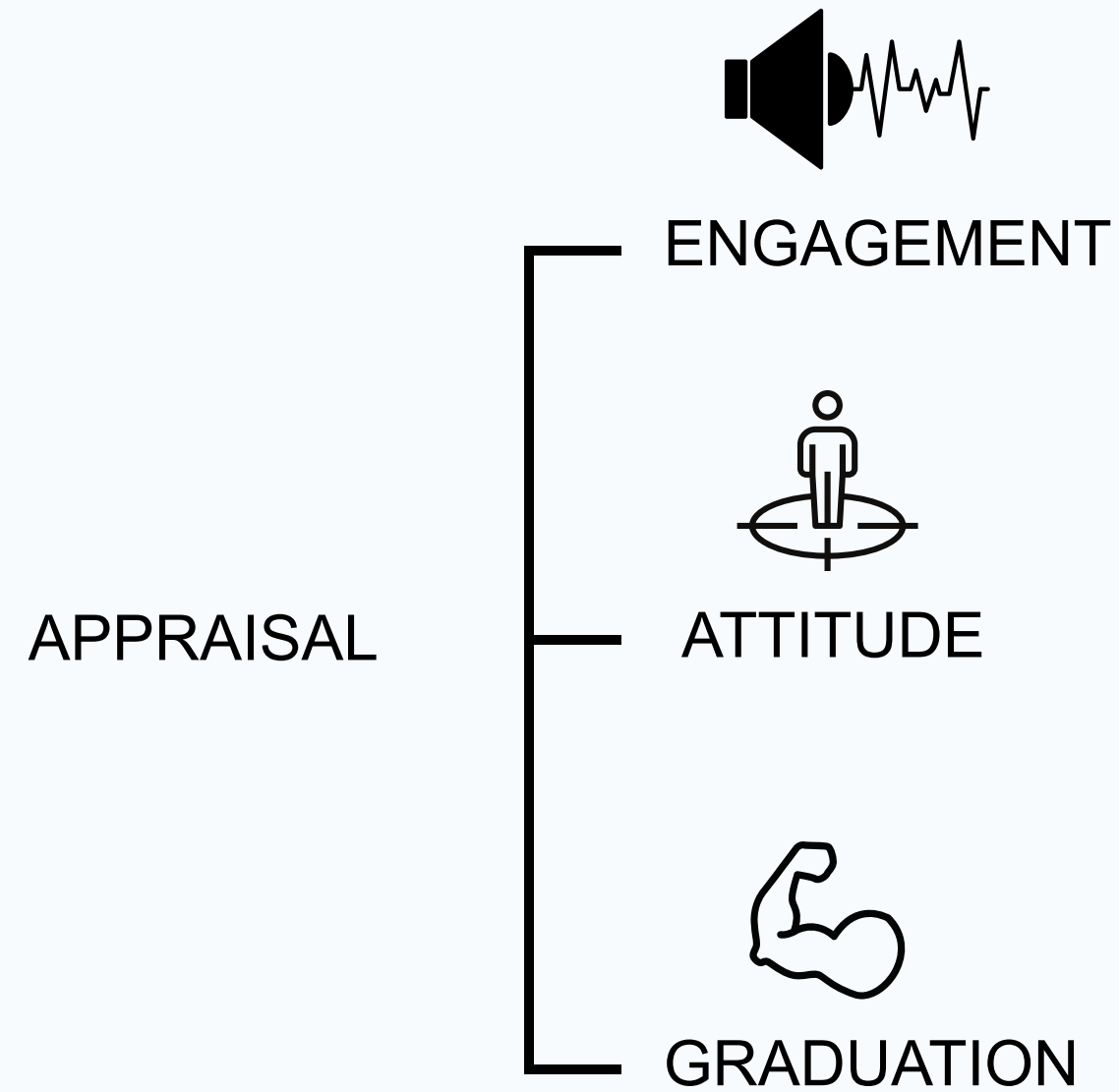
A linguistic approach

**INTER-
PERSONAL
MEANINGS**

(MARTIN & WHITE, 2005)

A linguistic approach

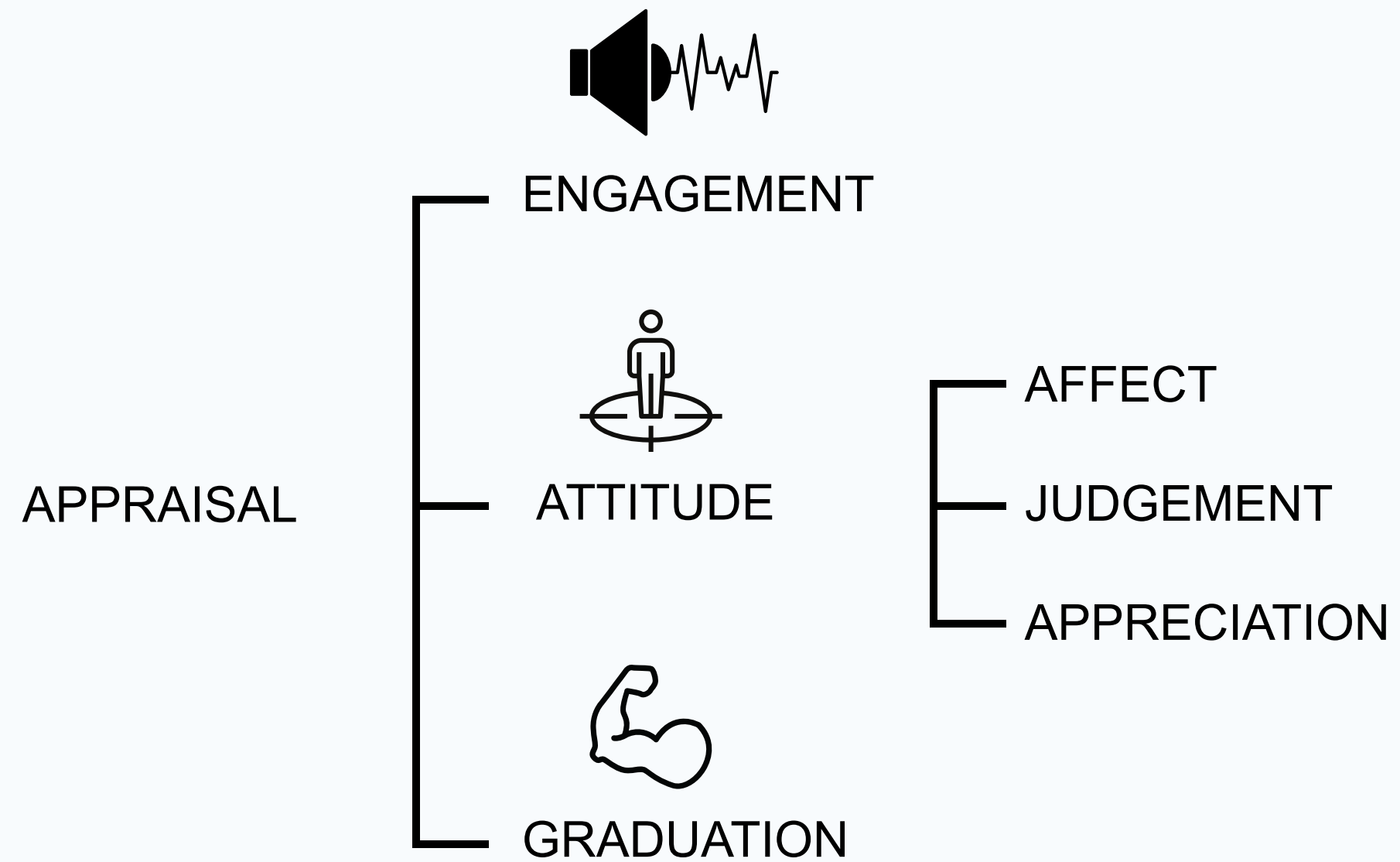
INTER- PERSONAL MEANINGS



(MARTIN & WHITE, 2005)

A linguistic approach

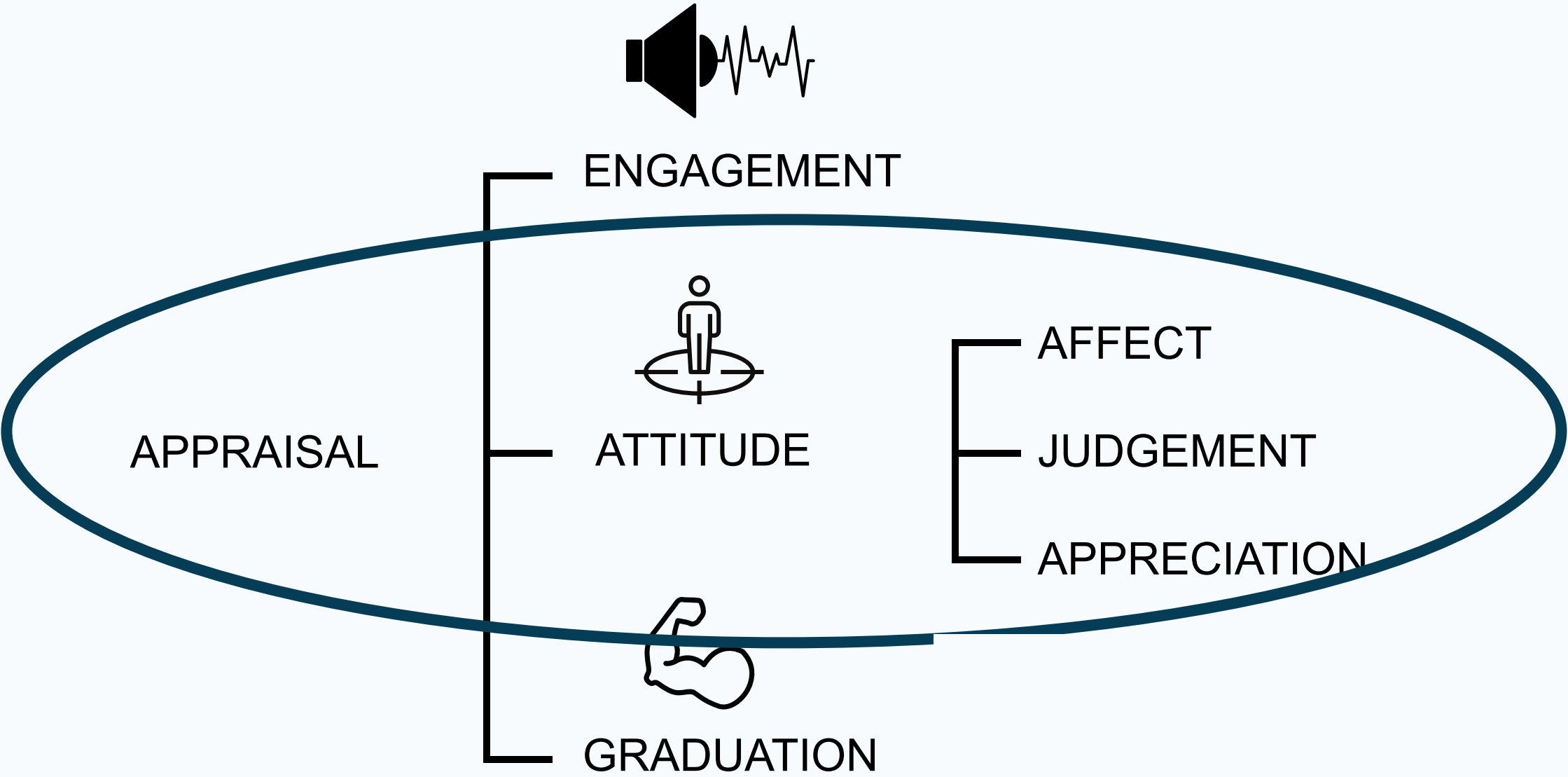
INTER- PERSONAL MEANINGS



(MARTIN & WHITE, 2005)

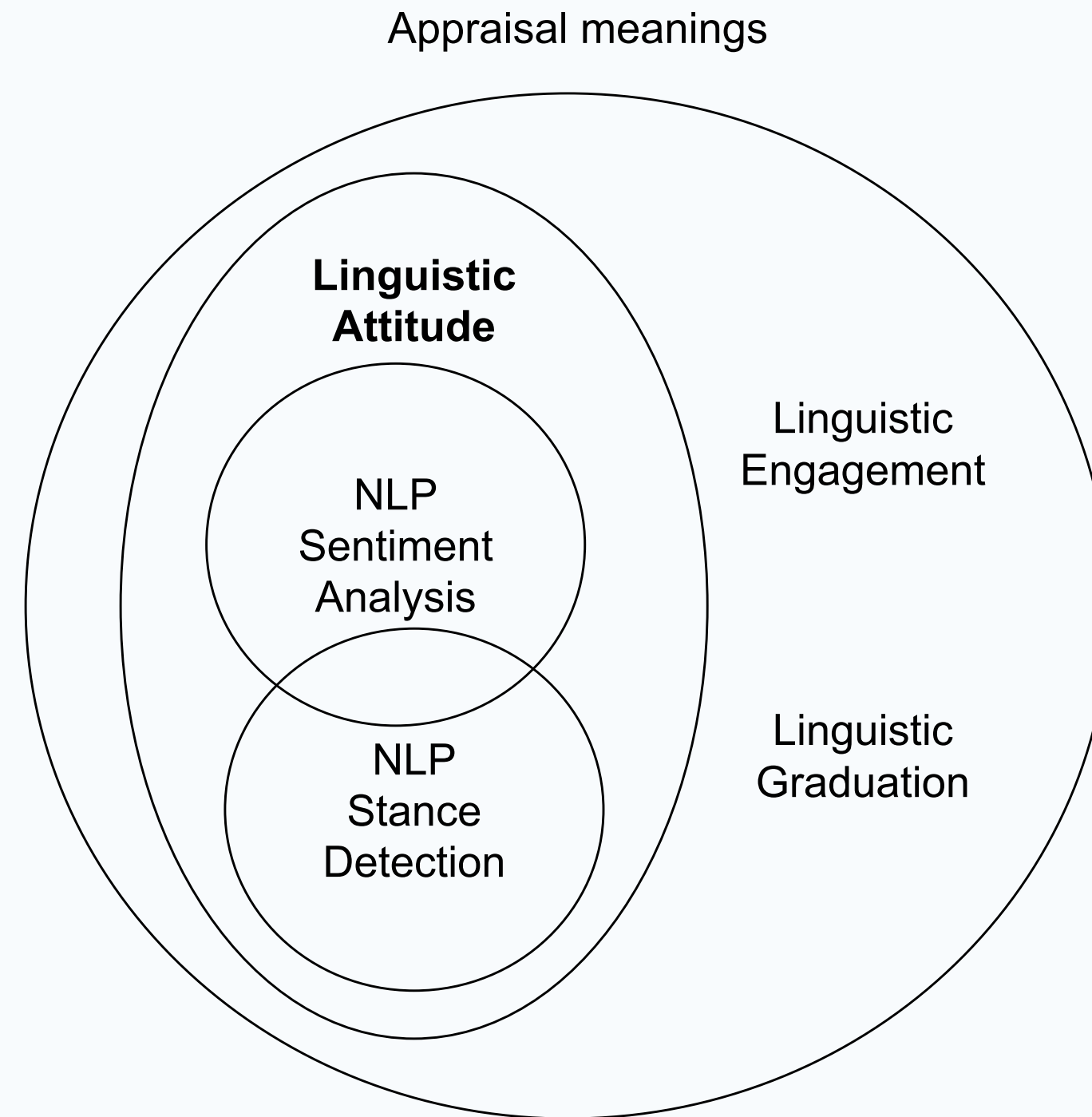
A solution: Attitude analysis

**INTER-
PERSONAL
MEANINGS**



(MARTIN & WHITE, 2005))

A comparison of all perspectives



A comparative

Analysis

Sentiment Analysis

**Aspect Based Sentiment
Analysis**

**Target Dependent
Sentiment Analysis**

Stance Detection

A comparative

Analysis	Unit of analysis
Sentiment Analysis	texts, sentences, groups/phrases (indistinctly)
Aspect Based Sentiment Analysis	semantic aspects
Target Dependent Sentiment Analysis	nominal groups/phrases
Stance Detection	texts, sentences, groups/phrases (indistinctly)

A comparative

Analysis	Unit of analysis	Problems	
		Grammatical ambiguity	
Sentiment Analysis	texts, sentences, groups/phrases (indistinctly)	x	
Aspect Based Sentiment Analysis	semantic aspects	x	
Target Dependent Sentiment Analysis	nominal groups/phrases		
Stance Detection	texts, sentences, groups/phrases (indistinctly)	x	

A comparative

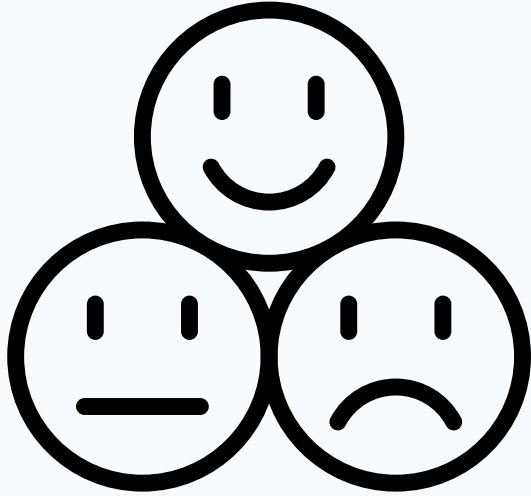
Analysis	Unit of analysis	Problems	
		Grammatical ambiguity	Semantic ambiguity
Sentiment Analysis	texts, sentences, groups/phrases (indistinctly)	x	x
Aspect Based Sentiment Analysis	semantic aspects	x	x
Target Dependent Sentiment Analysis	nominal groups/phrases		x
Stance Detection	texts, sentences, groups/phrases (indistinctly)	x	x

Attitude analysis

APPRECIATION



AFFECT



JUDGMENT



Unit of analysis: TEXT

NOMINAL GROUPS

CLAUSES

**EVALUATIVE
PROSODIES**

Unit of analysis: TEXT

NOMINAL GROUPS

CLAUSES

EVALUATIVE

PROSODIES

La sensación mayoritaria apunta a años de abusos, de una clase política incompetente que no supo estar a la altura de los desafíos, incapaz de valorar la importancia de la palabra empeñada y de responder a las urgencias ciudadanas con visión de país. El mensaje de la gente hacia los políticos es claro: no les creen nada, no hay confianza en ellos, sean del sector político que sean.

Unit of analysis: TEXT

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Unit of analysis: TEXT

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CLAUSES

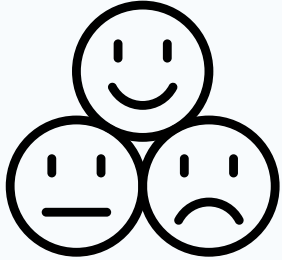
EVALUATIVE
PROSODIES

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Types of Attitude

ATTITUDE

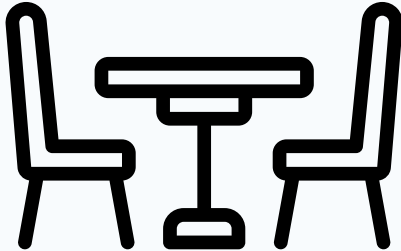
AFFECT



JUDGEMENT



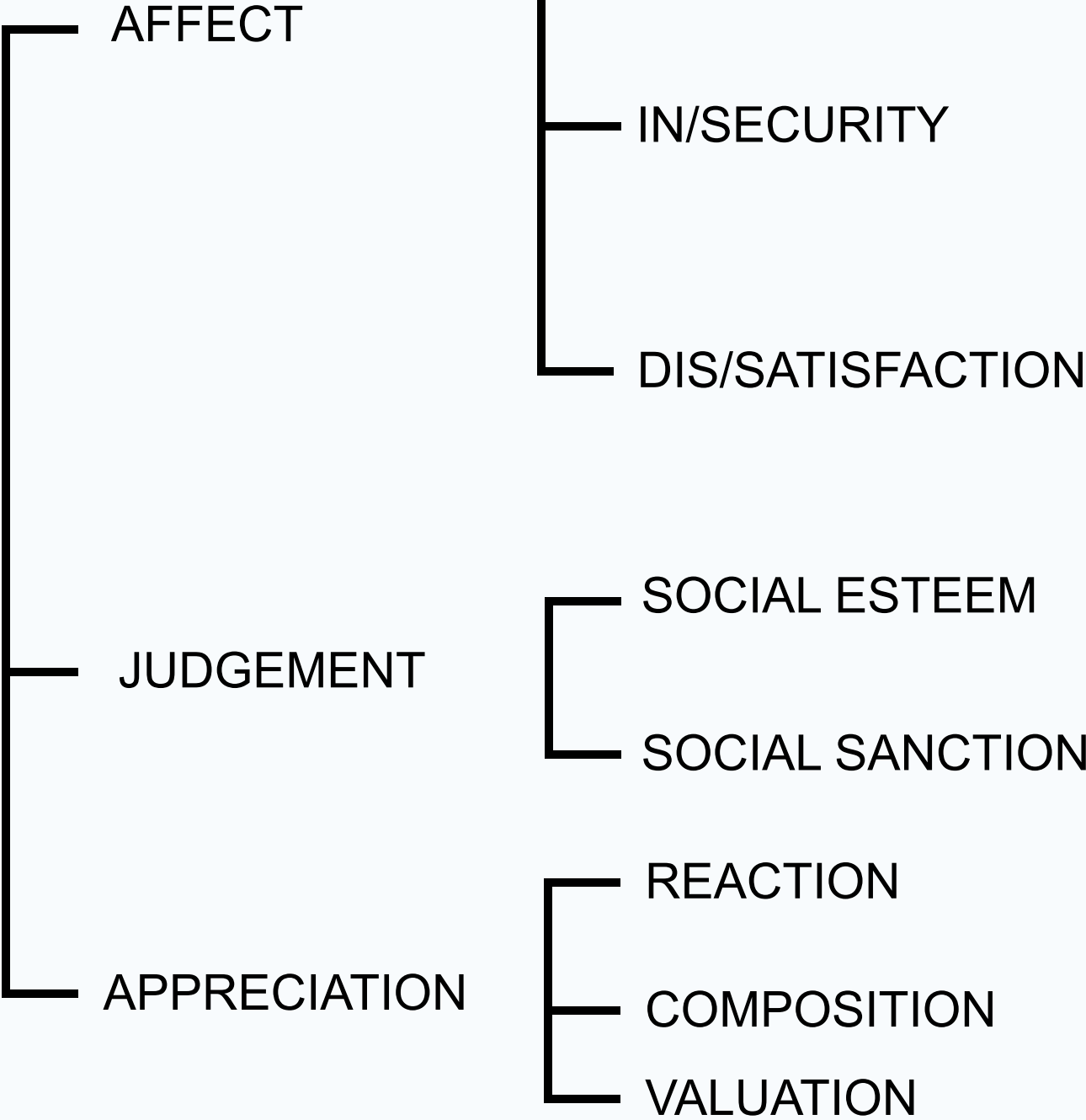
APPRECIATION



(MARTIN & ROSE, 2007)

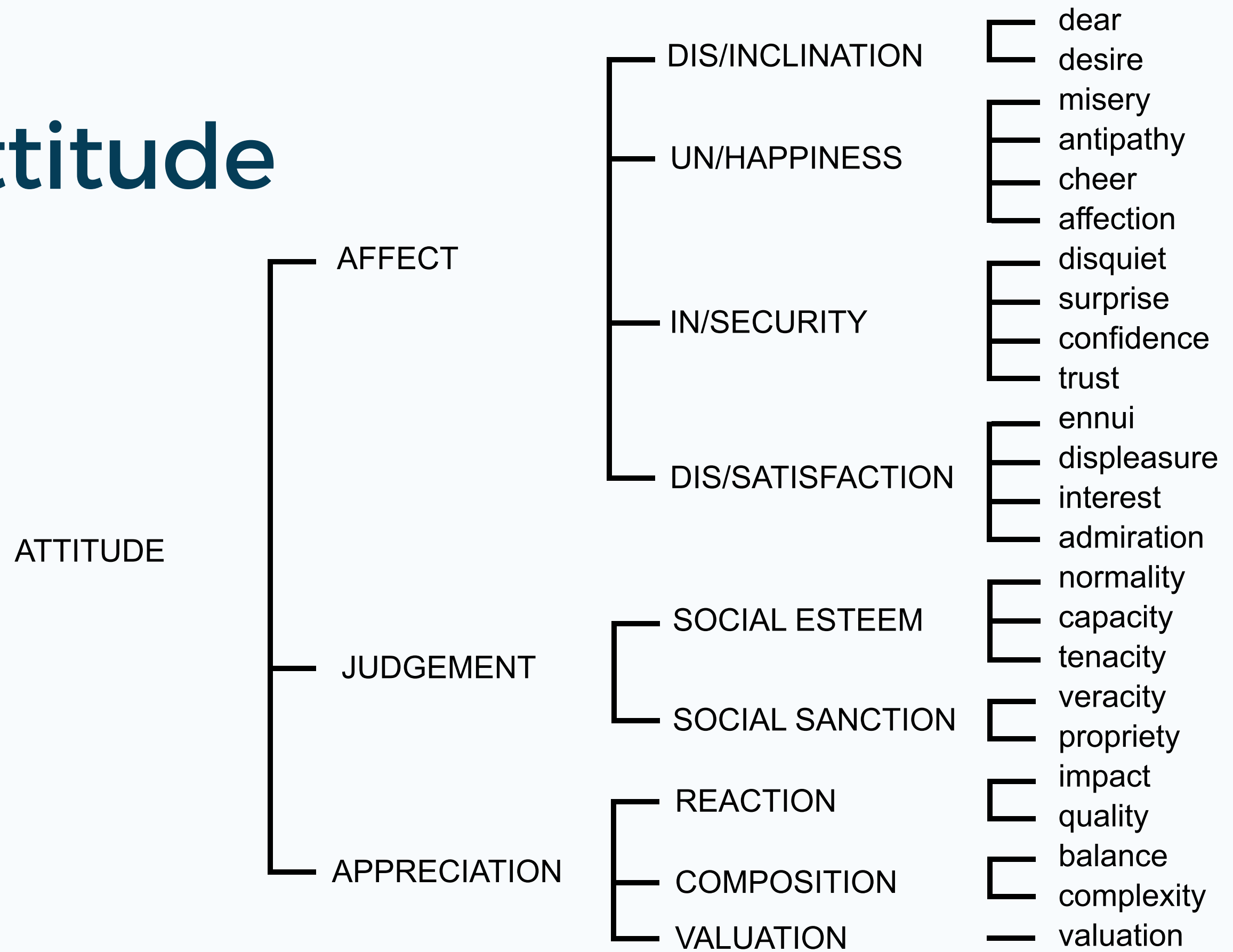
Types of Attitude

ATTITUDE



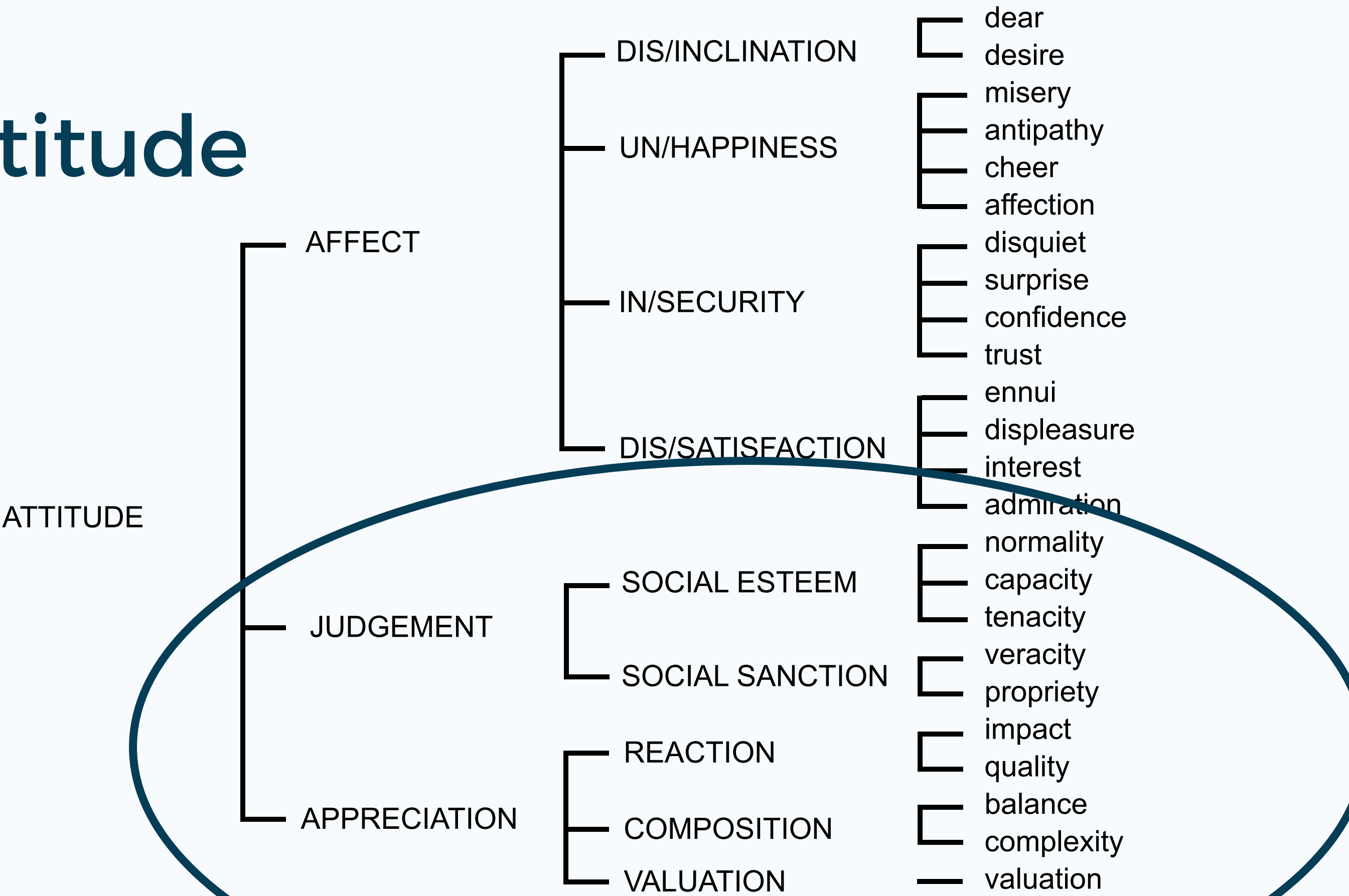
(MARTIN & ROSE, 2007)

Types of Attitude



(MARTIN & ROSE, 2007)

Types of Attitude



(MARTIN & ROSE 2007)

Types of Attitude

Judgment type	Negative (criticize)	Positive (admire)
Normality	unlucky, hapless... peculiar, eccentric...	lucky, fortunate... normal, natural...
Capacity	mild, weak... Incompetent, unaccomplished...	powerful, vigorous... competent, accomplished...
Tenacity	timid, cowardly... rash, impetuous	brave, heroic... cautious, patient
Veracity	dishonest, lying... deceptive, manipulative...	truthful , honest... candid, direct...
Propriety	bad, immoral... rude, discourteous...	good, moral... polite, respectful...

(MARTIN & ROSE, 2007)

Main goals

- 1** To build a corpus of different registers in Chilean Spanish with nominal groups labeled according to the Attitudes system.
- 2** To automate the Attitude analysis in nominal groups in Chilean Spanish texts.

Methodology

- 1 Corpus selection
- 2 Labeling
- 3 Computational automation

Corpus selection

Source	Texts
Letters	60,027
News	864,812
Opinions	156,703
Claims	31,219
Top Tweets	2,025,271
Random Tweets	9,963,572
Wikipedia	1,773,582

TEXT SELECTION BY KEYWORDS

- From bibliography
- Dictionaries of synonyms and antonyms
- Synonyms using word2vec
- Expert suggestions

Labeling

el gobierno de irán considera que la homosexualidad es un

NOMINAL_GROUP

NOMINAL_GROUP

NOMINAL_GROUP

PROPRIETY

NEGATIVE

comportamiento antinatural e inmoral

Computational automation

- 1 LSTM
- 2 Transformer
- 3 Generative language models

Contributions

- 1 First formalization of an analysis of SFL as a NLP task that sets precedents for future work.
- 2 Public models for linguists or discourse analysts to analyze the attitude system of texts in Chilean Spanish automatically

Acknowledgments to

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