Guidelines for Annotating Implicit Sentiment Evoked by Fine-grained News Events

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Chapter 1

Introduction

Newspapers are generally seen as institutions for collecting and distributing news, i.e. factual information about what is happening in the world. Journalists and media distributors mark a clear distinction between opinions and facts, for instance by dedicating a specific part of a newspaper to opinion pieces or columns by individuals, not by the editorial board. Nevertheless, newspapers do contain more than factual information alone. As shown by a survey study among journalists by Beckers (2017), *vox pops*[1] are growing practice in the news as a way to increase audience involvement and represent public opinion.

Factual utterances can express sentiment as well, be it indirectly by either specific language use (i.e. words that activate emotional values), or by the sentiment certain events evoke through cultural or personal emotional connection. While journalists intend to maximize the use of objective or neutral language, they may use quotations or framing strategies to make their (personal) viewpoints known. Irrespective of potential framing, when consuming news readers may infer a positive or negative impression of an event or topic based on world knowledge, cultural background, historical context or even personal experiences. Such text spans are known as "statements or phrases that describe positive or negative factual information about something without conveying a private state" (Wilson, 2008, p. 2741). Later, Toprak et al. (2010) coined the term "polar facts" to refer to such statements, a term also adopted by Van de Kauter et al. (2015), who elaborated guidelines to identify polar facts in factual data. The latter validated this theory by demonstrating a high inter-rater agreement for the annotation of polar facts in Dutch and English financial newswire text.

According to Lei et al. (2014), news articles evoke certain emotions within their readers. Driven by this premise, the researchers built an emotion lexicon from Chinese news articles that were manually tagged for emotions, such as "touching", "boredom", "anger", and "warmness". In 1997 already, Johnston and Davey experimentally demonstrated that people who were exposed to negative news events experienced increased anxiety and sadness levels, which also intensified their personal worries. A similar experiment by Boukes and Vliegenthart (2017) revealed that consuming hard news (e.g. news focusing on crime, politics, societal causes,...) has a negative effect on the development of news consumers' well-being over time. In fact, news articles entitled "Wrong-Way Truck Accident Leaves 4 Dead" are likely to evoke a negative sentiment (i.e. feelings of sorry, sadness,...) within their readers. By contrast, the title "3,716 extra staff for care and welfare sector", will most likely be read as positive and encouraging news.

One of the reasons why the above is interesting from a research perspective, is that, when looking at the way citizens consume news, one can observe a (partial) shift to online news consumption

[1] A term that originates from the Latin "Vox populi" meaning 'voice of the people'.

(i.e. via the online channels of the official news distributors such as their website and social media accounts). This alternative media landscape assigns much more responsibility to citizens, who select from a wide variety of news sources, distributors and topics. Recommendation algorithms do part of the work by filtering, out of the extensive offer of information, news that sparks citizens' interest. Most commonly, such algorithms apply collaborative filtering techniques, which recommend news articles based on users' past reading behaviour and similar interests in their network. A detrimental side effect of this interplay between algorithms and user behaviour, is that it may lead to a less diverse news consumption, a phenomenon often referred to as the "filter bubble" (Pariser, 2013).

A game changer in this respect are algorithms that use content diversity as the key driver for personalized news recommendation. When aiming for automatic content analysis, sentiment analysis is an essential method to get deeper insights and capture subjective information as well. The present guidelines were elaborated to annotate implicit sentiment evoked by specific events in hard news. With hard news we mean news covering topics which are more serious and urgent in nature, such as economics, politics, war and crime. With the resulting annotations, algorithms could be trained to predict which sentiment is most likely inferred by an unseen news event.

The present guidelines were developed in the framework of the #NewsDNA[2] research project funded by the Special Research Fund of Ghent University.

[2]https://www.ugent.be/mict/en/research/newsdna.

Chapter 2

News Events

Prior to defining implicit sentiment evoked by specific news events, we need to know how news events are defined and which event types to focus on. Colruyt et al. (2020) developed a dataset of Dutch news articles describing hard news (i.e. covering important topics in the public debate, such as politics, finance and economics, war and crime, as well as international news (Shoemaker and Cohen, 2006; Patterson, 2000; Tuchman, 1973). As part of their research, text spans that describe hard news events were annotated in news articles' titles and lead. The annotations were executed according to a novel set of guidelines for event annotation. We refer to Colruyt et al. (2019) for more details on the annotation process and illustrative examples.

The articles with annotated events were loaded in the web-based annotation tool WebAnno (Eckart de Castilho et al., 2016) as the starting point for our implicit sentiment annotations.

Screenshot A: Dutch annotated events in WebAnno.

As shown in screenshot A, for each news article (title + lead), the main and background event annotations were loaded as the starting point for the implicit sentiment annotations. As *main events* are considered text spans with new information which led to the article being written. Related events that are meant to place the main event in context are called *background events* (Colruyt et al., 2019). Although this information can help annotators in understanding the articles' content and context, this distinction does not affect the implicit sentiment annotation, hence no distinction should be made between main and background events.

Chapter 3

Implicit Sentiment Evoked by News Events

Sentiment analysis has a broader application range than detecting explicit sentiment clues in subjective texts. Objective utterances can contain words that activate emotions, or they may evoke a specific sentiment through cultural or personal emotional connection. This is illustrated in example 2; although the event (i.e. the entire sentence) does not contain any explicit subjectivity clue, it may well evoke a positive sentiment within its readers.

> **Ex. 1** *Volvo brengt een stukje Zweden naar België: alle werknemers kunnen half jaar geboorteverlof opnemen. (EN: Ghent Volvo workers to get same parental leave as colleagues in Sweden.)*

Such objective utterances of two kinds bring up the terminological confusion around sentiment and opinion. As pointed out by Liu (2015), the difference between the two is quite subtle, but dictionary definitions of both terms indicate that opinions represent a person's concrete view, whereas sentiments are more of a person's feeling. Although both are not completely independent of one another, it is worthwhile to mention this distinction to understand that implicit sentiment can be analyzed from the author's perspective (i.e. implicit opinions), as well as from the reader's (i.e. implicit sentiment). Research on implied opinions is prevalent in research areas including electoral politics (e.g. Bansal and Srivastava, 2018; Chiu and Hsu, 2018), political viewpoints and argumentation mining (e.g. Chen et al., 2010) and stock market predictions (e.g. Khedr et al., 2017), but it is also gaining research interest in typical user-generated content analysis, for instance to detect irony and sarcasm (e.g. Van Hee et al., 2018), and for analyzing newswire text.

Looking at the mere impact of news events on their audiences without having readers' reactions at hand, the current annotation scheme focuses on annotating implicit sentiment rather than implied opinions. According to Montoyo and Balahur (2008) and Balahur and Steinberger (2009), news texts contain *emotion triggers*; i.e. words that evoke specific emotions within the reader. Although such words may refer to generally known concepts or basic human needs (e.g. Maslow's (1943) human needs theory), their emotional connotation depends on the interpretation given by the readers' world knowledge, cultural background, and personal experiences. The researchers distinguish between emotion triggers that are likely to evoke similar sentiments within readers worldwide; such as "war", "child abuse" and "terror attacks", and triggers that are likely to be interpreted differently amongst readers. Example 2, for instance, may evoke less positive feelings within people working in other companies or employees at Volvo for whom this is not relevant (anymore).

Ding et al. (2018, p. 1) call such emotion triggers "affective events", i.e. activities or states that are typically positive or desirable and negative, hence undesirable. Examples of positive affective events are "I got engaged" and "I bought a house", whereas situations as "I have not eaten for 2 days" and "I woke up at 2 AM" are negative affective events. In addition to classifying events as positive or desirable and negative or undesirable, the researchers intend to predict the reason for such events being positive and negative. They introduced human need categories that explain people's motivations and desires, in accordance with Maslow's (1943) human needs theory.

For the current annotation task, we define implicit sentiment as the sentiment evoked by hard news events in news texts. The annotators are tasked to define implicit sentiment evoked by news events in the most general possible way, judged on their common sense and world knowledge. One additional instruction they are passed on is to read and interpret the news events in the dataset from a Western/European point of view, given that the data subject to these annotations were collected from Flemish[1] newspapers. The following chapter describes the consecutive steps in the annotation procedure.

[1]Dutch written and spoken in the northern part of Belgium.

Chapter 4

Annotation procedure

This chapter presents an overview of the annotation preparation and the consecutive annotation steps. More detailed information, how-tos and worked out annotation examples are included in the paragraphs below.

As a preparation step before making the sentiment annotations, the existing news event annotations should be checked and completed if necessary.

PREP: carefully read the entire document and check all pre-annotated events (annotated according to the guidelines by Colruyt et al. (2019)). Annotate any missing events.

After the preparation, the following annotation steps should be taken, starting with the first sentence of each document:

STEP 1: define, for each annotated event, the implicit sentiment it evokes.

STEP 2: indicate, inside the annotated event, the minimal text span that triggered or helped you define this implicit sentiment.

STEP 3: repeat STEP 2, but now consider the remainder of the sentence (i.e. excluding the event).

STEP 4: identify named entities.

STEP 5: continue with the next sentence and repeat steps 1 to 5.

4.1 Annotation preparation

Carefully read the entire document and focus on the annotated news events. Whenever events are missing in the document, annotate them yourself (this should be rare, however). Following the guidelines by Colruyt et al. (2019), two types of events exist: **main** and **background** events.

- The **main** event is the event that caused the reporter to write the article. It is the answer to the following question: "why was the article written?".

- **Background** events add context to or more information about the main event. Background events should only be annotated when they are specific (i.e. no hypotheses or irrealis events).

In example 2, the main and background events are underlined with a solid and dashed line, respectively.

> **Ex. 2** *Salah Abdeslam werd woensdag nog maar eens ondervraagd over zijn betrokkenheid bij de aanslagen in Parijs, vandaag extract twee jaar en twee dagen geleden*

If events are missing in the document, annotate them yourself via the event annotation layer in WebAnno.

> **Screenshot B:** Screenshot of Dutch annotated events in WebAnno.

In the above screenshot (identical to screenshot A), the following events are missing and should be annotated:

- Sentence 1: "wateroverlast"
- Sentence 3: "het charter met afspraken tussen de provincie en de lokale landbouwers werd onlangs ondertekend door de gemeentelijke landbouwraad"

Note
Keep in mind that all pieces of text referring to the same event should be annotated (these are co-referring events). This tip may help you to find missing events.

WebAnno HOW-TO

- Make sure the annotation layer 'Event clauses' is activated (screenshot C).
- Select the event that you wish to annotate (by using drag and drop or by double-clicking on a word) and indicate whether this is a main or background event. You can already indicate the event's implicit sentiment, but you can also do this in the next step (see later). Click 'clear' to save the annotation (screenshot D).
- Make the event annotation as complete as possible; i.e. including all words that are part of the event, also determiners.

Screenshot C: select the annotation layer 'Event clauses'.

Screenshot D: indicate whether the new event is a Main or Background event.

4.2 Annotation STEP 1: define implicit sentiment

When the preparation step is completed for at least a part of the corpus (try to work in batches of 5 to 10 documents), you can continue with the first annotation step.

Define, for each event, which sentiment it implicitly evokes out of four categories. Try to do this as intuitively as possible and by relying on world knowledge (from a Western/European point of view). Do not rely exclusively on lexical elements in the text.

Positive: the event mainly evokes a positive sentiment or feeling.

Negative: the event mainly evokes a negative sentiment or feeling.

Neutral: the event does not evoke a positive, nor a negative sentiment or feeling, it can be considered neutral.

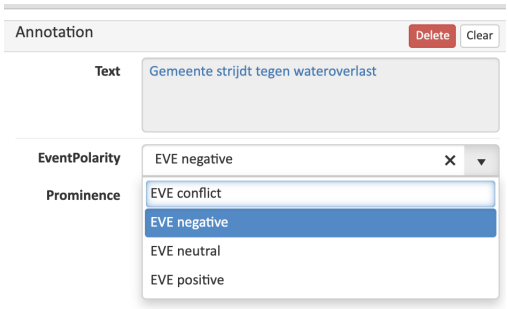
Conflict: it is unclear whether the event evokes a positive or a negative sentiment or feeling; it is ambivalent.

Note
Events with a conflict polarity evoke a sentiment that depends on personal interests or experiences of the annotator, or on political preferences (e.g. 'Brexit'). Bear in mind that the 'conflict' label should be used sparingly and, if possible, always prefer 'positive', 'negative' or 'neutral' above this label.

WebAnno HOWTO

- Make sure the annotation layer 'Event clauses' is activated and double-click on the event you wish to annotate (screenshot C).
- Select the appropriate sentiment label from the drop-down menu (screenshot E).

Screenshot E: annotate the event's implicit sentiment.



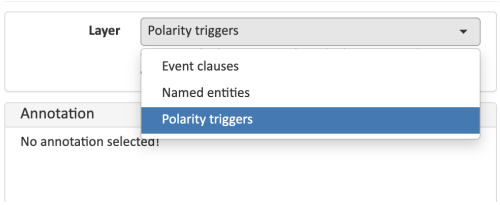
4.3 Annotation STEP 2: indicate text spans that trigger implicit sentiment

Next, annotate for each event the minimal word group or text span that triggered or helped you define the implicit sentiment of that event and explicitly link this text span to the event. Whenever irony is involved, you can flag this. Only consider the text span of the event itself in this step; sentiment triggers in the remainder of the sentence are annotated in STEP 3.

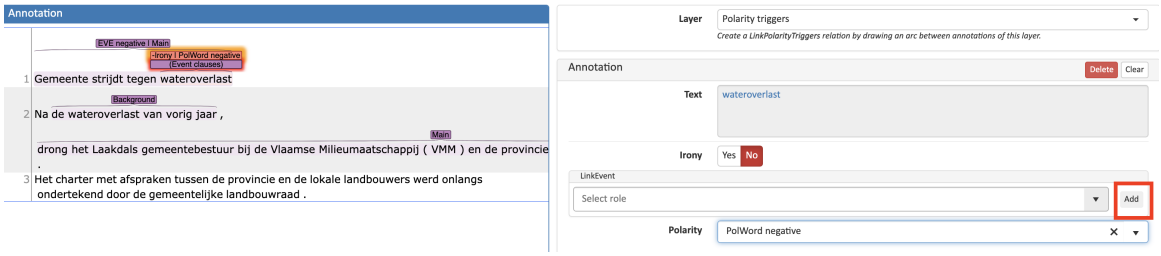
WebAnno HOWTO

- Activate the 'Polarity triggers' layer (screenshot F).
- Select sentiment triggers in the event by double-clicking on a word or by using drag and drop to select multi-word spans) and select the appropriate sentiment in the drop-down menu. Flag irony if present (screenshot G).
- Link the sentiment triggers to the relevant event by selecting 'LinkEvent' and by double-clicking on the respective event. WebAnno will automatically connect the two annotations with a dashed line (screenshots H and I).

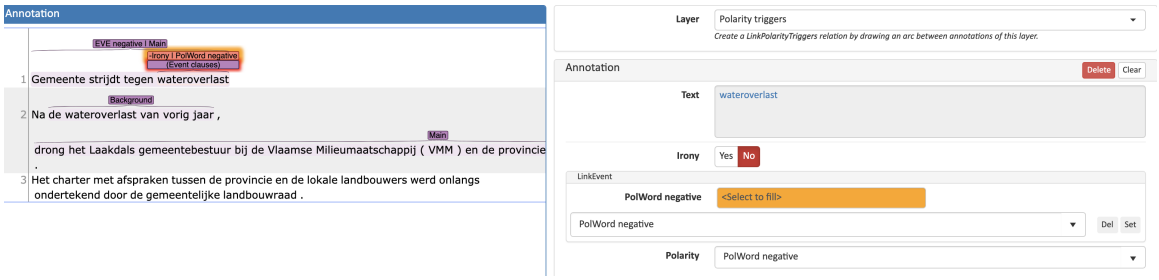
Screenshot F: activate the 'Polarity triggers' layer.



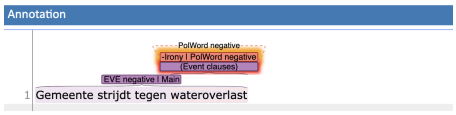
Screenshot G: annotate the sentiment trigger and flag irony if present. Click the 'add' button to link the sentiment trigger to its event.



Screenshot H: link the sentiment word to the relevant event.



Screenshot I: WebAnno will draw an arc (dashed line) between the sentiment trigger and its event.



If a sentiment trigger consists out of non-consecutive text spans, you can link them by drawing an arc between the two annotations (see worked out example 4).

4.4 Annotation STEP 3: repeat STEP 2 for the remainder of the sentence

Repeat the annotation steps explained in STEP 2 but now only consider the remainder of the sentence (i.e. excluding the event span).

4.5 Annotation STEP 4: identify named entities

Annotate named entities in the sentence and indicate their type (person, location, organization, product, event, miscellaneous) and implicit sentiment (positive, negative, neutral, conflict). Table 4.1 presents an overview of the named entity typology used for the present annotations.

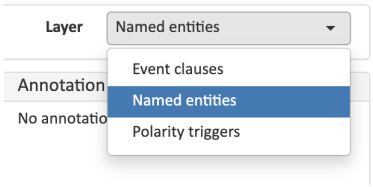
NE tag	Meaning	Examples
PER	Person	Anne, Jurafsky, Donald Trump, Lassy,...
LOC	Location	Great Britain, Europe, Soviet Union, Berlin Wall, Mount Everest, Eiffel Tower,...
ORG	Organization	Apple, Ghent University, The Louvre, NMBS, ACV, CD&V,...
EVE	Event	Gulf War, Olympic Games, Brexit, World War II, Tomorrowland,...
PRO	Product	Apple iMac, Paracetamol, Oscar, Nobel Prize, Herald of Free Enterprise,...
MISC	Miscellaneous	Rest category (to be used sparingly)

Table 4.1: Overview of named entity types with examples.

WebAnno HOWTO

- Activate the annotation layer 'Named entities' (screenshot J).
- Annotate the named entity (by double-clicking on a word or using drag and drop to select multi-word spans) and indicate the NE type and implicit sentiment in the drop-down menu (screenshot K).

Screenshot J: activate the 'Named entities' layer.

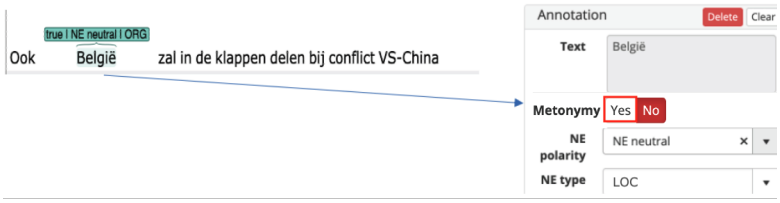


Screenshot K: annotate the NE type and sentiment. Flag metonymy if relevant.

Note

When a named entity is used as a metonym (e.g. "Belgium scored against Cyprus" → "Belgium" should be annotated as LOC, though it refers to the national soccer team), then 'Metonymy' should be flagged (screenshot L).

Screenshot L: annotate Named entities that are used as metonyms.



4.6 Annotation STEP 5: continue with the next sentence and repeat steps 1 to 5

Once a sentence annotation is completed, you can go on to the next sentence and repeat STEP 1 to STEP 5. Bear in mind that all documents should be prepared first. This means: all pre-annotated events should be checked first and missing ones should be annotated.

Chapter 5

Annotation Examples

This section presents some worked out annotation examples in WebAnno with detailed information per sentence.

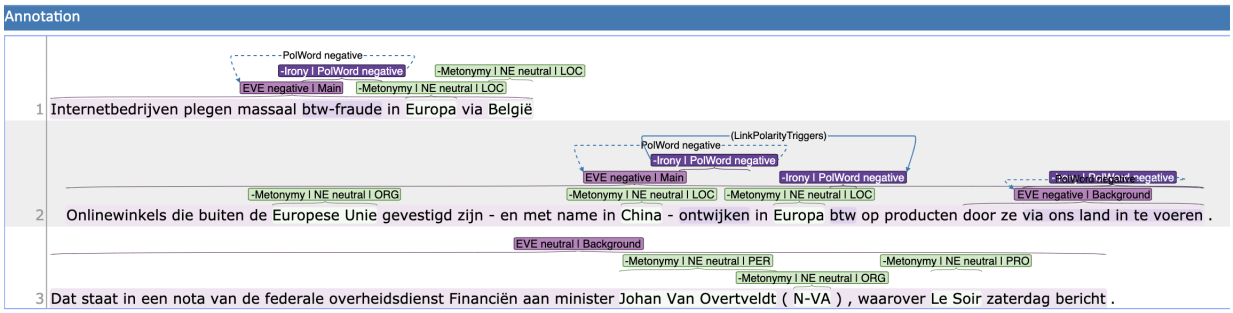
The following abbreviations are used in the below examples: EVE (event), ST (sentiment trigger), NE (named entity), Back. (background event), POS (positive), NEG (negative), NEU (neutral), CONF (conflict).

Ex. 3 worked out annotation example in WebAnno.

- EVE 1: "Gerecht zoekt moordenaar Julie (24)" → Main, NEG
- ST 1: "moordenaar" → not ironic, NEG
- NE 1: "Julie" → no metonymy, NEU, Person
- EVE 2: "Julie Quintens (24), een jonge kapster uit Tienen, is vermoord" → Main, NEG
- ST 2: "is vermoord" → not ironic, NEG
- NE 2: "Julie Quintens" → no metonymy, NEU, Person

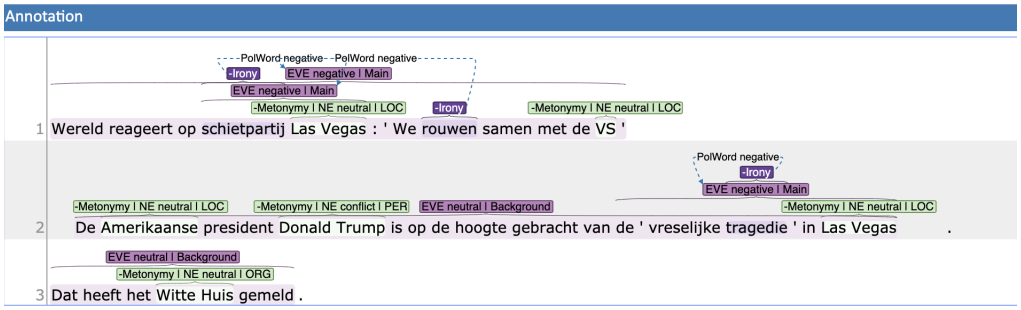
- NE 2: “Tienen” → no metonymy, NEU, Location
- EVE 3: “Het was de vader die (...) in haar appartement” → Back., NEG
- ST 3: “dood aantrof” → not ironic, NEG
- EVE 4: “Het parket doorzicht de flat het hele weekend lang” → Back., NEU
- EVE 5: “Voorlopig konden de speurders nog geen verdachte oppakken” → Back., NEU
- NE 6: “Julie” → no metonymy, NEU, Person

Ex. 4 worked out annotation example in WebAnno.



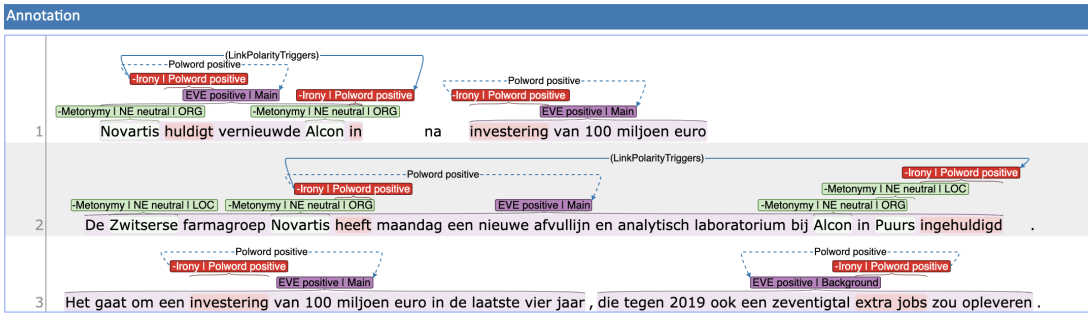
- EVE 1: “Internetbedrijven plegen massaal btw-fraude in Europa via België” → Main, NEG
- ST 1: “btw-fraude” → not ironic, NEG
- NE 1: “Europa” → no metonymy, NEU, Location
- NE 1: “België” → no metonymy, NEU, Location
- EVE 2: “Onlinewinkels die buiten de Europese Unie (...) in te voeren” → Main, NEG
- ST 2: “ontwijken + btw” → not ironic, NEG
- ST 2: “via ons land in te voeren” → not ironic, NEG
- NE 2: “Europese Unie” → no metonymy, NEU, Organization
- NE 2: “China” → no metonymy, NEU, Location
- NE 2: “Europa” → no metonymy, NEU, Location
- EVE 3: “Dat staat in een nota van (...) zaterdag bericht.” → Back., NEU
- NE 3: “Johan Van Overtveldt” → no metonymy, NEU, Person
- NE 3: “N-VA” → no metonymy, NEU, Organization
- NE 3: “Le Soir” → no metonymy, NEU, Product

Ex. 5 worked out annotation example in WebAnno.



- EVE 1: "Wereld reageert op schietpartij (...) met de VS"' → Main, NEG
- EVE 1: "schietpartij Las Vegas" → Main, NEG
- ST 1: "schietpartij" → not ironic, NEG
- ST 1: "rouwen" → not ironic, NEG
- NE 1: "Las Vegas" → no metonymy, NEU, Location
- NE 1: "VS" → no metonymy, NEU, Location
- EVE 2: "De Amerikaanse president Donald Trump (...) in Las Vegas." → Back., NEU
- EVE 2: "de 'vreselijke tragedie' in Las Vegas" → Main, NEG
- ST 2: "tragedie" → not ironic, NEG
- NE 2: "Amerikaanse" → no metonymy, NEU, Location
- NE 2: "Donald Trump" → no metonymy, CONF, Person
- NE 2: "Las Vegas" → no metonymy, NEU, Location
- EVE 3: "Dat heeft het Witte Huis gemeld." → Back., NEU
- NE 3: "Witte Huis" → no metonymy, NEU, Organization

Ex. 6 worked out annotation example in WebAnno.



- EVE 1: "Novartis huldigt vernieuwde Alcon in" → Main, POS

- ST 1: “huldigt + in” → not ironic, POS
- EVE 1: “investering van 100 miljoen euro” → Main, POS
- ST 1: “investering” → not ironic, POS
- NE 1: “Novartis” → no metonymy, NEU, Organization
- NE 1: “Alcon” → no metonymy, NEU, Organization
- EVE 2: “De Zwitserse farmagroep Novartis (...) in Puurs ingehuldigd.” → Main, POS
- PT 2: “heeft + ingehuldigd” → not ironic, POS
- NE 2: “Zwitserse” → no metonymy, NEU, Location
- NE 2: “Novartis” → no metonymy, NEU, Organization
- NE 2: “Alcon” → no metonymy, NEU, Organization
- NE 2: “Puurs” → no metonymy, NEU, Location
- EVE 3: “Het gaat om een investering (...) laatste vier jaar” → Main, POS
- EVE 3: “die tegen 2019 ook een zeventigtal extra jobs zou opleveren” → Back., POS
- ST 3: “investering” → not ironic, POS
- ST 3: “extra jobs” → not ironic, POS

Bibliography

Balahur, A. and R. Steinberger (2009). Rethinking sentiment analysis in the news: from theory to practice and back. *Proceeding of the 1st Workshop on Opinion Mining and Sentiment Analysis (WOMSA) 9*, 1–12.

Bansal, B. and S. Srivastava (2018). On predicting elections with hybrid topic based sentiment analysis of tweets. *Procedia Computer Science 135*, 346–353. The 3rd International Conference on Computer Science and Computational Intelligence (ICCSCI 2018) : Empowering Smart Technology in Digital Era for a Better Life.

Beckers, K. (2017, 01). Vox pops in the news: The journalists' perspective. *Communications 43*(1), 101–111.

Boukes, M. and R. Vliegenthart (2017, 07). News consumption and its unpleasant side effect: Studying the effect of hard and soft news exposure on mental well-being over time. *Journal of Media Psychology 29*, 137–147.

Chen, B., L. Zhu, D. Kifer, and D. Lee (2010). What is an opinion about? exploring political standpoints using opinion scoring model. In *Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence*, AAAI'10, pp. 1007–1012. AAAI Press.

Chiu, S.-I. and K.-W. Hsu (2018). Predicting political tendency of posts on facebook. In *Proceedings of the 2018 7th International Conference on Software and Computer Applications*, ICSCA 2018, New York, NY, USA, pp. 110–114. Association for Computing Machinery.

Colruyt, C., O. De Clercq, and V. Hoste (2019). Eventdna : guidelines for entities and events in dutch news texts (v1.0).

Colruyt, C., O. De Clercq, and V. Hoste (2020). EventDNA: a dataset for Dutch news event extraction as a basis for news diversification. Manuscript under review.

Ding, H., T. Jiang, and E. Riloff (2018). Why is an event affective? classifying affective events based on human needs. In *AAAI Workshops*, pp. 8–15.

Eckart de Castilho, R., É. Mújdricza-Maydt, S. M. Yimam, S. Hartmann, I. Gurevych, A. Frank, and C. Biemann (2016). A web-based tool for the integrated annotation of semantic and syntactic structures. In *Proceedings of the Workshop on Language Technology Resources and Tools for Digital Humanities (LT4DH)*, Osaka, Japan, pp. 76–84. The COLING 2016 Organizing Committee.

Johnston, W. and G. Davey (1997, 03). The psychological impact of negative tv news bulletins: The catastrophizing of personal worries. *British journal of psychology (London, England : 1953) 88 (Pt 1)*, 85–91.

Khedr, A., S. Salama, and N. Yaseen (2017, 07). Predicting stock market behavior using data mining technique and news sentiment analysis. *International Journal of Intelligent Systems and Applications 9*, 22–30.

Lei, J., Y. Rao, Q. Li, X. Quan, and L. Wenyin (2014). Towards building a social emotion detection system for online news. *Future Generation Computer Systems 37*, 438–448. Special Section: Innovative Methods and Algorithms for Advanced Data-Intensive Computing Special Section: Semantics, Intelligent processing and services for big data Special Section: Advances in Data-Intensive Modelling and Simulation Special Section: Hybrid Intelligence for Growing Internet and its Applications.

Liu, B. (2015). *Sentiment analysis: mining opinions, sentiments, and emotions* (1st ed.). New York: Cambridge University Press.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review 50*(4), 370–396.

Montoyo, A. and A. Balahur (2008, 01). Applying culture dependent emotion triggers database for text valence and emotion classification. *Procesamiento del lenguaje natural, ISSN 1135-5948, Nº. 40 1*, 107–114.

Pariser, E. (2013). *The Filter Bubble: What The Internet Is Hiding From You*. London, England: Penguin Books Limited.

Patterson, T. E. (2000). *Doing Well and Doing Good: How Soft News Are Shrinking the News Audience and Weakening Democracy*. Cambridge, MA: Harvard University Press.

Shoemaker, P. and A. Cohen (2006). *News Around the World: Content, Practitioners, and the Public*. New York: Routledge.

Toprak, C., N. Jakob, and I. Gurevych (2010, jul). Sentence and expression level annotation of opinions in user-generated discourse. In *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, Uppsala, Sweden, pp. 575–584. ACL.

Tuchman, G. (1973). Making news by doing work: Routinizing the unexpected. *American journal of Sociology 79*(1), 110–131.

Van de Kauter, M., B. Desmet, and V. Hoste (2015). The good, the bad and the implicit: a comprehensive approach to annotating explicit and implicit sentiment. *Language Resources and Evaluation 49*(3), 685–720.

Van Hee, C., E. Lefever, and V. Hoste (2018). We usually don't like going to the dentist : using common sense to detect irony on twitter. *Computational Linguistics 44*(4), 793–832.

Wilson, T. (2008, may). Annotating subjective content in meetings. In *Proceedings of the Sixth International Conference on Language Resources and Evaluation (LREC'08)*, Marrakech, Morocco, pp. 2738–2745. ELRA.