

EMONA: Moral Opinions towards Events in News Articles

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Abstract

Most previous research on moral frames has focused on social media short texts, little work has explored moral sentiment within news articles. In news articles, authors often express their opinions or political stance through moral judgment towards events, specifically whether the event is right or wrong according to social moral rules. This paper initiates a new task to understand moral opinions towards events in news articles. We have created a new dataset, EMONA¹, and annotated event-level moral opinions in news articles. This dataset consists of 400 news articles containing over 10k sentences and 45k events, among which 9,613 events received moral foundation labels. Extracting event morality is a challenging task, as moral judgment towards events can be very implicit. Baseline models were built for event moral identification and classification. In addition, we also conduct extrinsic evaluations to integrate event-level moral opinions into three downstream tasks. The statistical analysis and experiments show that moral opinions of events can serve as informative features for identifying ideological bias or subjective events.

1 Introduction

Morality refers to a set of social moral principles to distinguish between right and wrong (Berker, 2019; Nilsson et al., 2020). Moral judgment plays a crucial role in expressing public opinions, driving social movements, and shaping policy decisions. (Dehghani et al., 2016; Wolsko, 2017; Brady et al., 2020; Voelkel et al., 2022). *Moral Foundations Theory* (Haidt and Graham, 2007; Graham et al., 2009), provides a theoretical framework to categorize social moral principles into five dimensions, each associated with a positive and negative judgment: *Care/Harm*, *Fairness/Cheating*, *Loyalty/Betrayal*, *Authority/Subversion*, and *Purity/Degradation* (Figure 1 provides detailed values). Extracting moral

framing from text demands a combination of sociological moral knowledge and contextual semantic understanding (Fulgoni et al., 2016; Xie et al., 2019; Johnson and Goldwasser, 2018).

In many studies, the moral foundations lexicon (Frimer, 2019) has been widely used to match words and identify moral foundations in text. Realizing the limitations of this lexicon match approach, researchers have started creating moral foundation annotations in text and training moral foundation detectors using annotations. However, such resource creation efforts have mainly been devoted to social media short text analysis and moral frames were usually annotated for an entire social media post (Trager et al., 2022; Roy et al., 2021; Hoover et al., 2020), in contrast, little work has explored moral sentiment within news articles at a more fine-grained and nuanced level yet.

In this paper, we propose a new task to understand moral opinions towards events in news articles. The concept of *event* refers to an occurrence or action, and is the basic element in story telling (Zhang et al., 2021). In news media, the authors often express their stance through moral judgment towards events, so as to shape public opinions (Wolsko et al., 2016; Amin et al., 2017). To facilitate a profound study towards morality aspect of events, we create a new dataset, EMONA, annotated with Event-level Moral Opinions in News Articles.

While we believe the created dataset EMONA can be broadly useful for studying moral opinion injection in context, this effort is initially motivated by the potential significant role of moral opinions for media bias analysis. In addition, recognizing the difficulty of identifying subjective events in news articles, we also aim to understand whether event moral opinions enables uncovering implicit subjective events that are otherwise hard to detect. To address these research questions, we have carefully chosen 400 documents from three sources for annotation, including 180 documents from All-

¹https://github.com/yuanyuanlei-nlp/EMONA_dataset

Care/Harm: should show care, generosity, compassion to others, sensitivity to suffering of others, and prohibit actions that harm others.
Fairness/Cheating: pursue fairness, justice, equality, and avoid discrimination, exploitation, or cheating.
Loyalty/Betrayal: should keep loyalty to in-group, virtues of patriotism and self-sacrifice for the collective, and punish betrayal.
Authority/Subversion: people should respect and obey authority and social traditions; authority should fulfill its social roles of maintaining social order.
Purity/Degradation: pursue spiritual purity, cleanliness, sanctity, and prohibit impure, disgusting, degrading actions.

Figure 1: *Moral Foundation Theory* categorizes moral principles into five dimensions.

Example 1: event-level moral opinions can be more implicit than opinionated content
In a succinct speech [non-moral] , the new president Donald Trump told [non-moral] Americans: “The time for empty talk [cheating] is over. Now arrives the hour of action [authority] .” The speech [non-moral] appealed for a “new national pride [loyalty] ” and a “rediscovery of American patriotism [loyalty] ”.
Example 2: event-level moral opinions can reflect ideology bias
Left Ideology Gov. Rick Perry of Texas is broadcasting [non-moral] a new campaign ad that seems to contrast [cheating] Christianity with homosexuality. The Perry ad was denounced [non-moral] by the Log Cabin Republicans, a gay men and lesbian group, which said [non-moral] we should support equality [fairness] and our nation was built [non-moral] upon individual liberty [fairness] .
Right Ideology Texas Gov. Ricky Perry is on the attack [non-moral] , claiming [non-moral] in a new TV ad that President Obama is waging a war [degradation] on religion, and he is the GOP candidate that can defend [purity] faith in America. “I will fight [purity] against attack [degradation] on our religious heritage,” says [non-moral] Perry in the new ad.

Figure 2: Examples of moral opinions towards events in EMONA dataset.

Sides that spans over 12 domains and indicates article-level ideology bias (Baly et al., 2020); half (150 documents) of the BASIL dataset that has sentence-level media bias annotated (Fan et al., 2019); and the entire MPQA 3.0 dataset (70 documents) that has fine-grained opinions toward entities and events annotated (Deng and Wiebe, 2015).

The annotation process went through two passes: the first pass annotates event mentions, and the second pass annotates moral opinions for individual event mentions with respect to the context of the news article. Annotating event-level moral opinions within a news article turned out to be a challenging and demanding task for human annotators, we recruited five annotators and steadily improved pairwise inter-annotator agreements for both tasks to a satisfactory level. In total, the dataset contains over 10k sentences and 45k event mentions, among which, 9613 event mentions were annotated as bearing moral opinions.

The challenge of event morality analysis indeed lies in the implicit nature of moral opinions toward events. In some cases, event-level moral opinions can be too implicit to be identified as opinions. Take the example 1 in Figure 2 as an instance, which are annotated as non-opinionated content by previous work (Fan et al., 2019; Deng and Wiebe, 2015), the semantic implies *cheating* criticism towards *empty talk*, and infers praise towards *patrio-*

tism event. The implicit nature of event-level moral opinions requires the annotators to take both local sentential context and global broader context into consideration during annotations.

The numerical and visualization analysis of the dataset show that annotated event-level moral opinions can effectively reflect article-level ideology, and designate sentence-level political bias. Take the example 2 in Figure 2 as an illustration, liberal media focus on *fairness* judgment by framing the story as *Texas Gov. contrasts Christianity with homosexuality*, while conservative media emphasizes on *purity* moral by praising *Texas Gov. defends religious faith*. While not evident to readers, the journalists often subtly influence public opinions through moral value implication (Roy and Goldwasser, 2021). The annotated moral opinions towards events can uncover and provide fine-grained explanations for such ideological bias.

We build baseline models for event moral identification and classification, and we further conduct extrinsic evaluations on three downstream tasks: article-level ideology classification, sentence-level media bias identification, and event-level opinions identification. The experiments demonstrate the usefulness of detecting event-level moral opinions on all the three extrinsic evaluation tasks, with F1 score improved by 3.35% to 4.71%, and also validate the value of our new dataset.

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