Frames (Automated Content Analysis)

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BRIEF DESCRIPTION
Frames describe the way issues are presented, i.e., what aspects are made salient when communicating about these issues.

FIELD OF APPLICATION/THEORETICAL FOUNDATION
The concept of frames is directly based on the theory of "Framing". However, many studies using automated content analysis are lacking a clear theoretical definition of what constitutes a frame. As an exception, Walter and Ophir (2019) use automated content analysis to explore issue and strategy frames as defined by Cappella and Jamieson (1997). Vu and Lynn (2020) refer to Entman's (1991) understanding of frames.

The datasets referred to in the table are described in the following paragraph:
Van der Meer et al. (2010) use a dataset consisting of Dutch newspaper articles (1991-2015, N = 9,443) and LDA topic modeling in combination with k-means clustering to identify frames. Walter and Ophir (2019) use three different datasets and a combination of topic modeling, network analysis and community detection algorithms to analyze frames. Their datasets consist of political newspaper articles and wire service coverage (N = 8,337), newspaper articles on foreign nations (2010-2015, N = 18,216) and health-related newspaper coverage (2009-2016, N = 5,005). Lastly, Vu and Lynn (2020) analyze newspaper coverage of the Rohingya crisis (2017-2018, N = 747) concer-

ning frames.

REFERENCES/COMBINATION WITH OTHER METHODS OF DATA COLLECTION
While most approaches only rely on automated data collection and analyses, some also combine automated and manual coding. For example, a recent study by Vu and Lynn (2020) proposes to combine semantic networks and manual coding to identify frames.

REFERENCES
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Walter, D., & Ophir, Y. (2019). News frame analysis: an inductive mixed-method computational approach. Communication Methods and Measures, 13(4), 248–266.

Vu, H. T., & Lynn, N. (2020). When the news takes sides: Automated framing analysis of news coverage of the rohingya crisis by the elite press from three countries. Journalism Studies. Online first publication. doi:10.1080/1461670X.2020.1745665

Table 1. *Measurement of „Frames" using automated content analysis.*

Author(s)	Sample	Procedure	Formal validity check with manual coding as benchmark*	Code
Vu & Lynn (2020)	Newspaper articles	Semantic networks; manual coding	Reported	Not available
van der Meer et al. (2019)	Newspaper articles	LDA topic modeling; k-means clustering	Not reported	Not available
Walter & Ophir (2019)	(a) U.S. newspapers and wire service articles (b) Newspaper articles (c) Newspaper articles	LDA topic modeling, network analysis; community detection algorithms	Not reported	https://github.com/DrorWalt/ANTMN

* Please note that many of the sources listed here are tutorials on how to conducted automated analyses – and therefore not focused on the validation of results. Readers should simply read this column as an indication in terms of which sources they can refer to if they are interested in the validation of results.