Effects of narrative journalism on interest and comprehension: an overview

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Abstract: *Ideally, journalism makes current information public and facilitates democracy therewith. For accomplishing this task, comprehension as well as interest in the sense of engagement and in the sense of selecting a message are the most important effects of a journalistic message. As these effects are attributed to narratives, 15 experiments from 13 publications, which investigate the differences between traditional and narrative news writing style, were analysed. While the studies reported positive effects of narrative news on narrative engagement, news selection was not part of the investigation. The results for comprehension were intermediate except for a favourable effect of narratives on information recognition. Implications for further research are discussed.*

1. INTRODUCTION

Storytelling and narrative journalism are enjoying growing popularity. Narratives are said to facilitate interest in and comprehension of current events. Still, only few studies and theories are focused on the effects of narratives in a journalistic context. By conducting a content analysis of empirical publications, the aim of this paper is to examine which effects of narrative journalism have already been scientifically proven and to identify directions for further research.

1.1. JOURNALISM AND SOCIETY

When investigating the effects of narrative journalism, journalism's function for society has to be considered.

Democracy refers to a "government in which the supreme power is vested in the people and exercised by them directly or indirectly through representation" (Democracy, 2019). While in ancient times only a minority of a state's population was entitled to vote, nowadays most adult citizens are (Demokratie, 2019). Citizens elect the government for a certain period of time and participate through plebiscites in the period between two elections. In other words, laypeople have to make democratic decisions about how they want their daily lives to be. For making educated decisions, every single citizen needs sufficient information about current events, the relationships between these events and the underlying mechanisms. To form an opinion, people have to test their hypotheses on sufficient material (Engle, 1960/2003) – material that news media can provide.

Ideally, journalism serves as a public service and fulfils several functions for the 'common good': reduction of complexity, explanation, dissemination, socialization and (self-) observation of society to name only some. Journalists make complex content and interrelationships understandable for the general public (Burkart, 2002 pp. 378-412; Weischenberg, 2018, p. 61). In this process a lot of information gets lost – but it also gives the recipients the feeling of being able to cope with a world that otherwise would be too complex (Weischenberg, 2018, p. 40). As a consequence, news media can influence public opinion, the democratic formation of opinion and the voting behaviour (Weischenberg, 2018, p. 44).

As a closed functional system, journalism used to be exclusively responsible for accomplishing its task of addressing remarkable, current topics – as objectively as possible (Weischenberg, 2018, p. 30). In 1996, Niklas Luhmann (p. 9) wrote that everything people know about society and nature – about the world we live in – they know from mass media. In states with free press, it was the journalist's task to turn information into public good.

Nowadays, private persons partly take over the journalists' function of observing society: by the use of social media many private persons jointly enhance the transparency of events (Weischenberg, 2018, p. 279). Social media also make it possible to highlight irregularities and gaps in the journalistic coverage more easily. In sum, however, there are too many contributions on social media to keep an overview and spot the most remarkable issues. People who are overwhelmed by the quantity of news messages tend to avoid them (Song et al., 2017). Especially for the working population, a manageable quantity of news is important: their time besides occupation and housekeeping is particularly limited (Schrape, 2011).

To achieve a manageable quantity, some topics and messages have to be selected above others. According to the Agenda Setting Theory, this selection influences where people direct their attention to (Littlejohn et al., 2017, p. 161). On social media, messages are displayed based on algorithms. These algorithms favour messages from contributors a user has subscribed to, messages similar to previously 'liked' messages, messages with which 'friends' have already interacted or advertisements tailor-made for the user. When relying too much on these algorithms and on getting important news automatically, there is the risk of being caught in the so-called 'filter bubble' (Schrape, 2015, p. 207). This tendency towards individualisation threatens the minimum consensus, which is essential for democracy (Demokratie, 2019). Journalists on the other hand reduce complexity by allocating the codes information/no information to current topics (Weischenberg, 2018, p. 61). While journalists are (or should be) subject to professional and ethical standards like impartiality, accuracy and fairness in reporting (Weischenberg, 2018, p. 32), private persons or enterprises publishing on social media are not. As their coverage is still large and social media messages on current issues are often based on journalistic sources (Schrape, 2011), news media turn information into a public good (Burkart, 2002, p. 391) and recipients gain knowledge and material to shape their opinions.

2. THEORETICAL BACKGROUND

First, the most important effects of journalism are derived from the functions journalism is supposed to fulfil for society. Subsequently it is about what stories can contribute.

2.1. DESIRABLE EFFECTS OF ONLINE JOURNALISM

The mentioned rise of social media made the role of a gatekeeper and watchdog a bit less important for journalists, whereas the role of an interpreter has gained in importance (Weischenberg, 2018, p. 61). On the basis of the above considerations, laypeople have to **comprehend** journalistic messages about carefully selected issues as well as the facts behind them. They should also be

able to transfer the knowledge from the current to new situations. According to the 'Taxonomy Table' by Anderson et al. (2001, pp. 27-37), this means going beyond merely remembering factual knowledge.

Fostering comprehension of and knowledge about relevant topics requires people to receive the messages – as well as the relevant background information – in the first place. According to a study of online news consumers, 47 % of the respondents most often read only the headlines when accessing news via news aggregators, online social media and search engines. Only 45 % indicated to proceed to read the article, while the remaining respondents did not access news in this way (European Commission, 2016). As a consequence, it is very likely that many recipients lack background knowledge for interpreting the headlines correctly. To increase the likelihood of selecting and reading news articles, the interest in the sense of the desire to proceed to the whole message (**interest/proceeding**) is important for journalism.

After a message was selected and the recipients went on to read the message, it is important for those not familiar with the context to read the whole article. If people have scant prior understanding of a topic, making sense of new information can lead to inaccurate assumptions or unwarranted conclusions. Providing the relevant context helps individuals to gain a framework for organizing their knowledge accurately (Downs, 2014). Traditionally, the so-called inverted pyramid structure places information about the context and background at the very end of the article (van Dijk, 1985, p. 82). Lagun and Lalmas (2016) found out that approximately one third of their participants did not stick to the article until the end. To maximize the number of recipients deeply or completely engaged with the message and to increase background knowledge and understanding of the topic therewith, the interest in the sense of engagement (**interest/engagement**) has to be increased.

Many studies investigating the effects of narratives are focused on persuasion – especially in the context of science and health communication (e.g. Betsch et al., 2011; Dahlstrom, 2010; Dunlop et al. 2010; Hinyard & Kreuter, 2007; Slater & Rouner, 2002), advertising (e.g. Hémar-Nicolas, 2011; Mattila, 2000; Tussyadiah et al., 2011) and public relations (e.g. Farace et al., 2017; Kim & Youn, 2017; Lee & Leets 2002). Although news influence the public opinion, persuasion should not be an aspiration of journalists. Ideally, public opinion is only influenced in the sense of a democratic formation of opinion – by providing material so that people are able to draw their own conclusions.

As a result, desirable effects for online journalism are the interest in receiving the message, the desire to receive the message as a whole and, most importantly, a good comprehension of the message. These effects are often attributed to narratives (e.g. Hauff et al., 2014; Saadatnia et al., 2017), which is

why narrative journalism could help improving the users' knowledge and their quality of democratic decisions.

Narrative journalism

Although journalism and a free press are essential for democracy, there is little theoretical background for narrative journalism and its effects on democracy. Also definitions of narratives used in empirical research diverge (Frey, 2014), which is why this section starts with a definition of narratives. In their analysis of narrative text, Lahn and Meister (2016, pp. 18-19) differentiate between the event (what is told), the discourse (how it is told) and the narrator (who tells it). The event's dimension consists of five elements: topic, plot, characters, space and time. If one of these elements is missing, it can be doubted that it is a narrative at all. In the context of news, the topic can be taken for granted, whereas narrative news differs from traditional news particularly by having a continuous plot. Characters, locations and time are often mentioned and described also in traditional journalism (c. f. theory of newsworthiness, e.g. Burkart, 2002, pp. 281-282).

Another specific characteristic of journalistic narratives is factuality. Whereas fiction authors can invent every detail of their stories, journalists are bound to reality. Their creative freedom is restricted to selecting, framing and emphasizing content (Knobloch et al., 2004). Subsequently, it is usually not possible to tell a story from a first-person perspective when the journalists were not present at the events they are writing about. Journalistic narratives might therefore cause different effects than entertainment narratives.

To the knowledge of the author, there are no meta-analyses of effects of narrative journalism so far. In previous general meta-analyses of storytelling, studies investigating the effects of narratives in a journalistic context were rare (e.g. 8.06 % in Ettl-Huber et al., 2019 and 9.09 % in Frey, 2014). Especially when the percentage is compared to the share of health communication (e.g. 29.03 % in Ettl-Huber et al., 2019 and 30.91 % in Frey, 2014). To find out more about the specifics of journalistic narratives, the present investigation focuses on the effects of textual narrative news articles, leading to the following research question:

What is the present state of research concerning effects of textual narrative journalism on interest/proceeding, interest/engagement and comprehension?

3. METHOD

To gain an overview over already existing findings about the effects of narrative journalism, a content analysis of relevant studies was conducted. This analysis focused on the relevant effects mentioned above: comprehension, interest in the sense of proceeding to the message and interest in the sense of reading the whole message (engagement).

After conducting a search for relevant publications and sorting out irrelevant ones, it was evaluated, which references were cited most in order to identify standard works in the field of journalistic narrative impact research. To figure out theories relevant for describing narrative effects, an overview of the theories mentioned in the publications was created. Possible limitations to generalisability were addressed by evaluating the procedures, stimuli, participants and instruments used. Finally, the relevance of the documented effects for practice was assess by calculating and comparing the effect sizes. To be able to compare the magnitude of the effects, effect sizes according to Cohen (1988; Cohen's d) were calculated. When data necessary for calculation was not reported, effect sizes were transformed from η^2 according to Cohen (1988, pp. 281, 284, 285) or calculated from the F-value of ANOVA (Thalheimer & Cook, 2002).

3.1. SEARCH TERMS AND PROCEDURE

Papers researching the impact of narrative journalism use either the notion 'impact' or 'effects'. Therefore, one of these two terms was present in all search queries. Also 'narrative journalism' and 'journalistic storytelling' are closely related conceptions, which is why either 'narrative' or 'storytelling' was combined with 'journalism' and 'impact' or 'effects'. Therefore, the combinations of search terms used were 'effects journalism storytelling', 'effects narrative journalism', 'impact journalism storytelling' and 'impact narrative journalism'.

In a previous meta-analysis of storytelling effects (Ettl-Huber et al., 2019, p. 22), none of the publications, which were cited the most by the analysed papers were included in the sample. One reason might be that these studies were not present in the search engines that were used. As Google Scholar contains entries of most databases, this study used Google Scholar (scholar.google.com) for data collection. Search queries on Google Scholar were conducted between 23 March and 28 March 2019 for each of the search terms mentioned above. The search was ordered by relevance and the first 100 search results for each term were further analysed. Multiple entries were merged and after sorting out papers not dealing with the effects of textual narrative journalism, eight papers remained. Papers dealing with the narrative method of inquiry, narrative psychotherapy, interactive storytelling, theoretical papers, papers not reporting experiments and experiments not dealing with written news were considered as papers not dealing with the effects of narrative journalism in the present meaning. Interactive storytelling was omitted as in these cases the storyline is not pre-defined, which means it does not belong to traditional mass communication and the effects might be different in this case. As cause-and-effect relations can only be proved using experiments, all studies not reporting experiments were also omitted.

It became apparent that most studies relevant for the current topic compared narrative texts with traditional news articles written in an inverted pyramid style. To increase the sample size, a fifth query was conducted using the more specific search term 'impact storytelling journalism inverted-pyramid experiment'. Again, the 100 most relevant search results were further analysed, resulting in an initial quantity of 500 papers. After sorting out 106 duplicates and 381 irrelevant papers as mentioned above, the final sample consisted of 13 publications, which describe 15 experiments.

Subsequently, the quality of the papers was checked, theories mentioned in the papers were collated, the methods and instruments used were analysed and the reported results compared. Finally, limitations of the studies as well as potential research gaps were discussed.

3.2. QUALITY CHECK

To ensure the quality of the papers, first the data reported was checked. Every paper reported Cronbach's alpha for the instruments to ensure their internal consistency. Also descriptive statistics (mean, SD or SE), significance (p-values) and effect sizes of the results were reported. None of the studies reported adaptation of the significance level α despite testing more than one hypothesis on the same dataset.

In a next step, the indexation of the journals in established science indexes was checked. 10 papers were published in journals indexed in SSCI. The three papers not indexed are one dissertation, one conference paper and one paper published in the Newspaper Research Journal.

Subsequently, the number of references the papers relied on (M = 53.54, SD = 36.31) and the number of other papers citing the respective study (M = 46.31, SD = 53.32; according to Google Scholar on 10 August 2019) were analysed. See table 1 for detailed results.

Table 1: Results of quality check

Reference number and author(s)	Indexation (Journal/type of publication)	Number of references	Number of citations
1 Emde et al., 2016	SSCI, SCOPUS (Journalism Studies)	42	15
2 Kleemans et al., 2018	SSCI, SCOPUS (Journalism Studies)	81	5

3 Knobloch et al., 2004	SSCI, SCOPUS (Communication Research)	59	147
4 Nan et al., 2015	SSCI, SCOPUS (Health Communication)	39	64
5 Yaros, 2011	SSCI, SCOPUS (Science Communication)	76	22
6 DeAngelo & Yegiyan, 2019	SSCI (Journalism & Mass Communication Quarterly)	56	0
7 Oliver et al., 2012	SSCI (Journalism & Mass Communication Quarterly)	28	172
8 Shen et al., 2014	SSCI (Journalism & Mass Communication Quarterly)	28	74
9 van Krieken et al., 2015	SSCI (Journalism & Mass Communication Quarterly)	37	34
10 Wise et al., 2009	SSCI (Journal of Broadcasting & Electronic Media)	49	38
11 Sternadori, 2008	– (Dissertation)	161	3
12 Chun & Chi, 2013	– (Conference Proceedings)	10	1
13 Zerba, 2008	– (Newspaper Research Journal)	26	27

4. RESULTS

4.1. MOST CITED PUBLICATIONS

To find quality work on the effects narrative journalism has, the author analysed which publications were frequently cited in the papers that make up the sample. Knobloch et al. (2004) was cited by eight of the other papers, followed by two papers not in the sample, which were cited by five papers: Pottker (2003), a theoretical paper, and Yaros (2006). Four of 10 publications, which were cited by four papers, were written by or in cooperation with Annie Lang: Lang (1989), Lang et al. (1996), Lang (2000) and Lang (2006). Of the remaining papers of the sample, three authors cited Oliver et al. (2012) and Wise et al. (2009), two cited Emde et al. (2016), two cited Zerba (2008) and one cited Shen et al. (2014) and Yaros (2011).

4.2. THEORIES MENTIONED

The theories mentioned in the studies attempt to explain how media messages result in comprehension, interest and persuasion. The analysis in hand does not focus on persuasion; thus, theories about persuasion are left aside.
Interest

The *Model of Narrative Comprehension and Engagement* explains the impact of narratives on raising the recipients' interest (9, 12). In this model, four distinct dimensions are important if an author wants to achieve narrative engagement (Busselle & Bilandzic, 2009): narrative presence, emotional engagement, attentional focus and narrative understanding. Narrative understanding is only important as a lack of understanding disrupts narrative engagement.

Knobloch and colleagues (2004) based their research on the *Structural-Affect Theory:* Brewer and Lichtenstein (1981; 1982) differentiate an event-focused narrative structure (what is told) from a discourse-focused narrative structure (how the story is told; order of events as they are presented in the narrative). Certain combinations of event and discourse structure result in different affective reactions in the readers while they follow a narrative. In the traditional inverted pyramid style, initiating event and outcome are presented right away. This is why recipients are often unwilling to proceed with their reception after they have read about the outcome. When the discourse structure is parallel to the event structure ('linear type'), the author evokes suspense (e.g. typical for thriller genre). When the discourse structure omits information in the initiating event and then makes references to this omission ('reversal type'), recipients get curious (e.g. mystery stories).

The *Uses and Gratifications Theory* (13) describes the recipients' individual motivation for selecting one message rather than another and what influences their motives for doing so. The individuals' attitudes towards and evaluations of the medium determine the gratifications they seek from this medium (Rayburn & Palmgreen, 1984). These expectations are acquired through experience, communication, deduction and/or inference (Palmgreen & Rayburn, 1985). In other words, past reading experiences influence future reading. Narrative journalism is hypothesised to engage individuals who don't enjoy keeping up with traditional hard news. Therefore, the positive reading experience after receiving a narrative message also has a positive impact on further news consumption and selection.

4.3. COMPREHENSION

When explaining text comprehension, four studies mention the *Construction–Integration Model* (1, 2, 5, 11). This model differentiates between two phases:

construction and integration. In the construction phase, recipients process new information from the text and information from long-term memory. In the subsequent integration phase, recipients construct a coherent model (Emde et al., 2016; Kleemans et al., 2018). In order to explain advantages of narratives for comprehension, the Construction-Integration Model was combined with the *Limited Capacity Model of (Motivated) Mediated Message Processing* (1, 2, 10, 11): individuals are not able to process and store all information a message contains. The cognitive resources available to the recipient are divided into three cognitive sub-processes: encoding, storage and retrieval (Lang, 2006; Wise et al. 2009). If the processing of a message requires more resources than are available or allocated to the process, the information gets poorly processed (Lang, 2006). If narratives are close to how the human mind processes information about events, they might require fewer cognitive resources for being encoded. Subsequently, more resources are left for other processes resulting in a richer memory for the story (Wise et al. 2009).

The *Web-Based Processing Theoretical Framework* (6) focuses on users of the World Wide Web who have great control over the order and/or pace of the content on display. On the web, users tend to skim information based on importance and/or interest (e.g. Liu, 2005). In this environment, information processing is likely to suffer, which leads to decreased content knowledge compared to articles in print magazines (Eveland & Dunwoody, 2002) and to less recognition and recall for news events compared to reading print news (Tewksbury & Althaus, 2000). After skimming the beginning of a news message, online news readers may stop processing the message in more detail and devote their cognitive resources to another story. In narratives, authors do not place the basic information in the first paragraph. Therefore, readers who stop reading the message will miss it.

4.4. PROCEDURES, STIMULI, PARTICIPANTS AND INSTRUMENTS

The papers in hand investigate the effects of narratives in news stories by conducting experiments. In 15 experiments, most stimuli were presented on screen – only five used printed stimuli. Five experiments were conducted in a computer laboratory and five were web-based experiments. All papers except one (4) reported comparable word counts of the texts used in narrative and non-narrative conditions. Five papers (1, 2, 7, 5, 11) matched the amount of information in the texts in both conditions and one paper (11) compared the ease of reading to a standardised score.

The *participants* of nine experiments were university students, two experiments with younger pupils. The participants of two experiments were recruited online and for the last two experiments, researchers approached people on the street. The median of participants per experiment is 133, whereas the

studies measuring heart rate and second task reaction times had considerably fewer participants (47 and 58 participants respectively).

Almost half of the papers (6 of 13) used self-reported measures among other measures, whereas five relied solely on self-reports. Six papers reported recognition and/or recall tasks, three papers used psychochronometrical as well as psychophysiological measures and one used behavioural measures.

All instruments for measuring *interest* were based on self-reports. Participants were asked directly about their reading experience (13) and situational interest (5). Instruments were created to measure the narrative influence on suspense and curiosity (3). Grouping the instruments according to the Model of Narrative Comprehension and Engagement (Busselle & Bilandzic, 2009), participants indicated their narrative presence through (narrative) transportation (absorption/immersion in the narrative world; 12, 8), story involvement (7) and narrative presence (9). Emotional engagement was measured with instruments named 'emotions' and 'emotional engagement' (9, 8), 'identification' (9), 'empathy' (9, 12) and 'affective involvement' (1). The instruments 'attentional focus' (9) and 'narrative involvement' (12) provided indications for the readers' attentional focus. Reading enjoyment was measured in three studies (13, 11, 3) of which one (11) used an enjoyment index in addition. One study (1) also measured the cognitive involvement.

Besides one self-report (13), *comprehension* was mainly measured using tests examining: information recognition (2, 10, 11), cued recall (1, 11), free recall (6, 5) and the Sentence Verification Technique (11). In addition, also the recall order (6), time spent on story (6), secondary task reaction time (11) and heart rate (10) were examined. Heart rate indicates when individuals allocate more cognitive resources to encoding for example videos (e.g. Fox et al., 2004).

In addition to common *control variables* like demographic data, the studies also controlled for individual characteristics like reading experience and regular news consumption (1), general news interest and specific issue interest (13, 1, 5), perceived issue importance (6), knowledge about an issue (5, 1, 9, 8), affective disposition towards story characters (3) or perceived credibility of articles (8).

4.5. EFFECT SIZES

According to Cohen (1992), an effect size between 0.2 and 0.5 can be considered as 'small', between 0.5 and 0.8 as 'medium' and sizes above 0.8 as 'large'. Medium and large effects can be perceived in daily life. Although recipients do not perceive small effects, they can still affect cognitive performance.

4.6. INTEREST

At least one message of most studies showed intermediate or small positive effects of the narrative compared to the non-narrative stimulus on the interest that is raised in the recipient, reading enjoyment, suspense, curiosity and narrative engagement. These results provide some evidence for an increased *interest in the sense of engagement* through a narrative presentation. Narratives only had a negative effect on situational interest in a science context (5) and on reading enjoyment according to the enjoyment index (11). In the study Emde et al. (1) conducted, the least interesting topic (a text on minimum wage) produced a higher difference between the narrative and the inverted report in affective involvement. No study in the sample investigated the effects of a teaser text structure on the recipients' news selection. Therefore no indication in favour or against an increased *interest in proceeding to the message* could be found.
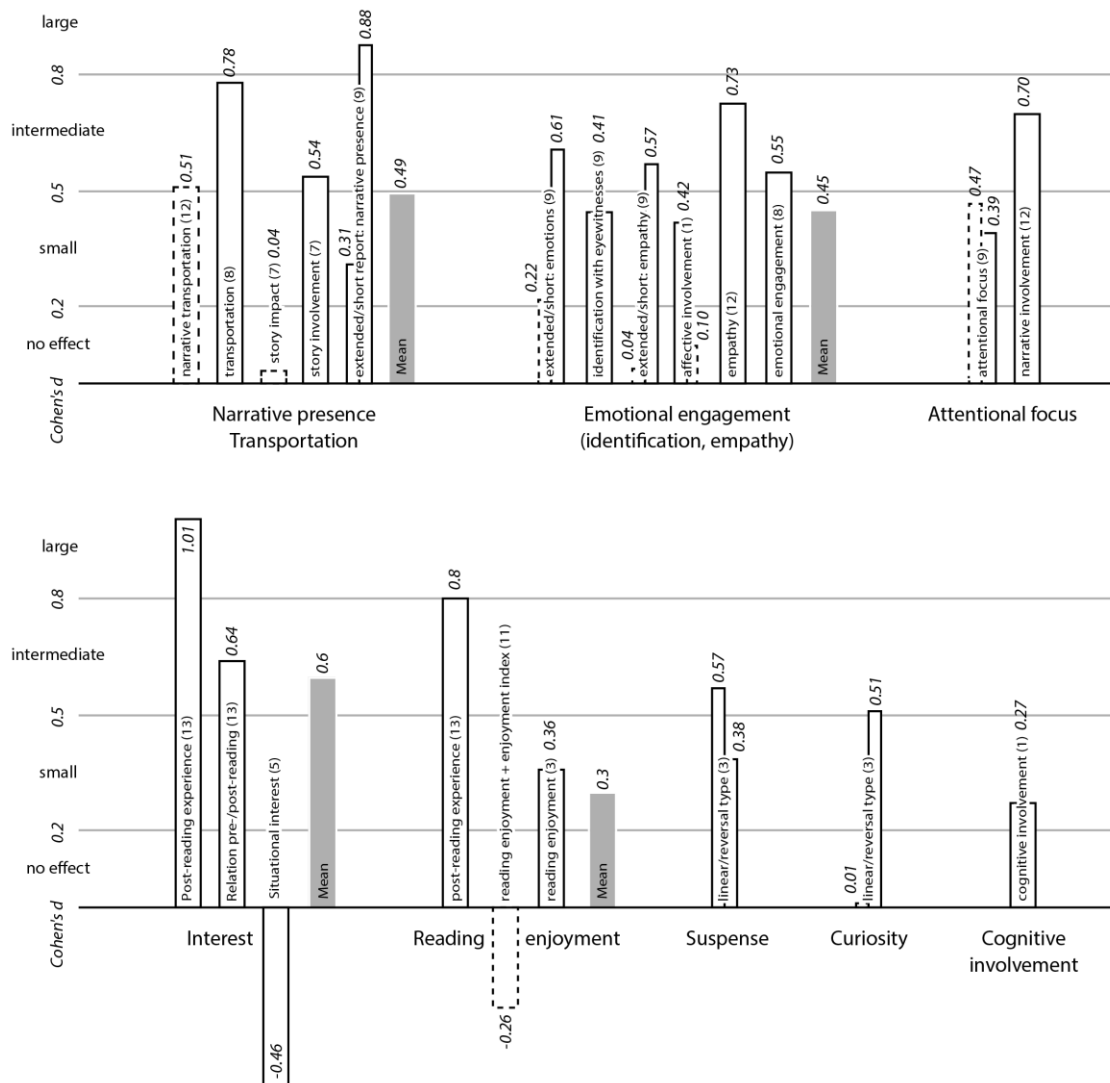

Figure 1: Effect sizes for results on interest
Number of study in brackets; dashed lines indicate non-significant results.

4.7. COMPREHENSION

Compared to how a narrative affects interest, the results for how a narrative affects comprehension are less clear. Two studies reported significant and high effects for information recognition in favour of narratives, however, no study reported a significant result for cued recall and only one study a significant result with a rather small effect for free recall. An intermediate effect on self-reported comprehension (13) and a small effect on heart rate (10) was noted as reaction to narratives. The results from recall order (6) and the Sentence Verification Technique (11) were non-significant, but suggest effects in favour of the inverted pyramid. Participants also spent more time on narrative news than inverted pyramid reports – according to the authors, this indicated that narrative news are more difficult to comprehend (6). Finally, there was a problem with the interpretation of the mental chronometry (second task reaction time): according to the author, the longer time recipients needed to accomplish the second task in the narrative condition can indicate both: hindered or enhanced cognitive processing (11).
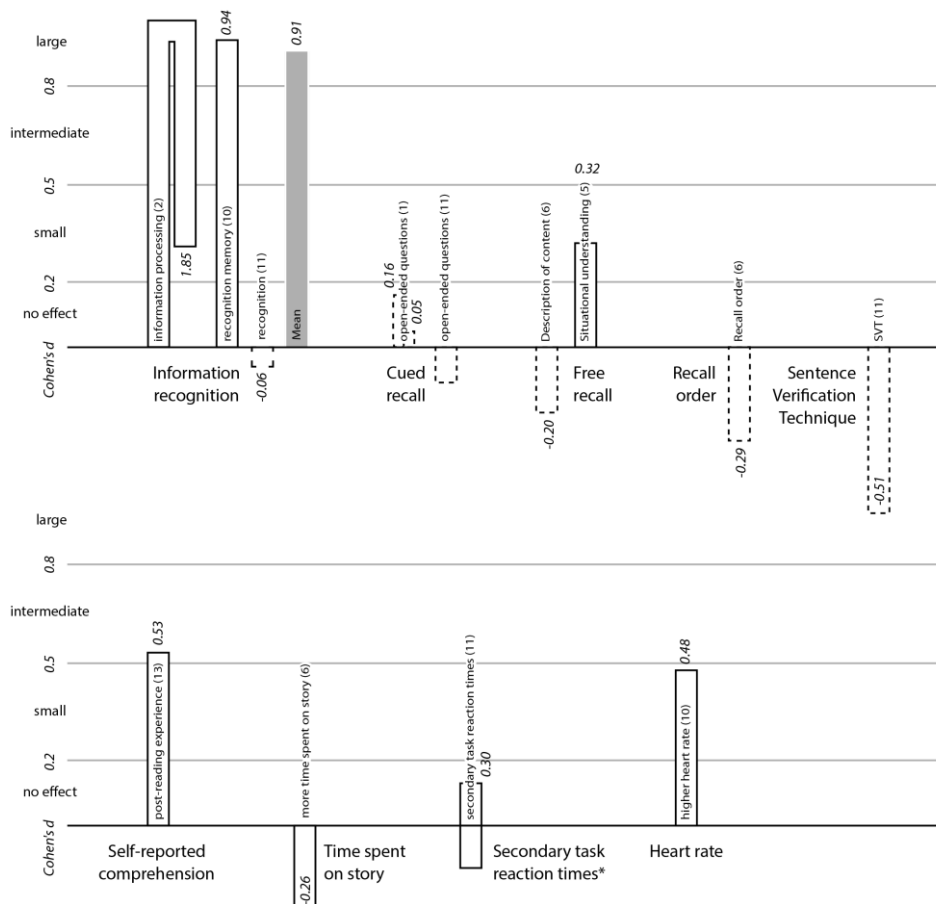

Figure 2. Effect sizes for results on comprehension.
Number of study in brackets; dashed lines indicate non-significant results
* Result allowed interpretation in both directions.

5. DISCUSSION

Journalism disseminates information among citizens and is as such a requirement for democracy. For citizens to comprehend this information, it has to be consumed. Therefore, journalism also has to arouse interest in the sense of proceeding to the whole message and in the sense of engagement. As these effects are attributed to narratives, 15 experiments of 13 publications, which investigate these effects of narrative journalism, were analysed.

5.1. INTEREST

Altogether the studies reported positive results for narrative engagement. These findings are consistent with the meta-analysis of Frey (2014), where narratives also showed increased effects on transportation (p. 164), attentional focus (p. 149), empathy (p. 149), identification (p. 154) and emotions (p. 158).

Emde et al. (2016) state that narratives tend to show larger effects for less interesting topics. This is in line with the results of Arya and Maul (2012) who compared narrative and non-narrative scientific texts in the context of pedagogy. The narrative led to larger situational interest with a text about astronomy. This topic was considered to be less interesting compared to the topic of radioactivity. When employing narrative engagement, it has to be taken into consideration that mechanisms like transportation, narrative engagement or identification also lead to narrative persuasion (Hamby et al., 2018).

None of the studies analysed directly investigated the influence of teaser text structures on the recipients' news selection and on whether or not recipients proceed to consume the whole article. Nonetheless, a direction for further research can be derived from Knobloch et al. (2004), who investigated the aspect of curiosity: headlines and other teaser elements structured according to the reversal type might evoke the recipients' curiosity and users might more often select items (e.g. on news overviews or on social media) and proceed to consume the whole message.

5.2. COMPREHENSION

In the present study, only one paper (Zerba, 2008) investigated self-reported comprehension and found an intermediate positive effect of narratives on comprehension. One single result is not enough for making an assessment. Also, Frey (2014, p. 150) could not work out a convincing result: two studies he cited report negative and three report positive effects on recipients' self-perceived comprehension.

In accordance with Frey (2014, p. 155), the results of the memory tests of the studies examined in this paper pointed in both directions. Still, all significant

results of these studies were in favour of narratives compared to other ways of information transfer. Concerning the remaining results on comprehension, heart rate measurements showed a significant effect in favour of narratives (Wise et al., 2009) and time spent on story had a significant effect that worked against narratives (DeAngelo & Yegiyan, 2019). Also, Frey (2014, p. 150) reported only one study with a significant result for comprehension (in favour of narratives) and found almost the same number of studies showing favourable short-term effects of narratives for comprehension and knowledge acquisition as studies showing these effects for non-narrative messages (Frey 2014, p. 157). According to Frey (2014, p. 157), short-term effects on comprehension seem to be mixed, but the results for long-term effects were mostly in favour of narratives. Therefore, investigating long-term effects on comprehension in the context of journalism is an interesting topic for further research.

DeAngelo & Yegiyan (2019) interpreted more time spent on a story as the story being more difficult to comprehend. As participants could decide for themselves how much of a message they wanted to receive, more time spent on a story could also mean higher narrative engagement as the recipients consumed more of the message. To investigate this issue, the time spent on story has to be combined with other measures like viewport time (Lagun & Lalmas, 2016), where it is possible to tell how much of the message was consumed.

Emde et al. (2016) did not find a significant effect for comprehension of traditional versus narrative news. They suggested that the effects might only be significant with some media. The difference might be smaller for written news messages compared to audiovisual information, e.g., which demands simultaneous processing of two channels. Individuals usually cannot control the pace of information processing. Therefore, effects of different media (e.g. videos, pictures, information graphics) on comprehension should be considered in further research. Research on effects of different media is also needed as visual social media are on the rise (c. f. Newman et al., 2018).

Most of the studies assessed the effects on remembering factual knowledge (Anderson et al., 2001, pp. 27-37). Factual knowledge means the recognition of content (e.g. tested with information recognition, cued or free recall), whereas comprehending content (e.g. tested by assessing interrelationships among various concepts in a domain) is associated with knowledge structure. In the first case, information is retrieved from memory, in the latter, connections among concepts are reflected (Eveland et al., 2004). Further research should also focus on comprehension in terms of reflecting knowledge structure.

5.3. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The participants of the experiments were mainly students and pupils. As news are aimed at all citizens, it is at least questionable if the findings can be transferred to the whole population – especially to people who have received less education. Some studies reported favourable effects only for one of the stimuli, which might indicate that other factors than the controlled ones influenced the effects (e.g. tense, perspective, stylistic devices or topic). Dahlstrom (2010) also found out that the location of information in the internal causal structure of a narrative influences its effects. In addition to that, other aspects than age, gender, interest and knowledge can influence the results. Therefore, studies should also control different personal characteristics like the Bem Sex Role Inventory (Troche & Rammsayer, 2011) or situational influences like individual processing targets (Slater, 2002).

Only one study (Shen et al., 2014) examined medium-term effects of journalistic messages but medium- and long-term effects are crucial for making democratically oriented decisions. Besides measuring immediate effects, further research should also measure the effects after a certain period of time (time delayed measurement).

None of the studies examined the effects of using mobile devices when displaying the stimuli. As 70.4 % of page views on websites indexed in ÖWA (Austrian web-analysis) are done with mobile devices (ÖWA, 2019), these should be considered in future studies. In addition, the studies only used self-reports for investigating interest. Further studies could use eye tracking or viewport time: gaze is a reliable indicator for interest, focused attention as well as the effect an article has (Arapakis et al., 2014) and viewport time reflects levels of user engagement (Lagun & Lalmas, 2016).

Finally, the sample size of the present study was small. One reason for this was the restriction to experiments using text stimuli. However, therefore, influences from the medium could be excluded and the narratives were compared to the same control stimuli (inverted pyramid) in all experiments. As a consequence, more search results and results from additional search engines should be included to increase the sample size. A more specific search for effects of narrative journalistic teaser texts might allow finding studies that deal with the interest recipients take when proceeding to read a message.

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