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'Under Construction': Informing Young People in an Appropriate Way

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Samenvatting
Deze experimentele studie onderzoekt de effecten van constructieve berichtgeving in nieuws op de emoties en informatieverwerking van jongeren. Resultaten tonen aan dat een constructieve aanpak positieve gevolgen heeft voor de emoties en herinnering van het nieuwsitem van deze jongeren. Constructieve journalistiek kan daarmee mogelijk bijdragen een geschikte strategie te ontwikkelen om ongewenste effecten van nieuwsconsumptie tegen te gaan.

Abstract
It is important to investigate strategies to inform young people in an appropriate way. Young people indicate that they want to be informed, but news can be rather terrifying and depressing to them. This study investigates if constructive journalism can contribute to young teens' (10-15 years) emotional well-being and information processing. An explorative experimental design was used to investigate effects of watching constructive or non-constructive audio-visual news ($N = 174$). Results showed that the type of news had an effect on emotions; watching constructive news caused a smaller decrease of positive emotion. Furthermore, there was a difference in both groups in what was perceived as the most important message and how much participants remembered, but the type of news did

not influence recognition. This study shows that a constructive approach can contribute to counteracting unintended negative effects of watching the news.

Keywords: Constructive journalism – news for children – recall – emotions – television news

Introduction

Everyday news is not exclusively relevant for adults, but also for young people. Research suggests that following the news at a young age can make children more active and critical citizens (Van Deth et al., 2011). Besides that, it has been shown that news consumption at an early age is an important predictor of news consumption later on in life (Huang, 2009; Mindich, 2005). There is a concern, however, that news can be rather terrifying and depressing to young people and make them feel powerless, which can lead to long-term news avoidance (Alon-Tirosh & Lemish, 2014). It is challenging for newsrooms aimed at young people to find a way to inform their viewers on relevant issues without upsetting them (Walma van der Molen et al., 2002). Therefore, it is important to understand how young audiences can be informed with the help of new strategies in news production without it leading to unwanted side effects (Kleemans et al., 2022).

Journalists producing news for children in the Netherlands take their responsibility seriously and often look for appropriate ways to inform their young audience. Content analysis showed that different 'consolation strategies' are used to counter the often scary and negative focus in the news. Strategies such as the alternating of heavy and soft topics and the use of experts to explain what is going on, are expected to help in reassuring children (Walma van der Molen & De Vries, 2003).

To better understand how journalism can inform its younger audience in an appropriate way it is interesting to look at a constructive approach (Kleemans et al., 2019). Constructive journalism exists additionally to traditional journalism practices. It criticizes the dominant focus on the negative and the exceptions in today's journalism (Gyldensted, 2015; Haagerup, 2017). It provides alternatives, not by ignoring problems, but by including more context and possibilities for action and solutions (Hermans & Drok, 2018). Since constructive journalism wants to report on socially relevant issues

that can also contain inspiring and hopeful perspectives, this approach might offer the opportunity to balance both the emotional responses and cognitive needs of the audience. Yet, little is known about the effects of this type of journalism on cognitive responses and whether constructive news is processed in a different way than non-constructive news (cf. Swijtink et al., 2022; Van Antwerpen et al., 2022). As research has shown that young people can potentially benefit from a constructive approach in regards to their emotional state of mind (Kleemans, de Leeuw et al., 2017; Kleemans, Schlindwein et al., 2017), it is important to take it a step further and examine the audience's demand for being informed in a proper way as well. Often, studies test the effects of written constructive news (cf. Hermans & Prins, 2020; Kleemans, de Leeuw et al., 2017; Meier, 2018), but especially for younger people, it is important to look into the effects of audio-visual news because of the impact its shocking and terrifying footage can have. Therefore, this study investigates the effect of a constructive approach on emotions and on information processing of an audio-visual news message for young people.

In the Netherlands there is a special news programme for children ('NOS Jeugdjournaal'). Although this news broadcast is aimed at children between nine to twelve years old, older youngsters have also indicated to watch this news. Therefore, in this study the age group is expanded to young people between ten and fifteen years old who are referred to as young teens (cf. Valkenburg & Piotrowsky, 2017). This study wants to contribute to the search for news production techniques to make news more suitable for young people.

Hypothesis and research questions

Constructive journalism uses knowledge from behavioural sciences, especially positive psychology, to create news that is more accurate and engaging. Constructive news is expected to counteract the common negative bias in the news (McIntyre & Gyldensted, 2018). Given the important function of journalism in democratic societies, journalists cannot ignore problems in society. However, by including constructive elements such as solution-, future- and action-oriented perspectives in news, it is expected this will improve emotional responses to news. Looking at the theory of positive psychology (cf. Fredrickson, 2001) constructive news will lead to more positive emotions and will decrease negative emotions such as fear and anger, which leads to a more hopeful and optimistic mindset that

can contribute to the well-being of people (McIntyre & Gyldensted, 2018). Previous research on the effects of constructive elements on the emotions of people confirms these expectations. Overall, findings showed that adults who read a constructive news article experienced more positive emotions and less negative emotions than readers of a non-constructive news article (Baden et al., 2019; Hermans & Prins, 2020; McIntyre & Sobel, 2017; Meier, 2018; Rusch et al., 2022). Similar results were found for children. Including constructive elements such as solution-oriented perspectives and positive feelings enhanced a smaller decrease of positive emotions and a smaller increase of negative emotions (Kleemans, de Leeuw et al., 2017; Kleemans, Schlindwein et al., 2017). The following hypothesis is formulated to test the effect of using constructive elements in audio-visual news on the emotions of young teens.

H1. Watching a constructive audio-visual news item leads to (a) a smaller decrease in positive emotions and (b) a smaller increase in negative emotions than watching a non-constructive audio-visual news item for young teens.

Besides the effects constructive news can have on emotions, it is also interesting to investigate the possible influence on how young teens process this information and how they remember it (Kleemans et al., 2019). Looking at Lang's (2000) theory of information processing – the Limited Capacity Model of Mediated Message Processing (LCM) – it is not clear yet how these processes will exactly apply for constructive news and specifically for young teens, as multiple factors might play a part.

As stated by the LCM (Lang, 2000) the cognitive capacity of the human brain is limited. According to this model, attention given to new information depends on several conditions, such as how familiar the information is. When things are recognizable, or when a person has intrinsic motives to pay attention, the information will have more value and the brain will consciously pay more attention to this information. The process of purposely paying attention to a message is called *controlled* processing. Interest in a story can enhance the attention and make it easier to access new information in a controlled way (Fredrickson, 1998). Since young people indicate they desire more positively framed news stories (Alon-Tirosh & Lemish, 2014), it could be expected that young people who watch constructive news stories that include inspiring perspectives are more interested in these stories. This might lead to a more *controlled* way of processing constructive news than processing non-constructive news.

Furthermore, another way of processing new information is by *automatic* processing of information (Lang, 2000). This process does not require a lot of cognitive attention, as the resources needed to process a message are allocated automatically. This process is stimulated by highly negative and emotional content which often results in negative emotional responses. When this happens, automatic (or subconscious) attention is paid to the main parts of the information, but the details can be overlooked and not recalled well. Since a non-constructive or more traditional news reporting style focuses mainly on problems and negative information, this could potentially lead to a more *automatic* way of processing.

Kleemans et al. (2019) looked at how children (nine to twelve years old) processed a constructive versus a non-constructive news story and asked in an open approach what they remembered of it. Results of this study showed some contrasting findings. Where children who watched a non-constructive news item were better at recalling some of the general information that was presented in both items, they remembered less of the specific parts of the news story than children who watched a constructive alternative. This could indicate that the children watching the constructive item in fact processed the information in a more controlled way and the children watching the non-constructive item in a more automatic way. However, in this study information processing was measured using only one variable (free recall). In the current study, this process is extended by using three variables to measure information processing; namely free recall, cued recall, and recognition. This creates the possibility to investigate the process more thoroughly. Leading to the following research question:

RQ1. Is there a difference between young teens exposed to a constructive versus a non-constructive audio-visual news item in their information processing (free recall, cued recall, and recognition)?

According to the Broaden-and-Build Theory by Fredrickson (1998; 2001) not only interest in and paying attention to a topic can influence the way it is remembered, but emotions might also play a part in this. The theory states that the experience of positive emotions can broaden one's attention, ideas, and actions to build more cognitive resources. This increased number of cognitive resources can subsequently make it easier to process a message (Lang, 2000). Positive emotions make people more open to and aware of their environment and will therefore make them learn more about it. On the other hand, negative emotions like anger and fear will narrow down

people's views and behaviour (Fredrickson, 1998; Fredrickson, 2001). As constructive reporting has already proven its effect on young people's emotional responses, it is interesting to see if this effect is reflected in young people's recall (Kleemans et al., 2019). This study will investigate both positive and negative emotions as the Broaden-and-Build Theory suggests both might influence information processing.

RQ2. Is the effect of constructive reporting on cued recall and recognition mediated by emotions experienced by young teens?

Method

A one factor between-subjects experimental design was used to investigate the effect of constructive reporting on the information processing of young teens. Each participant was randomly assigned to either a constructive or a non-constructive audio-visual news item (type of reporting style).

Stimulus materials

Specifically for this study two versions of an audio-visual news item were conducted: a constructive and a non-constructive item. To make the items connect well with young people and resemble the typical children's news, only news parts that originated from the official Dutch news for children ('NOS Jeugdjournaal') were used to construct the different versions. The topic of the news items were the bush fires in Australia that were covered from November 2019 until January 2020. Previous research shows that when it comes to watching the news, children are the most afraid of natural disasters (Riddle et al., 2012). Next to that, the bush fires had a big impact on the animals living in Australia and 'animals' as a topic is one of the most popular ones covered in news for children (Alon-Tirosh & Lemish, 2014; Kleemans, de Leeuw et al., 2017).

In the constructive version different constructive elements were included focusing on solution-oriented perspectives, creating positive feelings and relationships and on non-victims (Hermans & Gyldensted, 2019; Kleemans, de Leeuw et al., 2017; Kleemans, Schlindwein et al., 2017). These constructive parts were mainly placed at the peak and at the end of the item, to create the biggest impact on viewers (Fredrickson, 2000; Kleemans, de Leeuw et al., 2017; McIntyre & Gyldensted, 2018). The non-constructive version focused on the disaster itself and the problems that occur with animals and people as victims (Gyldensted, 2015). Apart from these differences in focus, several

characteristics of the news items were kept the same, to assure comparability, see Table 1. As only real fragments from the Dutch news for children were used (to establish ecological validity), not every subitem was exactly the same. One of the consequences was that the items had different presenters. To ensure that this had no influence on the results, the evaluation of the presenter was checked for (see 'participants'). Table 1 gives an overview of the specific parts in both items.

Table 1. Subitems and length of the stimulus materials

Non-constructive			**Constructive**		
Items	Length	Elements	Items	Length	Elements
Opening tune	00:10:45	-	Opening tune	00:10:45	-
Opening studio	00:10:02	Focus on problem	Opening studio	00:12:44	Neutral
Part 1: protests Sydney	00:39:86	Overlapping information	**Part 1:** protests Sydney	00:39:86	Overlapping information
Part 2: animals (victims)	00:25:13	Negative emotions (sadness, hopelessness), victims	**Part 2:** animals (rescued)	00:43:72	Positive emotions (hope, awe resilience), help, positive relations
Studio transition	00:08:95	-	**Part 3a:** Australian youth	00:21:22	Solutions, non-victims, collaboration, positive emotions
Part 3a: Dutch children in Australia	00:38:96	Negative emotions (fear, hopelessness), victims, problems, suffering	Studio transition	00:08:79	-
Part3b: Australian youth	00:32:69	Negative emotions (hopelessness), victims, problems	**Part 3b:** Dutch children raising money	00:32:57	Solutions, non-victims, collaboration, positive relations
End tune	00:09:15	-	End tune	00:09:15	-
Total:	02:55:21		Total:	02:58:20	

Participants

The original sample consisted of 228 participants. Data cleaning resulted in the exclusion of 54 participants for the following reasons: they did not finish the full questionnaire, they did not agree to the terms of the research, or they did not meet with one of the set criteria (e.g., age; maximum time). The final sample therefore consisted of 174 participants (age: $M = 12.43$, $SD = 1.26$, range: 10–15). The majority of the sample were girls (58.6%) and one participant indicated not to identify with or did not want to indicate any gender. Different school levels were represented ranging from fifth grade in elementary school to the ninth grade of secondary school.

The participants were randomly assigned to one of the two news items. This resulted in 84 participants in the non-constructive condition and 90 participants in the constructive condition. A randomization check showed no significant differences between the two groups based on gender ($X^2(1) < .001$, $p = .984$), educational level ($X^2(2) < .14$, $p = .932$), age ($F(1, 172) < 1$, $p = .737$), or news consumption ($F(1, 172) = 1.03$, $p = .312$). As both news items had a different presenter, the participants were asked what kind of report grade they would give the presenter on a scale from 1 to 10, and there was no significant difference between the two ($F(1, 172) < 1$, $p = .861$).

Procedure

Due to the corona epidemic, the researchers could not be physically present during the conduct of the study. In consultation with teachers of the schools, a letter was sent to potential participants and their parents. In the letter the general goal of the study was explained, with the contact information of the researchers for any further questions.[1] The young teens received a link to the survey in the online programme *Qualtrics.* The survey started with a short description of the study. Participants were told beforehand that there were no wrong answers and that they could stop at any given time. They had to give active consent themselves before they could go any further. Participants entered the questionnaire and first answered a few demographic questions. Then participants were asked to indicate how they felt at that moment. Next, a test video was shown to check vision and sound. If this worked, the participants were submitted to one of the news items. After viewing the news item, participants answered questions about their emotions and what they remembered of the information in the news item. Upon submitting the questionnaire, participants were thanked for their participation and the purpose of the study was explained. Next to that, it was explained that the news items were specifically created for this study and that the bush fires were not raging at that time.

Measures

Emotions: Four basic feelings – joy, anger, sadness, and fear (Keltner et al., 2014) – were used to measure emotions. These emotions were asked before and after watching the news item to measure changes in emotions caused by watching the news item. The emotions were measured with a 'visual analogue scale' ([VAS], Davey et al., 2007) ranging from 0 to 100. A higher score meant a higher intensity of feeling a certain emotion. Change in emotions was calculated by subtracting the average intensity of emotion after watching the news item from the average intensity of emotion before watching the news item (see Kleemans, de Leeuw et al., 2017; Kleemans, Schlindwein et al., 2017; Kleemans et al., 2019). The differences in the three negative emotions (anger, sadness, and fear) were conducted into one average difference score (see Table 2). The reliability of the scale was acceptable: $\alpha = .69$ (Field, 2018).

To explore *information processing*, three variables were used: Free recall, cued recall, and recognition. These three variables are in line with the different phases of information processing proposed by Lang (2000): the retrieval of information, the storage of information, and the recognition of information.

Free recall: To measure the *retrieval* of information (Lang, 2000) a *free recall* method was used to measure the perceived main message. Participants were asked in an open-ended question to write down what they thought the most important message of the news item was. The answers that the participants filled in were analysed using a basic version of a qualitative thematic analysis (Braun & Clarke, 2006). All answers were first given codes and in the next step combined into different nominal categories. This led to seven content-oriented categories and three residual categories (see Table 3). In the next step the different free recall answers of the perceived main message were counted which made it possible to compare both groups.

Cued recall: To measure *storage* of the information (Lang, 2000) a *cued recall* method was used. Participants had to answer three open-ended questions – each about one of the parts of the news item (Table 1) – that were accompanied with two pictures as cues to help them retrieve the information. (For example: '*Why were these people in Australia protesting?*' accompanied with two stills of the news item where people were protesting in Australia.) Participants were encouraged to be as thorough as possible in their answers. To measure cued recall each answer was scored with 0 (no or

wrong answer), 1 (partly correct answer) or 2 (complete and correct answer) point(s).[2] As there were three questions, the total scores ranged from 0 to 6.

Recognition: To measure how the information was *encoded* (Lang, 2000) a *recognition* method was used. After answering the previous open-ended questions, participants viewed ten images on a new screen and had to check the boxes of the ones they thought they had seen in the news item. Five of those images had been in the news item and five of them had not. A total score of how many correct images were chosen was calculated. Every image that was chosen correctly resulted in an extra point and every wrong chosen image resulted in a minus point. There were five right answers in total and the total scores of the participants ranged from 0 to 5.

Control variables: Because the age of the participant could be an explanatory factor for possible differences in information processing (Valkenburg, 2004), age was included as control variable in the analyses. Next to that, 'interest in the topic' could be an influencing factor explaining possible differences in information processing (Fredrickson, 1998; Lang, 2000) and was therefore also included as control variable. Interest in the topic was measured on a scale from 0 to 100 (0 = not interesting at all, 100 = very interesting). Only where the control variables had a significant influence on the tested effects they are discussed in the results.

Results

Effects of type of news reporting on emotions (H1)

The first hypothesis, stating that watching constructive news would lead to (H1a) a smaller decrease in positive emotions and (H1b) a smaller increase in negative emotions than watching non-constructive news was partly confirmed. Using a one way multi-variance analysis (MANOVA), analyses showed that the decrease of the positive emotion 'joyful' was indeed significantly less for participants who saw the constructive news item ($M_{\text{difference}}$ = -2.76) than for participants who watched the non-constructive news item ($M_{\text{difference}}$ = -12.02), $F(172) = 17.186$, $p < .001$. For the negative emotions, results showed differences between both groups in the expected direction, but these were not significant, $F(172) = 5.566$, $p = .177$. Therefore, H1a can be confirmed, but H1b must be rejected.

Table 2. Differences in emotions (Means and Standard deviations) before and after watching a (non-) constructive news item (*N* = 174)

	Non-constructive			Constructive		
	Before *M* (*SD*)	After *M* (*SD*)	Difference Means	Before *M* (*SD*)	After *M* (*SD*)	Difference Means
Positive emotion* (Joy)	75.27 (20.53)	63.25 (25.46)	-12.02	71.66 (24.06)	68.90 (25.00)	-2.76
Negative emotions (scale)	10.46 (20.98)	17.82 (24.18)	7.36	10.20 (22.00)	14.14 (23.22)	3.93

*Significant effect $p < .05$

Effects of news reporting style on information processing (RQ1)

Three different ways were used to explore participants' information processing when watching a constructive or non-constructive news item: free recall, cued recall, and recognition (Lang, 2000).

Retrieval of information: Free recall of the most important message

The perceived main message of the participants can be divided into seven substantive categories. Findings show that three categories can be related to the different parts in the news items (Government; Animals; Children/Youngsters), the other four categories refer to more abstract or general information (Bush fires in general; Taking action; Climate change; Deeper level). Also, there was a residual category that contains answers that could not be used for further analyses (Multiple answers; Other; Nothing/I don't know) (Table 3).

The most dominant main message for the participants watching the constructive version referred to the category 'Children/youngsters' (24.4%; non-constructive: 8.3%). As for the participants watching the non-constructive version the dominant main message referred to the category 'Bushfires in general' (19%; constructive: 8.9%). Furthermore, an important difference was found in the category 'Taking action' which was referred to much more as the main message by participants watching the constructive version (18.9%) than those watching the non-constructive version (3.6%).

Table 3. Results free recall most important message differences between constructive and non-constructive (between brackets = ranking top 3) (*N* = 174)

	Examples answers	Non-constructive	Con-structive	X^2	*p*	Total
Government (Part 1)	'That the people in Australia were mad at the government'	9.5%	6.7%	.48	.489	8.0%
Animals (Part 2)	'That a lot of animals were dying'/ 'That they were saving animals'	15.5% (3)	7.8%	2.53	.112	11.5%
Children / youngsters (Part 3)	'That those children had trouble breathing'/ 'They raised money'	8.3%	24.4% (1)	8.12	.004*	16.7%
Bushfires in general	'There are bushfires in Australia'	19.0% (1)	8.9%	3.78	.052	13.8%
Taking action	'That we can do something about it!'	3.6 %	18.9% (2)	10.02	.002*	11.5%
Climate change	'Stop climate change!'	17.9% (2)	12.2% (3)	1.09	.297	14.9%
Deeper level	'Things don't go as well in every country'	10.7%	8.9%	.16	.685	14.9%
Residual categories						
Multiple answers	People are protesting (part 1) and are raising money (part 3)	6.0%	4.4%	-	-	5.2%
Other	'The people'	2.2%	2.4%	-	-	2.3%
Nothing /I don't know	'I don't know'	7.1%	5.6%	.19	.667	6.3%
Total		*n* = 84	*n* = 90			*N* = 174 (100%)

Note. $\chi^2(174) = 23.01$, p = .006.
*Significant difference, p < .05
– More than 20% had a value of less than 5 and could therefore not be measured separately in the Chi-square

A Chi-square test was used to help interpret the differences found between the two versions and the perceived main message. Table 3 shows that participants who saw the constructive version referred significantly more often to the category 'Children/youngsters' (part three: including solutions, non-victims, collaboration, positive relations) as the most important message than participants of the non-constructive group referred to the equivalent

part three (including problems, victims, negative emotions), $\chi^2(2) = 8.12$, $p = .004$. Participants of the constructive version often mentioned something like '*That these children were raising money and helping out*' as the most important message.

Furthermore, a difference was found between the importance of the main messages referring to the category 'Taking action'. Participants who watched the constructive news referred more often to this category (18.9%) than participants who watched the non-constructive news item (3.6%). This difference was significant, $\chi^2(2) = 10.2$, $p = .002$. In the constructive condition it occurred relatively more often that participants realized that they could *take action* to help people and animals in Australia. These participants related the news story to themselves by giving answers such as '*That we should all do something to help*'.

Finally, there was a difference found in how participants referred to more general or abstract elements as the most important one. Participants who had seen the non-constructive news mentioned a general statement about the bushfires in Australia most often as the main message (19.0%), writing down something like '*That there are bushfires*'. While participants who watched the constructive news mentioned this much less often (8.9%). However, this difference was not significant.

Storage of information: Cued recall

To analyse possible differences in cued recall (RQ1), a one-way analysis of covariance (ANCOVA) was carried out. Participants who saw the constructive news item remembered a bit more from the news item in total ($M = 3.48$, $SD = 1.21$) than participants who saw the non-constructive news item ($M = 3.07$, $SD = 1.31$). This difference was significant, $F(172) = 6.345$, $p = .013$. To understand this effect more thoroughly, the answers towards the different parts of the news item were tested separately (Table 4). The results showed that there was no significant difference between the two groups in the questions about the first two parts, but that there was a significant difference in the question about part three ($F(172) = 16.181$, $p < .001$). The last part of the news item was remembered significantly better by participants who saw the constructive news item (including solutions, non-victims, collaboration, positive relations) ($M = 1.36$, $SD = .64$) than by participants who saw the non-constructive news item (including problems, victims, negative emotions) ($M = .95$, $SD = .79$) and caused the total effect.

Table 4. Means, Standard deviations, F-values and p-values of the different parts of 'cued recall' of the news item (*N* = 174)

	Condition					
	Non-constructive		**Constructive**			
	M	*SD*	*M*	*SD*	*F*	*p*
Part 1	.92	.52	.89	.57	.013	.910
Part 2	1.20	.51	1.23	.56	.228	.634
Part 3	.95*	.79	1.36*	.64	16.181	< .001*
Total	3.07*	1.31	3.48*	1.21	6.345	.013*

*Significant effect p < .05

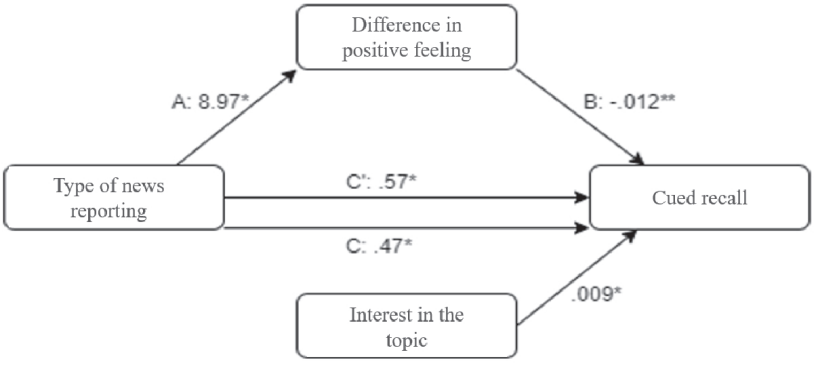
Encoding of information: Recognition

To analyse the last part of information processing (RQ1) – recognition – results of an ANCOVA showed that there was no significant difference in the score of how many shown images participants recognized, $F(1, 172) = 2.480$, $p = .117$ ($M_{\text{constructive}} = 3.74$, $SD = 1.38$; $M_{\text{non-constructive}} = 4.04$, $SD = 1.01$).

The role of emotions on cued recall (RQ2)

Because there was no significant difference between the news versions on recognition, this variable was not included in the mediation analysis. To analyse the possible mediating effect of emotions (RQ2) on cued recall a mediation-analysis was carried out with the analysis programme 'PROCESS' (Hayes, 2013). As hypothesis 1 was only confirmed for the positive emotion 'joyful' and not for the negative emotions, the mediation analysis was only conducted for this positive emotion. The results are shown schematically in Figure 1. There was a significant effect of type of news reporting on the decrease in positive emotion ($\beta = 8.97$, boot $SE = 2.448$, CI(4.13, 13.80)). Participants who saw a non-constructive news item had a bigger decrease of positive emotion than participants who saw a constructive news item (path A, H1). This effect on positive emotion turned out to have a subsequent effect on cued recall (Path B). The less a participant's positive emotion had decreased, the more was remembered of the news item. This effect was significant ($\beta = -.012$, boot $SE = .006$, CI(-.02, .00)). There was also a significant direct effect of type of news reporting on cued recall ($\beta = .57$, boot $SE = .191$, CI(.19, .95)). Participants who had seen a constructive news item had higher cued recall scores than participants who saw a non-constructive news item (Path C'). The indirect effect of 'type of news reporting' on 'cued recall' (Path A*B) was also significant ($\beta = -.10$, boot $SE = .048$, CI(-.21, -.02)).

Finally, interest in the topic turned out to have a small but positive effect on cued recall. Participants who were more interested in the topic presented in the news item, also had slightly better cued recall scores (β = .01, boot *SE* = .004, CI(.00, .02)) regardless of the news version they saw. In conclusion, constructive reporting has a positive effect on cued recall. This effect is mediated by a smaller decrease in positive emotion and is influenced by interest in the topic.



**Significant effect, p < .05*

*** Significant effect, p = .05*

Figure 1. Schematic representation of mediation effect positive emotion on the effect of type of news reporting on cued recall

Conclusion and Discussion

This study explored the effects of using constructive techniques in audio-visual television news for young teens and gives more insight into how constructive news affects the emotions and information processing of a news story. In line with earlier studies investigating young people's responses to constructive news in written texts, this study found that using a constructive approach in audio-visual news leads to a smaller decrease of a positive feeling after watching the news (Kleemans, de Leeuw et al., 2017; Kleemans, Schlindwein et al., 2017; Kleemans et al., 2019). Furthermore, this study showed some differences in how the information was processed. Considering the retrieval of information, measured via free recall, the reporting style (constructive versus non-constructive) influenced young teens' perception of what they considered as the main message of the news item. Young teens who saw a non-constructive news item referred more often to the general

information about (bush)fires than the youngsters who saw a constructive news item. This could refer to what Lang (2000) calls automatic processing of information in which people pay close attention to more general information but do not focus on details. The young teens who saw a constructive news item more often referred to more specific information with solution and action perspectives as the most important message. Also, these parts with constructive elements were remembered better (cued recall) by participants who saw a constructive version than for those who saw a non-constructive version. As this was the part with the more detailed information it could indicate that watching constructive news might lead to a more controlled way of processing information where people pay attention more consciously. This makes it easier to store information and retrieve it long-term (Lang, 2000). Next to that, results show that a constructive news item can stimulate behavioural intentions of participants (cf. Baden et al., 2019): Young teens watching a constructive news item related the information to themselves more often and mentioned that their takeaway was that they should and could actually do something to help. These findings show that the use of constructive news could be a promising way to address the concerns that news can frighten young people (Alon-Tirosh & Lemish, 2014). It is shown that negative or shocking images are not necessary to inform young teens. This indicates that using a constructive approach in news could contribute to developing suitable strategies to inform young people.

Kleemans et al. (2019) raised the critical question whether it could be a problem when the more general information would be less dominantly remembered by young people exposed to constructive news. This study showed reassuring results: both groups equally mentioned the importance of climate change as a cause of the bush fires. Furthermore, there were no differences between both groups in recalling the overlapping part that presented the 'who, what, where, and when' of the event (cued recall) nor in recognition of the presented information. In conclusion, both types of news reporting show young people what the problem is, underline how it is caused, and make them aware that changes need to be made. In addition, the constructive reporting gives them more perspectives for action which leads to the feeling they can contribute themselves and makes them more aware of the detailed information. From a constructive journalism perspective, it is important to add the question 'what now' and include inspiring and hopeful perspectives wherever possible to give a more balanced overview and not leave young people with only a hopeless and frightened feeling (Gyldensted, 2015; Haagerup, 2017).

The effect of constructive reporting on cued recall that was found, was mediated by the experience of a more positive emotion. This can be linked to the Broaden-and-Build Theory (Fredrickson, 1998; Fredrickson, 2001) in which is stated that the experiencing of positive emotions can broaden one's attention, ideas, and actions to build more cognitive resources and make it easier to process a message. This study showed that next to emotional responses, interest in the topic had an influence on cued recall. The more interested young teens were in a topic, the more they could remember of it regardless of the version. Since this study only looked at one topic (the bushfires in Australia), it would be interesting for future research to compare different topics to get more insight into how this might influence the information processing of the news. Next to that, this study was conducted during the COVID-19 pandemic which meant that the researchers could not physically be present for the full procedure. This might have had a small effect on the study in case a participant, for example, did not understand a question and could not have had it explained by the researchers. Which is also why this study only included the positive emotion 'joy'. Other positive emotions like hopeful and inspiring (Hermans & Prins, 2020) were considered for this research, but were not added because these terms were expected to be too complicated to understand for young teens without further explanation. For further research it is advisable to include more positive emotions and explore what other effects may come from a more positive state of mind.

As watching a constructive news item had some positive consequences for young people's feelings and information processing, including constructive techniques in news could be an appropriate strategy to counteract the unwanted negative effects that can occur when young teens watch the news. This is not only relevant for young people, but also for adults. Recent studies by Reuters Institute showed that the most important reason why people avoid news was that it had a negative influence on their mood (Newman et al., 2017; 2019; 2022).

In conclusion, this study confirms that constructive journalism could be an appropriate approach to present information to young people. Findings show several beneficial consequences of constructive reporting – on well-being, and recall – and no undesirable effects. It is important to keep connecting with the wishes and needs of the audience (Costera Meijer, 2022). Constructive journalism acknowledges the importance of a public-oriented approach and emphasizes the importance of taking responsibility for the frames that are used in news. By producing news that counteracts the negativity bias

and that looks for ways to stimulate engagement and empowerment it wants to contribute to a well-functioning democracy. Something that cannot be done without the involvement of the future generation, which is why it is important to inform young people in an appropriate way. Finding solutions to prevent negative consequences of the news on young teens is necessary and remains under construction.

Notes

1. Because this study was carried out in the context of an educational programme (master's thesis), it was not mandatory to request active permission from an ethics committee at the time of the research. Active consent was obtained from schools and participants and passive consent from parents was sufficient.
2. The full coding scheme is available on request: contact the first author.

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