Reflexivity and negotiation in collaborative journalism on air quality

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Abstract

This paper sheds new light on collaborative journalism and investigates how this innovative newsroom practice affects the news production process and product. More particularly, we focus on a collaborative project on air pollution involving a newspaper, university, and environmental government agency and examine how journalists and professionals within the fields of science and policy-making interact within this collaboration. We draw on linguistic ethnographic fieldwork behind the scenes of the collaborative project as well as a comparative multimodal discourse analysis of news items produced within the collaboration and similar news items produced a year earlier outside the collaboration. In our study, we analyse how the act of collaborating blurs boundaries between the traditional professional identities for the three categories of actors involved and urges them to reflect on their own and each other's discursive practices. Our study demonstrates the added value of a linguistically sensitive analysis of both the discursive processes behind the scenes of the news production process as well as the news product itself, in revealing how innovative newsroom practices like collaboration between journalists and expert sources shape the (language of) news.

Keywords:

Collaborative journalism, reflexivity, mediatization, linguistic ethnography, multimodal discourse analysis, air quality

1. Introduction

The complex relationships between media, science and politics have been put centre stage during the COVID-19 crisis. As with many other facets of society, the pandemic has exposed important weak spots in how these three related social fields interact against the backdrop of today's changing media ecology. Issues like the rapid spread of misinformation on social media (Cinelli et al., 2020) or political figures building their own partisan narrative around the crisis (Dunwoody, 2020) are not necessarily new. Observing how these issues play out in the midst of a public health crisis, however, lays bare the high stakes involved in researching how media, science and politics relate to one another in society. This paper aims to contribute to this research by investigating how a collaborative project on air pollution between a newspaper, university and environmental government agency affects the news production process and product.

We approach this case from a media linguistic perspective, in which both the discourse of the news product and the discursive 'newsmaking' practices are key (Burger, 2018; Cotter, 2010). In line with previous innovative media discourse studies (Jacobs & Tobback, 2013; Vandendaele & Jacobs, 2014), we use linguistic ethnography to analyse how situated language use in the newsroom and beyond shapes the news product. More specifically, we conducted extensive multi-sited fieldwork behind the scenes of the collaborative project, resulting in a fine-grained analysis of the discursive practices of three professional communities coming together in the news production process. This linguistic ethnographic analysis was complemented with a multimodal discourse analysis comparing news items produced within the collaborative project and similar news items produced a year earlier by the same journalists on a related air pollution topic but - crucially - outside the collaboration. With this combined methodological approach, we intend to answer the following research questions:

RQ 1: How is the collaboration between journalists and professionals within the field of science and policy-making reflected in (and potentially impactful on) the news production process and product?

RQ 2: How can a linguistic ethnographic lens focused on the news production process, combined with multimodal discourse analysis, shed new light on the news product and vice versa?

RQ2 relates to a larger and long-standing methodological debate on whether media and journalism are best studied by examining the product or the production process behind that product (Fairclough, 1995; NT&T, 2011; Van Dijk, 1988). As boundaries between producing and consuming journalism are dissolving (Bruns & Schmidt, 2011), however, this distinction seems to have become futile and scholars are faced with an infinitely expanding production process (or a never ending product). This paper, therefore, intends to place "the news text at the central nexus of analysis within (and not against)" its institutional context (NT&T, 2011, p. 1848). In doing so, we hope to offer new perspectives on how to handle the fluid and complex research objects that are "today's noisy news cultures" in which news is constantly circulated and recontextualized (Van Hout & Burger, 2015, p. 3).

In the following sections, we will first provide a short theoretical background on the media-science-politics relationship and the rise of newsroom innovations such as collaborative journalism. Second, the case of the collaborative project on air quality is explained in more detail. Next, the different datasets and analytical framework will be outlined. Finally, the findings are presented, followed by the discussion and conclusion.

2. The relationship between media, science and politics

In recent years, one of the most popular ways of discussing the relationship between media and other social fields has been through the concept of mediatization. From an institutionalist perspective, mediatization refers to the process in which on the one hand, media have become social institutions with their own logic, and on the other hand, other institutions adapt to this media logic, using elements, such as news values and storytelling techniques, to compete for people's attention (Hjarvard, 2008; Strömbäck, 2008). One must be wary, however, of viewing this as a linear process in which media overpower or "colonize" other institutions in society (Strömbäck, 2008, p. 240). Deacon & Stanyer (2014) point out that instead of simply complying to the rules and logics of the media, political actors can also alter their communicative practice in order to manage the media and use them to their advantage. Briggs & Hallin (2016, p. 11) show how media institutions themselves have become penetrated by other social fields like medicine or politics and how this has created a "complex exchange and partial hybridization of logics and professional practices".

Along with mediatization, this hybridization and the boundary-work that might ensue from it have sparked a lot of interest amongst media linguists. Firstly, one might wonder how language is entextualized as it travels across "boundaries of time, texts, contexts, media" (Jaffe, 2009, p. 573), and in this case specifically across boundaries of media, science and politics. Secondly, it is interesting to see how media outlets and journalists deal with this mediatization in the context of ongoing challenges, such as commercial pressure, large information flows, and loss of authority (Van Hout & Burger, 2015). Recently, studies have shown how these challenges have prompted innovations and a new sense of reflexivity in newsrooms around the world, in which journalists critically rethink how they should navigate these challenges and what journalism means within this complex context (Carlson, 2016; Mast et al., 2019). The collaborative project investigated in this paper can be perceived as one such innovation. Collaborative journalism has been described before in the form of different newsrooms working together, the Panama papers perhaps being the most famous example (Carson & Farhall, 2018). In this paper, however, collaborative or participatory journalism takes on a different form as it opens up the news production process to the audience in the form of user-generated content, crowd sourcing or co-production with actors of the very field that the reporters are covering (Paulussen & Ugille, 2008; Spangenberg & Heise, 2016). In previous research, the author has shown how collaboration between journalists and actors from the field of coverage, can set in motion a range of boundary-work amongst the different actors (Verkest &

Jacobs, 2021). In the following section, a more detailed picture is drawn of the collaborative project studied in this paper.

3. Case

This paper is part of a larger ethnographic study on a collaboration between a newspaper, university and environmental government agency in Flanders, Belgium. These three partners worked together closely over the course of nearly a year to set up a large-scale citizen science project on air quality. During the project, 20,000 participants measured Nitrogen Dioxide (NO_2) in front of their doorsteps. The results of those measurements were published in the newspaper and in a scientific report.

A short profile of the three partners:

- Within **the newspaper** organisation the project was led by one "project journalist", who took on larger projects that tended to take more time to investigate, and one deputy editor in chief. Aside from these two journalists, the audio-visual and marketing team was also heavily invested in the project.
- Although the newspaper was the initiator, it was **the university** who took the overall lead and was in charge of the scientific process. They convened regular 'partner meetings' in which various aspects of the project were discussed, and 'scientific committees' devoted to the scientific proceedings of the project. The university team included several scientists as well as science communication and PR staff.
- The **environmental government agency** was charged with executing and communicating about environmental policy as well as formulating policy advice and scientific reports. Although the agency is considered independent, they are directly funded by the ministry of environment and at least one informant indicated during an interview that they avoid publicly criticising the ministry's policies. Within the team working on the project were several scientists, a department head and the spokesperson for the agency.

At the time, this kind of large-scale collaboration between a newspaper, university and government agency was relatively new in Flanders. This was marked by an editorial at the start of the project stating that "the newspaper is stepping out of its usual journalistic role", but also by the fact that the collaboration itself was an overt part of the story (e.g. the newspaper produced a podcast on how the collaboration was set up and how the different parties dealt with this unusual practice).

4. Data and analytical framework

4.1. Datasets

This paper draws on three datasets. The first dataset consists of audio-recordings, transcripts, internal documents and field notes collected by the author during extensive multi-sited fieldwork behind the scenes of the citizen science project from May until November 2018. The author gained access to the project shortly after it had started and was able to conduct fieldwork as a participant-observer in the newsroom, during the scientific committees and partner meetings . She also conducted interviews with various key actors. The author is not connected to the university that is a part of this collaboration.

The second and third dataset are corpora of news items from the newspaper involved in the project. These news items consist of on- and offline articles as well as videos and podcasts. The author collected these corpora after the project had ended.

The news items of the second dataset (corpus 2018) were published between the 29th of September and the 6th of October 2018. In these news items, the results of the citizen science project were published and discussed in the form of interviews, opinion pieces and other news items. More

specifically, corpus 2018 consists of a special weekend edition of the newspaper devoted almost entirely to the citizen science project and other related news items published on- and offline in the following week.

The third dataset consists of news items published one year earlier, viz. between the 17th and 25th of February 2017 (corpus 2017). These news items are a part of a larger series of news stories dedicated to the progress that had (not) been made since the 2015 Paris Climate Agreement. Within this series we focus on two large stories concerning air quality.

Corpus 2017 and 2018 are uniquely similar in that their news items were written by nearly all the same journalists, feature some of the same interviewees and deal with the same topic: air pollution. The corpora differ in two ways. First, they revolve around different air pollutants. The 2017 news items focus on Particulate Matter (PM), while the 2018 news items focus on NO_2. The second difference is that the 2018 news items were produced in the explicit collaboration of the citizen science project, while the journalists and interviewees involved in making the 2017 news items had a more common source-reporter relationship.

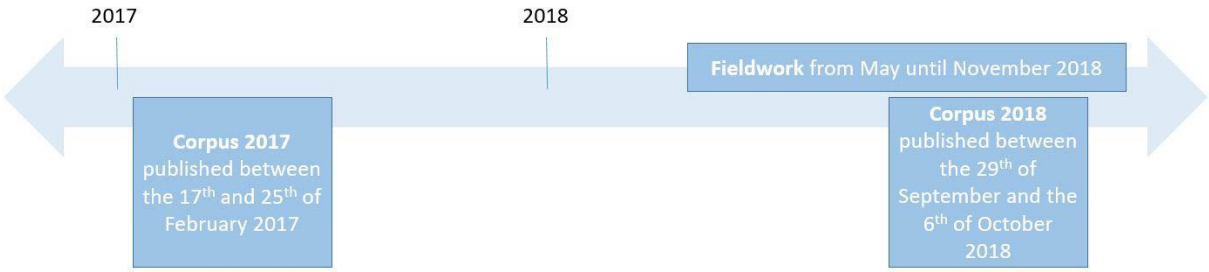


Figure 1: timeline datasets

Other than the similarities and differences listed above, the main reason why we selected these two corpora is because the key players in the project explicitly and repeatedly referred to the 2017 news items in the making of the 2018 news items. The fieldwork data, therefore, contains the production process of the 2018 news items and reflections of key players on the 2017 news items.

Quotations from these three datasets were translated from Dutch to English for the purpose of this paper.

4.2. Analytical Framework

The two corpora were compared using Multimodal Discourse Analysis (MDA), for which we mainly draw on Kress and van Leeuwen's *Grammar of Visual Design* (Kress & van Leeuwen, 1996). Kress and van Leeuwen state that, much like language, visual communication adheres to culturally specific rules and structures. They do not focus so much on the sign as such, but on the choices made in the sign-making process: how is an object or entity represented, which aspects of it are represented and what resources were used to do so? Raising these questions allows us to examine the texts in ways that relate to the context of the production process: which discursive choices did the journalist make? What kind of modes or semiotic resources (think of color or narrative structure in a text or photograph) were adopted to represent those choices? It has been argued that these choices are part of the meaning-making process and are deeply rooted in the newsmakers' "social, cultural and psychological history [...] and the specific context" in which the news items are produced (Kress & van Leeuwen, 1996, p. 6). Considering the nature of the news items in the corpora, our analysis was

supported by visual quantification rhetoric, focusing on how numbers and quantifiers are represented discursively and visually (Mehta & Guzmán, 2018).

The process-oriented lens of Kress and van Leeuwen allows us to align the analysis of the news items elegantly with the linguistic ethnographic analysis of the production process captured in the fieldwork data. Here our analysis was inspired by Jaffe's views on mediatization, mediation, and entextualization. Jaffe (2009, p. 572) considers mediatization to be a process containing all the "representational choices in the production and editing of text, image, and talk in the creation of media products", and mediation to be a process in which meaning is entextualized in different contexts. Here, representational power lies in the extent to which you are mediated by others. Ethnographic fieldwork gives us a micro-perspective on these mediatization and mediation processes by providing insights into the normative routines and daily practices of journalism that shape the language of news (Cotter, 2010) and also gives us a sense of the lived experiences of the different members in the three communities of practice that are collaborating in this case (Rampton et al., 2004). The fieldwork data were analyzed using qualitative content analysis (Dörnyei, 2007).The comparative MDA of the two corpora and the analysis of the fieldwork data were developed in an iterative process. Our starting point was an exploratory qualitative content analysis of the fieldwork data in which two salient themes were identified. These themes serve as a framework for the MDA of the corpora and qualitative content analysis of the linguistic ethnographic data.

5. Findings

First, the two salient themes uncovered in the exploratory qualitative content analysis of the fieldwork data are discussed. Next, we present the three discursive differences between the two corpora found in the comparative MDA and connect these differences with the fieldwork data.

5.1. Exploratory qualitative content analysis of fieldwork data

Two salient themes were identified in the exploratory analysis of the fieldwork data: the health risks related to air pollution and the political and scientific dimensions of air quality criteria. These themes were considered salient because they were dominant points of discussion amongst the three partners.

The **public health risk of air pollution** was an overarching theme in the meetings and interviews. Not only did the key players[1] struggle to identify the potential health risks, they frequently reflected on how this topic was approached in previous media reports and continuously negotiated how this should be approached in the news items to come. In one of the scientific committees, the lead scientist kicks off a discussion in the following way:

(1)

1 Lead scientist	and then I would also like to take advantage of this opportunity (0.5)
2	to have a substantive discussion about a number of (0.6) um:: (1.3)
3	things of how ((…)) to communicate to the (0.3) um (0.9) participants
4	and the general public (1.6) um ((…)) a link is made with air pollution
5	between::: certain diseases and um ((…)) we have a a sort of
6	discrepancy in which ((…)) there is a continuously clearer link (0.2)
7	here and now between (0.6) um air quality or air pollution and and
8	health aspects (0.5) while actually it used to be (0.9) um a lot worse

[1] None of the scientists involved had a medical background. They were, however, specialised in air pollution from a biological, chemical, ecological, or computational perspective.

9 (0.3) and and I'm worried=I'm worried about that °°and um°° (0.9) I
10 don't understand entirely how tha: (0.5) how tha: um: (2.9) works

In this extract the lead scientist switches between making sense of the risks himself (lines 4-8) and finding a way to construct the issue for the journalists in the project and the general public (lines 2-4). In his view, this story could be negative: there is increasing knowledge about the negative impact of air pollution on health (lines 4-6). One could, however, also forefront that air quality has improved massively in the past decades (lines 7-8). The scientists debated this issue at length, continuing to go back and forth between discussing the actual public health risks and reflecting on the discourse about public health risks in the media. This shows the scientists constructing a discourse about public health risks with an intense so-called 'metapragmatic' awareness, meaning that by applying what they know about the language of news they are able to choose a discursive strategy and consider the possible consequences of the discourse they are producing (Caffi, 2016; Verschueren, 2004).

Related to health risk (discourse) is the theme of **air quality criteria**. These criteria refer to the concentration level of air pollutants that cannot be exceeded without adverse public health effects (European Commission, 2017). The EU and the WHO both issue their own criteria. The EU air quality standards are a part of a directive of the European Parliament (Kuklinska, Wolska, and Namiesnik, 2015), while the WHO air quality guidelines are designed to influence policy-makers in air quality management (WHO, 2005). For PM, the WHO guidelines are stricter than the EU standards. For NO_2, the EU standards and WHO guidelines are the same. At the time of the fieldwork, however, it was rumoured that the WHO had intentions to make its guidelines stricter and the WHO itself already reported on a stricter "threshold value" that should be taken into account when it comes to public health risks . For both PM and NO_2, Flanders does not exceed EU standards, but it does exceed the stricter - published or rumoured - WHO guidelines. The tension between these two criteria was frequently addressed during meetings and interviews and, as will be shown later in the findings, the journalists struggled with the discrepancy between the two authoritative sources.

It should be noted that the tension between the air quality criteria and the way the scientists discuss health risk (discourse) displays the constructedness of scientific knowledge concerning risk. In what follows, it is this constructedness as well as the metapragmatics, with the journalists, scientists and policy-advisors negotiating the conditions and consequences of diverse linguistic choices, that prove to be fertile ground for further analysis (Peterson, 2015). In the next section, the three discursive differences found within this thematic framework are discussed.

5.2. Discursive differences

5.2.1. Specific language

When it comes to describing adverse health effects of air pollution, the 2018 corpus contains language that appears to be more specific than the language used in 2017. This is illustrated by two articles about the health impact of air pollution in **figure 2**:

In the 2017 headline and lead (lines 1-3), death and the number of months lost are forefronted, as opposed to the more specific types of diseases in line 2 of corpus 2018. At the same time, "air pollution" (corpus 2017, lines 1-2) could be considered a hypernym of "car addiction" (corpus 2018, line 1) in this context, as "car addiction" is a direct reference to the specific air pollutant NO_2, which is a traffic related pollutant.

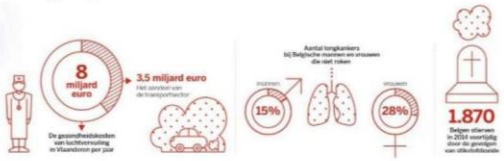
Corpus 2017	Corpus 2018
	
Headline: 1. "We're all dying a little bit of air pollution" **Lead:** 2. Air pollution is costing us on average nine months of our lives 3. The insights on the devastation it is causing to our health are growing every day. 4. ((This newspaper) went looking for the inconvenient truth on the air that we breathe. 5. "We have underestimated the problem far too long"	**Headline:** 1. "Our car addiction is making us ill" **Lead:** 2. Too much asthma, heart attacks after surges of air pollution, a striking number of lung cancers amongst non-smokers: 3. Alarm bells are ringing about the impact of air pollution on our health. 4. The healthcare costs are estimated at 8 billion a year.
Infographic: 	**Infographic:** 

Figure 2

When we connect this finding with our observations in the field, however, a different reading ensues. During the interviews and meetings, several scientists mentioned their frustration with sensational language use and scare terms in the 2017 news items. In one interview, the lead scientist discusses how he made it clear in the very first meeting that he did not want "to communicate the way we normally communicate", but wanted to maintain a positive tone in the project:

(2)

1 Lead scientist	and we're saying like so many [dead] and the and the
2 Interviewer	[mm]
3 Lead scientist	we make it very [aggressive]
4 Interviewer	[mm]
5 Lead scientist	and ((…)) so many people die every year and and
6	that is why air quality is important and >that is why you
7	should care<
8 Interviewer	mm
9 Lead scientist	and and ((the newspaper)) absolutely wanted to go along
10	with that
11 Interviewer	mm
12 Lead scientist	I said no we are really not going to do that (0.6) we have to
11	make it a positive campaign ((…)) and the the we need you to
12	to make the largest air quality experiment in history and then
13	you can then we can say like what is the healthiest route to
14	go to work ((…)) but that is something totally different if
15	there (0.3) so many are dropping dead from the sky
16 Interviewer	[yes]
17 Lead scientist	[you know] so many dead .hhh and so um (0.6) so that was a
18	tough discussion ((…)) (1.2) and (1.5) and then I said I am not
19	joining if
20 Interviewer	yes
21 Lead scientist	you know mean I am not joining (1.4) if it's happening like
22	that

The lead scientist distances himself from the scare terms (lines 1 – 7) that he usually finds in air pollution news and states that premature death should not be the news value of this project (lines 6-7). What is important, in his view, is the scale of the research and the healthy solutions it would be able to provide (lines 12-14). He even goes on to say that if the newspaper had pressed on maintaining fearful language, he would not have participated in the project (lines 18-22). In an earlier informal interview, he explained that he was so insistent on this issue because "people tune out" when there is too much focus on negativity and danger. The use of a more neutral tone was also written down in a briefing about the communication strategy of the project; it was stipulated that the word "air quality" should be used instead of "air pollution" in order to adopt a neutral tone and avoid political parties using the project to their advantage:

(3)

1	All cooperating partners wanted to take on a neutral, open stance
2	and stay far away from a message that could be politically
3	recuperated. For this reason the explicit choice was made to use the
4	word air quality and not the word air pollution.

In the newsroom, it was noticeable how the two leading journalists on the project were keen on maintaining this neutral tone, despite efforts from colleagues to take on language that the scientists would consider sensational. In one editorial meeting an argument unfolds about the front page title of the special weekend edition containing the results of the project:

(4)

1 Journalist 1	now it has become how dirty is the air in your street
2	[the question is if we shouldn't stick to]
3 Journalist 2	[hmm I would do that]
4 Journalist 1	how healthy is the air in your street which is also my gut feeling ((…))
5 Journalist 2	we are going to get immediate response and criticism by
6	((environmental government agency)) and ((university)) when they
7	first lay eyes knowing that for a year we have been talking about how
8	healthy hmm I would not ((…)) and then it will appear like you know
9	they have tricked us by putting dirty on the cover anyway .hhh I
10	wouldn't do it

In quote **(4)**, one of the lead journalists scrutinizes the lay-out and title of the front page (lines 1-2). The other lead journalist immediately jumps to his aid expressing loyalty to and fear of criticism by the partners in the project (lines 5-10). In their argumentation to stick to the neutral tone of the project, the journalists reflect on their commitments towards the scientists they have been collaborating with for nearly a year. The headline continues to be a point of discussion later on in the newsroom as the two journalists face criticism by their peers who state that by changing the headline from "dirty" to "healthy" they are no longer publishing a news story but launching a campaign.

Here, the fieldwork sheds a different light on the discursive differences found in the excerpts in **figure 2**. What was initially perceived as a difference between broad and specific language, can also be perceived as an attempt to write in a more neutral tone. Although focusing on death and diseases are both fearful and negative discursive choices, one could argue that forefronting specific kinds of potential diseases and the health care costs related to them is less fear mongering than forefronting death as a consequence of air pollution. This was at least the argumentation that was held up by the partners of the government agency and university (see lines 14-17, **quote 2**). This is visible in other aspects of **figure 2** as well: the photograph accompanying the 2017 article shows a typical traffic jam as the scene of the crime and the infographic forefronts death by using a decaying bird and a cross to symbolize the months life lost and yearly death toll. In contrast, the 2018 article shows a relatively neutral blue-greyish detailed image of a lung, and in the infographic the death toll shares the stage with specific information on health care costs and lung cancer data.

5.2.2. (Un)certainty of scientific findings

A second discursive difference has to do with the fact that the 2018 corpus emphasizes the uncertainty of scientific findings more than the 2017 corpus. This is illustrated by two videos in **figure 3**. Although the videos are relatively similar, the 2017 video uses quantitative visual rhetoric (Mehta & Guzmán, 2018) to create a more certain cause-and-effect relationship between air pollution and premature death. By repeating the premature death rate over and over in frames 42-45 (corpus 2017), each time using a different quantification or quantifying language, the causal relationship between premature death and air pollution becomes based in a factual discourse.

Corpus 2017	Corpus 2018
Frame (42)  Voice over: On average air pollution is costing us Europeans 8 months of our lives. **Frame (43)**  Voice over: In ((country)) that is about nine months **Frame (44)**  Voice over: "Every year in our country alone more than 10.000 people die prematurely due to air pollution"	**Frame (40)**  Voice over: "((…)) the European environmental agency" **Frame (41)**  Voice over: "now dares to speak explicitly – next to 'PM deaths' of 'NO_2 deaths'" Sound effect: church bells ringing **Frame (42)**  Voice over: "these are people who die prematurely due the consequences of nitrogen dioxide"

Figure 3

Corpus 2017	Corpus 2018
Frame (45)  Voice over: "On average that is one passing every hour"	**Frame (43)**  Voice over: "of these there was an estimate of 1870 ((…)) in 2014" **Frame (44)**  Voice over: "that is more than double the amount as the number of traffic killings that year short episodes of high concentrations of NO_2"

Figure 3 (continued)

Although a quantitative visual rhetoric is used to describe premature death in the 2018 video as well, one could argue that the video makes the causal link between NO_2 and premature death less explicitly. In frame 41 (corpus 2018), we read that the EU "now dares to speak explicitly – next to 'PM deaths' of 'NO_2 deaths'", emphasizing that recognizing the causal link between NO_2 and premature death is relatively new. In frame 43, the real number of deaths is hedged by the words "estimate" and "2014", highlighting that the last time this estimate was conducted was a relatively long time ago.

One exception can be found in one 2018 article about the robustness of the project itself. The article discusses the "accuracy" and "precision" of the measurements, and explains why the results are accurate by discussing standard deviation and other technical aspects of the research project. This type of technical knowledge tends to be avoided in popularized science discourse (Calsamiglia & Van Dijk, 2004). Certainty is thus expressed in a different way than in the 2017 corpus: not with bold claims and strong quantification, but with an unusual display of scientific jargon and stress on accuracy.

Throughout different meetings, several scientists seemed to struggle with the concept of uncertainty and how to communicate about it. During one meeting, a government scientist explained his apprehension:

(5)

1 Gov scientist 1	uncertainty is something that politicians (0.3) can (0.2) it's a
2	double edged sword and that is according to me the only thing they
3	can address (0.5) about (0.6) I don't know that's a question of how
4	openly (.) we will communicate about uncertainty and that whole
5	approach (1.2) um: (1.4) I suspect that that is something that that
6	(0.7) if I may p- (0.8) play de=devil's advocate (0.7) yes (0.6) this is a
7	very difficult concept we often notice that (1.5) politicians can (.)
8	use that

According to the government scientist in quote **(5),** uncertainty is a "double edged sword" (lines 1-2), implying that although (as scientists) they should express uncertainty, this is something that "politicians can use" (lines 7-8) to discredit or abuse the results. This fear was fuelled by the fact that the publication of the results was scheduled two weeks before the municipal elections and by previous comments on similar projects by some politicians.

At the same time, the scientists were anxious that too much certainty concerning the results might lead to misinforming citizens about the public health risks of air pollution. This led to many discussions with the newspaper staff on accuracy in the news items, often in the form of seemingly small linguistic details. One example is found in the final meeting between all partners before the results were published. A government scientist discusses a particular sentence in the press release about the results:

(6)

1 Gov scientist 2	A part of the ((people)) has good air quality (1.1) that's not the case
2	your Particulate Matter ((…)) is up so you get health effects there that
3	weigh much heavier than your NO_2 that you mapped out .hhh so you
4	can't write that you can write that the majority of ((people)) (0.4) was
5	not exposed to traffic=um=related air pollution (0.3) but not um that
6	good quality there are a lot more premature deaths due to
7	particulate matter than by NO_2 I think you need to be very careful
8	with that I also (0.5) indicated that in the report
9 Lead scientist	yes [that's:]
10 Gov scientist 2	[you cannot] write about air quality in this exercise but it's about
11	traffic related air pollution here

The government scientist in quote **(6)** problematizes the word air quality (line 1), as this did not indicate sufficiently that only one pollutant (NO_2) was measured in the project. This might give the impression that their results are about the overall state of our air and might lead people to assume untrue facts about the air quality they are exposed to (lines 2-6).

The following quote from a later editorial meeting shows that the journalists took the scientists' concern for accuracy to heart:

(7)

1 Journalist 1	ehm start with the big conclusions there are three three big
2	conclusions with some boxes that give extra information one

3		emphasize strongly once again that what is Particulate um
4		PARTICULATE MATTER IS NOT NO_2
5		[and NO_2 is not particulate matter hahaha]
6	All	[hahaha]
7	Journalist 1	and a second important thing [is um:::]
8	Journalist 3	[the pr(hh)ofessor] is getting a heart
9		attack

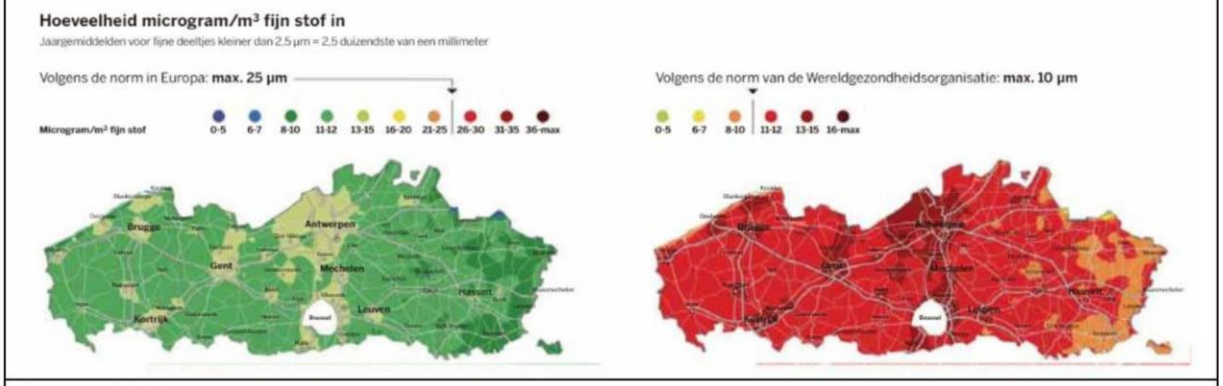
In lines 2-3 of quote **(7)**, journalist 1 makes a mistake saying that they should emphasize what PM is instead of NO_2. He quickly and jokingly corrects his mistake (lines 3-4). His joke is a reference to the many meetings and interactions the journalists had with the other partners – which, gathering from the response he got, seems like a topic that had been discussed before in the newsroom. The joke could also be seen as a face-saving act as he steps out of his usual journalistic role by emphasizing the need for scientific accuracy (Holmes, 2000).

5.2.3. Political vs. scientific angle

A third and final discursive difference has to do with the fact that news stories containing a political 'angle' in 2017, are covered with a scientific 'angle' in 2018. This shift is most noticeable in news items that include the WHO and EU air quality criteria. Throughout the 2017 corpus, the EU standard is continuously discredited as "political" or a "compromise". In contrast, the 2018 corpus appears to confirm the validity of the EU standard and only describes the tension with the WHO guideline using very factual and scientific discourse, focusing on the "process" of "re-evaluation". This is visible in two infographics (**figure 4**) that both show the difference between the two air quality criteria.

In 2017, this difference was visualised in two maps and described in the accompanying article as one (falsely) "reassuring, mostly green map" with air quality according to the EU standards and one "alarmingly red" map representing the state of air quality according to the WHO guidelines. The 2018 infographic also shows this tension, but takes on a totally different approach: a horizontal list of measured values of NO_2 combined with a table of the different criteria and specific numbers of people living in areas in which these values are transgressed. Not only does the contrasting green and red map of the 2017 infographic amplify the tension between the two criteria, it is also a rather crude representation of the data compared to the level of detail we find in 2018.

Corpus 2017



Corpus 2018

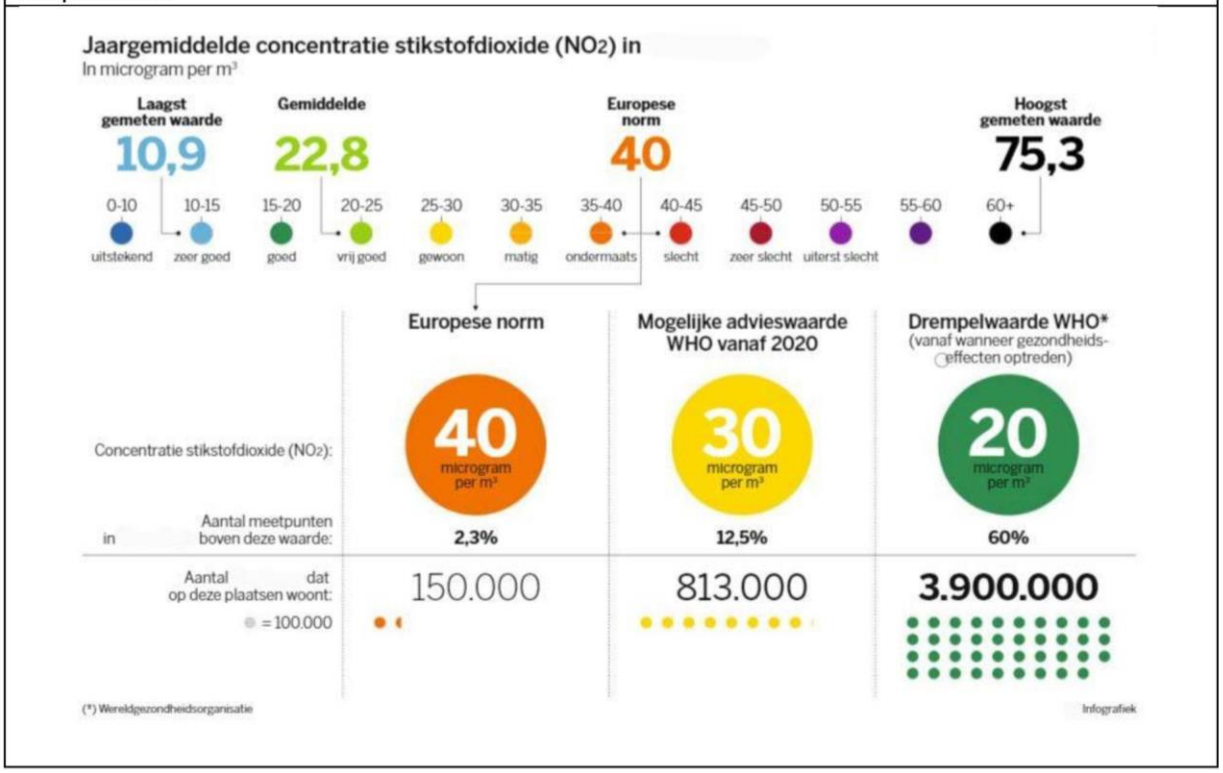


Figure 4

During an interview, the two lead journalists brought up the 2017 infographic in **figure 4** as an example of the "tension between journalism ((…)) and science". The journalists stated that although both maps are "partly political" and neither of them are "purely scientific", they consider the WHO guidelines to be "the most scientific". According to the journalists, they base their claim on expert sources, but also on the fact that the government only adheres to the EU standards as it is in their "best interest to minimize the results". It was this political conflict that inspired the journalists to create a similar map in 2018. When suggesting this to the partners, however, this idea was not well received:

(8)

1 Journalist 2 I felt like shouldn't we just (.) make the the whole ((citizen science

2	project)) map
3 Interviewer 2	mm
4 Journalist 2	<u>again</u> but then with those criteria (1.1) yes then they immediately
5	said like yes but yes it will be bad enough as it is (.) right (.) so and
6	that's not ne- and we can make our point as it is you don't need to
7	start .hhh um:: messing around with that ((…)) but you feel the
8	dilemma we are (.) in in business with the government and the
9	university who are holding on intensely to it all has to be correct and
10	we'll take what's legally correct and the scientifically valid at that
11	time ((…)) while we have something like yes but wait so that's
12	then our critical voice (he he)

According to the journalist in quote **(8)**, the other partners involved had stymied her idea to create similar contrasting maps for NO_2 because "things are bad enough as it is" (line 5). In 2017, one of the reasons for forefronting the political tension with the WHO guidelines was that it was in the government's best interest not to use this guideline. This puts the journalist in a difficult position in 2018, as she is now "in business" with that very same government (line 8) and therefore feels she cannot use her "critical voice" (line 12).

The same journalist addresses this issue in an interview she is conducting with one of the scientists. The scientist immediately pushes back on the question by stating that this will be "a long and complex answer" and by focusing on the level of scientific uncertainty with which these kinds of criteria are set. The journalist responds by emphasizing the same political angle we find in the 2017 corpus (lines 1-3):

(9)

1 Journalist 2	this is (.) at the moment the consensus but it's politically and
2	economically inspired .hhh and if you look at health (.) chances are
3	((the criteria)) will be lowered (1.0) °°or not°°
4 Scientist 1	is that <u>ok</u> (.) it seems (0.4) I would even write it seems like there are
5	effects below ((the threshold))
6 Journalist 2	(0.9) yeah:: that is
7 Scientist 1	[of there ARE] effects below ((the threshold))
8 journalist 2	[yes right]
9 Scientist 1	yes I would dare to write that

In line 4, the scientist no longer pushes back on the matter, but instead tries to shape the message. He suggests that the journalist writes about the scientific grounds, rather than the political nature of the criteria. His suggestion "it seems like there are effects" (lines 4-5), however, is met by a hesitant response from the journalist. The scientist quickly rephrases the sentence by dropping the modal verb to "there ARE effects" (line 7), downplaying the scientific uncertainty and appeasing the journalist's need for more clear-cut statements. Almost as an extra selling argument, the scientist introduces and concludes his answer with "I would even write that" (line 4) and "I would dare to write that" (line 9), suggesting that writing about the problematic scientific grounds of the EU standards is a much stronger message than criticizing their political nature. This short interaction shows a metapragmatic awareness of which linguistic features are suitable for news language and which aren't and how this awareness can be used strategically. By making his answer "long and complex" and by stressing the uncertainty, two features rarely found in news stories, the scientist attempts to avert journalistic interest in the potential political conflict behind the criteria. Once he

notices that the journalist is sticking to the political angle, he changes his strategy and replies in a spontaneous act of what could be termed 'preformulation'. Preformulation is a regular feature of press releases and entails that, through third-person self-reference and so-called pseudo-quotes, certain metapragmatic characteristics of the news are anticipated so that journalists can simply copy the press releases in their own news reporting (Jacobs, 1999). In this case, we find preformulation in the explicit reference to the writing of the story (lines 4 and 9) and the dropping of the modal verb (line 7).

6. Discussion

This paper explored a collaboration between a newspaper, university, and environmental government agency and investigated how this affected the news production process and product. A comparison was made between news items produced within this collaboration (corpus 2018) and similar news items produced outside of the collaboration (corpus 2017), using a Multimodal Discourse Analysis (MDA). This analysis was combined with a linguistic ethnographic study behind the scenes of the collaboration. By combining these two analyses, we aimed to answer two research questions. First, **how is the act of collaboration between journalists and professionals within the field of science and policy-making reflected in (and potentially impactful on) the news production process and product?**

As a starting point, two themes were identified in the ethnographic data: the health risks related to air pollution and how to communicate about them; and the political and scientific dimensions of air quality criteria. These themes served as a framework for the MDA of the corpora and the linguistic ethnographic analysis, which showed three discursive differences between the corpora and how those differences were negotiated by the key players in the project.

Firstly, the 2018 corpus uses language and visual communication that is more specific. When looking into the fieldwork data, however, it appeared that this specific language use is linked to an explicit request from the scientists in the project to use a neutral tone and steer clear of scare terms. In fact, "open" and "neutral" language was firmly rooted in the communication strategy of the project and the journalists felt inclined to continue this tone in their reporting in spite of some criticism in the newsroom.

Secondly, the 2018 corpus contains more emphasis on scientific uncertainty. When certainty is expressed, this is done using different semiotic resources compared to 2017: with jargon and technical language instead of bold claims and (visual) quantification. This appears to be in line with the use of specific and neutral language, as these could all be perceived as discursive choices typical of scientific practice. In contrast to the explicit demand to avoid scare terms (**quote 2**) or adopting a neutral tone as part of the official communication strategy (**quote 3**), the discursive choices concerning (un)certainty appeared to be a more natural consequence of negotiations about and reflections on (un)certainty by the scientists during meetings. In the field we saw how these negotiations stem from the fear of having results discredited or misinterpreted. The journalists handled the issue of (un)certainty with care, adopted a nuanced tone, and were met with little to no opposition in the newsroom on this.

Thirdly, we see that news items about air quality criteria contain a political angle in 2017, and a scientific angle in 2018. Our data not only show how the journalists struggled to find a "critical voice" in their collaboration with the government agency and university, but also how one of the scientists uses his metapragmatic awareness of what news language looks like to forefront the scientific issues behind the air quality criteria, rather than the political tensions. These kinds of negotiations display parallels with a typical push-and-pull process of (de-)politicization in which scientific issues are either politicized by emphasizing uncertainty of scientific evidence (Bolsen & Druckman, 2015) or

depoliticized by emphasizing consensus and using science as discursive tool (Maeseele, 2015). Here, this push-and-pull process did not lead to clear-cut (de-)politicized news items, but to articles that on the one hand emphasize the uncertainty inherent in scientific evidence (see Popper's work (1959) for more on the nature of scientific discovery) and use accurate and nuanced language, but on the other hand steer clear of addressing political tension that might be important to understand the full scope of the issue.

The second research question tackled a methodological issue: **how can a linguistic ethnographic lens focused on the news production process, combined with multimodal discourse analysis, shed new light on the news product and vice versa?**

Firstly, by placing the two corpora within a larger linguistic ethnographic analysis we were able to provide a holistic and context-sensitive analysis. This text-in-context perspective should not be seen as simply authenticating a textual analysis with data from the field (Fürsich, 2009), but rather as a way to explore underlying ideological issues and power struggles and "to arrive at a more nuanced understanding of institutionalized discourse processes" (NT&T, 2011, p. 1847).

Secondly, one might wonder why a comparison with the 2017 corpus was necessary. After all, the fieldwork did not include the production process of that corpus. In the course of the fieldwork, however, it became clear very soon that the 2017 news items served as a reference point for many of the actors as to what the 2018 news items should or should not look like. On top of this, the comparison with the 2017 corpus helped us see the different discursive choices that have been made. If one were to solely analyse the 2018 news items, one might come to the conclusion that in spite of this collaboration the news items concerning this project are quite negative and political. It is the comparison with the 2017 corpus, however, and the combination with the fieldwork that unveils the shift in tone and discursive features discussed here.

7. Conclusion

Combining Multimodal Discourse Analysis with a linguistic ethnographic perspective, the research reported in this article has shed new light on how the interaction between journalists and professionals within the fields of science and policy-making affects the news production process and product in Flanders. Our study has shown that it takes a close linguistically sensitive analysis of both the discursive processes behind the scenes of the news and of the news product itself, to reveal how the complex interactions between journalists and their expert sources shape the language of news.

In particular, our analyses have demonstrated how discursive differences between the two news corpora find their roots in the negotiations and reflexivity observed in the field**.** As the scientists and policy-advisors involved in the project were discussing how to define the risks related to air pollution, they displayed a unique sense of metapragmatic awareness, i.e. a sensitivity to specific language choices and how these choices can help them strike the right chord with the journalists. At the same time, they also reflected on the language choices made by the journalists and engaged in intensive negotiations about these choices with them during meetings and interviews. The journalists were explicitly asked by the other partners to avoid scare terms and adopt a neutral tone. Furthermore, (un)certainty and how to communicate about it was negotiated and reflected on at length by the scientists in the project. This led the journalists to adopt a careful consideration for accuracy and nuance when reporting about scientific evidence. In the collaboration, however, the partners from the university and government agency also urged the journalists to write about certain topics from a scientific angle instead of a political angle. This caused some discomfort with the journalist as they felt they could not always express their "critical voice" and address underlying political issues that are necessary to understand the full scope of the issue.

We would like to argue that the metapragmatic awareness displayed by the scientists and policy-advisors and the negotiations with the journalists that we observed in our data should be interpreted in terms of mediatization and mediation processes. The scientists and policy-advisors demonstrate awareness of which semiotic resources and "representational choices" typically occur in the news production process (Jaffe, 2009). They do not simply adapt to, but attempt to manage the media logic of news values and storytelling techniques typical for the news (Strömbäck, 2008). Although this collaboration has led the journalists to step out of their usual role and perhaps at times caused some discomfort, they have made some distinctive discursive changes in their writing style in order to successfully collaborate with the other partners. Whether this collaboration is a successful one, depends on the perspective from which you look at the final news product. Although the news items could still be considered as relatively negative, the items and the scientific results in it were presented using specific and nuanced language. This is a discursive shift many scientists would find commendable (Dunwoody et al., 2018). On the other hand, in some of the news items the journalists refrained from highlighting the political nature of a scientific issue, which the journalists themselves considered to be a loss of their critical voice. Overall, however, the collaborative project discussed in this paper was considered a success in Flanders as it received multiple awards and has inspired several similar projects in which journalists, experts, and policy makers (amongst others) join forces.

By analysing how the act of collaborating blurs boundaries between the traditional professional identities for the three categories of actors involved and urges them to reflect on their own and each other's discursive practices, we have shed new light on how these mediatization processes operate in today's increasingly close-knit mediascape. As collaboration and participation are becoming more ubiquitous in newsrooms and other societal institutions (Declercq et al., 2021) and might increase even more in light of the current COVID-19 crisis, further research is needed on how they affect mediatization processes and the production of institutional discourse. This paper shows how a media linguistic perspective can be a fruitful vantage point and how the investigation of the role of metapragmatic features in these processes can be an interesting start to these efforts.

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9. Appendix: Transcription Glossary

[and]	Overlapping utterances
=	Latching between utterances
(0.0)	Timed pause (in tenth of seconds)
(.)	A pause shorter than one tenth of a second
:	Elongation
-	Abrupt stop
underline	Emphasis
CAPITAL	Loud/forte speech
°°	Soft/ piano speech
hh	Exhalations
he or ha	Laugh particle
wo(hh)rd	Laughter within a word
.hhh	Inhalations
>word<	Faster/ allegro talk

<word>	Slower/lento talk
$word$	Smile voice
((notes))	Analyst notes
((..))	Omission in order to safeguard anonymity of informants
((journalist))	The names of the informants or organizations were replaced with generic terms in order to safeguard anonymity

Table 1