Framing systemic traffic violence

Media coverage of Dutch traffic crashes

te Brömmelstroet, M.

Contents lists available at ScienceDirect

Transportation Research Interdisciplinary Perspectives
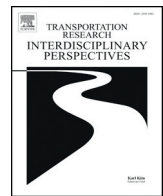
Framing systemic traffic violence: Media coverage of Dutch traffic crashes

Marco te Brömmelstroet

Professor in Urban Mobility Futures, Amsterdam Institute for Social Science Research, University of Amsterdam, Nieuwe Achtergracht 166, PO Box 15629, 1001 NC Amsterdam, Netherlands.

ABSTRACT

Traffic crashes undeniably levy a significant and detrimental toll on contemporary societies. They are a disruption of every-day traffic order, and the specifics of their coverage in the media offer insights into how a society frames and perceives this underlying order.

This study analysed the terms and frames that are used in 368 reports on traffic crashes in local Dutch newspapers. The coding is embedded in the larger debates about competing frames of mobility (efficiency versus justice), and informed by recent studies on traffic crash reporting. The study adds a novel geographical context to the Northern American focus of earlier work, and a broader scope of traffic crash types (including non-fatal crashes and all vehicle types).

The reviewed articles support the previous findings that media coverage largely dehumanizes traffic crashes, presenting them more as glitches in the machine (efficiency) than human tragedies (justice). Crashes are presented as episodes instead of as part of a larger pattern, in a factual tone. Parties involved in a crash, and especially secondary parties are most often referred to as vehicles instead of persons and most often the headlines use a non-agentive grammar.

However, the study also demonstrates that the way we currently study this coverage is limiting us in develop a full understanding of the complex nature of traffic crashes. To overcome this, we need to deploy mixed methods and a richer coding scheme that help us to get a better grip of the systemic violence of our contemporary traffic.

1. Introduction

"Cyclist injured at crash in Overberg."[1]

"Cars collide with each other on A50 near Ewijk."[2]

"Driver damages car and tree in Ede."[3]

Traffic crashes are all too common and have devastating impacts on contemporary societies. Global traffic fatalities reach up to 1.3 million per year, with a figure that is ten-times higher for severe injuries (Culver, 2018, p. 153). According to the World Health Organization (WHO, 2018), traffic crashes are the leading cause of death for young people around the world. However, we now relatively little of how these crashes are reported in mainstream media. This study aims to add to an emerging body of empirical research on this, by studying local media coverage of all types of traffic crashes in the Netherlands.

1.1. An invisible catastrophe

Culver describes how "the regime of mobility predominant in most Western societies (and increasingly around the globe) that is characterized by the hegemony of the private automobile and its spaces" (Culver, 2018, p. 146) represents the largest threat to life and limb that most people in contemporary, automobility-based society experience on a daily basis. Since this violence occurs in our public spaces, Culver argues it is a form of violence that next to bodily harm, creating landscapes of fear and anxiety and putting everyone at risk as soon as they leave the house. When also considering the emotional toll among family and friends, and the trauma among all parties involved in traffic crashes (the other crash party, possible bystanders, emergency responders, etc.), this is the highest level of direct exposure to violence in our lives.

This systemic violence is created by us and we seem to have collectively accepted it as a tolerable price for automobility. "Considering both the magnitude of this violence and the relatively limited attention it receives, the violence of the car arguably constitutes something of a blind spot even within much of mobilities and transport scholarship" (Culver, 2018, p. 146). Also, the fact that "it is not a concentrated but a spatio-temporal diffuse

[1] https://www.gelderlander.nl/utrechtse-heuvelrug/fietser-gewond-bij-aanrijding-in-overberg~aecf3ea8/.
[2] https://www.gelderlander.nl/beuningen/auto-s-botsen-op-elkaar-op-a50-bij-ewijk~ad358f9f/.
[3] https://www.gelderlander.nl/ede/bestuurder-rijdt-auto-en-boom-in-de-vernieling-in-ede~a1ccdf145/.

catastrophe, the naturalization and denial of vehicular violence have allowed car deaths to become largely invisible relative to their horrific ubiquity, shielding it from any substantial critique to this day" (Culver, 2018, p. 152).

French philosopher Paul Virilio problematized this invisibility: "The large number of road accidents is truly a kind of sacrifice to the godhead of mobility to keep the wheels of traffic moving. It is a sacrifice made unconsciously, but one for which society is apparently prepared to pay the price nonetheless." (Virilio, 1998, p. 44). Instead we should zoom in on those "accidents" as a way of learning (Virilio, 1999). He states that with the conception of every technological innovation, also its own accident is invented and argues that the surprise, unexpectedness and unforeseen nature of an accident opens a potentiality for other ways of seeing. As such, an accident makes visible what mostly stays below the surface, forming a breach of the regular order.

1.2. The role of media coverage

Popular opinion and the perceived societal urgency of emotionally charged topics such as traffic collisions are heavily influenced by media reporting (Marris et al., 2000). First, media coverage determines the topic's importance by giving it more or less attention, either in the position of the article or frequency of coverage. Second, journalists and editors make choices *how* to report events, through syntax and vocabulary, imposing certain frames on the audience. Such frames have been shown to strongly influence beliefs and attitudes, especially when they are shared across different media sources (Ralph et al., 2019). Headlines of media reports are especially influential since they are the most read part of articles and actively aim to connect to current and pressing societal discourses to attract attention (Magusin, 2017).

As Culver mentions, there is surprisingly little empirical evidence on this issue. One transport policy study showed how novel and shocking events (such as airplane crashes) receive much more media and policy attention than the commonplace – and much more destructive – traffic fatalities and injuries (Cobb and Primo, 2004). Building on this observation, the study by Goddard et al. (2019) found that subtle differences in the framing of traffic crashes involving pedestrians resulted in significant changes in how readers attributed blame (i.e. focusing on the pedestrian or the driver, framing the actor as an object or a person). Using a thematic frame that links a crash to a wider pattern, instead of reporting it as an isolated event, also significantly increased support for safety-related infrastructural improvements and shifts the understanding of responsibility to a more structural level (see Iyengar, 1994, 1996; Scheufele, 1999).

This research builds on the ongoing investigation of this issue by examining the following research question: **Which terms are used in local news coverage of traffic crashes in the Netherlands and what frames do they strengthen**? Crash reporting gives us a powerful lens for discussing the mobile subject due to the above-mentioned severe societal impact of such crashes on our society. Such reporting provides us with a strong indication of the dominant frames that shape our common understanding and (in)action.

The paper starts by embedding the research in the academic literature on framing and continues by discussing state-of-the-art studies on the reporting of traffic crashes. These review steps inform the research design and operationalization, which are outlined in Section 3. The empirical findings are presented next (Section 4), followed by the key conclusions and a targeted discussion of their implications (Section 5). The paper ends with a number of directions for future research and proposes practical guidelines for reporting on traffic crashes.

2. Theoretical embedding

2.1. Language sculpting competing frames

Transportation planning practice and research are dominated by a strong objectivist view of the relationship between language and the

reality it describes. The dominance of technical, often mathematical language creates the illusion of a linear relation between the two as well as the external position of language (Kębłowski and Bassens, 2018): "In most transportation planners' minds, language describes objective conditions, explains methodologies and expresses values. Numbers, moreover, are a precise form of language that provide unambiguous representations of reality" (Willson, 2001, p. 1).

Our professional language is decidedly not neutral. Although we are often not aware of the specific semantic and terminology choices we make, they fundamentally shape our understanding (Lakoff and Johnson, 1980) – like a spotlight that highlights the things it shines on but automatically obscures all objects just outside its beam. Empirical studies showed how language, and the choices it inhibits, gain political power in guiding action of certain groups of actors (see for instance the edited book by Fischer and Forester, 1993). For example, Hajer (1993) discusses how competing coalitions of stakeholders develop distinct discourses to describe a specific phenomenon that have direct repercussions for politically essential questions. Meadows goes on step further by arguing that "the language and information systems of an organization are not an objective means of describing an outside reality—they fundamentally structure the perceptions and actions of its members" (Meadows, 2008, p. 174). So, the underlying choices in the language we use to describe phenomena can always be disputed. And they should be, since they significantly influence what we (do not) see and as such directly influence our actions.

2.2. Frames of motorized traffic: justice versus efficiency

Norton (2011) studied the contestation between "first principle" frames in the USA of the 1920s as the root of the language that we use to describe mobility. Before that decade, social constructions of the street were fairly stable: the street was the open area in between buildings, free to be used by all to play, meet, trade and move through with approximately walking speed (Sennett, 2018). This harmony of chaos was destabilized by the introduction of fast motorized vehicles: "Automotive interests […] proposed that customary social constructions of the street were outdated and that only a revolutionary change in perceptions of the street could ease congestion and prevent accidents" (Norton, 2011, p. 2). The two dominant and opposing frames were those of justice and efficiency.

Citizens' dominant frame to contest the street was one of *justice*. The general perception was that the street was a place to walk, to meet, to play and to trade. This function of the street did not allow for the introduction of fast-moving, motorized vehicles that caused an unprecedented safety threat. Citizens argued that street design, and the legal rights of use should protect children and vulnerable people as they used the street already for millennia in this way. Note that this system perspective on justice is different from the concept of "justice" as used in a legal setting, referring to a fair and just treatment for all (uniform application of the law).

The rallying cry that opposed this justice frame was the call to *efficiency*. "Most called themselves engineers. [They] had a long and impressive record achieving efficiency in diverse modern city services […] confident they could to the same for street traffic. […] they together invented a new professional discipline: traffic engineering" (Norton, 2011, pp. 104–105). This new discipline managed to largely redefine streets from public spaces to exclusive transportation ways in less than a decade.

In a recent contribution, Prytherch discusses how this fight between main principles was eventually won by the *efficiency* frame, especially when engineers and the car industry paired it with a call to safeguard the freedom of individuals to drive their cars. After the 1930s, the efficiency frame was solidified in laws and design guidelines (Prytherch, 2018). This development had profound repercussions for how society framed the mobile subject: "The purpose of the street itself was socially reconstructed as a space of high-speed automobile flow, and physically materialized as such through the creation of new laws and societal norms privileging the needs of motor vehicles over those of vulnerable bodies in these spaces" (Culver, 2018, p. 151).

2.3. Framing traffic crashes

Specifically talking about the change of framing of traffic crashes, Culver states: "manufactured risks have largely been socially reconstructed as both increasingly expected and increasingly 'normal' accidents" (Culver, 2018, pp. 145–146). Culver continues: "The social problem of vehicular violence itself was socially reconstructed as a natural problem. This is most clearly evidenced through the common use of the word 'accident', which frames the car crash as an unpredictable and unavoidable event" (Culver, 2018, p. 152).

Vardi (2012, p. 6) studied the quantification of traffic accidents as a social process that constructs a specific view of reality. He concluded that traffic crashes have become normalized: "the traffic accident problem has gradually 'disappeared' in America throughout the twentieth century – a disappearance that is not physical but conceptual" (Vardi, 2012, p. vi). This process redefined traffic crashes as a necessary social condition (i.e. a necessary evil), thereby strengthening the belief that there is only a limited ability (or desire) to eradicate it.

The starting point of this process parallels Norton's observations. Vardi (2014) shows that auto enthusiasts responded to public outcries against the increasing loss of life in crashes – especially among children – by arguing that emotions around traffic deaths should not serve as the basis for assessing the problem or formulating policies. Instead they proposed a "shift away from the individual representations of road tragedies toward more standardized and holistic vantage points" (Vardi, 2012, p. 351). The way to de-emphasize fatality levels was to use statistics, expressed as fatalities per passenger mile. Although not uncontested, this way of standardization of data collection and representation became increasingly institutionalized as the dominant metric. The resulting matter-of-fact tone created a frame that traffic deaths were a normal regularity, a fact of life, a manageable, and foreseeable risk. At the same time, advanced techniques of data collection allowed a compartmentalization of the problem, emphasizing individual behaviour as a policy target, instead of the more systematic, structural causes (Vardi, 2012, pp. 358–359). With normalization came the notion of "saving lives" as the overall moral purpose of traffic safety: "When the ability to claim a saving of lives through the management of death rates becomes the central policy goal, more radical challenges to the socio-technical arrangements that regularly produce mass

causalities are omitted from the conversation" (Vardi, 2012, p. 360). The question is, thus, how to apply interventions to decrease deaths *within* the system of automobility, instead of problematizing structural causes. A related effect "is the inadvertent entrenchment of 'normal' death rates […] that can only be affected to a *measured* extent" (Vardi, 2012, p. 361). Vardi concludes that "the problem has been largely reconfigured, in part thanks to statistical discourse, from a moral wrong to a necessary evil" (Vardi, 2012, p. 362).

There is a long history and large scientific body of literature on media discourse and analysis (e.g., Van Dijk, 2011). Although countless studies have examined a variety of issues of public health (Griffiths and Knutson, 1960), social justice (Ryan et al., 1998), and crime (Schlesinger and Tumber, 1994), relatively few studies have empirically investigated the media's framing of traffic crashes, fatalities and injuries (see a summary of recent contributions in Table 1).

All four recent empirical studies focused on the North American context, an overrepresented area in transportation research, which poses a limitation to achieving a global understanding of how traffic crashes are reported. The high level of car dominance on the streets – and in the social consciousness – of the USA and Canada is one explanation for the overrepresentation of studies of this context (Lutz and Lutz and Lutz Fernandez, 2010). Also, it might be that there is a stronger call to problematize the unconscious cost of traffic crashes in car-dominant societies.

All four studies examined media coverage of fatal crashes, with three specifically focusing on crashes that involved cyclists and/or pedestrians. All four studies started by problematizing newspaper reporting because (1) too often blame is levelled on cyclists and pedestrians, who are actually vulnerable road users (VRU); or (2) coverage follows an overly simplistic victim–villain storyline; or (3) reporting is too episodic and does not examine the systemic aspects of traffic crashes. The findings of the studies supported these views: in general, articles follow episodic instead of thematic framing, often assigning blame to either an individual driver or victim, and most often using nouns that emphasize the "unavoidability" of crashes (i.e. "accidents"). The human drama that is involved in crashes is under-reported, by using dehumanizing, object-based language. In their concluding remarks, several authors call for a more-structural reporting and discussion of crashes, seen as necessary for highlighting the urgency and initiating a broader societal discussion about the safety problems ingrained in the current mobility system.

Table 1
Recent studies on media framing of traffic crashes.

	Connor and Wesolowski (2004)	Magusin (2017)	Bond et al. (2018)	Ralph et al. (2019)
Goal	Understand to what extent newspaper coverage accurately reflects real risks, crash trends and conveys public health messages.	Uncover how news media headlines assign blame to either driver or pedestrian in cases of traffic fatalities of vulnerable road users.	Understand the linguistic choices that frame relationships between bicyclists and other parties involved in fatal crash events.	Understand agenda-setting and framing about crashes that involve pedestrians or cyclists.
Research material	368 articles on 278 crashes in local newspapers	71 headlines on 10 crashes in local newspapers	189 reports on 94 crashes	200 articles, mostly from local newspapers and television stations
Focus of sample	Fatal crashes involving motor vehicles	Fatal crashes involving pedestrians	Fatal crashes involving cyclists	Crashes involving pedestrians or cyclists
Context	USA (Midwest)	Canada (Edmonton)	USA (Hillsborough County)	USA
Method	Coding characteristics of individuals, crash (nouns) and factors	Syntax and use of nouns	Narrative construction, episodic/thematic framing and the use of nouns	Focus, agency, object-based language, syntax and nouns
Findings	• Articles highlighted crashes that diverged from the norm, assigned blame to a single party, and failed to highlight preventive practices.	• The dominant media discourse around pedestrian traffic fatalities is factual and dehumanizing.	• Almost no episodic articles in the dataset addressed the outcomes for the parties involved, discussed the broader context and causes of these events, or presented preventative safety measures.	• Articles tended to subtly shift blame away from drivers and towards vulnerable road users.
	• Articles positioned crashes as individual issues instead of framing them as part of a systemic public health crisis.	• Pedestrian deaths are reported as isolated incidents with no human repercussions and no link to larger systemic health and safety issues.	• The vocabulary draws on taken-for-granted, common-sense assumptions that motorists and bicyclists are fundamentally equal and, therefore, bear equal responsibility.	• Local media used non-agentive language in one-third of sentences.
	• The term crash and accident were used interchangeably, perpetuating the idea of crashes as unpredictable, unpreventable events.	• Drivers are nearly always rhetorically and linguistically absolved from blame.		• The vast majority of articles described the crash as an isolated event, mostly relying on the word "accident" to describe it.

3. Research design

The above discussion about the contestation between the justice and efficiency frames in mobility and the overview of the empirical studies on traffic crashes were used to operationalize the research question as follows: Which terms are used in local news coverage of traffic crashes in the Netherlands and what frames do they strengthen? What can the Dutch context add to the ongoing academic debate?

3.1. Contribution of the study

The mobility system in the Netherlands is less contested than in the USA and Canada. Although still largely car based, personal motor vehicle traffic is not as dominant, with 26% of all trips being taken by bicycle (Harms et al., 2014). Compared to other countries (US, Canada, and many European countries) vulnerable road users have much more dedicated road space at their disposal, and their safety has been a long-term goal of traffic policy, street design and traffic law (e.g., strict liability for drivers) (Schepers et al., 2017). The Dutch mobility system is often heralded as one of the safest in the world (depending on the metrics used) and as a best practice to emulate (Pucher and Buehler, 2008, 2017). The relatively good road safety track record is largely the result of the severe social debates of the 1970s, which put traffic safety high on the political agenda. Remarkably, one of the key triggers for change was the active use of language by a group of journalists and activists. They mainstreamed the notion of "Stop de Kindermoord" (Stop the child murder), after a child of journalist Vic Langenberg was killed in a traffic crash (Feddes et al., 2019).

This achievement has come under threat in recent years – the country fell from 4th (2010) to 11th (2018) place on the European road safety list, based on road deaths per capita (European Transport Safety Council, 2019). Looking at the most recent figures, 678 people died on Dutch roads in 2018, an increase of 11% compared to the year before (228 fatalities were cyclists and 54 pedestrians) (Centraal Bureau voor Statistiek, 2020), i.e. 3.1 road deaths per capita, which is lower than the 4.9 EU average,[4] the 11.2 in the USA,[5] and the 5.2 in Canada[6]). Although this indicates a different attitude towards road safety, the numbers are still high – approximately 20,000 Dutch citizens are severely injured and 350,000 suffer physical or mental trauma each year.[7]

This study is an attempt to investigate whether the recent empirical findings from North America are also reflected in other contexts, i.e. the Netherlands. The nation-wide dataset offers a more holistic view on the cultural frames used throughout the country, in contrast to three of the four recent studies that studied local media coverage. Finally, including *all types of traffic crashes* enables the wider exploration of the frames that are used. It is likely that newspaper reports on crashes between different vehicle types and of non-fatal crashes use a different frame.

3.2. Data gathering

The data was collected through a crowd-sourced approach. Through a cooperation with a journalist from the Dutch media platform (Thalia Verkade or De Correspondent) and by using our social media profiles, Dutch citizens were invited to collect local news media coverage on traffic crashes in general. So far, 142 people volunteered to do this. This initiative was supported by a website developer, who constructed the website www. hetongeluk.nl, which facilitated data collection. On the website, volunteers

can sign up, submit a newspaper article url, and classify it along a list of key characteristics (one party/more parties, animals involved, congestion, etc.). Also, the uploader is asked to indicate what is known about the people involved (their traffic mode, injury/death, involvement of alcohol/children or hit-and-run). After review by a moderator, the article is placed on the website's live feed.

Since the website was, and still is, used to present real-time traffic crash patterns to a larger audience, a number of tools were developed to display the data: a real-time graph showing traffic fatalities in relation to all transport modes involved in the crash; an option to propose an alternative headline; and an automatically generated picture mosaic. The website launched during January 2019 and is still operational. As of March 12th 2019, the database contains over 4300 articles covering approximately 3700 crashes. The underlying code is open access and available for export.

For the purpose of this research, volunteers were asked to collect as many local newspaper articles as possible within one week (14 to 20 January 2019). In total, 505 articles were collected, covering 304 unique traffic crashes. These 505 articles were filtered for exact doubles (articles by the same reporter copied under different news websites) and for direct police/emergency reports. The vetting process returned 368 articles of 273 unique crashes, which were subsequently used for the analysis.

3.3. Coding and analytical framework

Each article was manually coded, based on the theoretical and empirical contributions discussed above (see Table 2). This coding scheme was used to map characteristics from each headline and article. The initial coding set was based on the literature and expanded as new relevant terms were uncovered (i.e. adding "ongeval" as a noun and "secondary party as victim" as an identifier for a party). Note here that the coding does not imply my stance towards victim and or cause, but if/how items are identified as such in the report. In the analysis, the sample was split into five categories, based on their distinct characteristics: single-sided crashes, motor vehicle–VRU crashes, vehicle–vehicle crashes, no motor vehicle, and motor vehicle unknown.

3.4. Limitations

The selection of articles does not include all the crashes reported that week, as it relied on volunteers submitting reports on www. hetongeluk.nl, which were not randomly assigned or distributed across the country. The coding of the articles was done by one single coder, which could also lead to bias. To check, both the collection (scraping) and coding were also administered by a tailor-made computer program (Casimiro, 2019), which reproduced the classifications of the manual coding.

4. Results

4.1. General characteristics of the reported crashes

The vast majority (95%) of articles included the mention of at least one driver of a motor vehicle (see Table 3). There are several possible reasons for this dominance: 1) such traffic crashes and their aftermath are more severe/salient and, therefore, selected and covered more frequently by journalists as newsworthy; 2) car-related crashes possibly cause more nuisance for other road users (e.g., road closures and delays) and reporters, therefore, choose to cover these incidents to inform readers; 3) cars that were involved in a crash are harder to remove and more pictures of such incidents reach the desks of reporters; or 4) most crashes in the Netherlands involve cars. Almost all of the 116 single-party crashes involved a car (only 3 did not).

Surprisingly, 31% of articles did not mention a fatality or an injury. This omission is remarkable given the expected bias to more salient

---

[4] https://etsc.eu/euroadsafetydata/.
[5] https://en.wikipedia.org/wiki/Motor_vehicle_fatality_rate_in_U.-S._by_year.
[6] https://www.tc.gc.ca/eng/motorvehiclesafety/canadian-motor-vehicle-traffic-collision-statistics-2018.html.
[7] https://www.slachtofferhulp.nl/nieuws/2019/campagne-verkeersslachtoffers/.

Table 2
Coding scheme for news coverage of traffic crashes.

Variable	Values	Example	Relation literature
Article ID	Number		
Accident ID	Number		
Article url	Web address		
Type of accident	Single party, two parties, more than two		
At least one driver of a motor vehicle	Yes/no/unknown		
Number of fatalities mentioned	Number		
Number of injured mentioned	Number		
Transport modes involved (#pp)	Pedestrian, bicycle, scooter, motorcycle, car, taxi, emergency vehicle, delivery van, tractor, bus, tram, truck, train		
Does the headline identify			
A victim as a person	Yes/no	…gets injured/dies	Human-based language
A victim as a transport mode	Yes/no	Vehicle is damaged	Object-based language
A secondary party as a person	Yes/no	Driver causes…	Human-based language
A secondary party as a transport mode	Yes/no	Vehicle causes…	Object-based language
Damage to surroundings	Yes/no		Efficiency frame
Consequences for traffic	Yes/no		Efficiency frame
Something else	Yes/no		
Does the body text identify			
A victim as a person	Yes/no	…gets injured	Human-based language
A victim as a transport mode	Yes/no	Vehicle is damaged	Object-based language
A secondary party as a person (cause)	Yes/no	Driver causes…	Human-based language
A secondary party as a person (victim)	Yes/no	Occupants had a narrow escape	Human-based language
A secondary party as a transport mode	Yes/no	Vehicle causes…	Object-based language
Damage to surroundings	Yes/no		Efficiency frame
Consequences for traffic	Yes/no		Efficiency frame
Something else	Yes/no		
Syntactics			
Style grammar headline	Active/passive voice	Pedestrian got hit by/	Assigning blame
Style grammar body text	Active/passive voice	Car (driver) hits…	Assigning blame
Term used for incident at least once	• Aanrijding (crash) • Botsing (collision) • Ongeval (accident) • Ongeluk (accident) • Other		Nouns used
Pattern/incident	• Incident only • Larger pattern at location • Larger general pattern		Episodic framing/efficiency frame Thematic framing/justice frame Thematic framing/justice frame
Focus	• More details on a victim • More details on a secondary party • Equal • Not applicable		Assigning indirect blame
Cause/guilty party identified in body text	• Behaviour of a victim identified • Behaviour of a secondary party identified • Design of road/space identified • Cause not identified • Mentioning that cause is still unclear	Referring to clothing, rules, distraction	Potentially counterfactual
Concrete cause identified	• None • Verloor de macht over het stuur (lost control of the wheel) • Zag over het hoofd (overlooked) • Verblind door de zon (blinded by sun) • Reed te hard (was speeding) • Reed roekeloos (was reckless) • Reed met drank op (drove under influence of alcohol) • Reed afgeleid (drove while distracted) • Hield zich niet aan regels (didn't follow the rules)		Assigning direct blame

stories that involve human drama (Jeanis and Powers, 2017). For example, one headline "Glas op A325 na ongeval tussen twee voertuigen" (Glass on Highway A325 after accident between 2 vehicles) explicitly states that it is not yet known if someone got hurt. The potential filter of a journalist to select crashes that result in nuisance for other road users might explain this figure.

The five categories in Table 4 above reveal several distinct characteristics. For single-sided crashes the headlines most often suggest that the crash has been caused by a vehicle and that a victim is more often a person (e.g., "Pick-up truck slams into bench, driver injured"[8]).

For crashes between vehicles, it is notable that almost half of the body texts indicate the consequences for traffic flow. Four in five body texts describe the secondary party as a transport mode. Reports on crashes between

---

[8] https://www.haarlemsdagblad.nl/cnt/dmf20190114_3924315/pick-uptruck-ramt-hek-in-halfweg-bestuurder-gewond.

Table 3
General characteristics of coverage of traffic crashes.

	#	%
Type of incident		
Single party	116	32%
Two parties	207	56%
More than two	31	8%
Different	14	4%
At least one driver of motor vehicle involved		
Yes	350	95%
No	9	2%
Unknown	9	2%
Number of fatalities identified		
0	352	96%
1	16	4%
Number of injured identified		
0	119	32%
1	204	55%
2	35	10%
3	7	2%
4	3	1%
Transport modes involved (# of people)		
Car	463	
Bicycle	71	
Truck	45	
Scooter	37	
Delivery van	31	
Pedestrian	20	
Taxi	11	
Motorcycle	10	
Unknown	8	
Other (wheelchair, handicapped car, emergency vehicle, tractor, tram, train)	8	
Number of cars involved		
0	80	22%
1	175	48%
2	78	21%
3 or more	35	10%

non-motorized parties (only 6 cases) talk about the victim as a person. In this category a secondary party is more often also described as a person, and half also discuss consequences for traffic.

An interesting overall pattern is the absence of a secondary party in over half of the headlines. The three middle categories in Table 4 identified a secondary party involved in the body text but the majority of headlines did not include that information.

4.2. The nouns used to describe the crash

Both the words "ongeluk" and "ongeval" translate to "accident", an unintentional and unavoidable event. Although they are used interchangeably, there are however small semantic differences. Ongeluk is literally "unlucky" or "unhappiness", something external that happens to you. Ongeval was originally a legal term, a more instrumental way to describe an event, which already implies an element of responsibility. In contemporary language these terms are used interchangeably. In 9% of the articles, both terms are used to describe the same event, seemingly as direct synonyms. While ongeluk is used most often, when considering instances were either appears, in total 57% of articles (headline plus body text) use either term at least once (less often for single-sided crashes).

The second most frequently used noun (with more than 40%) is "botsing" (collision). For single-sided crashes this word appears in only 22% of the reports, while for crashes with multiple parties in 50%. This term has a mechanical connotation: "botsen" (colliding) occurs between objects, much less between humans. "Aanrijding" (crash, or literally "driven-into") is used in 31% of all articles. It also allows a delineation of who/what crashes into who/what (as in "A rijdt B aan"). It is worth mentioning that 38% articles used only one term, but 48% used two, 13% three and 1% of the articles used four different nouns to describe the crash. This might indicate that for journalists none of these nouns captures the full phenomenon.

The prevalence of nouns as "accident" and "crash" is similar to the findings of Bond and Scheffels, where they interpret it as a dominance of storylines that "remove action from subjects" (Bond et al., 2018, p. 34). For fatal pedestrian crashes, Magusin (2017) found that "collision" and "crash" were most frequently used.

4.3. Object-based versus human-based language in two-party crashes

In the 252 articles (68%) that involved two or more parties (see Table 5) the headline and/or the body text could potentially identify somebody who was injured or killed (a victim) and a secondary party.

Especially in the headline, there is a strong pattern of identifying a victim (78% of this subset), who is usually framed as a person (four times more

Table 4
The elements mentioned in the coverage of traffic crashes.

Type of crash	Single-sided crashes		Motor vehicle–VRU crashes		Vehicle–vehicle crashes		No motor vehicle		Motor vehicle unknown		Total	
Number of articles	116		70		168		6		8		**368**	
Does the headline identify												
A victim as a person	46	40%	68	97%	83	49%	4	67%	1	13%	**202**	55%
A victim as a transport mode	32	28%	1	1%	39	23%	0	0%	0	0%	**72**	20%
A secondary party as a person	21	18%	16	23%	18	11%	2	33%	0	0%	**57**	15%
A secondary party as a transport mode	30	26%	21	30%	48	29%	1	17%	0	0%	**100**	27%
No secondary party mentioned	65	56%	34	49%	104	62%	3	50%	8	100%	**214**	58%
Damage to surroundings	11	9%	0	0%	7	4%	0	0%	0	0%	**18**	5%
Consequences for traffic	6	5%	1	1%	31	18%	0	0%	7	88%	**45**	12%
Something else	3	3%	2	3%	9	5%	1	17%	0	0%	**15**	4%
Does the body text identify												
A victim as a person	47	41%	67	96%	107	64%	6	100%	1	13%	**228**	62%
A victim as a transport mode	53	46%	15	21%	108	64%	0	0%	0	0%	**176**	48%
A secondary party as a person (cause)	46	40%	36	51%	36	21%	3	50%	0	0%	**121**	33%
A secondary party as a person (victim)	37	32%	12	17%	59	35%	0	0%	0	0%	**108**	29%
A secondary party as a transport mode	40	34%	42	60%	133	79%	1	17%	0	0%	**216**	59%
Damage to surroundings	30	26%	0	0%	14	8%	0	0%	0	0%	**44**	12%
Consequences for traffic	33	28%	14	20%	80	48%	3	50%	7	88%	**137**	37%
Something else	2	2%	1	1%	7	4%	0	0%	0	0%	**10**	3%

totals are all percentages (of the number of articles in that category). Bold are the totals

Table 5
Object- or human-based terms used in two-party crashes.

	In headline		In body text	
Victim as a person	156	62%	181	72%
Victim as a vehicle	40	16%	123	49%
Secondary party as a person (cause)	36	14%	75	30%
Secondary party as a person (victim)	–	–	71	28%
Secondary party as a vehicle	70	28%	176	70%

Table 6
Object- or human-based terms used in single-sided rashes.

	Object-based (Vehicle)	Human-based (Person)	Vehicle or person
Not mentioned	55	50	4
Mentioned once	61	66	95
Mentioned twice	0	0	17

likely than being labelled as a vehicle). The victims are often either a pedestrian or a cyclist. A secondary party is mentioned much less often (42%) and, if so, is twice as frequently framed as a vehicle than as a person. In no less than 17% of cases there is no mention of the involved parties in the headline. Usually, such a headline refers to the consequences (e.g., "Severe congestion on the A28 due to accident near Elspeet"[9]). Of the 156 articles where the headline refers to a victim as a person, 29% combine this frame with a vehicle as a secondary party (e.g., "Bus passenger injured after collision with car in Hoofddorp"[10]).

4.4. Object-based versus human-based language in single-sided crashes

There are 116 articles on single-sided crashes in our sample; 56% identify a person in the headline, while 53% identify a vehicle (see Table 6) (e.g., "Car flies out of the bend and slams into bench and light pole in Achterberg"[11]). Four headlines mention neither vehicle nor person. Most of the persons and vehicles are identified not as culprits but as victims (40% and 28%, respectively), for example, "Driver died in accident with van in Alphen"[12] or "Car ends up in ditch next to parking area Aziëlaan".[13]

In total, 49 headlines used the active voice to describe the crash; in 33% the agent is a human while in 49% the agent is a vehicle (e.g., "Truck loses its load on Eisenhowerlaan"[14]). There are 26 single-sided crashes that are described in the body text with a vehicle as the cause and a person as a victim: "Along the N11 in the direction of Alphen, a car has driven into the water. The driver could get out with the help of a passer-by. The driver did not have to go to the hospital. How the accident could have happened is unclear."[15]

4.5. Implied cause and agency

4.5.1. Passive versus active voice in headlines

Article headlines can be written with active or passive voice: either something happens to an agent or the agent takes an action. A passive description implies a case of force majeure while active voice implies agency on behalf of a victim or secondary party. The overall sample contains 20% active and 10% passive headlines. Remarkably, 70% of headlines did not describe the crash itself but centred on the consequences, often using terms as "na" (after) or "bij" (at) in reference to a crash: "One dead and injured in an accident in Alphen aan den Rijn,"[16] and "Delays due to an accident with motorcyclist on the A4".[17] Also, almost all articles give the exact location as to indicate where people might experience a road closure or delay.

When different types of crashes are considered, the pattern shifts slightly. Headlines on single party crashes are more often active than those on multi-party crashes. For crashes that involved a motor vehicle and a VRU, there are more passive than active headlines. Most of these describe what happened to a pedestrian or cyclist: "Cyclist hit on Oosttangent,"[18] and "Pedestrian injured due to collision with truck in Ede".[19] All categories show, however, that most of the headlines offer neither an active nor a passive descriptions of the crash.

4.5.2. Agentive versus non-agentive headlines in vehicle–VRU crashes

In total, 70 articles covered a traffic crash involving at least one vehicle and a VRU (pedestrian or cyclist). This selection is similar to the findings in three of the four previously outlined studies and, therefore, can be analysed with the same analytical framework. The grammatical style and semantics (outcomes presented in Table 7) of the headlines were analysed based on Ralph et al. (2019). A central finding is that most headlines (59% of this subset) are non-agentive; they describe the consequences of the crash, mostly in terms of the trauma for the VRU, but not the crash itself. Most of these headlines do not refer to another party. If the other party is referred to as a person it often refers to him or her in an after-the-fact action (e.g., a hit-and-run). For those headlines that are agentive (40%), most position the VRU as the agent was subject to a crash (26%). Only three include a human secondary party. Six headlines (9%) describe a human driver of the car (or motor vehicle) as the agent.

Compared to the findings of Ralph et al. (2019), we noted several differences and similarities:

- Remarkably, 60% of the headlines are non-agentive, compared to 35% in their study.
- 64% of agentive headlines focus on the VRU, which is similar to the 74% reported in their study but less than in Magusin's (2017) study (69 of 71 headlines used the passive voice).
- Although still a minority, twice as many headlines refer to a human driver instead of a vehicle (40% compared to only 19%).

4.5.3. Identification of a secondary party

The sample includes 252 articles that cover a crash involving at least two parties. Table 8 shows how often a victim or a secondary party is mentioned at least once in the headline or the body text, either as a person and/or an object.

Most notably, while 25% of articles in this subset make no mention of a victim in the headline, as much as 60% headlines do not refer to a secondary party at all. The 28% of articles that discuss the secondary party as victim often refer to him/her as someone who "met de schrik is vrijgekomen" (had a narrow escape):

> **Van tipped over in accident at Hoograven** A van has tipped over this evening after a collision at exit Hoograven of the A12 in Utrecht. The accident happened around 20:45 at the beginning of the Laagravenseweg in the direction of Nieuwegein. While leaving the roundabout the van collided with a car. The Renault van drove against a metal railing, went airborne and landed on its side. In total, four persons were involved in the accident. Ambulance personnel checked the

[9] https://www.destentor.nl/zwolle/flinke-file-op-a28-door-ongeluk-bij-elspeet~a3e9f023/.
[10] https://www.noordhollandsdagblad.nl/cnt/dmf20190120_33422976/buspassagier-gewond-na-botsing-met-auto-in-hoofddorp.
[11] https://www.gelderlander.nl/rhenen/auto-vliegt-uit-de-bocht-en-ramt-bankje-en-lantaarnpaal-in-achterberg~aa4c13f3/.
[12] https://www.leidschdagblad.nl/cnt/dmf20190114_37674589/automobilist-50-overleden-bij-ongeluk-met-busje-in-alphen.
[13] http://www.alphens.nl/nieuws/politie/32858,auto-belandt-in-sloot-naast-parkeerplaats-azi-laan.html.
[14] https://www.alphens.nl/nieuws/vrachtwagen-verliest-zijn-lading-op-eisenhowerlaan.html.
[15] https://www.ad.nl/alphen/auto-water-ingereden-langs-n11~a1b9b0cb/.
[16] https://www.omroepwest.nl/nieuws/3756045/Dode-en-gewonden-bij-ongeluk-in-Alphen-aan-den-Rijn.
[17] https://www.pzc.nl/rotterdam/vertraging-door-ongeluk-met-motorrijder-op-a4~a1784667/.
[18] https://www.heerhugowaardsdagblad.nl/112/fietser-aangereden-op-oosttangent.
[19] https://www.gelderlander.nl/ede/voetganger-gewond-door-botsing-met-vrachtwagen-in-ede~a41c6bee/.

Table 7
Eight types of frames about cause and agency (based on Ralph et al., 2019).

Type	Agentive/non-agentive	Agent	Object/human	Active/passive voice and sentence structure	#	Examples
#1	Agentive	Vehicle	Object	A vehicle hit a VRU	4	Auto schept fietser in Enschede (Car scoops up cyclist in Enschede) Auto botst met fietser (Car collides with cyclist)
#2	Agentive	Vehicle	Human	A driver hit a VRU	6	Bestuurder auto rijdt door na aanrijding met 9-jarig meisje (Car driver drives away after crash with a 9-year-old girl) Bromfietser botst met fietser in IJmuiden (Moped rider collides with cyclist in Ijmuiden)
#3	Agentive	VRU	Object	A VRU was hit by a car	7	Voetganger gewond door botsing met vrachtwagen in Ede (Pedestrian injured due to collision with truck in Ede) Vrouw op fiets aangereden door auto in Drachten (Woman on bicycle hit by a car in Drachten)
#4	Agentive	VRU	Human	A VRU was hit by a driver	3	Fietser aangereden door automobilist in Breda (Cyclist hit by a car driver in Breda) Fietser (15) vliegt over motorkap na aanrijding in Rosmalen (Cyclist (15) flies over the hood after crash in Rosmaken)
#5	Agentive	VRU	N/A	A VRU was hit	8	Fietser gewond geraakt door botsing in Lunteren (Cyclist injured in collision in Lunteren) Oma en kleinkind in buggy aangereden in Kaatsheuvel (Grandma and grandchild in buggy hit in Kaatsheuvel)
#6	Non-agentive	N/A	N/A	VRU injured after crash	27	Twee gewonden bij aanrijding in Enschede, weg deels afgesloten (Two injured after crash in Enschede, road partly closed) Fietser (50) zwaargewond bij aanrijding (Cyclist (50) severely injured after crash) Fietsster gewond na aanrijding in Vriezenveen (Female cyclist injured after crash in Vriezenveen)
#7	Non-agentive	N/A	Human	VRU injured after crash with driver	5	Flink letsel' voor fietser na aanrijding, bestuurder rijdt door (Severe injuries for cyclist after crash, driver drives away) Meisje (9) zwaargewond na aanrijding, automobilist verlaat plaats ongeval (Girl (9) severely injured after crash, car driver leaves scene)
#8	Non-agentive	N/A	Object	VRU injured after crash with vehicle	10	Vrouw overleden na aanrijding met vrachtwagen (Woman dies after crash with truck) Fietser zwaargewond bij botsing met bestelbusje in Alphen (Cyclist severely injured in a crash with a van in Alphen)

Table 8
Identification of victim and secondary party in coverage on traffic crashes.

Party mentioned	In headline	In body text
Victim	189	228
Secondary party	103	223
Secondary party (victim)		71

occupants, but nobody was severely injured.[20]

4.5.4. Focus in body text

The focus of the coverage of crashes with multiple parties gives an indication of what a reporter considers important in a crash. A quarter of the articles provide more details on a victim than on a secondary party, often including information on the gender and age of the person that is identified as the victim while offering no such data on the other involved parties. One explanation for this could be that there is more information available about the victim after the crash when a reporter or photographer arrives. Also, the identity of the other party might be protected by the police due to legal reasons. Remarkably, 60% of articles contain no details about either victim or secondary party.

4.5.5. Episodic versus thematic framing

Similar to the earlier empirical studies, this sample includes mostly episodic framing. The vast majority (92%) of articles only factually describe the crash without referring to any pattern. Some do discuss the broader context, often related to the specifics of the location: "The accident is probably caused by a right-of-way mistake. These kinds of accidents happen more

often at this intersection, because it is unclear."[21] The few articles that discuss a larger general pattern (4%) refer to slippery roads and crashes that involved (Uber) taxi drivers around Amsterdam ("this is the seventh time a taxi without a roof light was involved in an accident in the last two months"[22]). As indicated in earlier studies, also this study did not find any articles that made links with larger systemic health and safety issues in traffic crash coverage.

4.6. Explicit blame

Although it is unlikely that the reporter was at the scene of the crash or investigated its details, almost half of the newspaper articles explicitly suggest a cause of the crash (see Table 9). Most often, the behaviour of a secondary party is implied as cause. In the overall sample, the design of the road was discussed only in nine articles. More than a quarter (27%) of articles explicitly emphasize that the cause is still unclear. The 12% of articles coded as "different" mostly talk about slippery road conditions, which can be explained by the wetter weather during January, the data gathering period.

Counterintuitive at first, but a single-party crash can be framed as a victim and/or as a secondary party (i.e. a cause of the crash). In 26% of these articles their behaviour is implied as a cause. Whenever there is a crash between two parties (including vehicle–VRU) over half of the articles make no explicit mention of a possible cause.

These patterns validate earlier findings that traffic crashes are seldom presented in a thematic frame. In more than half of all articles the cause is not discussed (or mentioned as still being unclear/under investigation),

---

[20] www.rtvutrecht.nl/nieuws/1874002.

[21] https://www.tubantia.nl/hengelo/fietser-gewond-na-aanrijding-op-kruispunt-in-hengelo~ab55b75e/.

[22] https://www.at5.nl/artikelen/190714/scooterrijder-gewond-bij-botsing-met-taxi-slotermeer.

Table 9
Causes explicitly attributed.

	All		Single party		Two parties		Vehicle–VRU	
Total	368		116		207		70	
Cause not discussed	140	38%	26	22%	96	46%	36	51%
Mention that cause is still unclear	101	27%	36	31%	50	24%	14	20%
Behaviour of secondary party implied as cause	66	18%	16	14%	44	21%	11	16%
Different	44	12%	28	24%	9	4%	2	3%
Behaviour of victim implied as cause	25	7%	14	12%	11	5%	6	9%
Design of road/space implied as cause	9	2%	4	3%	5	2%	4	6%

Table 10
Blame explicitly attributed.

	All		Single party		Two parties		Vehicle–VRU	
Total	368		116		207		70	
None	252	68%	65	56%	149	72%	52	74%
Different	34	9%	22	19%	10	5%	4	6%
Didn't comply to rules	24	7%	0	0%	23	11%	6	9%
Lost control of the wheel	20	5%	17	15%	3	1%	0	0%
Overlooked	20	5%	0	0%	17	8%	8	11%
Was speeding	10	3%	4	3%	5	2%	0	0%
Under the influence of alcohol	9	2%	7	6%	1	0%	0	0%
Distracted	3	1%	3	3%	0	0%	0	0%
Blinded by the sun	2	1%	1	1%	1	0%	0	0%
Was reckless	2	1%	0	0%	2	1%	1	1%

while in other articles the cause is implied to rest on the shoulders of the persons involved. In 7% of articles, the behaviour of a victim is discussed as a cause, for example, "Omstanders meldden dat de jongen spontaan de weg overstak en hierbij geschept werd door de auto" (bystanders report that the boy spontaneously crossed the road and was scooped up by the car).[23]

Table 10 lists the explicit references to the kind of blame that is implied for the behaviour of the persons involved in the crash. The majority of articles (68%) do not assign blame. Twenty articles, largely from the single-party category, refer to a driver "losing control over the wheel", implying a peculiar relation between human and machine. Another twenty articles, largely from the "two parties" category, refer to one of the parties being "overlooked". Speeding, reckless driving, driving under the influence of alcohol or while distracted are only mentioned sporadically. In the "two parties" category, 11% refer to the compliance with rules by one of the parties, i.e. right-of-way rules.

5. Conclusions and discussion

5.1. Conclusions

This study analysed coverage of traffic crashes in Dutch local newspapers. Traffic crashes are a daily occurrence with severe societal impacts; for those directly involved it is likely to be the most violent episode of their lives. Stating that this constitutes an unconscious sacrifice that society is apparently willing to pay, Virilio (1999) argued that "the accident" offers the opportunity to breach with regular order and make visible what mostly stays below the surface. This paper aims to use traffic crash coverage in local Dutch newspaper to explore the specifics of the underlying order. To structure this exploration, it links the coverage to larger competing frames of justice and efficiency.

To analyse which frames are represented in news coverage of traffic crashes, a collection of 368 articles from throughout the country was analysed. While a few similar studies have been done before, they are based in the North American context and focused either on fatal crashes between motor vehicles and cyclists/pedestrians (3) or on fatal car crashes (1). Their explicit aims are to question the "blame the victim" or simplistic victim–villain storylines in reporting and call for a more balanced reporting, in order to generate support for safer environments for vulnerable road users. These four studies informed the elaboration of the coding framework for the 368 articles in this sample.

The first main finding is that despite the broader scope (in both geography and typology of crashes) the analysis returned similar patterns to earlier studies:

- Crashes are for the most part episodically framed, a factual description of an isolated incident, without discussing larger patterns or underlying mechanisms that create the unsafe conditions.
- In the headlines of 70 articles on crashes between motor vehicles and VRU, the Dutch coverage is usually non-agentive but also refers more frequently to a car driver.
- Although less dominant than in earlier studies, the majority of headlines and body texts refer to a secondary party as a vehicle instead of as a person.

The second main finding relates to the suitability of the conceptual coding schemes. Several codes returned a large portion of "not applicable", for example, on active/passive voice. The relative straightforward coding schemes that were applied before to study coverage of fatal crashes between vehicles and VRUs have limited applicability to understanding the much richer spectrum of all traffic crashes. Due to the severity of its impacts and legal implications, a fatal crash between a motor vehicle driver and vulnerable road user mandates speaking about a victim and assigning blame. For this reason, Magusin (2017) looks at this issue, finding that "direct blame was only assigned to drivers in three out of 71 headlines" (p. 87) and highlights the notion of "victim-blaming tendencies in news media" (p. 66).

While the coding scheme works well for vehicles and VRU crashes in the North American context, and especially in response to the perceived biased reporting that blames the victim, it limits the research methodology to fully understand crashes and their reporting. People suffer physical and mental injuries regardless of the role they play in the crash, and blame distribution becomes much more complex. The sheer number of crashes in such a limited period, also challenges the entire notion of having a cause and a victim altogether. As the earlier studies also agree upon, both effects of crashes and their causes need to be seen in a much more systemic way. And that same applies to our research methodology and coding schemes.

5.2. Discussion

The reporting seems to highlight crashes that have a strong visual impact and/or an impact on traffic in the form of congestion or road closures. The human element is largely absent in the description of these crashes. When asking reporters how they decide to report on a specific crash and what to write, one answered that they have to work with pictures that land on their desk, made by commercial "crash hunters".[24] The overview of the articles also shows a tendency to describe items that can be deducted from such a picture: the vehicles, damage to surroundings, maybe the report on the age/gender of the victim if he or she is taken to the hospital. One could argue that many of these terms are used as a metonymy, where for instance a reference to a car is a substitute for the full human-machine hybrid. The reporting covered in this collection took little – if any – effort to research the impact of the crash on the humans involved

---

[23] https://www.ad.nl/arnhem/jonge-fietser-gewond-door-aanrijding-met-auto-in-arnhem~a9de0073/.

[24] For a journalistic article about this, see: https://decorrespondent.nl/9272/busje-ramt-auto-file-na-ongeluk-en-de-mensen-dan/3785365459304-4479cd6b.

or to analyse the thematic patterns (of the crash itself) or trends (relation with other crashes). Instead, it mostly described the impact on traffic and referred to the name of the road to indicate which part of the road network was impacted. This factuality resembles more the reporting of daily weather forecasts than human interest stories.

Overall, the terms and frames place the mobile subject more frequently in the efficiency frame than the justice frame. Instead of being seen as human tragedies, traffic crashes are presented as glitches in the machine – a dehumanized interferences with the overall functioning of a well-oiled machine, where the effects on traffic flow trump the impacts on the people involved. In the headlines of crashes that involved vehicles and cyclists/pedestrians, a majority did not refer to a secondary party and a quarter did not refer to a victim. Knowing that headlines are far more likely to be read and have a strong priming impact on the reader (Develotte and Rechniewski, 2001), these headlines would create the impression that a crash just happened to somebody, that it is almost an automated, unpreventable effect of the traffic machine. When there is a reference to a secondary party, it is most often represented as a vehicle instead of a human driver. This removal of human agency "implies that the incident was an accident, like the malfunctioning of a machine, rather than the result of avoidable factors" (Magusin, 2017, p. 82).

The tension between seeing crashes as human tragedies versus glitches in the machine mirrors the societal discussion in the 1970s between "Stop de Kindermoord" (Stop Child Murder) and Veilig Verkeer Nederland (Safe Traffic Netherlands). While the former claimed that the magnitude of traffic violence, especially against children, demanded a complete revision of the car dominated traffic the system, the latter focused on educating children and parents on traffic safety behaviour. Now, 50 years later, although the Stop de Kindermoord is often heralded, the VVN approach still prevails in our current mainstream framing of traffic safety (Verkade and Te Brömmelstroet, 2020). The data of this study confirms this.

5.3. Implications for research and practice

Future research can contribute to enhancing the understanding of this problematic, by developing a richer coding framework for assessing articles and by further examining the process of reporting on traffic crashes. This aim would require the research to go beyond quantitative coding and try to engage the subject with a mixed-method approach. Without it, we risk to study crashes as the interactions between the actors in a theatre, without understanding how systematic violence that is engrained in the traffic system is defining the stage on which the play takes place. In academic research we dehumanize people that are not encased in a box as "vulnerable road users" or even worse as only an abbreviation, VRU. All humans are vulnerable; however, the relative vulnerability of pedestrians and cyclists is a direct result of societal choices in road design and traffic rules.

For practical implications, the findings could be translated into a normative code for journalists, enabling them to create articles that better reflect more of the details of the crash and the effects it has on all parties involved (see Connor and Wesolowski, 2004). However, I agree with Ralph et al. (2019) that we have to be emphatic towards the conditions in which these journalists work: short deadlines, few resources and limited guidance (p.13). A follow-up study should try to uncover how these mechanisms work in generating the articles that end up in newspaper and studies like this one (e.g., by interviewing the key actors behind the reporting).

We should seek to raise societal awareness regarding the influence of the journalist's or editor's choices – of the power they have to frame a phenomenon that has such severe impacts on society (Wallack et al., 1993). The findings of this study offer useful foundations for a discussion of the choices that are made and the frames that are fostered by organisations of journalists and editorial boards of local newspapers.

References

Bond, J., Scheffels, M.E., Monteagut, L., 2018. Media Framing of Fatal Bicycle Crashes in Hillsborough County: A Critical Discourse Analysis. National Center for Transit Research (NCTR) Report No. CUTR-NCTR-RR-2018-01, Center for Urban Transportation Research, University of South Florida. Available at:. https://scholarcommons.usf.edu/cutr_nctr/9/.

Casimiro, E., 2019. Accident Reporting by Dutch Media: Content Analysis with Natural Language Processing. Bachelor thesis. University of Amsterdam http://scriptiesonline.uba.uva.nl/en/scriptie/697610.

Centraal Bureau voor Statistiek, 2020. 11 Procent meer verkeersdoden in 2019. https://www.cbs.nl/nl-nl/nieuws/2019/16/11-procent-meer-verkeersdoden-in-2018, Accessed date: 21 February 2020.

Cobb, R.W., Primo, D.M., 2004. The Plane Truth: Airline Crashes, the Media, and Transportation Policy. Brookings Institution Press, Washington.

Connor, S.M., Wesolowski, K., 2004. Newspaper framing of fatal motor vehicle crashes in four Midwestern cities in the United States, 1999–2000. Inj. Prev. 10 (3), 149–153.

Culver, G., 2018. Death and the car: on (auto) mobility, violence, and injustice. ACME: an international e-journal for critical geographies 17 (1).

Develotte, C., Rechniewski, E., 2001. Discourse analysis of newspaper headlines: a methodological framework for research into national representations. The Web Journal of French Media Studies 4 (1), 1–12.

European Transport Safety Council, 2019. Ranking EU Progress on Road Safety: 13th Rod Safety Performance Index Report. ETSC, Brussels.

Feddes, F., de Lange, M., Brömmelstroet, M., 2019. Hard work in paradise. The contested making of Amsterdam as a cycling city. The Politics of Cycling Infrastructure: Spaces and (In) Equality, pp. 133–157.

Fischer, F., Forester, J. (Eds.), 1993. The Argumentative Turn in Policy Analysis and Planning. Duke University Press, London.

Goddard, T., Ralph, K., Thigpen, C.G., Iacobucci, E., 2019. Does news coverage of traffic crashes affect perceived blame and preferred solutions? Evidence from an experiment. Transportation Research Interdisciplinary Perspectives 3. https://doi.org/10.1016/j.trip.2019.100073.

Griffiths, W., Knutson, A.L., 1960. The role of mass media in public health. American Journal of Public Health and the Nations Health 50 (4), 515–523.

Hajer, M., 1993. Discourse coalitions and the institutionalization of practice: the case of acid rain in Great Britain. In: Fischer, F., Forester, J. (Eds.), The Argumentative Turn in Policy Analysis and Planning. Duke University Press, London, pp. 43–76.

Harms, L., Bertolini, L., Te Brömmelstroet, M., 2014. Spatial and social variations in cycling patterns in a mature cycling country exploring differences and trends. J. Transp. Health 1 (4), 232–242.

Iyengar, S., 1994. Is Anyone Responsible?: How Television Frames Political Issues. University of Chicago Press, Chicago.

Iyengar, S., 1996. Framing responsibility for political issues. The Annals of the American Academy of Political and Social Science 546 (1), 59–70.

Jeanis, M.N., Powers, R.A., 2017. Newsworthiness of missing persons cases: an analysis of selection bias, disparities in coverage, and the narrative framework of news reports. Deviant Behav. 38 (6), 668–683.

Kębłowski, W., Bassens, D., 2018. "All transport problems are essentially mathematical": the uneven resonance of academic transport and mobility knowledge in Brussels. Urban Geogr. 39 (3), 413–437.

Lakoff, G., Johnson, M., 1980. Metaphors We Live By. University of Chicago Press, Chicago.

Lutz, C., Lutz Fernandez, A., 2010. Carjacked: The Culture of the Automobile and Its Effect on Our Lives. St. Martin's Press, New York.

Magusin, H., 2017. If you want to get away with murder, use your car: a discursive content analysis of pedestrian traffic fatalities in news headlines. Earth Common Journal 7 (1), 65–97.

Marris, P., Thornham, S., Bassett, C. (Eds.), 2000. Media Studies: A Reader. NYU Press.

Meadows, D., 2008. In: Wright, D, Green, Chelsea (Eds.), Thinking in Systems: a primer. White River Junction, Vermont.

Norton, P., 2011. Fighting Traffic: The Dawn of the Motor Age in the American City. MIT Press, Boston.

Prytherch, D., 2018. Law, Engineering, and the American Right-of-Way: Imagining a More Just Street. Springer, Berlin.

Pucher, J., Buehler, R., 2008. Making cycling irresistible: lessons from the Netherlands, Denmark and Germany. Transp. Rev. 28 (4), 495–528.

Pucher, J., Buehler, R., 2017. Cycling towards a more sustainable transport future. Transp. Rev. 1647, 1–6.

Ralph, K., Iacobucci, E., Thigpen, C.G., Goddard, T., 2019. Editorial patterns in bicyclist and pedestrian crash reporting. Transp. Res. Rec. 2673 (2), 663–671.

Ryan, C., Carragee, K.M., Schwerner, C., 1998. Media, movements, and the quest for social justice. J. Appl. Commun. Res. 26 (2), 165–181.

Schepers, P., Twisk, D., Fishman, E., Fyhri, A., Jensen, A., 2017. The Dutch road to a high level of cycling safety. Saf. Sci. 92, 264–273.

Scheufele, D.A., 1999. Framing as a theory of media effects. J. Commun. 49 (1), 103–122.

Schlesinger, P., Tumber, H., 1994. Reporting Crime: The Media Politics of Criminal Justice. Clarendon Press, Oxford.

Sennett, R., 2018. Building and Dwelling: Ethics for the City. Farrar, Straus and Giroux, New York.

Van Dijk, T.A. (Ed.), 2011. Discourse and Communication: New Approaches to the Analysis of Mass Media Discourse and Communication. 10. Walter de Gruyter, Berlin.

Vardi, I., 2012. Normalizing Accidents: Cars, Carnage, and the Disappearance of Social Problems. Boston University, Boston.

Vardi, I., 2014. Quantifying accidents: cars, statistics, and unintended consequences in the construction of social problems over time. Qual. Sociol. 37 (3), 345–367.

Verkade, T., Te Brömmelstroet, M., 2020. Het recht van de snelste: hoe ons verkeer steeds a-socialer werd. De Correspondent, Amsterdam.

Virilio, P., 1998. Surfing the accident: Interview with Paul Virilio by Andreas ruby. In: Brouwer, J., Mulder, A. (Eds.), The Art of the Accident (1998). NAI Publishers, Rotterdam, pp. 30–44.

Virilio, P., 1999. Politics of the Very Worst. Semiotext(e), New York.

Wallack, L., Dorfman, L., Jernigan, D., Themba-Nixon, M., 1993. Media Advocacy and Public Health: Power for Prevention. Sage, London.

WHO, 2018. Global Status of Road Safety. World Health Organisation, Geneve.

Willson, R., 2001. Assessing communicative rationality as a transportation planning paradigm. Transportation 28 (1), 1–31.