# Windshield bias is real: 2019 news coverage of pedestrian traffic fatalities in the United States

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**Abstract:** Framing pedestrian traffic fatalities episodically rather than thematically, non-agential descriptions of traffic crashes and transferring responsibility to pedestrians for their own deaths are indicators of windshield bias. Pedestrian traffic fatality rates increased dramatically in the U.S. over the previous decade. Findings from this content analysis of 2019 U.S. news coverage supports conclusions that windshield bias is national in scope and associated with pedestrian fatality rates, walkability and partisan segregation. The 2016 vote for Republican Donald Trump was also positively associated with episodic framing. An inverse association between word length and windshield bias was also established. The data set analyzed included 363 news articles drawn from 78 news sources in 74 cities located across 30 states.

**Keywords:** Frost Belt, news coverage, partisan segregation, pedestrian traffic fatality, Sun Belt, walkability

## 1   Introduction

Consider the following sentence in a June 26, 2013 article by National Public Radio reporter Juliana Kim: '*A new study paints a grim picture of American roads: every day, 20 people walk outside and end up killed by a moving vehicle.*' (Kim, 2023) In what is otherwise excellent reporting about the crisis of increasing pedestrian traffic fatalities in the U.S., and which appears in an important political news source (Grieco, 2020), responsibility is implicitly assigned to vehicles and not to their drivers.   For pedestrian safety activists, the attribution of responsibility in the article is a classic example of windshield bias, defined as journalism which presents pedestrian traffic fatalities from the perspective of drivers rather than that of pedestrians (Schmitt, 2020). Attributing responsibility to a vehicle rather than to the driver is one of the several indicators of this distortion in news coverage that they identify impressionistically.  If widespread, windshield bias may be part of the explanation for the

failure of both the public and public policy-makers to recognize and respond to the crisis.  How pedestrian traffic fatalities are framed by the press matters because news frames influence public opinion about individual risk and social harm, and in turn the resulting official response or non-response to this public policy problem.

How pedestrian traffic fatalities are reported may contribute to understanding why the U.S. has lagged behind other wealthy democracies in making their reduction an important transportation policy goal. The success of Sweden's Vision Zero road safety program has not attracted the same attention in the U.S. as elsewhere (Belin et al., 2012; Kristianssen et al., 2018). From 2010 to 2018, while per capita pedestrian traffic fatalities decreased in Denmark, the Netherlands and Germany, and increased only slightly in the U.K., they increased dramatically in the U.S. (Buehler & Pucher, 2021) Between 2011 and 2020, the number of pedestrians killed in traffic crashes in the U.S. increased from 4 457 to 6 516. Pedestrian deaths increased from

14% to 17% of all traffic fatalities in the U.S. over that period.

The public policy interest lies not only in the marked increase in pedestrian traffic fatalities, but also because the demographic profile of the deceased pedestrians—disproportionately members of racial and ethnic minorities, and elders—marks them as marginalized and vulnerable. Victims are marginalized because they have less power to command public attention and with it the moral regard that would result in action to limit harm and vulnerable because they are subjected to a fundamentally unequal exchange of risk. Drivers are physically protected in pedestrian traffic crashes while pedestrians are not.

That walking or walkability is essential to affordable transportation in the development of sustainable cities is a further public policy interest (Academic_Expert_Group, 2019). Elevating the importance of general road safety as a policy goal makes progress across a range of United Nations Sustainable Development Goals more likely. Improved pedestrian safety is reflected in improved health, environmental protection and community development. Enhancing pedestrian safety is an essential element of the transition away from cities largely dependent on motorized transportation to cities developed for pedestrians, cyclists and users of public transportation (Academic_Expert_Group, 2019).

From the perspective of activist author Angie Schmitt, the Sun Belt or southern tier of American states from South Carolina to California are the '*epicenter of the pedestrian safety crisis*' (Schmitt, 2020). Whether windshield bias mirrors regional pedestrian traffic fatality rates or is national in scope arguably matters because that may influence public recognition and political response. Previous research investigating windshield bias is a small literature and has focused on specific states and cities. What is still missing from the literature is evidence of windshield bias nationally. The research reported here fills that lacuna, while also going beyond that to reveal possible reasons for variation in windshield bias across cities.

The empirical findings reported from this investigation answer two important questions about windshield bias in U.S. news coverage. First, is windshield bias characteristic? Anecdotal evidence is a poor substitute for systematic evidence. Second, what are the geographic and political correlates of the indicators of windshield bias? News content is a product of decisions made by reporters and editors who reflect and must adapt to the societies they serve. Identifying the correlates may point the way toward better journalism and better public policy.

## 2 Literature review

Pedestrian traffic fatalities matter as the subject of public policy for several reasons. Most immediately, they end the individual lives of victims. The grief felt by their surviving family and friends, the remorse felt by drivers responsible for their deaths, and the dismay felt by bystanders who witness the event, are important ramifications. At another remove, pedestrian fatalities are an important symptom of 'un-walkability'. While the culture of the United States is car-dominated (Middleton, 2022), the physical infrastructure of some cities in the United States make them much more conducive to foot traffic than other cities. That determines whether pedestrians can travel to work, shop or access services within a reasonable amount of time and do so safely (Soderstrom, 2008). Walkability matters because of it is reflected in health, home purchases, business investment, and per capita carbon emissions (Hoehner et al., 2011). Moreover, the most successful U.S. cities in the future are anticipated to abandon 'blaming and shaming of pedestrians and bicyclists' that began with 'criminalizing walking' in the 1920s (Fulton, 2022). Increased walkability through pedestrian safety is associated with diversity, property value, life expectancy, educational attainment and environmental protection (Speck, 2018). Epidemiologists identify a range of problems associated with less walkable cities. '*Traffic-related ambient stressors such as noise, poor air quality, and perceived traffic danger are associated with lower health status and higher levels of depression and cynical hostility and could affect cognitive development in children.*' (King & Clarke, 2014)

Statistics about pedestrian fatalities present marked demographic disproportionalities by race or ethnicity and age. In their analysis of the bivariate correlates for pedestrian fatalities from 2012–2017, Sanders & Schneider (2022) found that '*the percentages for Black, Native American, Hispanic pedestrians differ from White pedestrians for most variables.*' Blacks and Native Americans experience higher rates of pedestrian fatalities on both per capita and per trip bases, and that Black and Hispanic children and

Asian elders experience much higher rates of risk of pedestrian fatality. Pedestrian traffic fatalities are a public policy problem because changes in physical and cultural infrastructure may reduce their incidence. Infrastructure comprises the systems that organize the circulation of objects, people, knowledge, meaning and power (Hass, 2022). Changes in physical infrastructure that organize the circulation of objects and people include posting slower speed limits, painting more sidewalks, and installing better street lighting. Changes in the cultural infrastructure that organize the circulation of knowledge, meaning and power include how news covers pedestrian fatalities, which is the subject of this research.

The framing of news coverage shapes public opinion by causing news audiences to treat some considerations as more or less important than others (Johnson-Cartee, 2005). The public's perception of risk is itself subject to systematic bias—actual risk and perception of risk are at variance—and newspaper coverage may be caused by such misperception (Combs & Slovic, 2016).

Defined as the tendency of journalists to report pedestrian fatalities in traffic crashes from the perspective of drivers rather than that of pedestrians, windshield bias operates by reporting traffic crashes involving the driver's vehicles and pedestrians by privileging vehicle over pedestrian transportation and diminishing driver responsibility and increasing pedestrian responsibility for traffic crashes.

Short & Pinet-Paeralta (2010) explain the 'silence' about pedestrian traffic fatalities as a public policy issue in scholarly urban studies as the product of the description of these events as an 'accident' and their naturalization as the 'constant background' which is a 'taken for granted cost of contemporary urban life'. As city planner Jeff Speck comments, '*[W]hile we Americans may take our risk of automobile injury for granted, it is actually something that is well within our control—in the long term, as a function of how we design places, and in the short term, as a function of where we choose to live.*' (Speck, 2012) That silence in public perception reflects neglect of the issue in news coverage. Systematic biases in news coverage matter because they construct understanding of public policy issue both by ordinary members of the public as news consumers and by decision makers who are attentive to both news coverage and public opinion. They may distort our understanding by directing attention to or obscuring recognition of the

extent of the problem and/or directing attention to the behavior of those less responsible for the problem, in effect by 'blaming the victim'. Many traffic engineers and other transportation specialists frame the problem by emphasizing 'distracted walking' in which pedestrians talk on their phones, text message or otherwise look at their screens, or listen to music (Ralph & Girardeau, 2020). They note that this frame may be attractive because it is easily recalled and thus subject to heuristic bias. The degree to which victims are blamed in news coverage varies across public policy issue domains (Singer & Endreny, 1993). In the terminology of media studies, both agenda setting and framing would be implicated in windshield bias.

Consider the following short article in the May 30, 2019 *Las Vegas Sun* by reporter Ricardo Torres-Cortez, with the headline 'Woman, 65, hit by car dies at hospital':

'*A 65-year-old woman hit by a car late Thursday in the central valley died at University Medical Center, according to Metro Police. The incident happened about 11:15 p.m. on Jones Boulevard, just north of Palmyra Avenue near Desert Inn Road, police said. The pedestrian was in the road, outside of a marked crosswalk, when she was hit by a 2006 Ford Mustang, police said. The motorist, who stayed at the scene, was not injured or impaired, police said. The death marked the 40th traffic fatality investigated by Metro this year.*' (Torres-Cortez, 2019)

Note that the brevity of the article may convey that the event itself is not very important and thus that similar events are not important. More importantly, a vehicle rather than a driver in a vehicle is said to have struck the deceased, that a specific year and make vehicle is said to have struck the deceased, that the deceased is implicitly blamed for her own death for being outside a marked crosswalk, that no information about pedestrian safety in the area is given as the immediate context for the event itself, and that for public policy context this death is grouped with all traffic fatalities (including those resulting from crashes between two or more vehicles) rather than grouped with other pedestrian traffic fatalities. All that readers learn about the deceased pedestrian is their sex, age and place of death.

This is also a news story reported from Las Vegas, Nevada, a Sun Belt city notably inhospitable for pedestrians. City planner and New Urbanism activist Jeff Speck describes it is as 'a place where nobody walks' (Speck, 2012). Rhetorically useful hyperbole

aside, some Las Vegans walk in their city and in doing so are exposed to tragic potential peril.

Pedestrian safety advocate Angie Schmitt explains the tragic structural etiology for windshield bias (Schmitt, 2020). Drivers may respond to the questions of police and reporters but the deceased cannot. In-depth investigations of pedestrian traffic fatalities by police or reporters are rare. They are 'routine and unsexy' as only marginally newsworthy. Although more newsworthy than the 'mundane deaths' of non-public figures from natural causes (Morse, 2017), pedestrian fatalities are conventionally conceived as the most ordinary of violent deaths. The newsworthiness of crime stories reflects the inherent 'seriousness' of the offense, with violent crime such as murder and vice such as drugs, prostitution and gambling receiving more attention than property crime such as burglary (Chermak, 1998). Pedestrian fatalities are invariably violent deaths and responsible drivers may be charged with a crime, however they are unlikely to be given the amount of news coverage comparable to violent crimes. Instead, they are conventionally deemed to be local traffic news.

Finally, reporters typically rely on a single official source for pedestrian traffic fatalities—the police report. Professional norms dictate that reporters rely on official sources, and the police report is the most readily available (Johnson-Cartee, 2005). '*Reporters who have only a short time to gather information must therefore attempt to obtain the most suitable news from the fewest number of sources a quickly and easily as possible, and with the least strain on the organization's budget*.' (Gans, 1979) When reporting involves risk, journalists look to the government as the 'most official' of official sources (Singer & Endreny, 1993). What is lost in that exclusive reliance is information that might be gathered either from other official but non-police or non-government sources and from private individuals. As Cook (1998) observed about the reliance on official sources in regular newsbeats, '*we must look not only for the news it makes possible but for the news it discourages.*' In their content analysis of 2 979 articles in four local newspapers in West Yorkshire, England, O'Neill & O'Connor (2008) found that in more than three-fourths used a single source and of the remaining articles, '*most were still framed by a primary source, with a brief alternative quote included at the end of the report*'. Chronic under-staffing in newsrooms exacerbates the problem (Werner, 2019). Overworked reporters cannot visit the location of every event in time to interview witnesses. '*The investigation of vehicle crashes is a notoriously difficult procedure, and for a general-assignment reporter in the chaos of a crash scene, getting basic details (name, age, etc.) is challenging enough.*' (Vanderbilt, 2019)

What is often sacrificed in covering traffic crashes is the larger context. Framing these events as part of an epidemic runs up against a '*tension between journalism and the epidemiological work of reducing car crashes*'. Where reporters '*instinctively look for a compelling individual story, as in, say the cruel, seemingly random death of a much-loved community figure*,' epidemiologists '*look for data and patterns*' (Vanderbilt, 2019).

Another potential source of tension that may be reflected in reporting pedestrian traffic crashes is ideological polarization in the U.S. Public opinion research indicates that, '*conservatives would rather live in large houses in small towns and rural areas— ideally among people of the same religious faith— while liberals opt for smaller houses and walkable communities in cities, preferably with a mix of different races and ethnicities.*' (Desilver, 2014) Ideology maps partisanship closely in the U.S., with conservatives voting Republican and liberals voting Democratic. '*Journalists negotiate complex sets of social and economic pressures within ideological frameworks of dominant culture that shape journalists' interpretations and presentations of news.*' (Gutsche, 2015) Crucially, if their news sources are to hold onto their readerships and the reporters are to hold onto their jobs, they must engage their news audiences and that means reporting events in a manner that readers, listeners and viewers accept. News source owners and editors worry about offending political and economic elites and public opinion in the cities they serve by reporting the news in a manner at odds with their values. Reporters worry about keeping their jobs or finding jobs in journalism elsewhere. As *Columbia Journalism Review* Editor in Chief Kyle Pope noted, '*The jobs picture in journalism is terrible. Since 2005, newspaper employment in the country has fallen by more than 50 percent.*' (Pope, 2018) News audiences naturalize the characteristics of their environments, including the walkability and partisan segregation—the tendency for Democratic and Republican voters to live in separate neighborhoods— of the cities where they live. Engaging them as a reporter may be reflected in greater or lesser windshield bias, with pedestrian traffic crashes reported differently in cities whose residents are ideologically more conservative or more liberal. Mutual partisan

antipathy has grown over the last three decades. Public opinion polling by the Pew Research Center in 2022 found that 62% of Republicans and 54% of Democrats responded that they had very unfavorable views of the other party (Pew_Research_Center, 2022). Partisan suspicion characterizes attitudes toward journalists and news sources.

The biases in news coverage of traffic crashes may be obvious or subtle. To include the information that a driver involved in a crash was unimpaired by alcohol or drugs has the effect of absolving them of full responsibility (Vanderbilt, 2008). To write that a vehicle struck a pedestrian elicits a different assignment of responsibility from readers than writing that a driver stuck a pedestrian with a vehicle. In their investigation of framing using agentive and non-agentive descriptions, Fausey & Boroditsky (2010) found that using non-agentive descriptions of events were associated with observers attributing both less blame and lower assignment of financial liability than agentive descriptions of events. The 'vehicle struck pedestrian' passive voice construction is non-agentive while the 'driver struck pedestrian with vehicle' active voice construction is agentive. Pedestrian safety advocates point out the manner in which the news articles describe events in which pedestrians die or are injured in traffic tend to absolve drivers of responsibility. Graham Larkin of Zero Vision Canada points out that the conventional term 'accident' implies lack of responsibility and is used even before the absence of driver negligence has been established (Spurr, 2016).

The two published studies of the news coverage of pedestrian traffic fatalities comprise a very small academic literature but clearly support the reality of windshield bias. In a content analysis of news headlines reporting pedestrian fatalities in 2017 in seven newspapers in Edmonton, Alberta, Magusin (2017) found strong evidence of windshield bias. Victims were either not described at all or not described in a manner that would have humanized them in a majority of headlines. In a majority of the headlines no adjectives or adjectival phrases were used to describe the deceased. As Magusin (2017) notes, denying the individuality or identity of the deceased with minimal or no humanizing description means readers are unlikely to experience sympathy or empathy. Morse (2017) theorizes what would grant them recognition of humanity:

'*[S]ince dead people no longer have agency and they cannot receive any response but grieving…the way to account for their lost lives is by giving an account of the life they had before their deaths. We need to ask to what extent the lives of the dead are portrayed as real and meaningful: Can we imagine them as lively and potent people? Can we grasp their stories as individuals?*'

Systematic failure to humanize the subjects of news coverage is evident in studies of other public policy issues. Crucial to that humanization is a description as complete and relatable individuals who are more than their names and demographic characteristics. In a content analysis of Canadian local news coverage of six missing/murdered Aboriginal and White women, Kristen Gilchrist found that the latter received more than six times the press coverage of the former. While the White women were described with full biographies '*offering thoroughly detailed accounts of their hobbies, idiosyncrasies, personalities, families, goals other intimate personal information*', the Aboriginal women were given less detailed descriptions (Gilchrist, 2010). Similarly, in an investigation of the newsworthiness of the deaths of minority residents by police and vigilantes, Kathy White et al. found that individuals killed in predominantly Black neighborhoods receive less news coverage that recognizes their 'complex personhood' than those in non-Hispanic White neighborhoods. '*Arguably the most powerful way to express the value of someone's life is to recognize their complex personhood, that is, to highlight and discuss their social relationships, such as key family and community roles*.' (White et al., 2021). Magusin (2017)'s analysis of headlines also revealed that responsibility was attributed more frequently to the vehicle than to the driver.

In their content analysis of 162 news articles in 2019 about traffic crashes involving bicyclists and pedestrians reported by seven statewide and local newspapers in Hawai'i, including four newspapers and three television stations, Keliikoa et al. (2022) found that more than three-quarters of the headlines used non-agentive language, referring to the vehicle more often than the driver. Only one-quarter of the articles humanized the person injured or killed. Information about the immediate context of the event such as the location of the pedestrian in a marked crosswalk and pedestrian island, was included in roughly one-half of the news articles. A majority of the articles were framed episodically and when framed thematically, the focus was on the number of traffic fatalities up to that point

in time.

The findings from the content analysis reported in this article offer further evidence of the reality of windshield bias, but this time from news sources in cities across the U.S. This research identifies correlates of the different components, including the political, that comprise windshield bias.

## 3   Data and methods

To investigate whether and to what extent windshield bias characterizes news coverage of pedestrian traffic fatalities in the United States we conducted a content analysis of the relevant news coverage.

### 3.1   Case selection

In keeping with similar quantitative research investigating the biases of news coverage, the focus was on the journalistic construction of responsibility for pedestrian traffic fatalities without 'cherry picking' cases.56 Specific news articles are discussed as examples of typical reporting. The National Highway Traffic Safety Administration (NHTSA) reports traffic fatality rates per 100 000 persons for municipalities with populations of 150 000 or more. The data for this content analysis of news coverage analyzed in this study were collected from news sources in municipalities listed in the NHTSA's 2019 Traffic Safety Facts (NHTSA, 2019).

Data were collected from articles in news sources (newspapers, wire services and broadcast news) in the metro area of the NHTSA's list of cities which appeared in a search of the news article texts in news sources in NewsBank using the search term 'pedestrian fatality.' The term was chosen because it is connotatively neutral and likely to appear to article reporting traffic pedestrian fatalities.

For example, Seattle and Tacoma are in the same metro area and any articles from news sources in Seattle or Tacoma about pedestrian traffic fatalities in those cities were included in the data set. Events reported in news sources in other metro areas were not included because the focus was on how news sources reported pedestrian fatalities in their own urban areas because they are best placed to perform that role. For example, the news article 'Pedestrian struck by vehicle, killed in Fort Collins', published on October 12, 2019, in the *Denver Post*, was not included in data set. Fort Collins and Denver are in different metro areas. To ensure

comparison across similar cases, data were collected only from articles that referenced pedestrians killed by motor vehicles, including buses. Pedestrian fatalities involving bicycles, scooters, trains and light rail were excluded from the data set. Data were collected only from articles that reference individual traffic fatalities and thus exclude those that report traffic statistics generally. Op-ed columns and letters to the editor were excluded because they do not report events impartially but instead offer opinion. However, data were collected from 'follow up' news articles in which the victims later die of their injuries, subsequent arrests for pedestrian traffic fatalities, article clarifications, and reports of social activism about pedestrian traffic fatalities that reference specific events. The rationale is that the updates and subsequent articles merit investigated because they reveal how these events are generally framed. Official traffic safety warnings during the holidays or general summaries of the problem that cite statistics were excluded because they were unlikely to present a comparable form of windshield bias. Multiple news articles about the same event were included if they presented two or more of the following points of difference: (*i*) different publication day; (*ii*) different article title; (*iii*) different text word count by at least 5 words; and (*iv*) different news sources even if they are owned by the same company, as is the case with the San Jose *Mercury News* and *East Bay Times*.

The resulting data set includes data from 363 articles collected from 78 news sources, in 74 cities, and located in 30 states. The largest numbers of articles were collected from news sources in 12 cities: San Francisco and San Jose, California; Colorado Springs and Denver, Colorado; Honolulu, Hawaii; Las Vegas, Nevada; Charlotte and Durham, North Carolina; Columbus, Ohio; Portland, Oregon; Austin, Texas and Richmond, Virginia.

### 3.2   Dependent variables

Drawing from the popular and academic literature, six indicators of windshield bias were identified: naming the deceased pedestrian, describing the deceased pedestrian, blaming the deceased pedestrian, reporting the pedestrian death as the result of a vehicle rather than a driver striking the pedestrian, failing to describe the context of pedestrian death, and episodic rather than thematic reporting.

The coding instrument collected the following data from each article either as values of '1' or '0':

1. A dichotomous variable to indicate whether the article named the deceased.

2. A dichotomous variable to indicate whether the article describes the deceased in a manner that humanizes them, including information about the victim in addition to age, race and locations of the event.

3. A dichotomous variable indicating failure to describe the immediate context of pedestrian risk, such as the absence of street lighting and sidewalks.

4. A dichotomous variable indicating thematic or episodic framing of the event. Articles with an episodic frame report the event in isolation from similar events, ignoring the public policy problem of pedestrian traffic fatalities. Articles with a thematic frame reference similar events, noting the larger public policy problem of which it is an example.

5. A dichotomous variable to indicate whether the article blames the deceased for their own death. For example, a December 18, 2019 article appearing in the *Mercury News* 'Collision Claims Pedestrian' includes the following information: '*the pedestrian was walking outside a designated crossing area when he was hit by a Lexus traveling southbound on Race Street.*' (Green, 2019) Implicitly the pedestrian was in the wrong because they were in the wrong location.

6. A dichotomous variable indicating the most common non-agentive initial description of the event. If the event is first described in language such as '*vehicle struck the pedestrian*', then it is coded as non-agentive even if subsequent descriptions specify that the vehicle was driven by an individual. Although most of the articles offer one or the other constructions, an example of a difficult case is the November 29, 2019 *San Francisco Chronicle* news report 'Metro', which states that '*Authorities in San Jose are searching for a driver of a car that fatally struck a man early Wednesday and fled the scene.*' The word 'that' implies the vehicle did the striking and not the driver.

Factor analysis was conducted to identify the relationships between the six indicators of windshield bias to reveal which of them could be used to calculate composite dependent variables capturing such interaction. Factor loadings are presented in Table 1.

Based on the factor loadings higher than 0.4 for two dependent variables in Factor 1 shown in Tables 1

**Table 1** Factor analysis for dependent variables

| Variable | Factor 1 | Factor 2 | Factor 3 | Uniqueness |
|---|---|---|---|---|
| Name deceased | 0.42 | -0.11 | -0.08 | 0.81 |
| Describe deceased | 0.52 | -0.05 | -0.02 | 0.73 |
| Blame deceased | 0.23 | 0.24 | -0.01 | 0.89 |
| Non-agentive | 0.28 | 0.10 | 0.05 | 0.91 |
| Context described | 0.27 | -0.02 | 0.12 | 0.92 |
| Episodic framing | -0.03 | 0.29 | -0.03 | 0.91 |

**Table 2** Factor analysis matrix statistics

| Factor | Loglik | df_m | df_m | AIC | BIC |
|---|---|---|---|---|---|
| 1 | -5.91 | 6 | 9 | 23.81 | 47.18 |
| 2 | -1.53 | 11 | 4 | 25.05 | 67.89 |
| 3 | -.0023 | 15 | 0 | 30.00 | 88.42 |

and 2, a composite dependent variable was constructed. Named-Described was constructed by adding the coded values for Name Deceased and Describe Deceased. Rather than a dichotomous variable, Named-Described may take values of '0', '1' or '2', permitting ordered logit regression analysis. The other four dependent variables are dichotomous and analyzed using logit regression.

## 3.3 Independent Variables

The coding instrument captured data for the construction of independent variables capturing the influence of news writing, geography and partisan politics. Among the most basic considerations for reporters and their editors is how many words to devote to their description of an event. '*A longer story signals to readers that this story is important and that more work went into it.*' (Chittum, 2011) The coding instrument also collected the number of words in the article not including the title, because length serves as a proxy for the importance attached to pedestrian fatalities by the news source. Reports of pedestrian fatalities are often buried in articles reporting multiple events involving the police, in which case the word count is limited to the number of words describing the pedestrian fatality. For example, in the November 11, 2019 *Richmond Times Dispatch* news article 'Crime Reports', the number of words about the pedestrian

fatality was 162 out of a total of 714 words.

Pedestrian traffic fatality rates vary across U.S. cities. In 2019, they ranged from a low of 0.4 per 100 000 in Winston-Salem, North Carolina to a high of 10.93 per 100 000 in Fort Lauderdale, Florida. More frequent events are by convention considered less newsworthy and perhaps therefore less worthy of being described as anything other than part of the background noise of urban life. Pedestrian traffic fatality rates were drawn from the NHTSA's 2019 Traffic Safety Facts.

Pedestrian traffic fatalities have been attributed to suburban growth and warm weather in the 'Sun Belt,' the lower tier of states that encompass much of the American South and Southwest (Schmitt, 2020). The precise boundary between American states deemed 'Sun Belt' and the rest of the country is debated (Storm, 2016). However, a plausible line may be drawn to distinguish the states of Alabama, Arizona, Florida, Georgia, Louisiana, New Mexico, South Carolina, California, Nevada and Texas as the Sun Belt, with the remainder of the country being the Frost Belt. Suburban growth has typically been reflected in reduced walkability, which may be associated with higher rates of pedestrian traffic fatalities (Balsas, 2019).

The walkability of a city is measured using Walk Score, an efficiency calculation ranking cities from 1 to 100, with 1 being the poorest and 100 being optimal (Walk_Score, n/d).

Two continuous variables were included in the data set to capture partisan differences across cities: the 2016 vote share for Republican presidential nominee Donald Trump and the degree of partisan residential segregation (Dottle, 2019). The 2016 election represented a historical moment when ideological and partisan divisions in the U.S. deepened and developed exceptional coherence (Pew_Research_Center, 2021). Partisan segregation represents a long term process in the U.S. as Democratic and Republican voters have increasingly come to occupy distinct neighborhoods. The partisan segregation measure in this data set ranges from a high of 0.63 in Jackson, Mississippi to a low of 0.10 in Honolulu, Hawaii. Democratic voters in Jackson overwhelmingly live to the west and Republican voters live to the east of Highway 55.66 By contrast, Democratic and Republican voters are interspersed across Honolulu.

Factor analysis was conducted to examine the relationships between the independent variables and to identify which might be calculated as composite independent variables capturing such interaction. Factor loadings are displayed in Table 3 and Table 4.

**Table 4** Factor analysis matrix statistics

| Factor | Loglik | df_m | df_m | AIC | BIC |
|--------|--------|------|------|-------|--------|
| 1 | 47.60 | -6 | 9 | 107.21 | 130.57 |
| 2 | -12.09 | 11 | 4 | 46.18 | 89.01 |
| 3 | -.19 | 15 | 0 | 30.38 | 88.80 |

Based on the sizes and signs of factor loadings, none of the independent variables are good candidates for calculating composite independent variables.

## 4 Findings

Summary statistics are displayed in Table 5. They reveal that the indicators comprising windshield bias are common and that some indicators are more common than others.

As the figure in the third column shows, the deceased are named in a minority (45.62%) of news articles. However, in more than roughly five out of six articles, they are both described in a manner that humanizes (87.9%) and the context in which they died (86.33%) is described. This likely reflects the norm that survivors are notified by authorities before their name is released. Windshield bias is most apparent in the last three indicators. The event framed thematically in only slightly more than one-fourth (26.76%) of the articles. They are also implicitly blamed for their demise in more than one-fifth (21.31%) of the articles. Reporters use non-agentive or 'vehicle strikes pedestrian' language in almost two-thirds (64.2%) of the articles.

To what extent are the characteristics of the cities where pedestrian traffic fatalities occur associated with windshield bias? Displayed in the five tables which follow for ordered logit or logit regression coefficients for the investigation. Note again that ordered logit regression was adopted because one of the five dependent variables is a composite indicator that may take values of '0', '1' or '2'. Logit regression was adopted to analyze the subsequent four dichotomous dependent variables.

Findings reported in the following tables present a complex picture of the news coverage. The Z scores shown in Table 6 reveal statistically

**Table 3** Results of factor analysis for independent variables

| Variable | Factor 1 | Factor 2 | Factor 3 | Uniqueness |
|---|---|---|---|---|
| # words | -0.08 | -0.13 | 0.21 | 0.93 |
| Pedestrian fatality rate | 0.23 | 0.35 | 0.19 | 0.79 |
| Sun Belt | 0.09 | 0.52 | -0.04 | 0.73 |
| Walk score | -0.59 | -0.09 | 0.15 | 0.62 |
| Republican vote 2016 | 0.54 | -0.35 | -0.02 | 0.59 |
| Partisan segregation | 0.20 | -0.03 | 0.37 | 0.82 |

**Table 5** Summary Data

| # Articles | Mean # words | # Name deceased | Described deceased | Decribed context | Thematic framing | Blame deceased | Non-agentive description |
|---|---|---|---|---|---|---|---|
| 363 | 243.45 | 45.62% | 87.97% | 86.33% | 26.76% | 21.31% | 64.20% |

significant relationships at the .05 level between the composite dependent variable NameDescribed and two independent variables: Number of words and Partisan segregation. The inverse relationship with word length is surprising. Rather than longer articles resulting in the identification and humanization of the deceased, they may permit reporters to focus on other aspects of the event. The inverse relationship with partisan segregation indicates that identifying and humanizing the deceased decreases as Democratic and Republican voters tend to occupy different neighborhoods in cities. The pseudo R-square reported in Table 6 indicates that the model accounts for approximately 10% of the variation in the dependent variable.

**Table 6** Ordered logit regression coefficients (dependent variable is NameDescribed)

| Independent variable | Coefficient | Standard error | Z score |
|---|---|---|---|
| # words | -.01 | .0007 | -6.86* |
| Sun Belt | .21 | .20 | 1.04 |
| Walk score | .01 | .01 | 1.35 |
| Pedestrian fatality rate | -.05 | .10 | -0.47 |
| 2016 Republican vote | -.01 | .01 | -0.51 |
| Partisan segregation | -2.15 | 1.19 | -1.81 |

*statistically significant at .05
Pseudo $R^2$ = 0.102

The Z scores shown in Table 7 reveal statistically significant relationships between the composite dependent variable ContextDescribed and two independent variables: Number of words and 2016 Republican vote. The Z scores for both are statistically significant at the .05 level. The Z score for a third independent variable—Partisan segregation—is almost statistically significant at the .05 level. The negative sign for Number of words is unexpected. Descriptions of the circumstances of traffic crashes resulting in pedestrian fatalities are associated with shorter rather than longer articles. In addition, unexpected are the positive relationship with 2016 Republican vote and the inverse relationship with partisan segregation. Facts describing the locations of pedestrian traffic fatalities are more frequently reported by news sources in cities with higher percentages of 2016 Republican presidential vote and less partisan segregation. These findings suggest that reporters working in more Republican cities where partisans lived intermixed are offering detailed but briefer time and place focused descriptions of crashes rather than associate them with the larger pattern of crashes that would highlight the public problem. The pseudo R-square reported in indicates that the model accounts for 20% of the variation in the dependent variable.

**Table 7** Logit regression coefficients (dependent variable is ContextDescribed)

| Indepedent variable | Coefficient | Standard error | Z score |
|---|---|---|---|
| # words | -.004 | .001 | -5.02* |
| Sun Belt | -.10 | .22 | -0.44 |
| Walk score | -.01 | .01 | -1.28 |
| Pedestrian fatality rate | -.20 | .16 | -1.29 |
| 2016 Republican vote | .06 | .02 | 3.06* |
| Partisan segregation | -6.44 | 1.78 | -3.61* |

*statistically significant at .05
Pseudo $R^2$ = 0.203

The Z scores shown in Table 8 indicate statistically significant relationships at the .05 level between the dependent variable Thematic Framing and four independent variables: Number of words, Pedestrian fatality rate, 2016 Republican vote and Partisan segregation. Longer articles permit thematic exposition of the larger pattern of pedestrian traffic fatalities and higher pedestrian traffic fatality rates likely motivate reporters to expand on that public policy problem. The negative sign for 2016 Republican vote indicates that reporters may avoid elaborating on the larger pattern when more of their audience voted Republican in 2016. Finally, the negative sign for the Z score in the bottom row shows that thematic framing is less likely in cities presenting higher rates of partisan segregation. In effect, reporters are more likely to frame pedestrian traffic fatalities thematically in cities where partisans live intermixed. The pseudo R-square reported in Table 8 indicates that the model accounts for 15% of the variation in the dependent variable.

**Table 8** Logit regression coefficients (dependent variable is ThematicFraming)

| Independent variable | Coefficient | Standard error | Z score |
|---|---|---|---|
| # words | .003 | .001 | 4.07* |
| Sun Belt | .05 | .20 | 0.25 |
| Walk score | -.001 | .01 | -0.12 |
| Pedestrian fatality rate | .24 | .12 | 1.98* |
| 2016 Republican vote | -.07 | -.07 | -4.71* |
| Partisan segregation | -3.63 | 1.61 | -2.26* |

*statistically significant at .05
Pseudo $R^2$ = 0.1523

The Z scores shown in Table 9 indicate statistically significant inverse relationships at the .05 level between the dependent variable BlameDeceased and two dependent variables: Walk score and Partisan segregation. The interpretation of the coefficient for Walk score is straightforward. Reporters are more likely to attribute responsibility to deceased pedestrians for their own demise in cities with lower walkability. However, the sign for the Partisan segregation coefficient is surprising. News articles which blame the deceased are more common in cities that are less, not more, partisan segregated. The pseudo R-square reported in Table 9 indicates that the model accounts for 7% of the variation in the dependent variable.

**Table 9** Logit regression coefficients (dependent variable is BlameDeceased)

| Independent variable | Coefficient | Standard error | Z score |
|---|---|---|---|
| # words | -.00 | .001 | -0.36 |
| Sun Belt | .14 | .17 | 0.80 |
| Walk score | -.03 | .01 | -2.76* |
| Pedestrian fatality rate | .14 | .12 | 1.21 |
| 2016 Republican Vote | .01 | .013 | 1.15 |
| Partisan Segregation | -5.65 | 1.69 | -3.33* |

*statistically significant at .05
Pseudo $R^2$ = 0.0724

Finally, the Z scores shown in Table 10 indicate inverse relationships statistically significant at the .05 level between the dependent variable Non-AgentiveDescription and two independent variables: Number of words and Partisan segregation. In effect, shorter news articles tend to shift the onus from the driver to their vehicles. As with BlameDeceased, the sign for the Partisan segregation coefficient is surprising. News articles characterized by non-agentive description are more common in cities that are less, not more, partisan segregated. The pseudo R-square reported in Table 7 indicates that the model accounts for a modest 4% of the variation in the dependent variable.

**Table 10** Logit regression coefficients (dependent variable is Non-AgentiveDescription)

| Independent variable | Coefficient | Standard error | Z score |
|---|---|---|---|
| # words | -.002 | .001 | -2.48* |
| Sun Belt | -.05 | .16 | -0.33 |
| Walk score | -.01 | .01 | -0.92 |
| Pedestrian fatality rate | .16 | .11 | 1.40 |
| 2016 Republican vote | .01 | .01 | 0.62 |
| Partisan segregation | -3.13 | 1.26 | -2.48* |

*statistically significant at .05
Pseudo $R^2$ = 0.0405

## 5 Discussion

The findings in the present study, a systematic national level content analysis investigating multiple indicators of windshield bias, fill an important lacuna in the still small literature on windshield bias. What they reveal is that some of the indicators of windshield bias observed impressionistically by pedestrian safety activists

are common. While news articles overwhelmingly describe the deceased in a manner that humanizes them as well as noting the time and place context of the crash, they also frame those events episodically and use non-agentive language. Thus, the typical news article both makes the deceased a person rather than statistic and offers details about the time and place of their death, yet it also treats their death as an event isolated from similar events and implicitly assigns responsibility to the vehicle rather than its driver. A minority of news articles blame the deceased for their own deaths by noting facts such as their location outside a crosswalk. U.S. news coverage exhibits a marked windshield bias. The likely effect of such news coverage is to naturalize pedestrian traffic fatalities and thereby diminish their importance as a public policy problem. This suggests generally the need to change the perspective and associated terminology used by journalists, policy makers and the public.

Examination of the correlates of the components or indicators of windshield bias presents a complex picture of the news coverage. Notably, longer articles are associated with thematic framing which presents individual pedestrian traffic fatalities as part of a larger pattern of similar events. Longer articles permit but do not require reporters to address responsibility more fully. As Nihlen_Fahlquist (2006) notes, attributing responsibility to an agent such as a vehicle driver for praiseworthy or blameworthy action adopts a retrospective, retributivist perspective while attributing responsibility to an agent such as traffic engineers with the authority to design degrees of safety adopts a prospective, consequentialist perspective. Episodic framing and description that is non-agentive and blames the deceased is an example of the retrospective, retributivist perspective, arguably short-circuiting the development of public awareness and thus policy making about pedestrian traffic fatalities as a problem of traffic systems. Thematic framing and description that is agentive and does not blame the deceased is an example of the prospective, consequentialist perspective, perhaps encouraging the development of public awareness and thus policy making about pedestrian traffic fatalities as a problem of traffic systems.

Although the difference between the regions identifies by pedestrian safety activists—Sun Belt vs. Frost Belt—was shown to be irrelevant to windshield bias, the incidence of pedestrian traffic fatalities, the physical infrastructural and the political characteristics of cities were revealed as important. The crucial measure of the public policy problem, the pedestrian fatality rate, is positively associated with thematic framing. Where the incidence is higher, reporters tend to report events as part of a larger problem. Curiously, increased city walkability is associated with reporting that blames the deceased pedestrians for their own deaths. Perhaps reporters are motivated by frustration that these tragedies are occurring where the public may more safely walk.

Politics also matters. Public opinion polling showing two distinct Americas, divided by ideology and conceptions of the ideal community, is reflected in the news coverage. News audiences in cities with increased partisan segregation are more likely to encounter reporting characterized by windshield bias: less description that names and humanizes the deceased, less detailed description of the time and place of crashes, episodic framing, and non-agentive description. News audiences in cities that voted for Donald Trump in higher percentages in 2016 are also more likely to encounter episodic framing, though, curiously, more detailed description of the time and place of crashes. Journalists thus appear to report pedestrian traffic fatalities from perspectives absorbed from news audiences and perhaps also decision-makers where they live and work.

Can windshield bias be overcome or reduced? The U.S. is metaphorically 'miles behind' the other wealthy democracies in confronting the crisis in pedestrian traffic fatalities. The diversity of U.S. cities is likely to mean uneven progress in covering this news story. Walkability and partisan segregation are likely to change slowly and how reporters cover this news story is clearly influenced by both. However, journalists may seek to increase the length and depth of their articles via the use of non-official sources to better reveal each tragic loss and thematic framing to make its meaning for the community clearer.

# 6 Conclusions

This study offers a more complex picture of news coverage of pedestrian traffic fatalities in the U.S. than is captured in the phrase 'windshield bias', yet it broadly confirms the impression of activists that too much of the reporting takes the perspective of drivers and not pedestrians. Four results stand out as especially noteworthy:

- Windshield bias is no more common in the Sun Belt than in the Frost Belt. Instead, the partisan character of cities shapes the reporting of pedestrian traffic fatalities.

- Non-agentive or 'vehicle strikes pedestrian' description of individual pedestrian traffic fatalities is common, though more common in cities with less partisan segregation.

- Deceased pedestrians are likely to be blamed rather drivers, though again in cities with less partisan segregation.

- Thematic framing describing the larger pattern of pedestrian traffic fatalities is more common in longer articles. It is also more common in reporting from cities with higher pedestrian traffic fatality rates.

## CRediT contribution statement

**John Hickman:** Conceptualization, Methodology, Data curation, Formal analysis, Investigation, Project administration, Resources, Writing—original draft.

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