Degrees of Anthropocentrism in Accounts of Wildlife-Vehicle Collisions

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Abstract
An investigation of language use in news stories about collisions involving vehicles and nonhuman animals in the wild reveals that reports of bird-airplane collisions tend to focus on the safety of the humans involved, even to the point of constructing the bird as a projectile, rather than a victim. Reports of land vehicles and boats colliding with larger nonhuman animals tend to demonstrate a greater concern for nonhuman participants, attributing greater responsibility to humans for the collisions, although they are more dangerous to humans. Although similar patterns are found in news reports in several languages and in several English-speaking countries, anthropocentrism alone does not fully explain the patterns in journalists’ choice of expressions and structures in these news stories.

Keywords
agency, anthropocentrism, aviation, discourse, road ecology

In early 2009, news of a dramatic resolution to an aviation emergency made headlines in newspapers around the world. The representation of the nonhuman participants in this event is significant.

Los Angeles Times, January 15, 2009
Passengers Are Safe after Jet Crashes
NEW YORK—A US Airways plane apparently hit a flock of birds and was forced to crash-land in the icy waters of New York’s Hudson River Thursday, but all of the more than 150 passengers and crew survived. “My understanding is that everybody is alive, but I don’t know if there are any serious injuries or not,” said Federal Aviation Administration spokeswoman Laura Brown. (Baum & Muskal, 2009)

Suppose some birds cross paths in the sky with a large hunk of metal moving at great speed. The birds perish, and the plane takes some damage. How do we describe an event of this type? It is perhaps reasonable that we tend to be more
concerned about danger to the human beings in the plane than the fate of the individual birds involved or even bird populations and their habitats. In the story above, for example, it is clear that the statement “everybody is alive, but I don’t know if there are any serious injuries” refers to what happened to the human participants in the event; the near certainty that any birds involved died is generally not considered worth mentioning in news reports. This paper aims to address the following questions:

1. To what extent do news reports of collisions involving vehicles and nonhuman animals show concern for other species and awareness of their behaviors and habitats?
2. Is one of the participants—the vehicle or the nonhuman animal—constructed as having agency, and therefore responsibility, for the collision?
3. When news discourse appears to disregard nonhuman others’ concerns or place unreasonable blame on them, is anthropocentrism the only likely explanation?

Addressing the first two questions is straightforward, and, while it might be nearly impossible to construct an empirical experiment that would yield a conclusive answer to the third question, a look at news reports in several languages (one of them non-Indo-European) will allow us to consider the possibility that reporters’ linguistic choices are shaped by the structure of a particular language, rather than by anthropocentrism alone. I will also briefly consider the tendency to place old information before new information (to ease the reader’s task in processing information) as a factor influencing these linguistic choices. In addressing the third question, I will also take a closer look at the seemingly innocuous terms *hit* and *strike* (frequently occurring in expressions such as *bird strike*) to demonstrate that anthropocentric views can manifest in subtle ways.

**The Critical Discourse Analysis Framework**

Various details of discourse can be usefully examined to shed light on writers’ underlying attitudes or assumptions, and on the messages they may convey so subtly that readers do not necessarily realize how they are influenced. (For an overview of critical discourse analysis, see, for example, Wodak & Meyer, 2009). The media, partly because of the pressure they face to remain newsworthy and relevant to news consumers, can be a significant force in selecting a particular perspective on an event and reinforcing it. We have a large body of
research demonstrating the potential effects of linguistic details on readers and hearers, going back to the classic study by Loftus and Palmer (1974). Corbett and Durfee’s (2004) experimental procedures demonstrate such an effect in environmental news coverage specifically.

**Research Approaches to Representations of Environmental Issues in the Media**

Research on representations of environmental issues in the media has tended to focus on content analysis. For example, scholars have described how often climate change is covered in the media (Boykoff, 2007, among others) and which types of sources—scientists, the national government, and NGO representatives—are most often used (Lewis, 2000, among others). While this type of research is important, and a necessary first step in understanding the nature of the data, limiting our investigation to this approach would mean that we would risk considering all mentions of a given topic equally important or beneficial.

Some studies on environmental discourse, though still too few, have approached texts at this level. Murata (2007), for example, analyzes rhetorical devices and grammatical structures in antiwhaling and prowhaling discourse. Among the linguistic choices she considers is the use of the modal *will*, which creates a sense of certainty in a sentence such as “This latest development will further anger many countries and outrage environmentalists worldwide.”

Here, my approach is to focus less on content analysis and more on the use of particular expressions and structures that allow insight into the representation of agency, intent, and potential responsibility. I will also examine the connotations of key expressions and structures through the analysis of occurrences in actual use, obtained from a large corpus of texts not limited to environmental issues.

**The Potential Significance of Anthropocentric Reports of Collisions**

The following review of accounts of various kinds of collisions involving wildlife and vehicles will show that some news reports go beyond a concern for human welfare. We will see a range of constructions of the causes of these collisions; at one extreme of this continuum, there is language use that might not merely reflect our anthropocentric perspective but reinforce it as well.
The Risk to Motorists and Wildlife

People might be expected to take a more anthropocentric perspective when the risk to humans is great. Therefore, a look at the degree of danger from wildlife collisions is in order before we proceed to the analysis.

Estimates of the number of collisions between motor vehicles and nonhuman animals per year in the United States range from 247,000, or about 4% of total car collisions (Langley & Mathison, 2008, p. 76) to 1-2 million (Huijser, McGowen, Clevenger, & Ament, 2008), resulting in an average of 165 human fatalities per year (Langley & Mathison, 2008, p. 76). Human fatalities have been increasing in North America (Langley & Mathison, 2008; Huijser, 2007).

Christie and Nason (2003) calculate that the 1,482 annual moose-vehicle collisions in the province of New Brunswick mean that “1 in 2278 drivers will hit a moose” (p. 3). In 2000, over 30,000 wildlife collisions resulting in 23 human fatalities were reported in Canada (Huijser, 2007, p. 3). In Europe, 507,000 collisions with ungulates per year are estimated to result in 300 human deaths (Huijser, 2007, p. 3). In fact, “moose and roe deer collisions accounted for more than 60% of all police reported accidents in Sweden” in the early 1990s (Langley & Mathison, 2008, p. 78).

The number of human deaths resulting from birds and planes colliding is much smaller. For 1990-2009, the FAA Wildlife Strike Database includes nearly 100,000 reports, 3,040 of these involving “substantial damage”; the number of human fatalities for the entire period is 24. (The number reported in some newspapers is 11.)

Our records of nonhuman fatalities resulting from collisions are hardly precise, but they suggest large numbers. Estimates of the number of deer killed per year in the United States range from 720,000 to 1.5 million (Forman & Sperling, 2003, p. 118). Going beyond vehicle collisions, Rönkä (2009) notes that, while debates about wind turbines include arguments about birds being at risk, birds have been colliding with all kinds of artificial structures all along, and the number of birds crashing fatally into windows of buildings may be as high as 100 million annually in North America. The effect of road fatalities on populations of nonhuman animals has been studied even less, but it is likely to be significant; for several species, “vehicle collisions have been reported as the largest source of mortality” (Forman & Sperling, 2003, pp. 119-120).

News Coverage of Collisions Involving Birds

I begin by examining the representation of birds involved in collisions of airplanes, before moving on to a more abbreviated look at collisions involving vehicles and larger nonhuman animals.
Birds, Planes, and the Federal Aviation Administration's Wildlife Strike Database

On Friday, April 24, 2009, the US Federal Aviation Administration (FAA) published its Wildlife Strike Database online. There had been calls for making this information public after the dramatic events of January 15 reported in the Los Angeles Times excerpt above.

Searching the Access World News database turned up coverage of the FAA database in USA Today, the Chicago Tribune, the Philadelphia Enquirer, the Pittsburgh Post-Gazette, the Ventura County Star, and the Deseret News. These news stories demonstrate a concern for human fatalities. None of them explicitly point out that birds or other nonhuman animals die when colliding with planes, although the Ventura County Star mentions that often “airports only recover a couple of feathers or a mangled carcass” (Hadly, 2009). (To their credit, when USA Today and the Philadelphia Enquirer report that no fatalities occurred in particular events described, they specify that they are referring to human fatalities.) Risk to bird populations is not explicitly mentioned, although several of the articles mention birds’ migration or nesting habits or similar information.

Birds and other wildlife are constructed as threats to humans (e.g., “birds are the danger [italics added] to planes in the air” [Sniffen, 2009]). Two other stories mention “[t]he risk [italics added] that growing populations of large birds create for commercial aviation” (Levin, 2009) and airports’ annual inspections “for potential wildlife hazards [italics added]” (Hadly, 2009). The representation of agency, intent, and potential responsibility in these news stories is worth examining. The events in question are sometimes labeled neutrally, as “incidents” or “accidents.” Somewhat less frequently, collision is used: “airplane collisions with birds” or “bird-plane collisions.” The most common characterization, occurring 4 to 11 times per story, is bird strike, wildlife strike, or just strike. One airport official quoted in the Deseret News defines strike in these terms: “when an aircraft hits an animal, or when airport officials find a dead bird on the runway” (Davidson, 2009). This implies more responsibility on the human side than the avian side. Actual uses of the word strike, however, seem to represent it as an action that the bird performs on the plane: “[T]he agency tightened engine design standards in 2004 to better withstand bird strikes” (Sniffen, 2009) or “[Y]ou could have a strike and not even feel it” (Levin, 2009). Although strike appears not to specify who struck whom, then, it turns out to be less neutral when considered in terms of its actual use and connotations. I will return to this later.

Collision and strike are nominalizations. That is, they refer to an action or process by means of a noun, with the result that the roles of various participants in the event are unspecified. In contrast, many other verbs (e.g., hit, damage, destroy, knock out) require writers to make the participants’ roles in the collision more explicit. One participant involved in a collision may be cast
in the role of agent (an animate being with an intention who carries out actions to bring about an outcome) or an instrument used by an unnamed agent, while another is presented as the patient, the entity being acted upon.

Considerable variation from one newspaper to another emerges in the use of these verbs. In the search results of the Access World News database, the Philadelphia Enquirer has four sentences in which birds are in an agent role; one of the few actions carried out by birds in this story is nesting. There are eight sentences, however, with birds in patient roles; in all eight, birds are victims in collisions with planes, sometimes described in graphic terms, as in the following example: “An American Airlines MD-80 climbing at 200 feet hit a gull. There was a burning smell in the cabin” (Loyd, 2009).

Such sentences come close to describing the event in terms of human agency being responsible for damage to birds. The Chicago Tribune story never does this. Instead, birds and other wildlife are usually experiencers: “The strategies range from shooting off propane cannons near runways to scare bird flocks to planting grasses that do not appeal to animals” (Sniffen, 2009). On two occasions, birds are agents of harmful actions. The story refers to aircraft that were “substantially damaged or destroyed by birds” (Sniffen, 2009). It also presents the events of January 15 as perpetrated by birds (“the dramatic ditching of a US Airways jet in the Hudson River when bird strikes knocked out its engines” [Sniffen, 2009]), while other newspapers tend to choose the opposite formulation (“a U.S. [sic] Airways jet collided with a flock of birds” [Davidson, 2009]).

Most remarkable is the Pittsburgh Post-Gazette’s headline “BIRDS, ANIMALS HAVE DESTROYED 28 AIRCRAFT SINCE 2000” (Sniffen, 2009), which seems to suggest that nonhuman animals intentionally set out to reduce aircraft to scrap metal.

US Air Flight 1549, in German

News coverage in German of Flight 1549 ending up in the Hudson shows a range of choices in the representation of agency. The formulations of the key event that come closest to attributing agency to the plane describe it as “getting into a flock of birds” (“das Flugzeug sei womöglich in einen Vogelschwarm geraten” [“Harte Landung,” 2009]) or “colliding with a flock of geese” (“…ein Gänse Schwarm, mit dem das Flugzeug in der Höhe kollidiert” [Wiechmann, 2009]).

Two fairly neutral expressions are found in the Frankfurter Allgemeine Zeitung and Augsburger Allgemeine, which note that engine problems occurred after “a collision with birds” (eine Kollision mit Vögeln [Budras, 2009]; dem Zusammenstoß mit Vögeln [“Notlandung auf dem Hudson River,” 2009]).
News stories that place more responsibility on the birds are somewhat more frequent; two sources refer to a “bird strike” (Vogelschlag). In two of the news stories, birds “get entangled in” or “get into” the engines (“Zwei größere Vögel verfangen [italics added] sich in beiden Triebwerken” [Wiechmann, 2009]; “mehrere große Vögel… in die Triebwerke geraten [italics added]” [“Harte Landung,” 2009]). RP (Rheinische Post) Online and Handelsblatt explicitly say that birds caused the incident or were to blame (“Ein Vogelschwarm habe höchstwahrscheinlich einen Ausfall der Triebwerke verursacht [italics added]” [Töpperwein, 2009]; “Schuld [italics added] waren offenbar Vögel” [“Notlandung im Hudson River,” 2009]).

The Goose and Fabio

One strikingly different collision with a bird was reported in the spring of 1999. As a more personal and direct encounter of one bird with one high-profile human participant who faced a greater risk of injury or death than the average airplane passenger, this is a useful case for examining the role of anthropocentrism in the choice of linguistic expressions. This case also differs from bird-plane collisions in that every aspect of it has an element of humor in popular perception: a goose, a male model, a nose, and a roller coaster. One of the headlines in USA Today’s Life section on Thursday, April 1, 1999, reads as follows: “Fabio runs a-fowl of goose.” The article goes on to say:

Fabio was “doing great” Wednesday after being goosed on his honker. The “I Can’t Believe It’s Not Butter” pitchman was smashed on the nose by an errant bird Tuesday while hawking the opening of the Apollo’s Chariot roller coaster at Busch Gardens in Williamsburg, Va. The bird, found dead Wednesday by park employees, turned out to be a goose, says Busch Gardens spokeswoman Cindy Sarko. (Vigoda, 1999)

So many of the headlines were irrelevant (for example, Entertainment Notes) that I excluded them from consideration. In the body of the news stories, I found 27 formulations of the key event. Table 1 lists the meaning relations captured in these formulations, roughly in order of the most explicit attribution of avian agency to the most explicit attribution of human agency. Square brackets enclose a word that stands for a set of synonyms; for example, bird (written as “[bird]”) appears as bird or goose, and hit (written as “[hit]”) can manifest as hit, strike, or smack. The item “[bird] [hits] Fabio” stands for both “a bird hit Fabio” and “Fabio was hit by a bird.”
Table 1. Meaning Relations in Formulations of the Collision Involving the Goose and Fabio

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bird] [hits] Fabio (in the face/on the nose)</td>
<td>56%</td>
</tr>
<tr>
<td>[bird] [slams] into Fabio’s face/nose</td>
<td>26%</td>
</tr>
<tr>
<td>bird collides with Fabio’s face</td>
<td>4%</td>
</tr>
<tr>
<td>[Fabio’s] [face] collides with bird</td>
<td>7%</td>
</tr>
<tr>
<td>Fabio collides with bird</td>
<td>4%</td>
</tr>
<tr>
<td>Fabio flies into bird</td>
<td>4%</td>
</tr>
</tbody>
</table>

In terms of agency, a roller coaster differs from an airplane in that its trajectory is fixed; therefore, a roller coaster rider’s ability to influence the event is minimal. This may partly explain why the goose appeared in an agent role in 78% of news reports of this collision. Sometimes the goose was constructed as responsible for the collision by being in the wrong place—described as “errant” or “low-flying.” Two of the stories even apply the label kamikaze to the bird. In contrast to the reports on US Air Flight 1549 that we have just reviewed, nominalizations such as collision were not used in articulating the key event in the roller coaster stories.

Despite this strong tendency to represent the goose as agent, the writers’ sympathies are with the goose, at least superficially. In stark contrast with news coverage of bird-plane collisions, more than half of the reports mention the fate of the goose, as in the news story excerpted above. Some stories include comments that seem to sympathize with the goose but are actually jokes (“The goose, alas, bought the farm” [Fabio Was Fabulous, 1999]). The limited nature of the reporters’ concern for the goose is clear in that the news stories contain virtually no information about the habits or needs of goose populations, and some of them describe a nearby lake as “goose-infested” (Groer & Gerhart, 1999).

It turns out that neither the avian nor the human participant in this particular collision receives compassion or respect. Fabio gets objectified to a surprising degree. Table 1 shows that there were even a few instances in which the two participants were not the goose and Fabio, but the goose and Fabio’s face (the bird smashes into Fabio’s face, or even, Fabio’s features collide with the bird). Fabio’s physical appearance is described gratuitously and in jocular terms and subjected to derision. The Daily Oklahoman even hints at a lack of cognitive capacity in order to fit in yet another pun: “Supermodel Forgets to Duck” (Hamilton, 1999).
News Coverage of Collisions Involving Cars, Boats, and Larger Nonhuman Animals

In the preceding section on collisions involving birds and airplanes, I considered news stories in their entirety. I will now turn my attention to collisions involving larger nonhuman animals. In this abbreviated look, I analyze only the headline and the immediate context of the sentence in which the nonhuman participant is mentioned.

Moose and Cars in Finland

Finnish-language news sources were not available in Access World News, but searching for hirvi (moose) and auto (car) in Google News turned up 38 news stories reporting on moose-vehicle collisions. These stories contained 42 formulations of the key event; the meaning relations in them are summarized in Table 2.

Figure 1. Moose caution traffic sign in Finland
Table 2. Meaning Relations in Formulations of Collisions Involving Cars and Moose in Finnish News Discourse

<table>
<thead>
<tr>
<th>Description</th>
<th>Headline</th>
<th>Story</th>
</tr>
</thead>
<tbody>
<tr>
<td>“moose [hits/collides with] car” hirvi [törmäsi] autoon</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>moose as agent of action related to collision (e.g., walking onto the road)</td>
<td>13%</td>
<td>24%</td>
</tr>
<tr>
<td>nominalization, usually (hirvi) kolari</td>
<td>26%</td>
<td>31%</td>
</tr>
<tr>
<td>“collide,” usually kolaroivat, with both participants as plural subject</td>
<td>3%</td>
<td>10%</td>
</tr>
<tr>
<td>“a moose calf was hit by a car,” lit. “remained under a car” auton alle jäi hirven vasa</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>driver as agent of action related to collision (e.g., attempting to swerve)</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>[car] hits/collides with moose [auto] törmäsi hirveen</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>driver hits/collides with moose autoilija törmäsi hirveen</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>a headline about some other aspect of event</td>
<td>32%</td>
<td></td>
</tr>
</tbody>
</table>

We see here that the nominalization kolari (collision) is the most frequent choice, both in the headline and in the news story itself. The formulation car hits moose is more frequent than moose hits car, and sometimes driver hits moose even occurs (while pilot hits bird does not seem to be an option when reporting on bird-plane collisions). We should note, however, that the verb törmätä can be translated as either hit or collide with; in my estimation, it carries less of a sense of deliberate action than hit.

The moose is often the agent of actions other than colliding—for example, walking onto the road. Overall, the expressions chosen reflect a view of the moose as carrying out actions for his/her own reasons, but as being less responsible for the accident than the driver, who has more resources for avoiding it. In half of these news stories, the condition of the moose was mentioned.

Moose and Cars in Canada

Access World News had 15 relevant results with moose and car in the headline or lead in Canadian newspapers. Car hits moose was the most frequent formulation of the key event. Nominalizations were much less frequent than in Finnish moose collision stories; in almost every case, the nominalization chosen was crash (“Moose-car crash kills driver”). In contrast to bird strike nominalizations in reports of bird-plane collisions, moose strike did not occur.
Table 3. Meaning Relations in Formulations of Collisions Involving Cars and Moose in Canadian News Discourse

<table>
<thead>
<tr>
<th></th>
<th>Headline</th>
<th>Story</th>
</tr>
</thead>
<tbody>
<tr>
<td>(moose explicitly blamed)</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>moose and car collide</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>[crash]</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>car collides with moose</td>
<td>7%</td>
<td>20%</td>
</tr>
<tr>
<td>car crashes into moose</td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>[car] [hits] moose</td>
<td>33%</td>
<td>53%</td>
</tr>
<tr>
<td>others with moose as patient</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>headline about something else</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>

Kangaroos and Cars Down Under

I found 11 accounts of collisions involving kangaroos in Australian newspapers. *Car hits kangaroo* was by far the most frequent formulation, occurring in 7 of the 11 stories.

Apparently kangaroos do not hit cars. Some news stories even demonstrate a concern for kangaroos for their own sake, not related to any risk to humans: “A group of kangaroos have been killed after being targeted by car hoons deliberately driving at them and mowing them down…” (“Hoons,” 2008).

Manatees and Boats

Collisions involving boats and manatees, who are endangered, are a concern in Florida. As with kangaroos, it seems that manatees are not constructed as responsible for these collisions. Two kinds of nominalizations are used. One is *collision*: “A collision killed one of two manatees found dead this year in Duval County…” (Patterson, 2009b).

Another frequently used nominalization is *strike*. In contrast to the frequent *bird strike* mentioned earlier, collisions between boats and manatees are “boat strikes,” not “manatee strikes”: “On Jan. 17, the carcass of a pregnant female was found… likely the victim of a boat strike” (“Risk,” 2009). Another noteworthy detail in this example is that the nonhuman participant is characterized as a *victim*.

As with moose and kangaroos, *[boat] [hits] manatee* occurs often, but accounts of boat-manatee collisions go further in transcending anthropocentrism in that manatees’ deaths are explicitly mentioned:
Last year, 73 manatees were killed by boats in Florida’s bays and inland waterways. (“FUA Researchers,” 2009)
Boat-related deaths on that river are likely to increase. (“Manatees,” 2009)

The following headline contrasts sharply with some of the ones for bird-plane collision stories:

Ships get blame [italics added] for manatee deaths: The mammals’ autopsy results indicate larger vessels are responsible [italics added]. (Patterson, 2009a)

Discussion

We have seen that expressions placing the responsibility for bird-plane collisions on the human side are possible in various languages, but journalists often choose instead bird strike, a variation of the form [bird] [hits] [plane], or other expressions that tend to represent the birds as responsible for the collisions. When journalists are reporting on cars and boats colliding with moose, kangaroos, and manatees, they are more likely to use nominalizations and [vehicle] [hits] [living being] constructions, even though collisions involving cars and wildlife are more frequent and more dangerous to humans than bird-plane collisions, and can impose a financial burden on individual drivers even when there is no physical harm to human participants.

The Semantics of Hit and Strike

Let us take a closer look at the verbs hit and strike. For comparison, we can consider accounts of collisions involving vehicles and humans. The Corpus of Contemporary American English¹ (Davies, 2008-), a collection of more than 410 million words of text from fiction, newspapers, and other sources, contains 16 relevant instances in which synonyms of hit occur within five words of pedestrian. Most of these have hit; only two have strike. In nine instances, the human operator of the vehicle is the agent, and pedestrian is the patient: “It was a cool feature, until I almost hit a pedestrian who walked behind me as I was backing out of a parking space.” In the other seven, the vehicle has the role of agent: “A pedestrian had been hit by a truck while crossing the street.” As might be expected, there are no cases of the form pedestrian [hits] [car].

I also searched the Corpus of Contemporary American English for expressions of the form NOUN PHRASE [hit] NOUN PHRASE or NOUN PHRASE [strike] NOUN PHRASE and found that the referent of the first noun phrase is usually in motion, while the referent of the second one is stationary. Con-
considering the small subset of more relevant expressions in which both referents are in motion reveals a pattern: missiles hit airplanes, bullets hit presidents, bombs hit refugees, and fragments hit soldiers, but not the other way around. Similarly, cars, buses, and motorcycles hit humans or dogs, but not the other way around. Findings for *strike* are similar. Accounts of cars colliding with moose or kangaroos fit this general pattern, but accounts of bird-plane collisions stand out: the more frequent use of \([bird] \ [hits] \ [plane]\) (which is unusual for moose and apparently impossible for kangaroos, manatees, or humans) may construct birds as a kind of projectile, not as a victim of an accident.

These characteristics of *hit* and *strike* as verbs are also reflected in *strike* as a noun. Since this noun occurs so frequently as part of the compound *bird strike*, I searched for NOUN + *strike* in *The Corpus of Contemporary American English*. Most expressions of this form refer to various types of labor strikes (*transit strike, union strike*) or other instances of refraining from some action in order to influence others (e.g., *hunger strike*). Table 4 shows a more relevant subset: expressions in which the noun preceding *strike* refers to a natural force that acts on something or an object used as an instrument for striking.

With the possible exception of *gold strike* and *coal strike*, I do not see any expressions in which the noun preceding *strike* refers to the object struck, and there are no clear instances of any of these nouns referring to animate beings that are struck. That is, when NOUN + *strike* refers to an agent striking a patient, the meaning relation expressed is almost always INSTRUMENT +

<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
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<tbody>
<tr>
<td>lightning strike(s)</td>
</tr>
<tr>
<td>missile strike(s)</td>
</tr>
<tr>
<td>heel strike</td>
</tr>
<tr>
<td>meteor(ite) strike(s)</td>
</tr>
<tr>
<td>asteroid strike</td>
</tr>
<tr>
<td>bomb(ing) strikes</td>
</tr>
<tr>
<td>earthquake strikes</td>
</tr>
<tr>
<td>hammer strike</td>
</tr>
<tr>
<td>comet strike</td>
</tr>
<tr>
<td>artillery strike</td>
</tr>
<tr>
<td>foot strike</td>
</tr>
</tbody>
</table>
strike, not PATIENT + strike. Therefore, bird strike represents the bird as the cause of a collision while not saying anything about the role of the human participant.

Not surprisingly, The Corpus of Contemporary American English has no occurrences of pedestrian strike.

Information Structure

Another aspect of discourse to consider is information structure: generally, we tend to place old information (that is, references to entities that have already been introduced in the same text or conversation) before new information in a sentence. Could it be that journalists use instances of [wildlife] [hit] [vehicle] in order to present information in this useful order?

In Australian newspapers, descriptions of collisions involving kangaroos and cars very consistently place old information before new information. In the following example, since driver is mentioned, his car is old information, and the new information a kangaroo occurs after it: “A driver escaped injury after his car hit a kangaroo, rolled and burst into flames…” (“Driver,” 2007).

Many cases are like this; human beings and their cars are often topics, so that [car] [hits] [wildlife] is likely to be placing old information before new information. In the following example, information structure might be expected to exert pressure in the opposite direction: “Authorities were passing the buck about responsibility for wildlife in urban areas last week after a kangaroo was hit by a car…” (“Wildlife,” 2007). Once wildlife is mentioned, a kangaroo is old information and appears appropriately at the beginning of its clause. Here, the journalist could have written “after a kangaroo hit a car…” but chose to preserve both old-new order and the meaning relation [car] [hits] [wildlife] by using the passive voice.

A similar point can be made about Canadian newspapers reporting on cars and moose colliding. For example, the headline “Injured moose infested with pesky ticks” introduced the following story, making “a moose calf” old information and therefore an appropriate beginning for a sentence. This writer also chose to place new information after it by resorting to the passive voice, although “after hitting a car…” would have been possible: “A moose calf that had to be put down after being hit by a car Wednesday turned out to be in very poor health and covered in ticks…” (“Injured moose,” 2009)

Interestingly, one of the two formulations in Canadian newspapers in which the moose seems to be represented as responsible for the collision can be explained as a way to preserve both old-new order and structural parallelism.
The moose is introduced in the headline “Moose killed on 404,” so the lead begins with old information:

A bull moose [emphasis added] stumbled into Metro’s northern outskirts today, wrecked a car [emphasis added] and paid with his life for leaving the bush. The animal bounded out on Highway 404 . . . The moose dropped on the road after the collision and was hit by a second vehicle, dying instantly. ("Moose killed,” 1993)

Here, I would argue that the use of wrecked a car was not motivated by an anthropocentric wish to blame the moose; it was used because the sentence structure requires the moose as the subject, and was hit by a car would have been less informative. It is followed by the dramatic expression paid with his life, and the possessive determiner his, both of which suggest that this journalist has sympathy for the moose.

Turning to accounts of bird-plane collisions, it seems that the pressure to place old information before new does not explain the more frequent use of expressions that represent birds as being responsible for the collisions. Generally, all references to airplanes and birds in the sentences of interest were old information. The two examples that follow illustrate this. In the first example, the elements of the sentence could be rearranged, or alternate expressions could be used (for example, “planes were substantially damaged in collisions with birds”):

Topping the list of airports where planes were either substantially damaged or destroyed by birds since 2000 were John F. Kennedy International Airport in New York . . . (Sniffen, 2009)

Ten years ago, a bird went through the windshield of a plane taking off from Camarillo Airport. The small bird hit the pilot in the eye, forcing him to turn his plane around and land. (Hadly, 2009)

While discussing sentence structure, we should also note that agentless passives are available to writers as a device for avoiding mentioning the agent of an action (e.g., “Mistakes were made”). Journalists reporting on the collisions under consideration here, however, generally do not do this. Passives, when used, tend to be similar to those in the examples above ("A kangaroo was hit by a car"), where the agent is specified in a phrase introduced with the word by.

The Trajectories of Small Flying Entities

It is not clear what alternatives could be suggested for the second example above. It hardly seems reasonable to say, “The windshield hit the bird” or even,
“The windshield and the bird collided,” since the bird’s path went through the windshield. “The pilot’s eye hit the bird” is also not possible.

While writing this paper, I took a break, stepped out into the balmy summer evening, and was hit in the forehead by a large insect who then plummeted toward the ground. Even as I hoped that he or she was not dead but only stunned, I was struck by the words that had immediately popped into my mind: “That bug hit me in the forehead.” It still does not seem possible to report this event by saying, “I hit a bug” or even, “My forehead collided with a bug” (despite some reporters’ choice to write that Fabio’s face collided with a goose). It seems that there are times when representing small, flying entities as projectiles feels like a necessity. It is not clear to me whether this is a result of the structure of human language or of the workings of human cognition, and to what extent it might derive from anthropocentrism.

**Speculating about Reasons**

What factors really influence representations of these collisions? The degree to which wildlife is represented as responsible for the collisions does not seem to be in proportion to the degree of risk to humans: birds have a role in fewer human fatalities than moose, yet are represented more negatively. We have seen that the pressure to place old information before new also does not have a major role in the representation of nonhuman animals in these collisions, as reporters manage to preserve this useful order just as well when framing a kangaroo as a victim as when framing a bird as a dangerous projectile.

What might explain the higher probability of birds being framed as responsible for collisions with planes, compared with other wildlife? Certainly people can have an affectionate attitude toward moose, kangaroos, or manatees; they may even be an important part of the cultural identity of local people. People are fond of birds as well, however.

The accounts of Fabio’s collision with the goose give a clue. If anthropocentrism were the major factor shaping these discourses, reporters would express concern for the human participant and condemn the goose, but in some ways they did the opposite. The reporters seem to delight in Fabio’s injury. Even though the expressions of sympathy for the goose are intended as humor, they show that consideration for the nonhuman participant is possible and that we have ways to express it. Maybe the explanation here is that the human participant in this collision triggers others’ insecurities about body image, and his loss of dignity provides welcome relief, which overrides our tendency to focus on human welfare over that of other species.
Individual drivers have far greater potential for agency than airplane passengers or roller coaster riders. For bird-plane collisions, passengers’ perceived powerlessness might be a factor. Furthermore, we are prone to fear during air travel because most of us do not fully understand how airplanes work.

Maybe it is easier for us to identify with the moose or the kangaroo, because all have a first-person understanding of what it is to be a pedestrian and watch out for traffic. We also understand readily that sometimes one has reasons to move across a road on foot. “Why did the chicken cross the road?” The answer is so obvious that it has become a trite joke for children. Maybe we do not understand in the same fundamental way what it is to be a small flying entity. Many of us do not know much about bird behavior and habits, and so we do not readily see why a bird finds itself in an airplane’s path. In our perception, maybe the bird seems to be in the wrong place at the wrong time, compared with the airplane, which has a rational and justifiable purpose of getting from Detroit to Phoenix, following a route that an expert has chosen wisely.

We may also be influenced by an element of inertia regarding mental habits and linguistic choices that may have become customary in some circles. The US Federal Highway Administration has sections on its Website devoted to environmental issues (US Department of Transportation Federal Highway Administration, n.d.), and books and articles devoted to the relationship between roads and wildlife are easy to find (see Forman & Sperling, 2003; Evink & Erickson, 2002).

Aviation seems different. The US Federal Aviation Administration’s website (US Federal Aviation Administration, n.d.) does have a section on environmental issues that focuses on air quality, climate change issues, and noise. It has much less to say about wildlife, however, than the Federal Highway Administration’s Website. In addition to the Wildlife Strike Database mentioned earlier, there is only one other link, titled “Wildlife Mitigation Program” in one index and “Wildlife Hazard Mitigation” in another. At the time of this writing, that link was broken. And, at least from the perspective of a nonspecialist reviewing books and articles on aviation and airport management, what they have to say about wildlife seems to be focused on human safety, not on wildlife for its own sake. The book Airport Planning and Management has a section titled “Bird and wildlife hazard management,” which does recommend relying on the expertise of an ornithologist but is otherwise entirely focused on danger to humans:

Birds and other wildlife striking aircraft in operation near the vicinity of an airport has the potential to cause serious damage to aircraft and loss of human life…
A flock of birds ingested into a jet engine at takeoff can cause a dangerous stall, and a single large bird hitting an engine with the force of a bullet might smash a fan blade that can cost thousands of dollars to replace. (Wells & Young, 2003, pp. 273-274)

Discipline-specific linguistic habits can be inherited by the public. Once the FAA has a Wildlife Strike Database that reports on *bird strikes*, naturally journalists will also use this pithy expression instead of the lengthier *collisions involving airplanes and birds*. Perhaps the first Associated Press stories on a particular event are picked up by many local papers, and *bird strikes* becomes the most common expression to which the public is exposed.

Discourses about manatees in Florida show us that a more compassionate and constructive approach is possible. Goedeke (2004) chronicles the educational efforts that shaped present-day human attitudes toward manatees. We should not discount the role of scientists and other experts in using language carefully when reaching out to the public.

**Conclusion**

My sense is that anthropocentrism is not necessarily the primary cause of news discourse representing wildlife as responsible for collisions with vehicles. Other possible reasons include the cognitive issue of how humans perceive small flying beings, a relative lack of understanding of the behaviors of some kinds of nonhuman animals, the degree of control that human operators of vehicles have—or the fact that certain expressions may simply become habitual in news discourse or in particular institutions. In any case, thoughtless use of such constructions can reinforce anthropocentric views in readers. As writers and speakers, we might try to be mindful of selecting constructions that reflect events fairly.

**Afterword: Bird Safety in Your Home**

Rönkä (2009) offers the following suggestions: avoid placing large house plants next to windows, as birds may try to land on them. Hang white threads in windows, make designs on them, or attach stickers. The simplest solution of all is to refrain from washing the windows.

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**Notes**

1. Since there is no reason to expect the linguistic phenomena in this section to vary greatly from one variety of English to another, I view *The Corpus of Contemporary American English* as a source of information about the English language in general, not necessarily relevant to American English only.

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