



Article

Conflict or Harmony: Framing of Wildlife News in a Biodiversity Hotspot

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Abstract: Newspapers are avenues of the media that can influence public perceptions. Newspapers are especially important to engender support for wildlife protection because they reach populations who do not necessarily encounter wildlife frequently. Our research examined how newspaper media depict wildlife-related information in Uganda, a country which hosts high biodiversity. A content analysis was performed in two widely read daily newspapers, namely, the *New Vision* ($n = 258$) and *Daily Monitor* ($n = 267$), for news articles published in selected years between 2010 and 2019. The findings show a balance between positive and negative articles published in this period. *New Vision* had 51.5% of its articles on wildlife negatively framed while *Daily Monitor* had 50% of its articles positively framed. The articles that focused on the positive benefits from wildlife were the longest with 803 ± 525 words. One of the themes that featured prominently was the impact of developments on wildlife such as successful conservation practices, management interventions to save wildlife, and NGO conservation support to wildlife protection and population growth. Overall, newspaper articles addressed efforts that called for wildlife survival, but conflict still featured prominently. Measures to sensitize journalists, such as media engagement, wildlife tours, and integration with scientists, are needed to better implement conservation media. We also suggest that the media focus on the intrinsic benefits of biodiversity conservation, and that scientists be better integrated into wildlife news stories.

Keywords: media framing; wildlife conservation; content analysis

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1. Introduction

As the world undergoes extensive climate change and land degradation, retaining the remaining natural wildlife habitats, in addition to protecting the biodiversity within these habitats, is a priority (Laurance et al. 2012; Mokany et al. 2020). Across the globe, anthropogenic pressures such as habitat fragmentation, agricultural expansion, climate change, poaching, wildlife trade, and disease threaten wildlife, often synergistically (Estrada et al. 2017; Díaz et al. 2019). This will eventually lead to wildlife extinctions, which will have cascading effects on ecosystem structure, food supplies, air quality, and watersheds (Crist et al. 2017; Loiseau et al. 2020).

Africa is unusually rich in biodiversity compared to other continents, yet has rapidly growing populations with a shift to urbanization (Güneralp et al. 2017). The pressure from people on wildlife habitats is large as land is increasingly being converted to agricultural lands and cities. As such, much of Africa's population does not interact with wildlife and may not appreciate the need to safeguard it. In this regard, the media, such as radio and newspapers, are vital to conservation efforts, each offering unique strengths in disseminating information and facilitating environmental consciousness. Newspapers, with their in-depth reporting, commentaries, and opinion articles, provide a valuable platform for

issues related to wildlife conservation. Newspapers can delve into the complexities of ecological challenges, presenting context that educates the public and policymakers alike. Newspapers are also accessible on the internet and in social media, and thus provide a source of information where internet access is possible (Flavián and Gurrea 2008). Alternatively, radio connects with audiences in remote areas with limited access to other media. Radio programs, including talk shows and broadcasts dedicated to wildlife topics, enable experts and local voices to engage with greater immediacy directly with communities. Both of these media types can evoke emotional connections to nature, making conservation issues relatable, and inspiring positive behavioral change and political advocacy.

Uganda, a landlocked country within East Africa, is internationally known because of its distinctive landscape and amazing array of plant and wildlife diversity that are uncommon to other parts of the world. Uganda hosts over 18,000 species of fauna and flora, and ranks among the top ten most biodiverse countries globally (Plumptre et al. 2019). As a result of this variety of rare wildlife and bird species that are unique to Uganda, tourists visit from around the globe to view them (English and Ahebwa 2018). In fact, nature-based tourism has been the leading foreign exchange earner in Uganda for years, generating USD 1.5 billion annually and contributing 8% of the country's total employment (National Planning Authority 2020). Moreover, about 20% of the funds generated by national parks as entry fees go towards revenue shared with the neighboring community (Uganda Wildlife Authority 2022). Additionally, the conserved wildlife plays a role in the provision of ecosystem services such as protecting water resources, breaking down pollution, stabilizing the climate, and maintaining soil fertility (Haines-Young and Potschin 2010).

However, despite the importance of wildlife, there are several areas where the public comes into conflict with it (Redpath et al. 2013). Humans are increasingly occupying the habitats of wild animals, and wildlife does not know the boundaries of the human-designated wildlife-protected areas. For example, increasing habitat fragmentation and roads built by humans impede animal migration routes. This habitat destruction is exacerbated by climate change, which can often effect changes in food availability for wildlife (Acevedo-Whitehouse and Duffus 2009). The synergistic effects of these anthropogenic changes can affect wildlife in detrimental ways, forcing the animals into areas inhabited by humans (Lindsey et al. 2022) where they face dangers such as hunting, disease, and starvation, or a tragic death by road accident (McLennan and Asiimwe 2016; Maisels et al. 2013). While in some cases, human-wildlife coexistence is possible, there are other instances where there is human-wildlife conflict (Nyhus 2016). Such conflicts can arise from crop-raiding by wildlife, a predator injuring a community member, and/or the need for wildlife resources. Wildlife can cause devastating losses and create major challenges to the aggrieved population (Nyhus 2016). Thus, as much as wildlife conservation can be profitable and contributes to people's livelihood, it can be disruptive to people who neighbor the wildlife.

While news media are a powerful means to disseminate information about both conservation and problems related to wildlife, the framing of news stories has an impact on the public. Reese (2010) emphasizes that news frames work more by connecting the mental dots for the public. They inevitably suggest a connection between concepts, issues, or events such that when audiences get exposed to the messages framed, the audiences either accept or become aware of the issue under question. For example, most newspaper articles globally blame wildlife and not humans for human-wildlife conflict, reflecting a misunderstanding of the drivers of wildlife interactions with the public (Hathaway et al. 2017). A quantitative analysis of reports on tiger-human interactions in Bangladesh noted that national newspapers perceived tigers as a threat to the livelihood and well-being of the local people, rather than promoting their conservation value (Sadath et al. 2013). Similarly, a study of the media coverage of sharks in the USA and Australia revealed that the media reported more commonly on the risks sharks pose to people, even though such events are quite rare and many shark species are endangered (Muter et al. 2012). After the COVID-19 pandemic, bats were framed as much more dangerous in the media, hindering conservation efforts in Uganda (Ejotre et al. 2022). However, since the media are a powerful tool, it

is possible that they can be used educationally to mitigate human–wildlife conflict and promote coexistence (Hansen 2018).

Since Uganda is high in biodiversity and the media have an impact on public opinion, it is important to understand the role that the media play in reporting conservation news. To understand media trends in Uganda in 2010–2019 (pre-pandemic), we focused on newspapers, and conducted a content analysis of two widely read newspapers in Uganda, *The New Vision*, which is government-owned, and *Daily Monitor*, which is independent, to assess wildlife-related content. Our main objectives were to (1) describe the number of articles on wildlife that were published each year to determine if the number of articles increased or decreased each year; (2) to determine whether wildlife-related articles had a positive or negative frame and its theme; (3) to investigate the length of the differently framed articles; and (4) to record the types of messengers within in each article, such as government officials, celebrities, general public, and others. The significance of this research is to better promote conservation within the media, particularly newspapers.

2. Materials and Methods

Two popular daily newspapers (*New Vision* and *Daily Monitor*) were selected to assess how the media depict wildlife-related information to the public in Uganda. The two dailies were selected because they are the leading newspapers with the widest readership and nationwide circulation published in English in Uganda (Alina 2013). Circulation estimates for the last quarter of 2019 by the Audit Bureau of Circulations of South Africa (ABC) indicated that *New Vision* had an average of 23,636 and *Daily Monitor* had an average of 16,169 print copies (Uganda Business News 2019). In addition, much of the Ugandan public accesses these two news sources online, though we were unable to find out the online reach in this respect.

We used purposive sampling as a non-probability sampling strategy to select the years from a ten-year scope (2010–2019). The analysis was carried out for the stories published in 2010, 2015, 2016, 2018, and 2019. The research sampled a ten-year scope purposely to understand the nature of the coverage of wildlife issues from the beginning of the decade to the more recent years, pre-pandemic. To achieve that, 2010 was sampled as a benchmark year that begins the ten-year period. Four years were skipped to 2015 to give a mid-decade representation. Skipping 2017, two years each were purposefully picked in succession to account for the most current information published with a good average in the middle years. Both online and physical archives for newspaper libraries were searched for wildlife-related information in these two newspapers. Because the COVID-19 pandemic affected the stories printed, we restricted our analysis to those years before the pandemic began.

All news articles in these two dailies were searched using keywords such as ‘wildlife, national park, wildlife reserve, conservation, wildlife population, wildlife tourism.’ Keywords searched also included the large mammals in Uganda, such as gorilla, chimpanzee, elephant, lion, buffalo, rhino, zebra, giraffe, antelope, kob, cheetah, leopard, and baboon, as well as crane, shoebill, crocodile, snake, and butterfly. Any articles that were obviously not about wildlife were discarded (for example, the “Uganda Kobs” are a sports team, and the many articles that were found on this topic were discarded). A total of 525 relevant news stories on wildlife conservation were analyzed (*New Vision* ($n = 258$) and *Daily Monitor* ($n = 267$)). It is acknowledged that we did not assess articles for wetland conservation nor insect, amphibian, or many other keywords that could have identified additional wildlife articles. In each article, we recorded the number of words, and the news voices included in the article as well as the frames and themes involved. We also recorded the key words used to find the article, as well as any additional animals in the title of the article. Each article was thoroughly read and summarized.

We predetermined five frames and considered them when analyzing the content in the articles (Muter et al. 2012). Positive articles had two dimensions that included those with positive aspects from or/to wildlife. Articles with a positive impact on wildlife discussed the positive effects from people to wildlife. These were actions by human effort to encour-

age the preservation of wildlife. Examples include successful conservation, management interventions, non-governmental organization (NGO) conservation awareness, or community education campaigns and population growth. Articles with positive impact from wildlife discussed the impact from wildlife on humans or the environment such as wildlife tourism, recreation, medical/human health insights, employment, healthy ecosystems, and providing researchers with novel/important information. These were aspects that benefit the population as a result of wildlife's existence in the country. Similarly, negative impacts had an aggregate of stories from two dimensions. This category included articles with negative impact from wildlife, or on wildlife. Articles with negative impacts on wildlife discussed the impact from humans on wildlife including encroachment, poaching, disease, capture, and illegal wildlife trade. These were generally actions by the public that disadvantaged wildlife. Articles with negative impact by wildlife discussed the impact from wildlife on humans or the environment that are caused by human-wildlife conflict, such as crop raiding, human fatalities, the destruction of property, and disease transmission. These articles, therefore, had aspects of anything negative that wildlife does to create discomfort to humans. If an article had multiple frames, it was considered multiple foci, whereby the article discussed multiple topics such that no topic clearly dominated the story. In such a case, almost equal attention is given to two or more of the aforementioned topics.

In the newspaper content analysis, to assess the number of wildlife-related articles between the two papers and among the years, a chi-square test was used. Similarly, to assess the distribution frequency of frames, formats, and themes in each newspaper, a chi-square test was used. To assess the word count, ANOVA was used with post hoc Tukey multiple comparisons. We considered statistical significance to be achieved at $p < 0.01$, and SPSS Version 29 was used for analyses.

3. Results

New Vision, which is government owned, was compared to *Daily Monitor* that is privately owned. The two newspapers had a similar number of articles that focused on wildlife each year (*New Vision*: $n = 258$, *Daily Monitor*: $n = 267$; Table 1), but the number of wildlife-related articles was varied in each year in both papers ($X^2 = 60.354$, $df = 4$, $p < 0.001$). In *Daily Monitor*, the highest number of articles about wildlife was in 2018, followed by 2019. In *Daily Monitor*, there was a difference in article frames according to year ($X^2 = 35.898$, $df = 16$, $p = 0.003$). In 2010, there were fewer positive articles about wildlife (both to wildlife, and from wildlife) than other years: (22%) vs. (44–68%) in other years. In the same year, *New Vision* published the highest number of negatively framed articles. In *New Vision*, there were fewer negative frames in 2019 compared to 2010 ($X^2 = 2.335$, $df = 1$, $p = 0.048$), although all other comparisons were not significant ($X^2 = 22.749$, $df = 16$, $p > 0.12$). Overall, the intensity of publication of the negative aspects of wildlife is more projected in *New Vision* compared to *Daily Monitor*, and thus there is a need to create avenues for positive reporting on wildlife in this paper.

The distribution of the differently framed articles was different in the two newspapers, whereby *New Vision* had more negatively framed wildlife articles (51.5%) than *Daily Monitor* (34%) (Table 2). *Daily Monitor* contained more articles that were framed as being positive to wildlife compared to *New Vision*, which had more negatively framed articles.

Wildlife-related articles that were based on the positive attributes of wildlife to humans were the longest, followed by those that had multiple components to the wildlife story, indicating that journalists and editors allocated more space in the newspaper for the positive benefits of wildlife when these types of articles were written. The word count was related to the frame ($F = 2.928$, $df = 4$, $p = 0.021$) and newspaper ($F = 106.8$, $df = 1$, $p < 0.00$), but there was no interaction among the two ($F = 0.606$, $df = 4$, $p = 0.659$). As noted above, the article word count in *New Vision* was overall shorter than *Daily Monitor* (Table 3). This result indicates that *Daily Monitor* published more positive wildlife information and offered more detailed articles for those positive stories, which is good for wildlife reporting. On the other hand, *New Vision*, that often carries negative wildlife stories, does not give a lot of detail.

The articles that were focused on the positive benefits from wildlife were the longest, with 803 ± 525 words, and those that were shortest were focused on the detriments of wildlife (negative from wildlife), indicating that when conflict was reported, articles were much shorter than articles reporting benefits. The positive-from-wildlife and multi-foci themes had similar word counts, but they were significantly different from the negative-to-wildlife and negative-from-wildlife frames (Table 3). The positive-to-wildlife frame had an average word count that was not significantly different to any of the other frames (Table 3).

Table 1. Number of wildlife-related articles published in *New Vision* and *Daily Monitor*, and their frames (2010–2019).

Year	Positive to Wildlife ¹	Positive from Wildlife	Negative to Wildlife	Negative from Wildlife	Multi-Foci	Total
<i>New Vision</i>						
2019	8	3	9	1	4	25
2018	12	6	8	6	8	40
2016	23	3	30	7	8	71
2015	9	3	13	0	2	27
2010	17	10	45	14	9	95
Total	69	25	105	28	31	258
<i>Daily Monitor</i>						
2019	21	11	13	7	10	62
2018	18	20	14	7	12	71
2016	17	17	12	3	1	50
2015	12	9	12	9	6	48
2010	6	2	10	4	14	36
Total	74	59	61	30	43	267

¹ Positive from wildlife are ways that wildlife provides humans with a benefit whether economic, intrinsic, or other; Negative to wildlife includes any frame where wildlife is being harmed by humans such as poaching, wildlife trade, or their habitat being destroyed; Negative from wildlife includes any frame whereby wildlife is harming humans such as through human–wildlife conflict, deaths from wildlife, or crop/property damage from wildlife. Multi-foci frames could be a mixture of one or more frames in the same news story.

Table 2. Positive and negative frames in the wildlife-related articles published in *New Vision* and *Daily Monitor*.

	All (n = 525 Articles)		<i>New Vision</i> (n = 258 Articles)		<i>Daily Monitor</i> (n = 267 Articles)		Statistics ¹	
	Frequency	%	Frequency	%	Frequency	%	χ^2	p^2
Frames ³								
Positive to Wildlife	143	27.2	69	26.7	74	27.7	0.066	$p = 0.797$
Positive from Wildlife	84	16	25	9.7	59	22.1	14.978	$p < 0.001$
Negative to Wildlife	166	31.6	105	40.7	61	22.8	19.415	$p < 0.001$
Negative from Wildlife	58	11.0	28	10.9	30	11.2	0.012	$p = 0.913$
Multi-Foci	74	14.1	31	12.0	43	16.1	1.819	$p = 0.177$

¹ χ^2 = Chi Square test statistic; ² p (probability) of less than 0.05 confers significance that the frequency of frames is dissimilar more than one would expect by chance, meaning that there are more articles of a particular frame in the newspapers and they are not in equal distribution. ³ Positive to wildlife includes any frame whereby humans are providing wildlife with protection; Positive from wildlife are ways that wildlife provides humans with a benefit whether economic, intrinsic or other; Negative to wildlife includes any frame where wildlife is being harmed by humans such as poaching, wildlife trade, or their habitat being destroyed; Negative from wildlife includes any frame whereby wildlife is harming humans such as through human–wildlife conflict, deaths from wildlife, or crop/property damage from wildlife. Multi-foci frames could be a mixture of one or more frames in the same news story.

Table 3. Word count of articles published in relation to the different media frames in *New Vision* and *Daily Monitor*.

	N	All (n = 525)		New Vision (n = 258)		Monitor (n = 267)		Statistics
		mean	st. dev	mean	st. dev	mean	st dev	significance
Word Count								
Positive to Wildlife ¹	199	682	497.7	460	264	882	572.0	a,b
Positive from Wildlife	28	803	525.1	470	251.3	943	525.1	a
Negative to Wildlife	166	559	371.7	433	241.4	795	452.2	b
Negative from Wildlife	58	528	499.1	314	126.4	728	623.8	b
Multi-Foci	74	789	582.8	483	257.9	1009	651.0	a
Total articles	525	660	489.9	436	244.0	876	565.1	

¹ Positive from wildlife are ways that wildlife provides humans with a benefit whether economic, intrinsic, or other; Negative to wildlife includes any frame where wildlife is being harmed by humans such as poaching, wildlife trade, or their habitat being destroyed; Negative from wildlife includes any frame whereby wildlife is harming humans such as through human–wildlife conflict, deaths from wildlife, or crop/property damage from wildlife. Multi-foci frames could be a mixture of one or more frames in the same news story. Different lowercase letters denote differences at $p < 0.01$.

Within the positive and negative frames, different specific wildlife themes were explored, as shown in Table 4. The most written-about positive theme related to wildlife was ecotourism, which is likely related to economic benefits; for example, tourism. Positive themes overall included ecotourism, the natural history of wildlife, the population dynamics of wildlife, funding gained from wildlife, historical perspectives about wildlife, and government spending on wildlife. This result indicates that the media should better showcase why people need to care about wildlife in addition to its economic benefits, such as tourism. Negative themes included crop destruction, encroachment, human fatality, overall human–wildlife conflict, poaching, illegal wildlife trading, and risk management to protect humans from wildlife. Sometimes, articles had multiple themes, and those were also recorded.

A large number of articles were negatively themed (45.5%), although these included the negative actions by both the wildlife and humans (e.g., poaching, and crop destruction) as well as others that mitigated the actions of both (risk management). This indicates that there was a great number of publications dedicated to themes that cause resentment towards wildlife because of the numerous conflicts its existence generates with communities. However, 41.2% of articles were framed positively in terms of the benefits that humans provide to wildlife, and those that wildlife provides to people. There were about 14.3% of articles that had multiple foci. The top ranked theme overall was ecotourism (14.3%), which is positive because of the benefits wildlife provides to humans. It was more commonly found in *Daily Monitor* (18.2%) compared to *New Vision* (10.6%), as shown in Table 4.

In *New Vision*, the most common theme was risk management (15.9%), which is a theme focused on the human resource and legal issues within wildlife (corruption, fraud, lawsuits, fund mismanagement, and harassment by staff to and from communities). There were more articles about risk management in *New Vision* compared to *Daily Monitor* (Table 4). Overall, there were more articles about government spending on wildlife activities in *Daily Monitor* (3.3%) compared to *New Vision* (7.2%), and more articles about poaching (9.0%) in *New Vision* compared to *Daily Monitor* (6.9%) (Table 4). There were no other significant differences between the two papers.

In *Daily Monitor*, there were no differences in themes among the years ($X^2 = 9.145$, $df = 4$, $p = 0.058$), although there were slightly more negative themes and fewer positive themes than expected in 2019, and there were more positive themes in 2016 than expected, although this difference was marginal as can be seen by the borderline significance. In *New Vision* there were more negative themes and fewer positive themes in 2010 than other

years ($X^2 = 18.449$, $df = 4$, $p = 0.001$), which is apparently related to human resource issues surrounding wildlife issues that were prominent in that year.

Table 4. Frequencies and chi-squared analyses of the different wildlife themes in the *New Vision* and *Daily Monitor* newspapers.

	All		<i>New Vision</i> (<i>n</i> = 258 Articles; <i>n</i> = 697 Themes)		<i>Daily Monitor</i> (<i>n</i> = 267 Articles; <i>n</i> = 642 Themes)		Statistics	
	f	%	f	%	f	%	χ^2	<i>p</i>
Positive Themes								
Ecotourism	191	14.3	74	10.6	117	18.2	15.790	$p < 0.001$
Natural history	64	4.8	32	4.6	32	5.0	0.117	$p = 0.732$
Wildlife population	140	10.5	63	9.0	77	12.0	3.215	$p = 0.073$
Funding wildlife	53	4.0	20	2.9	33	5.1	4.255	$p = 0.391$
Historical perspective	34	2.5	15	2.2	19	3.0	0.849	$p = 0.357$
Government spending	69	5.1	23	3.3	46	7.2	10.360	$p = 0.001$
Negative Themes								
Crop destruction	38	2.8	19	2.7	19	3.0	0.109	$p = 0.742$
Encroachment	53	4.0	23	3.3	30	4.7	1.716	$p = 0.190$
Human fatality	52	3.9	27	3.9	25	3.9	1.0	$p = 1.000$
Human–wildlife conflict	133	9.9	76	10.9	57	8.9	1.492	$p = 0.222$
Poaching	120	9.0	76	10.9	44	6.9	6.535	$p = 0.011$
Illegal wildlife trade	73	5.5	45	6.5	28	4.4	2.837	$p = 0.092$
Risk management	139	10.4	111	15.9	28	4.4	47.449	$p < 0.001$
Multi-foci Theme								
Other wildlife conservation	113	8.4	56	8.0	57	8.9	0.350	$p = 0.554$
Other	67	5.0	37	5.3	30	4.7	0.252	$p = 0.615$

The majority of messengers in the wildlife-related articles were government officials (28.1%, $n = 303$; Table 5), which was not different in the two newspapers. UWA officials are actually government employees, but they were separated from other officials because of their relationship to wildlife. UWA officials served as the primary information source on many articles (24.7%, $n = 266$). When the two categories are combined, it means that over half of the articles published had information from government officials, as indicated in Table 5. Celebrities were rarely messengers, and featured in only two articles, one in each of the two newspapers. This indicates that celebrities are rarely used to disseminate wildlife information in newspapers, but they could be impactful and popular with readers of wildlife information in the media.

There were differences among the two newspapers in the messengers featured. Conservationists, who included NGO representatives, wildlife advocates, and tour guides, were featured more in *Daily Monitor* compared to *New Vision* (Table 5), while media personalities were featured more in *New Vision* compared to *Daily Monitor*. More UWA representatives served as messengers in *New Vision* compared to *Daily Monitor*, with UWA representatives being the most common messenger type. Tourists were rarely featured (3.9%, $n = 42$), but they were more often so in *Daily Monitor* compared to *New Vision*. Other messenger types were similar between the two newspapers. This indicates that wildlife information is often sourced from credible experts who can offer reliable information on wildlife issues. It also means that the media uses dependable sources to generate wildlife information.

Table 5. News voices in wildlife articles.

Messenger Type	All (n = 525 Articles, n = 1078 Voices/Experts)		New Vision (n = 258 Articles; n = 406 Voices/Experts)		Daily Monitor (n = 267 articles; n = 672 Voices/Experts)		Statistics	
	f	%	f	%	f	%	X ²	p
Celebrity	2	0.19	1	0.25	1	0.14	0.169	p = 0.681
Conservationist/Tour Guide	217	20.1	58	14.29	159	23.7	13.913	p < 0.001
Academics	41	3.8	13	3.20	28	4.2	0.688	p = 0.407
General Public	120	11.1	42	10.3	78	11.6	0.433	p = 0.511
Government Official	303	28.1	110	27.1	193	28.7	0.320	p = 0.571
Media Personality	44	4.1	30	7.4	14	2.1	18.081	p < 0.001
Tourist	42	3.9	6	1.5	36	5.4	10.18	p = 0.001
Uganda Wildlife Authority Representative	266	24.7	128	31.5	138	20.5	16.476	p < 0.001
Others	43	4.0	18	4.4	25	3.7	0.325	p = 0.568

Most articles were identified through the keyword “wildlife” (*New Vision*: n = 103, *Daily Monitor* n = 189); however, some articles were identified through the other search words and focused mostly on one species (Table 6). Within these, the search words elephant, gorilla, lion, hippo, giraffe, and crocodile had the most articles (n = 5 or above) in *New Vision*, and chimpanzee, elephant, gorilla, crocodile and giraffe (n = 5 or above) in *Daily Monitor*. As can be seen in Table 6, articles that focused on elephants tended to be framed in terms of the negative actions humans were taking against them, such as poaching and trade in ivory. Gorillas and chimpanzees were mostly featured in articles that were framed to demonstrate the positive actions that humans were taking to protect them, such as through the protection of their habitat. Gorillas and chimpanzees also had high numbers of articles framed to illustrate their positive impact, mostly in the form of ecotourism and economic gains. Large predators (lions, leopards, and crocodiles) were prominent in articles that mostly focused on their potential for harm to humans, or the harm that humans were causing to them, rather than any positive benefits they provide to humans. For example, no article on crocodiles was positive in either *New Vision* or *Daily Monitor*, and the majority of articles about lions in *New Vision* focused on how they were poisoned by humans (in the negative to wildlife category; Table 6).

Table 6. Types of wildlife featured in articles in *New Vision* and *Daily Monitor* when one wildlife species was the focus of the article. * Note that pangolins and baboons were not original search words, but they were the sole focus of some articles found using the keyword ‘wildlife’.

Key Word	Positive to Wildlife ¹	Positive from Wildlife	Negative to Wildlife	Negative from Wildlife	Multi-Foci	Total
<i>New Vision</i>						
elephant	1	0	19	5	0	25
gorilla	9	6	2	1	0	18
lion	1	1	6	4	0	12
hippo	0	0	5	3	0	8
crocodile	0	0	4	4	0	8
giraffe	4	1	0	0	0	5
leopard	1	0	0	3	0	4

Table 6. Cont.

Key Word	Positive to Wildlife ¹	Positive from Wildlife	Negative to Wildlife	Negative from Wildlife	Multi-Foci	Total
rhino	1	2	0	0	1	4
buffalo	0	0	2	2	0	4
pangolin *	0	0	4	0	0	4
chimpanzee	2	0	1	0	0	3
antelope	1	0	2	0	0	3
snake	0	0	2	1	0	3
kob	0	0	0	0	1	1
crane	1	0	0	0	0	1
<i>Daily Monitor</i>						
chimpanzee	7	5	1	1	3	17
elephant	1	1	6	6	3	17
gorilla	4	9	2	0	1	16
crocodile	0	0	6	6	0	6
giraffe	3	1	1	0	0	5
buffalo	2	0	0	1	0	3
pangolin *	1	0	2	0	0	3
lion	3	0	0	0	0	3
hippo	0	1	0	1	0	2
leopard	0	1	0	1	0	2
kob	0	1	0	0	0	1
rhino	0	1	0	0	0	1
baboon *	0	0	1	0	0	1
shoebill	1	0	0	0	0	1

¹ Positive from wildlife are ways that wildlife provides humans with a benefit whether economic, intrinsic, or other; Negative to wildlife includes any frame where wildlife is being harmed by humans such as poaching, wildlife trade, or their habitat being destroyed; Negative from wildlife includes any frame whereby wildlife is harming humans such as through human-wildlife conflict, deaths from wildlife, or crop/property damage from wildlife. Multi-foci frames could be a mixture of one or more frames in the same news story.

4. Discussion

Articles that are framed negatively towards wildlife feature prominently in Ugandan newspapers. Of the two newspapers, *New Vision*, the government-owned medium, had more negatively framed stories than *Daily Monitor*, the private-owned medium. In Uganda, the government is responsible for protected areas and is the recipient of funds generated from most activities within the protected areas. This category included human-wildlife conflict, damage of property, crop raids, and diseases transmitted from wildlife to humans. Negatively framed stories in these newspapers included deaths from wildlife, like crocodiles and leopards, or crop-raiding by elephants. These are significant but rare problems in Uganda and could cause an alarmist reaction by the public. The negative frames heighten poor perception and can affect public perception. A media survey after a human infant was fatally injured by a black bear (*Ursus americanus*) in New York, USA, suggested that the media coverage of the incident would affect the perceived bear-related risk among residents in New York's black bear range. Results compared in a pre-incident mail survey and a post-incident telephone survey of New York residents indicated that the proportion of respondents who believed the risk of being threatened by a bear increased after an increase in print media coverage of black bears during the month following the

incident (Gore and Knuth 2009; Gore et al. 2005). Similarly, in a study about how media shapes public opinion, that investigated the impact of media frames in relation to attitudes to video games (Kümpel and Haas 2016), the findings indicate that media coverage that framed gaming as a risk factor to health aided the formation of a negative perception of gaming by the public. The media information affected people's understanding of gaming, with the majority deciding it was negative. Therefore, the population's assumptions about gaming risks were based on media emphasis on the negative narrative. The media therefore shape the narrative that the general public relies on to make judgment. This can be applied to wildlife conservation where the negative news reports may influence the public to dislike wildlife based on the media. Instead, while reporting about conflicts, the media could be educational, and could be used as a form of conservation outreach (Marker and Boast 2015).

There was also a significant percentage of articles published that were positive (>40%), and these positive stories leaned heavily towards those aspects that the government and its partners were implementing to protect wildlife. Some of the areas that featured prominently concerned the impact of developments on wildlife, such as successful conservation practices, management interventions to save wildlife, and NGO conservation support to wildlife protection and population growth. Articles also prominently featured the great apes, gorillas, and chimpanzees, which are highly valued for tourism. The news articles mostly addressed efforts that called for wildlife protection and survival. As much as these positive reports focused on what wildlife proponents do to protect wildlife, there were few articles that addressed the aspect of why communities needed to support and protect it. This addition would be crucial to ensure an attitude change and community support of wildlife conservation. More information needs to be published in that regard, including information on the reasons why people should care about the positive things that humans do for wildlife, yet they do not necessarily know why wildlife is important. This is something wildlife conservationists and media professionals should work together to bridge and address. In other studies, Epanda and colleagues (Epanda et al. 2019) explain that the positive perception of the protection of wildlife is linked to a good awareness of benefits that accrue to communities from the protected areas. They urge wildlife managers to integrate a component of media dissemination to cause awareness of livelihood improvement programs as an integral part that will help improve the perception of wildlife. They also argue that livelihood improvement alone may not be enough to alleviate some vices that impact negatively on wildlife like poaching; rather, media awareness is equally important to bridge this gap. The awareness helps lessen the negativity through making positive information available and known for permanent reference of such efforts. Therefore, the media become instrumental in presenting alternative layers of information of the measures in place. This helps to improve community and park relations.

The newspaper articles that focused on the positive benefits from wildlife were the longest with 803 ± 525 words. Those that were the shortest focused on the detriments of wildlife (negative from wildlife). This is a positive result for proponents of wildlife conservation. It offers a good start in attaining support for aspects of wildlife conservation because longer articles offer more information. It is an opportunity to give a well-researched article with more sources to balance the ideas from experts. Therefore, in-depth stories with a good ratio of word count avails a platform where narration and context to a story can be given with the corresponding explanations. This offers a better understanding of issues by the reader. McLellan and Shackleton (2019) note that short news articles do not have sufficient space to explain complexities and interconnections between issues. Feature stories, for example, which have a longer word count, do not only include facts, but also information that offers avenues to explain the details (Ricketson 2004). The longer articles present an opportunity for more information and a balanced view of the story. Wildlife stories need space and time to explain because of the nature of the debate they attract. They require scientific backing with a lot of human-oriented relevancy to them.

The credibility of a source is fundamental to audience trust (Peters 2008). Overall, in both *New Vision* and *Daily Monitor*, the most frequently sought wildlife experts for infor-

mation responses were UWA staff or government officials. This is not surprising because these are the responsible and technical officers mandated to manage wildlife in Uganda, as well as being the government representatives in charge of wildlife. Tour guides and conservationists were also well represented. Academics were not featured as prominently, and this could be improved in the Ugandan conservation media. Scientists are considered the most credible sources of information in the media because they create special knowledge that helps inform opinion and guide behavior, decision making, and problem solving, without bias (Peters 2008). In this regard, Nanni et al. (2022) suggest that academics, technical specialists, and conservation specialists should join forces with journalists to improve conservation management. NGOs that also employ scientists and animal advocates should also be featured. Those prominent in Uganda include Wildlife Clubs of Uganda, Wildlife Conservation Society, and World Wildlife Fund, among others. In Uganda, this idea can work to improve textured reporting on wildlife conservation, particularly through the local media. Overall, conservation-oriented media could be improved by journalists interacting more frequently with scientists (Rija and Kideghesho 2020). In a study of the media reporting of climate change impacts in Australia, Lunney and Moon (2012) noted that wildlife scientists should make more of an effort to connect with the media because they have a powerful role, and observed that policy makers respond to media interest. They also noted that wildlife conservation policy is often facilitated by the media, and thus scientists should be willing to connect more readily with the media. We fully agree with this viewpoint.

Interestingly, very few celebrities featured as sources in the articles for any wildlife-related frame. In fact, less than 0.2% of all articles contained a celebrity figure. Celebrity endorsements are frequently used as a strategy to market and promote certain values (Sharma 2016). For instance, there are numerous images of celebrities that have been dominating the media in print, radio, and approximately 20% of all television commercials (Boyd and Shank 2004; Klaus and Bailey 2008). It is thus interesting that celebrities have not featured much in this case. The use of celebrity endorsement in the media often offers the opportunity to keep an issue in the limelight. Since celebrities often visit Uganda's wildlife and are supportive of conservation, they could be used to strategically enhance a conservation issue in the news.

The methods of this research have some limitations. First, we did not analyze images within the newspapers which could influence the public's views and are an important component of environmental journalism (Lunney and Moon 2008). Second, we did not assess reactive and proactive news stories, which could have an impact on the public (Hansen 2018). Third, we did not determine the time of the year that differently framed wildlife articles were published, or those articles that were published alongside them. Fourth, we only investigated two Ugandan newspapers, and did not consider the framing of Ugandan news in the international media. Interestingly, in a study of Bangladesh, tigers were framed in a biodiversity and conservation context in international news, while in national newspapers they were framed in terms of conflict and threat (Sadath et al. 2013). Here, we were interested in Ugandan news only, but it would be interesting to capture how the international media present wildlife conflicts in Uganda to the international public. Future analyses may wish to consider this when conducting newspaper content analysis.

Our research demonstrated that the *New Vision* and *Daily Monitor* newspapers report both negatively and positively framed articles that relate to wildlife, with a leaning towards negative frames. *New Vision* has had a reduction in wildlife news articles over the years, while *Daily Monitor* has had a stable publication rate, but very few articles in the newspaper per year. A small number of stories cannot capture the attention of the public enough to ensure the readers' consistent support of wildlife. We also suggest that the media focus on the intrinsic benefits of biodiversity conservation, and that scientists are more integrated into newspaper articles. When human-wildlife conflict is presented, it can be used as a way to educate the public rather than sensationalize a negative event. Further, media engagement workshops, sensitization tours to wildlife protected areas, and interaction with wildlife scientists may improve the conservation media in Uganda and elsewhere.

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