

Research Note

Content Analysis of Three Waterfowl Hunting DVDs

MARK G. ALESSI, CRAIG A. MILLER,
AND ERIN E. HARPER

Illinois Natural History Survey, Prairie Research Institute, University of Illinois
Champaign, IL, USA

Waterfowl hunting product manufacturers have determined that a market exists for waterfowl hunting videos. Viewing these videos could have meaningful effects on hunters who watch them. We conducted a content analysis of three waterfowl hunting videos. The most frequently spoken word was “kill” for two of the videos and “ducks” for the third video. Less than 5% of each movie was attributed to shooting, and when hunters did shoot, the average length of each shooting scene was 1.77 seconds. There were significant differences among videos in the number of shots taken per scene and number of birds harvested per scene. Overall, success rates in the videos differed from the average success rates for Illinois hunters. We stress the importance of understanding the influence of media on development among hunters and discuss how effects of media may impact wildlife agencies in the future.

Keywords media, hunting, communication, harvest, youth

Approximately 1 million hunters engage in waterfowl hunting in the United States annually (Raftovich, Wilkins, Williams, Spriggs, & Richkus, 2011). Previous research indicates that most hunters begin hunting before the age of 20 and are introduced by their father or another father-figure (Bissell, Duda, & Young, 1998). Participation in hunting is also influenced by rural upbringing (Bissell et al., 1998; Hayslette, Armstrong, & Mirarchi, 2001; Heberlein & Thompson, 1996; Langenau & Mellon, 1980). With increased urbanization, there are fewer opportunities for youth to be introduced to hunting (Boxall, Watson, & McFarlane, 2001). Not only is the spatial distribution of youth changing, but also the allocation of time.

Youths and adults spend a significant amount of time watching all types of visual media (e.g., television [TV], videos, mobile phones, Internet; Nielsen Company, 2011). In a one-year period (2010–2011), TV viewership increased on average 22 minutes/month/person when compared to the previous year. Children (2–11 years old) watched 117 hours of TV

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Address correspondence to Mark G. Alessi, Illinois Natural History Survey, 1816 S. Oak Street, Champaign, IL 61820, USA. E-mail: mgalessi@gmail.com

per month in the beginning of 2011, and adults (18–34 years old) watched 131 hours of TV per month; the number of hours watching TV continues to increase with age (Nielsen Company, 2011). Broadcast media have a significant impact on shaping attitudes, influencing children and adolescent perceptions of social behavior and social reality, creating cultural norms, and conveying messages about behaviors (see Strasburger, 2004 for review). Little research has been done on the effects of media on hunters. DiCamillo and Schaefer (2000) subjected 10- to 12-year-old suburban children to a website and a computer game on wildlife, hunting, and hunter education (hereafter referred to as prototypes). They documented that females were most affected by the prototypes by increasing their tolerance toward legal hunting. Agee and Miller (2009) found a relationship between Illinois deer hunters who watched hunting shows on television and their preference for hunting trophy white-tailed deer (*Odocoileus virginianus*), although the causal reasons for this relationship were unknown.

Waterfowl hunting entrepreneurs have perceived a market opportunity for waterfowl hunting videos. These videos focus on the hunting process (e.g., decoy placement, calling, harvest) and are sold in sporting goods stores and on the Internet. Anecdotal evidence suggests that younger waterfowl hunters are watching these videos more frequently. For example, a new television series, *Duck Dynasty*, debuted on A&E Network on March 21, 2012. Two months after its debut *Duck Dynasty* had 1.27 million viewers, and was ranked the highest non-sports, original program on cable (Nielsen TV Rating, May 3, 2012). Although *Duck Dynasty* is a reality show and does not focus on hunting, it is an indicator of the level of interest by the general population.

Individuals are watching waterfowl hunting media, but the actions and words conveyed to viewers and their representativeness are unknown. For example, hunters in waterfowl hunting videos have high success rates and corresponding high harvests. Typically, the opposite is true; 53% of hunters in Illinois, during the 2011–12 waterfowl season, harvested less than six ducks the entire season (Alessi, Miller, & Campbell, 2012). Moreover, media content may not be representative. Videos appear to focus great attention on the harvest of banded birds. Hunters are commonly seen wearing many leg bands on their lanyards, and much excitement occurs around the harvest of a banded bird.

In this article we discussed a content analysis of three of the top-selling waterfowl hunting Digital Video Disks (DVDs). We were interested in what behaviors and words were being conveyed to viewers. Given that what a hunter sees/hears in a video may affect their expectations and perceptions of actual conditions, we transcribed every word spoken in each video, measured shooting frequency, number of birds harvested, and the number of banded birds harvested. We discuss importance of these findings and the need for future research on this topic.

Methods

Video Selection

We selected three waterfowl hunting DVDs that were easily accessible in hunting catalogs and/or the Internet, and subsequent responses from Illinois waterfowl hunters suggested these were three of the four most-often watched DVDs (Alessi et al., 2012). The three videos were *Duckmen*TM 15: Fire in the Hole (Robertson & Robertson, 2011); *Fallin' Skies*TM 7 (Realtree, 2010); and *Band Hunters*TM III: The Perfect Storm (Zink, 2011).

Content Analysis

We used Express Scribe v5.40 (NCH Software, 2012) to transcribe each movie. We converted audio to text after any previews or introductions. In Duckmen™, footage continued through the end of the final credits, and thus was transcribed. We recorded when a new hunting scene began and ended, time stamped all events and sentences, and converted all words to text. Inaudible words (words that could not be understood when listened to more than 10 times) were coded as “inaudible” and were retained for analysis. We converted slang terms to represent dictionary words (“em” to “them,” “gonna” to “going to,” and “ya” to “you”), and spelled out contractions (“don’t” to “do not,” “ain’t” to “are not,”).

Each video and text was reviewed by the primary author and corrections were made. Several more variables were then recorded for analysis: number of words per minute, percent of movie spent shooting, length of each shooting scene, shots taken per scene (categorical: 1–3, 4–10, > 10), and birds harvested per scene (categorical: 1–3, 4–10, > 10). The length of each shooting scene began when the first shot was fired and ended when the last shot was fired at a bird still in the air. In scenes where only one shot was fired, we entered “0” into the length of the shooting scene. The number of waterfowl harvested with a leg band was counted in each of the three videos.

Analysis

To determine which words were used most frequently in each movie, we used QDA Miner v4 (Provalis Research, 2012a) and WordStat v6.1.4 (Provalis Research, 2012b). We applied the English exclusion function in WordStat to remove words with little semantic value (e.g., pronouns, conjunctions). We conducted Pearson’s Chi-square analyses of number of shots per scene and number of birds harvested per scene, and measured effect sizes using Cramer’s *V* (Vaske, 2008).

Results

Similarities in frequency of spoken words were observed among the videos; the most frequently spoken word for Duckmen™ and Fallin’ Skies™ was “Kill,” and the most frequently spoken word for Band Hunters™ was “Ducks” (Table 1). A small proportion ($M = 3.8\%$, Range = 2.9–4.6%) of each movie was devoted to shooting, and when hunters did shoot, the average length of each shooting scene was of limited duration ($M = 1.77$ seconds, Range = 1.5–2.0 seconds; Table 2). Duckmen™ devoted a higher proportion of the video to shooting at waterfowl and each scene was shorter compared to the other two videos.

There were significant differences in the number of shots taken per shooting scene among videos ($\chi^2 = 22.46$, $p < .001$, $V = .17$; Table 3). For example, the majority (67%) of shooting scenes for Duckmen™ were between 1–3 shots/scene; by comparison, 45% of the shooting scenes in both Fallin’ Skies™ and Band Hunters™ were between 1–3 shots/scene. Among the three videos, there were significant differences in the distribution of the number of birds harvested per scene ($\chi^2 = 23.02$, $p < .01$, $V = .17$; Table 3). Fallin’ Skies™ had the highest proportion (93%) of harvest in the 1–3 birds harvested/scene, and Duckmen™ had the highest proportion of harvest in the 4–10 (17%) and > 10 birds harvested/scene (2%). In each of the three videos, birds were harvested in 94% of the scenes or more. Duckmen™ presented hunters hunting ducks in 100% of the

Table 1

Ten most frequently used words in each of three waterfowl hunting videos

Duckmen™ 15: Fire in the Hole	Fallin' Skies™ 7	Band Hunters™ III: The Perfect Storm
Kill	Kill	Ducks
Yeah	Man	"Inaudible"
"Inaudible"	Back	Shoot
Duck	Awesome	Yeah
Back	Hunt	Geese
Killed	Geese	Hunt
Big	Boys	Time
Boys	Day	Field
Ducks	Guys	Um
Teal	Folks	Day

Table 2

Descriptive analysis of three waterfowl hunting videos

	Duckmen™ 15: Fire in the Hole	Fallin' Skies™ 7	Band Hunters™ III: The Perfect Storm
% of video depicting shooting scenes	4.6	3.8	2.9
Mean length of shooting scene (seconds)	1.5	1.8	2.0
Words spoken per minute	81	113	90

Table 3

Differences in shots per scene and birds harvested per scene, by video

	Shots/Scene ¹			Harvest/Scene ²			
	1-3	4-10	>10	0	1-3	4-10	>10
Duckmen™ 15: Fire in the Hole	67%	22%	12%	1%	81%	17%	2%
Fallin' Skies™ 7	45	46	8	2	93	5	0
Band Hunters™ III: The Perfect Storm	45	40	15	6	80	15	0

¹($\chi^2 = 22.46, p < .001, V = .17$)²($\chi^2 = 23.02, p < .01, V = .17$)

hunting scenes, whereas in Band Hunters™, hunters were observed hunting ducks in 75% of the hunting scenes, and in Fallin' Skies™, hunters hunting ducks comprised 50% of the hunting scenes. Hunters harvested 15 banded birds in Fallin' Skies™, 2 banded birds in Band Hunters™, and 1 banded bird in Duckmen™.

Discussion

Results of this article suggest that very little time is devoted to shooting in waterfowl hunting videos (<5% of the movie), but when it does occur, the majority of the time there are 1–3 shots per scene and 1–3 birds harvested per scene. Rarely do producers show footage of hunters not harvesting waterfowl when they shoot. Does this harvest/shot ratio depict a realistic hunting scene? By comparison, during the 2011–12 duck seasons in Illinois duck hunters harvested an average of .7 ducks/day, and 15% of hunters harvested no ducks for the entire 60-day duck season (Alessi et al., 2012). These harvest figures are in contrast to the videos, wherein hunters harvested at least 1 duck/goose $\geq 94\%$ of the time among all three movies. The high probability of success conveyed in the hunting videos is not a realistic representation of success in waterfowl hunting, and whether naïve and/or impressionable hunters are influenced by this false sense of success is currently unknown.

Based on findings reported in the communication literature, media have been known to have both negative (Frey, Benesch, & Stutzer, 2007; Strasburger, 2004) and positive effects (Mares & Woodard, 2005) on viewers. For example, meta-analytic evidence indicates that exposure to sexually explicit material is associated with sexual attitudes and behaviors (Allen, D'Alessio, & Brezgel, 1995; Allen, Emmers, Gebhardt, & Giery, 1995). Additionally, exposure to certain media can have a desensitizing effect; exposure to video game violence is associated with lower empathy and stronger pro-violence attitudes (Funk, Bechtoldt-Baldacci, Pasold, & Baumgardner, 2004). Conversely, Mares and Woodard (2005) demonstrated that children who watched pro-social content in experimental settings behaved significantly more positive or held more positive attitudes than others. Are waterfowl hunting videos influencing hunters? The word spoken most often in *Duckmen*TM and *Fallin' Skies*TM was “Kill.” We attribute this to both *Duckmen*TM and *Fallin' Skies*TM having a higher proportion of time spent shooting than *Band Hunters*TM. Waterfowl hunters use key identifiers when preparing to harvest birds; for example, “kill ‘em (them),” “take ‘em (them),” and “shoot ‘em (them).” We hypothesize that the repetitive nature of these words in the video may have an effect on viewers, mainly young hunters who are beginning to hunt. For example, a new waterfowl hunter could be influenced to repeat what they hear in the videos. In the case of waterfowl hunting videos, viewer demographics are currently unknown, along with whether video watching influences hunters' expectations and subsequent satisfaction (higher expectations, lower satisfaction of video-watchers), ethics development, and hunter identity. Potential effects of viewing waterfowl hunting videos in forming expectations, evaluating satisfaction, and developing hunter ethics is of primary concern. Anecdotal information suggests that older hunters “blame” hunting videos for changes in ethics of young hunters (e.g., increase in crippling rates of waterfowl and skybusting; see Kuentzel, 1994). Whether this relationship actually exists and is influenced by waterfowl hunting videos has yet to be determined. If media viewing influences expectations, we predict that hunters who view hunting videos frequently will have higher expectations of their upcoming total duck harvest than hunters who either do not watch or watch hunting DVDs less frequently.

Past research has indicated that waterfowl hunters prefer certain types of ducks in their daily harvest (Gilmer, Hicks, Fleskes, & Connelly, 1989; St. James, 2011). Preference for bag type (i.e., species and/or sex of animals harvested) has also been identified in ungulate hunters, and can have negative evolutionary consequences (i.e., trophy hunting, Coltman et al., 2003). In 2009–2010, the duck species harvested most often in the United States was the mallard (*Anas platyrhynchos*), and the goose species was Canada goose (*Branta*

canadensis; Raftovich et al., 2011). An empirical question is: Do videos influence hunter preferences for a specific species and/or sex of waterfowl harvested?

Waterfowl biologists attach leg bands on ducks and geese to determine and monitor survival, migratory routes, and annual harvest rates. Hunters, upon harvesting a banded duck or goose, are able to voluntarily report the band number to the U.S. Fish and Wildlife Service. Some waterfowl hunters will display their bands around their neck while hunting and we hypothesize that hunters, primarily younger hunters who watch videos frequently, perceive a hunter with many bands as more advanced than those with fewer or no bands. In the three waterfowl hunting videos analyzed, each video had at least one scene where a hunter harvested a band, and in a single hunt, hunters harvested 13 individual geese with leg bands. Statistical probability of harvesting banded waterfowl is very low, assuming harvest of a banded bird is random. For example, mallard abundance was estimated at 9.2 million birds for the 2011 waterfowl season (U.S. Fish and Wildlife Service, 2011). Covering the same geographical distribution, 15,605 (0.2%) mallards were banded in 2011 (U.S. Fish and Wildlife Service, 2012). Given the proportion of banded to non-banded mallards, odds of harvesting a banded bird are quite low—contrary to what was depicted in the videos. Another aspect of the importance of leg bands is found in anecdotal information that suggests younger hunters are more likely to wear bands around their neck. Because of this perception of a banded bird being a trophy bird, future research should be directed at determining whether video-watching influences bag preference, specifically preference for a banded bird. The inability to achieve preferences may impact satisfaction, and therefore impact wildlife agencies. Hunters may complain because they prefer to harvest mallards, and are unable to harvest an appreciable amount of mallards, but younger, video-watching hunters may have a different bag preference (e.g., banded birds). This hypothetical shift in bag preference could affect how agencies engage with waterfowl hunters in the future.

Lastly, we advocate incorporating effects of media in future human dimensions studies of hunters—especially youth hunters—whenever possible, as media have been known to have a significant impact on many psychological processes (Strasburger, 2004). Similarly, viewing behaviors may be a product of hunter specialization. Incorporating media into future surveys may prove to be of importance as we continue to understand what role, if any, media may play in developing antecedents to attitudes and behaviors (Fulton, Manfredo, & Lipscomb, 1996).

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