Fanning the Flames? Media Coverage during Wildfire Events and its Relation to Broader Societal Understandings of the Hazard

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Abstract

News media are an important source of information that the public uses to collectively define and respond to wildfire. Yet research on this topic rarely examines the mechanisms behind continued messages of fire exclusion, despite prevailing scientific notions of wildfire as an inevitable and vital ecological process that residents should learn to live with. This study analyzes newspaper coverage during wildfire events in two Western U.S. States and compares emergent themes with existing fire social science literature. We use discourse analysis and the concept of framing to demonstrate how newspaper coverage of wildfire events both draws from broader social contexts and continues to perpetuate notions of fire exclusion. This is accomplished by focusing coverage on the threat to private property and in treating public lands as a "non-property." Similarly, resident support or criticism of firefighting efforts is presented as contingent on the protection of private property.

Keywords: *wildfire, news media, discourse analysis*

Introduction

Research from a number of fields has demonstrated how the news media influence broader public perception and response to hazard events such as wildfire (Eisensee and Strongberg 2007; Freudenburg et al. 1996). Often this is accomplished through the selection and presentation of what news makers consider the most prominent information about an issue, providing media consumers one of the many sources of narrative they draw from to discuss and collectively make sense of hazard events (Tierney et al. 2006). Others have noted that media presentations provide consumers with central organizing ideas, thus helping them interpret, define and respond to problems in their interactions with others (Miles and Morse 2007).

Unfortunately, research on the mass media as an important component of public understanding/response to wildfire is not as well understood or documented when compared to other hazards. The majority of research on this topic has often focused narrowly on media presentation and/or public conception of particular fire management issues. These include prescribed burning (Shindler et al. 2009; Jacobson et al. 2001) or policy initiatives intended to reduce wildfire risk among residents living in areas proximate to wildland vegetation (the Wildland Urban Interface) (Davis 2006; Johnson et al. 2009).

Most fire professionals and scholars acknowledge the media as an influential force in the way the public understands and responds to wildfire events (Carroll and Cohn 2007; Pyne 1997). They also acknowledge that significantly more media coverage of wildfire and other hazards occurs during and focuses on times of immediate risk rather than the systematic causes or longer-term aftermath of an event (Johnson et al 2006; Mercer and Prisbrey 2003). Media is portrayed a vehicle to communicate fire risk information to the public, however this information is most influential during or immediately following a specific wildfire event (McCaffrey 2004; Toman et al. 2006). Media narratives of wildfire rarely

extend beyond claims that the media promote old conceptions of wildfire as the "enemy" of human settlement and the environment. In natural resource professional circles these notions have largely given way to the conception of naturally-occurring fire as a vital ecological process that can reduce the risk of catastrophic (unnaturally intense) fires and provide other ecosystem benefits (Paveglio et al. 2009; Pyne 1997). Coincidently, as urban sprawl has extended farther into fire-prone environments and flammable fuels have built up in such environments, wildland firefighting (particularly that to protect human settlements) has come under increased scrutiny from residents (Thackaberry 2004).

Less explored are the themes or underlying assumptions in media texts that continue to reflect and promote the old notions of fire exclusion as the best way to protect both wildland resources and human settlements. This is especially important because populations at risk for wildfire fire are increasingly encouraged to take responsibility for their own residential fire protections (i.e. brush thinning, employing fire resistant construction standards) and/or collaborating with natural resource and fire professionals.

Our research will provide insight on the preceding issues by analyzing newspaper coverage during significant fire events in California and Washington State. We have chosen to focus on coverage *during* specific wildfire events for two reasons: (1) This is when most media coverage of wildfire occurs; and (2) Because fire social science literature indicates that primary or secondary (i.e. media) experience during specific wildfire events is a significant factor in public understanding of wildfire (Daniel et al 2007; Martin et al 2008). We use both discourse analysis and the concept of framing in an effort to better explain how media presentations are embedded in and drawn from larger economic, social, cultural and political contexts (Fairclough 2003; Foucault 1972). This perspective allows us to discuss presentations made by the media and relate them existing social science research on public perceptions wildfire (Martin et al. 2008; Daniel et al. 2007). The intended result is a more nuanced discussion than is currently found in the literature concerning how media presentations reflect or are influenced by broader public discourse around wildfire.

The remainder of this paper is organized as follows. First, we will review relevant literature related to discourse analysis and the concept of framing. This will be followed by a short history of fire social science and the interaction between the public and firefighting professionals during hazard events. Next, we will present the emergent themes that were evident in newspaper discourse during the Columbia Complex Fire in Washington State and the Day Fire in California, including the interaction between the local public and fire professionals. Finally, we will revisit our discussion of discourse analysis and framing in an effort to situate media discourse about fire events in broader social, cultural, political, or economic contexts.

Literature Review

Discourse analysis and framing

There are many different definitions of discourse and its impacts on social life. Discourse is most commonly understood as the patterns of spoken or written language social actors use to communicate with each other (Fairclough 2003; Foucault 1972). Yet such "texts" are only one small portion of a very complex relationship between language, communication and the social world (Gee 1999). For one, all action (including language) is situated within particular social and historical contexts (Jorgensen and Phillips 2002; Hajer 1995). Rooted in social construction theory, discourse analysis treats explicit communication (including actions, language and written text) as the mechanisms humans use to create and renegotiate shared mental models of the world around them (Tischer et al. 2002). The goal of discourse analysis is to understand how and why language use, in our case newspaper discourse, contributes to individual and collective meanings of an issue such as wildfire (Tischer et al. 2002; Van Dijk 1997).

Discourse surrounding virtually any issue is often marked by competing efforts to define or "frame" a particular issue (Sonnett et al. 2006; Gamson and Modligliani 1989; Goffman 1974). Researchers from multiple literatures have demonstrated that how and by whom topics are framed greatly influence how the public acts toward a particular issue (Davis 2006; Entman 2004; Bell 1994). For instance Kahnenan and Tversky (2000) contend that social actors rarely make perfectly informed or rational decisions in regards to risks. Instead the variable presentation of information by media outlets can become very important influences people use when deciding whether or how to perform risk-averse behaviors.

Framing has become among the most popular approaches to understanding mass media effects (Van Gorp 2007). These studies often explore how the words, images or phrases media producers use to present unfolding events communicate different messages and meanings to an audience (Chong and Druckman 2007; Gamson and Modigliani 1989). According to Entman (1993): "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation" (p. 52).

A number of factors lead the media to frame issues in a particular way, including source or quote selection, reporter

bias, organizational routines and the influence of special interests groups (Entman 2004; Scheufele 1999). However as Scheufele (2004; 1999) and others (Kinder 2007; Van Gorp 2007) have since pointed out, journalists themselves are not immune to frames. Existing public discourse and citizen action surrounding a given issue also influence the way reporters choose to construct and frame their stories. This is clearly important to our discussion of wildfire, as the fire exclusion paradigm long promoted by the media originated in public discourse during the early part of the 20th century (Pyne 1997).

We seek to avoid a narrow or deterministic view of media effects in this research (McLeod and Detenber 1999; Neuman et al. 1992). Rather, we see media discourse as one of many sources that social actors draw from in the creation of meaning or as the basis for action (Kinder 2007; Van Gorp 2007). This perspective fits well with the study of a "natural" process (i.e. wildfire) that operates in the "environment." Numerous scholars have recognized how competing meanings for such terms can greatly influence public perception, acceptance or conflict over resource management (Carrus et al 2009; Macnaughten et al 1992). Framing and discourse analysis are treated as complementary and related theories. Framing clearly provides a way to describe the power and communicative effect of media discourse. Meanwhile, discourse analysis allows us to better understand how media presentations reflect or contradict meanings created in other social contexts (Van Gorp 2007; Goffman 1981).

Researchers who have used this approach to explain human experience with hazards, the environment or other social phenomenon (Sonnett et al. 2006; McLeod and Detenber 1999) focus more on the ways issues play out in what has been called the "public transcript" (Scott 1990). Others have demonstrated that the representation of environmental issues in public newspapers or other media (a form of transcript) provide particular insight into the ways these issues are discussed or understood in society (Norton 2008; Bell 1994).

Media discourse and wildfire

A relatively small body of literature has consistently shown that media discourse about wildfire or its management greatly influence public conception of the hazard. For instance, news media outlets framed the 1988 wildfires in Yellowstone National Park as destructive and detrimental, leading the public to believe that the destroyed a national treasure. The truth is that fire is a natural part of the Yellowstone ecosystem — in the long-term the 1988 fires provided enhanced wildlife habitat and restored ecosystem health (Smith 1992; Reid 1989). Jacobson et al. (2001) concluded that media reporting about the benefits of prescribed fire closely matched beliefs of the public. However, the public reported much more severe risks to wildlife and neighboring property from the practice. Johnson et al (2006) demonstrated how the vast majority of media coverage focuses predominantly on specific firefighting efforts rather than the measures homeowners can take to reduce possible damage from future fires. Davis' (2006) and Johnson et al.'s (2009) research on media coverage of national fire policy reveals that increased media attention, presentation and criticism are a major influence on public attitudes and policy shifts at the national level.

The above studies and others (Shindler et al. 2009; Toman et al. 2006) provide compelling evidence that the media is a frequent source of public information about wildfire. McCaffery (2004) found that newspapers or magazine articles were cited most frequently as a source of information the public uses to learn about various aspects of fire management. Seijo (2009) draws clear parallels between media, American Forestry and its impact on the fire suppression policies that have led to increased fire risk in Spain while Mercer and Prisbrey (2004) demonstrate how local newspaper coverage promoted trust and confidence in local fire fighting authorities. Cox et al. (2006) used critical discourse analysis to show how media coverage ignored the devastating impact to poor, underprivileged publics following a fire event by focusing on recovery efforts of populations with more resources. Finally, Whittaker and Mercer (2004) used discourse analysis to analyze media and public debate over fire policy following the Victorian Bushfires of 2003.

What seems missing from the above research is focused analysis of the underlying assumptions or themes that guide broader representations of wildfire in the media, including media coverage during and immediately after such events. Also missing is the linkage of such discourses to the broader sociological understandings that characterize the field of fire social science. Uncovering these "taken for granted assumptions" in text and linking them to broader social, political or cultural context is something that both discourse analysis and frame analysis attempt to achieve.

Broader fire social science literature

A diverse and growing body of fire social science can add to the discussion of wildfire events in the "public transcript." We wish to focus on two aspects of fire social science in this paper because they are most relevant to our discussion: (1) Efforts to change public perceptions/actions surrounding wildfire events and (2) The conflict or cohesion between local publics and fire professionals during and after wildfire events.

Resource managers recognized the need to change public perceptions of wildfire in the 1970's. By this time the negative consequences of fire exclusion policies had become increasingly obvious (Cortner et al. 1990), including the in-

creased intensity and prevalence of wildfire in Western ecosystems dependent on periodic burns (Arno and Allison-Bunnell 2002).

A number of factors contribute to the ways the public perceives or acts toward the reality of wildfire risk. Some of these include the fear of escaped fires, suppression costs, and the adverse effects wildfire events may have on recreational opportunities or area aesthetics (Shindler 2007; Bowker et al. 2009). Other studies show trust in firefighting professionals, proximity to homes (McCaffrey 2008; Winter et al. 2002), or the size and origin of the fire also play a role in people's views (Kneeshaw et al. 2004). Central to these and other notions, though rarely discussed explicitly, is fact that wildfire is a significant threat to property (both structures and land). Because eliminating fire reduces the chances of such destruction in the short term, many residents remain convinced that excluding fire is the best way to protect their investments and possessions (Daniel 2007; Cohn et al. 2008).

Other research demonstrates that property concerns play a central (though not explicitly recognized) role in the relationship between effected publics and fire professionals during significant wildfire events (Loomis et al. 2001; Carroll et al. 2005). Early disaster scholars (Quarantelli and Dynes 1976; Erikson 1976) claimed that so-called "natural disasters" more commonly brought community members together in a support network dubbed the "therapeutic community," while human-caused "technological disasters" often led to community conflict ("corrosive community").

It has become increasingly clear that wildfire events can lead to both conflict and cohesion among residents and outside firefighting agents (Carroll and Cohn 2007; Cohn et al. 2008). For instance, a study of the Rodeo-Chediski fire in Arizona indicates that wildfire can create support among local residents and conflict with fire professionals from outside of the community (Carroll, et. al. 2005). A re-study of the same communities five years later found elements of both long-term cohesion and conflict created during the event had become an integral part of the local culture and the basis by which residents would act in future wildfire situations (Carroll et al. in press). Others demonstrate how hazard events can amplify pre-existing social conflicts, including cultural and class disparities (Tierney et al. 2006).

Conflict during wildfire events often stems from residents' perception that standardized systems of government response (e.g., Incident Command System) fail to meet their expectations for management. This includes the protection of property or allowing residents to return to their homes quickly after evacuation (Kumagai et al. 2006; Carroll et al. 2006). Such conflict can also arise when residents have unrealistic expectations for firefighting protections, and some scholars have shown how such pressures have led to the failure of safety practices surrounding wildland firefighting (Thackaberry 2004; Weick 1993). Conversely, there is evidence that allowing for resident (particularly local firefighters) input or aid in the firefighting process, providing residents with regular information about fire progression and a (sometimes implicit) focus on private property concerns can lead to cohesion during and after fire events (Sturtevant and Jakes 2008; Carroll et al. 2006; Taylor et al. 2007).

How do media representations reflect or influence broader "discourses" of wildland firefighting and management? Our intent in this research is to uncover the drivers behind media presentation of wildfire events and begin to link them with the trends documented in other social realms.

Methods

Data collection

This study analyzes news coverage of two fires that took place in the late summer of 2006: The Columbia Complex Fire in southeast Washington State and the Day Fire in southern California. Two fire events were chosen in an attempt to capture media discourse from different regions of the Western U.S during the same time period. We gathered articles from any regional and local newspapers covering each event to capture a broad representation of text and media discourse. Articles were gathered using key-word searches in Lexis-Nexis and additional collection of articles about each fire in newspaper archives. Search terms for the Lexis-Nexus searches were the name of each wildfire event (Day Fire) and (Columbia Complex Fire).

Newspapers selected for analysis during the Columbia Complex Fire included The Tri-City Herald, a 55,000-circulation daily covering the south central area of Washington's Columbia Basin; the Walla-Walla Union Tribune, a 14,000- circulation daily covering southeast Washington; the Lewiston Morning Tribune, a 26,000-circulation daily covering the southeast corner of Washington and parts of Idaho; and the Spokesman Review, a 110,000-circulation daily covering most of eastern Washington. Newspapers selected for analysis during the Day Fire include the San Francisco Chronicle, a 512,129 circulation daily covering central California; The Los Angeles Times, a 851,832-circulation daily; the Daily News of Los Angeles, a 178,207-circulation daily; The Modesto Bee, a 85,725-circulation daily; City News Service, the nation's largest regional news service which serves Southern California; and The San Gabriel Valley Newspapers (Pasadena Star News, Dan Gabriel Valley Tribune) with a circulation of 110,000. Relevant data include all newspaper articles, editorials and letters to the editor that occurred after initial mention of each fire event. Coverage ranged from Aug. 22 through mid-October when crews contained most of the fires and cov-

erage decreased significantly. Data collection was halted three weeks after no new coverage of the fire events could be found. Our search resulted in 89 articles covering the Columbia Complex Fires and 75 articles covering the Day Fire. These articles served as the basis for our analysis.

Background

The Columbia Complex Fire began after lightning struck Umatilla National Forest land on August 21, 2006. It quickly spread to private lands near the community of Dayton in southeastern Washington. At one point the Columbia Complex Fire was the number one fire concern in the nation, and included all three levels of incident command personnel outlined in the bureaucratic response to disaster situations. Crews fought the fire for more than a month until they contained it in early October. It burned roughly 110,000 acres of private and public land including National Forest, wheat fields and grasslands. During the initial growth of the fire, crews ordered the evacuation of nearly 350 homes in the area, closed off area highways, and restricted access to a large portion of the Umatilla National Forest, including the Wenaha-Tuccannon Wilderness area. Approximately 30 structures were damaged during the event, including permanent residences, vacation cabins and outbuildings such as barns. No deaths or injuries occurred as a result of the fire. The Columbia Complex Fire cost $35 million to suppress.

The Day Fire began Labor Day (Sep. 4), 2006 after a trash fire grew out of control. It burned more than 162,702 acres, mostly in the Los Padres National Forest, and about 4,800 firefighting personnel helped contain the fire over the course of a month. This included all three levels of incident command personnel outlined in the bureaucratic response to disaster situations. The Day Fire forced the closure of significant portions of Los Padres National Forest and at one point threatened to close down the primary national highway that serves the West Coast. The fire burned 11 structures, caused 18 injuries and resulted in no deaths. The Day Fire cost more than $100 million to suppress.

Data analysis

Discourse analysis of newspaper content dictates an interpretive, contextual and constructivist approach to analysis that delves into the meanings of text rather than simply quantifying textual features. A number of scholars suggest the constant comparison method (sometimes defined as analytic induction) as a form of qualitative framing analysis or as a means of uncovering broader discursive themes at the text or societal level. This inductive method of allowing themes to emerge from the data is among the most recognized and robust procedures for qualitative analysis (Titscher et al. 2002; Van Dijk 1997).

A number of discourse analysts also have stressed that the elements missing from text can be just as telling as those that were included. These "textural silences" are also important to meaning creation in that their omission does not provide social actors all the information possible on an issue (Huckin 2002; Tischer et al. 2002). For this reason our analysis also included constant comparison of emergent themes to dominant social science findings about wildfire.

We used a variant of the constant comparison method described by Charmaz (2000) and Strauss and Corbin (1990) to analyze data in this study. This approach is primarily concerned with providing data-driven explanations or "themes" of phenomena and is well suited to uncover underlying or "taken for granted" themes that are central to news discourse about fire by allowing them to "emerge" from successive rounds categorization. In this case the collection and management of themes was aided using the Atlas-Ti program for qualitative data.

The primary and secondary author began the analysis process by making notes on each newspaper article and using them to situate portions of the dialogue into broader categories of communicated meaning (often referred to as open coding) (Strauss and Corbin 1990). Comparison and refinement of the categories developed by the primary and secondary author were conducted to provide reliability for emergent meanings (frames). Aggregation of these categories into "themes" of meaning follows the "selective" or "focused" coding strategies outlined by Charmaz (2000). Once initial themes were developed, they were considered as an explanation for the meanings of news discourse observed in successive news articles, a process referred to in the literature as progressive falsification (Strauss and Corbin 1990). Those themes that were not consistent with the meaning uncovered in successive articles were documented through memos and discussed with the other authors in an effort to refine understandings of newspaper framing. Finally, representative quotations of the remaining themes were gathered from all available articles and reduced to only the best examples by creating a series of increasingly restrictive documents listing representative discourse.

After emergent themes had been compared to the data sample multiple times, the authors discussed how they relate to broader sociological understandings surrounding wildfire, including their comparison to existing research on the topic. The intent here was to situate these themes within broader social, political, cultural or economic context and uncover "textual silences" in media coverage by documenting scientific meanings that were not communicated in media representation. This constitutes a second round of progressive falsification, as outlined above.

Results

We found that issues of private property emerged as the most significant drivers behind frames of fire suppression or conflict and cohesion between local publics and external fire professionals. In the following section, we will examine how these dynamics of property play out in media discourse using three primary themes: (1) *Public lands as non-property* (2) *property as a site of cohesion*; and (3) Property as a site of conflict.

Public lands as a non-property

Newspaper coverage and reported discourse suggest a significant difference in conceptualization of public and private land during these two events. This includes both the impacts of the fires on each type of property and the necessity for suppression. Articles most often discussed the threat or damage each fire presented to private property prominently in the story when it was present, placing less importance on damage or threat to public land managed by the U.S. Forest Service. In the Day Fire, the size or severity of the blaze burning on public land was most often used as a vehicle to showcase the threat fire could have for human settlements. Both of these messages were linked to an underlying message of quick fire suppression. For instance, the following is an example of a common news lead during the Day Fire: "Several days of calm weather were expected to end early today, and east winds forecast at 35 to 45 mph could send the Day fire's western edge closer to Ojai, Santa Paula and Fillmore" (Saillant 2006a). Nearly all the papers covering the Day Fire event increased their coverage and focused on efforts to protect homes when the fire began pushing in the direction of human settlements.

Media focus on the impact to private property owners during the Columbia Complex Fire resulted in omission of explicit fire impacts to National Forest land. Reported impacts often focused on structures, agricultural crops and livestock: "So far, the blaze has destroyed one home and one cabin, as well as several outbuildings, acres of wheat and has killed numerous cattle" (Hopkin 2006b). As one fire official on the Columbia Complex Fire said, "Now that it's in the wilderness, and the west edge is colder and blacker, people think the fire is out," (as cited in Ferguson 2006).

Discourse reported in the newspapers covering each fire also centered on structures and private lands damaged during the fires. Very seldom did they highlight public property impacts. As one fire manager commented during the Day Fire, "One of the good things is that it (the fire) happened in the backcountry, so there's some distance to absorb these flows and take care of some of the debris" (as cited in Biasotti 2006). Similarly, reporters from the Daily News of Los Angeles summarized the Day Fire this way: "The fire, still far enough from civilization, has had impacts much farther away." (Dobuzinskis & Farrell 2006).

Accordingly, newspapers focus on firefighting efforts centered primarily on keeping the fire from eventually affecting private property (specifically structures) and calling for quick suppression once threat to such property became an issue. For instance a reporter covering the Columbia Complex Fire summarized: "Crews worked to protect structures when the fire crossed the North Touchet River Road about 14 miles southeast of Dayton, fire officials said. No new damage to residences or buildings were reported this morning" (Porter 2006a). Fire officials' reported efforts to protect private property such as ski resorts, private cabins or fire lookouts on National Forest Land were also frequent mentions in articles about both fires.

Thus, our analysis suggests that fire on public land was reported to be far less of an issue because it did not threaten privately held property, nor was there much focus on fire as a natural part of the local ecosystem. Instead, fire was treated as something to "fight" so that it did not impact private property. As one reporter summarized, "Even the Day Fire, the season's biggest, burned mostly brush and light timber" (Martin 2006).

Recognizing that newspapers and quoted discourse (from both citizens and firefighting professionals) emphasized private property as a larger focus in the mitigation of these fire events, we intend to explore how these dynamics bear upon conflict and cohesion between locals and external fire fighting professionals.

Property as a site of cohesion

When fire fighting professionals and local residents came together during the Columbia Complex and Day Fires, reports from both fires suggest that each group seemed to expect the other to adopt or recognize their values and roles. For residents this included a focus on their concerns for private property, including livelihood and emotional ties. For instance, this passage framed firefighters' efforts to protect homes above all else:

> *Firefighters from other agencies considered the smattering of houses near Lockwood Valley Road too hard to defend against the Day fire. It looked like the blaze was going to chew up the houses and leave nothing but charred remains just as it had done to the 162,702 acres in Los Padres National Forest. However, Ventura County Fire Department firefighters were not ready to give up. "We're not going to back down to structures that are in our own county," said firefighter Matt Falat. "We are not going to lose."* (Navarro 2006)

A parallel sentiment was attributed to the fire information officer for the Columbia Complex Fire, who was quoted as saying "One home is too many and we don't like to lose any of them," (as cited in Porter 2006b).

At the same time, newspaper articles from both fires reported that residents were appreciative of firefighters' efforts to protect their property. As a resident reflected after the Day fire passed: "The strike team stayed with us. . . Fire commanders 'told them to leave but they never left'" (as quoted in Saillant 2006b). Similarly, resident Betty Turner was quoted as saying after the Columbia Complex Fire, "The wonderful firemen had our pictures out on the lawn in a garbage can," ... The firefighters had gathered the Turners' pictures off the walls. When the Turners arrived they helped them gather important papers, and items they didn't want to lose" (as cited in Chicken 2006a).

In the end, newspapers covering both fires reported that suppression efforts were a success and that the local community was supportive of their efforts. This conclusion was reached in the Day Fire because, as reporters summarized, after four weeks there were "no injuries or significant losses" (Aidem 2006), and that "damage to property was relatively light" (Martin 2006). A number of papers ran editorials praising firefighting efforts including a passage similar to this one: "Efforts to keep the fire from jumping into populated areas were very successful, with just one home and a handful of outbuildings destroyed...All sights firefighters have once again earned this community's confidence and gratitude (Ventura Country Star 2006)."

Similarly, one newspaper covering the Columbia Complex Fire presented the success of fire suppression efforts in the following way: "Firefighters have managed to save all but one permanent residence — the home of Lester and Jana Eaton, a historic, three-level home on Crall Hollow. In comparison, last year's School Fire destroyed more than 300 homes, cabins and outbuildings" (Hopkin 2006c).

Firefighters' acknowledgement of private property was not limited to the actual performance of protecting property while suppressing the fire; in the Columbia Complex Fire such attendance also included an explicit acknowledgment of property concerns in information sessions. As Chicken (2006b) reported about outreach efforts during the Columbia Complex Fire, "most of the more than 200 people at the meeting seemed satisfied with information provided and the opportunity to meet with fire officials."

The added benefit from this attendance to property concerns on the part of agency personnel was that local residents seemed more apt to adopt the agency view on fire issues. This presentation was evident in this quote from the Columbia Complex Fire:

> *"[resident name] [coming to] appreciate the firefighters, who have checked on him regularly. And he realizes the fire managers have a 'strategy that is thought out. It is not emotional like it is for people like us that have property. They see the bigger decisions that have to be made'"* (as cited in Chicken 2006c).

Thus articles from a variety of newspapers covering both fires seemed to suggest that agency willingness to protect private property first and to communicate about property concerns builds mutual trust and understanding between local populations and external actors (i.e. firefighting personnel, public safety officials).

Property as a site of conflict

The bulk of newspaper reports from both fires indicated the predominance of cohesion among the local public and firefighting professionals. However, some concerns and conflict about firefighting management also emerged during the Columbia Complex Fire. This conflict between agency personnel and local populations was reported as the latter's lack of confidence in the former to adequately protect private property. As one resident was quoted during a meeting with officials during the Columbia Complex Fire, "Why didn't you attack the fire at the beginning?" (as cited in Chicken 2006b). Reported opposition arose as agency management limited residents' access to protect their property. The president of the Columbia County Cattleman's Association was quoted as saying "ranchers aren't being allowed reasonable access to get their cows out of danger either. This is our livelihood" (as cited in Hopkin 2006a).

Another example of firefighting efforts falling short of residents' expectations during the Columbia Complex Fire was one frustrated resident quoted as saying, "I'm out there (bull)dozing, we lose our power, so I can't pump water, they won't let my water truck past the roadblock, and those guys (firefighters) are sitting on their butts" (as cited in Hopkin 2006d). More often than not, such frustration arose because, as one reporter summarized, locals thought that "the response to the fire wasn't aggressive enough and complaining that in many cases, homeowners weren't allowed to get to their homes to try and save them" (Hopkin, 2006d).

Discussion

Our results demonstrate that concerns about private property protection and the treatment of public lands as a "non-property" are important underlying themes (or frames) in continued media discourse during wildfire events. More specifically, they contribute to the framing of wildfire as a

harmful event which needs to be suppressed or excluded. What remains unclear is whether the media is merely reflecting broader discourses about wildfire or influencing public opinions through their framing. By comparing the above results with existing social science research on fire, we will suggest that these elements are mutually reinforcing — that is, the media not only draw from existing public discourse in producing their news stories, but they also perpetuate outdated ideas of fire exclusion through the promotion of private property as the primary concern during fire events. This recognition extends research on wildfire by *explicitly* demonstrating how certain media coverage can be a barrier to expanded notions of fire as event human populations must learn to live with.

Comparison of our results to fire social science literature reveals that many of the underlying conceptions in media presentation match with positions uncovered in studies of the broader public. For instance, fear that wildfires will impact private property, including the adverse effects fire could have on property aesthetics, are frequently mentioned by residents in studies of wildfire perceptions and in the media discourse analyzed as part of this study. Other examples include resident and media focus on the proximity of the fire to homes, fire size and origin (McCaffrey 2008; Toman et al. 2006; Winter et al. 2002).

Similarly, our results suggest that media discourse uses property as a focal point in the presentation of wildfire as something we need to "fight" and suppress. These links are not explicitly stated in much of wildfire research and as we will discuss below, deserve additional attention in understanding or changing perceptions of wildfire among certain sections of the public. An argument for wildfire suppression is especially true when wildfire threatens human settlement or property. In this respect the media continues to be one of many sources the public draw from in replicating the old notions of fire exclusion. While we cannot be certain how influential media discourse is on public resistance to fire as a natural event, previous work shows that newspapers are an influential source of information about wildfire (McCaffrey 2004; Shindler et al. 2009). For this reason, additional studies should evaluate attitudes toward fire by using media usage as an independent variable.

The dynamics of conflict or cohesion we uncovered in this study are remarkably similar to broader discourses on the subject. Cohesion was presented as occurring when firefighters recognized (whether explicit or not) that private property was of utmost concern and/or took the time to share information with the public (Sturtevant and Jakes 2008; Carroll et al. 2006). Any conflict during the Columbia Complex Fire was presented as occurring when outside agents (e.g. Incident command teams) did not meet residents' expectations that private property should be protected at all costs. It also occurred when professionals failed to keep the fire from placing private property at risk. Similar conclusions have been clearly articulated in sociological studies of fire events and thus proven in broader discourses (Kumagai et al. 2006; Cohn et al. 2008).

Coverage surrounding the Columbia Complex or Day Fires rarely mentioned the additional risk residents put themselves in by choosing to live in the WUI, nor did they make much mention of the protective actions residents could have undertaken to reduce the chance that their property would be damaged by the fire. These omissions do not reflect broader discourse about wildfire. For one, efforts to educate the public (and particularly WUI residents) about the importance of fire in local ecosystems or how to protect themselves from wildfire damage continue to be promoted by a number of federal and local agencies. These messages are a vital part of broader discourse about fire, as evidenced by the creation of national and local policies designed to reduce wildfire risk (Davis 2006; Paveglio et al. 2009.)

We feel the above omissions are best explained by media producers' need to draw from the dominant discourses (or frames) of their readership. In this case, it would be insensitive for coverage during or immediately following a wildfire event to point out how apathy or misunderstanding of fire processes could have increased fire risk. Yet is precisely during this time that media and professionals have the best opportunity to motivate action (Daniel et al 2007; Johnson et al 2006). While the causes of this increased fire risk are actually quite complex and include both biophysical and anthropogenic factors, residents are often portrayed as victims of a "natural process" that is inherent in their locality. Threat to private property is focused upon for a similar reason: Americans have become increasingly intertwined with their physical setting and the power ownership imparts (Carruthers and Ariovich, 2004). Assuming that the U.S. government would not do everything possible to protect private property from wildfires, despite the level of personal responsibility (or irresponsibility) in that process seems contradictory to public expectation. The great irony of this logic has been pointed out by those who question why agencies such as the U.S. Forest Service spend much of an estimated annual $1.5 billion fire suppression budget protecting private landowners when it is not within their agency mandate (NIFC 2009; USDA 2006).

Conclusion and Recommendations

We feel that this research can provide important insights for both media producers and fire managers. For one, it recognizes the need for increased scrutiny surrounding the way the media report on wildfire events. Nor is this scrutiny re-

stricted to newspapers, as the standards for media reporting across all mediums (Internet, television, and radio) share common frame-building properties (Entman 2004). Changing the presentation of wildfire events in the media means encouraging journalists to focus at least some of their discourse during wildfire events on the role of personal responsibility among populations who *choose* to live in fire-prone areas. It also means providing context about wildfire risk, including the development patterns that are placing residents at risk for wildfire. By this we do not mean to suggest that the media should stop writing about the possible or actual impacts of a wildfire on private property, but they should strive to present the multi-dimensional reality of that wildfire risk. While such coverage can and should occur well before and long after a wildfire threatens, it is especially critical during and immediately following a specific wildfire event as this is the time when at risk populations are most likely to regard and retain such messages (Johnson et al 2006; Daniel et al 2007).

The media should be educated to ask broader questions regarding wildfire, not just those that seem immediately relevant. For instance, reporters could ask fire managers about the measures homeowners have taken to reduce their risk ahead of the fire and how they aided firefighting efforts. They could make an effort to set the context of wildfire risk by interspersing information about the expansion of human settlement near fire-prone lands and the increasing difficulty of governmental response in such areas. Another contribution could be more thorough reporting on wildfire impacts to public lands, including possible benefits, economic losses and the severity of such events relative to "natural" fires. News reports could emphasize the cyclical nature of wildfire risk to the local ecosystem in tandem with discussion of damage residents' home and property. Such information could be conveyed within articles providing up-to-date information on damage (i.e. after updated risk and damage information is presented in early paragraphs). More likely is the production of additional articles (i.e. feature stories, sidebar stories) that run in tandem with or in support of traditional 'news.'

Accomplishing a shift in media "frame building" also means more input from scientific and professional communities. More specifically, these populations need to be more vocal about the somewhat one-dimensional nature of media reporting during or immediately following wildfire events. Incident commanders or public relations officers assigned to fire events can use their frequent quoting in the media to shift dialogue about fire. This could include focusing on the topics we mentioned above. Agencies could also provide information or workshops with media producers in an effort to foster collaborative partnerships that better reflect the "era of fire inclusion."

Whether presented as the valuable commodity that wildfire could destroy, the reason fire suppression is necessary, or the primary focus of relationships between the public and fire officials, notions of property need to take a central role in the understanding of fire events. This includes increased efforts to explore how notions of private property (including property rights) interact with messages of personal responsibility for wildfire protection. Although research addressing these topics does exist, they are rarely treated as primary component of wildfire perception and action as we have seen in this research.

Our findings also have additional practical and critical implications for fire managers. First, media framing of public lands as a non-property and the high likelihood that this perception is shared by the public is important. It implies that the public is apathetic about the management and stewardship of public lands such as National Forests. Apathy about public lands also could have negative implications for future fire management. For instance, WUI residents with a perception of public lands as a non-property would presumably be less likely to support the expenditure of federal funds on fuel-management strategies. Such disinvestment in efforts to reduce future wildfire risk is likely to ensure more coverage of wildfire damaging private property rather than preventing it.

On the other hand, fire managers would do well to use the concept of property as a means of connecting to local residents' interests. That is to say, fire managers could use the possible impact of wildfires on property as a means to motivate personal protective actions for fire. "Re-framing" public lands as a property we all share or as the source of catastrophic fires that could impact private property could also reverse the conception of public lands as a non-property. Research indicates that making fire risks tangible to residents through visual or data-driven scenarios is one possible way to achieve this (Toman et al. 2006).

Finally, face-to-face communication or dialogue between residents and fire professionals during or after fire situations can reduce possible conflict (Taylor et al. 2007). Increased communication between the local public and firefighting professionals would also allow residents time and space to articulate their stake in the planning process, thereby reducing residents' perceptions of uniform bureaucratic management that does not integrate their concerns. As shown in fire and other literatures, resident input has the capacity to improve firefighting efforts by utilizing local knowledge (Sturtevant and Jakes 2008; Carroll et al. 2006). Conversely, residents want fire professionals to couch additional communication about fire management techniques in terms of property concerns.

Endnote

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