



ANNUAL HAZARDS AND DISASTERS STUDENT PAPER COMPETITION

Natural Disasters and CNN: The importance of TV news coverage for provoking private donations for disaster relief

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The views, spelling, and grammatical errors expressed in the paper are those of the authors and not necessarily those of the Natural Hazards Center or the University of Colorado.

Introduction

Due in large part to the tendency for massive, graphic destruction, natural disasters around the world tend to receive a significant amount of attention from both the international media and the general public. In the aftermath of disasters such as the 2004 Indian Ocean Tsunami, Hurricane Katrina in 2005, and the 2005 Pakistan Earthquake, the international community is becoming increasingly aware of the natural hazards that threaten communities regardless of social, economic, or political status. Inherently, disasters necessitate more than just a localized response in order for a community to survive and recover. Especially in lesser developed nations and regions, those people directly affected by the catastrophic event often lack the capabilities to rebuild and continue to develop their communities on their own. These communities require the assistance of outside donors of all types—governments, non-governmental organizations (NGOs), and private donors—to even begin the recovery process. As the dominant economic and political superpower in contemporary international affairs, the United States and its citizens are constantly called upon to aid less fortunate groups.

As improvements in communications and travel continue the processes of globalization, the global media has emerged as a primary factor influencing public awareness of and focusing international attention on world events. Undoubtedly, visual evidence of destruction and suffering can be some of

the most compelling to potential donors with little other connection to the impacted community. As technology spreads around the world, more and more footage is available to news sources and more and more people have access to the footage being shown. Learning what priorities news sources set in selecting specific footage and learning how individuals respond to this footage are essential steps to comprehending the role of the international media in facilitating disaster aid.

This study analyzes the role of television news in prompting individual response to natural disasters through the use of a survey about student responses to the Indian Ocean Tsunami in 2004 and Hurricane Katrina and the Pakistan earthquake in 2005. The goal of this project is to suggest that there is a distinct correlative relationship between television news coverage and private response to major natural disasters in the form of relief aid. In doing so, this project will also specifically reaffirm the importance of media attention as an influential force in encouraging disaster aid and the dominance of television news among the various available media outlets for determining which international disasters are considered major. Further, the results of this study will suggest that the social and cultural affinity of a disaster-affected area to the United States is an important determinant of media attention and subsequently of the likelihood that Americans will open their hearts and their wallets to offer assistance.

Definition of a Disaster:

For researcher Jonathan Benthall, “the coverage of disasters by the press and the media is so selective and arbitrary that, in an important sense, they ‘create’ a disaster when they decide to recognize it” (11). While this view certainly reaffirms the significance of this project, it is important that a more traditional definition be clarified. According to the 2005 Hyogo Declaration by the United Nations World Conference on Disaster Reduction, disasters can be defined as “hazards [interacting] with physical, social, economic and environmental vulnerabilities” (---[Framework for Action](#) 1). Alternatively, the Center for Research on the Epidemiology of Disasters (CRED) defines a disaster as: “A situation or event which overwhelms local capacity, necessitating a request to the national or international level for external assistance, or is recognized as such by a multilateral agency or by at least two sources, such as national, regional, or international assistance groups and the media” and meets at least one of the following criteria: “10 or more people reported killed; 100 people or more reported affected; a declaration of a state of emergency; a call for international assistance” (Guha-Sapir 16). For as long as disaster studies has been an acknowledged as a distinct field of research, a universal definition of a disaster has been discussed and debated by students, scholars, and emergency managers (For examples, see Quarantelli, Alexander, or Fischer). It is clear that the actual term ‘disaster’ is multifaceted and open to a wide range of interpretations. For the purposes of this study, a disaster will be defined as an abrupt, devastating event caused by an external agent that can be recurring but rarely wholly avoided and requires relief from a variety of sources.

Literature Review

In 1986, a study was published by William C. Adams that attempted to test geographical bias in U.S. news coverage of international events. To do so, the author performed a regression analysis to compare the amount of U.S. television coverage of 35 major natural disasters from around the world with the number of deaths for each of those disasters. Natural disasters were selected as the test events because the fact that they strike and kill ordinary people gives them “some intrinsic degree of uniformity” (Adams 114). Overall, Adams’ data suggested that among the major disasters, the severity of a foreign disaster shows almost no relationship with the amount of TV coverage they receive. To explain this surprising conclusion, Adams

performed regression analyses on a number of other organizational and ideological factors compared to the amount of TV coverage for each disaster. Geographic location—in this instance, the distance from New York City to the disaster—appeared to have a substantial correlation with the amount of TV coverage; the death of 1 Western European was valued as much as 9 Latin American or 12 Asian deaths in terms of minutes of airtime attention. Importantly, Adams’s data also suggested that “A third of the variation in network news coverage of disasters can be accounted for by a country’s popularity with U.S. tourists” (120). Close correlations with similar factors makes tourism a reasonable surrogate for the socio-cultural affinity of the U.S. for other countries.

Fifteen years later, a similar study was conducted by Douglas Van Belle that again analyzed U.S. news media coverage of foreign national disasters. Van Belle expanded the data set of disasters (1964-1996) and tested a variety of other possible factors for correlation. The results were fairly similar to Adams’s conclusions: number of people killed, geographic proximity to Washington D.C., and number of U.S. tourists all showed a significant, positive, correlative relationship with the amount of coverage by the *New York Times* (Van Belle 59). Importantly however, the correlation was much stronger—and, in the case of U.S. tourists, more significant—when only major disasters (more than 300 deaths per event; described by Adams) were tested rather than all natural disasters. In addition to the fact that testing only major disasters eliminates null cases (no U.S. media coverage whatsoever), Van Belle suggests that factors related to ‘social distance,’ such as tourism, might only come into play when coverage expands beyond simply the reporting of facts. It is likely that news editors and reporters are more willing and able to add human-interest style coverage demonstrative of social and cultural affinities for major disasters (Van Belle 60). None of the other factors tested (including language, per capita GDP, international power, and press freedom) demonstrated a significant influence on media coverage of foreign disasters.

A number of studies and commentaries have dealt with the role of media during actual disaster events and preferences for different types of media. In a 1998 study by Piotrowski and Armstrong, residents of Pensacola, FL were surveyed about their preferences for media outlets during Hurricane Danny in July 1997. The resulting data indicated reliance on local television, radio and cable TV programming (e.g. the Weather Channel, CNN) as the

top three choices for hurricane related reports and bulletins (Piotrowski 343). Marla Perez-Lugo arrived at similar conclusions based on a series of in-depth interviews with survivors of Hurricane Georges in 1998. The author found that most interviewees left their preferred media outlet on during the hurricane as long as physically possible. In most cases, TV news or the Internet was the outlet of choice because of the perceived quality of those sources. It was only after affected areas lost electrical power during the storm that survivors would switch to battery-powered radios (Perez-Lugo 217-218). Interestingly, the interviews also suggested that during the impact, people looked to available media more as a source of emotional support and community ties rather than official information (Perez-Lugo 219).

With regards to media preferences among individuals not physically in danger of specific natural disaster events, there has been only a limited amount of research. Van Belle compared a variety of factors that may influence media coverage and found that there does not appear to be a significant difference between *New York Times* or TV news coverage under these terms (65). Alternatively, a 2005 study surveyed Norwegian adolescents age 12-15 about how they react to and find information about distant warfare events (Dyregrov). Warfare is obviously quite different from a natural disaster, but one interesting, related conclusion from the study was that a significant majority of the adolescents cited TV as their primary source of news and felt that TV news generally provided an adequate level of information about the events (Dryegrov 447). Examining annual surveys by the Independent Television Commission of Britain in the 1980s-90s, Jonathan Benthall affirms the dominance of television as viewers primary source of world news in general. From 1982-1991, respondents citing TV as their top source rose from 58% to 70% while those citing newspapers (the second most popular option) dropped from 27% to 19% (Benthall 201).

About a month after Hurricane Katrina hit the American gulf coast, *New York Times* journalist David Carr published a commentary explaining that during natural disasters, the dramatic footage and horrifying scenes from the locations where on-site TV news correspondents report clearly make these events good television stories. However, newspaper coverage is also extremely important because “[TV news] does not address the issues of governance, logistics, race, and class that the hurricanes reveal. Those are stories

newspapers tell well” (Carr C1). Similarly, Benthall states that “Television news is not well suited to exploring the social and economic disruption which follows disasters and which affects far more people than the immediate victims” (197).

Regardless of from where individuals get their information, it is clear that strong, compelling images shown by the media are a large part of what incites people to donate their time and their money. Alexander writes: “When heart-rending and catastrophic scenes appear on television, there is often a substantial public response in terms of solidarity, donations, and perhaps volunteerism” (139). Disaster relief organizations are some of the most conscious of the need of clear and abundant media footage to inspire donations (Wallace). Jeremy Hobbs, executive director of Oxfam International laments that “Disasters that do not get a high media profile—that’s most of them—do not get the money” (Quoted in Moszynki 165).

The importance of media attention is such a fundamental part of charity campaigns that many relief organizations put substantial resources towards keeping the media’s attention. *Washington Times* correspondent Warren Strobel describes journalists’ response to famine in Somalia in the early 1990s: “While journalists undoubtedly were drawn to the drama of the famine in Somalia, they had a lot of help getting there. Much of this came from international relief agencies that depend on TV images to move governments to respond and the public to open its wallets” (Strobel 1999, 88). Similarly, researchers Olsen, Carstensen, and Høyen published a study in 2003 proposing that the intensity of media coverage is one of three factors that play a decisive role in the volume of emergency assistance (the other two were political interests and the strength of relief agencies already in the country). In a comparison of the three month periods immediately following a major cyclone in India (Oct 1999) and a set of floods in Mozambique (Feb 2000), the authors found that Mozambique received at least four times as much media attention as India and subsequently almost eight times as much humanitarian aid (Olsen 114). This is true despite the facts that the Indian cyclone occurred first and resulted in at least ten times as many deaths, and that the size of India (and that it possessed nuclear weapons) makes it more politically important than Mozambique. Instead, the authors suggest, the most likely cause of the disparity in media attention was the accessibility of each event: “Reporters were assisted by authorities, aid agencies, and the South African Air Force in getting quick and almost

unhindered access to the disaster zone and, thus, some very dramatic and compelling footage” (Olsen 115). On the other hand, Indian authorities refused to allow media into the disaster zone for the first five days after the cyclone, so: “By the time the media was finally allowed full access to the worst-affected coastal areas, international interest had long vanished and dramatic footage...was no longer at hand” (Ibid).

One theory that has been popularized in recent years is commonly referred to as the ‘CNN effect.’ Innovations in satellites, cable television, and other communications equipment allowed The Cable News Network (CNN) to begin doing 24 hour news broadcasts from around the world in the early 1980s and the term ‘CNN effect’ was first used during the 1991 Gulf war (Gilboa 325). While, as Strobel points out, “Virtually every official interviewed agrees that the rise of Cable News Network has radically altered the way U.S. foreign policy is conducted” (86) the full validity of the effect remains something of a controversy. The amount of influence that CNN has over policymakers is really the major theme of the CNN effect debate. Eytan Gilboa explains that notably more controversy surrounds the possibility that CNN coverage of an event can prompt or even force policymakers to intervene in a humanitarian crisis even when other decision making influences suggest otherwise (Gilboa 327). UN Secretary-General Kofi Annan observed that “when governments have a clear policy...then television has no impact,” but “when there is a problem, and the policy has not been thought [through], they have to do something or face a public relations disaster” (Quoted in Robinson 1999 305).

Policymakers are often some of the most opposed to the theory because essentially, as political researcher Royce Ammon points out, “leadership *can* always trump journalism” (Ammon 93). Andrew Natsios—a former official with the Agency for International Development—explains that the CNN effect suggests that policy makers only respond to humanitarian crisis when scenes of suffering are on the news. Not only is this a false assumption but this clear exaggeration leads to an implication that policymakers in fact obtain most of their information from the news (In Gilboa 330). Unfortunately, because the CNN effect is a fairly recent idea, most published work on the topic consists of either vague theory or inconclusive and contradictory case studies (See Gilboa). Additionally, while a consensus about the actual definition of the CNN effect still has yet to be agreed upon, most research focuses

on intervention and aid into conflict areas rather than natural disaster relief zones (Robinson 2002, 126). Further, the CNN effect most often considers media influences on government policymakers because private individuals rarely have the capacity to intervene in violent, international conflicts.

Disaster Profiles

Around 8:00 am on December 26th, 2004, an earthquake measuring 9.0 on the Richter scale struck near the west coast of the Indonesian island of Sumatra. The earthquake’s epicenter was approximately 30 kilometers beneath the seabed and 250 kilometers south of the city of Banda Aceh. The quake and its aftershocks (ranging from 6-7.3 on the Richter Scale) triggered powerful tsunamis that reached over 10 meters high and would travel at a rate of nearly 500 kilometers per hour (United Nations Office for the Coordination of Humanitarian Affairs). To date, it is estimated that anywhere from 150,000 to over 200,000 people lost their lives and around 5 million people were directly affected by the disaster (EM-DAT). The tsunami hit at least 12 countries in Asia and Africa, including Indonesia, India, Sri Lanka, and Thailand. Many of the worst hit communities were made up of poor farmers and fisherman who have now been stripped of the few assets they possessed as the floods wiped out buildings, bridges, electricity, food supplies, clean water sources, and other infrastructure necessary for agriculture and fisheries (United Nations Office for the Coordination of Humanitarian Affairs). However, the outpouring of donations for relief was enormous. In only 3 weeks, the United Nations had collected 80% of its \$977 million emergency appeal. After 1 year, over \$7.7 billion had been secured as relief and reconstruction aid to tsunami-affected nations from governments, firms and individuals around the world, with the majority of donations coming from Japan, the United States, the United Kingdom, and the European Union. Moreover, the response from private individuals and firms was unprecedented, with private donations making up around 67% of those already secured (Stamp). In the first week following the disaster CNN devoted approximately 43.5 minutes every night during its primetime nightly news programming to coverage of the event (Vanderbilt). Finally, it is important to note that in the year 2004, Indonesia alone was host to over 5 million tourists (WTO 12) while Thailand had nearly 12 million foreign visitors in the same year (WTO 21).

On August 29th, 2005, Hurricane Katrina made landfall in the Gulf coast of the United States, wreaking devastation on the states of Louisiana and Mississippi and flooding 80% of the city of New Orleans (BBC News). This category 5 storm (category 3 by landfall) was one of the deadliest and most costly hurricanes in U.S. history, resulting in over 1,600 deaths and affecting over 1.5 million people (EM-DAT). Federal, state, and local response measures failed in many communities as chaos reigned throughout the city of New Orleans. The American public pledged nearly \$600 million in aid within the first two weeks following the disaster while the U.S. government estimated over \$60 billion in rebuilding costs (BBC News). People around the world remain in shock regarding the utter failure of policy makers and emergency managers before, during, and after this event. For the first week following Hurricane Katrina, CNN extended its primetime nightly news programming to provide approximately 60 minutes of exclusive hurricane coverage each night (Vanderbilt).

On October 8th, 2005, an earthquake measuring 7.6 on the Richter scale struck the northern provinces of Pakistan near Kashmir. Hundreds of aftershocks were recorded over the next month, some reaching as high as 6.0 on the Richter scale (United Nations). Over 75,000 people were killed and over 4 million people were affected (EM-DAT). In some areas, nearly 85% of the buildings were completely destroyed (United Nations). As a bitter winter quickly approached, survivors lacked shelter, food, water, medical care, or sanitation facilities. According to World Food Programme reports, some 500,000 people in remote areas received no aid at all in the first month after the earthquake. In the first three weeks, the UN had only raised around 20% of the \$550 million it was seeking (BBC News). Significant progress has been made but after six months, the United States had only donated around \$525 million. The bulk of relief came from Muslim States and other States that had suffered from earthquakes in the past including Saudi Arabia, Kuwait, the UAE and Turkey (BBC News). In the first week after the earthquake, CNN devoted only 6.5 minutes each night to coverage of the disaster (Vanderbilt). Separately, Pakistan saw the arrival of nearly 650,000 tourists in the year 2004, with over half coming from Western Europe and the Americas (WTO 18).

Methods

A one-page (front and back) questionnaire survey was constructed and distributed to approximately 400 undergraduate students attending Brown University in Providence, RI. Surveys were distributed to students taking courses in the biology, history, engineering, and environmental science departments. In addition to basic demographic information, surveys asked participants from which media sources they obtain news about natural disasters, if they donated time or money to disaster relief, and if they had any other personal connection to the disaster events. Surveys took about five minutes to complete. A total of 329 surveys were eventually collected.*

Results and Discussions

The analysis of the data will be presented in three parts. First, a series of tests will attempt to show a direct correlation between watching television news and likelihood of donating to an international disaster event. Second, other factors that might cause students to donate are tested to show if students who gave money were likely doing so for a reason other than the amount of news coverage. Finally, a test is done to examine how students first found out about the disasters in an attempt to reaffirm that television news is the most important media source for major natural disaster events and therefore the appropriate medium to study.

The first test performed was an attempt to find out if watching more TV news resulted in a higher likelihood of students donating to a foreign disaster. On average, students watched approximately 1.87 hours of TV per week. Student responses for hours of TV news watched each week was then crossed with whether or not they gave money to each disaster event. However, due to such a wide range of responses for hours of TV watched, no significant result was found. So, student responses for amount of TV watched per week were grouped into two-hour ranges (0 hours, 0.1-2, 2.1-4, 4.1-6, and 6.1 or more). The results of this grouping are listed in Table 1 below.

Once again, hours of TV news watched each week (now grouped into ranges) was crossed with whether or not students donated money to each disaster event. This time however, a chi-square test revealed significant

* Special thanks to Stephen Cellucci, Tim Drinan, Barrett Hazeltine, Jordan Heeger, Elizabeth Hermann, Susanna Makela, Kenneth Miller, Simone Pulver, Joan Richards, Thomas Stieve, Peter Wenstrup and Robert Williamson for their vital assistance in assembling, distributing, collecting, and analyzing the surveys used in this project

Table 1: Approximately how many hours of TV do you watch each week? (broken down into ranges)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 hours	71	21.6	21.7	21.7
	0.1-2 hours	158	48.0	48.3	70.0
	2.1-4 hours	66	20.1	20.2	90.2
	4.1-6 hours	20	6.1	6.1	96.3
	6 hours or more	12	3.6	3.7	100.0
	Total	327	99.4	100.0	
Missing	No Answer	2	0.6		
Total		329	100.0		

Table 2: Do you watch more than 30 minutes of TV each week?

		Did you donate money to the 2004 Tsunami?		
		Yes	No	Total
No	Count	28	43	71
	% within Do you watch more than 30 minutes of TV each week?	39.4%	60.6%	100.0%
Yes	Count	150	102	252
	% within Do you watch more than 30 minutes of TV each week?	59.5%	40.5%	100.0%
Total	Count	178	145	323
	% within Do you watch more than 30 minutes of TV each week?	55.1%	44.9%	100.0%

Table 3: Do you watch more than 30 minutes of TV each week?

		Did you give money to the 2005 Pakistan Earthquake?		
		Yes	No	Total
No	Count	2	69	71
	% within Do you watch more than 30 minutes of TV each week?	2.8%	97.2%	100.0%
Yes	Count	20	232	252
	% within Do you watch more than 30 minutes of TV each week?	7.9%	92.1%	100.0%
Total	Count	22	301	323
	% within Do you watch more than 30 minutes of TV each week?	6.8%	93.2%	100.0%

results for students who donated money to the 2004 Indian Ocean Tsunami. However, the amount of TV watched did not demonstrate a significant difference; only the fact that students watched any TV news versus none at all appeared to matter. So, to make the data clearer and more significant, a final comparison was done comparing whether or not students watched TV news at all with whether or not they donated to relief for natural disaster events. A majority of students who watch any TV on a regular basis (59.5%) donated to the 2004 Indian Ocean Tsunami, compared to less than a majority of students who don't watch TV (39.4%) making a donation, $\chi^2(1, N=323)=9.035, p=.003$, see Table 2. While a slightly higher percentage of students who watch any TV news regularly (7.9%) gave money to the 2005 Pakistan earthquake than those who do not watch TV news regularly (2.8%), so few students gave at all that the results cannot rule out randomness, $\chi^2(1, N=323)=2.287, p=.130$, see Table 3. For Hurricane

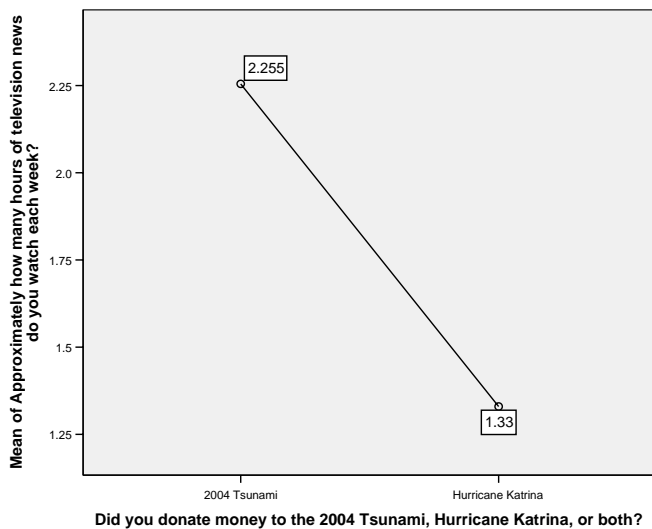
Table 4: Do you watch more than 30 minutes of TV each week?

		Did you give money to Hurricane Katrina?		
		Yes	No	Total
No	Count	35	36	71
	% within Do you watch more than 30 minutes of TV each week?	49.3%	50.7%	100.0%
Yes	Count	135	117	252
	% within Do you watch more than 30 minutes of TV each week?	53.6%	46.4%	100.0%
Total	Count	170	153	323
	% within Do you watch more than 30 minutes of TV each week?	52.6%	47.4%	100.0%

Katrina, although a slight majority of students who watch TV news regularly (53.6%) gave money and slightly less than a majority of students who do not watch TV made a donation (49.3%), both results were so close to 50% that the trends are not significant, $\chi^2(1, N=323)=.406, p=.524$, see Table 4.

Next, the data was tested to find out if students who watch more TV are more likely to give to a disaster that occurred outside of the U.S. This time, a One-Way ANOVA test was used to compare the mean numbers of hours watched by a student who gave to the 2004 Tsunami with the mean number of hours watched by a student who gave to Hurricane Katrina. Not enough students donated money to relief for the 2005 Pakistan Earthquake to allow this mean to be tested. Also, any students who gave to both Hurricane Katrina and the Tsunami were excluded from this test. The result of the test showed that students who donated money to relief for the 2004 Tsunami watched a noticeably higher amount of TV news each week (2.25 hours) than students who donated money to Hurricane Katrina (1.33 hours), $F_{1, 100}=6.373, p<.013$. This result is displayed in the means plot listed as Figure 1 below.

Figure 1



The combined results of these first two tests are quite interesting. The first test showed that students who watch TV news regularly were more likely to make a donation to the 2004 Tsunami than students who do not. This correlation could not be proven with regards to Hurricane Katrina or the 2005 Pakistan earthquake. The second test indicated on that average, students who donated exclusively to the Tsunami watched almost an hour more of TV news each week than students who donated exclusively to Hurricane

Katrina relief. These findings suggest that because the 2004 Tsunami was an international event, students had to spend noticeably more time regularly watching the news in order to gain exposure to the event. Despite the noticeably fewer number of deaths that resulted from Hurricane Katrina, that event received significantly more American TV coverage than either the 2004 Tsunami or the 2005 Pakistan earthquake. This is clearly an indicator of the fact that domestic events are much more likely to receive attention and subsequently aid from citizens and media within that nation.

The second part of this analysis was designed to show that the influence of other direct factors on student willingness to donate was minimal compared to student exposure to media dealing with the particular natural disaster events. Students were asked if they had ever lived or spent time in the areas affected by each disaster or if they, a relative, or a close personal friend had been directly affected by each disaster event. The responses to these questions were crossed with student responses to whether or not they donated money to each particular event. With these tests however, proving the null hypothesis—that these factors were not the reasons that most students gave to each event—would best support the argument that TV news coverage of each event prompted students to give. For the 2004 Tsunami, the number of students who donated money to disaster relief were not significantly more likely to have family or friends who were affected, $\chi^2(1, N=324)=.005, p=.945$. There was also no significant correlation between students who had lived or visited the tsunami-affected area and those who gave to the disaster, $\chi^2(1, N=323)=3.181, p=.075$. Similarly, students who donated money to Hurricane Katrina were not more likely to have had spent time in the area affected by Hurricane Katrina, $\chi^2(1, N=322)=1.608, p=.205$, or have family or friends directly affected by the storm, $\chi^2(1, N=324)=3.154, p=.076$. These tests confirm that for students who gave to Hurricane Katrina or to the 2004 Tsunami, neither visiting the area nor having a close friend or relative directly affected were major factors in their decision to donate.

In both cases for the 2005 Pakistan earthquake however, the null hypothesis was proven false. Students who donated money to the earthquake were more likely to have had friends or family directly affected by the event, $\chi^2(1, N=324)=4.298, p=.038$. Also, students who gave money to the Pakistan earthquake were more likely to have either lived or spent time in the area, $\chi^2(1, N=322)=22.554, p<.001$. These results show that students

who gave to the Pakistan earthquake very likely had some other reason for doing so unrelated to the amount of TV news coverage each event received. One possible conclusion that can be drawn from this is that the 2005 Pakistan earthquake did not cross the threshold of becoming an important international disaster in the eyes of the media. The limited television coverage supports the theory that too little footage was shown to suggest a significant correlation between watching TV news regularly and donating money to earthquake relief. This idea is also supported by the lack of significant data in the tests performed in the initial section of the analysis.

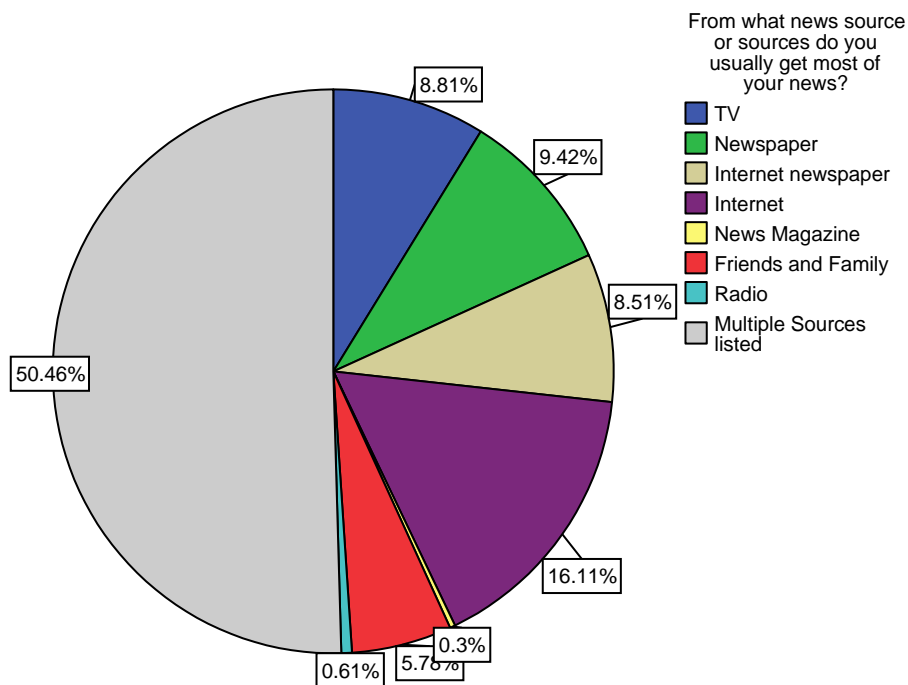
The third and final part of the analysis was an attempt to prove the legitimacy of television news as the most popular and important media outlet for information about major natural disasters. Students were asked about which media source or sources they used to find out most of their news on a regular basis. As can be seen in Figure 2 below, the majority of students listed multiple sources (50.46%) followed by the internet (16.11%), newspapers (9.42%), television (8.82%), and subscription internet newspapers (8.51%) as their primary source of news.

To avoid double-counting cases, respondents who listed multiple sources were not included in this part of

the analysis. Also, because of the low frequency of cases selecting news magazines, friends and family, and the radio as their primary source of news, these categories were also excluded from this analysis. Finally, a categorization can be made that newspapers are composed mainly of articles that offer detailed facts and analysis while television news is comprised mainly of emotionally-provoking visual footage and more human interest stories. For both the internet and internet newspaper subscriptions however, users have access to detailed articles and analysis as well as pictures, video and other multimedia. For that reason, respondents selecting internet or internet newspapers as their primary source of news were grouped together in a single category. Using the same reasoning, students were grouped into the same three categories based on from which media outlet (newspaper, internet/internet newspaper, or television) they first found out about each natural disaster event.

Regardless of which type of media students listed as their primary source of news, a significant majority first found out about the 2004 Tsunami from television news sources, $\chi^2(4, N=114)=22.528, p<.001$, see Table 5 below. The results from Hurricane Katrina suggested a similar trend, but were not statistically significant, $\chi^2(4, N=110)=1.422, p=.840$, see Table 6 below. Finally, a

Figure 2



significant majority of students who listed newspapers, internet/internet newspapers, or television as their primary source of news also listed those same sources (respectively) as the media outlet from which they first found out about the 2005 Pakistan earthquake, $\chi^2(4, N=109)=81.514, p<.001$, see Table 7 below. The results from the tests of the 2004 Tsunami and Hurricane Katrina suggest that if a disaster is significant enough, students will find out about it from a different source than the one that provides them with most of their daily news. This fits with descriptions of disasters as abrupt, non-routine events. Furthermore, the fact that in both of these cases TV news was the initial source of disaster information for all students indicates the

relative importance of that medium for keeping people updated about major natural disaster events. The fact that the initial information about the 2005 Pakistan earthquake predominantly came from the same sources as most news strongly suggests that this natural disaster was not considered a particularly out of the ordinary event on a level comparable to that of the other two disasters. It was certainly newsworthy, but students generally received information about this event the same way they did all other news. Despite the enormous devastation caused by the earthquake, it was not seen by the media or by the students as an especially spectacular disaster.

Table 5: From what source or sources do you get most of your news about the 2004 Tsunami?

		Newspaper	Internet AND Internet Newspaper	Television	Total
Newspaper	Count	8	6	1	15
	% within From what source or sources do you get most of your news (3 categories only)?	32.0%	9.4%	4.0%	13.2%
Internet AND Internet Newspaper	Count	2	24	2	28
	% within From what source or sources do you get most of your news (3 categories only)?	8.0%	37.5%	8.0%	24.6%
Television	Count	15	34	22	71
	% within From what source or sources do you get most of your news (3 categories only)?	60.0%	53.1%	88.0%	62.3%
Total	Count	25	64	25	114
	% within From what source or sources do you get most of your news (3 categories only)?	100.0%	100.0%	100.0%	100.0%

Table 6: From what source or sources do you get most of your news about Hurricane Katrina?

		Newspaper	Internet AND Internet Newspaper	Television	Total
Newspaper	Count	1	7	2	10
	% within From what source or sources do you get most of your news (3 categories only)?	3.8%	11.1%	9.5%	9.1%
Internet AND Internet Newspaper	Count	4	7	3	14
	% within From what source or sources do you get most of your news (3 categories only)?	15.4%	11.1%	14.3%	12.7%
Television	Count	21	49	16	86
	% within From what source or sources do you get most of your news (3 categories only)?	80.8%	77.8%	76.2%	78.2%
Total	Count	26	63	21	110
	% within From what source or sources do you get most of your news (3 categories only)?	100.0%	100.0%	100.0%	100.0%

Table 7: From what source or sources do you get most of your news about the 2005 Pakistan earthquake?

		Newspaper	Internet AND Newspaper	Television	Total
Newspaper	Count	19	8	1	28
	% within From what source or sources do you get most of your news (3 categories only)?	73.1%	12.9%	4.8%	25.7%
Internet AND Newspaper	Count	1	42	1	44
	% within From what source or sources do you get most of your news (3 categories only)?	3.8%	67.7%	4.8%	40.4%
Television	Count	6	12	19	37
	% within From what source or sources do you get most of your news (3 categories only)?	23.1%	19.4%	90.5%	33.9%
Total	Count	62	21	109	
	% within From what source or sources do you get most of your news (3 categories only)?	100.0%	100.0%	100.0%	100.0%

Conclusions

The results of this analysis provide very distinct results for each of the natural disaster events. The likelihood of an individual response to the 2004 Tsunami showed a clear and significant correlation with whether or not a particular student watched television news on a regular basis. Furthermore, the media attention can be confirmed as a major factor in prompting these individual donations as personal connections to the affected area were of negligible influence. Finally, this disaster was established as a major news event as television news brought the information to individuals fast enough and insistently enough to break those individuals' regular news gathering habits. On the other hand, the 2005 Pakistan earthquake failed to make a significant impact on the dispersion of regular news, proving newsworthy but not overwhelmingly so. This conclusion is supported by the fact that a significant portion of those who donated money to earthquake relief did so because of a personal reason rather than as a response to news footage. Finally, the overwhelming private response to Hurricane Katrina sets a baseline for the measurement of the importance of social and cultural affinity for prompting Americans to donate to disaster relief. The presence of tourists and westerners in tsunami-affected parts of Southeast Asia suggests a relatively close social affinity between this area and the United States. The fact that these individuals were an important source of TV news footage and personal stories with which Americans could identify only reaffirmed this

suggestion. The relative lack of these groups in Pakistan at the time of the earthquake resulted in a scarcity of footage for the TV news to broadcast and was likely a factor in the significantly lower amount of private aid response to this disaster.

As vulnerability to natural hazards continues to increase around the world, disasters are becoming more devastating if not more frequent. Furthermore, as satellite phones, airplanes, and the internet make it increasingly easy for around-the-clock news services to bring shocking footage of natural disaster devastation straight to the living rooms of the American public, it has become increasingly difficult for viewers to sit idly by while others suffer. Individual response to disasters can be a display of the goodness of humanity at its finest, but with so many disasters occurring all of the time, individuals become selective with regards to which events merit their attention and their charity. As the dominant source of up-to-the-minute information about these disaster events, television news plays a major role in determining how this attention is allocated and subsequently how individuals allocate their donations. Through a better understanding of TV news and how individuals respond to it, emergency managers, charity organizations and disaster researchers can make significant strides towards bringing aid to all of those in need.

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