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SATELLITE PHOTOGRAPHY:
INSTRUMENTAL, RHETORICAL, AFFECTIVE?

by

IRANGI EGODAPITIYA

A THESIS

Presented to the Faculty of the Graduate School of the
MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

In Partial Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE IN TECHNICAL COMMUNICATION

2009

Approved by

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ABSTRACT

This study examines how tsunami satellite images operate and could provoke various interpretations. The goal of this research project is to study whether the interpretation of tsunami satellite images could extend beyond scientific features to affective messages. Primarily based on the satellite images of Sri Lanka taken before and during the 2004 tsunami, this study analyses:

- How could mechanical satellite images, taken automatically by a machine in orbit, become an object of profound emotional meaning?
- How do viewers' experiences, knowledge, and discourse affect their interpretations of mechanical artifacts?
- How are tsunami satellite images connected to affective responses by viewers?
- How can tsunami satellite images be interpreted and analyzed in a humanistic way?
- What can the understanding of the ways people analyze and interpret satellite imagery contribute to our knowledge and practice of visual technical communication and visual rhetoric?

I reviewed literature in technical communication, visual communication, and related areas, which provide theory and research on how visuals and images constitute meaning. This research project involved empirical and qualitative research. Responses to the tsunami satellite images were gathered through my blog and emails. I also gathered relevant responses from other existing web discussions that connect on tsunami satellite images. The responses are identified as literal, figurative, or both.

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1. INTRODUCTION

1.1. RESEARCH GOAL

The goal of this research project is to examine whether the interpretation of tsunami satellite images could extend beyond scientific features like clarity, dimensions, and technological advancement to their less-obvious affective messages. The study asks whether tsunami satellite images could depict more than simply geographical before and after photos. People react affectively to technical material they see; yet, given the technological nature of these images, they seem to be excluded from most discussion about visual rhetoric. The primary images in which I am interested are in Figure 1.



Figure 1.1. The selected image of three satellite photographs

This study is based primarily on 2004 Sri Lanka tsunami satellite images. It examines whether people could respond to the mechanical satellite images, taken by a machine, in unpredictable ways depending on their experiences, knowledge, and discourse. These people may be directly, indirectly, or not affected by the tsunami at all; they may have been merely curious about the tsunami and the selected satellite images. The emotions attached to or provoked by the satellite images may have included sadness, anger, remembrance, disappointment, frustration, fear, or any psychological response.

The prominent effect of the tsunami on my life and the knowledge I have acquired by studying visual communication give me a perspective from which to examine the tsunami satellite images as both technological artifacts and meaning-making rhetorical objects. This research project involved empirical and qualitative research. I reviewed literature in technical communication, visual communication, and related areas, which provide theory and research on how visuals and images constitute meaning. This study received the Institutional Review Board (IRB) approval through the Missouri University of Science and Technology (Appendix A: IRB application).

The chronological order of the three satellite images develops meaning or narrates the behavior of the tsunami. Viewers understand what happened before and during the tsunami. Some may not understand the meaning without the chronological arrangement of the three images. Selection, arrangement, and captioning of the images will also help viewers who are not familiar with the tsunami or the context in which the tsunami occurred. There can also be a possibility that viewers, such as those who were directly affected by the tsunami, may make affective interpretations without the chronological order of these three images. They may interpret isolated tsunami satellite images

affectively based on their sad memories and experiences. For someone who is not familiar with the tsunami or tsunami experiences may have troubles understanding what the three images in isolation represent. They may not react affectively to the tsunami satellite images. Although the third satellite image was taken during the tsunami and does not depict any dead bodies or damaged properties, people who are directly affected by the tsunami may realize how damaging the tsunami was to lives and the entire country. Thus, they may react affectively towards the satellite images.

Personally, I find the selected tsunami satellite images highly emotionally provocative. It reminds me of people who were killed or left homeless, of orphaned children, of those who struggled to find the dead bodies of their loved ones, and of the devastation caused to property and the country as a whole. To me, the images depict the kind of psychological collapse experienced by the entire country and still felt due to the tsunami. I wondered whether others might experience as similar emotional effect when they see the satellite images. Although I came to the study with this bias, I have been careful to solicit, and respect, opinions which do not agree with my own, in order to understand how people interact with tsunami satellite images.

People who encounter satellite images taken before and after the tsunami may have a range of reactions. Some may find contemplation of the tsunami satellite images increasingly uncomfortable, experiencing sadness and frustration. Some may feel irritation at the lack of effective communication that so devastated lives and property. Some may be reminded of disappointment that the devastation and loss of lives were not prevented. I personally fear the possibility of another tsunami. To me, the images demand an effective emergency communication system that would prevent future unfortunate

situations. The satellite images are also scientifically interesting, but the emotions they stir are much closer to my life experiences. I was eager to know the degree of devastation the tsunami caused to the coastal area, and these images clearly depict the Kaluthara Beach that had been covered by the tsunami waves. The fact that these tsunami waves are so powerful reminds me how the waves flushed a train a few meters completely off the track, killing nearly three fourths of its passengers.

The affective power of tsunami satellite images can be enormous to some viewers like me. Even though the tsunami did not harm me physically, it affected me psychologically. The memories that the tsunami satellite images bring back are haunting. It was difficult for me to see the pictures of thousands of decomposed bodies, adults and children crying, homes flushed to the sea, and colleagues missing. There was no news about my brother for nearly two days. I was shocked and extremely scared to see my brother on television and on some web video clips struggling to save himself from the tsunami waves. I still can remember how my mother later forced my brother to stay at home even after the tsunami, worried that there would be another tsunami soon. The tsunami eventually created fear, myths, and frustration in me and among the people of Sri Lanka. I have been seeing and hearing sad stories of some people watching their loved ones die, of a parent who chose to grab one child from among others as the killer waves struck a train, and of an old Buddhist monk who decided to pray and ultimately passed away inside a vehicle while letting the driver escape. I struggle with the statistic that Sri Lanka had the second highest death toll of the 2004 tsunami. These somber feelings mean I will remember tsunami for the rest of my life.

1.2. CONNECTION BETWEEN THIS STUDY AND TECHNICAL COMMUNICATION

Visual communication plays a crucial role in technical communication. Images deliver quantitative and qualitative information to audiences. Understanding and interpreting visuals can be complex and is determined by context, content, discourse, culture, knowledge, and conventions. Much of the attention to images have been based on ethics as, for example, in works like Paul Dombrowski's "Ernst Haeckel's Controversial Visual Rhetoric" and Sam Dragga and Dan Voss's "Cruel Pies: The Inhumanity of Technical Illustrations." Dombrowski (2003) suggests that the way the illustrations are designed determines the types of rhetorical and ethical messages they deliver for their audiences. He emphasizes the importance of ethos in scientific and technical visual display by showing how Haeckel's controversial and erroneous illustrations of the embryos of various animals led to miscommunication and confusion (Dombrowski, 2003). Dragga and Voss (2001) suggest that technical communicators should consider a broader humanistic and ethical approach to visual communication. Visual display in the growing field of technical communication should promote ethics to address not only objectivity but also humanity. Visual communication is important in technical communication for a variety of reasons, and major researchers in technical communication focus on visuals communication. Ben Barton and Marthalee Barton (2004) in "Ideology and Map: Toward a Postmodern Visual Design and Practice" point out that visual studies should go beyond the emphasis on "cultural conventions" and modernism to the examination of ideologies attached to visuals and their conventions. For instance, maps can be complex since they are tied up with issues of ideology and power. According to these and many more researchers, more complexity in visual

technical communication theory and practice should be encouraged. Visual communication plays a vital role in the whole study and practice of technical communication itself. With the help of rhetoric, visual communication shows how interpretations of images can have social dimensions. With the help of relevant visual theories and approaches, this study examines how tsunami satellite images can operate provoking various interpretations. The study of how satellite images may provoke affective interpretations will expand and enrich the fields of technical and visual communication.

Generally, the field of technical communication would tend to see satellite images as instrumental: as tools to be used, for example, in making decisions, communicating information, or translating technical information or data to non-specialist audiences. Tufte (1997) would take an instrumental approach to the understanding of images, arguing that effective images are truthful and there is no room for emotions. The purpose of this study is to look at satellite images' affective aspects via qualitative methods. A qualitative approach to understanding affective responses towards a satellite image may help expand what we consider research material in technical and visual communication.

1.3. RESEARCH QUESTIONS

- How could mechanical satellite images, taken automatically by a machine in orbit, become an object of profound emotional meaning?
- How do viewers' experiences, knowledge, and discourse affect their interpretations of mechanical artifacts?
- How are tsunami satellite images connected to affective responses by viewers?

- How can tsunami satellite images be interpreted and analyzed in a humanistic way?
- What can the understanding of the ways people analyze and interpret satellite imagery contribute to our knowledge and practice of visual technical communication and visual rhetoric?

How could mechanical satellite images, taken automatically by a machine in orbit, become an object of profound emotional meaning?

A satellite image as a genre is a mechanical artifact that has no life or emotional meaning. The taking of a satellite image itself has no direct human involvement; rather it is taken automatically while a satellite orbits the Earth. The function of a satellite image is to record mechanical, scientific, and quantitative data, such as space, medium, geological features, date, time, location, color scheme, and resolution. In general, therefore, the very purpose of a satellite image as a genre demands that it not provoke emotions of its audience. What is interesting is to see how satellite images can evoke affective responses, along with statistical and objective interpretations. Viewers may interpret affective responses to the images as they remember sad tsunami experiences.

How do viewers' experiences, knowledge, and discourse affect their interpretations of mechanical artifacts?

Individuals interpret what they see based on their schemas, experiences, knowledge, and discourse. People use graphs to record data, illustrations to present data, and satellite images to study and interpret quantitative and mechanical data. This study asks how a mechanically produced artifact could be interpreted not only as a record of

data, but also qualitatively and humanistically. Viewers' experiences, knowledge, and discourse could also produce affective interpretations to a satellite image. Tsunami experiences were not pleasant to most. Viewers may interpret their overwhelming emotional responses to the images, not merely the images' mechanical or statistical data. Some may become increasingly uncomfortable as they look at tsunami satellite images. Viewers might pray or express hopes and other wishes. Prayers indicate the despair and helplessness of human beings when they encounter frightful circumstances beyond their control. All these affective responses may be stirred up when impacted people look at the satellite images of the tsunami.

How are tsunami satellite images connected to affective responses by viewers?

A constellation of factors can affect the production of meaning in images. Pictures of the Twin Towers can represent globalization and capitalism, and pictures of their destruction depict the evil of terrorism (Mitchell, 2006). Pictures of the 2004 tsunami can depict the hazardous, uncontrollable behaviors of nature. One could glean scientific information from a table, graph, or satellite image. One could clearly apply acquired knowledge to understand some objective aspect of a satellite image. The challenge, however, is to see instances when these scientific and affective interpretations of a satellite image overlap or combine. Generally, satellite images are presumed to facilitate objective interpretations rather than humanistic interpretations. One goal of this study is to examine whether tsunami satellite images can connect to affective responses by viewers.

How can tsunami satellite images be interpreted and analyzed in a humanistic way?

Satellite images as a genre are considered mechanically produced artifacts and are being interpreted objectively. Not everyone possesses the analytical skills and knowledge to look at visuals in different analytical frameworks. For instance, I was fascinated to see the degree of devastation the tsunami had caused in coastal areas and to observe tsunami behavior as recorded in the selected tsunami satellite images taken in Sri Lanka. I could hardly realize, however, the reason why I actually was attached to the images until I started studying visual communication. With the knowledge gained, I understood that the satellite images told stories about my people who were affected by the tsunami. Studying visual communication helped me realize that these satellite images are emotionally important to me. As Lee E. Brasseur (2003) suggests, visuals are more than just colors and shapes. Like other images, a tsunami satellite image could deliver more than colors, geological features, and resolution.

What can the understanding of the ways people analyze and interpret satellite imagery contribute to our knowledge and practice of visual technical communication and visual rhetoric?

Visual communication and rhetoric educate people on how to create, read, understand, and evaluate visuals. Sandra Moriarty says that "...visual communication is as much a primary system as verbal language" (1994, para. 51). Visual communication as a primary system emphasizes the fact that visual communication is as important as verbal and written language. Understanding visuals can be a challenge because people interpret visuals differently depending on their physical, social, cultural, and educational contexts. As a result of the difficulty of visual interpretation, a number of approaches and theories

have been developed. Cognition, Gestalt, Cartesian thinking, and Tufte's chartjunk contribute to instrumentalism and the objective interpretation of visuals. Rhetoric, discourse theory, and ecological perception contribute an understanding of human-oriented interpretation of visuals. Because people interpret images according to their own physical, social, cultural, and educational contexts, satellite images may provoke not merely scientific, but also affective interpretation. There can be a possibility that people react affectively when they see the images. The affective responses of viewers, thus, contribute something to our knowledge of visual communication and rhetoric. The potential for satellite imagery and related technological artifacts to produce such responses has rarely been addressed. The analysis of viewer responses to satellite images will demonstrate the importance of considering a broader approach to visual communication than is typically allowed by a traditional, positivist, or instrumentalist approach.

Generally, people learn how to understand, use, interpret, and evaluate conventions of satellite images through an instrumentalist lens. Instrumentalism generalizes visual perception and concentrates on universal viewers. The emphasis is on rational thinking and visual conventions. Analysis of how a mechanical artifact like a tsunami satellite image would be affective makes clear the importance of thoroughly considering possible humanistic responses to satellite imagery, an approach not included in most instrumental theories. Discourse theory, rhetoric, and ecological perception offer a more fruitful means to learn how satellite images are used and interpreted affectively. This research will fill a gap among existing visual theories and approaches, which exclude the capacity of satellite images to provoke humanistic interpretations.

1.4. THE 2004 ASIAN TSUNAMI

The 2004 tsunami was the result of an earthquake that occurred under the sea near Sumatra, Indonesia, on December 26. The earthquake had a magnitude of 9.3 on the Richter scale, and the subduction created a series of large sea waves, sometimes 80-100 feet high (2004 Indian Ocean earthquake, 2009). Nearly fifteen countries were affected; of these, Indonesia, Sri Lanka Thailand, and India suffered the most. More than 229,000 people were killed in total; in Sri Lanka alone, more than 35,000 people were killed. The following table shows the number of deaths caused by the 2004 tsunami:

Table 1.1. The number of deaths caused by the 2004 tsunami

Country	Confirmed deaths	Missing	Displaced
Indonesia	130,736	37,063	500,000+
Sri Lanka	35,322		516,150
India	12,405	5,640	647,599
Thailand	5,395	2,817	7,000
Somalia	78	—	5,000
Other	231	232	19,400+

(Source: 2004 Indian Ocean earthquake, *Wikipedia*, 2009)

There had been no recent massive tsunami experiences in southeast Asia until 2004, and as a result most people were ignorant about how to identify and react to a tsunami. Tsunamis occur within several minutes or hours of an earthquake. The sea recedes from the coast. This was a surprise to most. People started watching the receding sea water, not knowing that additional tsunami waves would bring the sea farther inland, harming them before the sea returned to its normal position. The selected satellite images show this behavior of the tsunami.

1.5. PROVENANCE OF THE SELECTED TSUNAMI SATELLITE IMAGES

I first saw the selected satellite images either in a newspaper or on the web, sometime after the 2004 Asian tsunami. The image is a God's-eye view of the area, Kaluthara, in Sri Lanka. The tsunami had caused a huge devastation to the captured area. The moment I saw the images, I could realize what and when it might have been taken because I was familiar with the context. As I mentioned before, the images brought all the sad tsunami memories back to me. I was also fascinated to see the degree of devastation the tsunami had caused to my country and its people. I could never forget these images. One reason could be that the images show an area near where my brother was affected by the tsunami. And I also cannot forget how the tsunami killed many people, including newly born babies, who had been traveling along the coastal railway.

The three satellite images used in this study were selected from the website of the Satellite Imaging Corporation (<http://www.satimagingcorp.com/gallery/sri-lanka-tsunami-lg.html>). The first image was taken in January 2004, before the tsunami struck, and the other two images were taken on December 26 during the tsunami. I received

permission to use the images for my study from DigitalGlobe, the copyright owner of the three satellite images. I also contacted the Satellite imaging Corporation, but did not receive replies. Use of the images is transformative, as they are being used as objects of critique, not as sources of information. The copyright holder's ability to profit from distribution of the images is not compromised by my reproduction of them in this thesis. Finally, I provide references as accurately as possible, given the nature of how such images are propagated through the Internet.

2. LITERATURE REVIEW

Visual communication is a crucial component of technical communication. Like studying technical communication, visual communication itself is challenging in its interdisciplinarity and scope. The following discussion relates some of the existing visual communication theories and approaches to the study on how tsunami satellite images operate. The 2004 Asian tsunami had a significant impact on people's lives. The experiences people had with the tsunami are so bitter that even a satellite image of the tsunami can bring those horrific memories back to viewers' minds, thus causing affective responses to the images. The selected theories and approaches address the areas of cognitive approaches, visual rhetoric, cultural criticism, visual studies, semiotics, ecological perception, and creative reasoning.

2.1. COGNITIVE APPROACHES

Cognitive approaches reflect modernism and instrumentalism, in which the emphasis is on the universal human experience of perception. The process of visual perception and interpretation in cognitive approaches is generalized and based on predictable responses. Cognitive-based theories, such as instrumentalism and modernism, promote the idea of universality and a universal viewer "whose needs can best be met by designing technical visuals that respond well to the innate perceptual abilities of readers" (Brasseur, 2003, p. 1). Cognitive-based theories do not take context into account. With regards to satellite imagery, cognitive approaches will focus on understanding the objective features of the images, interpreted by generalized viewers.

Cartesian thinking, like cognition, relies on universality of reason, standards, and rationality. There is no consideration of human dimensions and “Any visual genre that is based on a Cartesian or rationalist frame, ...leave[s] little room for details, context, and emotions.” (Brasseur, 2003, p. 38). As for Cartesian and mathematical thinking, the rationalization of perception derives from Descartes’ idea of the distinction between the mind and body. Visual genres and their conventions are considered stable. Rational thinking and stability of a genre are encouraged by a system of education that introduces conventions and standards. According to Descartes’ approach, truth derives from rational thinking. Types of interpretations a satellite image could provoke, in terms of the Cartesian model, are statistical and objectively informational.

Edward Tufte is a modernist who suggests that, if the form of a visual is precise and well-designed, then the information the visual delivers will be accurate. “Superior methods,” as Tufte points out, “are more likely to produce truthful, credible, and precise findings” (Tufte, 1997, p. 27), and cluttered data can lead to misinterpretations. Tufte defines the quality of a visual are through its clarity and accuracy of data, proper application of conventions, and consistency in design. His concentration is on universal design standards. To be effective, “information displays should be documentary, comparative, casual and explanatory, quantified, multivariate, exploratory, skeptical” (Tufte, 1997, p. 53). From this perspective, a satellite image would be accurate because of the harmonious relationship between the satellite photograph and the accurate data the photograph shows. Accuracy can be a function of resolution, labeling, colors, and other related information.

2.2. ECOLOGICAL PERCEPTION

People do not only use their cognitive or neurological abilities to interpret what they see. Ecological perception is about direct perception, which has little involvement with cognition, but related instead to ecological stimuli surrounding peoples' bodies. People make immediate interpretations of visuals depending on their surroundings or their world.

Ecological theory suggests that “we perceive a full and rich world of sensory data directly and immediately, without the intervention of discrete neurological responses or prior hypotheses” (Kimball & Hawkins, 2008, p. 49). A satellite image is a mechanical artifact. It becomes live and provocative as people build interpretations around it. These interpretations are determined by the scientific or photographic features of a satellite image, the human agency behind an image or, by experiences and emotions of viewers.

To make scientific interpretations, people may need to process data using their cognitive capabilities and develop hypotheses to analyze the data provided by a satellite image, such as time, date, altitude, angle, resolution, and proximity. As suggested by Gestalt theory, the focus of such interpretation is on a “stationary viewer” (Kimball & Hawkins, 2008, p. 50) who thoroughly analyses all possible data.

With affective responses attached to a satellite image, there could be the direct perception before the involvement of cognition or neurological processes. People could make affective interpretations immediately as their body reacts to, for example, the danger and tragedy they see in a tsunami satellite image. According to Hill and Helmers:

If the purpose of the emotional response is...to direct our attention to a nearby danger, then it makes sense that we would be programmed to react quickly and decisively, without taking the time to analyze the situation and evaluate all of the information that might be potentially relevant.

(Helmers & Hill, 2004, p. 34).

Affective reactions to tsunami satellite images can be spontaneous. They may immediately remember about the dead ones and damaged properties. The satellite images do not show any dead bodies or anyone washing out to sea, except for the land after it has been hit by the waves. Yet people read what is missing or not explicitly shown in the satellite images. As Gibson suggests:

Rather than perceiving the world as tiny, discrete sensations or percepts that we build into bigger concepts, we experience the surrounding world or ecology simultaneously, in a rush of available data that we interact with dynamically and unconsciously. But unlike Gestalt, which focuses on a mostly stationary viewer, ecological perception notes that we do not stand still while we look at our ecology....

(as cited in Kimball & Hawkins, 2008, p. 50).

A highly mechanical artifact like a satellite image can also become live and provocative. Pizarro, Detweiler-Bedell, & Bloom (2006), when they talk about the provocative aspects of images, explain how tsunami satellite images could arouse compassion and empathy, thus encouraging people to help the societies affected by the tsunami. Most human reactions aroused by tsunami satellite images are spontaneous. Hill and Helmers point out that “When we are exposed to visual information, our body reacts much as it would if the danger represented in the image were actually present. Our revolutionary response kicks

in, and we are prompted to make a quick decision and to take action without an extensive amount of analysis” (Helmets & Hill, 2004, p. 34). Human responses to tsunami satellite images are not the result of a thorough analysis of data or of the contribution of cognitive systems. The moment people see an image, they interpret what they see based on their ecology. Data acquired in this study may reveal evidence of ecological perceptions of tsunami satellite images. Theories that rely on stationary perception will not explain how people connect their feelings, perceptions, and relationships with tsunami satellite images, whereas the ecological perception theory prioritizes sensory perceptions of humans.

2.3. CREATIVE RATIONALITY

David A. Pizarro, Brian Detweiler-Bedell, and Paul Bloom (2006) say that current technology-based media like satellite imagery and cable news networks provoke “sympathy and compassion” just like old paintings of war. After the 2004 tsunami, a news website posted tsunami satellite images, and the responses towards those images were as follow:

[Reader A]: “The satellite images show the extent of damage, but remains impersonal. This picture graphically shows the devastation and number of deaths....[the user then provides a link to a high resolution image of hundreds

of dead bodies on beach, seen with a stark clarity in detail]”

[Reader B]: “After seeing this I feel physically revolted. Every one of those people could well be someone’s brother or sister, or parent...or child....”

[Reader C]: “Horrific. I just donated \$150 to the Red Cross. I had been thinking about it, but it was that image that pushed me over the edge.” (accessed on <http://slashdot.org>, 12/31/04)

(as cited in Pizarro, Detweiler-Bedell, & Bloom, 2006, p. 92)

People have their own reasons for interpretation of any image, and their interactions with an image varies depending on individuals' experience, knowledge, and discourse. The above responses reveal mixed feelings toward and interpretations of tsunami satellite images. Those who are directly or indirectly affected by the tsunami, or those who know about and are interested in tsunami satellite images may find them both scientifically and humanistically appealing as a site for inquiry

Given the likelihood of affective human responses, a satellite image could no longer be characterized as ideologically neutral. What is more than obviously seen begins to appear with different affective interpretations. Scientific images like the 2004 tsunami photos can be open to many interpretations, not just to predictable interpretations. Pizarro, Detweiler-Bedell, and Bloom (2006) suggest that an image can have enormous power to influence human acts. For example, photos taken during the Vietnam War ultimately helped to stop the war. And the tsunami satellite images not only aroused human emotions and concerns, but also influenced people to help those affected by the tsunami.

2.4. VISUAL RHETORIC

Rhetorical theory is a foundation of many of the ideas that inform this thesis. Some concepts from rhetoric are particularly important to the ideas in the thesis, such as exigency and agency. Exigency moves audiences to action. Generally, exigency is important when I discuss how participants in the study express a desire to act after viewing satellite images. Agency is the power of someone or something to decide to act

(MGGreer, 2005). This study examines how tsunami satellite images could demonstrate exigency and agency.

Visual rhetoric helps us to analyze how people make interpretations of what they see based on context, experiences, knowledge, and discourse. In general, people interpret mechanical data of satellite images based on their education, knowledge, and disciplines. Yet viewers' experiences, knowledge, and discourse could also influence them to interpret satellite images affectively, revealing a variety of emotions or mixed feelings. A satellite image has no status or life and is emotionless. So, how can mechanical artifacts like tsunami satellite images be provocative? As Charles A. Hill and Marguerite H. Helmers (2004) point out:

Rather than depict reality accurately, or event impressionistically, the creator assembles and arranges 'blocks of meaning' so that the description becomes yet another meaning. Rather than reveal truth or provide understanding, the poem or the image offers yet another meaning. The import of Barthes' insight for the study of visual rhetoric is that the assembling of these 'blocks of meaning' is a rhetorical act...[one should] avoid seeking the transparent, definitional relationship between image and referent. While an image may index something exterior (that which is 'real'), it points but does not tell.

(p. 17).

With regard to the tsunami satellite images, the "blocks of meaning" arrive with mixed emotions and real-life experiences. The rhetorical elements such as context, content, and audience determine how a satellite image would be interpreted in various ways. The context is a natural disaster that was inevitable and that created emotional turmoil. The content of the images is not just the tsunami waves or the landscape. The images represent what actually took place with the lives of people during and after the tsunami. It is also about people who were killed, homeless, and helpless. People who identify something more than "scientific" in the images will be saddened by the memories they

trigger. The audience for this tsunami satellite images would be not just geologists and scientists who talk about the tsunami behavior and satellite image conventions. The audience would include anyone who empathizes with what is being told “differently” by these images. With rhetoric, emotions, and experiences, therefore, the way the images are read and used will vary. They are powerful because their “blocks of meaning” could represent both objective and humanistic information. The images change the “transparent, definitional relationship between image and referent” (Helmets & Hill, 2004, p. 17).

These images may contradict external depictions of data with what appears to be rhetoric.

We cannot dismiss the fact that visual conventions aid visual studies because: Disciplines provide structures and conventional practices for supporting, disseminating, and responding to projects based on a common area of inquiry, and these structures and conventions can be highly productive by increasing efficiency, sharing ideas among scholars, and enhancing the credibility of individual studies as well as of the discipline as a whole...

(Helmets & Hill, 2004, p. 19).

“Structures and conventions” do increase the acceptance and discussion among scholars committed to instrumentalism. However, in the outside socio-cultural and rhetorical context, humanistic concerns must be addressed. Visual studies, therefore, should give prominence to the study of human elements and the affective function of visuals. We should examine what is controversial, different, and hidden from standard conventions and interpretations. Barbie Zelizer notes that “Visual representation gives way to visual rhetoric through subjectivity, voice, and contingency” (as cited in Helmets & Hill, 2004, p. 17). With respect to subjective viewer responses, a tsunami satellite image may be shown to echo voices of people. The same “voice” may resemble affective responses that are not identified through instrumentalism or visual conventions.

The original intention of a satellite image as a genre would not be to provoke discussion on human elements like emotions. The things depicted in satellite images are defined as and by objective data and features. According to Hill and Helmers:

In short, although descriptions of cognitive laziness and a preference for cognitive shortcuts might be useful for helping to explain how images affect us, a full understanding of the rhetorical power of images necessitates a discussion of emotion. Vivid images aretend to elicit strong emotions, and we do not need to perform psychological experiments to know that strong emotions will often overcome and even inhibit analytical thinking.

(Helmers & Hill, 2004, p. 33).

People have voluntarily revealed affective human reactions to tsunami satellite images in my blog and in some other web-based discussions. Tsunami satellite images invite people to talk about the humanistic nature of satellite images and how they can be emotionally laden, thus making them appear vivid. Although not as dramatic as other images like those of the Twin Towers, national logos, religious symbols, or photographs of the dead during the 2004 tsunami, satellite images could still “elicit strong emotions” (Helmers & Hill, 2004, p. 33) like fear, sadness, disappointment, and frustration.

As Hill and Helmers point out, fear is a primal emotion and the stimuli that cause fear will be different among cultures and even among individuals within a culture. Comments to my blog post reveal that people’s experiences and their being in the region where the tsunami took place trigger different kinds of responses. The ways in which individuals emotionally respond to an image cannot be generalized because even when the emotions are similar, there may be provided by different stimuli. Hill and Helmers (2004) suggest that “Although the primal emotion may be a result of an evolutionary response to personal danger, the specific stimuli that trigger these emotions can be personally and culturally conditioned” (p. 34). For example, the stimulus behind the fear

generated by seeing a tsunami satellite image could be the loss of either a family member or property, or the fear of seeing decomposed corpses. The helplessness viewers feel could be related to empathy for orphans and the homeless or to helplessness in the face of natural disaster. Viewers could feel guilt over the lack of an effective communication system to warn people about the tsunami and the inability to save a life as many were washed out to sea. Hill and Helmers (2004) talk about a range of emotions – from very basic ones to more complex ones such as guilt, love, and envy and concepts such as “nationalism and prejudice” that are related to powerful cultural forces. The analysis of many responses to the tsunami satellite images demonstrates that images could also be capable of triggering both basic emotions, like fear, and complex emotions like helplessness, oneness as a nation, and guilt.

As Hill and Helmers (2004) suggest, “Description of the nature of the visual rhetoric involves attention to two primary components – presented elements and suggested elements” (p. 307). Both presented and suggested elements of an image clarify what the image says and means to its audiences. Presented elements of an artifact are identified through its “major physical features, such as space, medium, and color” (Helmers & Hill, 2004, p. 307). Some of the presented elements of a satellite image include the geological features it captures as well as date, time, color scheme, and resolution. Thus, a rich rhetorical approach would include some of the same aspects that cognitivists and instrumentalists are concerned with. Hill and Helmers say that to identify suggested elements, we need to examine “ideas, themes, and allusions that a viewer is likely to infer from the presented elements...” (Helmers & Hill, 2004, p. 307). We can see how suggested elements like human responses and emotional inferences are triggered

by presented elements of a satellite image. The example used by Hill and Helmers to explain suggested elements is the “ornate gold leafing found on Baroque buildings,” which “might suggest wealth, privilege, and power (Kanengieter 12-13)” (Helmers & Hill, 2004, p. 307). The gold leaf is an artistic flourish that is designed, created, and deployed by people, but a satellite image as a genre is not, and the question remains as to whether a satellite image functions rhetorically.

2.5. CULTURAL CRITICISM

The objective of this thesis is to investigate questions like “Is there a possibility of affective interpretations inherent in the genre of satellite images that is missing when we rely on existing approaches to visual studies?” The problem inherent in “standardized” and “accepted” approaches to visual studies is that they exclude the possibility of affective interpretations of satellite images.

As Brasseur points out, knowing the context in which a genre is used will help one understand the genre and how it is being used. Genres are created by humans and derive from discourse communities. Genre is a social construction, and depending on discourse communities, the “values” of and the way people interpret genres differ. Satellite images are a visual genre that generally operates within scientific disciplines and are interpreted objectively. However, some may interpret satellite images affectively. When viewing satellite images of the 2004 tsunami, some will see scientific and photographic features; others will see the devastation the tsunami caused to people’s lives and property. Some may be saddened or amused by such an image. As Brasseur points out, visuals can be understood by “a human being or group of human beings operating

within a particular social structure” (Brasseur, 2003, p. 7). Not only knowledge and conventions are important for the understanding of visuals, but also history, context, values, audience, power, and emotions. Interpretation of a tsunami satellite image can be human from a cultural-critical perspective. People may recall the disaster and visualize what they saw at the time. They may remember their lost or missing loved ones. Some may generate a discussion about the horror and devastation of the tsunami and about myths generated in its wake. Or people will seek spiritual comfort by calling on their god.

Explanation of the human and emotional impact that is lacking in cognitive-based and rationalist approaches to the understanding of satellite imagery is a pragmatic approach. Brasseur writes, “Any visual genre that is based on a Cartesian or rationalist frame, ...leave[s] little room for details, context, and emotions. In this view, the Cartesian model of the split between mind and body necessarily results in a destabilization of the form” (Brasseur, 2003, p. 38). Making meaning of a tsunami satellite image is based not merely on the rationalist approach. People use their ecology, experiences, and innate abilities to comprehend and create the meaning of tsunami satellite images.

Lines, marks, and shapes are the “standard conventions” of a visual. As developed for scientific and technical communication, graphs, according to M. Bakhtin, are a “relatively stable type of genre” (as cited in Brasseur, 2003, p. 16). The stability of conventional genres is encouraged by an education system that introduces individuals to conventions and standards of visuals. With respect to Cartesian and mathematical thinking, this kind of education “rationalizes thinking and the information that it uses, accepting the implicit validity of Descartes’ idea of a split between the mind and the body” (Brasseur, 2003, p. 18). The question is whether studying theory and its

applications is enough to understand the whole notion of truth or the relevance of any image, including tsunami satellite images. Brasseur's example of the Nightingale Rose graph charts the occurrence of rape committed against women, the situation in which the rape occurred, and resistance modes such as "dissuade," "scream," "flee," and "fight" used by the women to defend themselves during rape. One could clearly apply his or her acquired knowledge to understand that "the right lower quadrant was colored simply in white and signified 'Not raped/ Not injured'" (Brasseur, 2003, p. 20). Yet, the challenge is to answer a question like "Does placing the words 'dissuade,' 'scream,' 'flee,' and 'fight' in blue letters lessen their [women's] highly charged emotional weight?" (Brasseur, 2003, p. 20), using the scientific or rational perspective. Generally, analysis of satellite images ignores affective components those images could possibly possess. Just as the Nightingale Rose graph shows more than just data related to abuse, a tsunami satellite image can provoke not just scientific interpretations, but also humanistic interpretations. Ben Barton and Marthalee Barton notes that "technical and professional visuals are not only instruments of communication and even of knowledge, but also instruments of power" (as cited in Brasseur, 2003, pp. 1-2). This remark acknowledges the "hidden" aspects of visual genres, such as power and ideology. If we consider images merely tools for information transfer, we would overlook their probable involvement with power and ideology. Brasseur's and the Bartons' cultural and critical approaches invite us to question and examine genres that are considered ideologically neutral. Clearly, my introduction to such theories has framed my interaction with satellite images and will be evident as I discuss the results of the study.

2.6. VISUAL STUDIES

Visual studies teach people how to read, understand, and evaluate visuals.

Understanding visuals can be a challenge because people interpret visuals differently depending on their own physical, social, cultural, and educational contexts. The diversity of visual interpretation makes studying visual communication as important as studying other aspects of rhetoric. According to Sandra Moriarty (1994), “visual communication is as much a primary system as verbal language” (para. 51). Diverse interpretations are possible with any visual, including tsunami satellite images. Depending on viewers’ varied contexts, the image may convey not merely scientific information, but also affective interpretations. This study on how tsunami satellite images operate can thus contribute to knowledge of visual studies and rhetoric, broadening these fields by addressing the possible affective impact of satellite imagery.

James Elkins (2003) specifically identifies “aerial surveying” and “digital videos from missiles” as potential objects for visual studies investigations. According to the sociologist Douglas Harper, “aerial photographs are a good way to break informants’ accustomed sense of the place they live...” (Elkins, 2003, plate 6, p. 23). The tsunami satellite images are in the same category as aerial images and provide a view different from that which informants and affected people have seen for many years. With the tsunami, “the place they live” is changed in split seconds. Paradoxically, tsunami satellite images may also accustom the viewers to the nature and effects of another tsunami. With mixed emotions such as sadness, frustration, and fear, audiences of tsunami satellite images may be more cautious next time.

As Elkins (2003) points out, “The argument for a general approach to images...is that it allows visibility itself to be questioned and permits new kinds of questions to be asked that can’t be easily raised in conventional classes of art history, anthropology, or sociology” (p. 39). The examination of responses to the tsunami satellite images will demonstrate how satellite images could provoke affective responses from viewers.

Visual studies approaches are not easy, and to the extent that I employ visual studies, my approach may be justifiably incomplete. According to Elkins (2003), “We need to become irritated ... Visual studies should be ferociously difficult, as obdurate and entangled in power as the image themselves...there is so much more out there waiting to be understood” (p. 201). The complex nature of visual interpretation itself invites further to study of visuals like satellite images--for instance, to see how the satellite images might provoke different emotions in different people. To some individuals, satellite images may not be emotional at all. Indeed, there is so much more to be understood about satellite images and how they are read and used, including humanistic interpretations towards a tsunami satellite image.

2.7. SEMIOTICS

Labeling icons, indices, and symbols to visuals will not be part of this discussion on semiotics, but seeing the semiotics systems with the context of use will be. Semioticians from traditional schools of semiotics, like Charles Peirce and Ferdinand de Saussure, address topics beyond the scope of this thesis. For contemporary semioticians such as W.J.T. Mitchell (2006), visuals do speak and deliver messages. People learn from, interpret, judge, and empathize with what they see in visuals. There are visuals that

affect affective interpretations of the viewer. For example, a picture of a parent may provoke high emotional responses like respect and affection. Photographs of the Challenger or the Columbia shuttle crew may provoke a sense of loss and sadness. As Mitchell (2006) points out, visuals can be seen as “living organisms” that have “desires (for example, appetites, needs, demands, drives)” (p. 11). Satellite images may function as “living organisms,” provoking desires in humans. The satellite images taken during the 2004 tsunami reflect and re-embody the tsunami destruction. Some participants to my blog post have agreed that the selected satellite images are emotionally laden and many comments on another web forum that talk about tsunami satellite images reveal how emotionally intense these images can be. Yet, taken to an extreme, images themselves may be conveying messages that seem human in their intensity and affect.

Pictures of the Twin Towers being attacked may suggest the evil nature of terrorism. Or they could be identified as “icons of globalization and advanced capitalism” or “symbols of decadence and evil” (Mitchell, 2006, p. 13) by those who attacked the twin towers. Similarly, tsunami satellite images can be symbolic in sending a message of inevitable, hazardous natural disasters. Or they could be a symbol of uncertainty, death, and fear. The messages these images can deliver express the emotions of those who were directly or indirectly affected by the tsunami. Tsunami images tend to appear as evil, violent, and scary. Most of the responses towards these tsunami satellite images do in fact reflect a humanistic perspective, not just a scientific view. Instead of the features of satellite images, some would rather talk about the destruction, the dead ones, the tsunami aftermath, and the possibility of another disastrous tsunami.

As with the Twin Tower attack, people's attitudes towards their lives and safety have changed after the 2004 tsunami. The affective response a tsunami satellite image creates in a viewer's mind can be similar to that produced by images of the Twin Towers, the Challenger or Columbia shuttles, or Dolly, the cloned sheep. Mitchell (2006) argues that:

The potency of these images [Dolly, the cloned sheep, and the collapsing Twin Towers] doesn't reside merely in their presentness or topical currency but in their status as enigmas and omens, harbingers of uncertain futures. They also exemplify the sensuous spectrum of image anxiety in our time, ranging from the overwhelmingly traumatic spectacle of mass destruction on the one hand to the subtle creepiness of the cloned sheep, which, as visual image, is quite unremarkable, but as *idea* is a figure of considerable dread.

(p. 12).

Mitchell (2006) says that "We want to know what pictures mean and what they do: how they communicate as signs and symbols, what sort of power they have to effect human emotions and behavior" (p. 28). People often talk about features like shapes, colors, contrast, and geography depicted in satellite images. What should also be examined is how these images provoke affective interpretations. As Mitchell (2006) suggests:

Art historians may "know" that the pictures they study are only material objects that have been marked with colors and shapes, but they frequently talk and act as if pictures had feeling, will, consciousness, agency, and desire. Everyone knows that a photograph of their mother is not alive, but they will still be reluctant to deface or destroy it.

(p. 31).

Examining the humanistic nature of satellite images is as important as knowing the conventions of a satellite image. The 2004 tsunami is a gateway to study more about these new approaches or outlooks towards satellite images--not just in how they represent the degree of destruction caused by the tsunami and the advancement of science and

technology, but also how most audience members read stories of the tsunami by looking at the satellite images. Respecting an image of parents involves human emotions. Similarly, other feelings such as fear, sadness, frustration, or any psychological reaction towards the tsunami satellite images are also human products. Just as some images that have professional importance can show intelligence and purposiveness, tsunami satellite images may appear alive and purposive to their vast audiences.

2.8. SUMMARY

This literature review identifies a number of theories and approaches to visual communication and their relevance to tsunami satellite images. This study connects relevant theoretical approaches to the data. Although other theoretical approaches may be possible, I have attempted to cover those which most directly connect to visual communication as it is studied within the discipline of technical communication.

3. METHODS

This research project examines how satellite images operate and asks whether tsunami satellite imagery is limited to objectivity and scientific and statistical data. The study explores the nature of the relationship between the technology of the tsunami satellite images and viewers.

3.1. QUALITATIVE RESEARCH AND EMPIRICAL APPROACH

This qualitative research project serves an interpretive goal of identifying and observing human responses to satellite imagery. The study consists of “more descriptions of user behavior or transcripts of interviews” and “allows for the discovery of unexpected knowledge” (Hughes & Hayhoe, 2008, p. 8). The aim is to understand how tsunami satellite images operate. To explore the research questions, I have conducted qualitative research, with empirical approach to collect data, as well as scholarly literature review. The goal of the empirical approach is to gather data to understand various responses to tsunami satellite images. Empirical data enable me to examine whether and how a mechanical satellite image could provoke both literal and figurative responses depending on viewers’ experiences, knowledge, and discourse.

I used the convenience sampling method and responses were gathered using various means, especially electronic forms of communication, including blogs and email. More related responses to tsunami satellite images from other existing web discussions. The analysis of data is conducted through application of relevant visual theories and approaches.

Michael A. Hughes and George F. Hayhoe say that “A good guideline is to use interviews and focus groups to discover people’s opinions, motives, and reactions...” (2008, p. 79). A visit to Sri Lanka or any other countries affected by the tsunami was not possible; therefore, observations of how the selected tsunami satellite images operate and participants’ opinions and reactions to the images were made through a blog and emails. Discussions and questions posed to participants were designed to reproduce as nearly as possible a face-to-face interview situation. This work also relied on viewers’ comments on other blogs and web discussions of tsunami satellite images.

3.1.1. Credibility, transferability, and dependability. As Hughes and Hayhoe recommend, I put my best attempt to achieve credibility, transferability, and dependability in qualitative research that I conducted for this study.

3.1.1.1 Credibility. The selected and anonymous participants in the study were people who represented audiences interested in talking about tsunami satellite images and how images operate in an authentic context of their use. Their reactions to and comments about tsunami satellite images were either focused on the features of the pictures or personal interpretations, which revealed how tsunami satellite images operate. To ensure sincere responses, the participants had the choice either to identify themselves or to remain anonymous. This approach reduced any influences that would compromise the credibility of the data.

Since I contacted people I knew, some have responded both to my emails and blog, and the comments revealed the same thoughts in both formats. In other existing web sources, single participants commented several times, and I did not notice meaningful

differences among those comments. Most of them were replies to previous comments from other participants.

3.1.1.2 Transferability. According to Hughes and Hayhoe, qualitative research should ask “Does the phenomenon you are [observing]...reflect what would be found in the real world?” (Hayhoe & Hughes, 2008, p. 79). This study opens a gateway to further investigation and research on the operation of satellite images. The phenomenon I examine is how people react to tsunami satellite images. Both the encouraged responses by participants to my questions and spontaneous responses to the blog and the web discussions could reflect the real world scenario in which tsunami satellite images operate. One place people would see these images is on the web. So, the actual tsunami satellite images I first saw were shown to participants via the blog.

3.1.1.3 Dependability. Discussion and conclusions for this study emerge from qualitative data. Hayhoe and Hughes define dependability as “the confidence with which the conclusions reached in a research project could be replicated by different researchers” (Hayhoe & Hughes, 2008, p. 80). Participants in this test represented many perspectives, and my personal accounts were included for further discussion. I admit my subjectivity on this topic and without my personal experiences with the tsunami and the selected satellite images, there would not be this study and thesis. I accurately narrated my experiences as facts and recorded participants’ responses. I depended on triangulation, which was used to “look at data from different perspectives” (Hayhoe & Hughes, 2008, p. 81). I categorized responses as literal, figurative, or both. I gathered data from through a blog and email to understand others’ perspectives on the selected tsunami satellite images. I also gathered data from web discussions that connect on tsunami satellite

images. Another approach was to connect theories and approaches to visual studies with this study. All of these approaches helped me to gather valuable data for this study.

3.1.2. Institutional Review Board (IRB) process. Before I started research, having the Institutional Review Board (IRB) approval was necessary before data could be collected from people. With the help of my adviser, Dr. Kathryn Northcut, we submitted an IRB application to the Missouri University of Science and Technology, Campus Institutional Review Board for the Protection of Human Subjects in Research (UMRIRB-1) (Appendix A). A consent letter was also designed to be given to participants. If an individual consented to participation, he or she was free to withdraw from the study at any time. Participants' names and other identifying information were kept confidential during research and throughout the thesis; pseudonyms were assigned if needed.

3.1.3. Participant profile. The goal was to include up to 20 participants, since a small number of participants are sufficient in qualitative research, and none under the age of 18 were to be included. Participants in the study include people who are directly, indirectly, or not affected by the tsunami at all, and those who know and are interested about the tsunami and the selected satellite images. Participants had the freedom to express their reactions to the satellite images. The intention of my blog post and the email questions were not to force them towards affective responses, but my comments were admittedly emotionally laden. They were asked to read the blog post and comment on what they sincerely think and feel about the selected satellite images. Participants could either reveal usernames or be anonymous. In the email, the respondents were asked to have a look at the satellite images first and then respond to the questions.

3.1.4. Sources used to gather data. I mostly used the web to gather data for this study. The internet-based sources used to gather data for the study were blogs, email, chat, and other existing web sources.

3.1.4.1 Blogs. Creating a blog was very useful for me because accessing the web is quite convenient to most of the target participant population. Therefore, people who were affected by any tsunami satellite image could participate in the discussion.

I created a blog called “Visual Communication” and posted the selected tsunami satellite images under the topic “Tsunami Satellite Images: more than just an image?”

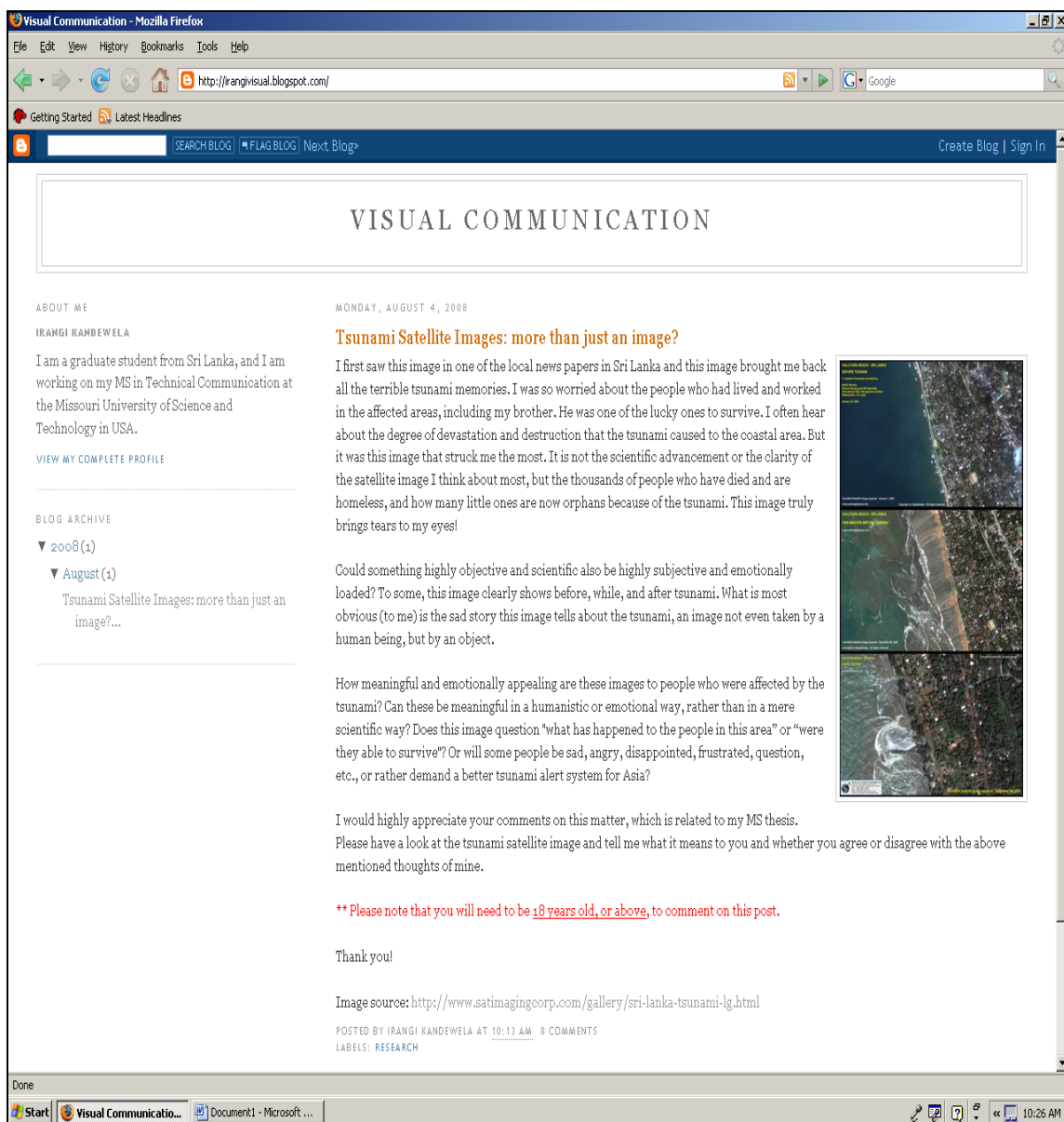


Figure 3.1. Screen capture of my blog

I opened the discussion on the blog by saying:

I first saw this image in one of the local news papers in Sri Lanka and this image brought me back all the terrible tsunami memories. I was so worried about the people who had lived and worked in the affected areas, including my brother. He was one of the lucky ones to survive. I often hear about the degree of devastation and destruction that the tsunami caused to the coastal area. But it was this image that struck me the most. It is not the scientific advancement or the clarity of the satellite image I think about most, but the thousands of people who

have died and are homeless, and how many little ones are now orphans because of the tsunami. This image truly brings tears to my eyes!

Could something highly objective and scientific also be highly subjective and emotionally loaded? To some, this image clearly shows before, while, and after tsunami. What is most obvious (to me) is the sad story this image tells about the tsunami, an image not even taken by a human being, but by an object.

How meaningful and emotionally appealing are these images to people who were affected by the tsunami? Can these be meaningful in a humanistic or emotional way, rather than in a mere scientific way? Does this image question "what has happened to the people in this area" or "were they able to survive"? Or will some people be sad, angry, disappointed, frustrated, question, etc., or rather demand a better tsunami alert system for Asia?

I would highly appreciate your comments on this matter, which is related to my MS thesis. Please have a look at the tsunami satellite image and tell me what it means to you and whether you agree or disagree with the above mentioned thoughts of mine.

** Please note that you will need to be 18 years old, or above, to comment on this post.

Thank you!

I believed that my blog post would help people realize what they may or may not feel towards these satellite images and an opportunity to talk about their interpretations freely via the web. Creating the blog helped me to attract responses from people whether I knew them or not. I informed viewers I knew about the blog by emailing the blog link and by displaying the blog link on my Facebook and Gmail status. The blog was intended to arouse viewers' curiosity to check the images and perhaps comment on them.

3.1.4.2 Emails. I emailed the selected satellite images and some related questions, along with the consent of participation letter, to selected people whom I assumed would provide valuable responses. Types of questions I asked from the people I emailed were:

1. What does this image remind you about? Can you remember (roughly) when you first saw it?
2. Does this image tell stories related to the tsunami?
3. What do you think has happened to people who lived in the area depicted in this satellite image?
4. Is there something you find surprising, interesting, important, and emotional when you see this image?
5. Do you think that some people (perhaps including you) will find this image to be emotional (e.g. by reminding about dead people, missing family members, lost houses, etc.)?
6. Do you feel like demanding something (e.g tsunami alert system for Asia) after seeing this image?
7. Do you wish the tsunami had never happened after seeing this image?

Similarly, I assumed that the above-mentioned questions would help participants to write about feelings they might have towards the satellite images.

I had the help of my colleagues in Sri Lanka and the USA to invite people they know to respond to my blog.

3.1.4.3 Chat. I tried to chat with people through Gtalk, Skype, and Facebook. I also used chat and Facebook messages to inform and remind people I know about my blog.

3.1.4.4 Existing web sources. I was looking into existing web posts, articles, blogs, and discussions to see whether people have talked about tsunami or satellite imagery to be affective. I found relevant information from OKCtalk (<http://www.okctalk.com/current-events/1507-tsunami-satellite-images.html>) and FreeRepublic (<http://www.freerepublic.com/focus/f-news/1311428/posts>), and saved screen captures and viewers' comments.

3.1.5. Constraints on data. No one without internet access would have been able to participate in the study. Since online access was costly for some people, they might have been hesitant to carry out an online discussion or reply to my blog or emails. Not everybody had online access and when people got opportunities for online access in colleges, internet cafes, and at work, they might have not been in urgency to respond to my study. And it was unethical to force people to respond to me while they were at work.

Only the most interested people might have responded to my emails and the blog, as no incentive was provided. There had been many attempts via online chat to build up a conversation to talk about this study, but almost all did not respond to my questions. Most of them told me that they either did not have time or would reply to my questions later.

People with one particular viewpoint might have responded my approaches and to the existing web sources, meaning that the study reflects the reactions from people with a strong opinion, not those who are neutral or uninterested. In all, I collected 13 email

responses, 8 comments on the blog, and 190 comments from postings in FreeRepublic and OKCtalk. Those provided the corpus for empirical data analysis.

Some technical problems also affected gathering of data during the study. Sometimes, the web browser was slow. Online chat failed several times. Also, in OKCtalk and FreeRepublic, the tsunami satellite images fail to show up.

3.2. SUMMARY

This qualitative study on tsunami satellite images was based on empirical research. It is a study on a phenomenon of tsunami satellite images with the help of the web and existing literature to gather valuable data. The study was not intended to prove that the tsunami satellite images are humanistic but to oversee how they are possibly interpreted by viewers.

4. RESULTS, ANALYSIS, AND DISCUSSION

The comments of the participants help us to understand how tsunami satellite images operate and how they could be interpreted and analyzed in a humanistic way. The comments of the participants also help us to see how viewers' experiences, knowledge, and discourse affect their interpretations of mechanical artifacts like tsunami satellite images. Both literal and figurative responses were offered in emails, the blog, and the existing web sources by participants. Literal results comment specifically on the images themselves and seem to place the highest value on objective aspects of tsunami satellite images. The figurative results are associated with provoking memory, imagination, symbolism, and emotions. They also appear to be related to rhetorical exigency, a desire to take action. I have kept the responses intact; if participants' comments contained particular emphases or typographic errors, they have been preserved in the quoted text to reflect exactly what participants wrote, avoiding the stigma of "sic."

Appendix B includes complete data derived from emails, the blog, and web sources. The analysis of the results is categorized by the web source and by figurative and literal responses:

A - Emails

B - Blog

C, D - Existing web sources

4.1. EMAILS

In my emails, I asked several questions from the participants and those questions were designed to identify what the viewer would genuinely feel towards the selected tsunami satellite images. There were 13 email responses and the results are categorized in terms of being literal or figurative.

4.1.1. Literal responses. Literal responses go hand in hand with more cognitive and instrumental approaches. In literal responses, the participants emphasize the scientific or photographic features of the tsunami satellite images. As mentioned in the literature review, instrumental approaches tend towards objectivity, abstractions, and universality of perception. Some participants reveal their fascination with science and the objective features of the satellite images. Participant 8A says that, “Its interesting to note the magnitude of the Tsunami as we get a comparison with the land features” to question 4, “Is there something you find surprising, interesting, important, and emotional when you see this image?” This participant focuses on what is seen externally in the satellite images. Participant 8A identifies the images to be a representation of the tsunami and interprets the images abstractly. His or her answer to question 5, “Do you think that some people (perhaps including you) will find this image to be emotional (e.g. by reminding about dead people, missing family members, lost houses, etc.)?” is “I am not sure whether I find it emotional as we cannot see clearly the damage in this.”

Some participants talk about universal or global understanding of the satellite images where what is depicted from the outside of a visual determines what is being understood by the viewer. For instance, participant 9A, although he or she says that the tsunami satellite images can be emotionally laden, answers question 2 “Does this image

tell stories related to the tsunami?” by saying “At some extent, I won’t say that it tells everything but a lot. If a person just looks at it, can’t figure it out that all the houses are ruined in this disaster. A sharp eye and strong study are needed to look at in depth of disaster.” According to this participant, although he or she feels somewhat emotionally towards the satellite images, knowing actual data on what might have happened to the affected area depicted in the images would help him/her derive more meaning.

To some, the satellite images may not be affective since they show just what had happened before and during the tsunami to them, but not the impact to lives of people. Interpretation can come through what is openly seen on those images like the whirl of sea waves. Tufte’s claim is that visuals should present accurate and clear information. Some respondents stated that they actually cannot see what might have happened to people since they do not see the clear damage the tsunami has caused and are hesitant to admit that these satellite images can provoke affective responses. Participant 8A says, “...I am not sure about the images impact on me, not very high I would say” and “As the image doesnot directly depict the damages, I am not able to make out its impact....”

4.1.2. Figurative responses. The figurative responses to the tsunami satellite images reflect memory, imagination, symbolism, and emotion. Tsunami memories the viewers have could help to provoke any affective responses towards tsunami satellite images. Many participants who responded by emails to my questions describe their tsunami memories. It seems that the selected satellite images are capable of bringing back all their tsunami memories. The participants relate their tsunami-related memories to talk about what they feel about the images. For instance, the participant 6A wrote, “it's surprising i still love the sea, yet its beauty cannot conceal the haunting memories, when i look at the sea, now it's a mixed feeling.” The fear has been generated in the participant's mind when he or she saw the tsunami satellite images. Participant 12A also talks about his or her tsunami memories in a somber manner by saying “the way the waves have gone back and came again in big curves is surprising. The emotional feeling doesn't come with these images, but when recalling those days through these images i feel so so sad” This participant specifically says that it is the tsunami memories that trigger his or her emotional reaction to the tsunami satellite images. Participant 13A describes how “So many people shouted to save their life when they are sinking in the water” and these memories have made him or her to express “I think this was very sad & fear situation for all of us.” The haunting memories mixed with the sight of the tsunami satellite images could provoke emotions like fear and sadness in participants' minds.

Many participants go beyond flashbacks to reveal that they find the images to be affective. Responses to my 4th and 5th questions seem to reveal participants' affective reactions to the tsunami satellite images. Some of them have thoroughly agreed with the suggestion that the tsunami satellite images provoke emotions. Participant 2A firmly

says, "Of course yes, the people who lost their relatives will find this very emotional. Even I find it emotional coz it reminds me of the mothers and fathers screaming & crying kneeling down near their dead children." Participant 10A simply said, "I find this to be very emotional." Emotional responses to the selected satellite images could also provoke concepts like helplessness along with sadness. Participant 4A provides an example of this type of response by saying, "Some people lost their children, children lost their parent, in one day huge structures were washed to the water, leaving millions of Sri Lankan's heart broken and helpless." The satellite images have provoked the viewer to narrate the sad tsunami story he or she had experienced. The same participant thoroughly confirms his or her affective reaction in the answer to question 5 by saying "Same as above. Very poignant specially when little infants were grabbed out of the parents arms and washed a way. Drowning... it's a very heart breaking memory."

Some participants find the satellite images affective even without any direct physical experience of the tsunami or with the location shown in the images. Participant 3A finds these images to be emotionally loaded by saying "Very much, I, inspite of not having any emotional ties with the place nor having lost anyone to the tsunami feel very emotional for everyone who suffered that day due to nature's fury. Lives are lives, whether they are related to you or not." The idea of oneness and empathy to all mankind is brought up with this response. Even without having been directly affected by the tsunami and without having witnessed it or felt any particular connection with the region, some responded affectively to the images. Perhaps, it is not merely the direct physical connection to the tsunami that stimulate affective responses from the satellite images, but also the psychological connection and what the participant believes in like empathizing

with those who were affected and the affection he or she has towards the nation and to all human beings. For instance, participant 10A says:

As a Sri Lankan I find this to be very emotional—although (fortunately) I was not an eye witness to this catastrophe, every citizen who was not affected by the tsunami directly, has at least one tragic and shocking story to tell about his/her relations or friends or both who were there when the tsunami hit Sri Lanka. This means almost every Sri Lankan is/was/will be affected by/connected to the tsunami either directly or indirectly at least for two generations.

Upon the viewing of the satellite images, most of the participants started to imagine things like what might have happened to people in the affected area and through the imagination they reveal affective reactions. Some of them started creating sad tsunami stories based on their imagination. For instance, answers to question 3 “What do you think has happened to people who lived in the area depicted in this satellite image?” reveal the imaginary ideas of the participants. Participant 2A imagines that “Some must have run towards hilly areas and survived and the rest must have either got injured or washed away with the giant waves that came in” and participant 4A says that “Millions must have been washed to the deep blue sea. Very poignant.” This response shows how some could develop affective reactions to tsunami satellite images through imagination and narrative, as does response 3A: “Many are dead, some have started their life anew. But it must be devastating to lose everything you had in a matter of seconds and they have to live with that grief all their life.”

Some responses reveal combined literal and figurative reactions to the satellite images where respondents are impressed by what is being depicted objectively and what they feel when they see and recall tsunami memories. Participant 3A answers question 4 by saying:

I find it really surprising that the image captures the region from a distance, but still has so much detail to it. I can see homes and the beach clearly in the first pic - what a peaceful place it must have been. It is the sort of place you would want to be to relax. And then when I see the next image, it is scary because I know what's going to happen. But imagine the people, they don't know what's happening and even if they do, what can they do, how far can they run in the short time. In the last image, its too late, so may lives have already been lost. It's really a very emotional image, makes one feel really bad for the people who were just so unfortunate.

The participant is fascinated by the high-resolution satellite images, which clearly depict the degree of devastation the tsunami waves had caused to the coastal area. Then the participant mixes what he or she sees with thoughts and reveals affective reactions to the images. A similar response is given by participant 11A to question 4:

surprising -not now.. but it was
 interesting-The destruction looks small from up there.
 important- The whole world could see what happened on that day. It
 might be helpful in any further investigation.
 emotional- Sad

This participant finds the images to be affective as well as interesting in terms of the view of the satellite images. He or she specifically mentions that the kind of emotion he or she gets by seeing the images is sadness. Participant 7A's response "Of course I feel interesting and surprising. When we look at the image I see how the water in the sea is twisted and turned because of the pressure in the sea, which is the cause for this disaster" also shows his or her impression towards the satellite images. This participant also says "Yes, of course.." to question 5, which is, "Do you think that some people (perhaps including you) will find this image to be emotional (e.g. by reminding about dead people, missing family members, lost houses, etc.)?"

Some participants say that it is due to their knowledge and familiarity with the tsunami context that they find the images to be affective. Participant 5A better describes how the viewer's familiarity with the context would affect his or her interpretation of the tsunami satellite images:

These images do talk a lot about the disaster. They represent three different stages of the disaster: the "calm" sea, the "recession", and the "disastrous" sea. This interpretation is based on my familiarity with the event. However, for a person who is not familiar with the context under discussion would not be able to even come to terms with this interpretation as these images are not an explicit representation of the event. The images have been taken from a location removed from the location of the event; so the "real" experience is not adequately captured or represented in these. In my view, we cannot expect to go beyond a predominantly scientific, if not a scientific, understanding of the event using these images.

The same participant's response to question 4 is "It has an emotional appeal to me because and only because I know the context. Again, in the case of a stranger I don't think the same emotional appeal would be there." Viewers' contexts and experiences have a role in provoking affective reactions to the satellite images; such factors point to the research question, "How do viewers' experiences, knowledge, and discourse affect their interpretations of mechanical artifacts?" As pointed out in responses, individuals who were directly affected by the tsunami or who lost family members in the tsunami may connect with the images more emotionally. People who are not familiar with the context of the tsunami may be less likely to find the images to be affective. Participant 9A says "Yes" to question 5 and further defines the rationale behind her answer by saying "however I did not face any direct loss from this catastrophe but as a human being I have emotions for other people. When I look at this picture I definitely get emotional

but my emotions are not very strong as I said that I did not have any direct loss from this disaster.”

Some responses reveal how the images may be of symbolic significance, recalling related experiences and thoughts. The images may be symbolic of amusement, evil, or destruction. Participant 5A says that “The images act as the trigger.” Participant 3A associates the images and supernatural phenomenon to reveal how disastrous and unpredictable the tsunami was. He or she says, “Yes, I hope it never had; but being spiritual, I think there are somethings beyond the control of human beings. Somethings are just God's plan and man cannot, however intelligent he is, escape it.” Tsunami, thus, is something beyond human control, an act of god. Participant 3A narrates his or her story behind the three photographs in the selected tsunami satellite images by saying:

And then when I see the next image, it is scary because I know what's going to happen. But imagine the people, they don't know what's happening and even if they do, what can they do, how far can they run in the short time. In the last image, its too late, so may lives have already been lost. It's really a very emotional image, makes one feel really bad for the people who were just so unfortunate.

The sequence of the images might have been personified as an evil force coming to destroy lives and property. People might have become scared and helpless. The ultimate end might have been nothing but to die. Perhaps due to the affective reactions the viewer could get by seeing the satellite images, participant 7A says, “I do feel to demand an alert system but sometimes nothing can be predicted and protected when nature turns so wild....” With such damage, nature, including the tsunami, could be seen as an evil creature.

Question 6, “Do you feel like demanding something (e.g tsunami alert system for Asia) after seeing this image?”, prompt answers that reveal viewers’ rhetorical exigency to take action to prevent the intense damage of another tsunami. All participants demanded an effective tsunami communication system, some prompted by the satellite images, and some by other consideration.

4.2. BLOG

There were 8 responses to my blog and they reveal both literal and figurative reactions to the satellite images. These responses depend on participants’ experiences, discourse, motivations, and knowledge.

4.2.1. Figurative responses. Participant 1B thoroughly suggests that the selected satellite images are emotionally laden by saying, “Yes, definitely. It surely brings back all the sad memories. Although it did not affect me directly, it helps me to get a clear understanding of the devastation caused by the tsunami and you can get a feeling of those who experienced it.” The response mentions memories of the tsunami and indicates sadness over the situation and empathy for those who were directly affected by the tsunami. Participant 4B also reveals a similar reaction where he or she says, “Irangi, I do agree with your point. It is clearly something more than just an image taken by a satellite. It definitely involves human emotions. These do bring back the agonizing memories of the physical and psychological damage caused by the tsunami wave that hit our coastline a couple of years back. There is no doubt about that.” The participant sees the images’ capabilities to provoke emotions with the help of his or her tsunami memories. Also, the fourth response is an in-depth discussion of how viewers’ experiences, knowledge, and discourse affect their interpretations of the satellite images. Participant 4B says:

However, to assume that these images would provoke the same kind of reaction from every person who looks at them would be a misunderstanding. People like you and me are capable of reading these images in this particular way because we are familiar with the context in which tsunami took place. We have the necessary background information in order to read them in this fashion. However, a person who has been living in Greenland (just for the sake of the argument) would not necessarily react in the same manner as s/he is alien to the context. To say that this person lacks sensitivity just because s/he fails to read the images the way we do would be a huge distortion. This shows that more than just the images, it is the context of the images with all its associations that matters. It is this context that facilitates our interpretation of the images. In that sense, the images are just the interface through which we access the context. The response of the reader would depend on the degree to which s/he is familiar with the context.

Participant 6B also says that the satellite images bring tsunami memories back and the participant feel affected by those memories. The participant struggles between whether to weep or to be excited to have witnessed a once-in-a-lifetime natural disaster:

These pictures bring back memories from nearly four years ago. The emotional turmoil that people in Sri Lanka went through is almost uniform and am a part of that. Although I was not a direct victim of the tsunami the stories that I heard sent me into an emotional limbo as it was not clear to me if I should weep for the diseased or be excited to have experienced the largest natural hazard that the world (at least man) has ever witnessed.

This participant also suggests that the context and experience of the viewer would determine how emotional or not these images will be to him or her:

I agree with one of the readers who says that if you have not experienced such a devastation personally the pictures do not make much sense as I myself have come across people who do not take the pictures/videos "seriously" but they see them as "cool". The magnitude of the event as shown in these pictures is indeed "cool" but not when you have to live through such an event. This I believe is an eternal law of life. Although I do not experience the same intensity of emotional distress when I look at these pictures, they sure do a good job at reminding me how vulnerable life could be. Peace !!!

It seems the participant does not feel the same intensity of emotions of someone directly affected by the tsunami, but remembers how uncertain and vulnerable life could be.

Another point by Participant 4B is that nothing can be scientific when human beings are concerned. The suggestion reminded me of Brasseur's idea that visual interpretation can be human depending on the context and discourse. The participant wrote:

I have an issue with your understanding of scientific data. In my view, nothing can be purely scientific when human beings are involved in it. To say that these images provide a purely objective and scientific bit of information would be only a partial truth. The moment we look at them they cease to be purely scientific as our recognition of the images necessarily involves our interpretation. As we are familiar with the context of these images, the moment we recognize these as images showing the devastation caused by the tsunami we are already in pain. My point is, unless we talk about the issue at a rather superficial level, we cannot even know the nature of something purely scientific. This is because thinking involves some sort of interpretation. Your subjectivity is always involved in it; as a result, you become part of it.

The above response addresses the research questions "How is a tsunami satellite image connected to affective responses by viewers?" and "How can a tsunami satellite image be interpreted and analyzed in a humanistic way?" As I have explained in this thesis and as implied by Participant 4B, pure instrumental approaches will hinder our opportunities to understand possible affective reactions to mechanical visuals like satellite images. With respect to analyzing images, like tsunami satellite images, where viewers would mix their experiences and emotions, more humanistic approaches explain my observations more fully than positivist approaches.

The figurative responses to my blog demonstrate affective responses to tsunami-related memories, imagination, and symbolism. Participant 8B's response is a narrative of what actually happened to someone who directly experienced the tsunami. The participant says, "As a person who experienced this devastation personally, for sure these

pictures remind me what has happened in 2004. later pictures showed us what has happened, but on that day when the sea went back from the shore as shown in the picture we never thought that it would cause such disaster to people who lived there.” The images have brought his or her tsunami memories back. Interestingly, the person says that rather than reminding about what had happened, this image acts as a visual replay or a flashback of his or her unfortunate tsunami experiences: “I saw it, rather than evacuating our selves from the shore we enjoyed it not knowing disaster to come. The pictures that posted here gives me not actually a remind, but certainly a visual replay of the unfortunate event....” The tsunami satellite images, thus, can be symbolic of an unfortunate occurrence and a devastating disaster.

The response from Participant 3B is a combination of both figurative and literal reactions. The participant first emphasizes some objective elements of the images by saying, “Okay, First I wanted to make a quantitative comparison between all 3 images to find out how the tsunami has effected the coastel area.” Then the participant moves on to say, “Then I began to read the article. Well..I'm wrong again. I should have thought about the tsunami like how irangi has done. To be honest, I don't know how to write & think beautifully on any matter, but..tsunami devastated South & south-east asian countries & people. Authorities need to take actions to prevent any devastating natural incidents like this.” Here, Participant 3B also welcomes a humanistic approach to interpreting mechanical artifacts. The participant does not dismiss my idea of the satellite images being affective and has thought what he or she could have done differently to interpret the images. Perhaps to this participant, considering only a scientific viewpoint to understanding could not be enough. The kind of response to the satellite images could be

the demand to have a better communication system to prevent natural disasters like the tsunami. The rhetorical exigency to take action to prevent a future disaster is expressed by the participant 3B.

4.2.2. Literal responses. Some responses to my blog are literal. The main emphasis of literal responses is to interpret what is directly visible in the images rather than on human elements. Some responses identify no emotions with regard to the tsunami satellite images. For example, Participant 2B disagrees with the fact that the satellite images are emotional in all instances. The participant sees no emotional correlation in both this image and the tsunami itself:

I feel a tsunami itself has no emotional significance. Its only the effect of the tsunami on peoples lives that provokes emotional response. This picture only gives a global view of the tsunami. The effect of the tsunami on peoples' lives is not distinctly visible. So for a person like myself, just looking at the picture doesnt cause much of an emotional stir (though i feel bad for the people affected by the tsunami).

The response reflects the assumptions of instrumentalism where the participant is not willing to accept any possible affective interpretation of the images since they do not directly depict the tsunami's effect on people. However, the person says, "In your case, since you can associate yourself with the place, it probably holds more of an emotional value." The idea is that one could rationalize the emotional importance of the images depending on that person's relationship with the tsunami. Someone like Participant 2B who does not find these images to be emotional at all would not totally dismiss the possible humanistic aspect of the tsunami satellite images. Participant 7B also finds these satellite images not to be affective since he or she has no experience with the tsunami. According to Participant 7B, "What [he or she] see[s] here is nature being destroyed by

nature...,” without having sad memories and emotions related to the tsunami. However, the participant suggests that the images would be affective if the viewer finds some connection with it:

One cannot feel any real emotion when looking at these images if one has not experienced the pain that this destruction causes. Whether you have experienced it personally or through friends and family these images have more impact when the viewer feels a connection. I have never been in this situation and have no one close to me that has been affected by a tsunami therefore although i have compassion for the people whose lives have been taken or destroyed by these horrible events i cannot say that the images brought about any real emotions.

Participant 5B disagrees with Participant 4B who says, “nothing can be purely scientific when human beings are involved in it.” The response was complex, critical of other responses, and mentions both human and scientific values. Most of the response by Participant 5B seems to merit more attention than I can currently give it, and I regret that I have had to overlook many of its arguments.

4.3. OTHER WEB SOURCES

After the tsunami, many images including satellite images were posted to the web, and people have commented on what they actually experienced when viewing tsunami satellite images. The comments can help us to understand how tsunami satellite images operate. The responses discussed here come from online discussion forums (OKCtalk and FreeRepublic). There were 2 responses in OKCtalk and 188 responses in FreeRepublic. Responses in these web discussions are both literal and figurative in nature and will be analyzed in the manner I have established for the email and blog responses. Since there

are multiple responses from the same participants, I will refer to the comments on other web sources by response numbers.

4.3.1. Figurative responses. It is quite interesting to see how two viewers have responded figuratively to the posted tsunami satellite images on OKCtalk. There are no clear literal responses to OKCtalk. The original post has provided the link to the images and says that the images show the degree of devastation by the tsunami. Response 1C sees the images to be “quite horrific.” It is more of a sudden and spontaneous affective reaction by the viewer to the tsunami satellite images. Instead of expressing any literal interpretations, the viewer expresses how dreadful what the images depict is. Response 2C, which says “That is unbelievable,I have feeling it will still get worse before it gets better.I pray to God not,” depicts future uncertainty, fear, and helplessness the viewer would feel when seeing tsunami satellite images. The viewer ends the comment by praying to God not to make the tsunami aftermath any worse. The satellite images have made the participants think beyond what they directly see from the images to what they would have seen or would want to see in the future.

FreeRepublic opened a discussion titled “The Tsunami, Satellite Images, BEFORE AND AFTER. AMAZING!! (Warning: Graphic images downthread),” which invites people to post comments of several tsunami images taken in the Aceh province in Sumatra, one of the islands of Indonesia. Before talking about the blog comments, it is important to pay attention to the post topic. The topic itself could provoke affective interpretations. The writer sees before and after of tsunami satellite images as “amazing.” Clearly, many people were motivated to talk about their true thoughts and feelings towards tsunami satellite images. I observed 188 comments to this post and most of these

comments are a blend of somberness, amusement, wishes, prayers, heartbreak, disgust, and shock. The following table shows some of the highly figurative responses from FreeRepublic:

Table 4.1. Figurative responses from FreeRepublic

Response number	Response
2D	Speechless
3D	Thx for the post. Totally heartbreaking...
6D	Prayers for these people. Note the size of the area in the first picture that shows where these smaller detailed photos were taken. And this is still just one small part of the whole thing.
8D	wow.
11D	The horror, the horror.
14D	It is truly hard to bear. May God have mercy...
15D	Amazing photos. Prayers for the survivors of this catastrophe and those involved in relief efforts!
19D	Amazing
20D	Words cannot describe the suffering the people must have gone through and are going through.

26D	Whew. Really makes one think a little differently about any of their own troubles. Such devastation.
28D	Oh my... :(
30D	Why bother repair this mess. Mother nature pissed off and is going to retake what's hers.. Hurricanes, flooding in LAX.. It's just the begining
42D	Whoa. The destruction is, simply horrifying! And the amount of erosion and destruction...almost unimaginable.
54D	Excellant post. That one pic brings Reallity. Does make me wonder how we here in the US would be 'handled' if/when something like this happens here.
56D	There aren't enough words.....
60D	Unbelievable satellite pictures of Indonesia. Wow.
61D	Good morning Dear! Somehow, I feel as if I need to be in mourning. This is so devastating..... and I know there is life to be lived, but I am sad for the families of these islands.
62D	Very sad

104D	<p>Man oh man. Beyond the shock of the tragedy, this is a testament to the power of nature, which IMO sillifies our exaggerated notions of how we think we can control and preserve this force. It's far more likely to control us.</p>
133D	<p>It certainly is, and the survivors will face starvation; all those checkerboard patterns are probably farms/rice paddies, and they are all gone. Hopefully they will get food in time; they need our help!!!</p>
134D	<p><i>That's reality. That's nature. Get used to it. I think people living comfortably in modern industrial societies have become too insulated from the facts of Life and Death.</i></p> <p>I agree. As I said, the decision to post it could have gone either way. In the end, I decided to go ahead. Those satellite photographs provided only one dimension of this terrible natural disaster. I provided another.</p> <p>We lost 3,000 Americans on 9/11. The people of Southeast Asia and Somalia lost more then 30 times that number -- and their disaster relief networks are pathetic compared with ours.</p>
140D	<p>Ping for Amazing satellite photo's!!!</p>

These figurative responses derive from tsunami-related experiences, imagination, and the symbolism of viewers. These responses may involve not only sadness, disappointment, or fear, but also amusement, excitement, prayers, hopes, and other

wishes that indicate the despair and helpless nature of human beings when they encounter frightful things that are beyond their control. And some responses, such as 134D, show the relationship between similar experiences the viewers have had like the 9/11 terrorist attack with the 2004 tsunami. Response 134D also reveals a reply to another response, which says, “That's reality. That's nature. Get used to it. I think people living comfortably in modern industrial societies have become too insulated from the facts of Life and Death.” The replier agrees with the response to which he or she is replying and further says that “Those satellite photographs provided only one dimension of this terrible natural disaster. . . .” The tsunami satellite images might have caused changed viewpoints of people’s lives. Some of the viewers of tsunami satellite images might have been motivated to reach out to those who were affected and help them, as did Participant 133D: “It certainly is, and the survivors will face starvation; all those checkerboard patterns are probably farms/rice paddies, and they are all gone. Hopefully they will get food in time; they need our help!!!” Response 133D has mixed the imagination to anticipate and predict things. As a result of viewer imagination and empathy, more humanistic outcomes have been possible with these tsunami satellite images. Not only have the viewers attempted to help, but they have also tried to encourage and wish tsunami relief efforts, as mentioned in response 6D: “Amazing photos. Prayers for the survivors of this catastrophe and those involved in relief efforts!” The above response also reveals the viewer’s rhetorical exigency to act.

The tsunami has also been discussed as being symbolic of the immense power of nature, for instance, in response 104D: “Beyond the shock of the tragedy, this is a

testament to the power of nature... It's far more likely to control us.” Response 30D personifies nature: “Mother nature pissed off and is going to retake what's hers...”

Some responses fall in between both literal and figurative where the viewer interprets the objective elements of the tsunami satellite images while empathizing with the human reality, such as Response 6D, which says, “Prayers for these people. Note the size of the area in the first picture that shows where these smaller detailed photos were taken. And this is still just one small part of the whole thing,” and Response 42D, which says, “Whoa. The destruction is, simply horrifying! And the amount of erosion and destruction...almost unimaginable.”

4.3.2. Literal responses. There are some literal responses to the tsunami satellite images in FreeRepublic. Just like the literal responses to my email and blog, the literal responses to FreeRepublic also value the objective elements of tsunami satellite images. Response 5D, which says, “It actually looks like the ocean level went up in those after pictures,” explains the nature of the tsunami waves and destruction. The respondent 22D has noticed that “The beach sand was washed away.” The response 38D is a reply to Response 5D where the person better explains the science behind what Respondent 5D has seen in the tsunami satellite images:

I completely agree but I think it's more an issue of the land subsiding than the ocean rising. I've been thinking about this the last few days. There's been numerous reports from Indonesia of some islands off the coast literally "disappearing". Maybe they're not talking about the buildings, but the actual islands. The Banda Aceh area is to the east of the subduction zone, on the 'up' side of the fault. If there was 30m of upward thrust at the fault then I think it's reasonable to presume there might have been some downward movement further in. It would be as if the crust was tilted, or tipped upward at the faultline causing a downward tilt further in. In that case the land would subside or even "disappear".

The before-and-after arrangement of the tsunami satellite images has made things more comprehensible to some viewers, such as Respondent 49D, who says, “Thanks for those before and after. It helps in understanding the devastation. There is a lot less land, especially in the first pair,” and Respondent 92D, who says, “Thanks for this. Until I saw the side by side photos as you displayed them, I could never really tell what I was looking at. Amazing the difference.” Some viewers might have been impressed to see the comparison between the pre and post tsunami satellite images. And they may not identify the images in isolation.

Some viewers not only interpret what they see on the images, but also react to the shortcoming they see, such as the following by Respondent 58D:

In first pair, right, the caption says taken January 29, 2004. Should that be December 29, 2004? These aerial views are somewhat misleading. They are taken at such a distance that the actual damages are hard to realize. The one large photo posted in many threads that shows the bodies among the debris is probably the most telling of the devastation and deaths.

4.4. SUMMARY

The results I gathered help us to understand and analyze the research questions for this thesis. With diverse responses from email, my blog, and existing web discussions, I demonstrate how people interpret tsunami satellite images differently. Some people interpret tsunami satellite images literally, valuing objective aspects while others interpret images figuratively based on their emotions, context, and imagination. Thus, a humanistic approach to understanding mechanical visuals like tsunami satellite images might be in higher value in the fields of visual and technical communication.

5. CONCLUSION

The goal of this research on tsunami satellite images is to present a possibility that they can operate diversely. Theorists and researchers such as W.J.T. Mitchell (2006) and Lee Brasseur (2003) point out how visuals can be interpreted affectively. If technical communication risks being influenced only by the “medium is the message” thinking or a positivist approaches to visual communication, research such as this would remind us that few objects are actually objective, and technical communication is still more about people than technology. Research on how satellite images operate is essential and will contribute to fill a gap in existing technical and visual communication theories and approaches that do not address the possible humanistic aspects of satellite images. We should value humanistic approaches to visual studies based on what is being read and discussed about satellite images in the real world. Examining the possible affective operation in satellite images is novel and will make the fields of technical and visual communication richer.

Technical communication is not a set of mechanical skills. It is about the relationships between humans and different sources of information. Images in general have human and rhetorical agency behind them and could provoke affective interpretations. Satellite images as a genre would not be thought, by default, to demonstrate human and rhetorical agency. They are images taken by machines. The human agency behind in satellite images would be modification and addition of features like captioning to and presentation of the images. The human agency will increase the quality and objective data interpretation. Studying what else satellite images can present

us, than objective interpretations, will be an important and interesting phenomenon in the field of technical and visual communication. Future research should be done to look at satellite images in isolation to understand whether they can constitute meanings and affective responses or to understand how people react to non-manipulated satellite images. This study, which attempts to understand how people react to satellite images, is novel and an entry to study more on how mechanical artifacts can provoke affective interpretations. As Brasseur (2003) points out, we need to study genre to question them. More research to understand how people react to satellite images will help understand the genre of satellite images well and to understand various interpretations: both literal and figurative. More research on this topic will contribute to visual literacy and visual literacy education. Students learning about how satellite images operate will improve their analytical skills and know more about satellite images as a genre.

The Satellite Imaging Corporation image already has a human agency behind it. They have borrowed three tsunami satellite images from DigitalGlobe and placed them chronologically to create a narrative. The images show before and during the tsunami. The viewers, thus, can compare and contrast the difference. Or some may be able to understand what the images are about through the selection, arrangement, and captioning of three mechanical artifacts. They have increased comprehensibility by including text to the images. Viewers who are not familiar with the context in which the tsunami occurred will find the modifications by the Satellite Imaging Corporation, along with other features of the satellite images, very helpful. Some may realize that the images represent the 2004 tsunami and react affectively to the images without the manipulation of the images. Some may not need to pay attention to the selection, arrangement, and

captioning, or the other features of the images to interpret the images affectively. Or there may be instances where the viewers make meaning from the features from the images and then reveal affective reactions. As seen in the results analysis, some respondents identify with only the features of the images, some with figurative responses where they reveal their feelings about the images, and some with both literal and figurative responses.

Tsunami satellite images as a genre have no life or status and cannot be emotional in themselves, according to most accepted theoretical approaches in technical communication. It is through viewer's interpretations that these satellite images provoke non-objective responses. Some images, such as those of the Twin Towers and Dolly, the cloned sheep, may seem to have rhetorical agency, allowing them to act meaningfully in a particular community of discourse. Rhetorical agency is "the capacity to influence the form and shape of a rhetorical culture" (MGGreer, 2005, par. 5). According to Mitchell (2006), pictures of the Twin Towers and Dolly do talk as "living organisms" and can convey messages themselves. Tsunami satellite images may also suggest evil, uncertainty, and what are called "appetites, needs, demands, drives" (p. 11), and act meaningfully upon those who were affected by the tsunami and tsunami satellite images. The figurative responses show how tsunami satellite images could convey to the viewer affectively. Tsunami satellite images seem to be powerful because they can exert rhetorical exigency, prompting viewers to take action. Mitchell's (2006) idea is that "From certain point of view, the moral imperative is to offend the images themselves, to treat them as if they were human agents or at least living symbols of evil, and to punish them accordingly" (p.15). Yet, the only kind of punishment tsunami satellite images could receive would be disgust or rejection from some who feel uncomfortable to look at

them. Perhaps the purpose is not to defend or “punish” these images but to learn something broader about the nature of visual representations.

If I had a chance to do this study again, I would not ask Question 7 in my emails: “Do you wish the tsunami had never happened after seeing this image?” Although I did get a few useful responses to that question from participants, I should have asked some other question that would have been more useful. It seems that Question 7 has less connection with my research questions. I would also fix the discrepancy of using “image” versus “images” in email questions and the blog post and “before, while, and after” versus “before and during” in the blog post.

A suggestion for future research on tsunami satellite images will be that visiting the affected countries like Sri Lanka and Indonesia will help us to gather valuable data to understand how tsunami satellite images operate in different audiences. Direct observation would add more to the study that I have started. I hope that my study will be a gateway to motivate people in the fields of technical and visual communication to examine how mechanical artifacts like satellite images could be less mechanical when seen in their fuller contexts of use.

APPENDIX A.
IRB APPLICATION

Campus Institutional Review Board Approval Form
Missouri University of Science and Technology

This is to certify that the research proposal entitled:

Satellite Photography: Instrumental, Rhetorical, Affective?

Submitted by: **Kathryn Northcut**
Department: **English and Technical Communication**

has been reviewed by the Campus IRB and approved with respect to the study of human subjects as appropriately protecting the rights and welfare of the individuals involved.

Type of Approval: _____ Exempt X Expedited _____ Full

Approval Date: May 29, 2008 Expiration Date: May 28, 2009

Note that approval of this research is contingent upon the following agreement by the researcher(s):

- 1) To report potentially serious events to the Campus IRB by the most expeditious means within five days of occurrence. The IRB may require an additional written report.
- 2) To submit a **Change in IRB Approval Form UMRIRB-2***, if the project changes in any way that affects human subjects.
- 3) To maintain copies of all pertinent information, including copies of informed consent agreements, for a period of three years from the date of completion of the research.
- 4) To adhere to all UMR Policies and Procedures relating to human subjects, as written in accordance with 45 Code of Federal Regulations 46.
- 5) To be aware that Federal and University Regulations require continuing review of research projects involving human subjects. Therefore, **this approval will expire one year from date of approval**. To meet this requirement, **Continuing Review Report UMRIRB-4* should be filed within one year of the original approval date**. However, projects receiving Exempt Approval and lasting less than one year do not need to provide this report. The campus IRB reserves the right, at any point, to inspect project records to ensure compliance with federal regulations.

*See <http://www.umar.edu/~irb/forms.html> for the necessary forms.

Approved By: *Randy H. Moss* Title: Chair, UMR IRB

Randy H. Moss

Date: May 29, 2008

JUN 03 2008

Mailed to E.N. 6408

*APPLICATION TO THE UNIVERSITY OF MISSOURI-ROLLA
CAMPUS INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH (UMRIRB-1)*

Review Requested: Exemption Expedited Full Board

1a. Primary Investigator:

Kathryn Northcut

Daytime Phone Number:

573 341 4687

Mailing Address:

500 W 14th St HSS 216

City/State/Zip:

Rolla MO 65409-0560

E-Mail Address:

Northcut@mst.edu

Department:

English and Technical Communication

1b. Additional Applicant(s):

Irangi Egodapitiya

1c. Advisor:

Northcut

Daytime Phone Number:

Advisor's E-Mail Address:

Department:

Campus Mailing Address:

2. Project Period: From June 1, 2008 to June 1, 2009

3. Funding Source(s): Unfunded

4. Site of Work: United States, Sri Lanka, India, Indonesia

5a. Title of Project:

Satellite photography: instrumental, rhetorical, affective?

5b. Brief description of its general purpose:

We have anecdotal evidence that satellite imagery of tsunami devastation in and around Sri Lanka and Indonesia is taking an unexpected role as a memento, or emotionally-laden artifact for victims and survivors of tsunami devastation. Given the theory and research in technical communication, we would expect satellite images to be devoid of such affective or emotional content. If approved, we would systematically seek evidence to support the notion of a new role for technologically-generated images.

6. Give details of the procedures that relate to the subjects' participation, including at a minimum the following information (append additional page(s) if necessary):

MAY 19 2008

- a) How will the subjects be selected and recruited? (Append copy of letter, ad, or transcript of verbal announcement.)

Ms. Egodapitiya, a graduate student in the Tech Com MS program, will begin contacting people she knows in person and from internet sites who have viewed, seen, or posted satellite images, downloaded and printed them, or otherwise used them. She will ask them if they will participate in her study. See Attachment A.

- b) What inducement is offered?

None.

- c) Number and salient characteristics of subject, i.e., age range, sex, institutional affiliation, other pertinent characterizations.

We expect to find no more than twenty participants. They will vary in age, but none under the age of 18 will be included. They will speak English, Sinhala, or another language with which Irangi is familiar or can have translated. The participants have had direct or indirect experience with the Internet and the tsunami.

- d) If a cooperating institution (school, hospital, prison, etc.) is involved, has written permission been obtained? (Append letters).

- e) Number of times observations will be made? Between 1-50 email exchanges, or 1-10 brief conversations, over the course of 2-8 weeks.

- f) What do the subjects do, or what is done to them, in the study? (Append copy of questionnaires or test instruments, description of procedure to be conducted on the subject.

They will be asked, over email, telephone, or in person, how they found the satellite images, when they look at them, what they think, how they use them, and whether they also have snapshots or other visual representations of tsunami damage and how those are used and characterized in comparison.

- g) Is it clear to the subject that their participation is voluntary, that they may withdraw at any time, and that that they may refuse to answer any specific question that may be asked them? Yes

- h) Number of subjects to be used in the project: No more than 20

- i) Please indicate below if any of your proposed subjects might fit into the following categories:

Minors?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Age	<input type="checkbox"/>	Incompetent Persons?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Pregnant Women?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>			Students?	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Women of Child-Bearing Age?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>			Low-Income Persons?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Institutionalized Persons?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>			Minorities?	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- j) Cite your experience with this type of research.

Northcut – case study research experience since 1994; several ongoing qualitative research projects as faculty at MS&T.
Egodapitiya - none

7. How do you intend to obtain the subjects' informed consent? If in writing, attach a copy of the consent form. If not in writing, include a written summary of what is to be said to the subject(s), and justify the reason that oral, rather than written, consent is being used. Also, explain how you will ascertain that the subjects understand what they are agreeing to.

See Attachment A

8. In your view, what benefits may result from the study that would justify asking the subjects to participate?

Currently, technical visuals are considered to be instrumental. They convey facts and information that people can use toward increased knowledge or informed action. The images themselves, however, are merely tools and technological devices. Egodapitiya would like to follow up on anecdotal evidence that this is not the case, and that in fact the most technologically-derived visuals, satellite photos, are taking on new meaning for victims of the tsunami that struck her home country. Without IRB approval, her research findings will be unpublished if in fact anything of interest is discovered.

- 9a. Do you see any chance that subjects might be harmed in any way? Do you deceive them in any way? Are there any physical risks? Psychological? (Might a subject feel demeaned or embarrassed or worried or upset? Social? (Possible loss of status, privacy, reputation?)

Reliving the effects of the tsunami will not be pleasant. We are asking people questions about images that may evoke emotional responses. There is no deceit – they will be told what we are wondering about and why, and they will know in advance that unless they state otherwise, their comments may be used in research publications. Otherwise, no foreseeable risks.

- 9b. How do you ensure confidentiality of information collected? (Consider 9a and 9b from the point of view of the subject.)

We will not use participants' names; if publication results, pseudonyms will be used.

Irangi Egodapitiya

Applicant's Name (Please Print)

Kathryn Northcut

Faculty Advisor's Name (Please Print)

May 15, 1008

Date


Applicant's Signature


Faculty Advisor's Signature

May 15, 2008
Date

Attachment A

Satellite photography: instrumental, rhetorical, affective?

I am conducting a study to determine the uses of satellite imagery of the 2004 tsunami by victims and people who suffered either directly or indirectly as a result of that event. I will be asking questions to find out what responses you and others have had to specific images. If you are willing to share your thoughts about those images with me, please indicate either by responding through email (electronic) or signing below (in person).

If you consent to participating, you are free to withdraw from the study at any time. If you agree to your comments being used, your name and other identifying information will not be used, but a pseudonym will be assigned to represent you.

If you have questions about this research project, you may contact Dr. Kathryn Northcut, northcut@mst.edu or call her at 1-573-341-4687, or mail her at 500 W. 14th, HSS 216, Missouri University of Science & Technology, Rolla MO 65409-0560.

If you wish to report research misconduct, please contact Dr. Randy Moss, 226 Emerson Electric Co. Hall, MS&T, Rolla MO 65409, (573) 341-4518, rhm@mst.edu

Thank you for considering this request.

Irangi Egodapitiya
MS&T Student
MS Technical Communication

APPENDIX B.
RESULTS

A - Email responses

Number of responses: 13

Email	
Questions	
1a	What does this image remind you about?
1b	Can you remember (roughly) when you first saw it?
2	Does this image tell stories related to the tsunami?
3	What do you think has happened to people who lived in the area depicted in this satellite image?
4	Is there something you find surprising, interesting, important, and emotional when you see this image?
5	Do you think that some people (perhaps including you) will find this image to be emotional (e.g. by reminding about dead people, missing family members, lost houses, etc.)?
6	Do you feel like demanding something (e.g tsunami alert system for Asia) after seeing this image?
7	Do you wish the tsunami had never happened after seeing this image?

Email				
Answers				
Participant	Question 1a	Question 1b	Question 2	Question 3
1A	Tsunami	End of Dec in year 2004 (When the tsunami came)	Yes	They lost their lives, families, properties & all the valuables they had.
2A	Of course, it reminds me of the devastation of December 2004. (Tsunami- the enemy of most of the people in the Asian Region)	Yep, I was watching a Damma programme on ITN and suddenly they stopped the programme and showed people who came running toward that temple.	Stories??? Like Viharamahadevi story???	Some must have run towards hilly areas and survived and the rest must have either got injured or washed away with the giant waves that came in
3A	This image reminds me of end of 2004. I was in the US at that time when I heard about the news of Tsunami from India. I was very worried and knew it had caused damage to Srilanka, India, Indonesia and Thailand.	This is the first time I saw this image, although I have seen videos before.	Yes it does. I remember many women crying, bodies being buried, foreigners going around with pictures of their near and dear ones gone missing, a few lucky survivors recounting how they had escaped.	Many are dead, some have started their life anew. But it must be devastating to lose everything you had in a matter of seconds and they have to live with that grief all their life.
4A	Can't remember seeing these images earlier but it reminds me of tsunami attack and the gravity of it.	I only saw it now.	It quickly reminded me about the fact that people tried to grab plots of land when the shore became wider.	Millions must have been washed to the deep blue sea. Very poignant.

5A	These remind me of the tsunami disaster.	You had sent these images asking about my responses to those about six months ago and that was the first time I saw these exact images. I don't think I had seen these images before that.	These images do talk a lot about the disaster. They represent three different stages of the disaster: the "calm" sea, the "recession", and the "disastrous" sea. This interpretation is based on my familiarity with the event. However, for a person who is not familiar with the context under discussion would not be able to even come to terms with this interpretation as these images are not an explicit representation of the event. The images have been taken from a location removed from the location of the event; so the "real" experience is not adequately captured or represented in these. In my view, we cannot expect to go beyond a predominantly scientific, if not a scientific, understanding of the event using these images.	Destroyed, eliminated, drowned, separated from the loving ones, ... so goes the list. However, this interpretation is only possible because of my familiarity with the context under discussion. For a stranger, the images wouldn't mean anything other than a set of satellite images that have captured a geographical reality on the earth.
6A		on TV on the 26th December 2004	they remind me of many sad stories related	dead

			to Tsunami	
7A	The image reminds me about a very nice view of the pleasant sea and then next image says that there is definitely something wrong and there should be a sea storm in the sea.		I never felt this image shows it to be a tsunami because this is the first time I am looking at satellite image of TSUNAMI.	I think all the people who lived there has lost their homes and some of those people have even died because of Tsunami.
8A	When I see the third satellite image it reminds me of some whirlpool.	I am seeing for the first time	Yes, to a certain extend , I think	People might have got washed away , Houses surely must have got destroyed
9A	This image reminds me the disaster happened in the end of year 2006 in Sri Lanka and some other countries coastal areas.	I first saw this image when my classmate Irangi presented her assignment- Image Analysis in her Visual theory class.	At some extent, I won't say that it tells everything but a lot. If a person just looks at it, can't figure it out that all the houses are ruined in this disaster. A sharp eye and strong study are needed to look at in depth of disaster.	I can tell by looking at these pictures that most of the houses were ruined as the current of water must have drowned everything and have killed people living in those houses.
10 A	This image reminds me of the greatest calamity happened in Sri Lankan history-the Tsunami catastrophe on 26th December 2004.	I can remember seeing this image first (roughly) after the tsunami either on news papers or on TV channels.	Yes, it does tell stories related to the tsunami such as deaths and destruction of properties.	I think the people, who belong to this area were badly affected by the tsunami in number of ways. But according to what I heard through media, compared to the other affected areas in Sri Lanka such as Galle,

				Hambantota and Ampara this area was less affected by the tsunami. This means the number of deaths found in this area was low compared to those of the above mentioned areas in Sri Lanka.
11 A	Yes. Tsunami 26th Dec 2004(the day after Christmas)	somewhere around Dec 27th- 31st 2004	Yes	Died, lost family & friends, lost homes, lost their living, children lost their schools
12 A	it reminds me about the disastrous incident i ever saw in my life.			most of them must have died.....
13 A	About Tsunami. I amazed, when I saw it.	I have never seen before.	Yes	Every thing was destroyed within a few minutes.
Participant	Question 4	Question 5	Question 6	Question 7
1A	Yes. We see the in actual fact, how Tsumani victim had happened.	Yes, without any doubt they will shocked when they see it..	Yes, definitely..	Positively yes..
2A	Like the sea going backwards for few minutes before the 1 st wave of Tsunami hit the island???	Of course yes, the people who lost their relatives will find this very emotional. Even I find it emotional coz it reminds me of the mothers and fathers screaming	Well, yes. If we had that kind of a system at that time then most of the lives could have been saved. By the way, I think we already have a Tsunami alarm	Of course.

		& crying kneeling down near their dead children.	system in place.	
3A	I find it really surprising that the image captures the region from a distance, but still has so much detail to it. I can see homes and the beach clearly in the first pic - what a peaceful place it must have been. It is the sort of place you would want to be to relax. And then when I see the next image, it is scary because I know what's going to happen. But imagine the people, they don't know what's happening and even if they do, what can they do, how far can they run in the short time. In the last image, its too late, so may lives have already been lost. It's really a very emotional image, makes one feel really bad for the people who were just so unfortunate.	Very much, I, inspite of not having any emotional ties with the place nor having lost anyone to the tsunami feel very emotional for everyone who suffered that day due to nature's fury. Lives are lives, whether they are related to you or not.	I do hope there is, I would be disturbed to know that there isn't even after the devastation.	Yes, I hope it never had; but being spiritual, I think there are somethings beyond the control of human beings. Somethings are just God's plan and man cannot, however intelligent he is, escape it.
4A	Some people lost their children, children lost their parent, in one day huge structures	Same as above. Very poignant specially when little infants were grabbed out of the	Yes, Tsunami early warning is important and people should be prepared for	Yes

	were washed to the water, leaving millions of Sri Lankan's heart broken and helpless.	parents arms and washed a way. Drowning... it's a very heart breaking memory.	another if it happens.	
5A	It has an emotional appeal to me because and only because I know the context. Again, in the case of a stranger I don't think the same emotional appeal would be there.	Definitely.	Not particularly because of these images. There is definitely the need for such a system, but that wouldn't be the first thing which such images would compel me to demand. I can think of a long list of "things" like people, parents, children and loved ones, which/whom I would want to demand, but I don't know from whom!	I do wish that tsunami had never happened, but once again not particularly because of these images, but because of the totality of the experience I have about the event. The images act as the trigger.
6A	it's surprising i still love the sea, yet its beauty cannot conceal the haunting memories, when i look at the sea, now it's a mixed feeling	definitely	yes	i wish it a million times, i always have, even before seeing this image.
7A	Of course I feel interesting and surprising. When we look at the image I see how the water in the sea is twisted and turned because of the pressure in the sea, which is the cause for this disaster.	Yes, of course..	I do feel to demand an alert system but sometimes nothing can be predicted and protected when nature turns so wild...	Yes, I wish it never would have happened again..
8A	Its interesting to	I am not sure	I think Tsunami	As the image

	note the magnitude of the Tsunami as we get a comparison with the land features.	whether I find it emotional as we cannot see clearly the damage in this.	alert system will be a good one to go for if the economic situation allows that. I am not sure about the images impact on me, not very high I would say	doesnot directly depict the damages, I am not able to make out its impact . I generally wish it shouldn't affect the people.
9A	I neither find it interesting nor important but I find this image very surprising and emotional because I was surprised to see how much disaster a strong current of water can make. I was emotional by looking at the situation of houses and living area, thinking, probably no one would have alive in this catastrophe.	Yes, however I did not face any direct loss from this catastrophe but as a human being I have emotions for other people. When I look at this picture I definitely get emotional but my emotions are not very strong as I said that I did not have any direct loss from this disaster.	Yes, and I would also ask government and NGOs to do something for the people who survived in this disaster. They deserve better and normal lives.	Yes, of course.
10 A	I find this to be very emotional.	As a Sri Lankan I find this to be very emotional— although (fortunately) I was not an eye witness to this catastrophe, every citizen who was not affected by the tsunami directly, has at least one tragic and shocking story to tell about his/her relations or friends or both who were there when the	Yes, I do feel that there must be a tsunami alert system for Asia.	Yes, I wish it for thousands times.

		tsunami hit Sri Lanka. This means almost every Sri Lankan is/was/will be affected by/connected to the tsunami either directly or indirectly at least for two generations.		
11 A	surprising -not now.. but it was interesting-The destruction looks small from up there. important- The whole world could see what happened on that day. It might be helpful in any further investigation. emotional- Sad	Yes. Most of them	Yes. I hope we already have it.	Yes, even before that :)
12 A	the way the waves have gone back and came again in big curves is surprising. The emotional feeling doesn't come with these images, but when recalling those days through these images i feel so so sad	yes in that way yes.	why not, yes of course.	yer, with all my heart.
13 A	So many people shouted to save their life when they are sinking in the water.	I think this was very sad & fear situation for all of us.	I suggest tsunami information center to our country.	I will never wish the tsunami in future.

B - Blog responses

Number of responses: 8

Blog
Blog post
<p data-bbox="282 669 993 705">Tsunami Satellite Images: more than just an image?</p> <p data-bbox="282 743 1414 1035">I first saw this image in one of the local news papers in Sri Lanka and this image brought me back all the terrible tsunami memories. I was so worried about the people who had lived and worked in the affected areas, including my brother. He was one of the lucky ones to survive. I often hear about the degree of devastation and destruction that the tsunami caused to the coastal area. But it was this image that struck me the most. It is not the scientific advancement or the clarity of the satellite image I think about most, but the thousands of people who have died and are homeless, and how many little ones are now orphans because of the tsunami. This image truly brings tears to my eyes!</p> <p data-bbox="282 1073 1414 1218">Could something highly objective and scientific also be highly subjective and emotionally loaded? To some, this image clearly shows before, while, and after tsunami. What is most obvious (to me) is the sad story this image tells about the tsunami, an image not even taken by a human being, but by an object.</p> <p data-bbox="282 1255 1414 1472">How meaningful and emotionally appealing are these images to people who were affected by the tsunami? Can these be meaningful in a humanistic or emotional way, rather than in a mere scientific way? Does this image question "what has happened to the people in this area" or "were they able to survive"? Or will some people be sad, angry, disappointed, frustrated, question, etc., or rather demand a better tsunami alert system for Asia?</p> <p data-bbox="282 1509 1414 1619">I would highly appreciate your comments on this matter, which is related to my MS thesis. Please have a look at the tsunami satellite image and tell me what it means to you and whether you agree or disagree with the above mentioned thoughts of mine.</p> <p data-bbox="282 1656 1414 1692">** Please note that you will need to be <u>18 years old, or above</u>, to comment on this post.</p> <p data-bbox="282 1730 431 1766">Thank you!</p>

Blog	
Participant	Response
1B	Yes, definitely. It surely brings back all the sad memories. Although it did not affect me directly, it helps me to get a clear understanding of the devastation caused by the tsunami and you can get a feeling of those who experienced it.
2B	I feel a tsunami itself has no emotional significance. Its only the effect of the tsunami on peoples lives that provokes emotional response. This picture only gives a global view of the tsunami. The effect of the tsunami on peoples' lives is not distinctly visible. So for a person like myself, just looking at the picture doesnt cause much of an emotional stir (though i feel bad for the people affected by the tsunami). In your case, since you can associate yourself with the place, it probably holds more of an emotional value.
3B	Okay, First I wanted to make a quantitative comparision between all 3 images to find out how the tsunami has effected the coastel area. Then I began to read the article. Well..I'm wrong again. I should have thought about the tsunami like how irangi has done. To be honest, I don't know how to write & think beautifully on any matter, but..tsunami devastated South & south-east asian countries & people. Authorities need to take actions to prevent any devastating natural incidents like this.
4B	<p>Irangi, I do agree with your point. It is clearly something more than just an image taken by a satellite. It definitely involves human emotions. These do bring back the agonizing memories of the physical and psychological damage caused by the tsunami wave that hit our coastline a couple of years back. There is no doubt about that.</p> <p>However, to assume that these images would provoke the same kind of reaction from every person who looks at them would be a misunderstanding. People like you and me are capable of reading these images in this particular way because we are familiar with the context in which tsunami took place. We have the necessary background information in order to read them in this fashion. However, a person who has been living in Greenland (just for the sake of the argument) would not necessarily react in the same manner as s/he is alien to the context. To say that this person lacks sensitivity just because s/he fails to read the images the way we do would be a huge distortion. This shows that more than just the images, it is the context of the images with all its associations that matters. It is this context that facilitates our interpretation of the images. In that sense, the images are just the interface through which we access the context. The response of the reader would depend on the degree to which s/he is familiar with the context.</p> <p>I have an issue with your understanding of scientific data. In my view,</p>

	<p>nothing can be purely scientific when human beings are involved in it. To say that these images provide a purely objective and scientific bit of information would be only a partial truth. The moment we look at them they cease to be purely scientific as our recognition of the images necessarily involves our interpretation. As we are familiar with the context of these images, the moment we recognize these as images showing the devastation caused by the tsunami we are already in pain. My point is, unless we talk about the issue at a rather superficial level, we cannot even know the nature of something purely scientific. This is because thinking involves some sort of interpretation. Your subjectivity is always involved in it; as a result, you become part of it.</p>
5B	<p>I am not so sure of [Respondent 4B] view of science, i.e. to say, "In my view, nothing can be purely scientific when human beings are involved in it", I think, is absurd. I believe this view is inter-twinned (unfortunately) with the concept of religion where you seek "pure answers" and does not reflect what science really means. Science is a "system" with "in-built" rules (or criteria) that we call CONPTT (Consistency, Observability, Natural Mechanism, Predictability, Testability, Tentativeness) and with specific predefined approach called scientific method (Observation, Question, Hypothesis, Experiment, Evaluation). In this system that we call science, I fail to recognize a single component where human interpretation is NOT involved. Science brings out the continuously evolving comprehension of natural world of humans and again to say that "In my view, nothing can be purely scientific when human beings are involved in it" is offensive to people who are serious about science. Science is NOT religion to have "pure states" or "pure answers" nor will it have answers to all the questions one would have. [Respondent 4B]'s statement is a classic example of the misconception that has plagued, sometimes, even the scientific community that rambles about the superiority of science over religion that do not share (not even by the width of a hair strand) any similarities. Ayubowan !!!</p>
6B	<p>These pictures bring back memories from nearly four years ago. The emotional turmoil that people in Sri Lanka went through is almost uniform and am a part of that. Although I was not a direct victim of the tsunami the stories that I heard sent me into an emotional limbo as it was not clear to me if I should weep for the deceased or be excited to have experienced the largest natural hazard that the world (at least man) has ever witnessed. I agree with one of the readers who says that if you have not experienced such a devastation personally the pictures do not make much sense as I myself have come across people who do not take the pictures/videos "seriously" but they see them as "cool". The magnitude of the event as shown in these pictures is indeed "cool" but not when you have to live through such an event. This I believe is an eternal law of life. Although I do not experience the same intensity of emotional distress when I look at these pictures, they sure do a good job at reminding me how vulnerable life could be. Peace !!!</p>

7B	<p>What i see here is nature being destroyed by nature. One cannot feel any real emotion when looking at these images if one has not experienced the pain that this destruction causes. Whether you have experienced it personally or through friends and family these images have more impact when the viewer feels a connection. I have never been in this situation and have no one close to me that has been affected by a tsunami therefore although i have compassion for the people whose lives have been taken or destroyed by these horrible events i cannot say that the images brought about any real emotions.</p>
8B	<p>As a person who experienced this devastation personally, for sure these pictures remind me what has happened in 2004. later pictures showed us what has happened, but on that day when the sea went back from the shore as shown in the picture we never thought that it would cause such disaster to people who lived there. I saw it, rather than evacuating our selves from the shore we enjoyed it not knowing disaster to come. The pictures that posted here gives me not actually a remind, but certainly a visual replay of the unfortunate event.....</p>

Existing web sources

C – OKCtalk (<http://www.okctalk.com/current-events/1507-tsunami-satellite-images.html>)

Number of responses: 2

Participant	Response
1C	Quite horrific.
2C	That is unbelievable,I have feeling it will still get worse before it gets better.I pray to God not.

D – FreeRepublic (<http://www.freerepublic.com/focus/f-news/1311428/posts>)

Number of responses: 188

Response number	Response
2D	Speechless
3D	Thx for the post. Totally heartbreaking...
4D	Cool. What's the link to the site providing these pics?
5D	It actually looks like the ocean level went up in those after pictures.
6D	Prayers for these people. Note the size of the area in the first picture that shows where these smaller detailed photos were taken. And this is still just one small part of the whole thing.
7D	Different sources.
8D	wow.
9D	If you on Drudge and look for Videos there are links to vids of the wave coming in, they are very shocking so be warned.
10D	AWESOME. THANKS MUCH.
11D	The horror, the horror.
12D	I think I've found it. http://www.digitalglobe.com/tsunami_gallery.html
13D	<i>Speechless</i> Understatement of the year. I am just <i>stunned</i> at how much some of the towns were obliterated by the earthquake and subsequent tsunami waves from these pictures.
14D	It is truly hard to bear. May God have mercy...
15D	Amazing photos. Prayers for the survivors of this catastrophe and those involved in relief efforts!
16D	Mark
17D	Me too. DAMN WOW.
18D	<i>Speechless</i> Yes it is. As are the satellite pics I have from from the USGS of the World Trade Center still smoking. I'd post them but I do not know how, and they are only on my home PC.
19D	Amazing
20D	Words cannot describe the suffering the people must have gone through and

	are going through.
21D	-
22D	The beach sand was washed away.
23D	Wow.....
24D	yikes. that pic needs a warning...
25D	(removed by moderator)
26D	Whew. Really makes one think a little differently about any of their own troubles. Such devastation.
27D	I agree. That picture is also amazing but brutal and should no be here.
28D	Oh my... :(
29D	You should've posted some kind of disclaimer along with that graphic of a picture. Those are human beings, not beach toys.
30D	Why bother repair this mess. Mother nature pissed off and is going to retake what's hers.. Hurricanes, flooding in LAX.. It's just the begining
31D	Thanks for the post.
32D	Crosslinked: Master source of links here, updated frequently: <u>The Great Wave- Sumatra Quake and tsunami of 2004</u>
33D	Absolutely brutal. :-(
34D	Intelligence report: Bin Laden sought Indonesian base (Aceh) Counterterrorism experts say he also checked out Yemen http://edition.cnn.com/2002/WORLD/asiapcf/southeast/07/09/indo.binladen From Maria Ressa CNN Correspondent MANILA, Philippines (CNN) --Intelligence officials tell CNN that Osama bin Laden wanted to move the base of operations for his al Qaeda terrorist network from Afghanistan to Southeast Asia in 2000. The plan, according to these officials' intelligence report, was to move the base to Aceh in Indonesia, where members of the Free Aceh movement (or GAM) were working with al Qaeda. Aceh is a remote Muslim province in which rebels have fought for a separate Islamic state for decades. Bin Laden's No. 2, Egyptian Ayman Al-Zawahiri visited Aceh with al Qaeda's former military chief, Mohammed Atef, in June 2000. "Both of them were impressed by the lack of security, the support and

	<p>extent of Muslim population," reads the intelligence report made available to CNN. "This visit was part of a wider strategy of shifting the base of Osama bin Laden's terrorist operations from the subcontinent to Southeast Asia." [SNIP] ----- http://jmm.aaa.net.au/articles/10294.htm On 3 January 2002 the Jakarta Post reported, "The Aceh or Nanggroe Aceh Darusallam administration has officially put the special autonomy law and syariah (Islamic law) into effect." The article went on to quote Teungku Sofyan Hamzah, an imam at the grand Baiturrahman Mosque. "Asked about feelings of anxiety by some non-Muslims in Aceh following the implementation of the Islamic law, he (Hamzah) said that the minority should not worry. "The administration will use national law for them." Well - an article appeared in the Jakarta Post on 28 September 2002, detailing how under shari'a law, caning or imprisonment would be the punishment for those who "propagated beliefs other than Islam to Muslims in the province."</p>
35D	Those are huge changes.
36D	Dear Lord, that is horrible. Just insane.
37D	Bttt
38D	"It actually looks like the ocean level went up in those after pictures." I completely agree but I think it's more an issue of the land subsiding than the ocean rising. I've been thinking about this the last few days. There's been numerous reports from Indonesia of some islands off the coast literally "disappearing". Maybe they're not talking about the buildings, but the actual islands. The Banda Aceh area is to the east of the subduction zone, on the 'up' side of the fault. If there was 30m of upward thrust at the fault then I think it's reasonable to presume there might have been some downward movement further in. It would be as if the crust was tilted, or tipped upward at the faultline causing a downward tilt further in. In that case the land would subside or even "disappear".
39D	Oh my goodness! That is just awful!! God rest their souls!!
40D	I would imagine that the vegetation was washed away and there went the earth, too.
41D	sweet jesus....
42D	Whoa. The destruction is, simply horrifying! And the amount of erosion and destruction...almost unimaginable.
43D	Come on people! There is a disclaimer on the title, if you bothered to read the title it will tell

	you "graphic images downthread". That's what made me wanna check out this thread.
44D	<i>There is a disclaimer on the title, if you bothered to read the title it will tell you "graphic images downthread". That's what made me wanna check out this thread.</i> When I clicked on the thread there was no such warning...that was added later by the Mod.
45D	Ok Thanks, I wasn't aware. I do appreciate the fact that our fellow freepers post this kinds of pics on, I have been having a hard time finding pics like these in the regular news media. God bless the victims and their families.
46D	Just thought you should know why everyone was reacting as they did. The death and destruction is truly unfathomable. Prayers
47D	For later.
48D	Bumping bookmarking
49D	Thanks for those before and after. It helps in understanding the devastation. There is a lot less land, especially in the first pair.
50D	Looks like a nuke hit the place. (the digiglobe pics) Go to the site and look at them full size. (I put them in photoshop and increased the brightness, it really helps) I don't think there will be any terrorists in Banda Aceh chopping up Buddhists and Christians there for a while. Banda Aceh Looks like it was the hardest hit of all places.
51D	He did post a warning..
52D	Please don't go there right now..
53D	Thanks for the pictures!
54D	Excellant post. That one pic brings Reallity. Does make me wonder how we here in the US would be 'handled' if/when something like this happens here.
55D	<i>Does make me wonder how we here in the US would be 'handled' if/when something like this happens here.</i> While we have fortunately been spared natural disasters in the 100,000+ death category so far, we have had large disasters such as the Johnstown flood and the Galveston hurricane -- and we cleaned them up and went on. The horror and shock gives way, and it becomes a problem that we can overcome... and we will. This terrible event, which is large, may well be dwarfed by another disaster's death toll.

	In particular, we have quite a bit of seismically active ground and we could have a terrible earthquake at any time on either coast, or in the middle of the country -- and our preparations for another series like the terrible ones in 1811-1812 are woefully inadequate. Even another Charleston would be horrendous (though these days at least there is far less nuclear material about the Holy City than 20 years ago.)
56D	There aren't enough words.....
57D	Indeed.
58D	In first pair, right, caption says taken January 29, 2004. Should that be December 29, 2004? These aerial views are somewhat misleading. They are taken at such a distance that the actual damages are hard to realize. The one large photo posted in many threads that shows the bodies among the debris is probably the most telling of the devastation and deaths.
59D	...WOW...
60D	Unbelievable satellite pictures of Indonesia. Wow.
61D	Good morning Dear! Somehow, I feel as if I need to be in mourning. This is so devastating..... and I know there is life to be lived, but I am sad for the families of these islands.
62D	Very sad
63D	You managed to put into words exactly how I'm feeling. Like everyone else, I've been so wrapped up in the coverage and the pictures and the enormous scope of it all, that I haven't been able to think about anything else, let alone celebrate the New Year. Though the circumstances are very different from 9/11, the gut wrenching feelings in the aftermath are very much the same.
64D	Removed by Moderator
65D	Thank you for posting ALL the pictures. Warning of graphics is more than due (thank you admin) for pictures of this nature. Pictures like this, will probably only be found in a place such as FR because the cold rawness and and unimaginable was captured with a camera lens. The reality, is almost unconceivable. It would be something like the day after Armageddon. I pray that the thoughts of the photographer are the along that line. Life is not all 8 x 10 glossy pic's, sometimes we need access to reality and truth, no matter how ugly. If you were not prepared for the pictures, do not blame the poster, appropriate warning has been issued.
66D	I am sad,too..May God comfort those who mourn.

67D	Good Lord :-(-
68D	Oh my God. This is just one picture.
69D	One picture of one small section of one beach. Expound that to hundreds of beaches and thousands of miles of shorelines impacted. [The mind can hardly comprehend the level of devastation.]
70D	Yea like the poooooor people whining about being stuck on an airplane for 28 hours...really puts things in perspective...this is so horrible...
71D	Horrible :-(-
72D	It's like a nuke hit. Lord.
73D	I saw someone remark how these countries have no natural barriers anymore; hence much of the devastation. Used to be that the coral reefs, mango trees and sand slowed down waves. Now it's open season on all the buildings that have been built to get that close up view of the ocean.
74D	CNN has been getting an avalanche of emails indicating they should not be showing the horrors. They are standing by their theory that, if not shown, this would soon be forgotten.
75D	Why not show the 9/11 plane attacks? I gussess they don't want us to remember it.
76D	You mean show them now? I think there will come a time when these disasters are shown side by side with stats and all. Horrific, both.
77D	Not even close to being on topic. Give it a rest, at least here - please.
78D	CNN has been getting an avalanche of emails indicating they should not be showing the horrors. They are standing by their theory that, if not shown, this would soon be forgotten. Just as they did with 9/11 and the Americans falling from the towers. (/sarcasm)
79D	It seems the bodies are all face down....
80D	I was getting my news from Fox at the time. Didn't CNN show photos of everything but people falling? Did anyone show these at the time?
81D	They would be dancing in the streets claiming that allah was fighting for them against the great satan.
82D	<i>Did anyone show these at the time?</i> I think Europeans saw them on tv but we Americans were "spared". Real reason: they didn't want us to get angry.

83D	bump
84D	<p>I don't pretend to know all there is to know about disasters like this and 9/11. But I do know God is on The Throne and the devil is on the prowl, seeking whom he may devour. 1 Peter 5:8.</p> <p>The Scriptures also say that the thief comes only to steal, kill and destroy. John 10:10 But Jesus says, He came that we might have life, and that, more abundantly.</p> <p>Satan (the devil) is THE thief.</p> <p>Our blaming God for evil does no good to any one. Reading the Scriptures though, gives inner strength and peace, and a confidence in His love.</p> <p>This is what we have to cling to.</p> <p>Just know that we as humans, are but a vapor that appears for a little while and then vanishes away. James 4:14 & Heb. 9:27</p> <p>We are here.....then we aren't.</p> <p>I pray for the people to be comforted.</p> <p>God Bless us all.</p>
85D	<p><i>It seems the bodies are all face down....</i></p> <p>As kids we did the "dead man's float". Face down and very still for as long as you held your breath.</p> <p>BTW (and excuse the blunt language) but if disposal is delayed much longer those bodies will fall apart when moved.</p>
86D	This is the saddest picture of all the pics I have seen...does anybody know where exactly it was at?
87D	<p><i>Bandeh Aceh looks like it was the hardest hit place.</i></p> <p>From "Worldreligions.co.uk/islam.htm ...</p> <p>"...Islam`s most sacred sites are Mecca and Medina on the Red Sea coast of Saudi Arabia, Jerusalem, from where belief holds the Prophet made his miraculous night journey into Heaven, Karbala in present-day Iraq, and Bandeh Aceh in Sumatra..."</p>
88D	Terrible, horrible loss. But that's only a small portion of the devastation and loss of life. I'm praying for their souls and their survivors.
89D	Dear Lord comfort the families who have been touched by this unimaginable tragedy...
90D	WOWZERS
91D	Oh my God ping.
92D	Thanks for this. Until I saw the side by side photos as you displayed them, I could never really tell what I was looking at. Amazing the difference.
93D	<p>"I don't pretend to know all there is to know about disasters like this and 9/11."</p> <p>Same here. But 9/11 wasn't a "natural" disaster and there were real, very</p>

	evil people we could blame. You'd think since this current disaster occurred naturally, everyone would be satisfied with just blaming mother nature but some have to make the leap into blaming our God of Life. I'll never understand why bad things happen to good people - but I can live with that fact even though it's terribly hard sometimes.
94D	<i>Cool. What's the link to the site providing these pics?</i> You can right-click and look at properties to see the URL.
95D	It's just the beginning. "Cats & dogs, living together!" (Bill Murray)
96D	<i>It actually looks like the ocean level went up in those after pictures.</i> Or the island sank?
97D	They look like before and after images of "The Day After Tomorrow" Tropical Style. I am serious, it look's like someone dropped nuclear bombs on those areas.
98D	Wow!
99D	It's just the beginning. "Cats & dogs, living together!" (Bill Murray)
100D	Unbelievable. Thank you for posting these. It's shocking.
101D	I tried the Drudge link, but couldn't get the vids to download. I have DSL so bandwidth shouldn't be a problem. Could you recommend a specific link on the site?
102D	My little mistake.
103D	<i>They look like before and after images of "The Day After Tomorrow" Tropical Style.</i> From the information I got from NOAA's web pages, it appears when the tsunami hit northwestern Sumatra the wave was least four meters tall! I think the wave may have been as high as <i>ten meters</i> tall, which explains why the DigitalGlobe pictures taken by the <i>QuickBird</i> imaging satellite show the town of Banda Aceh nearly scoured clean by the tsunami waves.
104D	Man oh man. Beyond the shock of the tragedy, this is a testament to the power of nature, which IMO sillifies our exaggerated notions of how we think we can control and preserve this force. It's far more likely to control us.
105D	It was a big God - an awesome God.
106D	bump...best comparative illustration via a "wide-angle" view of what's been lost...
107D	I have never seen anything so dreadful, horrifying, and sad :(
108D	<i>I have been having a hard time finding pics like these in the regular news media.</i>

	<p>Go easy on the mainstream media...there's hardly any room left in their newspapers and websites once they've posted their criticisms of Dubya and the stingy Americans that planned this environmental holocaust. (don't get me zotted! I'm just marveling at the obscene agenda-driven media... and how they DON'T cover the true horrors of this event)</p>
109D	<p><i>Why not show the 9/11 plane attacks? I gussess they don't want us to remember it.</i> As Darryl Worely (sp?) noted in his "Have You Forgotten" song. But I've got to tip my hat (a bit) to USA Today. I think it was at the second anniversary of 9-11, they ran a good article on this topic. They admitted that they AND virtually all the media had self-censored by not showing the "jumper" pics very often (if at all). The article included one photo of a string of five or six jumpers in a line falling from one of the towers. And the article documented how the jumpers from one tower were the prod that got people out of the neighboring tower and to safety (despite instructions to stay in the building). The media/entertainment industry is ready to show us all sorts of objectionable things... as long as the images aren't the real world.</p>
110D	<p>unreal - this whole disaster just blows me away. I had no idea what I was looking at in the picture...I just thought it was showing debris and such until I started to scroll...unreal.</p>
111D	<p>Ping</p>
112D	<p>You are my sunshine, my only sunshine. You make me happy when skies are grey. You'll never know dear, how much I love you. Please don't take my sunshine away.</p> <p>The other night dear, as I lay sleeping, I dreamt I held you in my arms. When I awoke dear, I was mistaken, So I hung my head down and cried.</p> <p>You are my sunshine, my only sunshine. You make me happy when skies are grey. You'll never know dear, how much I love you. Please don't take my sunshine away.</p>

	Words and Music by Jimmy Davis and Charles Mitchell (1940) IN SYMPATHY AND WITH KIND AND LOVING THOUGHTS FOR ALL THOSE WHO HAVE LOST SOMEONE...
113D	Yes .. it should be here! People should know the truth. This is an horrendous event and it shouldn't be powdered over.
114D	What you are seeing here is one, very small part of the scope of damage and carnage. There is a 3000 mile coastline, for which most is relatively inaccessible now. Roads have been cut, buried with debris or flooded. It will take months to reach some of these places, a herculean effort I am not sure we can muster. Many more villages have all but been erased. Our capability to conceptualize the enormity of this tragedy is just not there. We have no way to compare. Our combined experiences cannot relate to 3000 miles of coastline let alone the wrath of a tidal action such as this on hundreds of villages. God be with the survivors along that coastline. For many, aid will come too late, if at all. If there is one thing we could take to heart..we live a delicate existance, treasure it and be as well prepared as we can to endure.....
115D	Unbelievable...if the Thia Government when alerted to this earthquake....making a decision NOT to issue a TSUNAMI ALERT....talk 'bout poor decision making....that's not the word for it.
116D	Just when you think you've reached the saturation point, new information and pictures brings the tragedy home and breaks your heart all over again. With tears in my eyes, thank you. Fing a good, reliable charity that does not feather its own nest.
117D	That picture is gruesome... was is really necessary to post it?
118D	Ping!
119D	<i>You should've posted some kind of disclaimer along with that graphic of a picture. Those are human beings, not beach toys.</i> I thought about it. It was one of those decisions that could have gone either way.
120D	lots of dead folks in that picture - WOW what a tragedy
121D	<i>It seems the bodies are all face down....</i> When a human being loses consciousness, the natural position of the floating body is face down.
122D	yikes. that pic needs a warning... <i>I agree. There is a child in there rumble with his arms up. I can't even imagine what his last few minutes were like:(</i>
123D	Here is a link of the Tsunami at one location:

	http://www.flickr.com/photos/tags/tsunami
124D	bump fer later
125D	Is photo number 3(right side) the epicenter of the EQ ?
126D	(Re that photo), that is how I would picture Hell , all presided over by Satan, laughing. Really.
127D	In pic #3 it looks like a crater to the left ??? Maybe impact ???
128D	<i>That picture is gruesome... was it really necessary to post it?</i> Yes, as long as the MSM won't and continues with its feeding frenzy on "who's not giving enough," i.e. the <i>evil</i> US and <i>evil</i> Bush.
129D	When you go to the drudge site and click on Video, it should take you to a mirror site. if it does, don't hit on the videos but hit on the guys who supplied them. It will take you to there direct sites and they play. I couldn't get the first site to play at all but the other way works pretty good.
130D	Bangladesh suffers periodic, deadly high tides, storm tides, whatever...and thousands die. We read about it in the press, but it happens repeatedly. Maybe at this point they're building some kind of barriers to the sea, but I don't really know.
131D	To the squeamish to objected to the photo in post #21: That's reality. That's nature. Get used to it. I think people living comfortably in modern industrial societies have become too insulated from the facts of Life and Death.
132D	Thanks. I did manage to get a couple to play. Just mind boggling. Overwhelming.
133D	It certainly is, and the survivors will face starvation; all those checkerboard patterns are probably farms/rice paddies, and they are all gone. Hopefully they will get food in time; they need our help!!!
134D	<i>That's reality. That's nature. Get used to it. I think people living comfortably in modern industrial societies have become too insulated from the facts of Life and Death.</i> I agree. As I said, the decision to post it could have gone either way. In the end, I decided to go ahead. Those satellite photographs provided only one dimension of this terrible natural disaster. I provided another. We lost 3,000 Americans on 9/11. The people of Southeast Asia and Somalia lost more then 30 times that number -- and their disaster relief networks are pathetic compared with ours.
135D	<i>I had no idea what I was looking at in the picture...I just thought it was showing debris and such until I started to scroll...unreal.</i> I had the same experience the first time I saw it. At first it looked like a

	couple of acres of flotsam and driftwood. Then I began scrolling down and saw those rounded, smooth objects and I thought, "What are those?" Then I kept scrolling down and ... oh, my God.
136D	God be with the people that lived through this... Here is a good site for current information. It shows the toll at 1601 :(http://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake#Casualty_summary
137D	<i>CNN has been getting an avalanche of emails indicating they should not be showing the horrors. They are standing by their theory that, if not shown, this would soon be forgotten.</i> They should be reminded of the discrepancy of their policy here versus showing graphic images of WTC 9/11, another event that should not be forgotten
138D	I think they should show pictures. Because the media job is to keep us informed...9-11 also should of been shown/remembered more over the media. I do not understand that to this day.
139D	ping
140D	Ping for Amazing satellite photo's!!!
141D	I'm glad Bryan that you erred by posting it! Thank you. I needed to see it to put some of the media coverage in perspective and jar home for me what a tragedy it is that really took place! I believe "WE" need to see it!
142D	As graphic as that picture is, it is necessary to see it to give some sort of sense to the large loss of life. While satellite photos maybe impressive, they just convey the loss of prime real estate, not the loss of human beings. The focal point of the dead bodies photo reinforces the fact that the bodies are all individuals, not numbers. They all had lives and loved ones less than a week ago. The daily updated body count lost all meaning a few days back. As was said a long time ago, "one death is a tragedy; Six million deaths is a statistic".
143D	PLEASE REMOVE THE TOTAL HORROR OF THIS PICTURE..PLEASE. MY IMAGINATION OF HOW TERRIBLE THIS ACT OF NATURE MUST OF BEEN IS ENOUGH..THANK YOU FROM MYSELF AND ALL THE OTHER VIEWERS WHO COULD BE SPARED THE INCREDIBLE IMPACT OF THIS PHOTO...
144D	YOU KNOW IM GLAD YOU HAVE FAITH IN "SOMETHING" BUT DO YA HAVE TO ALWAYS DO THAT HELL AND DAMNATION CRAP?? JUST ONCE IT WOULD BE A PLEASANT CHANGE (IN A WAY) JUST TO SAY WOW WE HAD A ..NATURAL..DISASTER!!!!!!!
145D	A reliable, as yet unconfirmed report has emerged that in October 2001, Christians in Aceh were forced to sign a 'Mutual Agreement' to destroy a

	<p>number of their own churches. They were also not to engage in religious activity in the homes of residents nor missionary activity. The purpose of this agreement, signed by representatives of the Islamic and Christian communities, was to 'create an atmosphere of living in harmony between the religious communities'. Failure to co-operate would result in 'unwanted consequences which could instigate the destruction of unity and oneness between the religious communities'. There were no restrictions placed on the Islamic community.</p> <p>Islamic Sharia Law was introduced into the Aceh Province at the beginning of 2002. Governor Abdullah Puteh said this was part of a special autonomy package extended to the province last year which would usher in a 'new era' for Aceh. From 15 March, police will start enforcing Islamic dress code. The sanctions on violators are as yet unspecified except that they will be 'firm'. Government and private offices must have business signs installed in Arabic-style script. This apparently growing push for hardline Islam in Aceh will cause suffering for its small Christian minority.</p>
146D	bttt
147D	<p>Yes!</p> <p>Because hell and damnation, is something I was delivered from 31 years ago. The Savior in the Scriptures is my life.</p> <p>I read your profile page.</p> <p>You like all caps I see. ;-)</p> <p>Happy New Year to you and yours!</p> <p>And God Bless you!</p>
148D	<p><i>9-11 also should of been shown/remembered more over the media. I do not understand that to this day.</i></p> <p>If the media had show the people trapped in the building with smoke and flame to their backs, the people diving from the windows as a preferred alternative to burning to death, the gore and body parts on the ground -- if they had shown this, then the American people would have supported turning the Arab Middle East into a parking lot, and strung up any "anti-war activist" that said boo about it.</p> <p>It only makes sense when you assume the main stream media works for the other side</p>
149D	<p><i>PLEASE REMOVE THE TOTAL HORROR OF THIS PICTURE..PLEASE. MY IMAGINATION OF HOW TERRIBLE THIS ACT OF NATURE MUST OF BEEN IS ENOUGH..THANK YOU FROM MYSELF AND ALL THE OTHER VIEWERS WHO COULD BE SPARED THE INCREDIBLE IMPACT OF THIS PHOTO...</i></p> <p>I've taken some heat for posting this photo, and I've also received some support. You've seen what's on the thread, but I've also received some freemail. I've explained that the satellite photos told only part of the story, and that this photo told another part. But I'll review some of the other factors that I considered.</p>

	<p>None of the remains were significantly decomposed, burned, dismembered or significantly disfigured. Almost all of the bodies were face down. Almost all of them appeared to be adults. It could have been a lot worse.</p> <p>Armed with 20/20 hindsight, I probably should have posted a warning in big, red letters and then, about 10 posts later on the same page of 50 posts, I should have posted the photo. A moderator edited the headline of the thread to provide that warning.</p> <p>A photo like this is always going to be controversial. This is a horrific human tragedy. In particular, the nations of Indonesia and Sri Lanka have been devastated -- but as far away as Sweden, there are 2,500 people missing because it was a popular resort area for Europeans to take their vacations.</p> <p>Now consider the relief efforts. There are literally millions of survivors in these areas, but many of them are now homeless. Stocks of food and medicine were destroyed. Water purification systems and sewage systems were damaged or otherwise compromised. The disaster relief agencies of these impoverished nations are pathetic compared with ours.</p> <p>These are island nations. Even when a relief effort has successfully reached an island, the road network was never very good to begin with; and many roads and bridges were destroyed, submerged or covered with debris. Starvation and disease, particularly cholera -- which can dehydrate and kill a victim in a matter of hours -- are very real dangers.</p> <p>We may be looking at just the beginning of a disaster that will rival the European plagues of the Middle Ages.</p>
150D	<p><i>We may be looking at just the beginning of a disaster that will rival the European plagues of the Middle Ages.</i></p> <p>We are also looking at something the U.N. should be good at. Where exactly are they?</p>
151D	<p><i>As graphic as that picture is, it is necessary to see it to give some sort of sense to the large loss of life. While satellite photos maybe impressive, they just convey the loss of prime real estate, not the loss of human beings. The focal point of the dead bodies photo reinforces the fact that the bodies are all individuals, not numbers. They all had lives and loved ones less than a week ago. The daily updated body count lost all meaning a few days back. As was said a long time ago, "one death is a tragedy; Six million deaths is a statistic".</i></p> <p>You've done a better job of expressing it than I could. This picture, together with the satellite images, will convey the scale of this disaster far better than words on a page. Believe it or not, there are worse photos that are available. I chose this one because it gives an idea of the massive loss of life from the perspective of someone who is there, on the ground -- but it is within limits that most of us find tolerable.</p>
152D	<p><i>We are also looking at something the U.N. should be good at. Where exactly are they?</i></p> <p>Based on past performance, the UN will do nothing but issue useless resolutions for the next 12 years. If anyone is going to actually do anything</p>

	effective about this, it is up to individual nations and corporations to form a coalition.
153D	I believe the original source of the pictures is from http://crisp.nus.edu.sg/tsunami/tsunami.html Should acknowledge the source.
154D	No, the images are not from http://crisp.nus.edu.sg/tsunami/tsunami.html and NO I do not have to reveal or acknowledge the source.
155D	Yes, they are from http://crisp.nus.edu.sg/tsunami/tsunami.html Go to this page and scroll down to "Aceh, Sumatra, Indonesia" and click on the links there. These images are copyrighted © CRISP 2004. I appreciate your sharing of these images in this forum. They really show the devastating effects of the tsunamis on Aceh. But Please.... Respect the rights of others if you want yourself to be respected. I don't think piracy is allowed in this forum.
156D	Did you even READ the title? What do you think "graphic images" means? When you put almost no effort into it like that, I bet it's really, really hard for you to get offended. /sarcasm
157D	Did you read the title of the thread? If you don't like your photos graphic, why would you go looking for them?
158D	The title of the THREAD should have tipped you off. Avoid graphic images if you don't like them.
159D	Wow. It'll be good to see follow-up photos in upcoming days and weeks, as the last of the trapped seawater evaporates.
160D	My God!!! Those poor people. God be with them... Prayers to all.
161D	Well... I wasn't expecting them to be THAT graphic.
162D	The original title of the thread read like this: <u>The Tsunami, Satellite Images, BEFORE AND AFTER.</u> <u>AMAZING!!</u> the warning was added after the post from Bryan: <u>21</u> posted on 12/30/2004 11:39:29 PM PST by <u>Bryan</u>
163D	Regardless of what you are saying, the images are NOT, from http://crisp.nus.edu.sg/tsunami/tsunami.html

	<p>I posted the photos, so I should no better don't you think?</p>
164D	<p>Almost too much to comprehend... I don't what to do first. Cry, pray, or throw up.</p>
165D	<p>Alright. You might not have gotten all of them directly from http://crisp.nus.edu.sg/tsunami/tsunami.html Some of these satellite images have appeared at various web pages. e.g. photos identical to your photos 8, 9 also appear in: http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php3?img_id=12647 (NASA Earth Observatory) http://www.reuters.com/newsPhotoPresentation.jhtml?type=topNews&imageID=1001619653 (Reuters) Note that they all credit them to CRISP. These are the image set "d" of "Aceh, Sumatra, Indonesia" on CRISP's web page. At least these two images originated from CRISP. Comparing the other images you posted with those on CRISP's web page, I dare to challenge that all of the images you posted originated from CRISP. Yes, I think I know better than you do. If you had any slight knowledge about satellite imaging, you wouldn't insist that these pictures could have originated from some other sources. If you don't believe what I say, please check with the sources where you got your images from. No matter where you got them from, you are violating the copyright of whoever producing the images in the first place by not acknowledging the original source of the images you posted. This is the point I am trying to make clear. I believe folks at CRISP won't mind people copying their images and showing them elsewhere. It is their intentions to let the public see the pictures, otherwise they wouldn't post them on their web page. But it is also my belief that credits should be given where they are due. Otherwise, you are no better than a pirate. Another remark: Please don't shout. It is not good for you :-)</p>
166D	<p>Sorry, but I was not shouting, I was just making a point. Some insist that I got the photos from http://crisp.nus.edu.sg/tsunami/tsunami.html that's just fine, but I did not get the pics from these sites either: http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php3?img_id=12647 (NASA Earth Observatory) http://www.reuters.com/newsPhotoPresentation.jhtml?type=topNews&imageID=1001619653</p>

	(Reuters) Anyway, why does it matter where I got them from?What's the point?
167D	Did you see his FR date? Today.
168D	It is interesting (great relief!) to note that the people in one of the first sets of Tsunami-related threads actually survived. It was feared that they reacted to the approaching waves too late. http://www.flickr.com/photos/fboosman/2813884/
169D	Thanks for the link. I was wondering about them. God spared that whole family and I am amazed.
170D	ping
171D	Bump
172D	Let this photo be a reminder to all of what is really meant by 'debris' in all the news stories you are reading about the tsunami. Horrible. Yes. Especially when juxtaposed with photos of happy people on the beach -- curious people at the seawall watching a big wave in the distance -- terrified people running from a HUGE wave towering over their heads. They ran but could not escape. This is what happened to them. Now I know a tiny bit of the reality of that experience. Thank you Bryan.
173D	Imagine being there, having to wade through filthy water, cholera infection spreading through the air and water, the smell of rotting and burning bodies almost too much to bear, to drag supplies to victims, who considered you their enemy.
174D	I agree wholeheartedly with you postin that picture here. People need to unnderstand this tragedy in immediate terms, not just as statistics, and this photograph accomplishes that end. I lived in Aceh for four years, and these kind and openhearted people were my friends. I am certian that your intention was not to de-humanize these victims, but to humanize the viewers, who too often in these posts abstract all Muslims into animals. These were human beings.
175D	"Who considered their enemy"? What are you talking about? I knew these people for years and lived among them. They most certainly did not consider me or any other American as their enemy. Achenese are very open and accepting people. They are not Arabs.
176D	marking
177D	<i>"Who considered their enemy"? What are you talking about?</i> I am considering the Asian Pacific Rim countries, all of them that were

	<p>effected. Many are dominated by Muslims. I understand (correct me if wrong) that OBL was considering ACEH for relocation plans. That AQ has established a foot hold there and in other rim countries.</p> <p><u>177</u> posted on Monday, January 03, 2005 12:40:48 AM by <u>UCANSEE2</u> (>The government of our country was meant to be a servant of the people, not a master.)</p>
178D	<p>I have been given to understand by friends who have maintained ties in Aceh long since I left my assignment there that indeed, Salafi influence has grown there along with intolerance toward non-Muslims, very unfortunately.</p> <p>But, I believe that Achenese in general bear the US no ill will, and in fact are well disposed toward Americans.</p> <p>This tragedy will not help the Islamists at all in Aceh as it will be clear to the people who it is that is helping them in real terms and who it is that is sending them Korans and dim-witted Imams.</p>
179D	<p>It doesn't matter where you got the images from. I don't really care where they come from. It does matter if you refuse to acknowledge the original sources. The point is about respecting the rights of others, respect for intellectual properties, respect for copyright, and giving credits when credits are due, not to mention the legal aspects.</p> <p>And I would like to bring your attention to a clause in the User Agreement of this forum:</p> <p>"Free Republic is a supporter of free speech on the Internet but we believe that along with the privilege of free speech comes the responsibility to respect the rights of others."</p> <p>Undeniably, the pictures you posted are great stuffs, no matter where they come from. Don't you agree that whoever produced these images should receive the credits they deserved? You got these images for free (I bet without the knowledge of the original producer). I really can't understand why you insisted on refusing to acknowledge the sources. In the academic world, this is called "plagiarism". In legal terms, it is "violation of copyright". In layman terms, it is called "stealing" or "piracy".</p>
180D	<p>Those areas were doubly cursed. It is apparent that the entire area is very low lying, with much development made via levees and landfill. When the earthquake hit, there must have been lots of liquifaction, destroying foundations and undermining roads, not to mention causing failure of some of the levees. Then, when the tsunami hit, the normal protective structures were not at full strength, even in cases where they were not overtopped. The final insult to injury was the return flow. What a mess.</p>
181D	bump for future reference
182D	Thanks for some political background. . .
183D	same here

184D	<p>Think there is fair-warning here; and surely after the first glance; one is free to 'move on'.</p> <p>It is what happened; what the survivors are dealing with; and what all those journalists on cable news, are trying to convey; and share; but cannot show .</p>
185D	<p>"Where exactly are they?" (U.N.)</p> <p>They are <i>following the money</i>. . .</p>
186D	<p>Unfortunate, but true. The Quake also awoke an extinct volcano.</p>
187D	<p>holy fish pace!!!!!!!!!!!!!!!!!!!! :(</p>
188D	<p>As I understand it, the island of Sumatra (I think it was that one) was pushed 100 feet to the southwest by the water. The ENTIRE ISLAND! It altered the core of the earth and compressed it as well, so now the earth rotates a little faster, like an iceskater drawing their arms in during a spin to spin faster! Truly an event of Biblical proportions to say the least!</p>

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