Digging into Google Earth: An analysis of "Crisis in Darfur"

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ABSTRACT

Google publicists have suggested the Crisis in Darfur is an example of the Google Earth software's "success at tangibly impacting what is happening on the ground." Yet whether or not Google Earth's interface, along with a medley of other media representations of the conflict, have impacted events on the ground or led to coherent policies of humanitarian intervention remains open to debate. This article draws upon critical approaches from media studies—namely discourse analysis—to analyze several aspects of the Google Earth/USHMM Crisis in Darfur project. While this project was no doubt developed with the noble intention of generating international awareness about widespread violence that has recently occurred in the Darfur region, it is important to evaluate how representations of global conflicts are changing with uses of new information technologies and whether such representations can actually achieve their desired impacts or effects. The article begins with a discussion of the Crisis in Darfur project's history, proceeds to analyze some of the press coverage of the project and then moves to a critique of the layer using four categories of analysis: (1) the shifting role of satellite image; (2) the temporality of the interface; (3) the practice of conflict branding; and (4) the practice of "information intervention." Throughout the article, I explore how the presentation of Darfur-related materials through Google Earth reproduces problematic Western tropes of African tragedy and misses an opportunity to generate public literacy around satellite images. I also consider how humanitarianism is intertwined with digital and disaster capitalism, and suggest that this instance of "information intervention" makes patently clear that high visual capital alone cannot resolve global conflicts.

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1. Introduction

On April 10, 2007 representatives of Google Corporation and the United States Holocaust Memorial Museum (USHMM) held a joint press conference in Washington DC announcing the release of a new "Global Awareness" layer in Google Earth entitled "Crisis in Darfur." Given the paucity of investigative reporters and television news crews generally working in Africa (Fair, 1996), the USHMM and Google had a unique opportunity to draw attention to a serious crisis underway and did so by pooling together audiovisual and written materials from a variety of sources, geo-referencing them and integrating them within the Google Earth system. The Crisis in Darfur initiative, they claimed, would make it "harder for the world to ignore those who need us most" (Google, 2007). The project was also designed to highlight the humanitarian potentials of new information technologies. As Google Earth's Elliot Schrage explained, "At Google, we believe technology can be a catalyst for education and action" and, because of this, his company decided to join "the Museum's efforts in responding to this continuing international catastrophe" (Google, 2007).

Google publicists have suggested the Crisis in Darfur is an example of the Google Earth software's "success at tangibly impacting what is happening on the ground" (Moore, 2007). Yet whether or not Google Earth's interface, along with a medley of other media representations of the conflict,[1] have impacted events on the ground or led to coherent policies of humanitarian intervention remains open to debate. While this project was no doubt developed with the noble intention of generating international awareness about widespread violence that has recently occurred in the Darfur region, it is important to evaluate how representations of global conflicts are changing with uses of new information technologies and to assess whether such representations can actually achieve their desired impacts or effects.

Geographers, political theorists, and media scholars have begun to consider how Google Earth is reshaping cartography, interna-

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[1] There is a veritable media industry that has emerged in relation to the conflict in Darfur. Feature documentaries such as *Save Darfur Now* and *The Devil Came on Horseback* have had wide theatrical release. Independent films such as *A Journey to Darfur* and *Darfur Diaries* have been released on DVD. The book *They Poured Fire on Us From the Sky: The True Story of Three Lost Boys from Sudan* has been on a number of best-seller lists. And Hollywood spokespersons from Mia Farrow to George Clooney have been actively involved in generating awareness about the conflict and have spoken before the United Nations. Finally, there is a "game for change" related to the Darfur conflict entitled "Darfur is Dying" available at www.darfurisdying.com.

tional relations and global representation. Most of the research thus far has emerged in the field of critical studies of geospatial technologies. This work has ranged from discussions of Google Earth's Apollonian characteristics manifest, for instance, in the software's popularization of precise measurement, militarism and panopticism (Harris, 2006) to an insistence that Google Earth be thought of in a more Dionysian manner as a kind of "digital peep box" (Kingsbury and Jones, 2009). Google Earth is also at heart of longstanding debates about geopolitics and visuality. Keenly aware of the relation between geopolitics and media and communication, Gearóid Ó Tuathail, describes the "geopolitical condition" as a "technological structure of public communication and popular cultural reception within which the dramas of international affairs unfold" (2004, pp. 80–81). He continues, "Much work remains to be done on the globe-spanning television networks to determine the spatiality and pace of world politics. Critical investigations need to explore how geopolitics is often a domain of affect not intellect…" (2004, p. 81). Media and communication scholars have analyzed how global media technologies have been used in different ways to advanced geopolitical agendas (Der Derian, 1992; Mattelart, 1994; Schwoch, 2009), but few have considered how Google Earth builds upon and differs from earlier global media formats and how it structures geopolitics as a "domain of affect," particularly when used as a technology of humanitarian intervention.

Google Earth builds upon the practices of global news networks by representing world historical events, but it also has the potential to open the field of representation in an unprecedented way to users who are scattered around the world and have different vantage points, social backgrounds and political interests. Unlike broadcast news reports, which cover events with sequential video flow, Google Earth organizes them as discrete units of data packaged as geo-referenced "layers." The materials contained within the Crisis in Darfur layer can be downloaded from Google Earth and arranged in different ways, but in this article I concentrate solely on the way the information is structured when accessing it using Google Earth software. I draw upon critical approaches from media studies—namely discourse analysis—to analyze several aspects of the Google Earth/USHMM Crisis in Darfur project. The article begins with a discussion of the Crisis in Darfur project's history, proceeds to examine some of the press coverage of the project and then moves to a critique of the layer using four categories: (1) the shifting role of satellite image; (2) the temporality of the interface; (3) the practice of conflict branding; and (4) the practice of information intervention.

Throughout the article, I explore how the presentation of Darfur-related materials through Google Earth reproduces Western tropes of African tragedy, and misses an opportunity to generate public literacy around satellite images. I also consider how humanitarianism is intertwined with digital and disaster capitalism, and suggest that this instance of "information intervention" makes patently clear that high visual capital alone cannot resolve global conflicts. In this way, the article challenges the notion that change will come if we simply raise awareness with ever more powerful techniques of seeing and knowing. The Darfur atrocities have been widely publicized and documented in a multitude of media forms in recent years. And though a veritable media industry has emerged around the Darfur conflict, the killing continues. This analysis ultimately suggests that we may need new ways of communicating about and understanding what political violence is and where it comes from before we can help to stop it.

2. "Crisis in Darfur background and press coverage

In 2005 Google began providing free downloads of its basic version of Google Earth software, offering an interface for navigation of a burgeoning collection of geo-referenced databases. In this way Google Earth builds upon earlier geospatial projects such as GIS, Terraserver, and the Digital Earth (LeClerc et al., 1999; Parks, 2003). The interface presents the world as a globe that has been mosaic'ed together as a patchwork of satellite and aerial images acquired by different sources at different times and provides people with computers and high speed Internet access the opportunity to "fly" around and explore the planet as a "collaboratively produced" digital domain. Google Earth functions as a kind of "world player" or "globe browser" in that it facilitates access to content/databases uploaded by agencies, companies and individuals from around the world. The capacity to produce the world in such a way depended in part upon Google's 2004 acquisition of Keyhole Corporation, a digital mapping company with a multi-terabyte database of mapping information fused with aerial and satellite imagery.

Since its launch in 2005 Google Earth has been used to circulate information about various conflicts around the world, including the wars in Iraq and Afghanistan. Its most high profile conflict layer has been the "Crisis in Darfur," developed in partnership with the United States Holocaust Memorial Museum. In 2004 the USHMM began concerted efforts to draw public attention to the Darfur conflict and, along with the Committee on Conscience,[2] became one of the first US organizations to describe the conflict in Darfur as "genocide." As an institution with a mission to broaden "understanding of the Holocaust and related issues, including those of contemporary significance," the USHMM has attempted to generate awareness about the conflict in Darfur claiming, "To date about 2,500,000 civilians, targeted because of their ethnic or racial identity, have been driven from their homes" (USHMM).

"Crisis in Darfur" became the first project in the museum's "Genocide Prevention Mapping Initiative." From 2004 to 2007 a team of staff members at the museum began gathering materials related to the Darfur conflict and building a database that includes reports and information from Amnesty International, Human Rights Watch, and the US State Department, testimony from victims, professional photographs, video clips and data about displaced persons and refugees. USHMM director, Sara Bloomfield, indicated the museum approached Google after learning Google Earth software had been downloaded by 200 million people worldwide. Museum staff working on the Crisis in Darfur project felt that partnering with Google would allow them to present evidence of genocide on "the world's biggest billboard" (Butler, 2007).[3] As Michael Graham, coordinator of the museum's Genocide Mapping initiative indicated, "We had all this information [about Darfur] from human rights groups, the State Department, and others, but it wasn't accessible, because the vast majority of people don't read 80-page human rights reports" (Lovgren, 2007). Thus one of the goals of the Crisis in Darfur project was to transform long investigative reports into formats that would facilitate public engagement with the important findings they contained.

On April 10, 2007 Google and the USHMM held a high profile press conference in Washington DC to announce the public launch of The Crisis in Darfur project. Representatives of Google and the USHMM spoke as well as Darfurian refugee Daowd Salih. Their speeches suggested that using the Google Earth platform to present evidence of "genocide" would make it more difficult for the world to turn the other way, as had happened with the case of Rwanda during the 1990s and, as Samantha Power suggests in her book *A Problem From Hell* (2002), in other conflicts throughout

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[2] The Committee on Conscience is a joint US government and privately-funded think tank that engages in human rights research around the world. Its offices are located at the USHMM. The committee has commented on the Darfur Genocide as well as the conflict in Chechnya. It serves as an advisory agency to the US government and other nations that seek its services.

[3] This partnership has facilitated other museum projects as well. For instance, the USHMM is using Google Earth to map key Holocaust sites such as Auschwitz, Dachau, Bergen-Belsen, Treblinka, Warsaw and Lodz with historic content from its collections.

the 20th century. At the press conference USHMM director Sara Bloomfield declared, "When it comes to responding to genocide, the world's record is terrible. We hope this important initiative with Google will make it that much harder for the world to ignore those who need us the most" (Labott, 2007). Google's VP of Global Communications and Public Affairs, Elliot Schrage, also spoke at the press conference proclaiming, "'Crisis in Darfur' will enable Google Earth users to visualize and learn about the destruction in Darfur as never before and join the museum's efforts in responding to this continuing international catastrophe" (Labott, 2007). Both presented the project as a kind of "information intervention" that relied upon new technology to expose ongoing political violence in a region largely ignored by the international community.

To explore the project in Google Earth the user must click on the "Global Awareness" layer and select "USHMM: Crisis in Darfur," which exists alongside other projects such as the World Wildlife Federation Conservation Projects, UN Environmental Program's Atlas of Our Changing Environment and a handful of others that have been approved by Google Earth. After clicking on the Crisis in Darfur the user encounters a view of the Darfur region made from US satellite images acquired between 2004 and 2007. This view is inscribed with an array of small icons including tents, flames, cameras, and quotation marks. As the USHMM website explains, the layer is designed to allow users to "zoom down and see what a burned village looks like from above, the vast tent cities of people displaced from their homes, and photos on the ground of refugees struggling to survive." By clicking on the various icons the user can link to frames that contain data about the numbers of refugees and internally displaced persons in certain locations, images of destroyed and partially destroyed villages, quotes from those whose villages were destroyed, photographs of sites and people throughout the region, and video of foreigners discussing what they witnessed while working in the region. This testimony is geo-referenced so that the user understands where it came from. The capacity to situate testimony and evidence within geographic space is one of the distinguishing characteristics of Google Earth. That is, the archive represents the *potential* to articulate testimony not only within a temporal logic of the historic, but in relation to the spatial logic of the geopolitical as well.

Clicking on a camera icon will lead to a photograph taken by one of several professional photographers including Jerry Fowler, staff director of Committee on Conscience, Mark Brecke, a professional photographer/filmmaker who also worked in Rwanda, the West Bank, Kosovo and Iraq, Ryan Spencer Reed, a photojournalist, Ron Haviv, a professional war photographer who also worked in Yugoslavia and Afghanistan, and Brian Steidle, former US Marine who became a monitor for the African Union Monitoring Force. Photographs taken by Hollywood actress Mia Farrow, who made several trips to the region, are also included in the database. As the USHMM website explains, "The imagery allows any user to see the systematic destruction of tens of thousands of homes, schools, mosques and other structures" and invites the user to "witness destruction for yourself...See more than 1,600 villages that have been damaged or completely destroyed. Zoom to more than 133,000 homes, schools, mosques and other buildings burned to the ground" (USHMM).

The interface draws on and combines the visualizing conventions of cartography, the *National Geographic* photo essay, war photography, and human rights monitoring in an effort to arouse "global awareness" about the conflict in Darfur. Yet what is missing in the layer is a history of the (post)colonial geopolitics of the region, information about the various ceasefire treaties that have been signed and violated, details about aid workers and peacekeepers killed in the conflict, and information about the perpetrators of violence and their resources and maneuvers. It would also be important to include historical details about events such as the Berlin Conference of 1885, the "Scramble for Africa," which divided up the continent among European powers, and had the effect of introducing animosities in the region derived from colonial policies and the biopolitical constitution of majorities and minorities (Bloom, 2008).

Despite the paucity of historical information in the Crisis in Darfur, the project's launch and press conference were met with a congratulatory press. Even though the USHMM initiated the project, headlines tended to recognize and praise Google and emphasized the corporation's benevolent efforts to draw attention to the violence in Darfur. A BBC headline announced "Google Earth Turns Spotlight on Darfur" (Smith-Spark, 2007). The *SF Gate* proclaimed, "Google Earth Zooms in on Darfur Carnage" (Kopytoff, 2007). And *PC World's* read, "Google Earth Zooms Into Heart of Darfur's Darkness" (Maxcer, 2007). Such headlines are problematic not only because they invoke Western tropes of Africa as a "dark continent" in need of "exposure" and "enlightenment," (Pieterse, 1992; Hickey and Wiley, 1993; McClintock, 1995; Landau and Kaspin, 2002) but they position Google, the corporation, and Google Earth software as an assemblage of resources and technologies that can be mobilized to identify and monitor trouble spots and promote civil society. In its own descriptions of the project Google interpellates users as if global peacekeepers explaining, "Improving rapid access to satellite imagery has the potential to enable citizens worldwide using Google Earth to play a part in monitoring areas at risk of genocide, and to strengthen organizations' ability to respond effectively. Expanding the use of remote imagery might help convince potential perpetrators that their actions against civilians will not go unnoticed by the international community" (Graham, 2007).

The press coverage stressed Google's corporate humanitarianism as well. *Wired* claimed the Crisis in Darfur project demonstrated that Google Earth could be "a life-saving humanitarian tool" (Gilbertson, 2007). *PC World* pointed out that the project was consistent with the Google corporation's mantra "Do No Evil," and suggested that by making the Crisis in Darfur available "Google takes it one step further" (Spring, 2007). Senior advisor to the International Crisis Group, John Prendergast, proclaimed, "No one can any longer say they don't know. This tool will bring a spotlight to a very dark corner of the earth, a torch that will indirectly help protect the victims. It is David versus Goliath and Google Earth just gave David a stone for his slingshot" (Boustany, 2007).

While the press focused on the humanitarianism of Google (and ironically less so on that of the USHMM), there was little discussion of the complexity of the Darfur conflict itself, not to mention the challenge of visually representing it. Instead, most of the press coverage promulgated the idea that the information contained in the Crisis in Darfur project is simply "true" or would "expose the truth." Even before the Crisis in Darfur project was released, a post on *Ogle Earth* pointed out the satellite images of Darfur that had appeared in Google Earth in Jan–Mar 2006 and described them as "an unequivocal indictment of the Janjaweed, and of the Sudanese government whose implicit support it has enjoyed, because in these new images each and every burned-out gottia is visible" (Darfur, 2006). *The Register* in the UK reported "The Crisis in Darfur project offers stark evidence of the true scale of the carnage, including the location of more than 1,600 destroyed and partially destroyed villages, plus audio and pictorial evidence" (Haines, 2007). While it may be accurate to say that many villages have been destroyed by the Janjaweed, both the "truth" status of satellite images and of other visual materials presented in Google Earth need to be evaluated and contextualized more carefully rather than simply adopted as "the real." Using satellite images alone it may not be possible to determine exactly who burned certain villages. One of the only press articles to recognize the precariousness of representation in the Crisis of Darfur layer appeared in the *Telegraph*. In it David Blair remarked that Google Earth "unquestionably labels the war a 'genocide' even though the United Nations

investigation ruled in 2005 that the term did not apply to events in Darfur," and continued, "the atrocities detailed on Google Earth are overwhelmingly attributed to the Janjaweed...Rebel armies have also committed atrocities in Darfur, but these are not detailed on the website. Sudan's regime may also ask why Google has chosen to highlight this war and not other crises" (Blair, 2007). Blair's observation serves as an important reminder of the need to be wary of "seeing is believing" logics that have emerged around the Crisis in Darfur project. Though the USHMM went to great lengths to acquire materials from reputable and credible organizations such as Human Rights Watch and Amnesty International among others, there are many ways of presenting and interpreting this information. In the digital age even the most seemingly incriminating visual evidence must be examined closely and considered in relation to broader institutional, technological, and geopolitical strategies. Phrases such as "the image speaks for itself" are no longer tenable. Not only do different users/viewers have radically different ways of interpreting the same visual information, the status of the digital image is itself uncertain in that it can be subjected (sometimes undetectably) to practices of doctoring and spinning (Parks, 2005, 2006).

The press doled out high praise for the Crisis in Darfur project without mentioning that there is limited historical contextualization at the interface, there is a ready embrace of both the satellite and other imagery as "truthful evidence," and there is little sense that the packaging of information in the Google Earth platform has impacted policy-making and/or led to direct intervention. The project has perhaps helped spread awareness of violence in Darfur, but the violence itself has not ceased. Further it is worth asking, what kind of "awareness" does the layer raise? As a writer for ICT for Peacebuilding astutely observes, "Although this [Google Earth] technology ...tries to galvanize global political actors and policy to act urgently against a further deterioration of conditions in Darfur, it's unclear how earlier attempts at using technology have succeeded in raising and sustaining the level of awareness and compassion necessary to address such crises" (Hattotuwa, 2007). Indeed, US information technologies and awareness initiatives have their own limits and may not be sufficient to thwart a civil war in Sudan. This and other wars have their roots in colonial pasts, pasts that the West remains deeply implicated within. An interesting way to navigate the Crisis in Darfur layer might be to hold Sven Lindqvist's book *Exterminate all the Brutes* (1996), a geographic meditation on the history of European genocide in Africa, in the other hand.

In general the press coverage and discourse surrounding the Crisis in Darfur project tended to reduce the political to the visual and encourage a "seeing is believing" logic, deputize the user/citizen as a monitor on global patrol situated at a strategic interface, celebrate the humanitarian potential of a US corporation and information technology, and demonstrate a preoccupation with the power to visualize rather than to develop coherent policies that may lead to peace in the region. In the following sections I offer a critical analysis of the interface that focuses upon the shifting role of the satellite image, the temporality of the interface, the branding of the Darfur conflict and the meanings of "information intervention."

3. Eclipsing the satellite image

During the past fifteen years US satellite images have appeared in news media on various occasions, whether to draw attention to displaced persons in central Africa, mass graves in Bosnia, and alleged weapons facilities in Iraq (Livingston and Robinson, 2003; Fair and Parks, 2001; Parks, 2005, 2006). In these previous instances the satellite images that circulated had been declassified by the US Department of Defense and presented by different news agencies as either novel, horrifying or strategic views of events related to conflicts on the ground. In Google Earth, the satellite image takes on a different function. Rather than being a site/sight of focus in the context of a print or broadcast news story, the satellite image is positioned as an entry point or gateway to closer views. The Crisis in Darfur interface is structured in a way that encourages users to zoom through and bypass the satellite image (as opposed to scrutinize it) in search of closer and presumably more meaningful perspectives. In this sense, the satellite image becomes a kind of throwaway, even despite its prominence and ubiquity in Google Earth. Unfortunately, the potential for satellite image literacy may ironically be diminished at the very site at which it could be enhanced and extended (see Table 1).

As I have argued elsewhere, the satellite image is useful as a site/sight of focus because its abstraction and indeterminacy keeps acts of interpretation and practices of knowledge dynamic. The satellite image is a site/sight that must be read (Parks, 2005, 2006). Yet at the Crisis in Darfur interface, satellite images are traversed in favor of closer views and representations of humans, many of which feature injured bodies and/or displaced women and children. For instance, by clicking on a camera icon the user can view photos with such captions as "A Malnourished girl in the MSF therapeutic feeding center. Inba, Chad, May 2004," or "Mihad Harrid, a year old girl, whose mother had attempted to escape an attack from helicopter gunships and Janjaweed marauders on their village, Allet, in Oct 2004," or "Girl with traumatized baby sister. The baby has not made a sound since the day their parents were slaughtered and the village burned." As illustrated in Figs. 1–3 the Google Earth interface is structured in a way that eclipses the satellite image and fills it in with closer views that are consistent with Western tropes of African tragedy and the representation of refugees (Pieterse, 1992; Fair, 1996; Malkki, 1997). The images spotlight the frail and wounded bodies of innocent young girls. Fig. 1, for instance, shows a photo of a baby girl who is so small that she is barely visible while cradled in the arms of a woman preparing to nurse her. Fig. 2 reveals a close up designed to focus attention upon an infected open wound on the lower back of a tiny infant. Fig. 3 features two young sisters gazing directly into the camera after losing their parents and home in an attack. These Figures illustrate how the territorial perspective of the satellite image is overlaid with close up photographs that are mobilized to *affectively* pinpoint feminized bodily injury and trauma. Yet what is it that we see in these close up photographs exactly?

Such closer views rely on what Michael Shapiro refers to as the "personal code" in that they focus on individual bodies rather than the complex dynamics of political violence in the region (Shapiro, 1988). As David Campbell suggests in his analysis of UK newspaper photographs of the Darfur conflict, such images may reify Africans as victims as much as they draw attention to conflict (Campbell, 2007). Similarly, the photographs integrated within the Crisis in Darfur layer may not trigger the kind of awareness and education

Table 1
Shifts in satellite image use in US media coverage of world conflicts.

| Location	In earlier news media	In Google Earth
Source	Declassified Dept of Defense	Multiple sources
Date	Precisely dated	Vaguely dated, if at all
Volume released	Low	High
View status	Unique	Gateway/Throwaway
Frames	Single site of focus	Composited/mosaic' d
Focus in inquiry	Satellite image	Closer views
Objective	To read/interpret	To zoom through
Interpretative acts	Emphasized	Downplayed
Function	Public discussion	Private navigation
Satellite image literacy	Higher potential	Lower potential
Economic value	Limited	Flexible accumulation
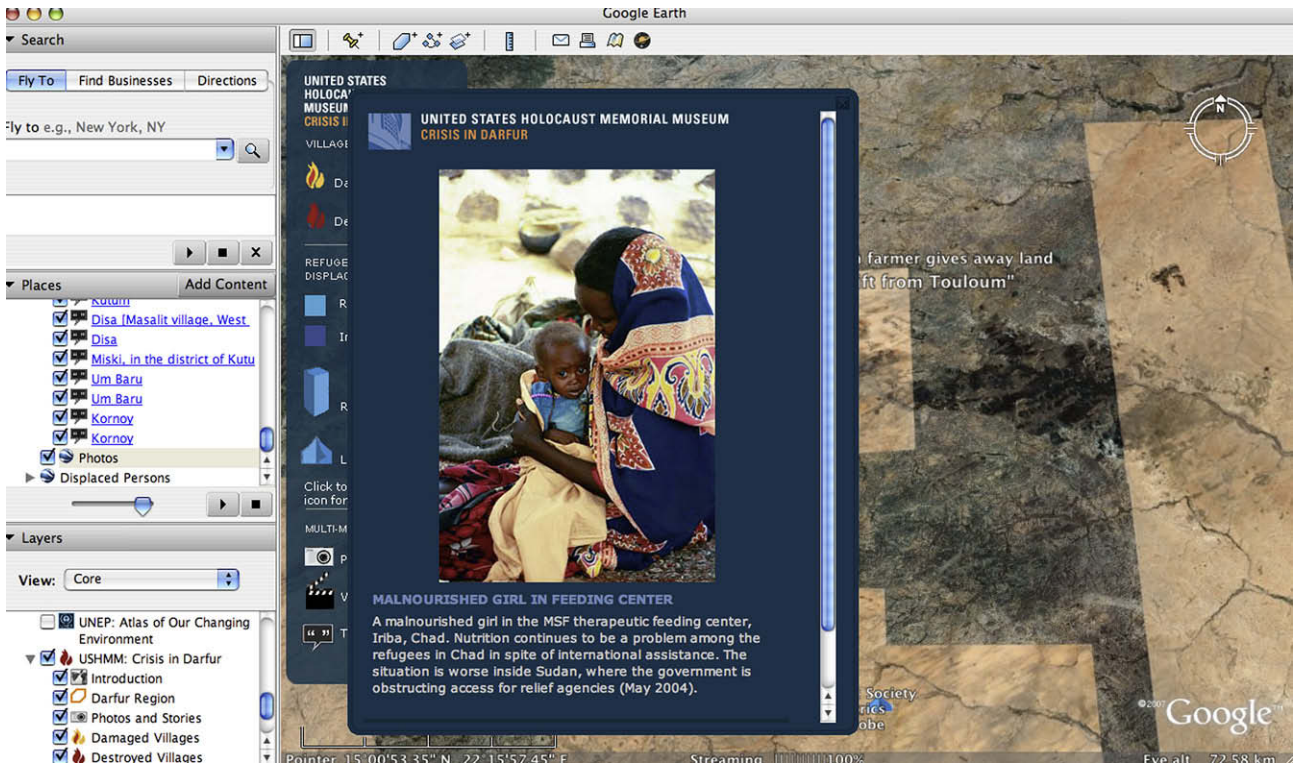
Fig. 1. At the Google Earth/Crisis in Darfur interface satellite images are overlayed with closer views of victims. This screen capture reveals a photograph with a caption that reads, "A Malnourished girl in the MSF therapeutic feeding center. Inba, Chad, May 2004."
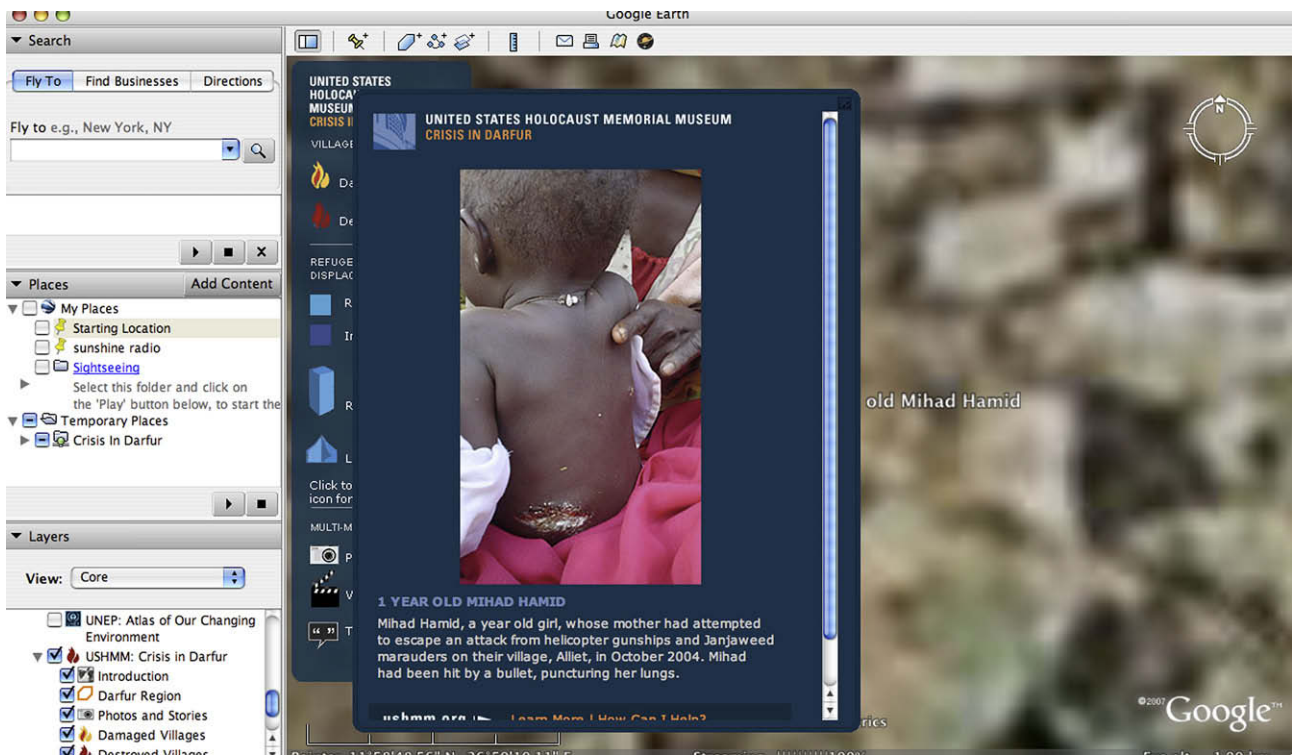
Fig. 2. In this screen capture the satellite image is once again eclipsed by a photograph, this time of an infant victim. As the caption explains, "Mihad Harrid, a year old girl, whose mother had attempted to escape an attack from helicopter gunships and Janjaweed marauders on their village, Allet, in Oct 2004."

that the USHMM intended. As Campbell writes, "...Although many of the individuals who are producing and publishing such images are hoping that we feel moved and responsible and driven to act, the affective responses engendered by these symbolic statements of conflict can–because of their familiar forms–just as easily lead to inattention and indifference..."(2007, p. 380).
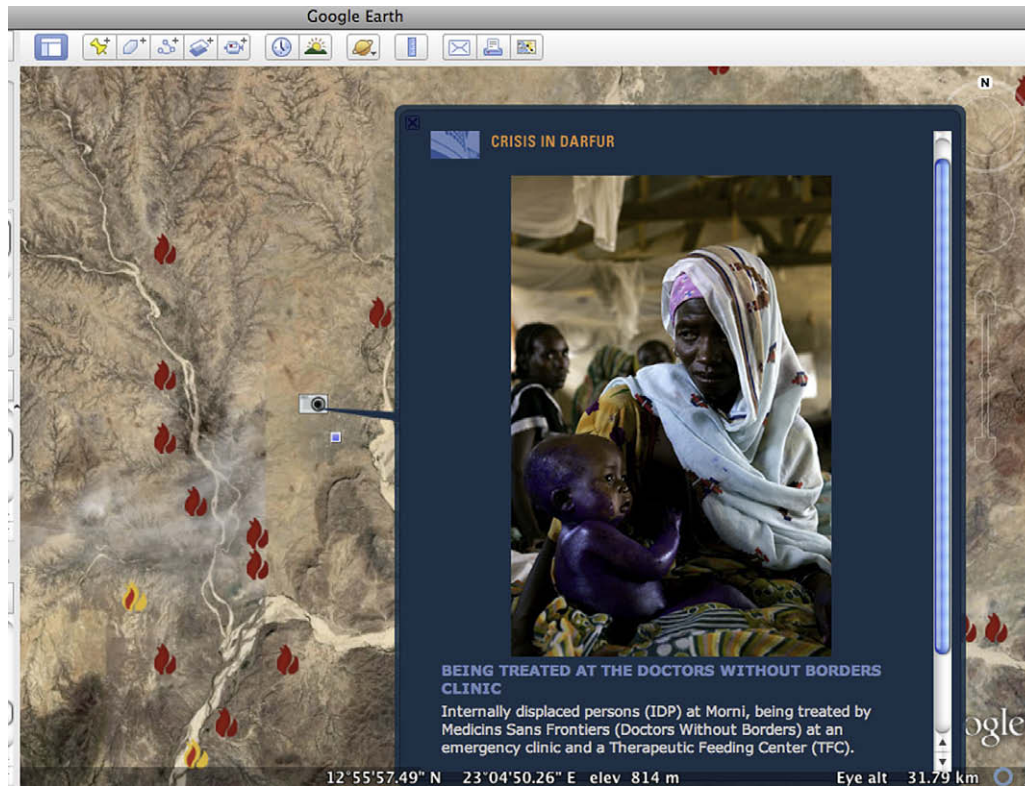
Fig. 3. Yet another screen capture reveals how the Google Earth/Crisis in Darfur interface positions the satellite image as a backdrop or gateway to closer views rather than as the site of focus. This one features a photograph of "Girl with traumatized baby sister. The baby has not made a sound since the day their parents were slaughtered and the village burned."

Perhaps the satellite image has a unique role to play in the representation of political violence. Its cartographic and abstract qualities position it as more evocative than definitive and as such it may set off chains of inquiry, investigation, reflection, as well as questions about position and perspective. In other words, rather than being used to resolve questions of activities on the ground, this medium is most useful when it is used to stage inquiries concerning the complex dynamics of political violence which cannot simply be "seen" and "understood." While historically some images have been successful at encapsulating or serving as icons of violent conflicts around the world, there is a need to imagine and develop *different* ways of using and engaging with images in efforts to account for political violence. Satellite images could be used to represent aspects of the conflict that are more spatial and geopolitical that cannot be reduced to images of the wounded body alone. They can expose territorial dimensions of atrocities such as burned villages, encampments of displaced masses, and perpetrators' maneuvers and hideouts. Their abstraction may help sustain a sense of the complexity of the conflict rather than reduce it to familiar tropes of victims, ethnic cleansing and tribal warfare that are as much inventions of the Western imaginary and ways of understanding world conflicts as they may be accurate descriptions of conditions on the ground.

4. The temporality of the interface

The second point I wish to address involves the issue of temporality and, in particular, the tense, of the Crisis in Darfur interface. One of the stated goals of the USHMM has been to "intervene" in the conflict and this has been emphasized in the project's publicity – to change things on the ground. If intervention is about the "now," then it would seem that the dates of satellite and other

imagery that make up the layer would be highly significant. Yet many images available at the Crisis in Darfur layer are either dated only by year (between 2004 and 2007) or are not at all. Updated satellite images can be acquired by Google Earth, but such refreshed views are not regularly integrated in the layer. Moreover, some of the professional photographs in the database are not dated precisely. This limited or missing temporal data is problematic because it plays into and perpetuates Western imaginings of the African continent as perpetually in strife (Fair, 1996; Malkki, 1996; Fair and Parks, 2001), an ahistorical logic that presumes there are never changes to conditions there.

While the Crisis in Darfur provides individuals with access to a wider array of sources and viewpoints than that of cable television news, it functions more as a medium of the past than of the present. The layer has a quite different temporal status than that of television news, which, in its claims to be "live" or "up-to-the-minute," typically provides the dates of visual materials it presents. The project may have been developed with the intention of fostering interventions on the ground, but the lack of temporal data is problematic in that it may prevent the interface from being useful to those for whom timing is everything – whether those aiding in refugee relief efforts, tracking human rights violations, or developing news reports. Ultimately, the Crisis in Darfur functions as *an archive of violent conflict that unfolded while being observed but without intervention*. It is an accumulation of information, a database of documents and images being used to represent and produce knowledge about a conflict site/sight that *could have been* intervened in. In this sense, the Crisis in Darfur project is a visual display of the *past perfect subjunctive* and perhaps as much as anything it *exemplifies the power to see/know and not act.* Thus even as Google Earth generates awareness and attempts to compel intervention, the project may, ironically, participate in the 20th century pattern Samantha Power describes so powerfully in her book, *A*
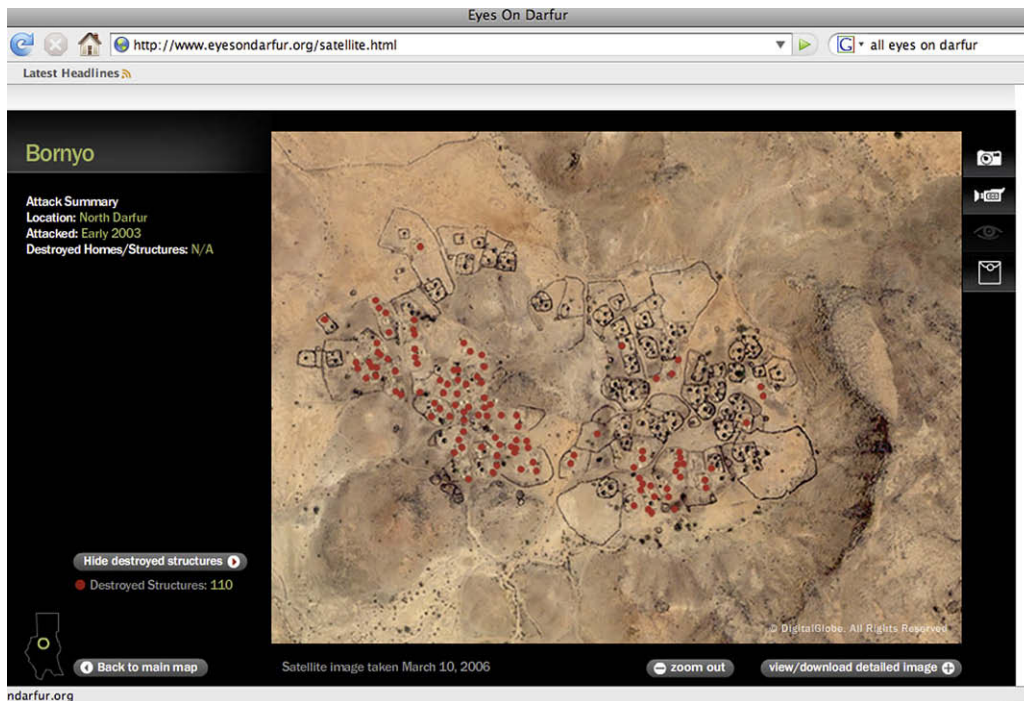
Fig. 4. This screen capture reveals the way satellite evidence is presented at the Amnesty International Eyes on Darfur website. Featured is a satellite image of the Sudanese village of Bir Maza and in the color version of the image destroyed buildings and structures are identified with red dots. (For interpretation of the references to colours in this figure legend, the reader is referred to the web version of this paper.)

Problem from Hell, of knowing genocidal atrocities are occurring but not acting to stop them (2002).

It is this paradox and conundrum that perhaps prompted Amnesty International to begin working on a project that set out to monitor attacks in the region online *as they happen*. The *All Eyes on Darfur Project*[4] was launched in June 2007 and uses commercial satellite imagery from the companies Digital Globe, Geoeye and Imagesat to monitor 13 villages in Darfur and Eastern Chad at imminent risk of attack. In this project, not only are satellite images the featured sites/sights of investigation they are clearly dated and their sources are indicated. Furthermore, there is an attempt to use them to analyze and predict which other villages may be at risk given analysis of locations already attacked and the spatial patterns of the attacks. For instance, by clicking "view destroyed structures" one can get a spatial sense of the attacks in different villages as red and/or yellow dots are graphically inscribed in the satellite image to indicate the locations of destroyed or partially destroyed structures. Figs. 4 and 5 contain satellite images that were used to identify destruction in the villages of Bir Maza and Bornyo.

While Amnesty International does not have the funding to provide constantly updated satellite imagery, I want to emphasize the importance of its efforts as well as its intention to foreground "satellite evidence." The Eyes on Darfur website significantly presents satellite images as catalysts for forensic investigation since they can be used to initiate questions such as: Who conducted the attack? From which direction did it occur? How many people were killed? How were they killed? How many buildings were destroyed and how? Were nearby villages also attacked? In other words, a strong focus on the satellite image itself can create an interrogatory position for the viewer, as well as a sympathetic one. Such a position confronts issues of temporality in that forensic investigations are designed to reconstruct the order of events and to use this knowledge to deter them from happening in the future. The

Eyes on Darfur project is thus suggestive of the way that *satellite forensics*—a kind of investigative disposition or practice that can take shape in relation to the satellite image—could be used to impact events on the ground. Though this Amnesty International project is ongoing, it has not had nearly as much publicity as Crisis in Darfur, perhaps because it does not have the Google brand name behind it.

5. Conflict branding and digital capitalism

The third issue I would like to discuss is the relationship between the digital corporation and global conflicts. Google Earth software has been used by many people for many purposes around the world and in the process has arguably generated a more fully elaborated form of digital capitalism. Google Earth transforms the sovereign territories of all of the world's nation-states into visual, digital, navigable and privatized domains (largely) owned by one US corporation, Google. When the user navigates the Crisis in Darfur layer (as well as others) with Google Earth software, the Google logo appears in the bottom right corner of every frame. Google claims copyright ownership of all of these frames unless they contain images originally classified as public domain. (NASA satellite images, for instance, remain public domain when they are part of Google Earth's databases.) In Google Earth the satellite image may be obscured or undated, but the Google brand is never lost.

The corporation's involvement in the Crisis in Darfur project and use of it to market and extend its brand name is a perfect example of neoliberalism. As David Harvey explains neoliberalism is a set of "political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade" (2005, p. 2). One of the aims of neoliberalism is to convert "various forms of property rights (common, collective, state,

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[4] See www.eyesondarfur.org.
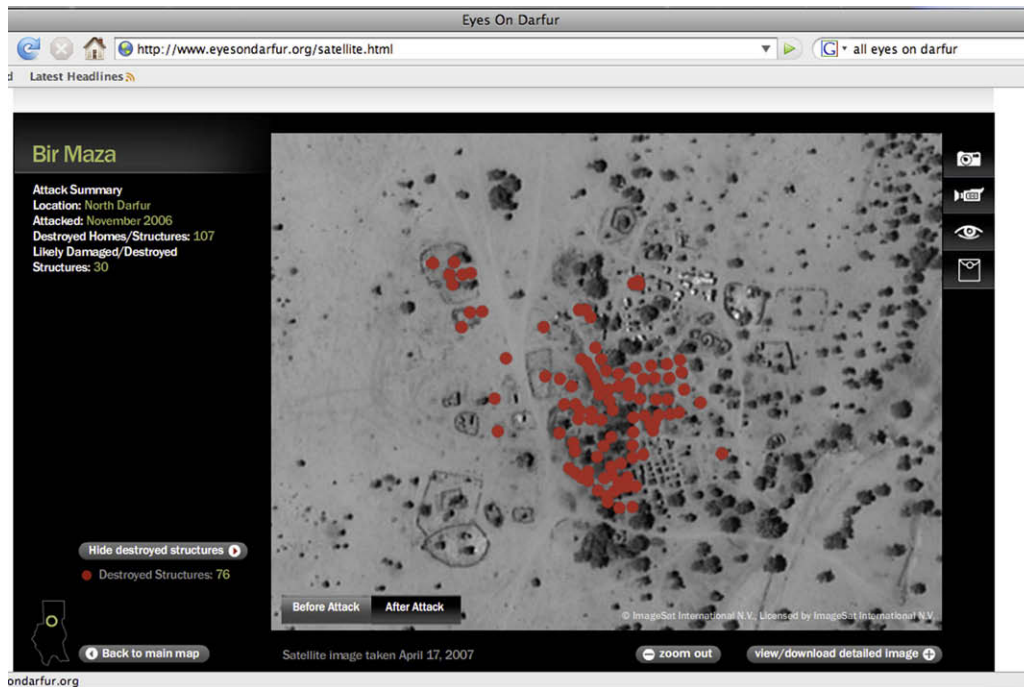
Fig. 5. The "satellite evidence" presented at the Eyes on Darfur is the site of focus at the interface, and can be used to initiate forensic investigations. This screen capture reveals a satellite image of destroyed buildings in the Sudanese village of Bornyo.

etc.) into exclusive property rights" (Harvey, 2005, p. 159). In this case, intellectual property that has been classified as public domain (whether state department or UN documents, NASA satellite images, reports from Amnesty International and Human Rights Watch) has been compiled as a database that is accessible through the privatized interface of Google Earth. *The digital corporation*, as opposed to the state, international agencies, or NGOs, becomes the primary mechanism for distributing information about the Darfur conflict. *Public* reports and documents are rearranged and presented alongside *privatized* information owned and branded by the Google corporation. Google, of course, does not own all content in the Crisis in Darfur database, but it does own the means to distribute it and thus has the power to control and regulate access to the information. What is also significant here is the way public and private intellectual properties are intermixed within Google Earth so that their ownership status is unclear and becomes relatively indistinguishable. This is reinforced when Google Earth imprints its brand name across and around public domain materials about Darfur because it owns the means to distribute it. Thus as Google Earth participates in the global circulation of public and privatized information about the Crisis in Darfur, it also lays corporate claim to the conflict.

In addition, Google Earth assumes responsibilities of global imaging once administered by the US National Reconnaissance Office and the Central Intelligence Agency. Satellite images have been gathered by federal agencies for nearly fifty years and Google Earth has now taken on the function of making this information accessible and valuable within the global economy. The very production of Google Earth software is symptomatic of a global economy in which most nation-states are unable to control the production and circulation of representations of their own territories and those transnational corporations that own and operate satellite and computer technologies—the technologies of high visual capital—are able to generate huge profits from such a condition of disparity. Google did not request formal permission from states to include satellite and other images of their territories in its proprietary interface/databases. In fact, countries such as India, Australia,

South Korea and Morocco have registered complaints against the company alleging privacy invasions and concerns about national security (Barlow, 2005; Levine, 2006; Google Earth Prompts Indian Fears, 2007).

Finally, the Crisis in Darfur interface is also symptomatic of an economic shift that Naomi Klein identifies "disaster capitalism," a condition defined by the global security and information industries' rapid privatization and expansion after 9/11. As she explains, disaster capitalism involves "orchestrated raids on the public sphere in the wake of catastrophic events, combined with the treatment of disasters as exciting market opportunities" (Klein, 2007, p. 6). Comparing this shift to the high tech bubble economy, Klein suggests, the "disaster capitalism complex is on a par with the 'emerging market' and information technology boom of the nineties…the disaster economy may well have saved the world market from the full-blown recession it was facing on the eve of 9/11" (2007, p. 14). Google Earth has become part of this complex to the extent that it produces systems of planetary visualization that have been used for conflict and disaster management. In addition to representing the conflict in Darfur, Google Earth interfaces have featured disasters ranging from Hurricane Katrina to the war in Iraq, from the tsunami in Indonesia to wildfires in California. When discussing how aspects of disaster capitalism have played in different parts of the world, Klein poses the rhetorical question, "Why deploy UN peacekeepers to Darfur when private security companies like Blackwater are looking for new clients?" (2007, p. 13) We could similarly ask, why have Human Rights Watch or Amnesty International distribute their own reports on Darfur when Google can do it? The point here is that Google is part of an global economic system that has been organized to allow the US digital corporation to profit from the erosion of public, state, NGO funding for all kinds of programs, but especially conflict, disaster and security-related services. In short, Google Earth is not "a view from nowhere" – it is the view from a company with enormous visual capital. And it, like other US corporations, whether security firms or media cartels, stands to profit from disaster and conflict.

## 6. Information intervention and the Google Earth Effect

In their book *Forging Peace*, Monroe Price and Mark Thompson identify "information intervention" as a crucial aspect of contemporary warfare, explaining that it involves "the extensive external management, manipulation or seizure of information space in conflict zones" (2002, p. 8). Practices of "information intervention" range from radio jamming to peace broadcasting and involve "actions taken by a powerful state or a combination of states sometimes in the name of the 'international community.' The actions may be taken to prevent conflict, as part of conflict, or as part of post-conflict reconstruction" (2002, p. 8). Military organizations use information interventions not only to win wars, but also to "democratize" and "liberalize" media systems, and increasingly, particularly in the age of neoliberalism and disaster capitalism, the digital corporation is implicated in these efforts. Google Earth can certainly be described as participating in the "external management," "manipulation" and "seizure" of Sudan's information space with the intention of preventing further violence and killing in the region. In this sense, Google Earth can be understood as yet another technique in the arsenal of information intervention.

While the Crisis in Darfur project alone could not deter violence in the region, a Google Earth spokesperson has emphasized its other successes, claiming, "The reaction to this project has been immediate: it has stimulated extensive worldwide media coverage, traffic to the USHMM website has quadrupled, and reporters and human rights organizations have used the information in these layers to ask more pointed questions" (Moore, 2007). What is striking here is that success is measured by an increase in world media attention to the Crisis in Darfur project itself and traffic to the USHMM website as opposed to an impact upon international policy or a change in conditions in Darfur. Moore's statement is a testament to the Google public relations campaign that underpins the project. This is all the more clear when one realizes that the Sudanese themselves cannot even access the Crisis in Darfur project using Google Earth given that US export controls and economic sanctions against Sudan prohibit people in that country from downloading US software.

Another issue to consider is whether this increase in traffic to and alleged impact of Google Earth is analogous to CNN's expanded influence when the network globalized throughout the 1990s. In other words, it is worth considering how a project such as Crisis in Darfur relates to what has been called the "CNN effect." This term emerged during the 1990s when the representation of news events on the 24-hour global cable news network, CNN, began to impact the foreign policies of various nation-states. Steven Livingston studied this phenomenon during the 1990s and suggested that "the extent, depth, and speed of the new global media have created a new species of effects" that differed from earlier ones (1997). The CNN effect involves the notion that foreign policy follows and is formulated in relation to television pictures. More recent scholarship, however, has mapped the contradictory issues raised by the CNN effect (Gilboa, 2005) and challenged this idea claiming that foreign policy only changes in relation to pictures when governments do not have already existing policies on the matter in question (Robinson, 2002).

Whether the Crisis in Darfur (or other databases in Google Earth for that matter) have impacted foreign policy in a way that warrants the designation "Google Earth effect" is open to discussion and may be too early to determine. I raise this question simply to suggest that Google Earth may, because of its capitalistic underpinnings and global ambitions, end up operating more like CNN than digital enthusiasts would like to imagine. While the Crisis in Darfur presents information in a different format than that of a television news report, it relies upon similar practices in that it draws upon and combines evidence from different sources, privatizes public records, brands conflicts, and presents multimedia accounts of world historical events. Furthermore, it has reproduced some of the conventions of representing African displacement and victimization often seen in the coverage of CNN and other news networks.
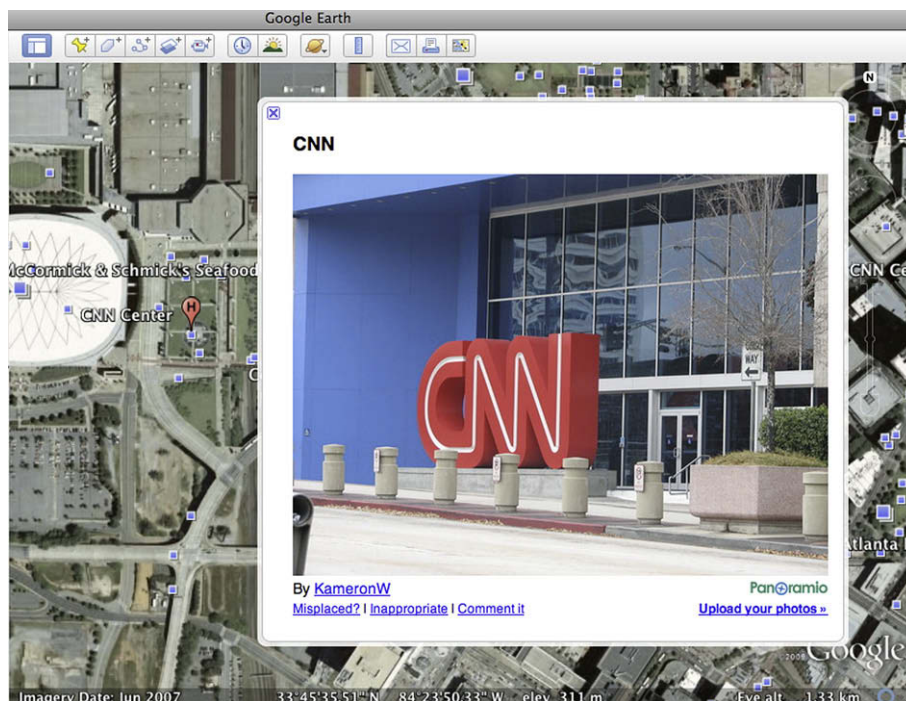
Fig. 6. Just as Google Earth frames have been increasingly integrated in CNN news reports, this Google Earth screen capture reveals how the software can also be used to pinpoint the location of CNN's headquarters in Atlanta, Georgia.

Perhaps a good indicator of things to come is in CNN's frequent use of Google Earth imagery in its news coverage such that the two brands are positioned as competing within the same frame. Yet just as one can glimpse the Google Earth brand in the video flow of CNN, as shown in Fig. 6, one can find icons and a pop up window revealing CNN's corporate logo and Atlanta headquarters in the digital terrain of Google Earth, which is consistent with what Siva Vaidhyanathan calls the Googlization of Everything (2009). Indeed, both companies not only use their brands to attract and compete for consumers, but also hold the power to shape knowledge about and impact interventions into world affairs. In this sense, they are major players within the global media economy and the geopolitical condition. Because of this, it is vital that critical analyses of their world-visions, whether they come in the form of the Crisis in Darfur layer or in the form of live reports from other conflict zones, continue.

7. Conclusion

While Google Earth presents exciting new possibilities for integrating and accessing documents and audiovisual materials and providing them in geo-referenced fashion, information interventions such as Crisis in Darfur need to be discussed and evaluated carefully. The project compels us to reflect upon the visual representation of political violence as a serious challenge and to ask what kinds of representations might lead not only to more awareness, but to better policymaking as well. As Power reminds us, "History has shown that the suffering of victims has rarely been sufficient to get the US to intervene... Humanitarian intervention came about only on the rare occasions when the shorter term political interests of US policymakers were at stake" (2002, p. 512). Perhaps there has been too much congratulatory discourse around Google Earth and too little scrutiny and discussion of the implications of its visual capital. Should the accumulation of visual capital come with the responsibility of developing accountability for and appropriate responses to the horrific acts that imaging technologies might be used to see? This is a question that deserves further deliberation.

Rather than operate in the past perfect subjunctive – that is, *observe what could have been intervened in* – we need a visuality that is linked to acknowledgement, accountability and intention as opposed to regret and lament. This mode of looking might also have built within it a recognition of the very challenge of representing global conflicts—whether from the satellite or the ground—and an inherent sensitivity to the tensions, disparities, inequities and traumas that have resulted from the histories of colonialism, the Cold War and the War on Terror. These historical contexts are not merely backdrops, but are themselves constitutive of modern visualities. Adopting sensitivity to such historical conditions in our visual encounters is especially important when the views of global conflicts are generated and experienced through the privileged platforms of high visual capital. I want to close with two points.

First, the satellite image, whether it appears in news media or Google Earth, remains a useful tool in the representation and discussion of global humanitarian crises. It is useful because it displaces the familiarity and authority of the proximate view, and in so doing, challenges the all too easy assumption that a closer view leads to better understanding. This point is especially important in relation to the visual representation of historical violence and trauma, since, in some cases, proximity literally clouds or obscures vision (MacLear, 1998). And yet the distant view of the satellite image comes with its own baggage. Its historical alignment with military strategy and scientific objectivity compels us to be wary of its paternalistic associations with "humanitarian" over-sights and super-visions. In the end, the structural interplays between the far and the near that undergird Google Earth's Crisis in Darfur

project are helpful in that they represent the potential to refigure key terms of humanitarianism. The iconographies of suffering are not reduced merely to images of people, but are placed in dynamic alternations with satellite images and graphics that emphasize the territorial and the geopolitical. Testimonials are translated, transcribed and geo-referenced but they remain inaudible and unheard. Witnessing is figured across a continuum of technologized far and near perspectives rather than fetishized as the physical bystander or "eye-witness." The satellite image can function as an "information intervention," then, in that it fosters different ways of visualizing and conceptualizing these key terms of humanitarianism – suffering, testimony and witnessing.

Second, the intense energy and motivation to "do something" about the Darfur conflict could be accompanied by further critical thinking about the relationship between images and political change. Since research shows that Westerners have become increasingly desensitized or immune to images of victims' suffering and displacement, this approach to communicating about world conflicts and their effects (used by news agencies and NGOs alike) may need to change. Google Earth represents the possibility of visualizing some of the geopolitical, territorial and structural conditions that set the stage for political violence in the first place. For instance, it offers the potential to overlay historical maps of colonial occupation, highlight areas of desertification, and identify networks of transportation. While the human dimensions of the conflict are no doubt extremely important, political violence stems from structural conditions and it seems useful to find ways of better communicating and understanding them. For instance, we might consider what are the transit routes of Sudanese and Janjaweed weapons trade? What are the spatial patterns of Janjaweed attacks? Where are the region's water and agricultural resources located? Treating the satellite image as a field in which to initiate and answer these questions might be a good place to start. Armed with such information, world citizens might be more apt to pressure their governments to formulate proactive as opposed to reactive foreign policies, to understand world conflicts as more than the primitivism or pathology of tribal warfare, and to help push the historical forces and power hierarchies that shape the planet into bold relief.

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