

SOCIAL ASPECTS OF NATURAL DISASTER

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Abstract

Although the hurricane Katrina is not the greatest natural disaster that has struck the US, there is no doubt that it was without a precedent among recent natural disasters. Disaster consequences mostly depend on society development, as well as on its ability to absorb disasters and provide disaster relief. As this case seems to involve a rich country with highly developed disaster management system, an effective response was naturally expected.

Why did Katrina happen at all? Katrina can be regarded as an example of how one particular disaster turns into another, of much greater proportions. Therefore, the main thesis of this paper is that Katrina embraces three disasters: natural, technological and social. In addition, three factors causing a disaster are given: physical vulnerability, social vulnerability, and disaster response. Furthermore, the focus is on city abandoning and an increase in crime and violence being the main aspects of social disaster during and in Katrina's wake. Accordingly, Katrina seems to be the "worst case" although an optional explanation is given as well. In conclusion Katrina is considered in social, community and civilizational terms.

Introduction

In short, the consequences of Katrina are: 1820 people lost their lives; over a million of the homeless and refugees; 80 % of New Orleans flooded; cca. 80 trillion US dollars of material damage; 352 000 houses, 160 000 of that number in New Orleans, have been destroyed in the Gulf Coast area (TIME, 2006).

The consequences shouldn't have been of such proportions. The scientists had been warning that a strong hurricane would strike that area. They had been giving out advices on how to reduce the impact of a possible disaster. Weather agencies had predicted one of the most active hurricane seasons. Information on wind force, weather details and possible effects had allowed enough time to prepare and evacuate the residents². Management and SAR systems were expected to be

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² *National Weather Service bulletin for New Orleans region: 10:11 a.m., august 28, 2005. special warning: urgent - weather message: ...devastating damage expected...hurricane Katrina...a most powerful hurricane with unprecedented strength...rivaling the intensity of hurricane Camille of 1969. Most of the area will be uninhabitable for weeks...perhaps longer. At least one half of well constructed homes will have roof and wall failure. All gabled roofs will fail...leaving those homes severely damaged or destroyed. The majority of industrial buildings will become non functional. Partial to complete wall and roof failure is expected. All wood framed low rising apartment buildings will be destroyed. Concrete block low rise apartments will sustain major Damage...including some wall and roof failure. High rise office and apartment buildings will*

prepared for a disaster. However, in spite of all, one of the most developed countries in the world hasn't succeeded in protecting its citizens.

Our starting point is that Katrina represents a streak of three disasters. First was a hurricane which, as a natural disaster, was inevitable. In consistence with the trend of hurricanes in modern times, its consequences should have been brought down to material damages and a low number of casualties. The real disaster occurred when some of poorly maintained levees broke which could be labeled as technological disaster, and flooding of the city followed as a result. As a third, a social disaster occurred including numerous casualties, sufferings, anarchy, asocial behavior, an increase in crime and violence. Social disaster originated from the previous two, it culminated after the city flooding and it continued during the recovery period. In distinction from hurricane, flooding as well as a social disaster could have been prevented.

Katrina turns out to be a complex disastrous event. Many factors and aspects should be taken into consideration in the analysis of this disaster. Focusing attention to the most severely affected city of New Orleans, this paper offers the sociological approach. The first part of the paper supports the thesis that physical vulnerability, social picture of the city and disaster response are crucial for disaster proportions. The second part focuses on two problems, the first one being the fact that large number of residents had decided not to leave the city, and the second one being an outbreak of crime and violence.

Physical vulnerability

New Orleans was founded in 1718 as a jeans trading centre. Having been founded at the crossroads of three navigable water bodies, Lake Pontchartrain, the Gulf of Mexico and the Mississippi river, the city of New Orleans evolved into one of the most important ports. The city location that ensured its development throughout the years has become an ever growing threat. The city has always been subject to flooding due to its position at the crossroads of three waterways but also because the major part of the city is below water level.

In order to reduce flooding risks, the levee able to resist Category 3 hurricanes³ was designed in 1960. But by building levees, natural, protective wetlands south and east of the city have been destroyed. Taking into consideration the fact that many city parts are below sea level, even heavy rains would lead to flooding. It was well-known that if a heavy rainstorm, Category 4 or 5, stroke the city, the majority of its territory would have found itself under water 20 ft (6m) in height (Westerink, Luettich, 2003).

The problem of physical vulnerability was recognized a long ago. Scientists have foreseen possible disasters suggesting measures and activities in order to reduce risks. For instance, M. Fischetti (2001) in his article *Drowning New Orleans* warns that New Orleans is a disaster waiting to happen. The author points out that the human activities along the Mississippi river have

sway dangerously...a few to the point of total collapse. All windows will blow out. Airborne debris will be widespread...and may include heavy items such as household appliances and even light vehicles. Sport utility vehicles and light trucks will be moved. The blown debris will create additional destruction. Persons...pets...and livestock exposed to the winds will face certain death if struck. Power outages will last for weeks...as most power poles will be down and transformers destroyed. Water shortages will make human suffering incredible by modern standards. The vast majority of native trees will be snapped or uprooted. Only the heartiest will remain standing...but be totally defoliated. Few crops will remain. Livestock left exposed to the winds will be killed. An inland hurricane wind warning is issued when sustained winds near hurricane force...or frequent gusts at or above hurricane force...are certain within the next 12 to 24 hours. Once tropical storm and hurricane force winds onset...do not venture outside! (http://en.wikipedia.org/wiki/national_weather_service_bulletin_for_new_orleans_region).

³ More about Saffir Simpson scale: <http://www.nhc.noaa.gov/aboutsshs.shtml>.

dramatically increased risks and only massive re-engineering of the area would be able to save the city from flooding.

Shortly after the disaster, New Orleans reports were perfectly clear: a real disaster took place not because of the hurricane, but because of the levees breaking and city flooding. Hence, there was every reason for making complaints against the authorities that wouldn't provide money for the levee maintenance. They turned a deaf ear to the warnings about incapability of the levee to resist a hurricane of such a force (Flaherty, 2005).

Social vulnerability

According to S. Cutter and C. T. Emrich (2006:103) social vulnerability is the product of social inequalities. It is defined as the susceptibility of social groups to the impacts of hazards, as well as their resiliency, or ability to adequately recover from them. This susceptibility is not only a function of the demographic characteristic of the population (age, gender, wealth, etc.), but also more complex constructs such as health care provision, social capital, and access to lifelines (emergency response, personnel, goods, services).

Despite general prosperity of the US, the differences among the rich and the poor are maintaining the upward trend and are evident among states, regions as well as city quarters. The hurricane struck the poorest states of the US. According to the Census Bureau data for 2004, Mississippi State had the highest state poverty rate in the nation - 21, 6% and Louisiana State had the second position with 19, 4% while Alabama State had the eight highest rate at 16, 1%. The income of the median household in these states is well below the national average of 44,684\$ and are among the lowest in the nation; in the State of Mississippi average household income is 31,642\$, and in Louisiana it amounts 35,110\$. The city of New Orleans is also marked by a high rate of poverty. While 10, 9% of US inhabitants live below poverty limit, the Census data indicate that more than one in four - 28% - of the city's residents were living in poverty before the hurricane stroke the city. Of the 245 large cities in the nation (population of 100 000 or more), New Orleans tied for the sixth poorest in the 2000 Census. Those who were poor in New Orleans commonly lacked their own means of transportation. Calculations based on Census data show that more than half of the poor households in New Orleans, 54%, didn't have a car, truck or van in 2000. Among the elderly, proportion was even higher; 65% of poor elderly households in New Orleans did not have a vehicle (Sherman, Shapiro, 2005). Poverty is followed by downward social mobility and poorly developed social networks: the birth-rate in Louisiana comes up to 77, 4% while the US average is 60%. A high poverty rate is also accompanied by a higher rate of the disabled and handicapped which in New Orleans surpasses the US average; in a 5-20 age group, there are 10,3% of the above-mentioned (US average 8,1%), in a 21-64 age group, there are 23,6% (US average 19,2%) and in a group gathering those of 65 and above there are 50,1% (US average 41,9%) of the disabled and handicapped.

Afore-mentioned data helps to explain why relief efforts were so important to Katrina victims. In disaster as Katrina was, many groups defined themselves as vulnerable: the elderly, children, the handicapped, the ill, minorities, tourists, the homeless, prisoners, etc. However, the class can be considered as basic factor that helps explain the social vulnerability. In general, wealthier were in better position before the disaster as they are after it. On the other hand, the poor, mostly African-American population that makes up the majority of New Orleans' residents has proved to be the most vulnerable group. They were not provided with material goods on disposal, transport nor social networks that could have helped them in leaving the affected city and getting by in a disaster.

Disaster response

In response to Katrina, the emergency management system defined itself as non-functional and in collapse. There is no doubt that an organizational breakdown happened, which was also confirmed in a Senate Committee report named *A Nation Still Unprepared*. An official investigation concluded about system failures at all levels, as well as about mistakes of the officials in charge: *...the failure of government at all levels to plan, prepare for and respond aggressively to the storm. These failures were not just conspicuous; they were pervasive. Among the many factors that contributed to these failures, the Committee found that there were four overarching ones: 1) long-term warnings went unheeded and government officials neglected their duties to prepare for a forewarned catastrophe; 2) government officials took insufficient actions or made poor decisions in the days immediately before and after landfall; 3) systems on which officials relied on to support their response efforts failed, and 4) government officials at all levels failed to provide effective leadership* (Senate Committee, 2006).

The authors are looking for the reasons of the organizational breakdown in long-term trends and bureaucracy. According K. Tierney (2005) the massive governmental reorganization that accompanied the creation of the Department of Homeland Security⁴, sealed the fate of disaster management in US. Federal Emergency Management Agency was incorporated into a 180 000 employee bureaucracy dominated by military, security, and law enforcement agencies. Many experienced officials had already left the agency in the aftermath of 9-11. DHS politics and programs jeopardized, in this author's opinion, two basic principles of the emergency management: all hazards approach and comprehensive emergency management. In other words by entering into such an organization, FEMA lost its independence, it was more engaged in internal reorganization and terrorism and it started neglecting natural disasters.

City abandoning

The question why thousands of, mainly poor, residents at the same time African Americans, in spite of warnings, didn't leave New Orleans can partly be answered by looking into the social picture of the city. Namely, as it was said before, a decision about leaving the city was conditioned by the socio-economic resources: income, private transport availability, age, health condition, disposable social networks outside the city, etc. The same factors will define how the affected population will recover after disaster.

In accordance with the afore-said, E. Fussell (2005) makes a distinction between two dominating evacuation strategies which were stratified by income. The evacuation strategies of most upper and middle-income residents were quite straightforward: make a hotel reservation or arrange a visit with out-of-town friends and family, board the house windows, pack the car, get some cash and leave town. These residents most often evacuated during the voluntary or mandatory evacuation period in the 24 to 48 hours before the storm was predicted to hit. For this group, the costs of leaving on Saturday were lower with respect to missing work or school since the storm was projected to arrive on Monday. They were likely to have been informed by television, radio, internet, e-mail, or telephone of the hurricane's projected path long before it arrived.

The situation was quite different for low-income inhabitants who had fewer choices with respect to how to prepare for the imminent arrival of Katrina. Since the storm was at the end of the month and many low-income residents of New Orleans live from paycheck to paycheck, economic resources for evacuating were particularly scarce. Furthermore, low-income New Orleanians are those who are least likely to own vehicles, making voluntary evacuation more costly and

⁴ DHS was founded in 2002 as a response to terrorist attacks of 11th September 2001. Such an organization was believed to provide better coordination and monitoring.

logistically more difficult. These residents were also more likely to depend upon television and radio for news of the storm, and alarm from these channels only became heightened in the last 48 hours before the storm arrived. Many of them remained in their home. Some of them took refuge in the city emergency shelters *Superdome* or *Convention Centre* in belief that they would get protection and care until the storm had passed out. Although evacuation strategies were stratified by income, elderly people and those with chronic health conditions or disabilities within each social stratum were less likely to evacuate than those in good health.

Thousands of people who didn't abandon the city were socially vulnerable structures. Because of the situation they found themselves in, these residents needed protection and care from the system. Major omission was made when the mandatory evacuation of the city wasn't proclaimed and organized. On the contrary, the fact that public shelters were given at disposal tells that those who wouldn't or couldn't leave, were, in fact, given the possibility to stay. The very fact that these groups had stayed behind in the city, in which help and care were not provided for, couldn't lead but to a social disaster.

Social and situational context of crime and violence

A social disaster was marked by an extraordinary increase in crime and violence. As such behaviors are not registered as characteristic of the period following disastrous events, this phenomenon will be viewed in a situational context in which it has happened: social picture of the city in distress in which an adequate help wasn't provided for.

New Orleans is generally marked by a high rate of crime. According to the AreaConnect and FBI Crime Reports data for 2004, New Orleans far exceeds the US average in criminal activities. On 100 000 New Orleans residents annually occur 56 murders (US 5,5), 40,1 rapes (US 32,2), 389,8 robberies (US 136,7), 462,4 aggravated assaults (US 291,1), 1112 burglaries (US 729,9), 2662,9 thefts (US 2365,9), 1387,1 car stealing (US 421,3).

Many studies emphasize social causes of crime and violence. Such behaviors are encouraged by continuous poverty and unperspectivness of the social groups as well as by conditions deriving from living in poverty. S. Kaufman's (2005) research, conducted among violent criminals in New Orleans, showed that American social institutions produce criminal behavior. This author isolated co-factors that interact to produce violence: growing up without enough food, often competing with multiple siblings; being taught to steal to help with their parents' rent; a chronic childhood illness that was not resolved because there was no money for doctors: ear aches, hernias, etc.; pitiful schooling, where avoiding violence supplanted learning; juvenile imprisonment, and being forced to defend oneself against guards and other inmates; untreated symptoms of depression, mania, psychosis, and other mental disabilities; a lack of employment outside the drug trade. Previous factors are frequent among the African-American residents in New Orleans and are concentrated in certain city quarters.

There is no doubt about increase of crime during and in Katrina's aftermath, but a part of such activities, particularly thefts, can be explained by peoples' need for basic provisions (food, water, clothing, toiletries, etc) in a situation in which disaster relief, aid and rescue weren't provided for. As there was no organized assistance in providing adequate supplies to the threatened population and as supermarket owners shut down their stores and left the city, people were breaking in as to assure their own survival.

We get to know a lot from a report by Lorrie Beth Slonsky and Larry Bradshaw (2005), two paramedics who happened to find themselves in New Orleans when the disaster occurred: ... *It was now 48 hours without electricity, running water, plumbing. The milk, yogurt, and cheeses were beginning to spoil in the 90-degree heat. The owners and managers had locked up the food,*

water, pampers, and prescriptions and fled the City. Outside Walgreen's windows, residents and tourists grew increasingly thirsty and hungry. The much-promised federal, state and local aid never materialized and the windows at Walgreen's gave way to the looters. There was an alternative. The cops could have broken one small window and distributed the nuts, fruit juices, and bottle water in an organized and systematic manner. But they did not. Instead they spent hours playing cat and mouse, temporarily chasing away the looters. ... When individuals had to fight to find food or water, it meant looking out for yourself only. You had to do whatever it took to find water for your kids or food for your parents. When these basic needs were met, people began to look out for each other, working together and constructing a community...If the relief organizations had saturated the City with food and water in the first 2 or 3 days, the desperation, the frustration and the ugliness would not have set in...⁵

J. Scanlon (2005) emphasize that it is important to examine the context of various acts which seem to have occurred in New Orleans. Persons for example were reported to have broken into stores to “steal” water, food, or other necessities, but they were making every effort to help themselves. This behavior is just as appropriate as if someone using an axe to chop through a roof. The stores were closed. No arrangements had been made for food, water and clothing to be provided. People took the only recourse they had for survival. The unacceptable behaviors, which are being sanctioned in normal circumstances, are being tolerated in a state of emergency. The social norms have changed.

The store break-ins aimed at satisfying basic needs could have been prevented by providing aid and relief to those in need of help. In the same manner by ensuring and maintaining law and order as well as by timely provision of additional forces, real acts of crime, violence and delinquency could have also been prevented. However, restoring order and calm in the city that had already been taken over by chaos was additionally aggravated because the police was going through its own crisis. Many policemen, traumatized by the ongoing events, found themselves in the situation of being forced to choose between duties and help that their families were in need of. Part of them, therefore, gave up and left their posts.⁶

Why did Katrina happen?

L. Clarke (2005) has labeled Katrina as the worst case, considering this disaster as an event that goes beyond imagination: *Events that we call worst cases are beyond the imagination, overwhelming it with images, data, noise, disorder, and sometimes violence and despair. Since the disaster, I've been grappling with the social, political, and physical dimensions of Katrina, trying to figure out what I think about it all. It is stretching my imagination, and that is one way I know it really is a worst case.*

Under our previous analysis resembling conclusion emerges: Katrina was worst case as a series of unbelievable and unfortunate circumstances: the hurricane struck physically vulnerable area and socially vulnerable population. The situation was made worse by an organizational breakdown and a failure of organizations and forces to mitigate or control the situation. Major omission was made at the point when city flooding hadn't been predicted and mandatory evacuation proclaimed. The city put public shelters at disposal of those who were left behind, but there was no plan of how to cope with their needs and safety. Social picture of the city and the general

⁵ Bradshaw and Slonsky are paramedics from California that were attending the EMS conference in New Orleans. Their shocking report tells us about a group of people attempting to leave the city and about all the misfortunes they came across on their way.

⁶ More than 200 New Orleans officers have been under investigation by the police department for leaving their posts during the hurricane crisis. Furthermore, among police rank there were cases of theft and two suicides on records (Johnson, 2006).

collapse of aid systems and public mechanisms could not have resulted but in such a sequence of events.

Following this line of reasoning about Katrina, as a series of unbelievable and unfortunate circumstances, or as a case that goes beyond imagination, one cannot help doubting that just everything will go wrong in a rich and powerful country as this one, and that one disaster will grow into another, even greater one, accompanied by a collapse of all systems for providing mitigation and assistance. This opens the way to another interpretation of Katrina. However, we will not confirm it but it will be given consideration only as a possibility. So, can a disaster be a way of solving social or other problems? Is a disaster involved in social and ethnic cleansing? Will the black, the poor and others of the marginal status in society be welcomed as returnees to New Orleans? Will the city be reconstructed as the cleansed imitation of the previous one? Once it has been reconstructed, will the African Americans, make up 2/3 of the population? In addition some arguments could be mentioned.

As it was mentioned before, prior Katrina New Orleans was a city loaded with social, economic and other problems the authorities had a hard time coping with. To illustrate once again: the city had a population of just over 500,000 and was expecting 300 murders per year, most of them centered on a few, overwhelmingly black, neighborhoods. The statement made by Illinois senator, Mr. Barack Obama, is very illustrative: *I hope we realize that the people of New Orleans weren't just abandoned during the Hurricane. They were abandoned long ago - to murder and mayhem in their streets; to substandard schools; to dilapidated housing; to inadequate health care; to a pervasive sense of hopelessness.*⁷ Furthermore, Louisiana congressman, Mr. Richard Baker, suggests that a natural disaster solved a problem that asked for great investment and effort by the authorities: *We finally cleaned up public housing in New Orleans. We couldn't do it, but God did* (Quingley, 2005). Furthermore, the statement made by *New York Times* editorialist David Brooks that people who lack middle-class skills should not be allowed to resettle the city: *If we just put up new buildings and allow the same people to move back into their old neighborhoods, then urban New Orleans will become just as run down as before* (Smith, 2005). The US President promised reconstruction of the city on several occasions: *There is no way to imagine America without New Orleans, and this great city will rise again.*⁸

The fact is that coping with the effects of such a great disaster is not easy, but it is well known that city reconstruction is not progressing. Data indicate that the situation in New Orleans a year after disaster is far away from one that we could describe as good: it is estimated that a year after the impact approx. 171 000 – 250 000 people have returned out of 465 000 inhabitants that New Orleans had before it. The unemployment rate is in increase: before Katrina, it was 5, 8% and a year after 7, 2%. On the other hand, labor contingent is in decrease: it was 633 759 before and 444 153 a year after. Number of homes for sale is rising while average home sale price is in decrease. During the first four months after the disaster, a number of suicides in the city increased for 300%. A number of murders in June 2006 were approximate to the level before Katrina although just a half of the previous number of inhabitants was living in the city at that moment. 49% of roads are in function and 17% of vehicle owners are using them. There are 60% of electric energy consumers, 41% of gas consumers, 29% of schools are open, 23% centers for child care, 62% of libraries, and 50% of hospitals (TIME, 2006).

In addition there's one more question. Why did the organizational breakdown happen at all since FEMA had conducted an exercise Hurricane Pam in July 2004, involving different emergency

⁷ http://www.obama.senate.gov/statement/050906-statement_of_senator_barack_obama_on_hurricane_katrina_relief_efforts/

⁸ <http://www.msnbc.msn.com/id/9345270/>

services, army and state and federal agencies. The exercise simulated a Category 3 hurricane and it comprised 13 districts in Louisiana. Furthermore, FEMA Regional Director, Mr. Ron Castleman, evaluated it as an important improvement in preparedness: *We made great progress this week in our preparedness efforts. Disaster response teams developed action plans in critical areas such as search and rescue, medical care, sheltering, temporary housing, school restoration and debris management. These plans are essential for quick response to a hurricane but will also help in other emergencies.* (FEMA, 2004).

Conclusion

To obtain a complete picture of natural disasters in modern society it is required to observe their causes and consequences in a broad civilization and narrow social context. The civilizational context of Katrina would be that hurricanes are becoming stronger and more frequent. That trend confirms already acknowledged influence of modern civilization on hurricanes as natural disasters. Highly developed countries are placing the economic prosperity and profit on the primary position and they consider themselves free from participating in global ecological actions.

Secondly, a social dimension of natural disasters is recognizable in their consequences which largely depend on the society and its social, economic, political, and other issues. Katrina confirmed that even in highly developed societies there are certain segments of population that are more vulnerable to disasters than the others. Their vulnerability is a direct outcome of inequalities within society and it is already present at the time of disaster outbreak. Perspectives of such groups in disasters mostly depend on their being recognized by the society itself and being offered assistance and relief. If the system is not ready or if it fails in its efforts for any reason, there's a possibility that a disaster evolve into a greater one.

It is not easy to manage disasters which are striking large cities and the situation gets worse if the affected area happens to be marked by concentrated poverty and all that it takes along. Major omission in Katrina was, in our opinion, oversight to declare and organize mandatory evacuation. Let's imagine Katrina if all the residents were evacuated from the city. Consequently, this disaster would be just one in a series to prove the rule that hurricanes in modern society could cause increasingly serious material damages but also take less and less victims. If an option of remaining in the city was left open in the first place, it should have been considered that the people who stayed behind would belong to the socially vulnerable structures that would be in need of immediate help and relief. Having in mind the social picture of the New Orleans, additional forces for restoring order in the city were needed as well.

With regard to the previous report we can point out one more level which can be discussed. Katrina was in many ways exceptional disaster but it reaffirmed sociological findings according to which, in spite of a complete destruction and lack of organization, the community affected by a disaster could help itself to a certain extent. Spontaneous, self-organized and cooperative activities and behaviors were not isolated cases in Katrina. Just to mention once again the paramedics' report that says: *...Our little encampment began to blossom. Someone stole a water delivery truck and brought it up to us. Let's hear it for looting! A mile or so down the freeway, an army truck lost a couple of pallets of C-rations on a tight turn. We ferried the food back to our camp in shopping carts. Now secure with the two necessities, food and water; cooperation, community, and creativity flowered. We organized a clean up and hung garbage bags from the rebar poles. We made beds from wood pallets and cardboard. We designated a storm drain as the bathroom and the kids built an elaborate enclosure for privacy out of plastic, broken umbrellas, and other scraps...*

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