**Urban Sociology**
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**Lecture 19**
**Natural and (Un) natural Disasters in the city**

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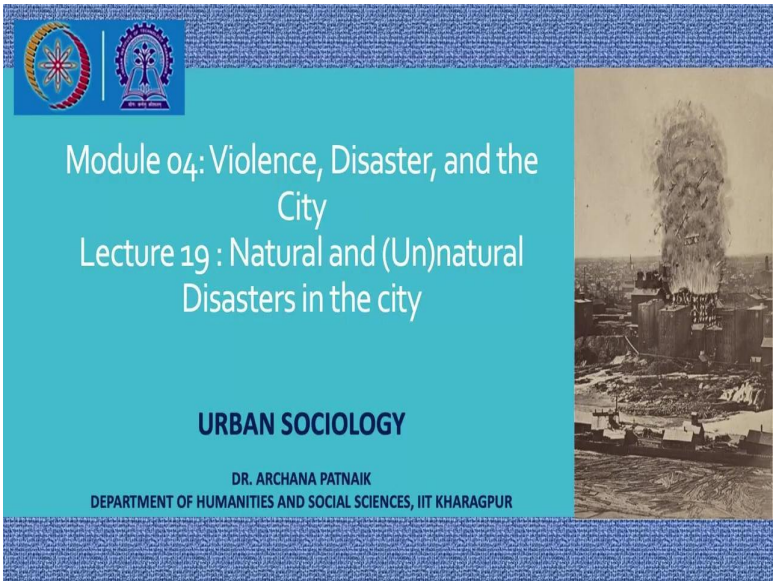


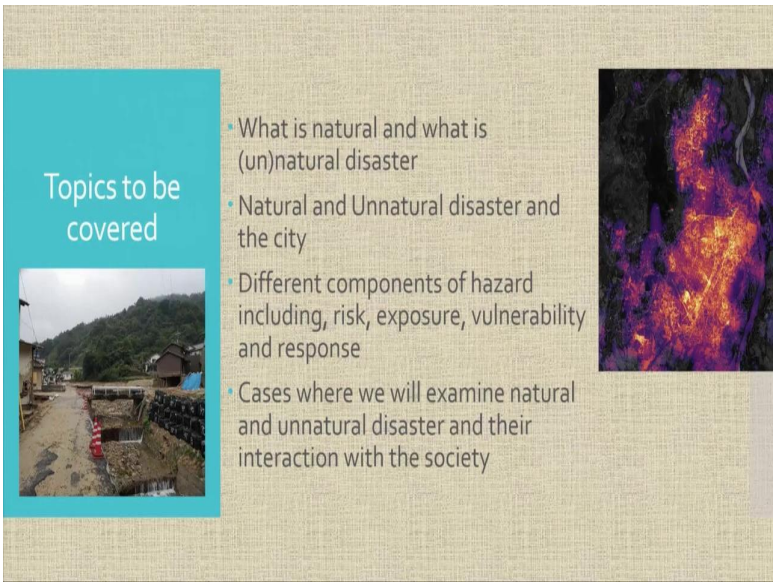


A warm welcome to all. Today we will discuss natural and unnatural disaster and the city and, in this lecture, we will be covering what is natural and what is unnatural disaster. Then we will be focusing on the different components of hazards, including the risk, exposure, vulnerability and the response. Then we will also discuss few cases where we will examine the natural and the unnatural disaster and their interaction with the society.

The natural disasters like the Katrina in the US and its effects on the ex-prisoners will be discussed. Then we will discuss on the unnatural disaster like the devastating fire which swept through one of the many shack settlements in the South Africa will again be discussed in under this context.

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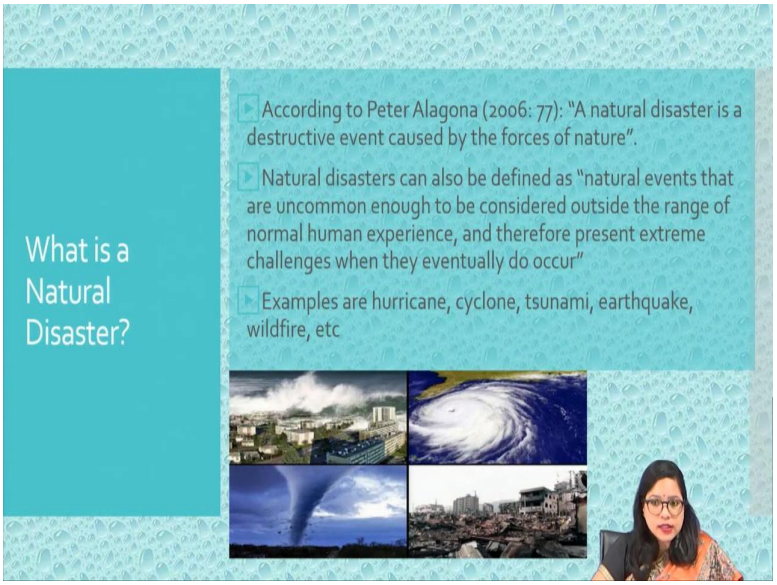


According to Peter Alagona (2006: 77): "A natural disaster is a destructive event caused by the forces of nature". According to him, natural disasters can also be defined as "natural events that are uncommon enough to be considered outside the range of normal human experience, and therefore present extreme challenges when they eventually do occur". Examples of natural disasters are hurricane, cyclone, tsunami, earthquake, wildfire, etc.

I am sure some of us must have witnessed some or the other form of natural disaster in our lives. And our experiences of the disasters will be more or less similar in their nature where the feeling of losing control over the situation might persist. When we talk about the (un)natural disaster then as the word suggests they arise from the unnatural causes.

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For example, just imagine the 911 attack that happened on the World Trade Center that could be termed as an unnatural disaster. This also caused loss of life as the natural disaster would however had different geopolitical consequences than any other natural disaster.

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When we analyze both natural and unnatural disasters then both have the power to uproot the normal life of people residing at a certain place and disturb their socio- economic. When we consider the cities then scholars have found that even the most developed cities in the world and not immune to both disasters.

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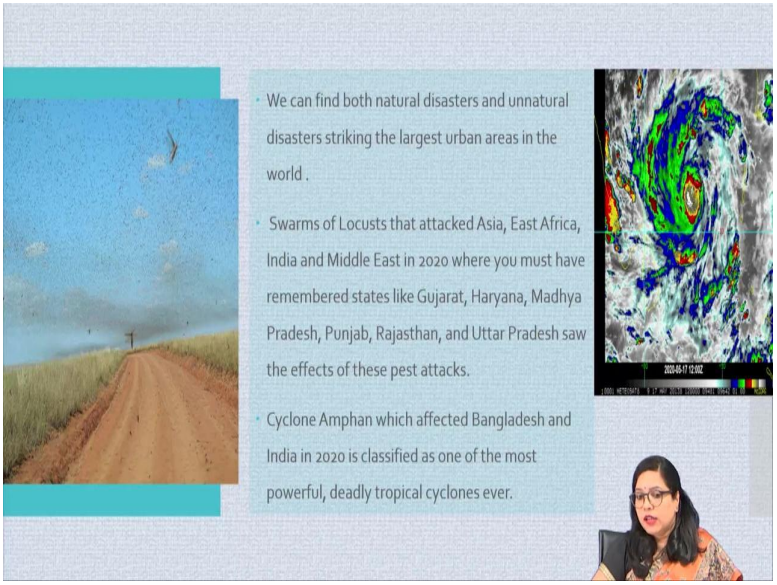


If we consider the largest urban areas in the world then we can find both natural disasters and unnatural disasters striking them. For example natural disasters like, Florida in US faced three hurricanes like Elsa, Fred and Mindy in 2021. The Dixie fire, which burned close to a million acres in California, in 2021 became the first fire to cross over the Sierra Nevada range.

Swarms of Locusts that attacked Asia, East Africa, India and Middle East in 2020 where you must have remembered states like Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan, and Uttar Pradesh saw the effects of these pest attacks.

Cyclone Amphan which affected Bangladesh and India in 2020 is classified as one of the most powerful, deadly tropical cyclones ever. In case of unnatural disaster, we find the most striking at the world level are the 9/11 attack, the explosion at Chernobyl and we all know about the 1984 Bhopal Gas tragedy where there was a gas leak at a pesticide plant in Bhopal affecting people on a large scale.

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When we compare the natural and the unnatural disaster then their geopolitical consequences to be different as emphasized by Peter Alagona (2006) where he gives the example of a hurricane Katrina which brought relief for the US from other countries but for 9/11 US launched two wars in two foreign countries.

If we consider the consequences of disasters on cities then we find that disasters in each city has brought in different components of hazard including, risk, exposure, vulnerability and response. It was during the United Nations-sponsored International Decade for Natural Disaster Reduction in1990–2000 that high priority was accorded to addressing megacity disaster problems.

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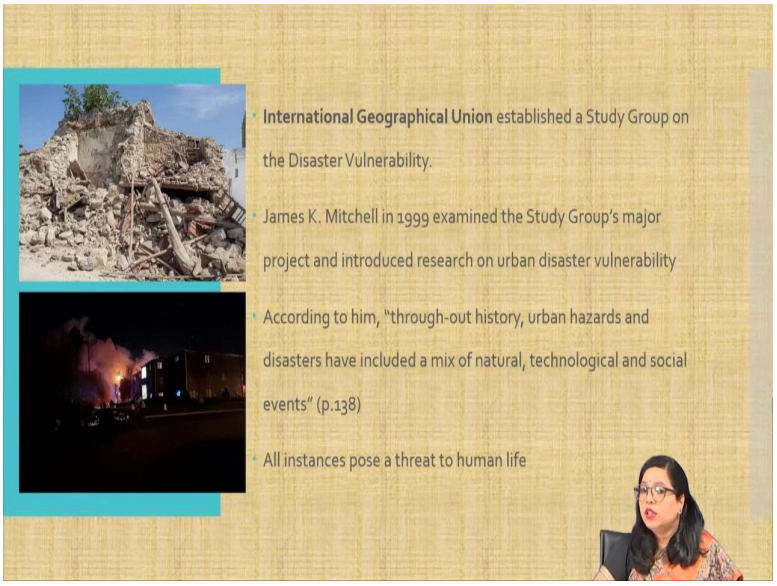


As part of this effort the International Geographical Union established a Study Group on the Disaster Vulnerability. James K. Mitchell in 1999 examined the Study Group's major project and introduced research on urban disaster vulnerability. We will focus on some of them. According to him, "through-out history, urban hazards and disasters have included a mix of natural, technological and social events" (p.138). According to him in every instance they pose a threat to human life. For example, since 1945 earthquakes have been major natural hazards in Tokyo, Los Angeles, San Francisco, Mexico City and Lima.

While floods have posed the most serious natural risks in London, Dhaka and Seoul. Infectious disease epidemics such as cholera (e.g., Lima) or AIDS (e.g., San Francisco) have affected most of the cities, especially in Asia and Latin America.

Similarly, he finds technological hazards like Residential and commercial fires in Tokyo, Seoul, Lima and Dhaka, and industrial fires and explosions which are more significant in London, Mexico City, Mumbai and U.S. cities have posed serious hazards to the people residing in the cities. According to him, the components of hazards like risk, exposure and vulnerability has changed.

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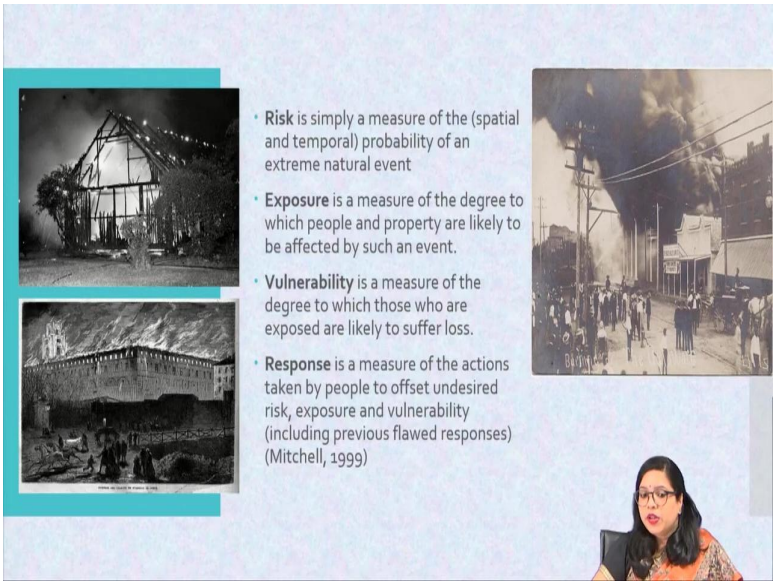


According to him, "risk is simply a measure of the (spatial and temporal) probability of an extreme natural event. Exposure is a measure of the degree to which people and property are likely to be affected by such an event. Vulnerability is a measure of the degree to which those who are exposed are likely to suffer loss.

Response is a measure of the actions taken by people to offset undesired risk, exposure and vulnerability (including previous flawed responses)". For him, risks are more stable component of hazard. As per him, there is very little chance that risks will change over time due to natural conditions. For example, when we face earthquakes the risks are stable but if we face flood due to human intervention then risks are not stable.

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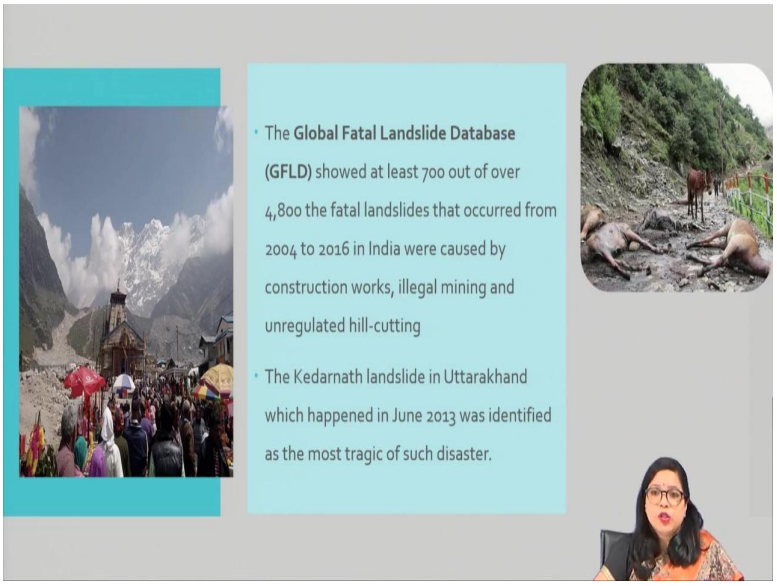


A study by UK's Sheffield University was published in the European Geosciences Union journal named "Natural Hazards and Earth System Sciences" where the study claimed that considering the Global Fatal Landslide Database (GFLD) at least 700 out of over 4,800 the fatal landslides that occurred from 2004 to 2016 in India were caused by construction works, illegal mining and unregulated hill-cutting. The Kedarnath landslide in Uttarakhand which happened in June 2013, caused by flash floods that resulted in over 5,000 deaths, was identified as the most tragic of such disaster.

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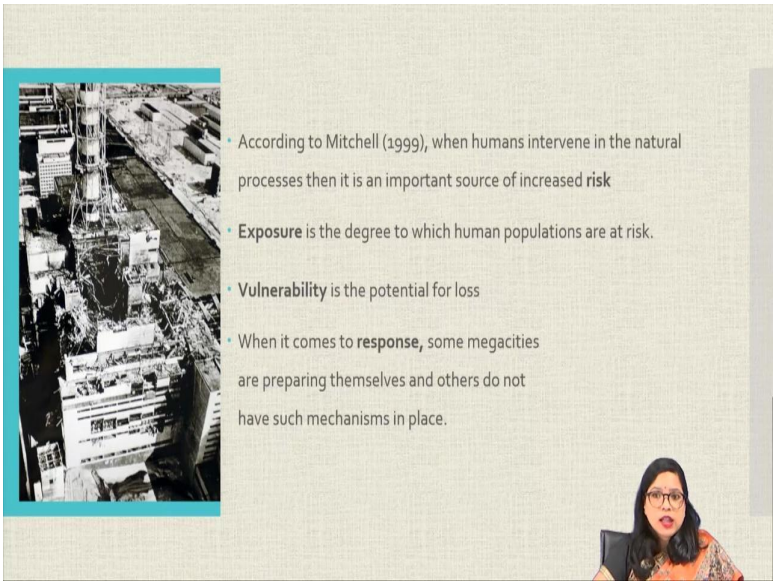

According to Mitchell, when humans intervene in the natural processes then it is an important source of increased risk. He gives the example of Land conversion and the creation of engineered drainage networks which have the potential to greatly alter the urban hydrological cycle. Similarly, the disappearance of open spaces to construct buildings, markets, etc. according to him is directly connected with increased runoff and flood losses in Seoul.

Then he talks about how Exposure is the degree to which human populations are at risk. Here he states that in case of megacities when the cities expand with them the exposure to risks expands to the peripheral areas. For example, there is now a shift of risk exposure from San Francsico Bay metropolis to the east side of San Francisco Bay, such as Oakland and Hayward. Then he talks about the vulnerability as the potential for loss.

According to him, Polarization and spatial segregation with respect to income and risk are increasingly visible in North American and European megacities. For example, Los Angeles rich suburbanites are more exposed to wildfire risks and (subsequent) slope failures whereas the inhabitants of less affluent neighborhoods are more likely to be affected by earthquakes.

When it comes to responding to these disasters, he also finds that some megacities are preparing themselves and others do not have such mechanisms in place. He finds, while disaster recovery and improved preparedness can stand alone as public issues during these periods, because they command the support of many victims or other affected groups, it is often difficult to sustain public interest and involvement in disaster policy making for very long at other times.

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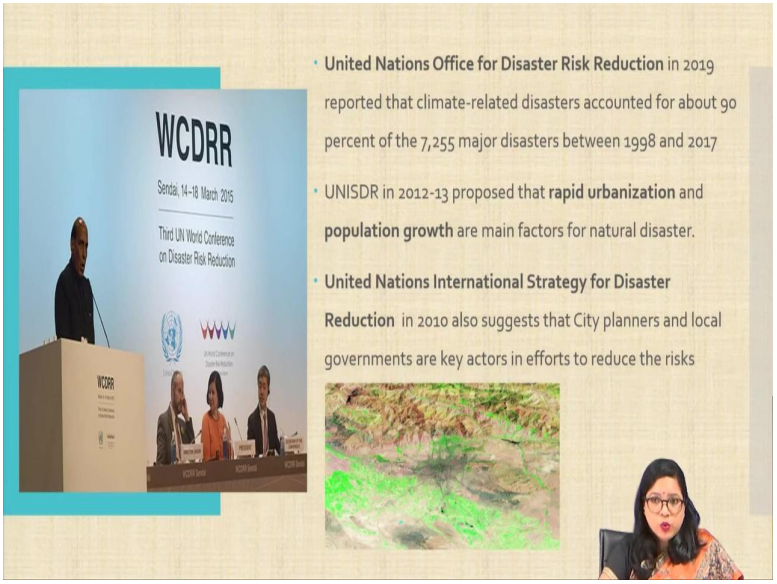


United Nations Office for Disaster Risk Reduction in 2019 reported that climate-related disasters accounted for about 90 percent of the 7,255 major disasters between 1998 and 2017, most of which were floods and storms. United Nations International Strategy for Disaster Reduction (UNISDR) in 2012-13 proposed that rapid urbanization and population growth as main factors for natural disaster.

United Nations International Strategy for Disaster Reduction in 2010 also suggests that City planners and local governments are key actors in efforts to reduce the risks posed by natural hazards by build resilient urban societies. Now let us discuss a case of natural disaster and its interaction with the society.

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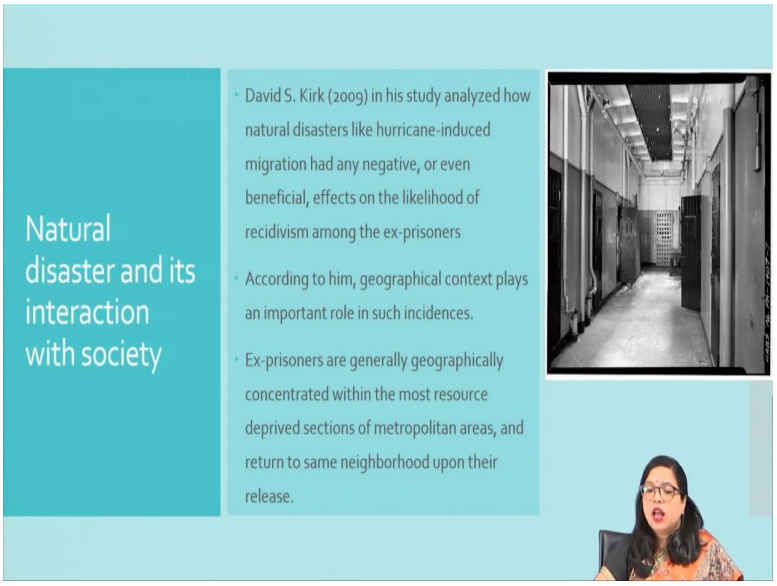

David S. Kirk (2009) in his study analyzed how natural disasters like hurricane-induced migration had any negative, or even beneficial, effects on the likelihood of recidivism among the ex-prisoners. According to Langan and Levin (2002) two-thirds of former prisoners in the United States are rearrested within three years of prison release, and half repeat the same undesirable behavior.

According to David Kirk, geographical context plays an important role in such incidences. He finds that Ex-prisoners are generally geographically concentrated within the most resource deprived sections of metropolitan areas, and return to same neighborhood upon their release. Thus, he tries to find if there is any connection between certain places in urban areas and crime and especially what happens when natural disaster fosters migration.

In US the repeated offenders who keep on repeating offences throughout their life are more. However, such behaviour has been accorded to the absence of social controls like, stable employment and a healthy marriage by Sampson and Laub (1993).

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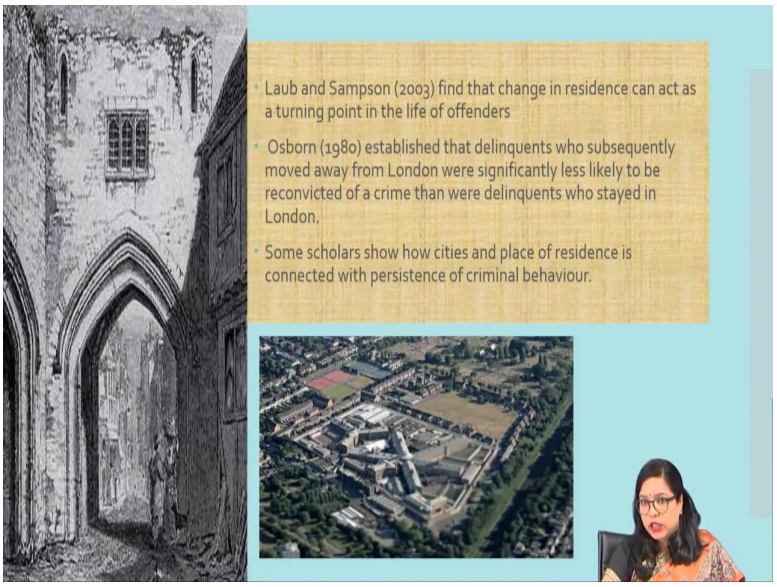


However, Laub and Sampson (2003) find that change in residence can act as a turing point in the life of offenders. Similarly, using the Cambridge Study of Delinquent Development, Osborn (1980) established that delinquents who subsequently moved away from London were significantly less likely to be reconvicted of a crime than were delinquents who stayed in London.

Thus, some scholars show how cities and place of residence is connected with persistence of criminal behavior. According to David Kirk, change in association with criminal peers and a change in one's routine activities.

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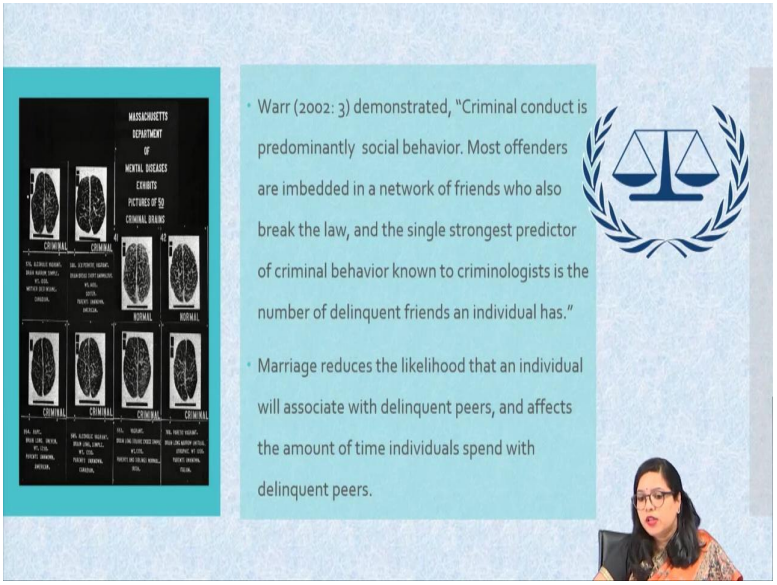


As Warr (2002:3) convincingly demonstrates, "Criminal conduct is predominantly social behavior. Most offenders are imbedded in a network of friends who also break the law, and the single strongest predictor of criminal behavior known to criminologists is the number of delinquent friends an individual has." He also suggests that marriage reduces the likelihood that an individual will associate with delinquent peers, and affects the amount of time individuals spend with delinquent peers.

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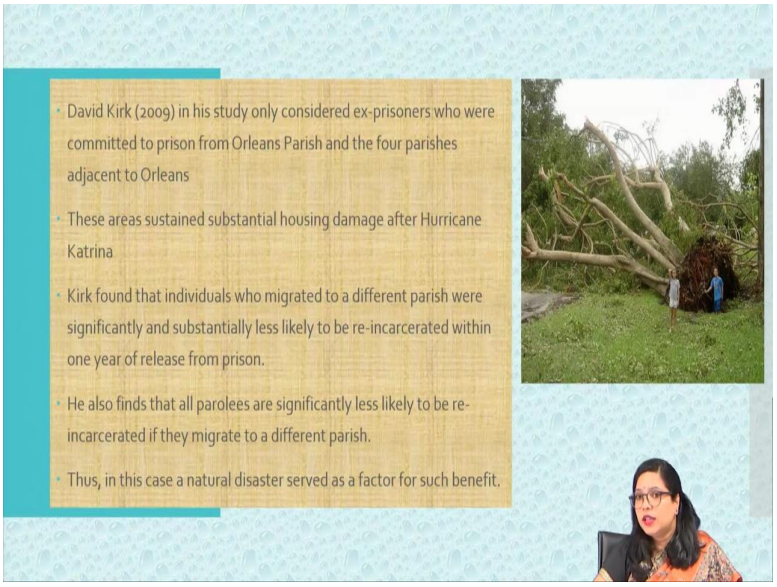


David Kirk in his study only considered ex-prisoners who were committed to prison from Orleans Parish and the four parishes adjacent to Orleans (Jefferson, Plaquemines, St. Bernard, and St. Tammany). These areas sustained substantial housing damage after Hurricane

Katrina. Considering the prisoners residential options released post-Katrina, resulting in some measure of geographic displacement Krik only considered them.

He found that individuals who migrated to a different parish were significantly and substantially less likely to be re-incarcerated within one year of release from prison. He also finds that all parolees, whether it was their first release or those with multiple prior incarcerations, are significantly less likely to be re-incarcerated if they migrate to a different parish.

Thus, his findings suggest that moving away from former places of residence serves some benefit for parolees. And in this case a natural disaster served as a factor for such benefit.

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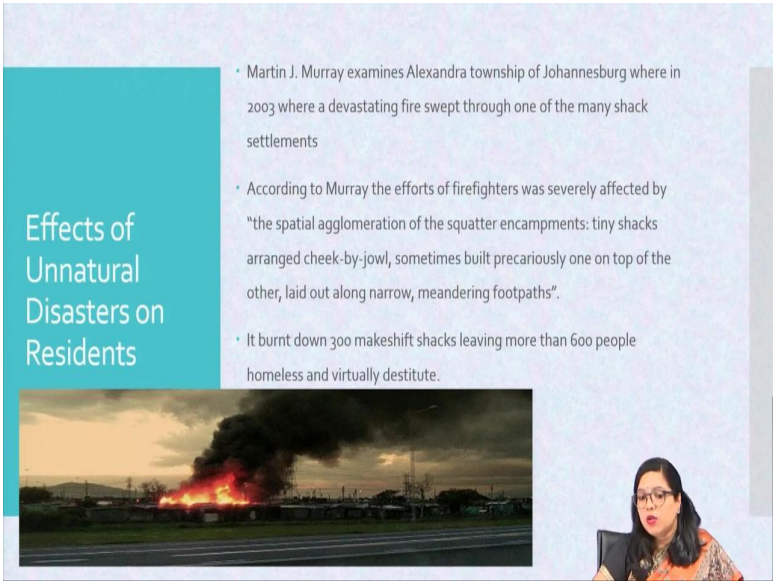


Now let us discuss a second case of South Africa where we will examine how unnatural disasters affect the residents. Martin J. Murray examines Alexandra township of Johannesburg where in 2003 where a devastating fire swept through one of the many shack settlements. This fire was caused when early in the morning an apparently distracted woman living in a dilapidated shack at the corner of Fifth Avenue and London Road accidentally overturned a cooking-stove upon which she had been frying eggs for breakfast.

The small blaze quickly turned into a ferocious firestorm that burned out of control for three hours and spread across tightly-packed warren of makeshift dwellings. According to Murray the efforts of firefighters was severely affected by “the spatial agglomeration of the squatter

encampments: tiny shacks arranged cheek-by-jowl, sometimes built precariously one on top of the other, laid out along narrow, meandering footpaths".

It burnt down 300 makeshift shacks leaving more than 600 people homeless and virtually destitute. Since their homes were regarded as illegal squatters, the homeless victims of the fire were not given any assistance by municipal social service agencies and in obtaining funds for rebuilding their modest homes.

These residents of the Johannesburg city according to Murray reveal the ironies and contradictions of a post-apartheid revitalization strategy which weighted in favour of establishing Johannesburg as a 'world-class' city while at the same time largely overlooked the immediate needs of the jobless urban poor who lack adequate housing, basic infrastructure and requisite social services.

According to Murray, these urban catastrophes cannot be separated from the material geographies of vulnerability unevenly spread across the metropolitan landscape. For him, the social nature of such artificial hazards, that is, the underlying structural conditions that make such social catastrophes inevitable in the first place must be emphasized and these hazards should not be considered to have happened by chance.

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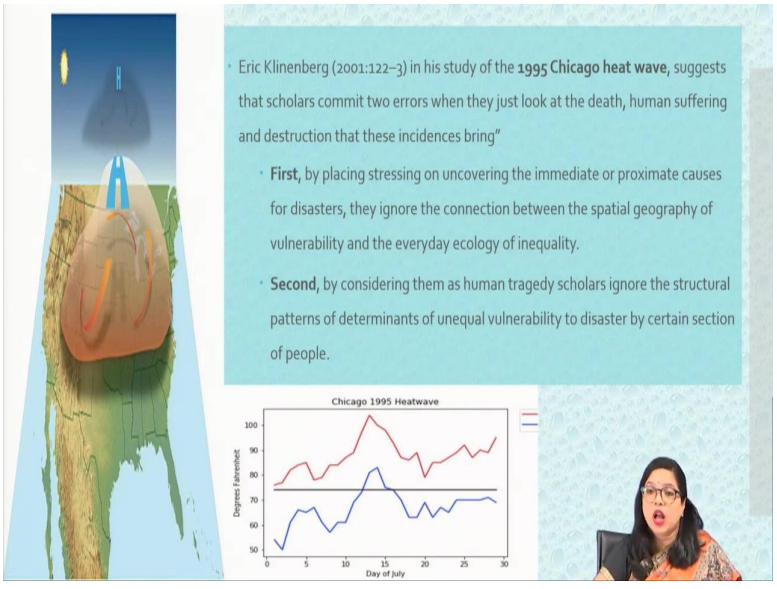


Eric Klinenberg (2001:122–3) in his study of the 1995 Chicago heat wave, suggests that scholars commit two errors when they just look at the death, human suffering and destruction that these incidences bring. First, by placing stressing on uncovering the immediate or

proximate causes for outbreaks of devastating fires like the human error, negligence, or the carelessness of the squatters they ignore the connection between the spatial geography of vulnerability and the everyday ecology of inequality. Second, by considering them as human tragedy scholars ignore the structural patterns of determinants of unequal vulnerability to disaster by certain section of people.

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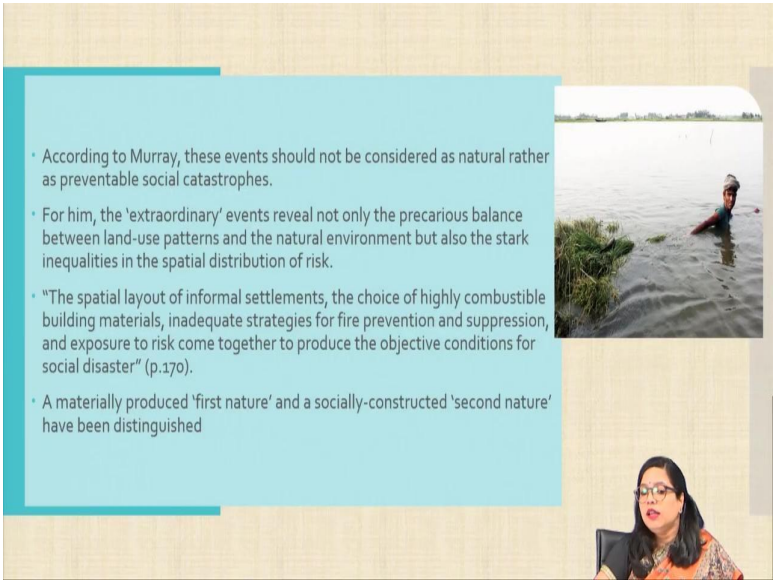


According to Murray, these events should not be considered as natural rather as preventable social catastrophes. He states that, "In order to grasp the social nature of these unnatural disasters, it is necessary to jump scales, that is, to move from accounting for why individual fires start to explanations for the overall patterns, trends and frequencies of fire-events taken in the aggregate" (p.169). For him, the 'extraordinary' events like devastating fires, flooding and freezing cold can reveal not only the precarious balance between land-use patterns and the natural environment but also the stark inequalities in the spatial distribution of risk.

Braun and McCarthy, (2005: 803) suggest that shack-fires reveal "the disaffiliation of the urban poor from the world of work, from decent housing, and from basic social services that is a part of the normal functioning of urban governance under the hegemony of neoliberal ideologies and practices". According to Murray, "The spatial layout of informal settlements, the choice of highly combustible building materials, inadequate strategies for fire prevention and suppression, and exposure to risk come together to produce the objective conditions for social disaster" (p.170).

According to Murray, various scholars have distinguished between a materially produced ‘first nature’ and a socially-constructed ‘second nature’, thereby drawing attention to the lived reality of hazardous places. Hewett, 1983; Cronon, 1991 and Demeritt, 2002 have stressed on the production of a hybridized metropolis, or ‘second nature’, where the social production of urban space is highlighted which unevenly distributes the vulnerability to hazards, exposure to risk and ecological breakdown.

Here the politics of scarcity influences how cities are built in their concrete forms where the underprivileged are the ones who due to unbalanced spatial distribution face the human tragedy. According to Murray, “City-building in Johannesburg has always been an uneven process where class hierarchies and racial inequalities are inscribed in the morphological form of the urban landscape” (p. 173).

According to him the fire has exposed how city-builders like the real estate moguls, architects and corporate builders, engineers, high-ranking municipal officials, urban planners and housing authorities have focused on ‘urban glamour zones’ neglecting the jobless and homeless residents of the city.

According to Murray, the haphazard growth of the urban landscape has produced what can be called a ‘galactic metropolis’ which has fragmented the city into extremes- one of the residents with luxurious wealth and other with abject poverty. According to Murray (2004) this has created a new kind of exclusionary urbanism where the economically secure are able to disentangle themselves from a shared civic life with the urban poor.

He finds that virtually all the firestorms that have gutted informal settlements in Johannesburg include inadequate fire prevention measures, particularly inefficient firefighting procedures and the lack of proper equipment.

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According to Wisner, (2001: 251) "In order to truly comprehend the connection between hazards and risk-prone environments it is necessary to distinguish between proximate causes for particular fire-events — faulty wiring, overturned stoves, dangerous coal-burning, and the like — and the systemic, root causes of disaster vulnerability, namely, the socio-economic marginality of residents of informal squatter settlements and environmental degradation".

Wisner suggests that social catastrophes like the periodic firestorms cannot be solved through technical solutions rather we need to look into the disparate patterns of urban living that stem from gross inequalities of wealth and power.

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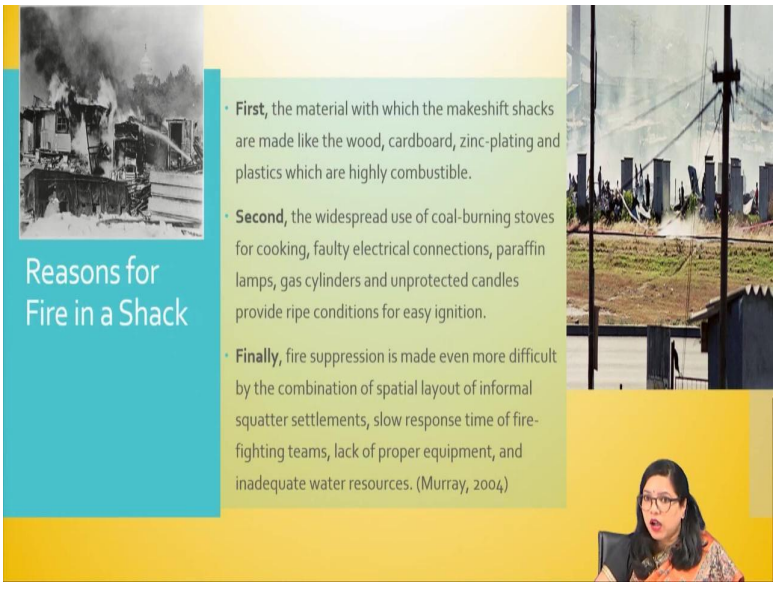

According to Murray the main ingredients of a perfect firestorm in the makeshift shacks are:

- First, the material with which the makeshift shacks are made like the wood, cardboard, zinc-plating and plastics which are highly combustible.
- Second, the widespread use of coal-burning stoves for cooking, faulty electrical connections, paraffin lamps, gas cylinders and unprotected candles provide ripe conditions for easy ignition.
- Finally, fire suppression is made even more difficult by the combination of spatial layout of informal squatter settlements, slow response time of fire-fighting teams, lack of proper equipment, and inadequate water resources.

According to Braun and McCarthy (2005: 803) informal squatter settlements effectively expose the shelterless poor stripping them of the right to unimpeded movement, the right to protection, and even 'the right to claim rights'. According to Murray, "The structural underpinnings of susceptibility to unnatural disasters are linked to uneven patterns of social inclusion into the mainstream of urban life" (p. 188).

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Thus, we find that both natural and unnatural disaster in this case affect the city and its residents and their interaction with the society. So, thank you for listening and have a great day ahead.