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PANIC AND MASS BEHAVIOUR UNDER FIRE CASES

Abstract: The aim of the material is to provide a clear image and perception of panic and mass behavior under fire disasters and comprehension of factors inducing it. The study is illustrated by definition and theories related with panic and associated with case studies of fire disaster. Mass psychology and evacuation procedures are two other issues that has been discussed in the second section of the material. Evacuation modeling is another concern that is been dealing for calculation and prediction of human behavior and increasing the effectiveness of evacuation methods. As conclusions there are accentuated the elements that need to be further progressed for developing highly efficient strategies and methods for reducing the evacuation time.

Key words: Panic, mass behavior, fire, evacuation, modeling.

1. PANIC AND ITS MISSCONCEPTION

1.1. Definition and interpretation of panic

Panic defined by Goldenson: *"reaction involving terror, confusion and irrational behaviour precipitated by a threatening situation."*

Haesler states that panic is inevitable after a period of time while the crowd has reached a certain density and immobility.

1.2. What mass panic is ?

During the mass panic the instincts will overwhelm socialized responses and social norms will break down as personal survival becomes the overriding concern. Selfish and competitive panic behavior, such as pushing and trampling others to reach safety will be displayed in the mass.

1.3. Scientific evidence in mass panic

What is described as panic in fire disasters is not scientifically approved and does not fit to the main concept of panic so there is a disparity in the perspective of people who use the concept of panic to judge the appropriateness of someone's behavior.

1.4. Panic on different perspectives

Table 1- panic perspectives

Media perspective	Cinema effect	Individuals perspective	Professionals & experts perspective
Dramatizing and exaggerating the cases while reporting. Journalists direct questions with a tendency to emphasize panic.	Dramatic mass panic scenes. Portraying hysterical behavior of people. Nourish wrong public imagination on fire cases.	Using word panic while interviewing where only fear is evident and rational behaviour.	Fire engineers and firefighters have the tendency to attribute the fault of tragedies to panic.

1.5. Is it really panic ?

Panic is very rare occurring or the case is misinterpreted and reported as panic. People explain some situations of stress/anxious/fearfulness as panic while is only a normal

reaction of a human behavior in cases of fire and it is commonly confused with the flight behavior under certain circumstances.

1.6. Case studies

Beverly Hills Supper Club Fire, *USA, May 28, 1977, 300 dead; the blame on panic by media*

Stardust Nightclub Fire, *Ireland, February 13, 1981, 48 killed and over 200 injured, the fault _ panic*

Gothenburg Discotheque Fire, *Sweden, October 29, 1998, 63 killed and more than 200 injured, overloaded with people _ panic*

World Trade Center Attack, *USA, September 11, 2001*

Lowenbrawkeller, *Germany, April 12, 1973, 11 died and 250 injured, stacked to one of the entrances _ panic*

1.7. Misconception of panic in scientific research

Until 70's literature and scientific research and evidence were blaming the panic as the main inducer of the tragedies and by this attitude no further development could be reached in research. In support to this argument were also important sociologists like philips while only very few researchers were focused on scientific explanation of catastrofic events.

1.8. The effects of misinterpretation of panic

Philips considers panic as the greater cause of death than the fire itself and this facts have effected the codes and regulation and the regulatory institutions have tried to deal mostly with panic and how to manage it rather than understanding the psychiological behaviour of humans under fire cases.

While blaming panic for the fire tragedies less importance and attention is provided to fire management and building standards. In this way less information is provided to people due to consideration of behaviour of the mass as irrational and illogical and it has caused the delaying of further investigation and research in fire cases.

The tendency to cover people with non human features and exhibit further their emotional aspects reduces the focus in the control of fire in its early stages, the layout of the building and thinking for particular options. While limiting information to people because it induces panic may be a fatality because the awareness to potential dangers is delayed (time is very precious in such actions).

2. PANIC AND MASS PSYCHOLOGY

There are 3 variables that are considered in the mass behaviour during the evacuation.

-Mass of people

-Threat of death

-Escape possibilities

2.1. Human factors

Some factors related with the human behaviour that effect the evacuation time are; the effectiveness of emergency procedures ;the behavior of the evacuating crowd, which has often been blamed for panic, disorganized, over-emotional, irrational and ineffective egress; decision-making and the interpretation of events; leadership and social influence.

2.1.1. Decision making

-Seriousness of threat and urgency of situation influence rapidity of response (**people often assume that the equipment is simply being tested, it is a malfunction or just a drill**)

-Mechanism of warning affects the interpretation of the event. (**people often do not recognize the emergency or act quickly enough**)

2.1.2. Clinical Issues

-Freezing(**potentially dangerous as it can prevent appropriately urgent flight action**)

-Becoming disassociated or psychologically distanced from the reality (**behave with more calmness than is needed**)

2.1.3. Social Identity

Table 2- Crowd psychology

Psychological crowd	Aggregated crowd
Greater concern towards others in the crowd (including strangers)	No concern at all

co-ordination, help and personal self-sacrifices (including strangers)	segregation
expectations of support	No support
fewer personally selfish or competitive behaviors.	individuality

2.2. Research methods on mass psychology

2.2.1. Room Evacuation modelling

Participants often did not take the scenario seriously enough and the evacuation was over too quickly to give people an opportunity to display selfish versus helping behaviors By cramming them into a small room together, people saw themselves as a group in relation to experimenters.

2.2.2. Visualization studies

When people saw themselves as group members, they helped more, cared for others more and expressed a greater desire to help meanwhile there is a strong sense of collective identity, there will be mutual concern and helping and with a strong shared identity characters tended to help the fallen character even though this meant delaying their own exit.

2.2.3. Field interviews

-witnesses showed that:

- in almost all cases, the crowd was more unified over the course of the emergency
- social roles continued to operate – for example teachers continued to act with authority in relation to the schoolchildren in their charge
- many people stayed with their small affiliation groups and gave more assistance to their affiliates than to others
- There was no mass panic
- individual feelings of fear of distress, people screaming or crying and did not spread to others
- no widespread uncontrolled, competitive, irrational and personally selfish behavior
- Causes of unity: Shared fate.
- Effects of unity: Mutual concern and helping

3. CONCLUSIONS

- Studies into fire disasters consistently find that **altruistic behavior is the norm**.
- Management should consider the **people as ally** to help in evacuation rather than irrational mass.
- **Information is the key** to a successful building evacuation during an emergency. (proper info in the right way at the right time)
- The **media plays a key role** on reduction of panic impression

4. EXPECTATIONS FOR FURTHER IMPROVEMENTS

- There is a **need for identification of factors which lead to panic** and measuring its level and how to overcome it.
- Need for **demystification** of panic concept.
- Much effort should be made in **developing computer models** for evacuation simulations and design properly the space in accordance with evacuation standards.

5. REFERENCES

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Gostujuće predavanje na temu:
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PITANJA ZA PROVERU ZNANJA

1. Is the media a factor affecting the perception of panic in fire cases?
   Da li su mediji faktor koji utiče na percepciju panike u slučajevima požara?

2. *Is misinterpretation of panic affecting fire and regulation codes*?
   Da li pogrešno tumačenje panike utiče na zakone i propise o požaru?

3. *Is social identity contributing on mass behavior for reducing the disaster consequences*?
   Da li društveni identitet utiče na ponašanje mase radi smanjenja posledica katastrofe?

4. *Does the virtual modelling software help on crowd prediction under fire case circumstances*?
   Da li softver za virtuelno modelovanje pomaže u predviđanju mase ljudi u slučaju požara?

5. *Does the crowd to be evacuated need to have information related with the fire situation or it has to be prevented from the information in order to help the evacuation process*?
   Da li masa ljudi koja se evakuiše treba da ima informacije u vezi sa požarom ili se mora sprečiti davanje informacija da bi se pomogao proces evakuacije?