

Why Hazards Science? (A New Approach to Hazard Perception)

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Introduction

When we study living environment and stories of communities and their perception of hazards, we learn that perceiving hazard was not a mere conceptual domain. It rather showed human ability to turn thoughts into action [1].

The way people and governments interpret hazards and respond to it, showed the quality of their perception. This depends in the first place on the type of hazard and in the second place, on individual and social psychology, cultural and economic components and most importantly, learning and teaching and this is not necessarily the same in all societies. Some communities are more aware of a particular type of hazard and completely unaware of the other types. Do you know the communities that belong to one of these two groups? The present paper deals with the question of what are the perceptions of the components of a community, government or government and, generally speaking, a nation. What do Iranian citizens, managers and the government perceive of the hazards? The process of perception is a delicate process. External stimuli received by a person require organization, learning and action in order to recognize and perceive a phenomenon. Perception of hazards comes from certain previous and new regular learning systems and practical experience to reduce it. Immunization against fire or earthquakes to reduce hazard, for example, is realized through education and learning from the most basic level to excellent levels (the power of perception) and participating in appropriate action (the power of action). What do the government and people perceive of hazard and what measures do they take to reduce it? Studying the perception of individuals and communities can bring significant benefits to development and living policies based on hazard reduction. [3]

Perception quality

Hazard perception is a delicate and selective process and is prior to action and happens differently in ordinary and expert people. The way ordinary people perceive hazard should be different from that of an expert who uses scientific methods [2]. The recognition of hazards increases gradually due to diligent research of many scholars. However, responding to hazard through practical

actions doesn't show a high level of awareness. In Iran, excess of developing unsustainable constructions, action without purpose, blind imitation, disregard to local science and research, lust for wealth and pure materialism are among the signs of poor perception of hazards [4]. This is just a perspective of Iran. There are other signs of poor perception of hazards in other countries such as USA. What is the solution? Providing an organizational mechanism or equipment for crisis management is not the most important strategy to reduce hazards in Iran! Reinforcing hazard perception is. I recall the day that the Geoscience Planning Committee held its annual meeting in Tabriz in 2014, I was given an opportunity to meet with a few members of Tabriz city council and the Mayor, research deputy of Tabriz University and members of the Iranian Society of Hazard Research. At this meeting, we suggested that Tabriz not imitate Tehran's behavior in management and urban development and develop a brainstorm room for its own in order to reduce hazards. Stop constructing new buildings in alleys narrower than 12 m. Given the seismicity of Tabriz and its geomorphic structure, stop constructing high rise buildings and focus on reinforcing, proper construction and stabilizing. This is a mere qualitative perception to reduce hazards in Tabriz that should be executed. Is there any action in this area? I ask my scientist friends in Tabriz that if there is an action. In Tehran, it is permitted to build several storage buildings in 4 and 6 meters alleys! If you pay a visit to areas such as Darvaze Doolab, Shoosh, Molavi, Nazi Abad, Azari, Nezam Abad and Imam Hossein, you will observe the results of decisions made based on poor perception of hazards by urban managers over the last decades. If you look at the tall, compact, and intermittent order of buildings in Imam Zade Hashim, Tajrish, you understand that how sustainable and beautiful natural landscape has changed to unsustainable dense urban zones for at least the next 100 years. The people behind these phenomena have any perception of hazards? Based on what urban engineering or service system such decisions have been taken? Is this for the benefits of the owners? Is this for the benefits of urban development? Is this helps urban sustainability? When lust overcomes conscience, the consequence would be increase of hazards and this suggests that decision makers and policy makers don't have a clear perception of hazards. And the community and people will pay for it. However, individuals and communities usually pay for the cost of hazards gradually, and not simultaneously or collectively. People who are exposed to noise and dust pollution due to uncontrolled construction or air pollution, they pay for it gradually with their lives. What is the solution? Exploring the perception of hazard represents the fact that each person has a unique background and tends to show different reactions to hazards. They do not respond the same way and they also need specific stimuli [5]. Therefore, identifying the characteristics of individuals and communities that determine the quality of perception of hazards and the appropriate action to reduce it can be a very important and complex task.

General and higher education materials, socioeconomic and political status, family sustainability, occupational status, religion, cultural and ethnic background, past experience of natural, human, technological or chemical hazards, mental health, and most importantly, the individual's and society's worldview can be among the indicators for this assessment.

Hazard perception has a duality nature, i.e. believing that addressing the reduction of hazards hinders progress and development. We may not pay attention to the difference in opinion about the importance of hazard perception. In other words, never think about and call them "evil invasion" [1]. However, we should be provident. Development and progress is not necessarily good. Communities and people who move toward development and progress without having a reasonable hazard perception, lead to no good. The devil uses lust to drive us into rapid, blind, and imitative development. This is not what we need. Unsustainable land, distorting the natural landscape, increasing distrust among citizens, increasing pollution in cities, increasing social harm and, in general, creating citizens with several crippling diseases are among the results of obeying lust?

In an ideal situation, a person or a community exposed to hazards, assess the level of hazard, study a range of alternative reducing measures, evaluate the consequences of each particular option and choose the action or a range of actions that are best suited to it. This means hazard perception and taking action to reduce them. Do world leaders at different levels have such an ideal situation? Does a mayor of a city enjoy such ideal situation? If no, they have no perception of hazards, or they have but there is no action. Imagine that a person who has no perception of the hazard of facing a reptile such as snake or scorpion and he takes no measure to eliminate the hazard. Therefore, no systematic action to reduce the hazard of snakes is seen from such a person. Enhancing the perception, observation and action to reduce the risks will bring good results. This is a desirable and scientific strategy for reducing hazards.

Inherent conservatism and resistance against new ideas might result in distortion of new achievements about perception of hazards roots and depth by authorities. This include for example, interpreting events mainly by luck.

Wisely and operative helplessness

One of the worst conditions for perceiving hazard is "wisely helplessness", where enough knowledge is available but do not contribute to hazard decrease. Therefore, people stop trying. A large part of the content of perception of hazards and its reduction in the context of humanities should be analyzed. Here's a fundamental question: has humanities contributed to enhancing perceptions of hazard and taking measures to reduce it, or has forgotten about it? All sciences

contribute to the perception of hazard and to reduce it. Despite the fact that Iran ranks 16th worldwide for generation of science, it ranks poorly in reducing hazards. The second condition is “Cognitive contradiction”, where a person or a mayor knows that the environment in which they live is dangerous, yet continue living there and perform hazardous behavior. This can lead to explicit denial of the existence of a threat. Researchers of earthquake perception have warned many times about conglomeration, compaction and non-retrofitting of the buildings in Tehran. However, city planning and municipalities do not pay attention to it. This is a cognitive contradiction. The scientist has a perception and the agent has another perception. The result of this contradiction is producing earthquake-vulnerable structures. According to an official, 80 percent of buildings in Tehran do not have the necessary earthquake resistance. Is it not time to ask ourselves, what kind of perception of hazards leads in such results? Cognitive contradiction can be seen in constructions and resource use and their effects on people and environment. When the results indicate an increase of hazard, it means that the policymaker and agent have no perception of hazard. A good perception of hazard is necessary for the scientist and agent as a balance in all processes of political, economic, technical, social and cultural development. The cognitive contradiction is that the agent pays no attention to the scientist. The former believes that he has no needs of the latter. An editorial from Hamshahri (15 Feb. 2017) titled Tehran suffers from the government’s ineffectiveness, argues that “We are not like the university professor who is theoretician. We act. We ask whether what you have done, has resulted in hazard decrease in Tehran.” How could we solve this cognitive contradiction?

People may believe in taking precautions. However it is unlikely to work well. On the other hand, it seems that the negative aspects of perceiving hazards and dangers are more significant than the positive aspects. Many people have no interest in perceiving hazards and expose themselves and many others to many hazards. They see hazard reduction and perception as an obstacle to their acts. If there was a reasonable perception of the hazard of dehydression in Iran’s water and soil resources management, Lake Urmia would have not dried. Gavkhooni Wetland would have not dried. Parishan Lake would have not dried. Haze would have not swallow Khuzestan. If there was a true perception of hazards, Gotvand salt dam would have not been there. The increasing losses of river and urban flood indicate that the agents have no reasonable perception of hazards. However, the positive aspects of hazard perception should be highlighted and expanded. We should accept the fact that scientists’ and agents’ good perception of hazard is a necessity as a strategy to reduce hazards.

Hazard perception could be considered based on three factors: fear, recognition, and exposure. Low level of exposure to hazard, decrease the overall attention to hazards. It’s not likely for example that Russians have any concerns

about earthquake since their exposure to earthquake is very low. However, earthquakes vulnerable countries could be the same. Iran and Turkey experience several destructive earthquakes each year. It seems that the high level of exposure to earthquake in Iran and Turkey has decreased the attention to the danger, whereas it should increase it. Frequent experience with a hazard should increase the level of knowledge and sensitivity. Studying hazard perception without considering the conflicting demands of people and authorities is a mistake. The scale and precision of hazard perception may depend on the degree of continuity of demand and resources at risk and the causes of social or political problems in societies. Experience has shown that if people demand it, officials will pay attention to it. Personal experience of people (for example, when they have experienced a hazard) and visual and media education and academic education in different levels may contribute to hazard perception by people and therefore their demand for hazard reduction.

Perception of hazard should be studied in its cultural context.

action about hazards is a result of total impressions and actions and social environment as well as historical events that bring the long and lasting cultural shadows to the present and future.

Even the simplest hazards are analyzed in local cultures and leads to predictable interpretation and reactions. Hence, we need a “culture of hazard perception” which is a model of individual and collective reaction to hazards. It may have roots in religion, politics, society or even science which indicates a form of consensus on reducing hazard in society. However, since societies are not monotonous entities, it is possible that we identify “sub-culture of hazard” as groups that adopt common views, but they are not necessarily homogeneous in practice.

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