

Article

# The History of Natural Disasters and Risk Management: a Common Understanding of the Disaster Terminology and definitions in all Aspects

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**Abstract:** The research world in which we work sometimes seems at times to be a confusing one in terms of how we understand and interpret things. This is due to the fact that, with the current encouragement of interdisciplinary research, there are many people in a re-search team with different fields of study and different roles, and they may use terms that are unfamiliar to people other than their particular research work. Even if they use the same terminology, they may not necessarily use exactly the same synonyms or the same definitions. Therefore, it is inevitable for international joint research to have a common definition and usage of terminology and a common understanding of the terms. We are conducting research on natural disasters from various fields including natural sciences, social sciences, and humanities. Although we believe we have a common understanding of each other, we often have different meanings of common terminologies. In our research, we inevitably need to think more about "normalcy bias." We use terminology and clear definitions in different research areas, but the same terminology and definitions may be different in other areas and in other countries. However, we have not focused much on this, which has led to different mutual understandings. We thought we understood each other. That is the "normalcy bias". This normality bias is a major issue in the fields of disaster psychology and disaster welfare. It is unfortunate that it has not been given much emphasis in interdisciplinary research, which is most concerned with research by a common definition." The "normalcy bias," also known as "normalization bias" or "homeostasis bias," can make a significant difference in disaster decision making in some research fields and in some countries with different histories and cultures. Therefore, it is inevitable to keep this in mind when conducting international collaborations across different disciplines.

**Keywords:** interdisciplinary research; common definitions/common understanding; normalcy bias; efficacy; research disciplines

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## 1. Introduction

The research world in which we work sometimes seems at times to be a confusing one in terms of how we understand and interpret things. This is due to the fact that, with the current encouragement of interdisciplinary research, there are many people in a re-search team with different fields of study and different roles, and they may use terms that are unfamiliar to people other than their particular research work. Even if they use the same terminology, they may not use exactly the same synonyms or the same definitions.

Therefore, common definitions and usage of terms and common understanding are necessary for international collaborative research.

For example, one of the fields of practice being promoted in Japan today is the "field of human health support," which encompasses medicine, health, nursing, and welfare. Although these four fields are adjacent, they are independent of each other, and even when the same terms are used, they often have slightly different definitions and meanings. Therefore, in order to ensure a common understanding among the four fields, definitions for mutual understanding are provided for terms that are commonly used by each of the four fields. The most advanced of these is the field of medicine. We conduct research on natural disasters from a variety of fields, including the natural sciences, social sciences, and humanities. We think we have a common understanding of each other, but we often have different meanings for common terms.

We need to think more about the "normalcy bias" among them. In the field of disaster psychology, this normality bias is a major evacuation salt issue. The same is true in the field of disaster welfare. Unfortunately, however, it is not given much emphasis in the natural sciences. It is also referred to as "normalization bias" or "homeostasis bias." Moreover, this normalization bias can make a big difference in disaster decisions, depending on the field of study and on the country where there are historical and cultural differences.

Normalcy bias regarding natural disasters refers to the tendency to view natural disasters, fires, accidents, and incidents as an extension of one's normal daily life[2], to ignore unfavorable information, and to underestimate the potential for damage by thinking "there is no precedent for this", "I am fine", "this time is fine", "I am still fine", "this time is not a disaster", etc. 2], ignoring unfavorable information or underestimating the situation by saying "there is no precedent," "I am fine," "I am fine this time," "I am still fine," and so on.

## 2. Materials and Methods

This study provides an overview of the history of natural disaster response in Japan and examines the current use of terminology in disaster research.

Examine the existence of common understanding. The following are examples of terminology used in Japan. (1) self-help, mutual aid, and public assistance; (2) vulnerability and resilience; (3) disaster prevention/mitigation, disaster response, and recovery/reconstruction; (4) alert level (a five-level classification of information on actions to be taken and evacuation, etc.), (5) flooding level; (6) facilities for people requiring special care.

Our question is whether common understanding and definitions are unified in each country based on these, or whether these terminologies are used based on common understanding even if they are not identical.

## 3. Limitations

This study has several limitations. These limitations are the theme of this study. The commonality of academic definitions of the basic and important terminologies in disaster research is examined for each of the natural science, social science, and humanities fields, but this study is mentioned only the Japanese case. The commonality of definitions in relevant international academic societies, history and culture are fundamental to disaster risk management policy, but this study provides no results of that analysis.

## 4. Conclusions

In conclusion, the specific terminology we examine first is "self-help, mutual aid, and public assistance". As an example, the following is a general definition of self-help, mutual aid, and public assistance in Japan. Each field of study is not aware of when and in which field this terminology came to be used and what it means. Each field has its own definition

of the terminology, but these definitions have not been standardized. This terminology includes historical, cultural, political, and policy meanings.

Self-help, mutual aid, and public assistance have been national policies in every country. In Japan, the Edo period (1603-1867) was a term of the Shogunate-Han Political System.

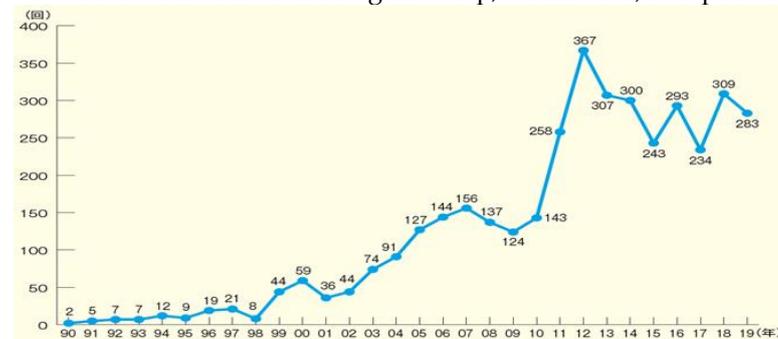
In Japan, "self-help" is the basis of disaster prevention. In other words, the principle is to protect one's own life by oneself.

Self-help, mutual aid, and public assistance have been national policies in every country. In Japan, the Edo period (1603-1867) was a time of the Shogunate-Han system. A HAN (prefecture) corresponds to today's prefectures. Japan has historically been a disaster-prone country. Each local government is evaluated later by how well it prepared stockpiles for disasters, how well it saved citizens, and how well it protected their lives. The feudal lord of the HAN, Uesugi Yozan is called a great ruler who controlled a disaster-prone area because he created a system of disaster response, recovery, and disaster preparedness. In the social sciences, this terminology is historically well known. However, it was not until 1982, with the "Basic Concept of Social Welfare and Social Work Reform," that this terminology came into use in the field of social. This terminology has since come to be used frequently as a policy terminology, as shown in the figure below.

After that It was not until around 2000 that it began to be used in the field of disaster prevention field, although it is now a common terminology in disaster science. Disaster prevention consists of three stages: prevention measures to anticipate the occurrence of a disaster, emergency measures following the occurrence of a disaster, and post-disaster recovery and reconstruction measures. In all cases, the term "disaster reduction" refers to the inevitable cooperation among the three forces of "self-help, mutual aid, and public assistance.

In 2020, the Prime Minister addressed with this terminology to promote his national policy.

Number of local councils using self-help, mutual aid, and public assistance(year)



Source: Cross-search of Proceedings of the Diet of 47 Prefectures in Japan, Makise, M. Business Plan 2020 vol.12

<Self-Help> refers to the preparations and actions one takes to protect oneself and one's family. Stockpiling water and food for a week, taking measures to prevent furniture from toppling over, having emergency supplies, and evacuating to a safe place by oneself are examples of "self-help," and each individual (family) is expected to do so.

< Mutual Aid > means helping each other in the neighborhood or community. It is generally recognized that mutual aid is difficult to achieve without regular interaction with neighbors and community members and participation in disaster drills held by the community unit in order to help each other in the event of a disaster.

In Japan, people in the community have long been called upon to cooperate in efforts to save others in the community, such as rescuing people in the neighborhood who have been affected by a disaster. This has not changed today.

A good example of "mutual aid" can be seen in Japan's Edo period (1603-1867) system of "5-man groups" and "10-man groups. This is the idea that neighbors would cooperate with each other to maintain their daily lives, even if they had difficulties in their daily lives, or if they were affected by a catastrophe.

Currently, the emphasis in Japan is on "mutual aid" in disaster prevention and disaster response. This is because major disasters occur every year and there is an 80% probability of a major earthquake occurring within the next 30 years.

In Japan, however, urbanization has led to a drastic decrease in interaction with neighbors, especially among today's younger generation, who are less inclined to interact with their neighbors. In urban areas, people are isolated from their neighbors, not meeting face-to-face on a daily basis. Can mutual aid in times of disaster be provided by people who do not interact with each other in peacetime? Group work inevitably requires a person to lead the group, but will people who have never met each other be able to organize the group and help each other? We now live in a society where we have to consider such issues. Is the definition of mutual aid still the same as it is today?

<Public Assistance> refers to the rescue and recovery work performed by the Red Cross and volunteer organizations in the event of a disaster, mainly by public rescue organizations such as the local government, self-defense forces(not called military in Japan), police, fire departments, and the national government. Public assistance is provided by "evacuation sites" set up in parks, public facilities, universities, etc., and designated evacuation shelters are local elementary and junior high schools. It is doubtful that people (families) who have never met each other can evacuate to a relatively familiar place such as an elementary or junior high school and form smooth relationships with each other.

"Public assistance" should be provided to manage evacuation shelters for such people. Temporary shelter (food, clothing, and shelter) must also be provided.

In the case of Japan, have the terms "self-help," "mutual-help," and "public-help" been used to describe disaster preparedness, response to a disaster, and recovery of the people and areas affected by a disaster? Even if there is a common concept of "3 phase of help" does it mean the same thing?

The response to such a situation may differ from region to region, from densely populated area to depopulated area, and from country to country. We need to disclose this reality and establish common definitions and conceptual rules.

Especially in the case of interdisciplinary research, it is inevitable that there will be definitions and conceptual rules for each research field, and a common understanding will be necessary.

The issues we address here are not new. However, it is a new issue. In conducting international joint research, the first challenge is to understand and share common terminology.

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