

# Expressions Used in Disaster Prevention in Japanese and German: A Contrastive Sociolinguistic Analysis

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# Expressions Used in Disaster Prevention in Japanese and German: A Contrastive Sociolinguistic Analysis<sup>28</sup>

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## Abstract

In the event that a natural disaster like a flood or an earthquake occurs and life is in danger, a disaster alarm is activated by the community of a dangerous or damaged area. The public must soon be informed of the proclamation of the disaster, which is accomplished over radio, TV, internet, loudspeaker announcements, or siren. Siren signals request the public to turn on a radio or TV. Through radio, TV, or loudspeaker, the public will get the information of safeguard measures. However, the means of transmitting linguistic information for the protection of life have become increasingly diverse due to changing societies because of social mobility and the popularization of the Internet. Effective means of conveying information differ among different countries, societies, and individuals. The aims of the current study are threefold: 1) To compare linguistic expressions for evacuation instructions between Japan and Germany by using “Relevance Theory” as a framework for contrastive analysis of corresponding linguistic expressions in Japanese and German; 2) to explain differences in the information structure of the corresponding expressions in Japanese and German by comparing the definitions of *hinan* (避難) and *Evakuierung* for “evacuation” in Japanese and German, respectively; and 3) to determine what information is relevant to efficient evacuation instructions and how it should be transmitted. The results are expected to contribute to managing trust and risks in changing societies in both countries.

## 1. Introduction

On March 11, 2011, the Great East Japan Earthquake and Tsunami hit the Tohoku area in Japan and claimed a huge number of missing and dead. One reason that the disaster claimed so many victims could lie in the methods by which evacuation instructions were transmitted to the citizens, specifically their inefficiently formulated expressions. In the current study, therefore, expressions for evacuation instructions will be focused upon. The main aim of the current article is to analyze linguistic expressions for evacuation instructions in Japanese and German contrastively in order to explain whether and how the corresponding expressions are effective to the citizens’ evacuation in the framework of the Relevance Theory. Our hypothesis is that the issued evacuation

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instructions in Japanese are too abstract and inefficient in comparison with those in Germany. The hypothesis will be tested by comparing evacuation instructions in Japanese and German.

## 2. Description of Problem

### 2.1. An example of evacuation instruction

The following example of evacuation instructions is the announcement that was transcribed from a YouTube recording at the time when the tsunamis struck the coast at Ofunato Bay, Iwate Prefecture in the Tohoku area on March 11, 2011.<sup>29</sup> The announcement was recorded by a person dealing with the emergency. In this sense, the recorded voice was considered based on what they saw at the scene or heard of it. The speaker of the recorded voice is a male. His voice is natural and slow. An English translation for the announcement is also provided under it.

(chime)

*oshiraseshimasu. Tsunami keihō dai san gō, tsunami keihō dai san gō, genzai, tsunami keihō hatsureichū desu. engan jūmin-wa tadachi-ni takadai-ni hinan shitekudasai. genzai, tsunami keihō hatsureichū desu. engan jūmin-wa tadachini takadai-ni hinan shitekudasai. kochira-wa bōsai ofunato kōhō desu.*

English translation:

May I have your attention, please. Tsunami Warning Number 3, Tsunami Warning Number 3. The Tsunami Warning has been issued and is effective. People at the coast, please evacuate to a hill immediately. The Tsunami Warning has been issued and is effective. People at the coast, please evacuate to a hill immediately. This is the Disaster Prevention Ofunato Publicity Department.

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<sup>29</sup> <https://www.youtube.com/watch?v=BUgm6y1lqrM>

The evacuation instruction was issued on the basis of the information for the New Tsunami Warnings issued by the Japan Meteorological Agency (JMA).

Title: Tsunami Information

Information about the estimated time and height of the first wave  
(issued by the JMA at 14:50, March 11 2011)

Great Tsunami Warning

Estimated time and height of the first wave

Districts	Date & Time	Size
Iwate Prefecture	Tsunami is arriving	huge
Fukushima Prefecture	March 11, 15:00	huge
Aomori Prefecture	March 11, 15:00	huge

**Calls for Caution**

The people near the coast or river for which the Tsunami Warnings were issued should (please) evacuate and go up a hill or to the evacuation building.

The estimated arrival time is the time the first wave arrives in the district.

Source: [http://www.seisvol.kishou.go.jp/eq/tsunami\\_keihou\\_kaizen/index.html](http://www.seisvol.kishou.go.jp/eq/tsunami_keihou_kaizen/index.html)

In the area, the tsunami claimed a large number of victims, even though this announcement had been made repeatedly. One of the reasons for the massive damage to human life seems to lie in how the evacuation instruction was issued as opposed to how it should have been. Could they trust this information? In general, in order to make the information trustworthy, its intentions should be transmitted correctly and efficiently (Arai, 2013). However, in many cases including the Tohoku Great Earthquake and Tsunami Disaster, the intentions of evacuation instructions were not transmitted so because the following points were not fulfilled according to Arai (2013):

The main causes of the miscommunication from a point of view of the speaker are as follows<sup>30</sup>:

<sup>30</sup> As for “1. The hi-tech and complicated information transmission system”, see the figure below:

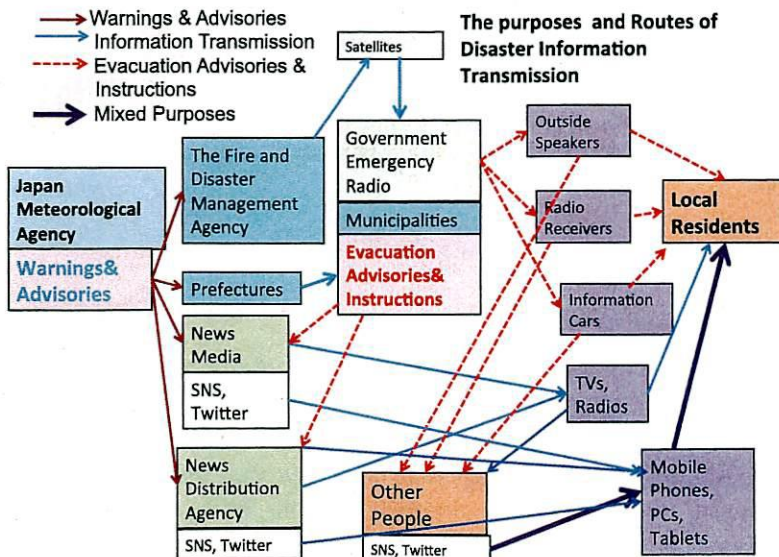


Figure reprinted from Arai (2013)

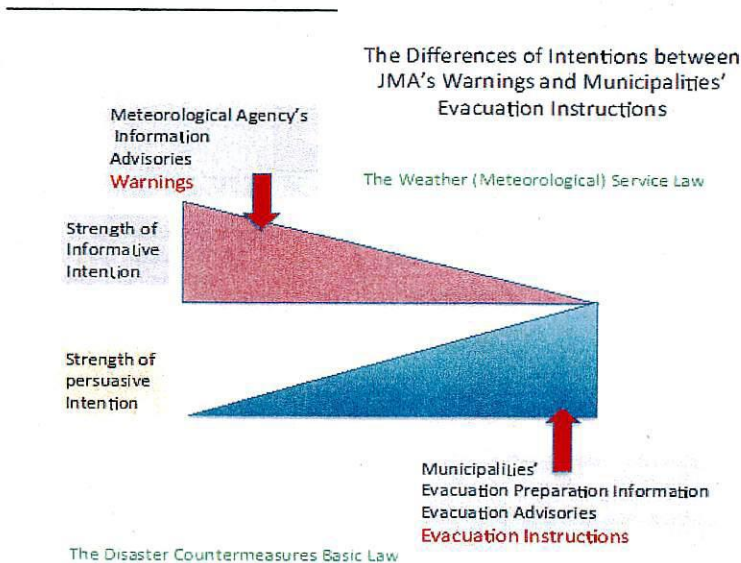
As for “2. The procedures of decision making and sending messages at Municipalities,” intentions are different in the Meteorological Agency and Municipalities. Please see the figure below:

- (1) The information transmission system is too high-tech and complicated;
- (2) The procedures of decision making and sending messages at Municipalities have no announcement manuals and no training sessions;
- (3) The expressions and word choices, wherein the linguistic aspects of the problem have never been discussed before.

According to Arai (2013), once a disaster occurred, evacuation instructions could decide the outcome of life or death in emergency; therefore, it is necessary to transmit the instructions immediately and effectively to the citizens in an emergency. To that end, through the linguistic expressions for evacuation, instruction must be conveyed appropriately and efficiently. The appropriateness and efficiency can be measured in the framework of the Relevance Theory (Sperber & Wilson, 1996). The theory, namely, can explain problems in linguistic expressions for evacuation instructions in Japanese. According to the Relevance Theory, the announcement made on March 11, 2011 above can be evaluated as abstract and implicit. Therefore, it can be inferred that the people in the emergency considered the evacuation instructions to be relevant for someone else, not as related directly to themselves and that many of them failed to escape.

## 2.2. Successful communication

A successful evacuation instruction in a disaster would be one that is issued immediately and efficiently to the people in an emergency. According to the Relevance Theory, in the case of the



public announcements, the conditions for an effective evacuation instruction can be described from a speaker's perspective as follows:

The speaker should

- (1) give the most cognitively effective information
- (2) give the least cognitively laborious information
- (3) make his/her intention mutually manifest, like a one-on-one announcement
- (4) convey the intentions directly such that the linguistic form is composed of the speaker's intention

“Cognitively effective” in (1) means that the information can change the hearers' cognitive environment, or hearers' assumptions. The hearers' assumptions are composed of thoughts, beliefs, knowledge, etc. Based on the conditions (1)-(4), effective and efficient linguistic expressions for evacuation instructions would have “new” or “related” information to the hearers, be easy to understand, and explicit as well. In this sense, the announcement in the disaster in Tohoku area did not have enough information to change the hearers' cognitive environment.

### **2.3. Hypothesis**

According to the Relevance Theory, the announcement discussed above is not quite considered as effective and efficient. If so, then it can be hypothesized that evacuation instructions previously issued in Japanese, in general, can also be evaluated as being cognitively ineffective and ambiguous in their manner of addressing the problem. This hypothesis will be tested by one of the evacuation instructions that were issued during floods in Japan, in comparison with those in Germany.

### **3. Methods**

Linguistic expressions for evacuation instructions that were issued previously in similar disasters between Japan and Germany will be compared socio-pragmatically. In this article, the Hiroshima Heavy Rain and Landslide Disaster in Japan, 2014 and the Flood in Central Europe, 2002 are compared, because they were both caused by heavy rain and evacuation instructions were also issued in both instances, although there were differences in the magnitude of human suffering and in the affected areas, i.e., the disaster in Hiroshima claimed more than 70 victims only in Hiroshima, whereas at least 45 in Central Europe (Germany, Austria, and Czech Republic).

## 4. Comparison and Results

### 4.1. Japanese examples

In Japan, the Hiroshima Heavy Rain and Landslide Disaster occurred on August 20, 2014.<sup>31</sup> The following example is the announcement for an evacuation instruction issued in Japanese in Hiroshima, Japan. An English translation is given under the original text.

The speaker is a male and his voice is natural.

(chime)

*Hiroshima-shi-kara oshiraseshimasu. Heisei nijūroku-nen hachi-gatsu hatsu-ka ichi-ji sanjūgo-fun-omotte, Asaminami-ku, Asakita-ku, Saeki-ku-ni saigaikeikaihonbu-o secchishimashita. Nao, Hiroshima-shi-ni doshasaigaikeikaikaihō-ga happyōsare, doshasaigai-no kiken-ga takamatteimasu. Gake-no chikaku-nado doshasaigai-no hassei shiyasui chiku-ni osumai-no kata-wa, ijō-o kanjita baai, hayame-no hinan-o kokorogaketekudasai.*

English translation:

This is Hiroshima City. At 1:35, August 22, 2014. We have established the headquarters for disaster control at Asaminami Ward, Asakita Ward, and Saeki Ward. Further, Landslide Caution Information has been provided in Hiroshima City. The risk of landslide disaster is increasing. People who live near cliffs, please try to evacuate ahead of time when you perceive danger. That is all from us now, Hiroshima City.

The information structure of the announcement is composed of the following: sender of the information, date of issue, establishment of the headquarters, landslide caution, the reason for the caution, object-persons, object-area, and the instruction to evacuate.

### 4.2. German example

The risk of washout disaster of the River Elbe saw an increase in August 2002. The people living in the district Bitterfeld near the river were informed of the evacuation instruction on August 16, 2002.<sup>32</sup> An English translation is given under the original text.

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<sup>31</sup> The recordings from the Disaster Prevention Government Emergency Radio of Hiroshima City on August 19th - 20th 2014.

<sup>32</sup> <https://www.youtube.com/watch?v=5FDh36aNtEA>

*Ihre Polizei. Aufgrund der aktuellen Hochwasserlage werden hier alle Personen und Anwohner von ... aufgefordert, den Stadtteil SOFORT Richtung ...hinter den Bahnlinien zu verlassen.*

English translation:

Your police. Because of the actual flood situation, all persons here and residents of ... are requested to leave the part of the city immediately in the direction of ... behind the railways.

The information structure of the announcement is composed of: sender of the information, the reason for the following instruction, evacuation instruction, object-persons, object-area, and direction for evacuation.

## **5. Discussion**

### **5.1. Similarities and differences**

In the examples above, similarities and differences can be seen in information.

Similarities in information are pointed out as follows:

Sender of the information, the reason for evacuation instruction, object-persons, object-area.

Differences in information are shown in:

Japan: establishment of the headquarters, condition for evacuation (when you sense danger)

Germany: concrete explanations regarding the direction for evacuation.

Questions arise from the comparison. One of them is the necessity of mentioning the establishments of the headquarters and conditions for evacuation. The former is not relevant to the people in the area. The latter can spoil or delay their judgment to evacuate. The announcement in German tells the people the concrete direction to evacuate, which is different from that in Japanese.



## 5.2. Differences of Definition

Why did the differences occur? In order to make them clear, it would be useful if the definitions of the term “evacuation” can be compared between Japanese and German.

“Evacuation” corresponds to *hinan* (避難) in Japanese, whose literal meaning is to prevent (*hi*: 避) a disaster (*nan*: 難). Naikakufu (2014) defines *hinan* in Japanese as follows:

*Inochi-o mamoru tame-no kōdō* (Naikakufu, 2014)

life.OBJ protect sake.GEN action

“action for life-saving”

In this definition, *hinan* is explained as “action for life-saving.” However, the explanation is unclear as to who does this and how and what is done for saving whose life. In this sense, the expression in Japanese can be considered as abstract and vague.

On the other hand, “evacuation” is equivalent to *Evakuierung* in German. Müller (1998) defines the word as follows:

*organisierte Verlegung von Menschen und Tieren aus einem gefährdeten*

organized moving of human beings and animals from an endangered

*Gebiet mit Transport, Unterkunft und Versorgung* (Müller, 1998)

area with transport, accommodation, and supplies

“organized moving of human beings and animals from an endangered area with transport, accommodation, and supplies”

In the explanation, *Evakuierung* in German is described as the “organized movement of human beings and animals from an endangered area with transport, accommodation, and supplies.” This description can be considered as concrete and easy to understand in comparison with that of Japanese.

### 5.3. Comparison for Sample Texts for Evacuation Instruction

In this section, sample texts for formulating evacuation instructions in Japanese and German will be compared.

The following text is retrieved from Naikakufu (2015). An English translation is given under it.

*Kinkyū hōsō, Kinkyū hōsō, hinanshiji hatsurei. Kochira-wa NN-shi desu. NN-kawa-no sui-ga teibō-no takasa-o koeru osore-ga arutame NN-ji NN-fun-ni NN-chiiki-no NN-chiku-ni NN-kawa nikansuru hinanshiji-o hatsureishimashita. Mada hinanshiteinai kata-wa tadachini hinanshitekudasai. Soto-ga kiken-na baai-wa okunai-no takai tokoro-ni hinanshitekudasai.*

English translation:

Emergency announcement, emergency announcement, evacuation instruction has been issued. This is NN-city speaking. Because the water level of the NN-river could exceed the bank height, an evacuation instruction on the NN-river was issued at NN o'clock NN in the area NN of the NN community. People who have not evacuated yet are asked to evacuate immediately. If outside is dangerous, please evacuate to a higher place inside the house.

The information structure of the sample text is composed of: seeking attention, issuing an evacuation instruction, sender of the information, the reason for evacuation, time of issue, object-area, explanation of the instruction, object-persons, request of evacuation, and explanation of the other alternative for evacuation.

As problems in the sample text in Japanese, the following points can be pointed out based on the conditions for efficient evacuation instruction mentioned above:

1. The concrete time description is not necessary.
2. How to evacuate and where one is supposed to go is not mentioned.
3. The direction or explanation of direction is not clear (ambiguous):
4. Technical terminology (*hatsurei (sare mashita)*) and expressions in negative form (*--sarete inaikata*) are considered as inappropriate expressions.

On the other hand, a comparable text in German could not be found. However, tips for formulating a text for evacuation instructions are found in Düren (2014).

*Bei der Festlegung der Texte auf Fachausdrücke möglichst verzichtet werden, um Verunsicherungen oder gar Beängstigungen zu vermeiden*

To give up technical terminology in formulating the texts in order to avoid uncertainty or worry

*Eine möglichst umgangssprachliche Ausdrucksweise angewandt werden*

Colloquial expressions are used wherever possible

*Zwar Exaktheit der Meldungen etwas leiden, aber die Informationen leichter verstanden*

Indeed, the precision of announcement suffers, but the information is better understood

The tips recommend us to use colloquial expressions rather than technical terminology and expressions that are easier to understand at the cost of precision, which differs from the sample text in Japanese.

## **6. Concluding Remarks**

In this paper, we tried to point out problems in formulating expressions for evacuation instruction in Japanese and German from a linguistic point of view, i.e., in the framework of the Relevance Theory. This linguistic analysis reveals that Japanese expressions were not formulated appropriately with respect to efficiency in the framework of the Relevance Theory, in comparison with the corresponding expressions in German to understand why the intentions of the expressions could not be transmitted efficiently to the citizens. Therefore, expressions for evacuation instruction in Japanese should be revised into more efficient ones.

In this way, a linguistic approach of expressions for evacuation instruction is expected to contribute to efficient risk communication in disaster prevention.

As for the theme of the conference “Risk and Trust,” in connection with this theme, we would like to mention the following points as concluding remarks. “Trust” in the evacuation instruction expressions in an emergency situation can be dependent on whether one can regard an immediate risk as relevant to oneself through information given in the evacuation instruction. In order to understand that the citizens are exposed to a real risk, it is expected that the formulation of linguistic expressions for evacuation instruction are more concrete and explicit.

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