

## A Comparison of Japanese Proverbs and British Proverbs Relating to Weather Prediction and Analysis of the Application of these Proverbs to “the Period for Integrated Study”.

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This paper undertakes a comparison of weather proverbs in Japan and Great Britain focusing on weather proverbs which have a scientifically applicable background. Proverbs relating specifically to animals were prevalent in both countries which allows for an interesting and contrasting view. These proverbs prove to show the depth of human interaction with nature and how distinct and distant cultures can come to the same conclusions based on observation of the facts. It is proposed that this study can be developed into useful teaching materials.

**Key Words** : Proverbs Relating to Weather, the Period for Integrated Study(総合的な学習の時間)

### 1. Outline of Japanese proverbs relating to weather

In Japan, the variety of the four seasons is clear and daily weather is often changeable. People have passed down proverbs relating to the weather and seasons from generation to generation for centuries. These proverbs about weather are most notably written in a book published in 1953 by the Agriculture cooperative of Fukui Prefecture<sup>(1)</sup>. These proverbs were believed to have increased the yields of foods after the world wars through the wisdom of the older generations. Due to the development of meteorology and fertilizers, proverbs relating to weather are not commonly discussed in the modern day. However there has been a growing tendency to have a better opinion of traditional local life and careful preservation of its history has become a priority. Additionally, there are many books about weather proverbs and local customs written later in the 1970s by other prefectures<sup>(2)(3)(4)</sup>. These proverbs discuss the characteristics of plants, animals, and landforms in every prefecture and in more local areas. At first this paper discusses some proverbs related specifically to Fukui Prefecture including samples from Fukui University of Technology(FUT) and goes on to discuss samples of more general Japanese proverbs.

There are many distinctions in weather patterns between the north and south of Japan. But there are also big distinctions, especially in winter, between the Pacific coast and the Sea of Japan coast. This is due to the large mountain ranges between the two. In fact, the distinctions between the Pacific coast and the Sea of Japan coast are greater than those of the north and south of Japan. Specifically, despite the low latitude, it snows a lot in winter on the Sea of Japan coast. This phenomenon is very rare, it's a remarkable peculiarity of the weather in Fukui Prefecture. Therefore, many people refer to Fukui as “The Back of Japan”. Residents of Fukui that grew up here don't have such a dark image about Fukui Prefecture and in fact because of the abundance of snow, it is easy to discriminate the four seasons very clearly. Perhaps more clearly than any other prefecture in Japan.

There are many proverbs in Fukui prefecture about weather that reflect on the variedness of the four seasons.

### 2. Classification of proverbs

AKAZAWA has gathered over 820 proverbs about weather by survey or through literature review. When we analyze these proverbs with relation to what kind of weather they teach, the major proverbs are as follows:

Proverbs predicting rain 281 (34.3%)

Proverbs predicting thunder (abundance or lack thereof) 175 (21.3%)

Proverbs predicting fine weather 172 (21.0%)

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Proverbs predicting wind 70 (8.5%)

Proverbs predicting fine weather or rain depending on the conditions 45 (5.5%)

Moreover, when we examine the methods used to predict the weather the number of proverbs are as follows:

Prediction utilizing animals, 288 (35.4%)

Prediction utilizing plants, 118 (14.5%)

Prediction relating to clouds on mountains, peninsulas or valleys 86 (10.6%)

Prediction utilizing optical phenomena such as rainbows 74 (9.1%)

Prediction utilizing the twelve signs of the Chinese zodiac 34 (4.2%)

Prediction relating thunder 18(2.2%)

**Weather proverbs relating to animals (by area)**

When tree frogs begin to creak, it will rain soon.	(Fukui Pref.)
If a cat is out of control, the wind will be strong.	(city of Sakai)
If a crow cries, it is going to be rough.	(city of Sakai, Asahi area)
If a black kite makes a circle high in the sky, it will be fine tomorrow.	(Mikuni area, city of Awara, Koshino area)
If a cat washes its face with its arm, it will rain soon.	(town of Eiheiji, Miyazaki area, Wakasa area)
If children make a lot of noise, it will be rain tomorrow.	(Fukui Pref.)

**Weather proverbs relating to plants. (by area)**

If the buckwheat grows up tall, it will snow a lot.	(Maruoka area, Morita area)
If the buckwheat grows short, it will snow a little.	(Mikuni area, Maruoka area, city of Awara)
If the flower of the buckwheat blooms well, it will snow very much.	(Mikuni area, city of Ohno, Kanazu area)

**Weather proverbs relating to clouds on mountains, peninsulas or valleys. (by area)**

If there is no cloud on the mountain of Jogu, it will be fine tomorrow.	(Suizu in Tsuruga)
If mist covers Mt. Kunimidake, it will rain tomorrow.	(city of Fukui)
If there is cloud over the mountain of Takasu, it will rain.	(city of Sakai)
If there is cloud over the mountain of Arashima, it will rain tomorrow.	(city of Ohno)

**Weather proverbs utilizing optical phenomena. (such as rainbows)**

If you see the sky at sunset or sunset cloud, it will be fine tomorrow.	(Fukui Pref.)
If a rainbow appears in the morning, don't cross a river.	(city of Sakai, Ota area, town of Mihama )
When you see the sky at sunset, it will be fine tomorrow.	
When you see the morning glow, it will rain.	(town of Eiheiji)
If the sun or the moon is cut off by cloud, it will rain tomorrow.	(Fukui Pref.)
If you see a rainbow in the evening, you had better do the laundry and dry the umbrella.	(Reinan area)

**Weather proverbs relating to thunder. (by area)**

If it thunders in the north, it will snow.	(Kamisihi area)
Thunder in the morning calls for sailor's caution.	(Fukui Pref.)
If it thunders in the east, women are with their sleeves rolled up.	(city of Echizen)
If it thunders in the west, it will rain.	(city of Fukui)

The use of weather proverbs that predict patterns according to optical phenomena are still applicable in the modern day. These include phenomena such as rainbows or the condition of the cloud over the mountain in a certain area. On the other hand, the proverbs

that predict the weather through animal behavior are more fantastical. While some can still prove to be useful, many become unbelievable when modern scientific knowledge is applied. Despite this their varied and abundant nature makes them interesting for study. It is interesting to get a glimpse of the way in which our ancestors thought and interpreted weather phenomenon through analysis of these proverbs.

To see how these Japanese weather proverbs compare and contrast with those of other cultures one of this papers authors researched weather proverbs of the British Isles. Through this research it is clear there are many similar yet distinct proverbs to those found in Japan. In particular the proverbs about animals are very similar and it is interesting to discuss the similarities and differences found.

### 3. Weather lore of the British Isles

Most weather proverbs or sayings found within the British Isles today come from fisherman, sailors and early farm workers, both arable and pastoral who wanted an easy way to predict the weather in the times before accurate modern meteorological methods were available. These sayings come mostly from the 19<sup>th</sup> and early 20<sup>th</sup> century period<sup>(5)</sup>. The farm workers favored rhyming sayings as they were the easiest to remember and pass on to following generations. These weather proverbs come in several forms, there are proverbs relating to weather formations themselves, proverbs relating to animals and proverbs relating to plants, as well as some miscellaneous sayings. As the UK is made up of 4 distinct countries each with their own culture and language there are unique sayings from each. Scotland and Northern Ireland share a Celtic basis in language and have some similar phrases, Wales and England too have their own unique proverbs relating to the weather. With a mix of many cultural backgrounds and linguistic roots the UK has some very interesting weather proverbs to analyze.

An example of probably the most widely known general saying about weather in the British Isles is; 'Red sky at night, shepherd's delight. Red sky in the morning, shepherd's warning.' This saying was commonly used by sheep farmers (shepherds) to predict the coming weather. If the sky at night is red then the next day will be fair weather, if the sky in the morning is red then the weather will be bad that day. A red sky in the morning is caused by ice particles in cirrus clouds high up in the atmosphere absorbing sunlight, this leaves the longest wavelength, red, to illuminate the morning sky. These cirrus clouds usually form ahead of depression systems which bring rain with them<sup>(6)</sup>. Red sky at night may be due to the movement of a high-pressure system. A rapid increase in air pressure following the passage of a cold front causes a thermal inversion layer where warm air near the ground is propelled high into the atmosphere. This warm air carries dust particles and other pollutant particles with it which act in a similar manner as the previously mentioned ice crystals and cause the sky to look red. These high-pressure systems usually bring fair weather with them. So, we can see that in this example the rhyming proverb has a scientific backing that shows it is somewhat reliable as a predictor of weather pattern.

Animals feature prominently in British weather proverbs. One common proverb states; 'A cow with its tail to the west, makes weather the best. A cow with its tail to the east, makes weather the least.' This is a simple example relating to the fact that a cow will generally stand with its back facing into the wind as they don't like to have the wind blowing in their faces. Westerly winds in the UK generally tend to bring fair weather, whereas easterly winds bring unsettled weather. This phenomenon is usually referred to as a 'Cow vane' (as opposed to weather vane).

Plants are also a common theme in British weather proverbs. The saying; 'when leaves show their undersides, be very sure that rain betides' is widely known in the UK. When humidity and moisture in the atmosphere is increasing, a sign of wet weather, stalks of leaves are softened, this then causes the leaves to turn over. This phenomenon is noticeable in trees, such as poplar, lime, sycamore and lilac that are commonly found in the UK.

It has been suggested that due to the accuracy of modern meteorological methods these proverbs may begin to be forgotten. One study by Freeland (2006) suggests that as many of these proverbs have some scientific basis in fact and therefore potentially have a hypothesis that can be tested, they could be used in school by the children as a simple science experiment. This might be a good way to both keep the weather proverbs alive in younger generations and at the same time engage the school children in simple science experiments that have clear results. While many weather proverbs are reasonably accurate several proverbs were constructed through too limited an observation of the facts and it would be interesting for the children to look at some of these proverbs too and analyze where the creators were mistaken and why.

As we can see the UK also has an abundance of proverbs relating to weather. Japan and Britain have the optical phenomena in common. When we compare the topography of the two countries, Japan has much higher mountains and more complex landforms. Therefore, in Japan there are more proverbs relating to the interaction between clouds and mountains, but in Britain there are few

proverbs on this topic. However, as previously mentioned there are many proverbs using familiar animals in Britain, moreover there are many similar proverbs to those found in Fukui Prefecture or in Japan. If we compare these mutual proverbs it makes for an interesting discussion.

#### 4. Comparison of proverbs in Britain and Japan

Table 1 shows the similarity of weather proverbs both between Britain and Fukui Prefecture and Britain and Japan. The reason for this similarity may be that though the two countries are both very far apart, both are islands surrounded by the sea. In both cases agriculture and fishery are prosperous and the people are very invested and interested in weather.

**Table 1**

Britain	Japan (city or town)
Frogs singing in the evening indicate fair weather for the next day.	When tree frogs croak noisily, it will rain soon. (Kamisihi) When tree frogs begin to croak, it will rain soon. (Fukui)
When kitty washes behind her ears, we'll soon have heaven's tears.	If a cat washes its face and rubs higher than ear with its arm, it will be fine tomorrow. (Mikuni) If a cat rubs its ear when it washes its face with its arm, it will be fine tomorrow. (Yokohama in Tsuruga) If a cat rubs its ear when it washes its face with its arm, it will be fine tomorrow. (Katsuyama)
Seagull, seagull, sit on the sand, it's never good weather when you're on land.	If a seagull comes from the sea to Kuzuryu River, it will be rain. (Mikuni) If a seagull goes up to a mountain, the weather will be rough. (Echizen)
Cows lie down in the field before rain.	If cow lies down it will be rain. (Eiheiji) If cattle have straw on their nose, it will rain before long. (Ohno)
Dogs will start eating grass when rain is coming.	If cattle howl, it will be cloudy or windy. (Reinan area) If a dog bites grass, it will be fine weather. (Katsuyama) If a dog sleeps on a high place, it will rain. (Reinan area)
Wild geese fly high when fine weather is imminent. Storms can be expected when they fly low.	If geese fly to the sea, it will be fine. If geese fly to the mountain, it will be windy. (Reinan area)
Crows warn us of rain when they caw and walk alongside pool and rivers.	If a crow has a bath, it will rain tomorrow. (Nyu area)
When the woodpecker laughs, rain is on the way.	If a woodpecker sings, it will be stormy. (Nisiago in Fukui) If a woodpecker made a hole higher, it will snow a lot. (Imajo)
When bees fly far from their hives and return late, fine weather will come. When rain is due, bees are more industrious, but do not fly far.	If the nest of bees is in a high position, it won't be windy. If the nest of bees is in a low position, it will be windy. (Echizen)

When the bees crowd out of their hive, the weather makes it good to be alive. When the bees crowd into their hive again, it is a sign of thunder and of rain.	
Flies become more annoying just before rain.	If little flies gather under a raindrop, it will rain tomorrow too. (Takahama)
	If there are many little flies, it will snow a lot. (Mikuni)
Gnats flying up and down at sunset predict hot weather.	If there are many gnats in the evening, it will rain. (Mikata)
	If gnats rampage outside, it will rain (Morita)
Spiders spinning webs on the grass means fair weather.	If a spider spin webs, it will be fine weather. (Mikuni, Takahama)
When geese cackle, rain is due, when they honk, a dry spell is coming.	When swans come, there is a high pressure in the west. (Bandai area in Fukushima Pref.)
Swallow flying low means the air is damp and their insect prey are flitting near the ground.	
When ladybirds swarm, expect a day that’s warm.	

### 5. The validity of weather proverbs as teaching materials:

“the Period for Integrated Study” is expected to engage students in the development of “experiential learning” and “problem-solving-oriented learning”. According to “COURSES OF STUDY(学習指導要領)” guide an example of the work that should be undertaken during “the Periods for Integrated Study” is as follows. It states that “experiences in nature”, “social experiences such as volunteer work” and “productive activities”, “observations & experiments”, “study tours or investigations” and “presentations and discussions” are all key factors. Many of these factors have been tackled by Science education in the past.

However it is a worry for modern society that many students, when asked their opinion on Science Education, answer that their perception of the usefulness of science lessons is low. Many students feel anxiety regarding Science Education and the majority of Japanese students answer in the negative to questions such as “Do you regard science conversation to be important in lessons?” “Do you regard science observations & experiments in lessons to be important?”, “Do you regard science research in lessons to be important?” and “Do you regard use and application of models to be useful in science lessons?”.

In research by OECD-PISA with relation to the areas “Students discuss science issues”, “Students are taught how to examine problems or to set up experiments” and “Students have a chance to select their own problems or questions” Japan had the lowest response rate and results of any country participating. It seems then that there are few opportunities in lessons for students to think about how to plan experiments by themselves, engage in deductive reasoning, or even have a chance to exchange opinions with other students and correct misunderstandings.

As it is expected that we actively develop “the Period for Integrated Study” in lessons, of course there must be an opportunity for students to examine or study by themselves. It goes without saying that it is important that students become independently and voluntarily engaged in the ideas presented. To actively encourage this, it is necessary to prepare teaching materials where students can easily gather data with their family or neighbors. In this way students can think by themselves without the constant input of the teacher.

It is also necessary to use somewhat simple teaching materials so that students can arrange to present their findings themselves. The teaching materials should be easy to understand and facilitate multiple interpretations which the student can come to their own conclusion based on the results. The materials should be set up in a way that facilitates figures or photographs that can be used in a presentation. Students should want to present their own research; in this way, they can gain a sense of fulfillment and self-affirmation.

“To think and study by themselves” This is one of the key goals stated in ‘the Period for Integrated Study’. This attitude will be more and more necessary in Japanese education in the future, in order to train students in independent thought and reasoning. Furthermore, this attitude is important in science because the natural environment varies depending on the area and independent reasoning and analysis of the local factors is key in coming to sound conclusions. The pattern or methodology they were taught may need to be adapted to suit the local situation. For example in teaching materials related to education on natural disasters, effective educational activities rooted in the community should be carried out in “comprehensive learning time”. This means that the distinct geography and biology of an area must be researched to get a clear picture of the situation. It is important for science education to cooperate with “the Period for Integrated Study” so that we can provide suitable education in each area.

Weather proverbs are connected to the community and the distinct geographic locations of Japan. They are open for interpretation and this allows students to research and present materials in a way unique and relevant to them and their local area. Weather proverbs are very effective as teaching materials because they can be used in schools throughout Japan and they can be engaging and interesting for students.

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