



Defining tsunamis: Yoda strikes back?



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ABSTRACT

Charting the journey of the term “tsunami” through to its nearly ubiquitous global use today is not simply a case of determining when it was borrowed from Japanese. It represents an almost 1400 year journey from the earliest historical Japanese reference to waves generated by the AD684 Hakuho-Nankai earthquake to a 95.7% usage by international media to describe the 2010 Chilean tsunami. The gradual rise of the term’s usage parallels changes in Japanese society from an educated elite in Kyoto writing down oral event descriptions from various prefectures, to the spread of newspapers, an increasing Western influence and a preference within the education system.

The widespread use of the term *tsunami* throughout Japan was not truly achieved until the same decade that it was adopted by Western scientists to describe the 1946 Alaskan tsunami in Hawaii. The alternative term *kaishou* most likely became less popular simply because it was more difficult to understand in Japanese. While there has been a rapid uptake in Western science, and ultimately its wider adoption, this has been aided greatly by two major events to affect the Hawaiian Islands in 1946 (Alaskan) and 1960 (Chilean). During this time the meaning of the term has also changed with semantic narrowing focusing in on the definition we know today. Along the way there have been casualties, with terms such as *kaishou* now rarely, if ever, appearing. Other terms, which speak volumes about not only the richness of the Japanese language, but also of Japanese experience with tsunamis in the past, now offer us the opportunity to use appropriate qualifying terms to describe the nature of an event. A *souteigai*-tsunami is an unexpectedly large event whereas a *yoda* is a small one.

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1. Introduction

The English-speaking scientific community has gone to considerable pains (and with great success) to convert the media from the inappropriate use of the term “tidal wave” to that of “tsunami” (Clark, 2010).

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The argument here is simple to explain: tides are generated by the gravitational forces of the Sun, and the Moon while a tsunami is specifically described as “a series of travelling waves of extremely long length and period, usually generated by disturbances associated with earthquakes occurring below or near the ocean floor... volcanic eruptions, submarine landslides, and coastal rock falls can also generate tsunamis, as can a large meteorite impacting the ocean” (UNESCO/IOC, 2013).

Whereas the term “tsunami” is now widely used as an international term, its origin is Japanese. In the past, people in Japan conversed in

Japanese but used Chinese characters to write. “Tsunami” is constructed from “tsu” and “nami”, the former indicating “harbour” and the latter “wave”. When written, people used the Kanjis “津” and “浪 or 波” to express “tsu” and “nami”, respectively. This definition includes any form of wave that would be unusually large inside a harbour (Darbyshire and Ishiguro, 1957). However, tsunamis (n.b. Anglicised plural usage) have travelled a long way to get to this point, and nothing is quite as simple as it seems with the etymology of this term having an interesting but convoluted history. We chart a simplified journey of the term through what is a rich history of Japanese culture and language. Indeed, there are many facets of the Japanese language alone that add a complexity to this journey that are beyond the scope of this paper. With this in mind, it is important to note that the Japanese titles and terms discussed below were translated by the authors.

2. Journey through Japanese and into English

In the pre-Edo Period (pre-AD1603) and indeed in much of the subsequent Edo Period (AD1603–1868) there was no term equivalent to the modern “tsunami” in Japan (Fig. 1). Instead of relying on a single term, historical documents tended to describe what happened during an event. For example, one of the oldest Japanese historical documents (AD720), the *Nihon shoki*, described the AD684 Hakuho-Nankai earthquake and tsunami along the Nankai Trough. In this document it was reported to the central government, then in Kyoto, that “large wave run

high up to land and seawater inundated. Due to this, many ships with tributaries were lost away” (大潮高騰、海水飄蕩、由是運調船多放失焉) at Tosa (now known as Kochi) (Tsuji, 2007). The term used for “large wave” was *oshio*. A more recent example from the AD869 Jōgan earthquake and tsunami along the Japan Trench is described in the document, *Nihon Sandai Zitsuroku*. It states “sea mouth barking, the sound was like thunder. Turbulent large wave and the welled-up seawater run the river and quickly reached to the castle town [the present-day Tagajo City in Miyagi Prefecture] that located far away from the coast” (海口哮吼、聲似雷霆、驚濤涌潮、沂洄漲長、忽至城下、去海數十里) (e.g. Sugano, 2014).

As far as we know, the first time that the term “tsunami” (津浪: n.b. the second Kanji 浪 is different to 波, but has the same meaning) appeared in an historical document, *Oudai-ki*, was in AD1524 and referred to the AD1454 Kyoutoku tsunami (Namegaya and Yata, 2014). However, its adoption grew more widespread in the 17th Century following the AD1611 Keicho tsunami that affected the Pacific coast of central Honshu (Tōhoku). According to the records of the Sunpu government, *Sunpu Seijiroku* (also called *Sunpu-ki*), the tsunami is described as “many houses and people [in the current Miyagi Prefecture] were flowed out by the bulging large wave. This is a so-called tsunami” (津波) (Ebina, 2014). Importantly, this document describes Ieyasu Tokugawa, who was founder and first general (shogun) of the Edo Period. The *Sunpu-ki* was therefore an important document and many influential people in Japan made copies of it. This is most likely the reason why the term “tsunami” (津波) became a more popular Japanese word in historical documents after this event.

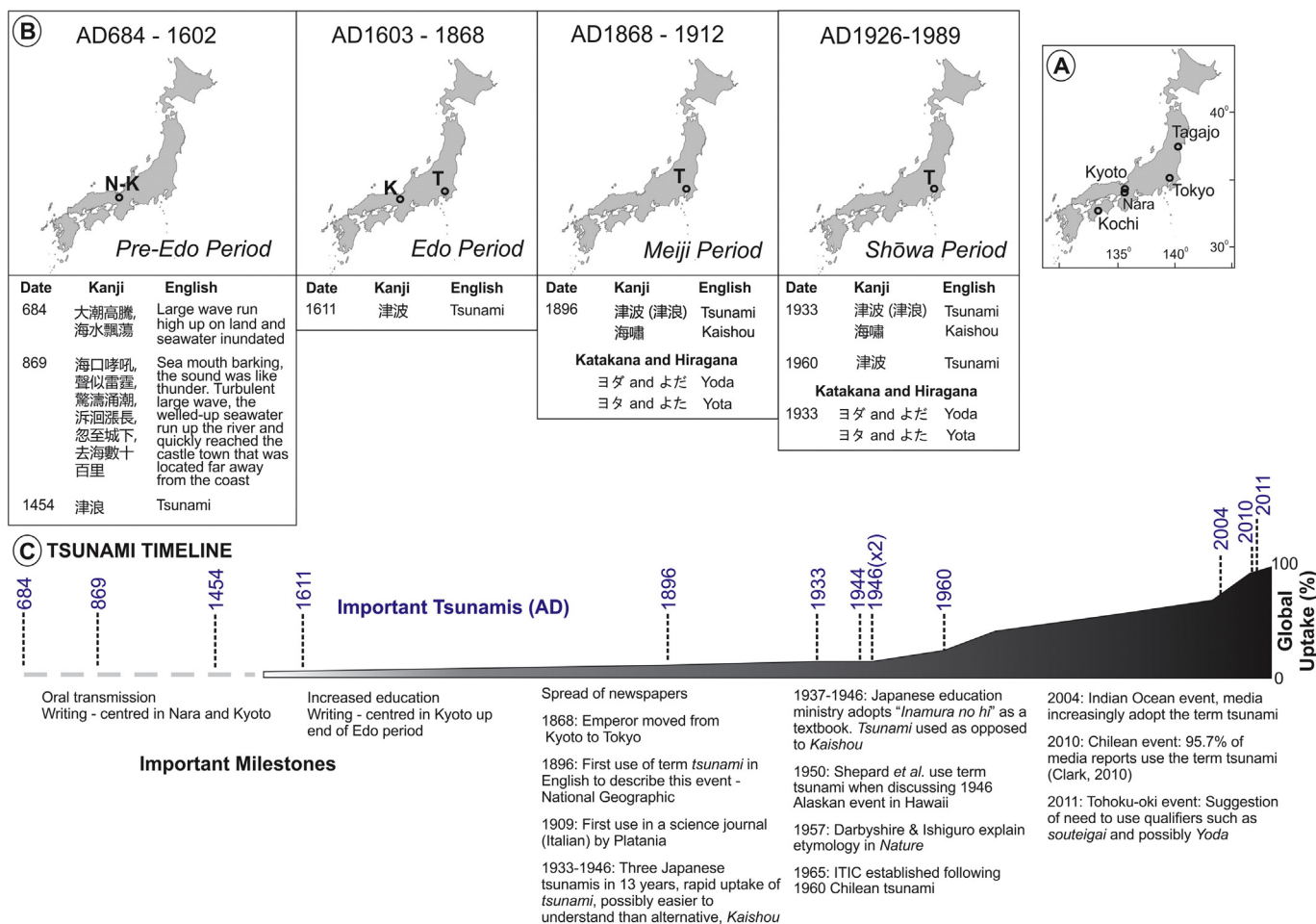


Fig. 1. Summary of historical information relevant to use of the term “tsunami”. A) Map of Japan showing key locations mentioned in the text, B) Relevant Japanese periods indicating capital(s) city at the time – the dates of pertinent tsunamis and the terms used to describe them (in kanji and/or hiragana) with English translations are shown for each period (N-K = Nara, Kyoto: Kyoto became the capital of Japan in AD794. In the century prior to this several other communities briefly held the position of capital of which the most well-known was Nara, about 30 km south of Kyoto), C) Timeline of pertinent tsunamis discussed in the text with important milestones indicating changes in uptake of the term.

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