



## The Origins of Japanese Culture Uncovered Using DNA —What happens when we cut into the world of the *Kojiki* myths using the latest science

**Miura Sukeyuki** – Professor, Rissho University & **Shinoda Kenichi** – Director,  
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**MIURA Sukeyuki:** The *Kojiki* (Records of Ancient Matters) has one distinguishing feature in the fact it includes a mixture of both Southern and Northern style myths. This is proof that Japanese culture was originally not only one culture, but rather came into existence while being influenced by its various surroundings; but when it comes to trying to seek out the origins of that culture, as we would expect, there are limits to how far we can get using only an arts and humanities-based approach. That's where your (Professor Shinoda's) area of expertise—molecular anthropology—comes in and corroborates things scientifically for us.



Miura Sukeyuki, Professor, Rishsho University

By analyzing the DNA remaining in ancient human skeletal remains, your research closing in on the origins of the Japanese people is beginning to unravel when the Jomon and Yayoi peoples and so on came to the Japanese archipelago, where they came from, and the course of their movements, isn't it?

In recent times we've come to look forward to the possibility that, by watching the latest developments in scientific research, we may be able to newly uncover the origins of Japanese culture.



Shinoda Kenichi, Director,  
Department of Anthropology,  
Japanese National Museum of  
Nature and Science

**SHINODA Kenichi:** Speaking of the *Kojiki*, during my time as a student my mentor examined the bones of O-no-Yasumaro, who is regarded as being the person who compiled and edited it. At the time the bones were cremated, but it was the first time I had seen the bones of a historical figure so I remember it well.

Certainly, with the accuracy of DNA analysis rising quite considerably over the past few years, I think that the day when we will be able to bridge the gap between myth and reality is near. Only, because of Japan's acidic soil, it's quite difficult to find old bones that remain intact. There is also the situation that, in comparison to the Pacific side of Japan, researchers' interest in the Sea of Japan side—where we have Izumo and so on—was quite low and the area was not actively excavated, so research has not progressed as it should have done.



**Miura:** That makes the samples discovered at the Odake shell mound dig in Toyama City that you were in charge of last year very valuable then, doesn't it?

**Shinoda:** That discovery was thanks to the Hokuriku Shinkansen (laughs). It was only thanks to the fact that a bridge support just happened to go right through the middle of the site that it was able to see the light of day.

It's a site from around 6,000 years ago (Early Jomon period), but an enormous amount of artifacts have been unearthed. Although the total amount of Early Jomon period human remains excavated nationwide up to that point had been around only eighty sets of remains altogether, a further ninety-one sets of remains came from just this one site.

As luck would have it, we ended up in charge of analyzing the "mitochondrial DNA" of those remains. Let me explain simply what we can tell from this analysis.

Mitochondria are organelles (tiny organs) contained in the cytoplasm in the cells of the human body. Because mitochondrial DNA (mtDNA) is passed genetically from mother to child, if we analyze a certain person's mtDNA we can trace the maternal line of that person's ancestry. By comparing different people's DNA, we can tell in what kind of order branching occurred from a common ancestral line.

There are two things that became clear from the analysis of the human remains found at the Odake shell mound. The first is that none of the D4 type mtDNA that one-in-three modern day Japanese people possesses was detected whatsoever. In other words, it reinforces the theory—as has been said conventionally—that the D4 type comes from immigrant-type Yayoi peoples.

## The Jomon people were not homogeneous

**Miura:** Does that mean that, in other words, it's reasonable to think that a group of rice-growing farmers from the continent became one of the fundamental bases for the modern Japanese people?

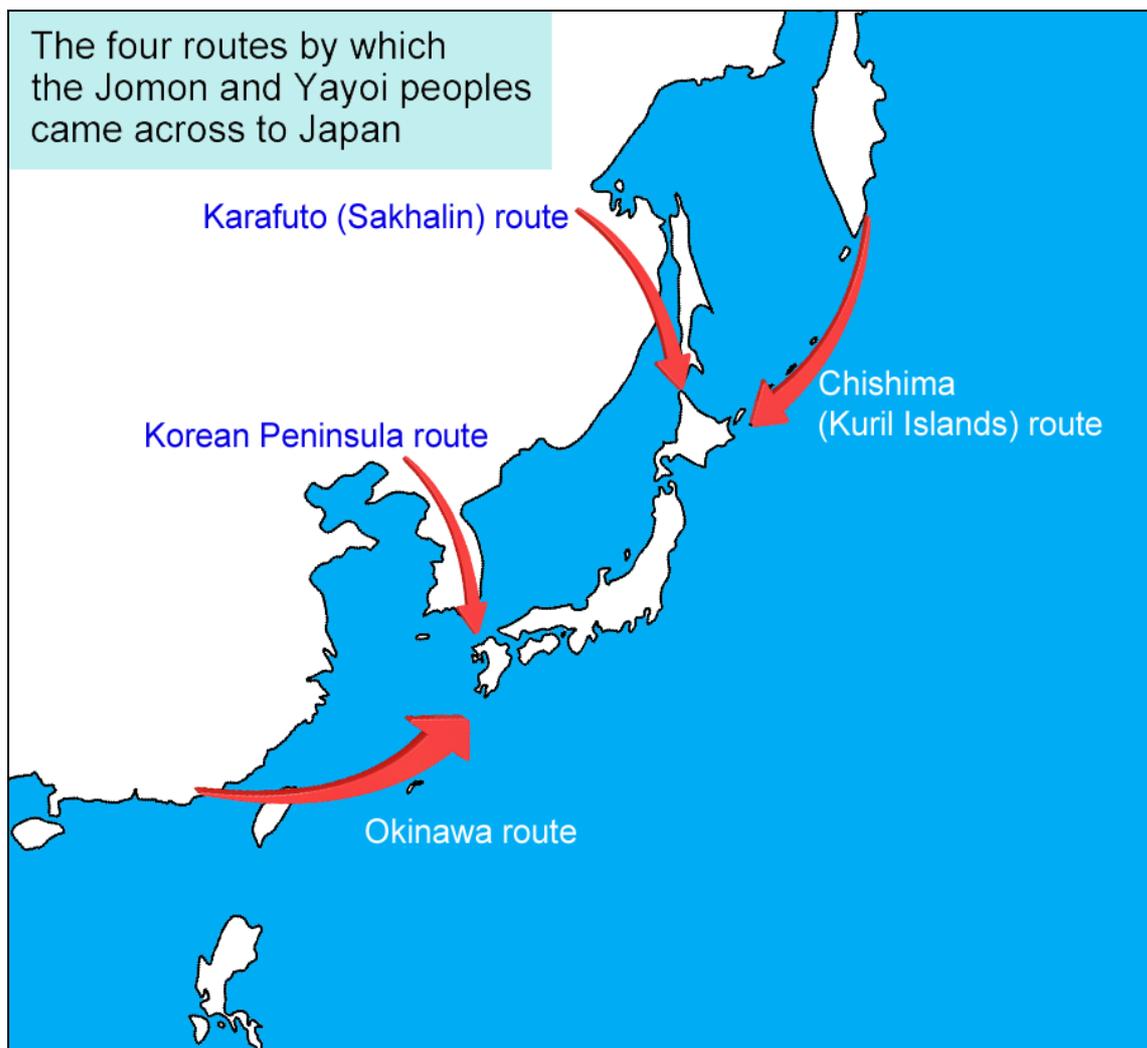
**Shinoda:** Yes, that's right. Only, this D4 group is classified down more finely from "a" to "n"—for example, D4b occurs frequently in the indigenous peoples of Siberia, and so on—and there are many aspects of the roots of these that have yet to be explained. In actual fact, type D4 DNA has been found in the remains of other Jomon people that we have examined. What we can say at this point in time is that it (the D4 type) was born on the continent around 20,000–30,000 years ago, and that later it gave birth to various other types, some of which also came to Japan during the Jomon period. But the main group is that which came to Japan together with rice farming during the Yayoi period.

The second distinguishing feature of the Odake shell mound site is that a mixture of the Southern "M7a" type and the Northern "N9b" type was found there. Although the former type (M7a) is possessed by between 7 and 8% of modern day Japanese, in Okinawa as high as around 24% has been detected—so it is considered that this is the oldest group, which came to the Japanese archipelago first from the south. However, since there is nobody in Taiwan with this type and it is limited exclusively to the Japanese islands, the route by which it entered has yet to be identified.

In contrast to this, remains containing the latter type (N9b) have been found in quite large numbers at shell mounds from Hokkaido, along the Tohoku (north-eastern Japan) coast and in the Kanto area; and



given the fact that it is found frequently in the indigenous peoples of the Primorsky Krai (Maritime Province) area of Russia it is thought that this is a group that entered Japan from the north at a time not too different from that of the former (M7a) group.



(From *DNA kara mita nihonjin* (the Japanese people viewed from DNA) by Saito Naruya, p. 79 diagram, partially abridged)

**Miura:** So is it OK to say that the southern M7a type is a type that is unique to Japan?

**Shinoda:** Yes. If somewhere in the world we examine some DNA and we find this type, we can judge that it is the DNA of someone who is related to a Japanese person or people in some shape or form. Actually, there are around 2 or 3% in the Korean Peninsula, but we think that there is a high probability that they are the descendants of a group that entered there from Japan.

In any case, what we can say from the characteristics of the human remains found at the Odake shell mound is that it's unreasonable to suppose that the people who were living in Japan before the Yayoi people came were "homogenous" Jomon people.



**Miura:** Since some time ago, in the world of archeology too, it has been pointed out—from the differences in the shapes of pottery and stone tools and so on—that Jomon culture was not uniform. For example, in the case of the earliest Jomon period pottery, there is Chinsenmon pottery, which is often found in eastern Japan, and Oshigatamon pottery, which is distributed around western Japan, and it has been acknowledged that there are clear differences in the patterns.

**Shinoda:** When we tried analyzing the DNA—in other words the genome—of the Jomon people using the latest technology, we found that the Jomon people are not similar to anyone, in any period in history, anywhere else in the world. If we look at it another way, they are also slightly similar in small ways to each of the various peoples of regions across a wide area of Asia. What this means is that the Jomon people were probably born within the Japanese archipelago. In other words, in Japanese history there is an extremely long Paleolithic (stone age) period (between 40,000 and 15,000 years ago) leading up to the Jomon period, but during that period—roughly speaking—various different peoples came to the Japanese archipelago from the north and south. What I’m saying is, I wonder if it wasn’t that the Jomon people were born out of the progressive mixing/blending amongst the group brought about by this influx.



PUBLIC DOMAIN VIA WIKIMEDIA COMMONS

Jomon pottery unearthed in Niigata Prefecture.

**Miura:** For a long time, the “dual structure theory” advocated by the late anthropologist Hanihara Kazuro—which states that the Japanese people are a hybrid of the Jomon and Yayoi peoples—was the established theory. But it’s a real surprise to find out that the Jomon people themselves were originally hybrids to begin with.

## The structure of the *Kojiki*

**Miura:** For a long time, the “dual structure theory” advocated by the late anthropologist Hanihara Kazuro—which states that the Japanese people are a hybrid of the Jomon and Yayoi peoples—was the established theory. But it’s a real surprise to find out that the Jomon people themselves were originally hybrids to begin with.

**Shinoda:** What I felt was a weak point in Professor Hanihara’s theory was the point of where did the Jomon people come from to begin with, before the Yayoi people came along. The origins, history and diversity of the Jomon people are becoming clearer through the analysis of the Jomon people’s DNA.

**Miura:** When I read the “dual structure theory” I thought that it could be applied to studies of the *Kojiki*, but it turns out that from the time of the Jomon people northern and southern cultures were already intermixed to begin with, doesn’t it?



**Shinoda:** Yes. If the Japanese people came about from that kind of intermixing, it naturally follows on from that to think that the myths and records of different regions should have remained as elements of that in the *Kojiki*.

**Miura:** The way I see it, the *Kojiki* has a “vertical view of the world” and a “horizontal view of the world,” and each of those respectively has a typically northern and southern character.

To begin with, what appears in the “horizontal world view” is a variety of earthly gods/deities (called *kami* in Japanese), and they are of the type often seen in myths found spread across from East Asia to Indonesia. For example, as shown in the way that the “Ne-no-Katasu-Kuni” ruled over by Susanoo is envisaged as a primordial world far across the sea, the world of the gods is on the other side of the horizon. Susanoo calls this place his “mother country,” and his progeny Ohonamuji (Ohokuninushi) later heads there on a voyage of adventure. The “matrilineal” nature of the stories is another distinguishing feature.

In addition, Ohokuninushi has a wife called Nunagahahime whom he took as his wife in “Koshi-no-Kuni” (Koshi, in the present day Hokuriku region), and it has been said traditionally that Takeminakata, the deity enshrined at Suwa-taisha (Suwa Grand Shrine), was their child. In other words, it can be seen that there was exchange with Izumo, Koshi and Suwa, and we believe that these regions constituted a single cultural sphere during the Jomon period.

On the other hand, the “vertical world view” has the characteristics of northern-type myths. As can be seen in the way that Ninigi-no-Mikoto—the grandchild of Amaterasu—descended onto the peak of Takachiho in Hyuga in the Tsukushi (current Chikushi) area, the gods move in a vertical manner. The stories have a “patrilineal” nature, and are the type of myths seen amongst the Northern peoples, nomads and so on. The *kami* that appear in these stories are heavenly (rather than earthbound), and it went on to be held that the emperors were descended from these gods, linking on to the formation of Yamato. These were probably myths brought into Japan by the Yayoi people.

In this way, I think that the myths of the *Kojiki*, and of the early history of the Japanese archipelago are a hybrid intermingling of the horizontal and vertical axes of southern—horizontal—Jomon and northern—vertical—Yayoi.



One to ten scale model of the ancient Izumo-taisha *honden* main hall 4.8 meter high, Shimane Museum of Ancient Izumo in Shimane Prefecture.



**Shinoda:** By the way, how is this big mishmash of different myths fused into the single story that is the *Kojiki*?

**Miura:** The *Kojiki* is like a kind of novel. The heavens and earth are suddenly created in a place where there was nothing, and then the two gods Izanaki and Izanami come along and make a string of other gods, one after another, and create an island. At the same time, the ancestor of humans—called “Umashiashikabihikoji”—is born. As can be seen from the fact that the Japanese characters *ashi* (reed) and *kabi* (meaning a bud) appear in his name, plant-related imagery is used for humans.

Amongst the deities there are both heavenly and earthbound gods, but the earthly gods magnificently create a world on earth called “Ashihara-no-Nakatsu-Kuni.” Seeing this, the heavenly goddess Amaterasu says, “The earth below is looking pretty good. It belongs to me now,” and dispatches various gods to earth in her attempt to take it for herself.

The earthly god Ohokuninushi eventually surrenders, and Amaterasu descends from the heavens and her descendants become emperors. In short, it's the story of the gods' conquest of the earth. If you look at it in an extremely simplistic way, maybe you could say that it's a mythical-ization of the actual history in which the Yayoi people came along to the world of the Jomon people, conquered the Japanese archipelago, and became its kings.

The stories of the *Kojiki* overlap with those of the *Nihon shoki* (Chronicles of Japan), but one point that differs greatly from the *Nihon shoki*—which was compiled and edited incorporating the intent of the Yamato imperial court—is that it sympathizes with the defeated Ohokuninushi, and tells of what a truly wonderful world Izumo was.

## The Jomon and Yayoi peoples co-existed

**Shinoda:** I see. That's simple and easy to understand. But I have doubts as to whether there really was a major government in Izumo. To put it another way, I have doubts as to whether Izumo was really Jomon, too. The reason being that, because the Jomon culture was basically a hunter-gatherer society, I don't think that they would have been able to build and maintain a national group of that magnitude.

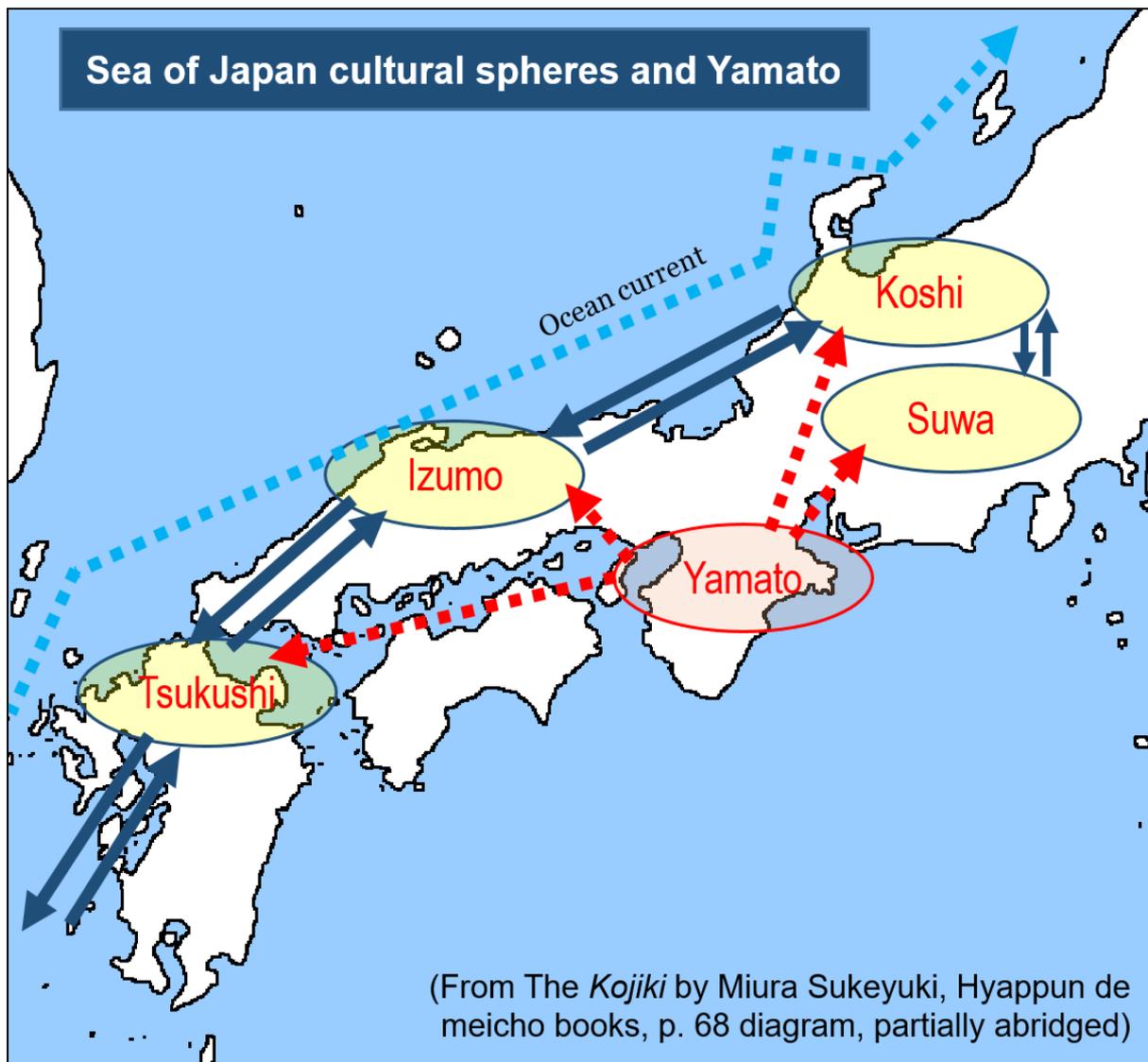
**Miura:** I feel the same way about that. Izumo is made out as being a large nation in the *Kojiki*, but probably that is just giving it a symbolic meaning, and I wonder if in actual fact they didn't have the will to create a big, powerful nation, and it was actually more of a trade-centered collective.

**Shinoda:** In other words, you mean a seafaring race?

**Miura:** Yes. I wonder if Izumo was nothing more than just another one of their bases of operation. The Sea of Japan side has many lagoons, so as long as they had dugout canoes they could do as much seafaring as they liked. They would have had bases in Kita Kyushu, at Izumo, at Wakasa and at Koshi, and would have been connected to inland Suwa, too, via rivers. I'm sure they would have had exchanges with the Korean Peninsula too, across the Sea of Japan. They were both hunters and fishermen, and were also engaged in trade, too.



**Shinoda:** That's reminded me of how people found buried in continental-style graves called *shisekibo* (dolmen) on the Genkainada coast in northern Kyushu all had the deeply chiseled, square eye-socketed faces of Jomon people. I had doubts as to why people in the early Yayoi period—and what's more, people thought to possess burial culture originating on the continent—would have the faces of Jomon people. But it may have been one cultural sphere of the Sea of Japan area.



In actual fact, with DNA analysis too, the D4a type DNA that is said to be the so-called royal road to the Yayoi people was not found much in the remains from the *shisekibo*. So it may be that a collective of people with typically Jomon-like traits formed one large group, and that people who came over from the continent passed on their culture to them.



**Miura:** There are other reasons to think that a Sea of Japan cultural sphere was formed. Four-cornered extrusion-type tombs are distributed widely along the Sea of Japan side.

It has been pointed out that the origin of the Izumo-taisha's colossal Shin-no-mihashira (central pillar) and Suwa-taisha's Onbashira (giant log-riding) festival lie in the giant-tree culture that can be seen in the late Jomon period, centered around Toyama Bay and the Noto Peninsula. Middle Yayoi period urns unearthed at the Sumida ancient ruins in Yonago (Tottori Prefecture) depict an enormous building furnished with tall pillars and stairs, which is the very image of...

**Shinoda:** Izumo-taisha!

**Miura:** Yes, that's right. Before the coming of Buddhist temples, evidence of a culture of raising big wooden pillars cannot be found on the Pacific side of Japan.

**Shinoda:** On the Pacific side too, there are archaeological sites that hint at the relationship between the Jomon and Yayoi peoples. We are told that from the end of the late Jomon period into the Yayoi period, the sites of the Itoku and Tamura ruins on the Kochi Plain maintained strong characteristics as Jomon and Yayoi settlements respectively. In other words, the view that interbreeding progressed right away as soon as the Yayoi people came into the world of the Jomon people is shortsighted, and it's conceivable that there was an age in which the two peoples coexisted without fusing together.

So why were the Jomon and Yayoi peoples able to coexist peacefully, without conflict? I think that it was because of the diversity of the environments in the Japanese archipelago. Although the distance between the ocean and the mountains is narrow, there is an extremely diverse range of environments, and even if farming peoples moved in there it was still possible to live in segregation in that area. If there were only flat land then there would definitely be quarreling, but I wonder if it wasn't that the reason they could get by without such fighting was that in the beginning they were able to share out the territory amongst themselves.

**Miura:** Yes, I agree. For example, in one section of Itoigawa in Niigata Prefecture, jadeite (green jade) beads have been unearthed. The workshops needed to process the jade have existed since the Middle Jomon period, and the prizing of Jade transcends the Yayoi period and extends into the early Kofun (ancient tomb) period. Supposing it was the Jomon people who possessed the techniques to polish this extremely hard stone and make it into beads, it would mean that those people were able to live and preserve their own culture for a fairly long period of time.

## Deifying the losers

**Shinoda:** In contrast to the way in which mitochondrial DNA is inherited matrilineally, Y-chromosomes are passed on only from father to son. The biggest mystery over Japanese people's Y-chromosomes is that although 30% of people in the Japanese archipelago possess the so-called D type, it is hardly found at all outside of Japan. As a result of the fact that integration went well in the Japanese islands, it's conceivable that the genes of the Jomon people have remained as they were until this day, but why is it that they only



remained in the Japanese archipelago and vanished from the continent?

**Miura:** The reason for that is probably that there were no conquests or large-scale massacres in the Japanese islands.

**Shinoda:** Usually, when you talk about conquests, in many cases the men are killed and the women are turned into slaves, and it's usual for the Y-chromosome line of the conquered people to end. Because that didn't happen, it means that an extremely diverse culture blending both Jomon and Yayoi elements should have been passed on in Japanese culture.

**Miura:** Even in the *Kojiki*, it's told that the annihilated losing side gave terms and conditions, promising that if the victors defended the palace properly that they wouldn't "haunt" them, that they would "be at peace" and so on. It was because of this that the imperial family, the victorious side and so on achieved reconciliation—of sorts—by deifying the losers.

If it was the history of another country, it would be normal to uproot and fully beat-down and eradicate the other side. But in the *Kojiki*, Amaterasu of the Yamato line and Susanoo of the Izumo line are made out to be older sister and younger brother, and are in a plot setting where they both have the same roots. This was probably one contrivance devised for the purpose of seeking conciliation between the ethnic groups.

The late historian Amino Yoshihiko advocated the theory that "the differences in accent/intonation between the Kansai (western) and Kanto (eastern) dialects of Japanese have existed since the Jomon period," but the Japanese language is not at all similar to either Korean or Chinese. It's said that this is because Yayoi culture incorporated the Jomon language into it.

**Shinoda:** It has been spoken of in the past as if there was a single, unified "Jomon language," but if we consider the diversity of the Jomon period then surely it's more natural to think that there were a number of different languages. It's probably the case that the Japanese language was created through the intermixing of those languages and the further incorporation of the Yayoi people's language.

It's a topic for future research, but I think that the process of how the transition from Jomon to Yayoi took place is a point that really needs to be unraveled, because I think that period was the most important time for the creation of the Japanese people and Japanese culture.

I believe that the coming of the Yayoi people was not just one single occurrence; that it was precisely because they didn't all suddenly come along in one go that a forceful conquest did not take place. My guess is that first of all there was a group that came in from the Sea of Japan side, and then later a new group that came across from the continent, traveled along the Sanyodo (the region of Japan that stretches from Yamaguchi Prefecture to Hyogo Prefecture on the Seto Inland Sea side of Honshu) from Kyushu, and went on to build the Yamato imperial court.

## Newer Gods are Better

**Miura:** That kind of flow of peoples and cultures is linked to the modern "import worshipping" mindset



that good things come from across the seas. In modern technology and food culture too, Japanese people thankfully and voraciously import and incorporate any and everything they can.

I also think that we have that consciousness with regard to *kami* too, that a new one coming along packs more of a punch. Of course there are *kami* whom we have been worshipping for a long time, but we don't consider that "our god is everything." I'm sure there are plenty of homes in the countryside where their household altars are overflowing with *kami* (laughs).

Japan's *jinja* (Shinto shrines) always have a set enshrined deity, and nowadays it would be a *kami* who is connected with the imperial family that is enshrined there first; be it Amaterasu, or Ninigi-no-Mikoto who descended to earth in the *tenson korin* story, or some other deity. There are many of these that have been changed in modern times due to the flow of state-sponsored Shintoism. But in actual fact, even before that, *kami* were something that changed continuously in Japan anyway.

For example, there is a famous shrine at the tip of the Shimane Peninsula called Miho-jinja, and it is written in the *Izumo fudoki* that "a *kami* called Mihosusumi-no-Mikoto resides there." However, and we don't know when this happened, at some point it was changed, and from then on right up to the present day two *kami* named Kotoshironushi-no-Mikoto and Mihotsuhime-no-Mikoto have been enshrined there. A typical example that is familiar to us is Inari. If a certain household worships Inari and is prosperous in business, then suddenly everyone goes and re-enshrines Inari in their family shrine (laughs). Japanese people actively incorporate new *kami* that are considered to be the most powerful at that particular time.

It's a pity that amidst that influx of new culture that fantastic Jomon pottery was completely usurped by Yayoi pottery, though...

**Shinoda:** Yes, as we go down through the ages, in the end Yayoi culture goes on to completely blanket the whole of Japan, doesn't it. This is just conjecture on my part, but Yayoi culture is a kind of set of tools specialized towards growing crops. So I think that when people began crop farming, at the same time as their lifestyles changed, the tools they used changed too. In the end, as expected, wasn't it that priority was given to the necessities in life?

**Miura:** I personally feel that, for example, the beauty of Jomon pottery and so on is something universal. How about you Mr. Shinoda? The items of Jomon pottery found at the Uenohara ruins in Kagoshima are really beautiful. They are self-standing, with square bottoms. It makes me think that Jomon people, too, had an aesthetic sense of beauty that still translates even to modern times.

## A buildup of wisdom

**Shinoda:** It's said that when *Homo sapiens* originally set out on a journey from Africa some 60,000 years ago that they were actually extremely few in number, probably somewhere between a few thousand and a few tens of thousands. Since they are now the ancestors of the 6 billion humans outside of Africa, even saying that they were of a different ethnicity or from a different era and so on there is no way that the capabilities and senses of humans can have changed that much in that time. It's only natural that we should find something that the Jomon people found beautiful to be beautiful, too.

But because we constantly possess both the intrinsic values that humans hold universally and the



values that were fostered historically later on, I think it's important to consider which of those two the things that are occurring right now come from.

The thing that set off the recent terrorist uproar was a cartoon drawing published by a French magazine that caricatured the prophet Muhammad. The reason that believers of Islam considered this to be the greatest insult is due to those very same acquired values born out of the cultural diversity built by humans. On the other hand, the so-called Islamic State's atrocious murder of hostages and streaming of that footage for all to see is a challenge to the values possessed universally by humans. In other words, looking at it as a whole, both the fundamental roots and diversity of culture are coming into play there. I think it's that kind of phenomenon.

Now in Japan we have a unified culture, but because we are living right slap in the middle of it we have a tendency to take the view that Japanese culture is the be-all and end-all of everything, don't we? But looking genetically at the roots of the Japanese people, we've found that we were formed by repetitive fusion, and that we created mechanisms for minimal exclusion of new things, and continually maintained our groups. Having pride in one's own culture is important too, but I think that we should be aware that the culture we have now is not the peak.

**Miura:** I don't think it's good to take the tone of declaring that Islam is intolerant because it's a monotheistic religion, but Japanese religions—by way of being animist and polytheistic—definitely do have the distinguishing feature of having been able to accept any and everything.

When Buddhism came into the country, too, it was accepted in the form of a new god that had come along from outside. It might be that this kind of tolerance is actually just what is needed right now.

**Shinoda:** Geographically too, Japan is in a region that forces it to go on accepting and incorporating new things. People flow to Japan from the continent and get piled up here, and—as there is nothing beyond here except the Pacific Ocean—they can't leave. In the beginning they lived in segregation, but as farming spread the population increased and they became unable to do that, too. And after all, amidst those circumstances, they decided to go on living together, heading in a direction with as little conflict as possible.

**Miura:** That kind of spirit is expressed in the world of the *Kojiki*, too.

**Shinoda:** If we analogize the 40,000 years since the Paleolithic era when people began living in the Japanese archipelago up to the present day as a single year, then the beginning of the Yayoi period (3,000 years ago) equates roughly to December 7, and everything from the Meiji period (1868–1912) onwards fits almost into the span of the single day of New Year's Eve. Even if a human being lives eighty years it comes to nothing more than eighteen hours. We should be sure not to forget that, looking at this long history, we are by no means standing at the pinnacle, but rather merely at the edge of the history of the Japanese people; a history which will continue on long from now, too.

*Translated from "DNA de Nihon bunka no Kigen ga wakatta— Saishin kagaku de 'Kojiki' shinwa no sekaini kirikomuto (The Origins of Japanese Culture Uncovered Using DNA— What happens when we*



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*cut into the world of the Kojiki myth using the latest science),” Bungeishunju, April 2015, pp. 334-343. (Courtesy of Bungeishunju Ltd.) [April 2015]*

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