Archaeological Craftwork: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2019

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Introduction

This article introduces the early stages of an ethnographic research project that broadly examines the production of archaeological knowledge in Japan. The ethnography follows a five-year archaeological project, led by the authors of this article, that began in 2019 with limited excavations of a Jomon settlement at Suwahara site in Hokuto City, Yamanashi Prefecture. It will continue through several more field seasons, years of analysis of remains, recording results in a site report, and up to the end-goal of making a reconstructed Jomon period pit dwelling at Umenoki Historical Park in Hokuto City.

The ethnographic side of this investigation seeks to understand the communicative and performative activities that underlie our knowledge of the past. The histories written about the ancient past are based upon artifacts and remains left by people long ago. By themselves, however, these objects do not speak about people's lives and behaviors. It is only through the complex orchestration of activities by people in the present that they come to communicate about the past. This article seeks to illustrate the social dimensions, the learning processes, the creation of classification systems, as well as acts of negotiation that take place

before and during excavation. In focusing on these aspects, we hope to understand how archaeologists transform excavated remains into data and how these data are then mobilized to create our stories about the ancient past.

This project is unique for its long-term and multi-sited scope. Over a period of five years the principle investigators,[1] an American cultural anthropologist and Japanese archaeologist, will follow an archaeological project from its conception, excavation, analysis, and up through site development and utilization activities. In previous studies, ethnographers have contributed to archaeology by: 1) providing comparative ethnographic evidence to explain historical remains; 2) facilitating community outreach programs with the indigenous and local residents; 3) observing the social and political dynamics during archaeological digs; and 4) analyzing representative strategies at heritage sites (Hamilakis and Anagnostopoulos 2009; Castañeda and Matthews, eds. 2008; Mortensen and Hollowell, eds. 2009). Each of these varied phases and aspects of archaeological investigation entails a different set of issues and problems (Edgeworth, ed. 2006). By directly experiencing the many sites where archaeological activities overlap, merge together, and contrast with one another, we hope to shed new perspectives onto how archaeological knowledge takes shape in (while also shaping) our world today.

In this article, archaeological knowledge is described as a type of craftwork. Knowledge of the past does not simply reveal itself through archaeological "discoveries." Rather, as Shanks and McGuire explain, archaeologists actively

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(1) Ertl is trained in cultural anthropology and has never previously participated in excavation. He has experience with archaeological laboratory work, including the sorting of pottery, searching through sifted remains, and conducting the prep work for samples run through accelerator mass spectrometry analysis (see Fujii, Sumio and John Ertl, eds. 2013). Yoshida Yasuyuki is co-investigator of this project and has a PhD in archaeology with an emphasis on the Jomon period. Central among the project collaborators is Sano Takashi (Hokuto City Archaeology Center) who has been conducting archaeology in the area surrounding Suwahara for decades. Such a project of this nature would not be possible without the many people in Hokuto City who have supported our project.

Table 1: Timeline of research activities.

Phase	Date	Activities
Pre-excavation	2 December 2017	Visit: Hokuto City Archaeological Museum, Kinsei Site Park, Hokuto City Archaeology Center, Umenoki Site Park
	3 December 2017	Visit: Umenoki Site Park Public Lecture at: Hokuto City Archaeological Museum
	1 May 2018	Umenoki Site Park (discuss research ideas with Sano Takashi)
	30 April 2019	Umenoki Site Park (planning for excavation with Sano Takashi)
	15 June 2019	Umenoki Site Park, Suwahara Site (discuss reconstruction with Keio Students and Sano Takashi)
Excavation	11–24 September 2019	Suwahara Site (excavation)
Post-excavation	9 January 2020	Hokuto City Archaeology Center (clean and prepare pottery)
	10 January- 1 February 2020	Laboratory work at Keio University (clean and prepare pottery)

"craft facts" out of what is otherwise "a chaotic welter of conflicting observations" (1996: 78). Archaeological data collection and interpretations are types of productive work that are directed toward specific purposes (e.g. publication of a site report) and respond to practical social needs (e.g. heritage conservation). As with other crafts, archaeology is based on the mastery of skills that, through their training and experience, become embodied in practitioners. The cognitive skills to view and create order out of historical remains are combined with the physical abilities to work the soil as well as the technical knowhow to use different equipment.

This article is presented as a narrative reflection on our archaeological excavation at Suwaraha site (Table 1). It is divided into two sections, the first introduces the background to this study and provides a narrative overview of the

events that led into the formation of this project. The second details the excavation work conducted over two weeks in September 2019. It introduces the concept of "archaeological vision" as an acquired skill to look at and understand a site and its remains, which is not only a perceptual ability but also the technical skills to craft a visible site. This section also examines the coding and classification practices that enable remains to be processed into forms like maps of artifact locations. It follows one particular potsherd to show how the coding process works transform it from a memorable discovery during excavation into archaeological data that can be compared to similar remains.

Pre-excavation

This section introduces the background to this project, describing several issues that arose in the planning and conceptualization stages, up to the point where permission to excavate was confirmed. From the outset, it may seem odd that Ertl, a cultural anthropologist with no previous experience, could be principle investigator for an archaeological excavation.[2] The easy explanation, at least in respect to funding, is that this is not an archaeological project. Funding comes from the Japanese Society for the Promotion of Science (JSPS) under the section "cultural anthropology and folklore." [3] It was submitted as an ethnography of field-based and laboratory science work, which are increasingly common in anthropology as questions of how the sciences shape our society become ever more pressing

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（2）　In this article, the many people who are introduced and discussed are primarily referenced by their family names without the use of titles or honorifics.

（3）　This JSPS research project: "Ethnography of Archaeological Excavation, Laboratory Analysis, and Site Development," is a Grant-in-Aid for Scientific Research (B) (19H01394) for fiscal years 2019 to 2023. Co-investigators are Yoshida Yasuyuki (archaeology, Kanazawa University) and Ikari Yoko (cultural anthropology, Meiji University). There are many additional collaborating scholars who have assisted in the development of this project and will assist in various facets of its execution. Only some of these individuals are mentioned in this article.

(Latour 1987, 1999). Even with the recognition of the academic merits of this project by JSPS, funding alone does not provide access to dig archaeological sites in Japan.

On the surface, the only requirement to lead an excavation in Japan is permission from the local management authority, usually the municipal board of education or archaeology center. Permission, however, is not easily granted: the 1950 Cultural Property Protection Law (*bunkazai hogo-hō*) (particularly articles 92–96) mandates these institutions to protect, manage, and maintain buried cultural properties as well as disseminate information about them. As such, institutions grant permission to those they can trust to properly record information and preserve remains. The result is that excavation work is only delegated to individuals and organizations deemed credible. This element of trust that underlies scientific inquiry has been discussed by Anthony Giddens (1990). He explains that in contrast to traditional forms of trust, which develop in face-to-face relationships, the sciences are formed into "expert systems" in which credibility is institutionalized through certification and membership. Interestingly, however, archaeological excavation in Japan does not require any license, certification, or membership in academic associations to be the principle investigator. As such, the process by which one may enter the confidence of management authorities is vague.

Stumbling upon an excavation site: Our introduction to Suwahara

Ertl and Yoshida have conducted collaborative fieldwork since 2013. From early on, we discussed how difficult it was to do excavation in Japan today, as a project leader or even as a volunteer.[4] We talked about wanting to join an excavation,

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(4)   For example, Yoshida explained that in the past, archaeology students could easily find work at an archaeological dig. Today, however, increased bureaucratization and specialization has made it ever more difficult for students or non-professionals to join excavations as short-term workers or volunteers. One issue that was raised in our conversations with practicing archaeologists is that there are new issues of liability (e.g. in

although we never sought out such opportunities. Two factors underlie the formulation of this research project. First is Yoshida's background and training in archaeology and, in particular, his doctoral research and many publications on Jomon period ear ornaments (*mimi-kazari*) (Yoshida 2003, 2004, 2008, 2013). Second is the publication of an edited book by Yoshida and Ertl (2017) titled *Japanese Archaeological Dialogues*, which is a collection of seminar presentations we hosted with support from Kanazawa University Center for Cultural Resource Studies. One of the themes in this book is how Japan's prehistory has been represented in art and architecture, including Ertl's chapter on the diverse factors that influence how buildings are reconstructed.

These two factors converged in December 2017 when Yoshida was invited to give a lecture on Jomon ear ornaments at the Hokuto City Archaeological Museum.[5] The museum was hosting a temporary exhibit of its ornament collection; which Yoshida had examined for his research in the 2000s. We arrived a day early so that we could have time to look at the museum and visit nearby sites. We were warmly welcomed at the museum by Sano Takashi, the senior manager of Hokuto City Archaeology Center. Having met Yoshida over a decade ago, Sano bantered, "Ah, you got a mustache!" Sano was holding a copy of our co-edited volume that was sent in advance by Yoshida. Sano had lined the book with post-it notes, especially in the sections on architectural reconstructions by Ertl and Takada Kazunori (Director of Goshono Jomon Museum in Ichinohe, Iwate).

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cases of injury on site) that discourage the hiring of inexperienced part-timers. A more direct explanation was given once by Okada Yasuhiro, archaeologist for Aomori Prefecture who gained fame for his involvement at Sannai-Maruyama. In a conversation about work for archeology students today, he said that in his experience that university graduates today are completely inept and unprepared to take part in excavations. Asking if Aomori Prefecture would host archaeological field schools for training purposes, his only response was that doing such is not part of their work mandates.

（5） The title of Yoshida's talk on 3 December 2017 was "A view of Jomon society from ceramic ear ornaments" (*Dosei mimikazari kara mita Jōmon shakai*).

Figure 1: Reconstructed buildings at Kinsei site. (2 December 2017)

It turns out that Sano and Yoshida first met at Umenoki site in Akeno Village (presently Hokuto City) when it was undergoing excavation as a rescue archaeology project. Umenoki is a Middle Jomon circular settlement (*kanjō shūraku*) with over 150 pit houses and a unique Jomon-period pathway leading to a nearby stream. These features led the site to be designated a national historic site (*kuni shitei shiseki*) in 2014 and thereby save the site from full excavation. At the time of our visit in 2017, the site was undergoing redevelopment and was scheduled to be opened as Umenoki Site Park in April 2018. Sano explained that he has been soliciting volunteers to assist in rebuilding an authentic Jomon landscape and invited us to build our own pit house at the site park.

During this reunion in 2017, Sano first took us to Kinsei site park (Figure 1), which has three reconstructed pit dwellings designed with wattle and daub walls and thatched roofs. These "standing wall structures" (*kabe-dachi kōzō*) are unique among Jomon period reconstructions in Japan. Sano explained that Kinsei is located the former Oizumi Town (presently Hokuto City) and that he was not

Figure 2: Sano Takashi and Yoshida Yasuyuki looking at the reconstructed Jomon pit dwelling at Umenoki site. (3 December 2017)

involved in making them. Pointing out many problems, he said, "I am unhappy with these reconstructions, as no concrete evidence was used to justify them." He said that he hoped to one day be able to rebuild them if new data from excavations becomes available in the future.

Next, Sano brought us to the former Akeno Village Archaeology Museum, which is currently used for storage and as a research facility. The old displays were covered in books, equipment, and half-rebuilt Jomon pots. Looking at the panels, a clear theme could be seen. Each section paired photographs of prehistoric tools or archaeological features alongside contemporary ethnic groups that display similar cultural patterns. Sano said this comparative ethnographic approach is relatively unheard of at Japanese history museums. His decision to design the museum in this way, he said, was a natural extension from his training in the Archaeology and Ethnology course (*minzokugaku kōkogaku kenkyū shitsu*) of Keio University – one of only a few courses in Japan to combine archaeology and anthropology.

Our last stop was Umenoki site (Figure 2). The paths, parking lot, and on-site

facilities were still under construction at the time. Sano showed us around the park where they were conducting experimental projects, including a pit dwelling that was half-built at the time. Sano talked at length about the design and philosophy behind the reconstruction. Notably, he discussed how the design was inspired from the houses of the North West Coast Native Americans that are described in early ethnographies. The characteristics of the house was the use of bark and soil for roofing and the placement of a skylight at the top that can, in theory, be used as an entryway when needed (e.g. in case of heavy snow).

Leaving Hokuto, we were excited at Sano's offer to design and build our own Jomon pit dwelling at Umenoki. At the same time, we thought that there would be little academic merit to build our own building based on data gathered by others. Over the next weeks, we contemplated this current project, which Sano has enthusiastically supported. The only limitation is that we could not excavate at Umenoki site. As a national historical site, preservation is paramount, and any new excavation would have to be justified and agreed upon by the Agency for Cultural Affairs (*bunkachō*). Sano suggested that we excavate Suwahara site, which was comparable to Hokuto in respect to historical period and site composition. Moreover, the site had already been surveyed, academic field schools had been run at the site until recently, and the owner would be happy to let us use the land.

Skepticism and credibility: Controls over the production of archaeological knowledge
By April 2019 we secured funding from the Japanese Society for the Promotion of Science. With support from Sano, we received permission to excavate from the landowner and we made plans to start in September. The next step was submitting the notification of archaeological excavation. It was here that the project faced its first wall of skepticism.

Before commencing excavation, a municipality must submit a notification document of excavation research (*hakkutsu chōsa todoke*) to the prefectural board

of education. Sano took the initiative to prepare this application, reworking Ertl's JSPS application into a convincing argument for us to excavate at the site. Not knowing the details of the application procedure at the time, Sano suggested that instead of Ertl, we should put Yoshida's name on the document as head of the Suwahara excavation. Many months after the excavation, we had a chance to talk with one of the members of Yamanashi Prefecture board of education. She implied that the initial correspondence with Sano was met with suspicion, in part due to the unique proposal, but most directly because of the name Ertl appearing as project leader. Even though Ertl is principle investigator for the JSPS grant, that did little to explain who he is (a foreign-national professor in the economics department of Keio University) and why he would make a credible site archaeologist (as someone who has no experience with excavation).

Yoshida submitted the document under his name through Hokuto City. The main purpose outlined in the Suwahara excavation proposal was to rethink existing methodologies and seek alternative excavation methodologies that would assist in reconstructing the Jomon pit dwellings.[6] Following the submission, Yamanashi Prefecture board of education made several inquiries to Sano. Their correspondence, which Sano later shared with us, showed some misunderstandings about the aim of the project. None were major issues, and Sano clarified their questions without problem. At the end of their written questions, the board of education reasserted a general suspicion about the potential merits of this project, stating that there is

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(6)　The application stated that we would excavate at Suwahara, limited in scope to one Jomon period pit house, with the aim of developing new excavation methodologies (relying on emerging forms of scientific analysis) that are aimed at recovering data that would assist in reconstruction. The justification for the project is that most reconstruction projects are only conceived after excavation has taken place. This means that most excavation is focused on garnering data needed for publishing a site report, which will accurately report the location of artifacts, include maps and section drawings, and contain a photograph of cleared out pit houses.

already a vast amount of existing research on Jomon period pit houses. They emphasized that "preservation is preferred," implying that our research may lead to an unnecessary destruction of archaeological resources.

It may be that any proposal for academic excavation requires justifying the potential merits over the unavoidable "destruction" of archaeological resources. Looking at Sano's response, however, it appears that he felt an unnecessary amount of suspicion was being directed toward our project. His direct response to their concerns clearly restated our intended contributions and explained the types of analysis we intended to conduct. Immediately following, he wrote:

> (From here is Sano's personal opinion)
>
> While it is unquestionable that the Cultural Properties Protection Division (*bunkazai hogo-bukyoku*) should wish to protect archaeological resources to the extent possible, the development and evaluation of new research methodologies is challenging in the context of our everyday bureaucratic-excavation (*gyōsei-hakkutsu*). While the success or failure of this research is uncertain, I do not think entrusting the fate of one pit house to such eager scholars will lead to the destruction of archeological resources. What do you say?

No further questions or hesitations were posed by the prefectural board of education. With our project accepted, it became one of approximately 150 excavation projects for the purpose of "academic research" (*gakujutsu-chōsa*) throughout all of Japan (compared to the over 8,000 rescue excavations and 60,000 surveys related to construction) (Agency for Cultural Affairs, Second Cultural Properties Division 2019: 17).

This episode illustrates the challenges in garnering permission to excavate archaeology sites in Japan. The Cultural Property Protection Law of 1950 set out a

system to balance the needs for protecting cultural resources with the impending development of the postwar recovery period. It was one of the earliest examples of such legislation worldwide (Okamura 2011) and it responded to archaeologists endeavors to rewrite Japan's early history, free from the imperial nationalism that had supported the wartime expansionism (Habu and Fawcett 1999, 2008). It set into place a check on postwar growth by requiring developers to fund archaeological excavations if their projects will destroy buried cultural resources. It also created the heritage designation system that allows for the protection of sites and artifacts, supporting the growth of heritage tourism with the creation of outdoor parks and museums. As a consequence, a system of bureaucratic institutions (boards of education, archaeology centers, and history museums) were entrusted with the protection of archaeological heritage. This has led into the current bureaucratic archaeology system that delegates responsibilities for excavation, analysis, and recording of sites and remains. The drawback of this effective system is that it has created rigid boundaries and expectations in regard to what are acceptable archaeological practices.

There are an increasing number of people who are inspired by Japan's archaeological remains (Yoshida and Ertl 2016; Furuya 2019), which has raised questions as to who should have access to sites and remains. While there is often a clear path for anyone to view and consume archaeological heritage at museums and through outreach activities. Our experiences in receiving permission to excavate at Suwahara site, however, are illustrative of the boundaries to the production-side of Japanese archaeology. In this process, we have learned that the qualifications necessary to be a site archaeologist are only partially based within institutionalized "expert systems" – as Yoshida's doctoral degree in archaeology and membership in the Japanese Archaeological Association (*Nihon kōkogaku kyōkai*) were important, although never mentioned directly. Certainly, Yoshida's early research on Jomon ear ornaments and Ertl's work on dwelling reconstructions were the initial factors

that brought us into the attention of Sano Takashi at Hokuto City Archaeology Center. Yet his support for our excavation was based just as much on Sano's personal evaluation of our eagerness and built upon layers of interpersonal trust.

The suspicion directed toward our project by the Yamanashi board of education is understandable. Neither our qualifications nor our research proposal directly aligns with their understanding of what constitutes proper archaeological practice. In looking at the communication between Sano and the prefectural board of education, it is interesting that justifying our project based on its academic merits was not enough. He concluded by making an appeal based on interpersonal trust. His personal postscript contains the implied message that the board of education's trust in Sano should be extended into support for our project.

Excavation fieldwork

The primary goal of excavation fieldwork is to reveal different aspects of the human and natural remains that can be used to reconstitute the past. A glance at any archaeological site report will show many different maps, section drawings, artifact illustrations, images of reconstructed pottery, and photographs of site features. These are all different methods to help visualize a site, which in turn helps explain what happened in the past. Excavation entails crafting a site into various shapes that can be seen and recorded. Yet for all the certainty in which a final site report presents its results, the archaeological site begins as a place of uncertainty and potential.

Preparing the site to bring the past into view

This section examines how archaeologists come to view and make sense of the archaeological sites they work at. Over the course of their work, archaeologists develop what Charles Goodwin has termed professional vision (1994), a normalized way in which members of a specialized community view and

Figure 3: Map of previous survey results at Suwahara site prepared by Sano Takashi before excavation commenced. The handwritten comment by Sano reads: "The gray indicates the possibility of "dwellings," however, the "blank" areas does not mean there are no dwellings." (11 September 2019)

understand the fields of activity they participate in. Working at a Jomon site, for example, one of the earliest challenges our group experienced was learning how to separate potsherds from rocks, as their colors and shapes are almost indistinguishable when covered in dirt. An "archaeological vision" is a learned perceptual skill that allows one to distinguish relevant from extraneous features at a site. At the same time, the way an archaeologist views a site is socially determined through communication and interactions with others as well as through the use of simple and complex tools to manipulate the environment in ways that make it easier to see.

Before excavation at Suwahara, Sano explained that with the two-week timeframe we set (11–24 September 2019) the most we could hope for is to identify the location of one or more pit houses. Ertl thought this was a conservative estimate, especially as we were provided maps that had clearly marked outlines of pit houses that were identified during surveys several years earlier (Figure 3). Sano

was right, of course. While clearly outlined on the map, the remains of pit dwellings proved to be elusive, partial, and seemed to shift location as we worked. In short, our efforts during the field season were directed toward making the Jomon period pit houses "visible." Yet, by the time we left the field, we wondered to what degree do archaeologists uncover remains of the past or do they, in fact, craft their sites in ways that bring features like pit houses to the fore.

Several people participated in this excavation. To briefly introduce, the excavation was directed by Yoshida Yasuyuki (Kanazawa University) and John Ertl (Keio University). Three students from Keio University economics department (Kodai, Asaka, and Ryo) joined as part of a year-long seminar led by Ertl. Collaborating institutions were Hokuto City Archaeology Center and Kayagatake History and Culture Institute (*Kayagatake rekishi bunka kenkyūjo*), commonly shortened to Kayabun. From the Archaeology Center, Sano Takashi directly assisted with excavation and was the primary contact person for any local issues. We were also assisted by Takita-san (Hokuto City Board of Education) who provided instruction on the use of the "total station" to record the locations of artifacts. From Kayabun, Ito-san (director) and Inagawa-san (office manager) provided equipment and made arrangements for the rental of an excavator. They also arranged to hire two individuals who joined the excavation during its first days: Oshima-san who operated the excavator and Kaoru-san who cleared the site following the excavator.

Ertl arrived at Suwahara on September 11, a few days before Yoshida and the students from Keio. Arriving just after noon, a 4-ton excavator and a portable toilet had already been delivered to the site. Ito and Inagawa from Kayabun were talking with Oshima, the operator of the excavator. At this time, the site was nothing more than an empty field with recently cut weeds and grass. The four of us looked over a file of documents that Sano prepared earlier that morning. These included a satellite image of the site with penciled in marks demarking the area previously excavated

Figure 4: Satellite image of excavation area at Suwahara site demarcating the area previously excavated by Showa Women's University and the three trenches that were excavated. The original was handwritten in red ink by Sano Takashi and given to Ertl before excavation commenced. (11 September 2019)

by Showa Women's University and three outlines for where we should dig trenches (Figure 4). On the first afternoon, Oshima used the excavator to remove the foliage and begin digging the first trench. As a heavy storm was approaching, we stopped at the first sign of rain in mid-afternoon.

On the second day, Ertl and Oshima were joined by Kaoru, who specializes in survey excavations for new construction projects. Quickly and adeptly, Kaoru and Oshima worked in concert to clear out all three trenches in one afternoon (Figure 5). As the land had been surveyed before, there were few surprises in removing the top layers of soil and sand. As the excavator pulled away all but a thin layer of sand, Kaoru followed behind with simple garden scoops (bent and filed to make a sharp edge) to clear away the rest. As she worked down the trenches, Oshima carefully remove the sand with the excavator as it piled up. The only trench to reveal significant remains was "trench 2."

Figure 5: Trench 2 at Suwahara site as it is being excavated by Oshima and cleaned by Kaoru. (12 September 2019)

Figure 6: Sano Takashi and Kaoru looking at sub-trench 2 at Suwahara site. (13 September 2019)

In the late afternoon, Sano came to check on our progress. Consulting with Kaoru, they looked at trench 2 and pointed to different locations. Sano borrowed one of Kaoru's garden scoops and marked off a partial circle where he could "see" outlines of two pit houses along the trench. He directed Ertl and Kaoru to dig sub-trenches and marked two sets of lines perpendicular to the trench. Both sub-trenches revealed many pottery and stone remains and Kaoru was able to reach what she concluded was the floor of a pit house – which she explained could be identified by a change in the color of the soil. We finished the day carefully packaging the remains into plastic bags and, for the time being, returning them into their respective sub-trenches.

Sano came again in the morning of the third day (Figure 6). He was pleased to see that the pit house – or rather the sub trench used to identify it – was well preserved and seemed to go down about 50 centimeters. Considering the size of

Figure 7: Sano Takashi and Yoshida Yasuyuki at Suwahara site looking at expanded field and discussing where pit dwelling features may be located. (14 September 2019)

Jomon pit houses, he directed Oshima and Kaoru to dig out an area surrounding the trench approximately 8 meters by 13 meters in size. For the remainder of the day, the soil and sand were quickly removed by Oshima in the excavator. Kaoru rushed behind to clear away the remaining sand and to shave away a thin layer of soil with her garden scoops. This was the final day for Oshima and Kaoru at the site.

On the fourth day (September 14), Yoshida joined Ertl at the site for the first time. We looked over the site that morning, unable to see any sign of pit houses. When Sano returned to the site, he admitted the pit houses were not as visible as they had appeared when he looked at the trench (Figure 7). As he scanned the site, he reminded us that it would probably take the entire time we had scheduled just to reveal the outlines of pit houses.

This set us on our way. The Keio students came that afternoon and over the next nine days our job was to carefully peel away layers of soil, carefully collecting and documenting any remains that we removed. In doing this, we hoped to eventually find a pit house out of the dirt, rocks, and pot sherds beneath our feet.

The Sano method, or how to make pit houses appear

To locate a pit house, as with any archaeological feature, requires making sense out of the variations in the color of the soil. At Suwahara, there were areas of brownish-black soil that contrast with the yellowish-brown soil found through most of the site. It is understood that the darker areas are disturbances in the soil, made at some point in the past. They can be from natural phenomenon (e.g. from plants or animals) or they can be the result of human activities. The Jomon period features that we expected to find are various pits dug out for homes, posts, storage, and garbage. The pottery, obsidian, and stone tools that we found throughout the site are clear signs that it was used during the Jomon period. But alone, these artifacts do not tell us much. Finding these patterns in the soil is key to understanding how the site was used by the Jomon people.

Charles Goodwin (1994, 1996) has examined the ways archaeologists identify soil colors during excavation. He explained that color classification in the context of archaeological practice is codified through the use of the Munsell chart, which "constitutes a historically structured architecture for perception" (Goodwin 2006: 50) The chart contains a variety of color samples that can be used to compare soil samples side by side and, moreover, it provides different codes to distinguish one color from another. The use of this chart, however, does not remove subjectivity from the classification process. To identify which color is closest requires skilled use of the archaeologists' trowel to hold the soil, knowledge of the ideal lighting conditions to view them, and learning tips such as spraying mist on the dirt to make it match the glossy surface of the chart. Furthermore, the identification of color is embedded in social settings and communicative practices, where the peculiarities of the site geography or the desires of the project leader may require learning and negotiating different ways to view and classify the color of the soil.

From this understanding, our aim to identify the color contrasts in the soil at Suwahara site involves a host of skilled activities that are coordinated between

156

Figure 8: Yoshida Yasuyuki (top right) using *joren* (shovel) to "peel" new layer of soil while Keio students "shave" the site with garden scoops at Suwahara site. The dried dirt on the ground behind the students caused the site to be obscured, making it that much more difficult to see archaeological features at the site. (19 September 2019)

several actors. One comes to see pit dwellings and other important features in a site as they are revealed through adept excavation practices. In practice, learning how to see the site is a skill that is developed hand-in-hand with learning the techniques and the tools to excavate the site.

Our excavation routine was pretty straightforward. The first step was to "peel" away a few centimeters of earth to create a new layer to investigate. After a new peel the ground was littered with new remains (pottery and stones) and the surface was rough and bumpy. To clear the surface, we would "shave" it with our sharpened garden scoops to reveal a fresh new layer (Figure 8). All the while, we would pick up the smaller pieces of pottery or obsidian and we would mark larger pieces that needed to be plotted with the "total station" before being removed. With each new layer, the hope was to identify Jomon period pit houses.

Most important in this was creating a clean layer of soil to examine. Making it, however, proved challenging. For Ertl and the Keio students, this was their first time excavating and, for some of us, it was the first time to use these basic garden

tools. The largest obstacle was the loose dirt that was picked up every time we worked the surface. In the summer heat, the newly revealed surface would quickly dry and appear covered in patches of dried dirt – as if someone had thrown a bucket of sand over the site. To combat this problem, one of the students had the idea to sweep up this loose dirt so we could get a better look at the surface. This was fairly easy to do, and it made the site easier to see, or so we felt. Another student jested that we should just buy a cordless vacuum cleaner to suck the dirt off the ground.

This "sweeping method" seemed to work fine and was becoming our norm. That was, until, the final full day of work on September 22, when Sano came to the site to take a look at our progress. Sano looked over the site and quickly pointed out three or four pit houses in the ground. Those of us who had been excavating shook our heads in disbelief: even after working the site for over a week, we still could not see what he was looking at.

Watching us work, Sano noticed Kodai using his brush to sweep up the loose dirt. He quickly interjected, and for the first time he jumped into the site to give instruction. He borrowed the scoop from Kodai and the other students gathered around. He explained that using the brush was counterproductive, as it only agitates the smooth new surface, making features more difficult to pick out. Sano crouched down and worked the surface of the ground with the scoop, showing how each stroke can clear away the loose dirt. The key, he explained, was to make sure not to run the scoop over the same surface again and again.

Calling this the "Sano method" (*Sano-san hōshiki*) the students began again with renewed intent. Sano's demonstration provided a clear vision for how to make the site look. However, the enthusiasm they began with quickly faded due to the combination of the summer heat, the uncomfortable crouching position, and the reduced speed they could work. As this was the final scrape of the season, the students discussed their frustration that they were not yet able to adjust to the demands of the "Sano method." In the end, we packed up our tools and covered the

Figure 9: Suwahara site at the end of excavation work. (20 September 2019)

site for the last time with no clear pit houses in view (Figure 9).

This section has described in detail the struggles that our excavation team members had in identifying Jomon period pit house features at Suwahara site. Everyone who participated knows these building features exist. Yet as the days passed, the faint outlines we thought were there seemed to ebb and flow from view (Figure 10). Sano explained that this is quite common, as the quality of the light during a sunny midday versus an overcast morning can make the site appear quite different. In this section, the ability to see important features in a site has been described as a type of "professional vision," which is shared framework for skilled members of a community that allows them to view and understand a situation in a similar manner. The ability to see archaeological features is built upon other abilities: namely, the ability to excavate a site in a very specific manner. Moreover, an archaeological vision is a skill that develops over time, as is attested by the fact that Sano could see pit houses, while Yoshida, Ertl, and the Keio students could
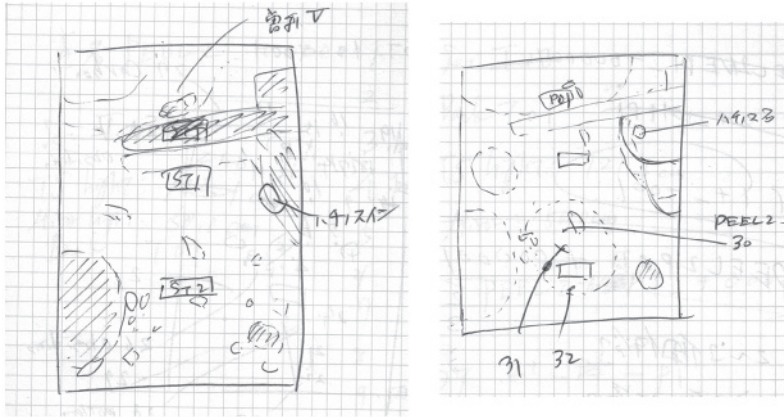
Figure 10: Fieldnotes drawn by Yoshida Yasuyuki (19 and 20 September 2019) showing how features in the ground came into and out of view while excavating at Suwahara site.

only see vague patterns of light and dark soil.

Codes and codification in archaeological practice

In his essay *Circulating Reference: Sampling the Soil in the Amazon Forest* (1999), Bruno Latour joined a scientific expedition to map the boundaries of the Amazon rain forest. He followed several scientists into the rain forest to collect samples, back to their hotels where they sorted findings, and finally to their laboratories for analysis and storage. Latour's interest is in the processes by which these scholars transform and translate the physical world into different types of signs or texts such as maps, drawings, and measurements. He explains how each successive stage in the research produces a "chain of references" that ends with the production of some publication (while the materials and notes collected along the way are stored in a project archive). Following these chains of reference, one may follow this knowledge – presented the form of two-dimensional texts, diagrams, and maps – back to their origins in the material world.

Archaeological excavation may be understood in a similar manner. The goal is not to find magnificent artifacts, but rather to accurately document site features and remains in a way that allows the site to be crafted into charts, maps, and illustrations in site reports. Creating accurate and meaningful documentation is considered a primary ethical imperative, because excavation is a destructive practice that can only be done once. Thus, a site report must record "what was there" in a manner that allows anyone to return, through documentation, to the site in its "original" form. Furthermore, the record of what was found, where it was located, and when it was removed is key to claims of scientific authority. Indeed, when one talks about authenticity in context of archaeology, what is most commonly at question is whether there is a record of an artifact's provenience: the three-dimensional data for where it was located when removed from the ground.

The code as a record what was done, not a record of what was there

In principle, creating codes is necessary for reducing the variety and complexity of information provided by an excavation field. The codes that are used amount to a shared communicative structure. They allow the participants of an excavation to make sense of their actions to themselves and each other. They not only function to keep track of what was done, but they also guide the activities in the field toward meaningful practices (e.g. behaviors that will provide accurate archaeological data).

The following explores the process by which the system of codes and classification systems was negotiated and employed during fieldwork at Suwahara in September 2019. Even the most basic activity of picking up a pottery sherd required us to have a shared classification system and method for recording. During excavation at Suwahara, the participants found themselves having to create and learn a system of codes and classifications. Finding these ways of communicating helped make sense of our activities and, in turn, enabled a smooth flow of activity

to take place.

Any site report (*hakkutsu chōsa hōkokusho*), the end result for most excavation projects, will have scores of photographs, illustrations, maps, and other figures. Looking the Suwahara excavation report produced by Showa Women's University (2018), the body of the publication is filled with site plans and section drawings for each of the pit houses discovered. The record of these pit house features is followed by several pages of images of pottery, stone artifacts, and arrowheads. What is noteworthy here is that each pit house is associated a list of "artifacts from the pit house feature" (*jūkyo-ato shutsudo-hin*). Linking remains to architectural features in this way is so commonplace in Jomon archaeology that does not even warrant attention for most.

That said, however, during our 2019 excavation season at Suwahara, we were unable to identify any pit houses that we can associate with the vast number of pottery sherds and other remains we collected. We can assume that several pit houses will reveal themselves as we continue, but for now, these remains do not "belong" to any pit house. As of now, our discoveries are ordered by the sequence they were removed from the ground. Once the excavation has reached the point where the pit houses come into view, retroactively, the previous discoveries may take on a different order – that is, they will "become" artifacts from a pit house feature.

The code as partial record of the life of a pot

The pottery removed from Suwahara site during the 2019 excavation (currently February 2020) sits in five boxes in Ertl's office at Keio University, Hiyoshi campus (Figure 11). These potsherds were collected and placed in plastic bags, each with an identification card inside. One that sits on Ertl's desk (Figure 12) contains a label with the code: *SU20190920 PEEL2 P01–000021*. This particular potsherd was the first large piece of Jomon pottery discovered, unearthed on the first full day in the
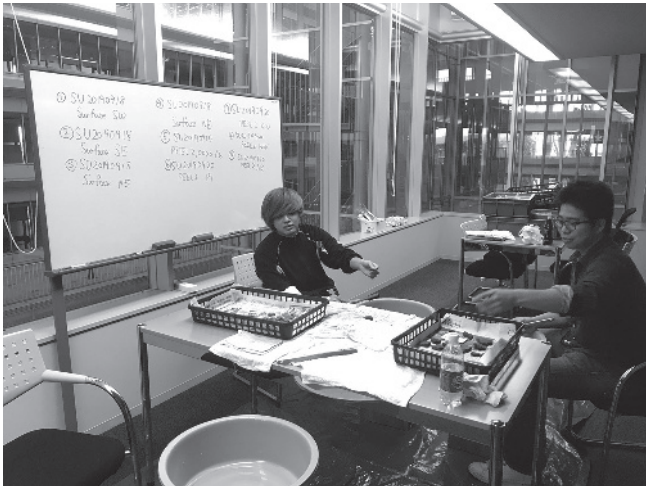
Figure 11: Keio students cleaning pottery at Raiosha building, Hiyoshi Campus, Keio University. Pottery from Suwahara fit into five boxes (*tenbako*) and each group of potsherds was kept in separate bags, each with a unique code – which can be seen recorded on the whiteboard. (1 February 2020)

Figure 12: Potsherd *SU20190920 PEEL2 P01-000021* located in John Ertl's office at Raiosha building, Hiyoshi Campus, Keio University. (12 February 2020)
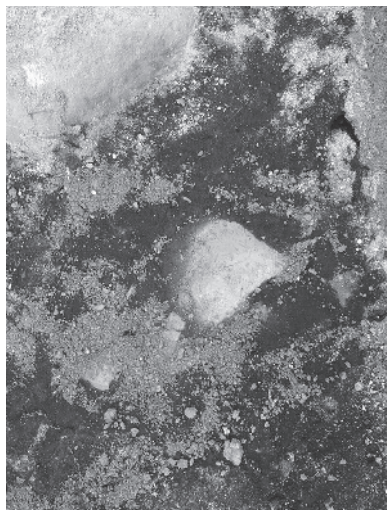

Figure 13: Potsherd *SU20190920 PEEL2 P01-000021* immediately after it was unearthed at Suwahara site during the excavation of trench 2. (12 September 2019)

Figure 14: Potsherd *SU20190920 PEEL2 P01–000021* and other potsherds before removal
    from Suwahara site. (20 September 2019)

field as trench 2 was being cleared away (Figure 13). It was also among the final
pottery to be removed from the site (Figure 14).

This group of potsherds is known by everyone who participated in the
excavation. During excavation we worked around it, protecting it by placing bags
of dirt on top so no one would accidently step on it. As the only "pot" we found
broken into several pieces, the students asked if we can try to put it back together
(*fukugen suru*). Their request prompted us to bring all the pottery to Hiyoshi
campus in January 2020 to clean and label it.

These pot sherds are a vivid part of our memories, and they are actively
referenced and discussed between the excavation participants. Depending on the
context they are called: "the first large pot that we discovered" (*saisho ni mitsuketa
ōkii doki*), "that big pot" (*ano ōkii doki*), "the pot we will repair" (*fukugen-suru
doki*), "the pot from trench two" (*torenchi-ni no doki*), or "those potsherds we
removed on the last day" (*saigo no hi ni toriageta hahen*). None of us refer to it as
the "sori-style potsherds" (*sori-shiki dokihahen*)[7] or identify it by other

characteristics such as its shape, design, or patterns. Most certainly, no one has ever called this potsherd by its code, *SU20190920 PEEL2 P01–000021*.

This code references a set of coordinates (saved on an excel file) that identify the location of the piece before being removed from the ground. The first line is *SU20190920*. *SU* is an abbreviation for "Suwahara" and the remainder is the date when the remains were removed (YYYYMMDD or 2019 September 20). The term *PEEL2* refers to the excavation activities that took place before the pot location was recorded. The term "peel" (*PEEL1* and *PEEL2*) was used to describe the process of removing a thin layer of dirt over the surface of the site several centimeters deep.[8] On the final line of the code, *P* is a term for a recorded artifact that has multiple parts to it and *P01* was the first of these kind of "artifact groups" recovered. The remaining *-000021* is the specific number given to the pottery sherd as it was recorded and removed from the ground. For this group, there were 35 sherds in total.

This identification code will remain with this pottery sherd for the remainder of its life as an archaeological artifact.[9] It will be inscribed on the smooth inside surface with painted letters and numbers. Even after the pot is put back together,

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(7) The name "Sori" comes from an archaeological site in Fujimi Town Nagano Prefecture where this stylistic pottery was first identified in the 1960s. Once classified as "sori-style" pottery, potsherds similar to the original specimen pottery vessels can be recognized as sori-style. Today, the term sori-style is also used to broadly refer to the culture of the people that made this pottery, occupying the latter half of the Middle Jomon period of the Central Highlands of Japan.

(8) The first remains gathered from the excavation are labeled SURFACE, referring to pottery found on the ground after the initial pass with by the shovel car. For many of the pottery collected, after PEEL1 or PEEL2 are the terms NW, NE, SW, and SE which are used to identify which general area of the site the pottery was found. In these cases, which make up the vast majority of pieces, all small in size, these were collected based on a rectangular grid marking off four coordinates (north and south, east and west).

(9) This sherd broke into three pieces when removed from the ground. All three pieces will be given the same code.

each individual piece will retain its unique code. Despite being the only information recorded directly upon artifacts, this code is surprisingly absent from site reports. What is important about an artifact in the site report is its location in relation to site features (e.g. a pit house) and other remains. Moreover, the code is relatively useless without the corresponding location coordinates – as the code contains only the date when it was removed from the ground.

In short, this code, which is patiently drawn upon an artifact does not directly refer to any of the qualities of the artifact that relevant to understanding the Jomon period culture when it was made. Rather, the code is a reference to the excavation activities that took place when it was removed from a site – in this case, after the second peel at Suwahara site on 20 September 2019. More than anything else, these codes represent the processes through which an excavation unfolded over time.

Interestingly, the code does not only identify an artifact. The very activity of recording the code is a key practice that allows the excavation to proceed. Each recording confirms the work that has just been completed and enables a shift toward new activities. As such, an artifact code is a device for making sense of the activities that unfold during fieldwork. To mark a potsherd *P01–000021* is to record our series of manipulations upon the pottery, but it is also an activity that allows us to assuredly move on to new activities in the field.

The data contained in the code itself are rarely part of any site report. In the future, this pot will be repaired, it will be photographed, a section illustration will be made, and it will be catalogued for presentation in a site report. In doing so, this pottery will be transformed into two-dimensional charts, images, and maps that show its location in relation to other relevant features and remains. Currently, this potsherd embodies a vast range of information related to the Suwahara excavation of 2019. It is an object with a "social life" (Appadurai, ed. 1986; Holtorf 2002). It is a member of our collective memories of excavation, it had an important role in developing our skill in recording location data, and in the near future it will be used

for learning how to reconstruct pottery. Despite the multifaceted "life" of this potsherd, at some point in time it will be transformed from being "the first large pot we found during excavation" to, for example, one image out of many sori-style pots that were located in a Middle Jomon period pit house.

Conclusion: How to craft an ethnography out of an archaeological excavation

The traditional model of ethnographic fieldwork would send one to a far-off land to live with a group of people while participating in their day-to-day lives for a period of a year or more. This model for ethnography developed in the early twentieth century and produced studies of the Trobriand Islanders and their Kula ring and the Balinese and their cockfights. In this, the aim for the ethnographer was to learn the cultural patterns, unique worldview, and novel classification systems of the people under investigation. More recently, armed with similar aims and methodologies, anthropologists have entered places far less remote: scientific laboratories, financial thinktanks, and healthcare facilities (Latour and Woolgar 1979; Miyazaki 2003; Mol 2002).

Such studies show that classification systems and knowledge production activities among these people and in these spaces may be just as "foreign" as any indigenous cosmology or initiation ritual. Moreover, as members of modern societies, much of our daily lives are firmly entrenched in these systems that we are alienated from. For example, we trust that the medicine our doctors prescribe will help us without needing to understand how it was innovated or how it functions in our bodies. Knowledge produced through scientific systems are commonly presented as "results" or "facts" based upon technological analysis and objective reason and, moreover, anyone who properly follows scientific methodologies will reach the same results. These ethnographies have shown to the contrary, that these knowledge producing systems are filled with human-centered activities and

subjectivities that are hidden or erased in publications and other results.

Archaeology is quite similar. The qualities of a site presented in site reports or museum displays appear as undeniable facts, especially as the material objectivity of remains and features seem to speak directly to the activities of people in the past. In this article, we have shown that archaeological artifacts and the knowledge about the past they contain are not simply discovered by archaeologists. Rather, they are crafted out of the raw potential contained within an archaeological site. A site takes shape by working the soil with tools, making careful observations, taking purposeful measurements, and separating out important remains from extraneous ones. The production of archaeological knowledge is directed toward particular ends (e.g. the site report) and responds to the interests and needs of the broader community – whether that be the academy, local residents, or heritage management authorities.

The events and activities introduced in this ethnographic essay will, in the future, appear in an archaeological report in quite different forms, if at all. Irrelevant to the report is the happenstance by which we were able to meet Sano and receive permission to excavate at Suwahara, our excitement in finding our first Jomon pot, or our frustrations with dried-out dirt covering the site. Other activities such as negotiating codes and recording artifact locations will shift from narrative accounts into the form of charts and maps. For in the end, archaeology is concerned with understanding the "Jomon site," not the subjective experiences of those who worked at a particular Jomon site.

The final aim of the archaeology side of this project is to reconstruct a Jomon period pit house. The Jomon pit house is, in many ways, an ideal example of archaeological craftwork: to make one requires combining disparate streams of data, the subjective imagination of the designer, and the artistic and technical ability of the people who construct it. However, most discussion on prehistoric architectural reconstruction in Japan focuses upon how accurately a building

168

reflects data garnered from archaeological investigation – with buildings based on direct evidence and logical coherence considered ideal. In most cases, evaluations are done in retrospect, only after a building is completed and has made an impact on the present-day landscape. What is lost in such a retrospective view, is an understanding of the multiple acts involved in transforming historical remains located in situ into a historical park with "ancient" architecture.

At the end of the first year of excavations, the pit house reconstruction we will make is still far off on the horizon. There are looming decisions we will have to make regarding the materials and design of this building, and these constantly underlie the work we are doing. In the coming year we will again attempt to master the "Sano method" to bring pit dwelling features into view. We will attempt to master our coding system to ease the work in recording artifacts and their locations. We will spend countless hours cleaning potsherds and recording their codes with paint and thin brushes. These activities may not seem to directly translate into a reconstructed Jomon period pit dwelling. Yet, the physical forms of knowledge produced by archaeology (site reports and reconstructed pit dwellings) are built upon these consecutive layers of embedded intellectual and physical activities that, in the end, work to transform material remains into two dimensional data and again into the social and physical landscapes we live in today.

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