DiPLAS : Academic Image Platform for Twentieth Century Photographs

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DiPLAS: Academic Image Platform for Twentieth-Century Photographs

Taku Iida
National Museum of Ethnology

1. Introduction

In recent years, there have been remarkable advancements in digital image technology. More and more film-based photographs taken from the late nineteenth to the twentieth centuries are being stored and used in digital format. Furthermore, it is not only old photographs from the collections of major institutions but also individually owned photographs that are being digitized. Digitized photographs are being used once again in a "second life." For example, the British Library's Endangered Archives Programme aims to preserve archives such as photographs held by individuals by enabling archivists to formulate a plan and apply for a grant (Kominko 2015).

However, applicants to this program must be archivists with specialized knowledge. People who do not have this knowledge or know an archivist with this kind of knowledge cannot take part in the program. In this paper, I will introduce a program of the National Museum of Ethnology, Osaka (hereinafter "Minpaku"). Researchers with no knowledge whatsoever about photography archives can apply and, if accepted, Minpaku will provide them with support to digitize and database their photographs. The program is a unique experiment that provides not only financial and technological support but also support tailored to the characteristics of the individual photograph collection. It would be interesting to describe the database system, which can flexibly accommodate a wide range of needs, but unfortunately, that is outside my area of expertise. The only thing I will mention about the system is that it can be customized by choosing which categories are displayed. In this paper, I will mainly discuss non-technical aspects and the objective and issues of the program.

The program is called Digital Picture Library for Area Studies (DiPLAS).[1)] It was launched in April 2016 with a JSPS (Japan Society for the Promotion of Science) Grant-in-Aid for Scientific Research on Innovative Areas. In this program, rather than Minpaku choosing the photographs, researchers submit proposals for the photographs and digital images they took (or collected) for research purposes. This is in line with the objective of the grant. The JSPS provides grants for research plans proposed by university-affiliated researchers for a wide range of fields,[2)] but DiPLAS's objective is to enable researchers who are not affiliated with Minpaku to produce effective research results by

using the equipment and labor resources of Minpaku.

DiPLAS put out a call to researchers who receive on-going research funds from JSPS for proposals in which organizing photographs would lead to significant secondary results beyond those initially planned. Researchers in fields that often use outdoor photographs for research materials applied, covering a broad range of specializations. In other words, our program meets a variety of researchers' needs and helps to promote the digitization and databasing of photographs. In the following paragraphs, I will provide an overview of digitizing and databasing in this program, explain its anticipated effects, and present the trends in accepted digitizing and databasing proposals. Lastly, I will discuss the issues the program faces, based on the report on the current situation.

2. Overview of Digitization

Minpaku is the core institute of the program. The director of the program is Kenji Yoshida, the Director-General of Minpaku.[3] The following organizations serve as associate institutes: National Institute of Informatics; Institute for Advanced Studies on Asia, University of Tokyo; Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies; and Center for Southeast Asian Studies, Kyoto University (Figure 1). An eight-person research staff and a three-person technical support staff at Minpaku handle the management and working-level operations of the program. The other four organizations are all well-versed in the digitization of film photography, and one researcher from each organization is involved in designing the program and selecting proposals.

Decisions related to the management of the program are made by a committee we refer to as the "Platform Committee," which meets twice a year. Its members consist of the above-mentioned eight-person research staff from Minpaku, the four researchers from the associate institutes, and four associate researchers from other institutions[4] (Table 1).

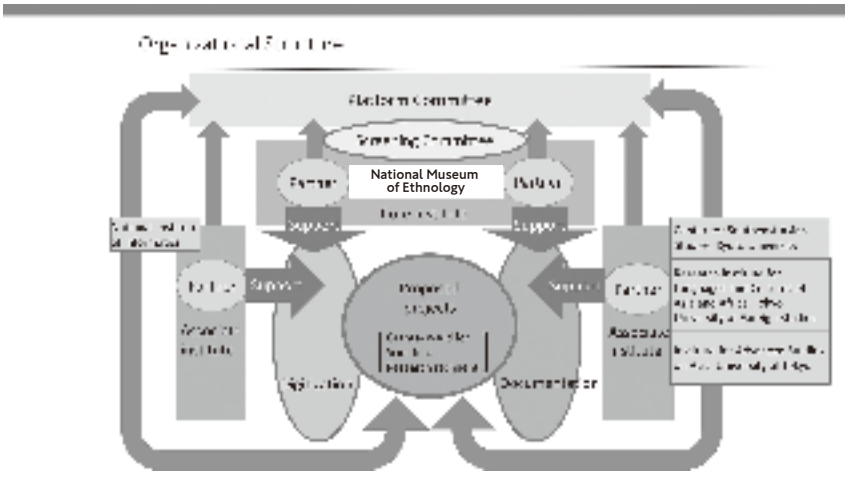

Figure 1 Actors and support structure of the program

Table 1 Structure of the Platform Committee and Secretaries (FY2019)

	Part in the Program	Affiliation	Number
Platform Committee	Program Leader	Minpaku (Core Institute)	1
	Program Members	Minpaku (Core Institute)	7
		Other than Minpaku (Associate Institute)	4
	Program Associate Members	Other than Minpaku	4
Secretaries	Technical Support Members	Minpaku	3

If the program was simply about digitizing and databasing photographs, a committee made up of so many researchers would not be needed. However, we established such a large committee because we needed to conduct work in accordance with each specific digitization and databasing proposal (hereinafter referred to as "proposed projects"). In other words, the Platform Committee focuses on discussing the problems faced by the individual researchers (hereinafter referred to as "supportees").

In the first year (FY2016), adjusting the plan took a long time, so we did not start accepting applications for proposed projects until four months after the start of the fiscal year (April 1). Therefore, the first application period was August through September. In the following years (FYs2017−2019), the application period was from the end of April to the beginning of June. Collected proposals are screened by a screening committee composed of Platform Committee members and four other external researchers, and proposals that meet the criteria were selected. To apply, the applicant must receive an on-going research grant from the JSPS, and the proposed project is limited to 5,000 photographs or less to be databased.

Once a proposed project is selected, a workshop is held in which several Minpaku staff members provide an overview of the support to be offered, and supportees are given the opportunity to ask questions and explain their specific needs. Then the Minpaku staff members travel to where the photographs are located to see the condition of the photographs to be databased and finalize the work plan. So far, we have not collected photographs that are in a poor state of conservation, but if a proposed project consisting of photographs in a poor state of conservation is selected, we would have to take temporary repair measures at this stage.

While there are researchers who want to database photographs taken with a digital camera in a database, most supportees want to organize film-based photographs. In this case, the photographs must first be digitized before being entered into a database. The digitization process starts with creating a catalog and counting the photographs. Photographs are often stored in containers such as slide boxes organized by theme or date taken, so we organize the photographs by headings based on the descriptions on the storage containers. This information is also useful when adding textual information to the database at a later stage.

After the catalog is completed, the photographs are digitized by a digitizing services provider. Photographs can be digitized with Minpaku's equipment, but this requires special cares that I will discuss below. When placing the order with the provider, we

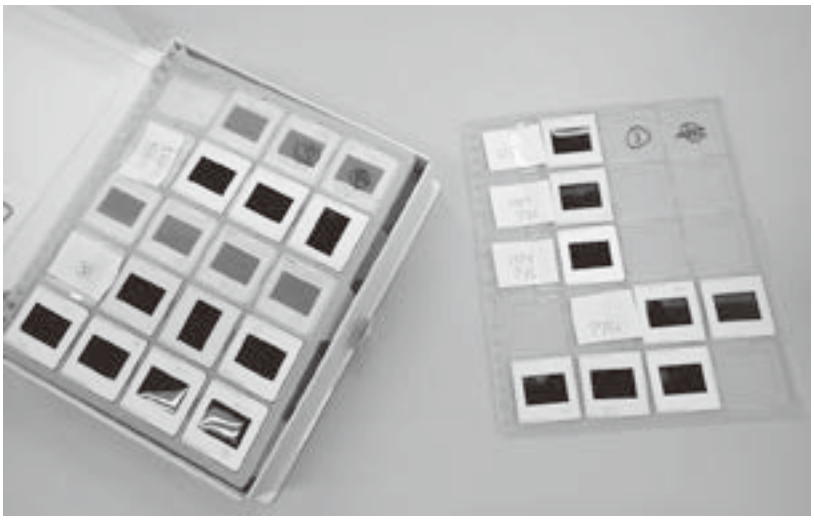

Photo 1 Example of the state of organization of a supportee's photographs (Image by the author)

must specify beforehand the rules for naming the image files to be delivered to us. This is surprisingly complicated because the method for organizing photographs in slide boxes varies greatly by supportee. The slide box includes about 20 transparent sheets with 20 slides each, as shown in Photo 1, but some arrange the slides horizontally, while others arrange them vertically. As you can see in Photo 1, sometimes there are empty spaces here and there. Most likely, the slide was taken out for use and never returned. In cases like this, we have to ask the supportee whether we should number the empty spaces as well or ignore the places with missing photographs and only number the existing photographs.

Furthermore, if a slide box has many missing slides, the digitizing service provider may not place the slides back in their original places after digitizing. Even if the provider places some of the slides back in their original positions, it is left to the Minpaku staff to return them all to their exact original positions so as not to inconvenience the supportee. Therefore, before giving the photographs to the provider, we take a picture of every transparent sheet and record which pockets have no slides. From FY2016 on, we carried out this work intensively in an assembly line fashion with the help of part-time workers.

3. Overview of Databasing

Once digitization is complete, we move on to the databasing stage. The first database shown in the process of the program is a closed database, viewable only by the system administrator and supportee. The purpose of this database is to add textual information and organize the photographs in accordance with their relationship to other photographs, in other words, to carry out documentation.

Considering that the photographs will eventually be placed on Minpaku's network

server and made publicly available, Minpaku required the supportees to fully transfer the copyright of the photographs at the database creation stage. Most supportees agreed to it after we emphasized that Minpaku would assume responsibility for keeping the photographs publicly accessible for academic purposes, while others objected to transfer the copyright. From FY2018 on, however, Minpaku asks only for permission to make digital copies of the photographs and post them online, in order to meet supportee's various expectations to the database. Transfer of the copyright will be negotiated in the future when the database becomes open to unspecified users.

Another important matter regarding copyright is that while some rights to the photographs should be transferred to Minpaku, the supportee keeps the original negatives or positives. If the number of photographs, including those in fields that have no direct connection to Minpaku's mission, increases at a rate of several ten thousand per year, Minpaku's storage would soon be beyond its capacity. Minpaku's policy of only obtaining copyright and digital copies was a difficult decision to make.

As mentioned above, the purpose for creating the database is to advance documentation. In other words, the database at this stage is not complete but rather in the "proofreading" stage.

All images in a data set displayed on one page can be viewed one at a time (Figure 2). Some of the text fields have already been filled out by Minpaku staff, but most have not, so they can be filled out by the supportee and other involved researchers. Our overall policy for the program is to display the information in three languages: English, Japanese, and the local language related to the proposed project, although the supportee can choose one or two of them. Determining the technical terms for multiple languages requires extensive expertise, so that is handled by the supportees. Minpaku provides documentation support for each photograph, such as entering the text written on the slide box beforehand and equipping the database system with a check box to enable people to easily enter frequently appearing keywords. From FY2019 on, applicants are required to tell in advance if this kind of support is necessary, to facilitate the Minpaku staff's process control.

Organizing photographs like this is significant in that they can be made publicly accessible in a way that makes the supportee's photographs easy to use. It also represents an important research outcome for the supportee. However, this is not the only thing that Minpaku aims to do. Minpaku's goal is to create a tool for producing new specialized knowledge by enabling users to search and compare photos spanning a wide range of regions and time periods—in other words, to build and manage a vast database with academic credibility that covers a global geographic scope. Beyond that, our hope is that communication between the researcher and the researched through photographs will lead to activities that accomplish both research and social contribution becoming routine.

As of the beginning of FY2019, the program has existed for three years now and is planned to last for three more years, but the leadership at Minpaku, including the Director-General, plans to appeal to the JSPS to enable the program to continue for the long term.

Figure 2 Completed database page

4. Trends in Selected Proposals

The film-based photographs expected to be the most numerous in DiPLAS were those taken from around 1955 to 2000. Film and cameras were not widespread before the 1950s, so there are not many photographs from that period. Many of those that were taken may have been lost due to war and other disasters, and the ones that do remain have likely already been located and organized. In fact, the proposed projects selected for FYs2016−2019 did not include any photographs taken before World War II.

The year 1955 was the year of the Scientific Expedition to the Karakoram and Hindu Kush—the first major overseas scientific expedition from Japan after World War II. The expedition was conducted by Kyoto University, and Minpaku's first Director-General, Tadao Umesao, was one of the members. In 1956, the Tokyo University Iraq-Iran Archaeological Expedition was dispatched, and in 1957, the Japanese Society of Ethnology organized an expedition to rice-cultivating countries in Southeast Asia. All the photographs and ethnographic objects collected during the Japanese Society of Ethnology expedition are held at Minpaku. At the time, if a Japanese national wanted to travel overseas, it was more than a simple matter of getting a Japanese passport and a visa from the destination country. The Ministry of Finance also had to screen the amount of foreign currency the expedition members were bringing out of Japan to be used in other countries. Photographic film was also brought from Japan, but it was incredibly expensive and out of the reach of ordinary people. The film was normally paid for with donations from the company supporting the expedition. However, little by little, Japan's scholarly activities began to be revitalized around that time, and photographic documentation accompanying those activities gradually began to increase.

Considering that the mandatory retirement age at national universities is 65, those who were 20 years old in 1955 retired in 2000.[5)] Since the researchers who have produced vast amounts of academic film-based photographs are gradually retiring, this program has the significance of helping to ensure that such valuable materials are not lost before they can be utilized by universities.

Five proposed projects were selected in FY2016, eight in FY2017, eleven in FY2018, and fifteen in FY2019. Table 2 shows the information such as the period, region, and academic field of the photographs in each project. There was one proposed project that was not selected in 2016, one in 2017, seven in 2018, and five in 2019; thus, a good balance between supply and demand has been maintained so far. However, as mentioned above, only 5,000 film-based photographs can be databased per proposed project, although more photographs were databased in a few projects when the number proved larger than expected only after the support began. We have received proposals from researchers with 50,000 film-based photographs who are at desperate to carry out digitization over several years. For example, proposed projects D, G, and S in the Table 2 are all related to an identical collection, as well as I and R are to another. If the number of proposed projects that span several years increases, even if the work efficiency of the staff improves and the number of projects they can accept increases, the percentage of projects we select can be expected to drop sharply. Furthermore, if awareness of this

Table 2 Overview of Proposed Projects

		No. of Photos		Age	Area
		(film)	(digital)		
(FY2016)	A	7,188	999	1974–2001	African rain forest
	B	0	7,626	c. 1979–	Afro-Eurasian arid area
	C	4,884	16,549	1997–2006	Micronesia
	D	0	8,085	c. 1970–1999	Arab societies
	E	0	8,675	2001–2014	Nepal
(FY2017)	F	c. 4,300	c. 3,250	c. 1987–1988	Mongolia
	G	4,999	0	c. 1982–1992	Arab societies
	H	c. 5,300	0	c. 1991–1994	Xinjiang (China)
	I	c. 4,700	0	c. 1978–1986	South Sudan, Ethiopia
(FY2017=petty)	J	0	c. 700	c. 2005–2014	Iran
	K	0	c. 500	c. 2015–2017	India, Pakistan
	L	0	c. 200	c. 2005–	Philippines
	M	0	c. 500	c. 2007–2016	Maharashtra (India)
(FY2018)	N	c. 4,100	0	1996–2002	Mongolia, China
	O	c. 6,600	0	1966–2005	Peru, Bolivia
	P	c. 2,500	0	1963–1964	Munda, India
	Q	0	c. 4,100	1975–1979	Peru, Ecuador
	R	c. 2,300	0	1988–1999	Ethiopia
(FY2018=petty)	S	0	c. 1,300	1968–1988	Arab societies
	T	0	c. 1,600	2014–2017	Ache, Indonesia
	U	0	c. 5,700	2016–2017	Inner Mongolia, China
	V	c. 1,100	0	1923, 1969, 1977	Alaska, US
	W	c. 700	c. 600	1979–2017	Africa
	X	0	c. 2,600	1990s–2000s	Papua New Guinea

* In projects of Arab societies (D, G, and S) and South Sudan/Ethiopia (I and R), the collections were digitized and databased for two or three years because of the large number.

program rises in the future, even more people will apply, which will make boosting work efficiency. Such a situation resulting from a kind of success in the project is a major issue to consider.

The time span of the photographs in proposed projects has been shorter than expected—from the 1970s to the present. Proposed projects J through M and S through X were selected for the petty project category. Consisting of a total of approximately 1,000 photographs, they are particularly recent. Proposals such as this that include no (or few numbers of) digitization are expected to become the most common, and I think that determining what meaningful support entails for such people will become an issue once digitization slows down.

The regions associated with the photographs in the proposed projects are more diverse than expected. In the light of our plan to enable users to compare regions in the future, I think this is a positive trend.

5. Conclusion: Future Challenges

We have solved a variety of problems through trial and error in our program, but there are still problems that remain unsolved. Below, I will describe two technical issues related to digitization and storage, as well as three issues regarding the system to enable the program to continue.

The first is that we would rather use Mipaku's equipment for digitizing than place an order with a company. Minpaku has purchased a slide scanner, which is essentially a modified carousel slide projector,[6] and is attempting to carry out digitizing in-house. It is easier to feed slides in this scanner than it is in a standard scanner, but it has several drawbacks: If a paper slide mount gets stuck, it will make the scanner function improperly, or an inexperienced operator may not notice that slides are in backwards. Although the focus does not have to be frequently adjusted due to temperature changes like in the days when halogen lamps were used, one still must be mindful of adjusting the focus. From FY2019 on, we cannot avoid using this equipment even for the project in which the copyright of the photographs are not transferred to Minpaku. Ideally, the photograph of such projects should be donated to Minpaku, as well as their copyright, in order to enable Minpaku to digitize them repeatedly. Use of the new device therefore necessitates new contracts with supportee.

The second problem is that if the original positives or negatives are returned to the supportee, they risk becoming lost. As mentioned above, originals retain a richer amount of information than copies, so needless to say, Minpaku would rather keep the originals. This is not something that can be solved immediately, but we must consider ways to secure sufficient space to be able to keep the originals.

The last three issues mentioned below have more to do with the system to keep the program going than with technical aspects. The third problem is securing the funds to continue the program. This includes securing server storage space to accommodate the steadily increasing amount of data. As of the beginning of FY2019, the DiPLAS program is approved to last until the end of FY2021, but nothing is yet determined thereafter. So I will refrain from commenting further on the matter.

The fourth problem is how to increase the number of users as data in the databases increase. Considering the development of historical studies in recent years, which uses photographs as historical materials, a small number of users may be a needless concern. However, Minpaku's catchphrase for the program has been that users can easily compare images from different periods and locations. Once a certain number of photographs has been accumulated, we will need to show an example of comparative analysis that users can use as a model.

The last problem is that we will need to take measures in regard to the unintended use of databases. One might say that it should not matter how a database is used, but we have emphasized to the people who have transferred their copyright to us that using the database in the locations where the photographs were taken will contribute to the advancement of science. However, if it is used in those locations, the likelihood increases that it will be used for amusement purposes in other places, so we must anticipate a variety of scenarios. If we receive a complaint about releasing a photograph to the public,

and copies of it have not yet spread, we can simply not release it. However, if the photograph has already spread on the Internet, then the situation would be difficult to control. Our program will be publicly accessible for academic purposes, so I believe we must be resolute against use for mere amusement purposes.

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Notes

1) The full title is "Platform for Integration and Sophistication of Image Information on Area Studies."
2) This grant system is in contrast to that of the United States and other countries, in which most research funds are contributed by private-sector companies.
3) When the program started in FY2016, there was no requirement that the program director must be the Director-General of Minpaku. In fact, Yoshida was Deputy Director-General at that time. In FY2017, Yoshida happened to be nominated for Director-General, which is why the Director-General of Minpaku and the program director are the same today.
4) The institutions the associate researchers as of FY2019 belong to are: the National Institute of Informatics; Kyoto University; Kansai University; and Ritsumeikan University. Research support staff from Minpaku handles working-level operations for the program and are not official members of the Platform Committee.
5) Before 2004 when Japanese national universities became incorporated associations, the mandatory retirement age was often 63, varying from 60 to 65. The calculation here is conveniently simplified.
6) The brand name is SlideSnap Pro. Designed based on the principle of the once commonly used slide projector, the device projects slide images directly onto a digital camera image sensor (CCD) instead of a screen.

Reference

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2015 *From dust to digital: Ten years of the Endangered Archives Programme*. Cambridge: Open Book Publishers.