

Significance of the Formation of a Digital Archive for the Study of Works of Art and Cultural Objects: Towards a Comprehensive Accumulation of Data

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The Nara National Museum and the National Research Institute for Cultural Properties, Tokyo began joint research on “Spectrographic Analysis of Buddhist Paintings” and the “Creation of High Resolution Digital Contents” in 2004 (Heisei 16), and conducted research on the color on silk Jūchimen Kannon, of Nara museum, which has been designated a national treasure, using images obtained through digital photography and analysis based on a portable X-ray fluorescence spectrometer in 2004 and 2005.

The data accumulated during the joint research is of three varieties, data from previously unattainable high-resolution photography, data based on scientific analysis, and data of a descriptive and aesthetic nature. Making this data public to researchers within and outside these institutions as shared resources is a serious issue. In this article, I reiterate the significance of the creation of a digital archive based on this data from the point of view of preparing the environment for further development of preservation management and comprehensive research on cultural objects.

The study of cultural objects begins with an examination and analysis of the objects themselves, followed by comparisons, identifying and distinguishing items, on through developing a chronology of their creation, but to make this effective, it is important to accumulate a large quantity of data that can serve as a standard for stable methodologies, whether scientific or aesthetic, and as material for comparative study. In this effort it appears that data forming such a standard that is based on a combination of analysis and description will play a major role in the future. On the other hand, in order to effectively utilize visual data obtained by various methods of photography, such that from color images, reflected near infrared images, penetrative near infrared images, photo luminescence images enhanced by visible light, it would be most effective to accumulate multi-layers of data representing varying depth levels of the cultural objects, and to map both the descriptive and analytical data of a location on the image surface.

The creation of a digital archive is still at an incipient stage, but as it proceeds, I hope there will be continued cooperation between researchers of varying disciplines such as art history and conservation sciences.

(translated by Michael Jamentz)