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Description of East Asian Seal Impressions as Metadata

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1. Introduction

Seals are a tradition of ink application unique to East Asia.¹ Many East Asian seal impressions on books, documents, paintings and calligraphies of both pre-modern and modern ages can be seen in libraries and museums. How are these seal impressions described in bibliographic or other metadata in the age of digitization when seal impressions are more visible than ever before?

I first started to think about this issue two years ago when I participated in a University of Pittsburgh digital cataloging project aimed at creating a web catalog of the woodblock color prints created by Japanese artist Tsukioka Kōgyo (月岡耕漁 1869-1927). The web catalog enables users to search the digital images of his works by title, publisher, place and date of publication, subject of the pictures, seal, signature, and so on.² My responsibility in the project has been to provide the descriptions of the seal impressions on his works, but I have struggled to figure out what information to include in the descriptions because all I knew how to do was to briefly describe seal impressions in bibliographic records.

Such brief descriptions of seal impressions have mostly been done as part of an effort to standardize East Asian rare book descriptions begun in 1998 at the Library of Congress.³ The descriptions generally contain the numbers, locations, transcriptions and readings of inscriptions of seal impressions, and names of seal owners. Although this amount of information has been considered sufficient to identify the provenance of rare books, it can hardly convey other aspects of seal impressions. Meanwhile the museum community has been creating more detailed seal descriptions when describing a seal itself rather than a seal as a mark on books or objects. However, the levels of fullness of their descriptions seem to vary with each institution that creates the descriptions. Their formats also vary; some are descriptive statements while others are collections of discrete data representing each aspect of a seal body and/or impression such as materials, techniques, date, inscriptions, dimensions, and subjects.⁴ This level of fullness would probably be necessary for seal descriptions to be considered as metadata.

In an attempt to consider using the descriptions of East Asian seal impressions as metadata in a digital environment, this paper will try to identify what types of information are necessary to comprehensively describe East Asian seal impressions. It will primarily focus on Chinese and Japanese seal impressions; other Asian countries' seal impressions such as Korean, Thai and Vietnamese ones will be mentioned sparingly. It will also exclude modern day seal impressions of any countries. In order to learn what has already been done with regard to the description of general inscriptions/marks, it will first study the provisions prescribing categories for the description in metadata standards and guidelines developed by the cataloging or other metadata communities for the descriptions of books, artworks, and other cultural objects, and will compile the categories into one set as a basis for further discussions. Then it try to determine if the base category set can also be applied to the description of East Asian seal impressions, and will make modifications to it if necessary and explore additional categories necessary to be defined for the seal descriptions. Finally it will compile the modified and additional categories into a new category set for a comparison between the base category and the new category sets, and will conclude with a suggestion for a way to use the new category set in a digital environment.

2. Base categories

This section will try to determine a category set that can serve as a basis for discussing the description of East Asian seal impressions by looking into some standards and guidelines of the metadata communities. Two rare book cataloging guidelines in the East Asian library community, *Descriptive Cataloging Guidelines for Pre-Meiji Japanese Books* and *Cataloging Guidelines for Creating Chinese Rare Book Records in Machine-Readable Form*, instruct a cataloger to transcribe the impressions of seals if owners are identified, or to note the existence of seals if owner's names cannot be identified, as follows:

LC set has “織田氏蔵” “織田” and 2 other seals, not deciphered, stamped⁵
“脫月看詩”, “唐風樓”, “羅振玉印” 等印記⁶

In Western rare book cataloging standard, *Descriptive Cataloging of Rare Materials (Books)*, the provenance section includes such descriptive elements as exact transcriptions of stamps, bookplates, etc., location of each in the item, approximate dates (when known), and references to published descriptions of the collections of former owners of the item. Below is an example:

National Library of Scotland copy: ... "Museum Britannicum" (ink stamp, in blue, ca. 1760, on t.p. verso)⁷

Some standards in the museum community have more elaborate provisions. *Categories for the Description of Works of Art (CDWA)*, for example, defines ten subcategories in the category 8. Inscriptions/Marks: transcription or description, type, author, location, language, typeface/letterform, mark identification, date, remarks, and citations.⁸ *Cataloging Cultural Objects (CCO)*, which deals with a critical subset of *CDWA*, gives an example of East Asian seal description:

Inscriptions: right hand screen: ... round seals read Masatoki⁹

The International Guidelines for Museum Object Information includes seven categories under the category of description of Mark/inscription such as text, type, description, technique, position, language, and translation, and shows an example of each as follows:

Mark/inscription text: SI DEVS NOBISCVM QVIS CONTRA NOS¹⁰

Mark/inscription type: inscription

Mark/inscription technique: engraved

Mark/inscription position: bowl, under rim

Mark/inscription language: Latin

Mark/inscription translation: If God be with us, who shall be against us

Another guideline in the community, *Introduction to Object ID*, discusses practical and detailed ways to describe art and antique objects incorporating views from a variety of sectors such as police and customs agencies, art traders, and the insurance industry.¹¹ In addition to the above-mentioned categories, *Object ID* recommends including both appearance and interpretation of subject matter to describe a mark for a broader audience of people beyond specialists, as in the following example:

Four hallmarks: lion passant (sterling silver); rose (Sheffield, England)¹²

Here the lion passant mark is interpreted in parenthesis as sterling silver, and the Yorkshire rose mark as the Sheffield Assay Office in England.¹³

All of the categories mentioned in this section are summarized in Table 1 below, divided into main and subcategories and listed in order of what seems to be important to the description of seal impressions. In subsequent sections, these base categories will be examined one by one by looking into books, articles, exhibition catalogs, and

websites on East Asian seals to see if there is enough evidence to either confirm a category or to establish a new category.

Table 1. Categories for description of general marks/inscriptions

no.	Category	Subcategory	Example
1	Type		inscription, ink stamp, hallmarks
2	Mark Identification		
3	Inscription (text)	Transcription	織田氏藏, Museum Britannicum
4		Transliteration	Masatoki
5		Translation	If God be with us, who shall be against us
6		Language	Latin
7	Author		
8	Date		ca. 1760
9	Technique		engraved
10	Description	Appearance	round seals, in blue
11		Subject matter	lion passant
12		Interpretation	sterling silver
13	Location (Position)		verso of t.p., right hand screen
14	Typeface/Letterform		
15	References/Citations		
16	Remarks		

3. Examination of the base categories

3.1. Type

This section 3.1 will discuss what types and subtypes of East Asian seals are available to be considered as a descriptive category. ‘Mark Identification,’ defined in CDWA as “An identification of the mark type or name,”¹⁴ basically refers to the same thing as ‘Type.’

Traditionally there have been two main types of seals based on the owners: ‘Official seal’ (官印) and ‘Private seal’ (私印), which appear in most of the literature on East Asian seals. Under these two types, there have been numerous subtypes that vary widely depending on a historical era of a country, making the further categorization very complex. Scholars also have different views on the categorization and refer to the same category by different names. For the purposes of this study, it will be sufficient to mention a reasonable number of subtypes to see if a further category can be formed.

3.1.1. Official seal

From ancient times, East Asian seals have been used to indicate ownership, to authenticate documents, and to establish political or religious authority.¹⁵ Official seals have been used by ministers and bureaucrats as an emblem for authenticating documents.¹⁶ The most important type of official seal throughout Chinese history is 'Emperors' and Empresses' seals' (帝后印). Other official seals can be largely subdivided into two categories: 'Government office name seals' (官署玺) and 'Government position name seals' (官名玺). The former category in the Warring States period, for example, included seals of such government offices as 'Local administrative offices' (地方基层行政官署用玺), 'Gate control offices' (门关官署用玺), 'Resource control offices' (资材署用玺), 'Material inspection offices' (工官署用玺), and 'Municipal offices' (市官署用玺).¹⁷ The latter included 'Higher officials' seals' (通官印), 'Lower-level officials' seals' (半通印), 'Local officials' seals' (乡官印), and 'Minorities' officials' seals' (少数民族官印).¹⁸ Other subtypes of official seals that appeared in the Yuan dynasty, such as 'Military officials' seals' (军官印) and 'Farmer-soldiers' seals' (屯田官印),¹⁹ may also be included in this category.

In addition to the above subtypes based on the content of seal inscriptions, there are other subtypes of official seals based on usage: 'Burial seals' (殉葬印), 'Clay sealing seals' (封泥), and 'Taoist seals' (方士印/道家印). Burial seals refer to those seals buried with the dead owners, especially dead officials, in their graves as part of a funeral custom that began in ancient times.²⁰ Clay sealing seals were impressed on clay which sealed letter packages during the era when writing was done on wood or bamboo plates.²¹ Both of these customs were lost long ago but many of their seals and impressions still exist today. Taoist seals are said to have been used in ancient times based on a Taoist belief that clay impressions of the seals would prevent wild beasts' attack when carried while walking in woods and mountains. However, the original impressions of Taoist seals have not survived, and thus the reproductions of their impressions seen today may not be authentic.²²

There have been several different views on the categorization of the above seals. Ye categorizes 'Taoist seals' as 'Official seals,'²³ while Liu Jiang categorizes them as 'Private seals,'²⁴ and Wang categorizes them as other seals (neither official nor private).²⁵ Collon considers that they are loosely connected with both official and private seals.²⁶ Probably these different views among scholars were caused by the vague nature of Taoist seals, or more specifically, Taoist owners who used them to ward off beasts. Fujita reported that both official and private seals used for clay sealing were

excavated in the northern Korean peninsula (the ancient Lelang Commandery) in the 1920s. He, however, believes that clay sealing seals using private seals were half-official in nature because of the fact that they were found together with official seals in the Lelang castle ruins.²⁷ Liu Jiang does not attempt to categorize 'Burial seals' and 'Clay sealing seals' as either official or private seals, but rather treats them as different usages.²⁸ This treatment appears reasonable because official and private seals were called by different names only when used for particular purposes. Given these various viewpoints, it may be possible to set up a third category to include those seals that cannot clearly be grouped under either official or private seals.

Japanese seals have also been largely categorized as 'Official seals' and 'Private seals.' Japanese official seals were first regulated by the provisions of Chapter 21 *Kushikiryo* (公式令) in *Yoro Ritsuryo* (養老律令), a legal code established in A.D. 701 that is said to have followed the Tang legal system. The following four types of seals stated in *Kushikiryo*, 'Emperors' seals' (内印), 'Central government seals' (外印), 'Department seals' (諸司印), and 'State seals' (國印), have been generally considered among scholars to be official seals.²⁹

Scholars have not reached a consensus on the categorization of some Japanese official seals. Ono, for example, includes 'County seals' (郡印), 'Village head seals' (郷長印), 'Kyoto government office seals' (京職印), 'Official priest seals' (僧綱印), and 'Major temple seals' (寺社印/大寺印) in 'Official seals' because they were all used in national and public affairs.³⁰ Ogino, however, considers county seals as a kind of 'Semi-official seals' because they were different from the shapes and sizes of the official seals defined in the code.³¹ Suzuki, on other hand, considers that it would be unreasonable to think that county seals were not 'Official seals' (even if their appearances and specifications were largely different from state seals) because they were aligned with the same organizational system of state seals.³² As for major temple seals, which were cast and distributed by government officials in the Nara period (A.D. 710-794), Ogino considers them as 'Semi-official' or even 'Private seals.' This is because they were in round shapes in the period when official seals were all in square shapes, and their emergence matched the time when private seals first appeared in Japan.³³ In Suzuki's view, official priest seals and major temple seals were 'Public seals' but not 'Official seals' because, even though the official priests office and major temples were public institutions at the time, the central government did not hold jurisdiction over these institutions.³⁴ As was true for Chinese official seals, an intermediate category such as 'Semi-official seals' or 'Public seals' that can include these types of seals seems necessary.

3.1.2. Private seals

The subdivision of 'Private seals' is less complex than that of 'Official seals.' With a few exceptions, the major subtypes of 'Private seals' are applicable throughout the history of private seals in both China and Japan. Most of the subtypes are associated with some kind of name and thus may be collectively termed 'Name seals.' Among them are 'Personal name seals' (姓名印), 'Alias seals' (表字印/表德印), 'Pseudonym seals' (号印), 'Collectors' seals' (收藏鉴赏印/鑑藏印), and 'Studio seals' (斋堂馆阁印). Among the non-self-explanatory designations, a collectors' seal bears a name of connoisseurs or famous collectors sometimes accompanied by an era-name or a word of possession to show ownership, appreciation, or authentication of books or artworks.³⁵ A studio seal normally bears one of the four Chinese characters, 斋, 堂, 馆, or 阁, which represents one's studio or study room, and is considered as a subtype of 'Collectors' seals.'³⁶ 'Ownership seals' (藏書印), another subtype of 'Collectors' seals,' have been affixed to books to indicate possession. In other East Asian countries ownership seals have been used by upper classes and scholars, but in Japan they have been widely used by people at all levels.³⁷ A Japanese seal type called 'Family seals' (家印), used in individual families for generations, may also be considered a type of 'Name seals.'

Other seals that can also be included in 'Name seals' in a broad sense may be 'Letter seals' (书柬印/书简印) and 'Monogram seals' (押字印/花押印). A letter seal bears a personal name and complimentary close, as in 「刘昌言事」 (Stated by Liu Chang), and was used as a clay sealing seal in ancient times or was placed at the end of a letter as a concluding word after paper making was invented in the late Han period.³⁸ Monogram seals appeared in the Song period and were frequently used in the Yuan period as a substitute for a flowerlike monogram signature written with a brush and ink. One theory suggests that monogram seals were used by people from central and western Asia unable to write their names with a brush and ink.³⁹ In Japan, similar kind of seals were mainly used from the end of 13th to the 17th centuries as receipts, or as a substitute for signatures by the sick.⁴⁰

The next larger subtype of 'Private seals' after 'Name seals' is 'Phrase seals.' Phrase seals are inscribed with various kind of phrases and have been differentiated according to the type of phrases, such as 'Idiom seals' (成語印), 'Epigram seals' (箴言印), and 'Lucky saying seals' (吉语印). In ancient times, most of them were used as a belt ornament and some were buried with the dead.⁴¹ After the Song period when the use of seals on artwork began, some were called 'Colophon-head seals' (引首印), 'Balancing corner seals' (押脚印), or 'Leisure seals' (閑印/遊印) when used as a compositional

device in artwork. For example, a colophon-head seal is placed after a colophon in a painting or piece of calligraphy. A colophon normally includes the title and name of an artist and a date and is written at the upper right or left corner of an artwork. A balancing corner seal is “often placed in the lower right or lower left corner to serve as a balance to the colophon ...”⁴² The location of a leisure seal is not restricted. The phrases of leisure seals “are either literary allusions or expressive of the artist’ or recipients’ aspirations or personalities,”⁴³ arousing poetic sentiments in the viewer.

The last subtype of ‘Private seals’ is ‘Pictorial seals’(肖形印). Pictorial seals have iconic human beings, animals, plants, tools, or mythical beings engraved on or cast into the face of a seal. These will be discussed in greater detail in section 3.6 ‘Subject matter.’ No established theory exists on the purposes of pictorial seals; some suggestions are religious belief, charms, or ornamental purposes.⁴⁴ Wang, writing about ‘Sichuan mark seals’ (巴蜀符号印), a kind of pictorial seals found in the graves of the Qin era in the Sichuan area, points out that only recently have they been distinguished from other pictorial seals. He endorses Liu Yuchuan’s view that the seals were used practical uses as logos, licenses, titles, or emblems.⁴⁵

In Japan, some of the seals of feudal lords in the Warring states period (15-17 centuries) include a picture of a savage animal such as a tiger, dragon, boar, or eagle. Ogino suggests that the origin of such pictures can be traced back to ancient Chinese pictorial seals and that feudal lords may have wanted to add the superhuman power of these animals to their authority.⁴⁶ However, these seals have not been grouped under ‘Pictorial seals’ but have traditionally considered as one of the typical ‘Family seals’ because they were used in individual feudal families for generations.



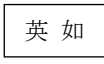



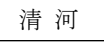





In addition to the above subtypes of private seals, there is a group of seals that do not bear characters but are not considered as pictorial seals. Among them are ‘Handprint seals’ (手印), ‘Thumbprint seals’ (拇印), ‘Nail print seals’ (爪印), and ‘Brush end seals’ (筆印), all known to have been used both in China and Japan since ancient times. In Japan, they were mainly used by the sick, women, minors, and commoners in place of a signature. In particular, a brush end seal, which makes a small circle impression on documents by using the inked-up end of a bamboo brush, is known to have been used until modern times in Japan.⁴⁷ These seals might be considered unusual in terms of their peculiar impressions, but the long history of their use cannot to be disregarded. The category is referred to in this paper as ‘Print seals’.

3.2. Inscription

3.2.1. Transcription

Section 3.2 will discuss the category 'Inscription' and the elements that constitute its subcategories. Transcription of the inscriptions is the essence of any seal descriptions because inscriptions show the most important information of seals such as the names and/or affiliations of artists, collectors, or former owners of artworks or books. How to read and transcribe the inscriptions is not always an easy task, as they are usually written in seal scripts, but it is beyond the scope of this paper to discuss the methods.

One thing to keep in mind when transcribing the inscriptions is the arrangement of characters in a seal impression. Seal inscriptions are usually read from top to bottom and right to left, or either one of the two, but there are also some other ways of reading as illustrated in Table 2 below. Liu explains that some of the nonstandard arrangements were determined by the content of a seal inscription, such as an official seal in which a geographic name comes first, position name the next, and lastly a word for seal, as in 「宜陽津印」, while others were left to the discretion of seal engravers; therefore, it is necessary to verify personal names, position names and place names.⁴⁸ For example, in order to read the seal inscription 「宜陽津印」 correctly, it is necessary to know that 宜陽 was a place name (Yiyang county set in the Warring States period), 津 means ferry, and 印 means a seal. From such information, the seal has been identified as an official seal of ferry management officer of Yiyang County.⁴⁹ Another nonstandard arrangement is seen in the private seals of the Han dynasty called 'Rotating character seals' or 'Huiwen yin' (迴文印), in which characters are read in an anticlockwise direction from the top right. It is said that the purpose of the anticlockwise arrangement was to separate a surname and forename in an inscription in order to avoid confusion,⁵⁰ but the original purpose appears to have faded away in Japanese seals as seen in the example in the table. Additional nonstandard arrangements of characters are introduced in Liu's books. In this respect, it would be worth considering 'Arrangement of characters' as a subcategory of 'Inscription' if research demands for it are anticipated. If the subcategory is set, how to name each arrangement should also be considered.

Table 2. Arrangement of seal characters					
Standard arrangement					
Seal Example	Arrangement	Transcription	Seal example	Arrangement	Transcription
		織田氏蔵 ⁵¹			如英 ⁵²
Nonstandard arrangement					
		宜陽津印 ⁵³	 54		清河 ⁵⁵
		帳從容印 ⁵⁶ (Chinese example of Huiwen yin)			
		求己堂記 ⁵⁷ (Japanese example of Huiwen yin)			

3.2.2. Transliteration, Language, Script type, and Translation

After transcribing seal inscriptions, transliterations and translating the inscriptions are the next steps, especially in the countries using Latin scripts. The North American library community has been using the ALA romanization tables for transliterations of seal inscriptions, while other countries using non-Latin scripts have been using their own alphabet systems. For example, the Kyushu University ownership seals database in Japan (九州大学蔵書印データベース) transliterates seal inscriptions using Japanese alphabet, or kana, as in 「碩水蔵書 (セキスイゾウシヨ) [Sekisui collection]」.⁵⁸ Either way, it may be preferable to provide transliterations because most Chinese characters have multiple readings, and readings are likely to differ according to the language of each East Asian country where Chinese characters were once used or are still being used. A lucky saying seal 「大吉祥」, for example, is read *Da ji xiang* in Chinese and *Daikichijo* in Japanese; both have the same in meaning “Great auspiciousness” as in no. 2 of Table 3 below. In such cases, it would be better to indicate the language of an inscription because one may not be able to see it by the transcription and transliteration.

Seals with non-Chinese characters may also require language indications, such as the ones using a script for Mongolian called ‘Phags-pa script seals’ (八思巴文印) that appeared in the Yuan dynasty,⁵⁹ and Sanskrit seals in the Qing dynasty.⁶⁰ In Japan,

Buddhist Sanskrit seals also appeared in ancient times⁶¹ and seals with Western language inscriptions such as Dutch, Italian, Portuguese, and Spanish were used from the 16th to 18th centuries mainly under the influence of Christianity introduced by missionaries.⁶²

Multiple scripts being used in a language, such as hancha and hangul scripts in Korean and kanji and kana scripts in Japanese, can also be considered as a category. As shown in no. 3 of Table 3, the oval seal uses only *kana* script for its inscription. Depending on research demands for retrieval, ‘Script type’ could be set as a subcategory under the ‘Language’ category.

Table 3. Examples of transcription, transliteration, language, script type, and translation of seal inscriptions

No	Seal	Transcription	Transliteration	Language	Script type	Translation
1		李田私印 ⁶³	Li Tian si yin	Chinese		Private seal of Li Tian
2		大吉祥 ⁶⁴	Da ji xiang	Chinese		Great auspiciousness
			Daikichijo	Japanese		
3		かながきぶんこ ⁶⁵	Kanagaki Bunko	Japanese	Kana	Kanagaki Library

Translations of seal inscriptions may help identify the types of seals and/or names of owners, collectors, or artists. The translations of the three examples above indicate that seal 1 is a private seal of Li, seal 2 is a lucky saying seal, and seal 3 is an ownership seal of Kanagaki. Providing this kind of detailed information on seal impressions may help not only people unfamiliar with East Asian languages but also the native speakers of the languages to increase understanding of seals.

3.3. Owner information and Date

The next base category, ‘Author,’ records the authors of marks/inscriptions. Because this term is not appropriate for the description of seal impressions, this section will instead use the term ‘Owner’ and discuss ‘Owner information’ derivable from examination of the transcriptions of seal inscriptions. The next base category, ‘Date,’ will be also included in this section because these two categories are closely related to

each other. Issues such as how to identify an owner's name using name dictionaries or other methods are beyond the scope of this paper and will not be included.

In order to know what kind of owner information is available, it may be helpful to look into some seal databases. In a seal exhibition website called *Japanese Ex-libris Stamps* created by the National Diet Library of Japan, one of the webpages entitled "British linguist who collected valuable books" shows an image of the ownership seal impression of Frank Hawley, 「寶玲文庫」 (Hawley Library), along with the owner's dates of birth and death and occupation, biographical sketch, a brief description of the library's collection of his books, and other locations of his book collections.⁶⁶ In other pages, owners' real names, other names, and pseudonyms are also included. Another Japanese database, *Kyushu University ownership seal database*, includes also corporate owners' seal impressions. One of them is 「岡山藩校」, the official school of the Okayama Clan founded in 1669. The database records the school's life-span, founders, place and purpose of establishment and also includes family seals with their names, social classes such as court noble and warrior class, occupations, and the places and time ranges that the families existed.⁶⁷ Social class is also included in the descriptions of personal owners' seals in this database.

Regarding the 'Date' category, it is necessary to distinguish between the date of the impression of a seal and the date of the creation of a seal body, which is beyond the scope of this paper. An example shown in the introduction, "'Museum Britannicum" (ink stamp, in blue, ca. 1760, on t.p. verso),"⁶⁸ indicates that the ink stamp was impressed on the museum copy of a book around 1760. When the date of impression has not been determined, the owner's biographical data may sometimes help to infer it. Take the first seal example above. Hawley's dates are 1906-1961. Since he came to Japan in 1931, all of his seals must have been impressed between 1931 and 1961. In the second example, the dates of the seal impressions of the school must fall in between 1669 and 1871, the years the school existed. However, there is always a possibility that multiple seals were used during the lifetime of a personal or corporate owner. The British Museum has used several stamps in different shapes and design during its life-span; the "Museum Britannicum" stamp was used from 1753 to around 1836, an oval one from 1837 to 1929 and a round one from 1929 to 1973.⁶⁹ Considering the nature of the use of seals, it may be very difficult to identify such clear date ranges unless the dates are recorded.

Difficulties in identifying seal owners and dates are well known. Kuo introduces such issues as using forged seals, misidentifications of a collector's seal with an artist's seal, genuine seals impressed on misattributed works of art, and two seals with

identical characters impressed on an artwork that actually belonged to two different persons.⁷⁰ Ono mentions issues such as a personal seal used by a different person in a same family by succession, and conversely, a seal bearing a name of an earlier generation in a family that was actually created by a later family member in commemoration of their ancestor.⁷¹ These issues indicate that identifying owner information and date may sometimes require extensive research and/or expert knowledge and insight to solve.

3.4. Representation of characters

The next base category, ‘Technique,’ seems irrelevant to discuss here because, in the case of seals, it usually refers to casting and carving of seal bodies. These techniques are not often mentioned with the images of seal impressions in seal literature because in most cases, they are not clearly noticeable without seal bodies. On the other hand, the methods of representing characters on a seal face (raised and incised) are almost always mentioned and therefore deserve to be considered as a descriptive category in this section.

The two methods have traditionally been called ‘Red or Yang characters’ (朱文 or 陽文) and ‘White or Yin characters’ (白文 or 陰文), respectively. The former is made by impressing the inked-up raised part of a seal face on paper, leaving red-colored characters, while the latter by the incised part with no ink, leaving white characters. There is also a third representation called 朱白文 or 白朱文, which includes both red and white characters (and vice versa) in one seal face.

Regarding the usage of the terms Yang and Yin characters, Ono views this usage as being unorthodox because seals were originally impressed in clay in ancient times and consequently, the raised part of a seal face was depressed in clay and was called Yin characters, and the incised part was raised and called Yang characters, opposite to the modern usage.⁷² This issue is debatable, and this usage of the terms is less common in seal literature in both China and Japan. For the sake of convenience, this paper will continue to follow the modern usage.

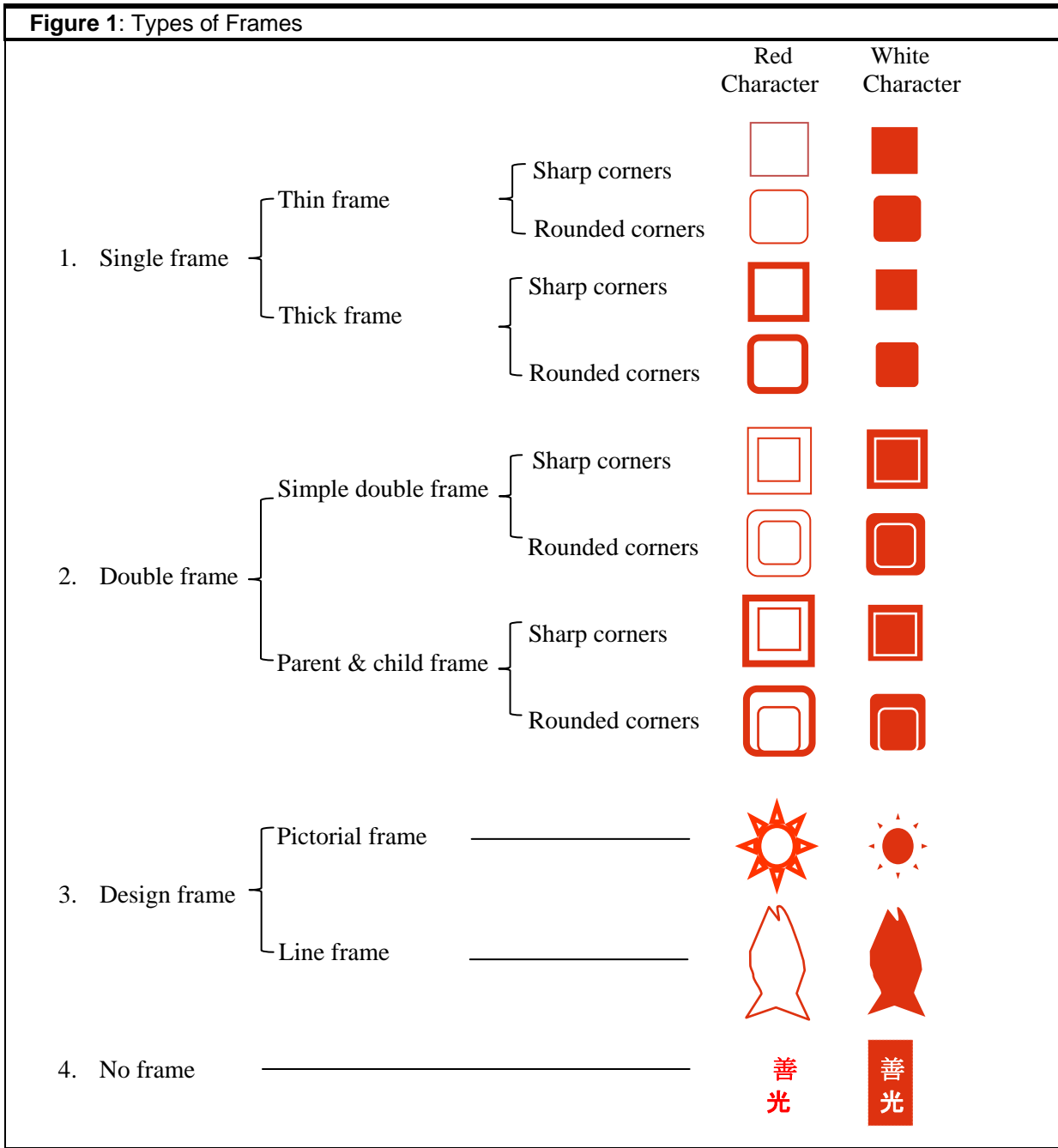
Another issue concerning these terms is that a range in English expressions is used. For example, Red/Yang characters are also called as “relief legend,” “characters carved in relief,” or “red lettering,” White/Yin characters are “Intaglio legend,” “incised characters,” or “white lettering,” and Red and white characters are “half-relief and half-intaglio legend” and “one incised character, one character carved in relief.” However, how to express the category terms is another theme to be discussed separately.

3.5. Appearance

The next base category term 'Description' is used to describe the content of a mark according to CDWA,⁷³ as well as an overall description of the mark. To avoid confusion, this paper will use the two subcategory terms of 'Description': 'Appearance' and 'Subject matter,' and will discuss them separately in section 3.5 and 3.6. Section 3.5 will discuss the four elements of the 'Appearance' of a seal impression: 'Shape,' 'Frame,' 'Size' and 'Color,' which have been identified by analyzing many images of various seal impressions in seal literature.

The vast majority of seal impressions regardless of the type have geometric shapes such as: quadrangular shapes (square, rectangular (portrait and landscape), and diamond shapes), polygonal shapes (pentagons, hexagons, and octagons), and round shapes (round, half-round, oval, and irregular round shapes). While official seal impressions have only either square or rectangular shapes, private seal impressions are also geometric and non-geometric in shape. Traditional Chinese non-geometric shapes include incense burner shapes (香炉形), tripod vessel shapes (鼎形), and tripod beaker shapes (爵形), all of which influenced Japanese private seals in the Kamakura-Muromachi periods (12-16 centuries) through seals used in Zen Buddhism.⁷⁴ Other typical non-geometric shapes include coin, gourd, flower, fish and elephant shapes. As mentioned earlier in the 'Private seal' section, some Japanese feudal lords in the Warring states period had seals with a savage animal depicted across the upper border of a square or rectangular shape.⁷⁵ Seal impressions of this kind are an example of a combined geometric and non-geometric design.

In addition to shapes, many seals have various kinds of frames around the characters. Ono's classification of the frames summarizes well most of the types.⁷⁶ Figure 1 below illustrates the classification. 'Grid frame' (格界), which looks like the character 田 used in the seals of the Han and the former dynasties, is not included.



Seal impressions vary in size from less than 1 cm across to over 10 cm, depending on the era to which a seal belongs. Official seals of the Han dynasty, for example, were mostly 2.3 cm squared, whereas those of the Sui and Tang dynasties grew to be larger than 5 cm squared.⁷⁷ In Japan, *Kushikiryo* specified the size of imperial seals to be 8.8 cm, central government seals as 7.3 cm, state seals as 5.9 cm, and department seals as 6.6 or 5.9 cm.⁷⁸ In the late sixteenth century Japanese seals became stylized and

smaller (about 1 to 3.0 cm).⁷⁹ Private seals vary greatly in size. Since the images of seal impressions in paper and online media are not always life-size, providing actual size information is important.

As for color, vermilion, which is made from cinnabar, has mostly been used as seal paste because it was regarded as a noble and lucky color in ancient China for its preciousness and resistance to fading. Ink black has also been used and considered to last even longer than vermilion. Traditionally vermilion (also called red) was used for auspicious occasions, public use, and artworks, and black for bad occasions and less formal/private use, but the distinction was not strict. From the late sixteenth to seventeenth centuries in Japan, other colors such as Montpellier green, red ocher, orange, and indigo blue were also seen occasionally.⁸⁰

3.6. Subject matter and Interpretation

This section will discuss the subjects depicted in pictorial seals and their interpretations. As mentioned in Section 3.1.2., ‘Pictorial seals’ are a subcategory of ‘Private seals’ and their subjects may include iconic human beings, animals, plants, tools, or mythical beings. Table 4 below summarizes the subjects of the Han dynasty pictorial seals discussed by Jian Liu.⁸¹

Table 4. Subjects of pictorial seals in the Han dynasty		
Subject matters		
Social life		plowman with ox, cavalry, performer, entertainer, horse rider, imperial life, hunting, breeder
Animal	Lucky animals	tiger, deer, horse, sheep, camel, rabbit, etc.
	Legendary birds	phoenix, vermilion bird, crane, paired swallows, Imperial Palace birds
	Other birds	chicken, duck, goose, ostrich, parrot, etc.
	Other animals, etc.	turtle, frog, insect, fish, etc.
Myth and legend		dragon rider, ogre extermination, tiger-god driving away ogre, fisherman Zhang Hong (张宏), god-man managing snake, Bluebirds feeding the Queen Mother of the West (西王母), Four benevolent animals, dragons
Geometric botanical design		persimmon fruits, cornels, star shapes, geometric design
Combination of characters and pictures		characters with: benevolent animals, animal pattern borders, Imperial Palace design, geometric patterns

There is debate over whether to interpret non-self-explanatory subject matters. How to interpret them may also be debatable. If a subject has a complex meaning based on the history and/or culture of the country where a seal was created, some may consider that it might be hard to grasp its subject without interpretation even if an image of the seal is provided. Others, however, may consider that it is appropriate to interpret basic cases only, such as turtles and cranes symbolizing longevity, in order to avoid subjectivity in interpretation. In either case, whether to use the 'Interpretation' category seems to largely depend on the needs of an institution that creates the metadata.

3.7. Location

This section will discuss the location of seal impressions on artworks, documents, and in books. The location is considered important because a seal impression could have a different meaning or role based on the location. As described in the 'Private seal' section, colophon-head seals, balancing corner seals, and leisure seals have a different function as a compositional device depending on the location on an artwork. Other art-related seals such as 'Signature seals' (落款印), 'Authors' seals' (筆者印), and 'Collectors' seals' appear to have had no fixed locations. A signature seal is usually placed under the name of the creator/artist of an artwork, but it could also be affixed on its own without the name. Therefore signature seals have sometimes been confused with collectors' seals or authors' seals, which belong to the authors who write poems and dedications on works of art.⁸²

The location of seal impressions on public documents was regulated by the ancient legal code *Kushikiryō* in Japan, which prescribed that official seals were to be placed on key words in texts, such as events, numbers, dates, as well as on signatures and paper seams.⁸³ Other than official regulations, there was also epistolary etiquette concerning seal locations. For example, in the 15 to 16th centuries, a seal impressed on the back of a document indicated a condescending manner of the sender, and a seal on the blank space in the right hand side of a document (袖) meant to have addressed to a person of a lower rank.⁸⁴

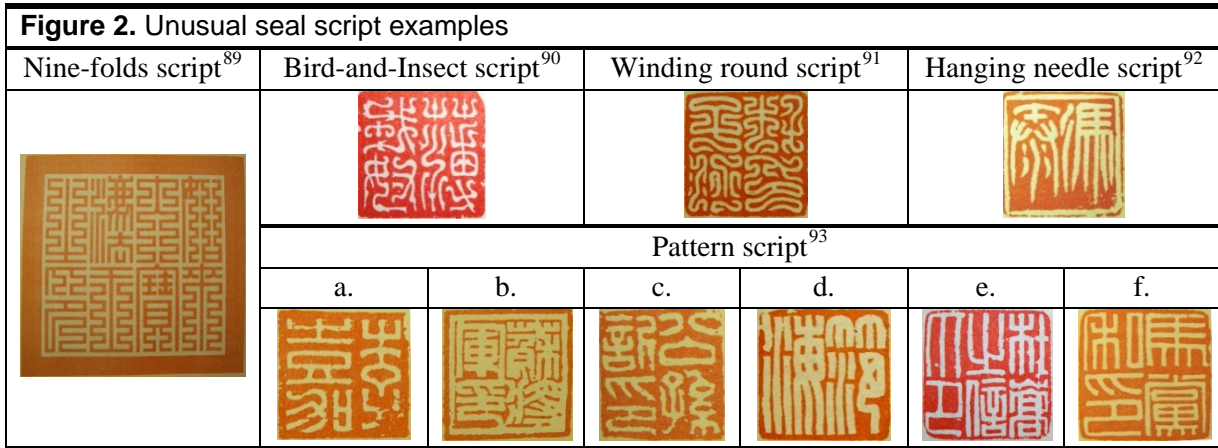
While there seems to have been no particular rule for the location of ownership seals in a book, certain locations were traditionally preferred. The blank space below the caption title of an East Asian style binding book (卷頭) has been most preferred because, unlike covers, the caption title page would less likely to be taken off even if a book is revised. Also the page is elastic enough for a seal to be affixed vividly so the seal look most impressive for readers. Often the seals of earlier owners of a book were placed on the blank space below a caption title and the later owners' seals on the upper

or side space of the title. This can be helpful in determining the provenance of a book besides figuring out from the birth and death dates of the former owners. Other preferred locations in a book have been the blank space in the end title page, covers, back of the front cover, title piece, and fly leaf. Title pages of Western-style books have also been used for books published in modern age.⁸⁵

In terms of metadata creation, providing the entire image of a seal impression including its surrounding area along with the descriptions is ideal because this could increase the chance of identifying the type, purpose, and/or authenticity of a seal.

3.8. Letterform

Many types of letterforms have been invented throughout the long history of East Asian seals. The best-known letterforms used for seal inscriptions are probably 'Ancient script' (古文), 'Large seal script' (大篆), 'Small seal script' (小篆), 'Clerical script' (隸書), 'Regular script' (楷書), 'Running script' (行書), and 'Cursive script' (草書). In addition to these typical scripts, the unusual scripts listed in Figure 2 below have also been used and mentioned in seal descriptions. Among them, the most mentioned is 'Nine-folds script' (九疊書), which looks as if every stroke of a character is folded many times, usually nine to sixteen times, and has been mainly used for official seals.⁸⁶ 'Bird-and-Insect script' (鳥蟲書), which is characterized by its decorative winding strokes with ends forming insect- or bird-looking shapes, is also often mentioned. 'Winding round script' (繆篆) has strokes closely winding. 'Hanging needle script' (懸針篆) consists of long and pointed strokes like needles.⁸⁷ 'Pattern script' (摹印篆) has many variants according to age. Ye classifies them in six types: a) Sparse composition of prolonged characters with uniform strokes with square ends; b) Close composition of square characters with thick strokes with square ends; c) Slightly rounded square characters with round strokes with slightly pointed ends; d) Slightly rounded square characters with bold strokes with equally-cut ends; e) Slightly rounded prolonged characters with uniform strokes; f) Square characters with linear strokes with square ends.⁸⁸ Since it is difficult to distinguish seal scripts with subtle variants and differences like pattern scripts, naming them in the descriptions of seals should be given careful consideration.



3.9. References/Citations

This section will first discuss ‘References’ and then ‘Citations.’ The *Descriptive Cataloging of Rare Materials (Books)* defines references as “references to published descriptions of the collections of former owners of the item”⁹⁴ and gives one example as follows:

National Library of Scotland copy: "Ioh. Mauritius" (17th-century inscription on t.p.; see Birrell, T.A. *Library of John Morris*, no. 410)

It shows a reference to *Library of John Morris*, an early printed book catalog of the collection of the former owner John Morris. This idea of making a reference is used in the *Japanese Ex-libris Stamps* database. The database’s references also include the titles of seal owners’ biographies and/or complete works, providing comprehensive information on each owner for research.

The Kyushu University ownership seal database includes in each seal description the citations of the titles of books to which the same ownership seal is affixed. This enables researchers to retrieve all of the seal impressions affixed to a particular book by searching for the title. For example, searching for a title 應天曆 (Otenreki) retrieves the seal impressions of three physicians, 洪江抽齋, 森立之, and 小島宝素, who once owned the book. As indicated in the case of these two databases, adding reference/citation information to the descriptions of seal impressions helps in research more than having seal descriptions only.

3.10. Remarks

This section will attempt to identify some types of information that are likely to belong to the 'Remarks' category. 'Remarks' is defined in CDWA as "Additional notes or comments pertinent to information in this category."⁹⁵ An example of 'Remarks' that CDWA gives is:

"Title and dedication have been burnished clean from plate 1, with a new title engraved by a late 19th century hand ..."⁹⁶

From this example we can conclude that what 'Remarks' refers to here is the sort of information that is not covered by other categories but needs to be recorded. By looking into the seal descriptions in the Kyushu University ownership seal database, the following types of information have been identified:

- 1) Related seals
 - Other seals that belonged to the same owner besides the seal in question
 - Different seals with identical inscriptions other than the seal in question
- 2) Multiple owners, such as father and son, of a same seal
- 3) Other libraries' holding information of the same seal impression
- 4) Paired seals (連印)

Paired seals are the seals called Lian yin (Chinese) or Ren'in (Japanese) that are intended to be used in pairs. Many paired seals are characterized by sharing the same overall design, except the difference between red and white characters. Most of each pair is the same size, but not all. The number of characters in each seal of a pair is not always the same. Inscriptions of a paired seal are often phrases such as an idiom, epigram, and lucky saying, or some combination of a surname, forename, another forename, another name, and pseudonym of a person.

In addition to the types of information in the above list, information about using multiple seals together in one location may also be relevant to the 'Remarks' category. Ogino explains that such multiple seal usages, including paired seals, are for variety's sake in order to complement the calligraphies to which those seals were affixed. He also describes some other examples of multiple seal usages: 1) Vertically-arranged three different shapes of seals; 2) Vertically-arranged two different sizes of seals in a same shape; 3) A combination of a seal with inscription and a pictorial seal.⁹⁷

Another candidate for the list may be detailed information on seal owners' book collections as in the *Japanese Ex-libris Stamps* database. It describes the characteristics of owners' collections such as the number of volumes, subject fields, and whereabouts after they were transferred. Preparing such detailed collection information may, however, require extensive research and time and therefore may not be suitable to every institution that creates metadata.

4. Other possible categories

To this point twelve major categories have been identified. Section 4 will explore any additional categories necessary to describe seal impressions.

4.1. Usages

A possible category 'Usages' was mentioned in the discussion of the types of seals in Section 3, which described some seals having two or more different names based on different usages. They include 'Official position name seals' used as 'Burial seals,' some official and private seals used as 'Clay sealing seals' or 'Burial seals,' and 'Phrase seals' used as 'Colophon-head seals,' 'Balancing corner seals,' or 'Leisure seals' that function as a compositional device for artwork. These examples may indicate the need to create a new category 'Usage' in order to fully describe these types of multifunctional seals.

4.2. Seal Materials

Materials of seal bodies have been often mentioned in seal literature. A wide variety of materials, such as stones (Jade, soapstone), metals (gold, silver, bronze, iron), minerals (agate, coal, lapis lazuli, crystal), plant-derived materials (wood, bamboo roots, amber), animal-derived materials (beeswax, horn, ivory), and artificial material (ceramic, plastic, rubber), have been used for seal making. The question is whether the materials of seal bodies can be perceived from seal impressions. Collon states that "From an examination of the impression it may be possible to deduce whether the seal was carved in jade, metal or wood, but doubts often remain."⁹⁸ Some descriptions of seal materials are accompanied by a question mark (?). Ono introduces some criteria for deducing seal materials by examining the appearances of seal impressions as follows:⁹⁹

- a) The letterforms of wood seal impressions have more perfection in terms of the correctness, smoothness, delicateness, and balance of the contours of the letters. However as time goes by, the letterforms will become blurred because of the greater adhesion of seal paste to wood and easy abrasion of wood letter surface.

- b) The letterforms of cast copper seal impressions have less perfection even if the molds are perfect because of the deviations resulting from heat.
- c) The impressions of stone seals have grazing caused by the graining of stones, and the contours of the letters have nicks caused by carving.
- d) It is reasonable to consider most seal impressions with regular script, cursive script, and any other dense and fine scripts as being made of wood or horn because it is hard to carve fine lines on stone or ceramic.
- e) It is also reasonable to consider extremely large seal impressions as wood seals. No stone, horn, or ceramic seal is so large because of the limitation of these materials.

He concludes that deducing the materials inevitably includes sensory judgment. This may indicate that such deduction may be subjective depending on the person in charge. In metadata creation in library settings where only seal impressions are generally available, it is extremely difficult to judge the materials without seal bodies and the value of information deduced from sensory judgment may be even questioned. Given this, institutions which need the category 'Materials' may be limited to those that have experts capable of dealing with such work and also have strong demands from users.

4.3. Number of characters

In contrast to deducing the materials, counting the number of characters in a seal impression is relatively easy for any institution, as long as the characters are discretely arranged. The Kyushu University ownership seal database is an example of providing such information. While the importance of recording the numbers may not be so obvious, Ye provides some explanations as follows.¹⁰⁰ The numbers of characters in some official seals have historical characteristics and/or the numbers may vary according to the ranks of government officials who owned the seals. For example, official seals of the Qin, Han, and the period of Northern and Southern Dynasties had four, five, or six characters, and especially four and five characters were widely used; five-character seals were used by higher officials and four-character seals by lower-level officials and local kings and nobilities. When Wáng Mǎng (王莽), the emperor of the Xin Dynasty (A.D. 9-23), stipulated that six or more characters were for use in seals, seals with six or more characters first appeared. After the Sui and Tang Dynasties, the numbers increased as official seals came to include many government office name seals, which tended to have longer names.

Another possible reason to record the numbers might be statistical purposes; some researchers may need to know the exact numbers to see if, for example, there are different characteristics between the types of seals. Because of the ease of counting and

objectivity of the data, 'Number of characters' may be another possible category for any institutions to use.

5. Conclusion

The purpose of this paper has been to identify any possible information categories for the description of East Asian seal impressions as metadata. First, a base category for the description of general mark/inscription was identified and the necessity of verifying its application to the description of East Asian seal impressions was recognized. Then the sixteen base categories were discussed and modified one by one, and three additional categories were identified for use in the description. The base category set and the newly defined category set are listed side-by-side in Table 5 below for easy comparison and contrast.

Base Category Set		New Category Set		
1	Type	1	Type	Official seal (官印)
2	Mark Identification			Intermediate seal
3	Inscription	2	Inscription	Transcription
4				Transliteration
5				Translation
6				Language
7	Author	3	Owner information	Personal owner Family owner Corporate owner
8	Date	4	Date	
9	Technique	5	Representation of characters	Red/Yang characters (朱文/陽文) White/Yin characters (白文/陰文) Red and white/White and red characters (朱白文/白朱文)
10	Description	6	Appearance	Shape Frame Size Color
11		Subject matter	7	Subject matter

				Geometric botanical design Combination of characters and pictures
12	Interpretation	8	Interpretation	
13	Location	9	Location	Artwork Document Book
14	Typeface/Letterform	10	Letterform	Ancient script (古文) Large seal script (大篆) Small seal script (小篆) Clerical script (隸書) Regular script (楷書) Running script (行書) Cursive script (草書) Nine-folds script (九疊書) Bird-and-Insect script (鳥蟲書) Winding round script (繆篆) Hanging needle script (懸針篆) Pattern script (摹印篆)
15	References/Citations	11	References/ Citations	
16	Remarks	12	Remarks	Related seals Multiple owners of a same seal Other libraries' holding information Paired seals (連印) Multiple seal usages Seal owners' collection information
		13	Usage	Burial seal (殉葬印) Clay sealing seal (封泥) Colophon-head seal (引首印) Balancing corner seal (押腳印) Leisure seal (閑印/遊印)
		14	Seal material	Stone Metal Mineral Plant-derived material Animal-derived material Artificial material
		15	Number of characters	

As this table indicates, there are few significant differences between the main categories of the two sets, except for the three additional categories in the new set. This suggests that there are likely to be few problems in describing East Asian seal impressions by using existing categories in metadata standards if some modifications for seal descriptions can be made. It should be noted, however, that the new category set will be altered or gain additional categories if the scope of further research expands to: 1) Seal bodies; 2) Korean, Thai, and Vietnamese seal impressions; 3) Modern day seal impressions. In addition, the subcategories will also be altered if more examples are included in the discussion of each category. Further research including these elements could yield quite different categories such as 'Seal artist/creator' and 'Types of string' that used to be attached to seal knobs for easy carrying or hanging at one's side. Also the terminology of the names of the categories may become a theme for further research because the terms used in this paper are neither authentic definitions/translations nor controlled terms.

Lastly, with the new descriptive category set for seal impressions, what specific work can be done in a digital environment? Some seal scholars have tried to develop a reference tool on seal impressions to help conduct specialized researches. For example, Kuo suggests obtaining a reference collection of reliable seal impressions.¹⁰¹ Ono emphasizes that it is necessary to compile a comprehensive, authentic seal impression album by seal collectors working together in the hope of contributing to analysis of old literature with seals affixed.¹⁰² Ogino also expresses the hope of building a dataset of detailed descriptions of a same type of seals that will enable researchers to see, for example, the differences between 'Imperial seals' in each different era.¹⁰³ Suzuki states that it is necessary to gather accurate data of the names, numbers, locations and document names from every existing seal impression.¹⁰⁴ If a database is built as they wish, with the images of authentic seal impressions and their detailed and reliable descriptions, many research needs concerning seals could be fulfilled more easily and satisfactorily. Furthermore, if a database is equipped with an image search function, which was unavailable in these scholars' times, the time-consuming task of identifying seal owners could be done more efficiently, and new findings and research demands could be exploited. This study on the description of East Asian seal impressions as metadata hopes to be a part of this effort.

Notes

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- ¹ Dominique Collon, ed., *7000 Years of Seals* (London: Published for the Trustees of the British Museum by British Museum Press, 1997), 10.
- ² “月岡耕漁: Tsukioka Kogyo: the Art of Noh, 1869-1927,” University of Pittsburgh, last modified March 21, 2011, <http://digital.library.pitt.edu/k/kogyo/>.
- ³ Manae Fujishiro, telephone message to author, August 23, 2012.
- ⁴ “Collection database search,” The British Museum, accessed August 1, 2012. http://www.britishmuseum.org/research/search_the_collection_database.aspx
- ⁵ Isamu Tsuchitani and Manae Fujishiro, “7B.17.2. Provenance. Seal of ownership,” in *Descriptive Cataloging guidelines for Pre-Meiji Japanese Books*, enl. and rev. ed. ([Washington, DC?: Library of Congress?], 2011).
- ⁶ Research Library Group, “Cataloging Guidelines for Creating Chinese Rare Book Records in Machine-Readable Form: 中文善本書機讀目錄編目規則,” in *Cataloger’s Desktop* (Mountain View, CA: Research Library Group, 2009), under “8.10 Local note,” <http://desktop.loc.gov/template.htm?view=main>.
- ⁷ Bibliographic Standards Committee, Rare Books and Manuscripts Section, Association of College and Research Libraries, “Descriptive cataloging of rare materials (books),” in *Cataloger’s Desktop* ([Washington, D.C.: Library of Congress], 2008), under “7B19.2 Provenance,” http://desktop.loc.gov/template.htm?view=main&content=document&doc_action=setdoc&doc_keytype=tocid&doc_key=&hash=.
- ⁸ J. Paul Getty Trust, “Categories for the Description of Works of Art,” in *Cataloger’s Desktop* ([Los Angeles, CA]: J. Paul Getty Trust, 2009), under “8. Inscriptions/Marks,” http://desktop.loc.gov/template.htm?view=main&h_action=clear.
- ⁹ Baca Murtha et al., *Cataloging Cultural Objects* (Chicago: American Library Association, 2006), 151.
- ¹⁰ A joint project team of the CIDOC data and terminology and the CIDOC data model working groups, ed., *International Guidelines for Museum Object Information* (Paris: International Committee for Documentation of the International Council of Museums, 1995), 49.
- ¹¹ Robin Thornes with Peter Dorrell and Henry Lie, *Introduction to Object ID* ([Los Angeles]: Getty Information Institute, c1999), 18-19.
- ¹² *Ibid.*, 19.
- ¹³ “Hallmark,” Wikipedia, accessed June 27, 2012, http://en.wikipedia.org/wiki/Hallmark#cite_note-6
- ¹⁴ J. Paul Getty Trust, “Categories for the Description of Works of Art,” under “8. Inscriptions/Marks.”
- ¹⁵ Jason C. Kuo, *Word as Image* (New York: China House Gallery, 1992), 17.
- ¹⁶ *Ibid.*, 28.
- ¹⁷ Qifeng Ye 叶其峰, *Gu xi yin tong lun* 古玺印通论 (Beijing: Zi jin cheng chu ban she 紫禁城出版社, 2003), 15-23.
- ¹⁸ Qifeng Ye, *Gu xi yin yu gu xi yin jian ding* 古玺印与古玺印鉴定 (Beijing: Wen wu chu ban she 文物出版社, 1997), 6-11.
- ¹⁹ Ye, *Gu xi yin tong lun*, 251-256.
- ²⁰ *Ibid.*, 100; Jiang Liu 刘江, *Zhongguo yin zhang yi shu shi* 中国印章艺术史, (Hangzhou Shi 杭州市: Xi ling yin she chu ban she 西泠印社出版社, 2005), 68, 77, 197.
- ²¹ Liu, Jiang. *Zhongguo yin zhang yi shu shi*, 75-76.
- ²² Collon, *7000 Years of Seals*, 214.
- ²³ Ye, *Gu xi yin yu gu xi yin jian ding*, 10.
- ²⁴ Liu, Jiang. *Zhongguo yin zhang yi shu shi*, 128.
- ²⁵ Tingqia Wang 王廷洽, *Zhongguo gu dai yin zhang shi* 中国古代印章史 (Shanghai: Shanghai ren min chu ban she 上海人民出版社, 2006), 158.
- ²⁶ Collon, *7000 Years of Seals*, 214.
- ²⁷ Ryōsaku Fujita 藤田亮策, “Rakurō fūdei zokukō 樂浪封泥續攷,” in *Keijō Teikoku Daigaku Bungakkai ronsan* 京城帝国大学文学会論纂, ed. Keijō Teikoku Daigaku Bungakkai 京城帝国大学文学会 (Tōkyō: Iwanami Shoten 岩波書店, 1935-1940), 5:143, <http://kindai.ndl.go.jp/info:ndljp/pid/1146586/62>.
- ²⁸ Liu, Jiang. *Zhongguo yin zhang yi shu shi*, 75-77.

- 29 Shigeo Suzuki 鈴木茂男, "Nihon koin o meguru 2, 3 no mondai 日本古印をめぐる二、三の問題," in *Sho no Nihon shi* 書の日本史, eds. Imai Shoji 今井庄次 (Tokyo: Heibonsha 平凡社, 1975-1976), 9:81-82.
- 30 Noriaki Ono 小野則秋, *Nihon no zōshoin* 日本の蔵書印 (Tokyo: Geibunsha 藝文社, 1954), 82.
- 31 Minahiko Ogino 荻野三七彦, *Inshō* 印章 (Tokyo: Yoshikawa Kōbunkan 吉川弘文館, 1966), 92-93.
- 32 Suzuki, "Nihon koin o meguru 2, 3 no mondai," 82.
- 33 Ogino, *Inshō*, 102-103.
- 34 Suzuki, "Nihon koin o meguru 2, 3 no mondai," 82-83.
- 35 Wang, *Zhongguo gu dai yin zhang shi*, 149.
- 36 Tsunetaro Ikeda 池田常太郎, ed., *Nihon shoga kotto daijiten* 日本書畫骨董大辭典 (Tokyo: Azuma Shuppan 東出版, 1996), 1348.
- 37 Ono, *Nihon no zōshoin*, 4.
- 38 Wang, *Zhongguo gu dai yin zhang shi*, 150.
- 39 Yiwen Liu 刘一闻, *Yin zhang* 印章 (Shanghai: Shanghai gu ji chu ban she 上海古籍出版社, 1995), 82-83; Wang, *Zhongguo gu dai yin zhang shi*, 153; and Ye, *Gu xi yin yu gu xi yin jian ding*, 77.
- 40 Ogino, *Inshō*, 329-339.
- 41 Ye, *Gu xi yin yu gu xi yin jian ding*, 66.
- 42 Kuo, *Word as Image*, 59.
- 43 *Ibid.*, 45.
- 44 Ye, *Gu xi yin tong lun*, 70-71; Wang, *Zhongguo gu dai yin zhang shi*, 156.
- 45 Wang, *Zhongguo gu dai yin zhang shi*, 155.
- 46 Ogino, *Inshō*, 377, 393-394.
- 47 *Ibid.*, 346-355.
- 48 Liu, *Zhongguo yin zhang yi shu shi*, 91, 110.
- 49 "Xi yin 璽印," Shanghai Bo wu guan 上海博物館, accessed April 7, 2012, http://www.shanghaimuseum.net:82/gate/big5/www.shanghaimuseum.net/cn/dc/jx/xy_1.jsp?id=117.
- 50 Liu, *Zhongguo yin zhang yi shu shi*, 174.
- 51 Tsuchitani, "Descriptive Cataloging guidelines for Pre-Meiji Japanese Books," under "7B.17.2. Provenance. Seal of ownership."
- 52 Zhuohai Zhang 張焯槐, eds., *Yi geng shu xue she shu fa zhuan ke ji* 詒耕書學社書法篆刻集: *The Calligraphy & Seal-engraving of Yi Geng Shu Xue She* (Xianggang 香港: Zhang Zhuohuai 張焯槐, 2004), 23.
- 53 Liu, *Zhongguo yin zhang yi shu shi*, 110.
- 54 The radical and body of each character in the actual impression are in reverse order, indicating the nonstandard way of reading.
- 55 Zhang, eds., *Yi geng shu xue she shu fa zhuan ke ji*. 32.
- 56 Liu, *Yin zhang*, 11.
- 57 "Zoshoin no sekai 蔵書印の世界: Japanese Ex-libris Stamps," Kokuritsu Kokkai Toshokan 国立国会図書館, c2003, http://www.ndl.go.jp/zoshoin/e/index_e.html.
- 58 "Kyushu Daigaku zoshoin detabesu 九州大学蔵書印データベース," Kyushu University Digital Collection, last modified March 24, 2011, http://mars.lib.kyushu-u.ac.jp/infolib/meta_pub/G0000002STAMP.
- 59 Ye, *Gu xi yin yu gu xi yin jian ding*, 76.
- 60 Liu, *Zhongguo yin zhang yi shu shi*, 357.
- 61 Ogino, *Inshō*, 302.
- 62 *Ibid.*, 441-452.
- 63 Kuo, *Word as Image*, 77.
- 64 *Ibid.*, 78.
- 65 "Zoshoin no sekai: Japanese Ex-libris Stamps," c2003, http://www.ndl.go.jp/zoshoin/zousyo/08_kana.html
- 66 *Ibid.*, http://www.ndl.go.jp/zoshoin/e/e_23_furan.html
- 67 "Kyushu Daigaku zoshoin detabesu," last modified March 30, 2012, http://mars.lib.kyushu-u.ac.jp/infolib/meta_pub/G0000002STAMP_49

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- ⁶⁹ "Provenance research," The British Library, accessed Feb. 8, 2012, <http://www.bl.uk/reshelp/findhelprestype/prbooks/provenanceresearch/provenanceresearch.html>
- ⁷⁰ Kuo, *Word as Image*, 59-60.
- ⁷¹ Ono, *Nihon no zōshoin*, 101-106.
- ⁷² *Ibid.*, 69.
- ⁷³ J. Paul Getty Trust, "*Categories for the Description of Works of Art*," under "8.1. Inscription Transcription or Description"
- ⁷⁴ Ogino, *Inshō*, 372.
- ⁷⁵ *Ibid.*, 390-417.
- ⁷⁶ Ono, *Nihon no zōshoin*, 69.
- ⁷⁷ Liu, *Zhongguo yin zhang yi shu shi*, 209, 213.
- ⁷⁸ Suzuki, "Nihon koin o meguru 2, 3 no mondai," in *Sho no Nihon shi*, 9:84.
- ⁷⁹ Ogino, *Inshō*, 430-432.
- ⁸⁰ *Ibid.*, 374, 446; Ono, *Nihon no zōshoin*, 76-82.
- ⁸¹ Liu, *Zhongguo yin zhang yi shu shi*, 128-137.
- ⁸² Ogino, *Inshō*, 355-359.
- ⁸³ Suzuki, "Nihon koin o meguru 2, 3 no mondai," in *Sho no Nihon shi*, 9:87.
- ⁸⁴ Ogino, *Inshō*, 363, 375.
- ⁸⁵ Ono, *Nihon no zōshoin*, 91-100.
- ⁸⁶ Liu, *Zhongguo yin zhang yi shu shi*, 260.
- ⁸⁷ Ye, *Gu xi yin yu gu xi yin jian ding*, 64.
- ⁸⁸ *Ibid.*, 63-64.
- ⁸⁹ *Ibid.*, 148.
- ⁹⁰ *Ibid.*, 174.
- ⁹¹ *Ibid.*, 174.
- ⁹² *Ibid.*, 174.
- ⁹³ *Ibid.*, 83, 171, 173.
- ⁹⁴ Bibliographic Standards Committee, "Descriptive cataloging of rare materials (books)," under "7B19.2 Provenance."
- ⁹⁵ J. Paul Getty Trust, "*Categories for the Description of Works of Art*," under "8. Inscriptions/Marks," 8.9. Remarks.
- ⁹⁶ *Ibid.*, Examples.
- ⁹⁷ Ogino, *Nihon no zōshoin*, 380-381.
- ⁹⁸ Collon, *7000 Years of Seals*, 211.
- ⁹⁹ Ono, *Nihon no zōshoin*, 84-87.
- ¹⁰⁰ Ye, *Gu xi yin yu gu xi yin jian ding*, 48-49.
- ¹⁰¹ Kuo, *Word as Image*, 60.
- ¹⁰² Ono, *Nihon no zōshoin*, 106.
- ¹⁰³ Ogino, *Nihon no zōshoin*, 67.
- ¹⁰⁴ Suzuki, "Nihon koin o meguru 2, 3 no mondai," in *Sho no Nihon shi*, 9:77.