數位典藏與數位學習 國家型科技計畫
Taiwan e-Learning and Digital Archives Program

Making Chinese Art Accessible to Western Users: A Brief Report from AAT-Taiwan Project

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Academia Sinica, Taiwan

TELDAP | **AAT-Taiwan Team**

International Terminology Working Group (ITWG) meeting

Getty Research Institute, Los Angeles, California

01/07~01/10/2013

AAT-Taiwan: Multilingual Research Project

	Western Art Resource	Chinese Art Resource
Western users	Getty's AAT Make Western Art Accessible to Western Users	AAT-Taiwan [2] Controlled Vocabularies of Chinese Art → Mapping → AAT-Taiwan Make Chinese Art Accessible to Western Users
Chinese users	AAT-Taiwan [1] Getty's AAT → Translating → AAT-Taiwan Make Western Art Accessible to Chinese Users	Digital Archives Thesaurus (DAT) [3] Keywords From Taiwan Digital Archives → Structuring → DAT Make Chinese Art Accessible to Chinese Users

Research papers

A. Journal papers

Chen, S.J., Cheng, C.J. & Chen, H.H. (2011). Methodologies for multilingual information integration in the domain of Chinese art. IFLA Journal, 37(4), 296-304.

Chen, S.J. & Chen, H.H. (2012). Mapping multilingual lexical semantics for knowledge organization systems. The Electronic Library, 30(2), 278-294. (SSCI)

B. Conference papers

Chen, S.J., Wu, D., Peng, P.W. & Chang, Y.T. (2010). AAT-Taiwan: toward a multilingual access to cultural objects. In M. Lalmas et al. (Eds.): European Conf. Research and Advanced Technology for Digital Libraries, ECDL 2010, LNCS 6273, 389-392. Springer-Verlag. (EI)

Chen, S.J. (2010). The Analysis of Mapping Multilingual Lexical Semantics for Knowledge Organization System. In: Academia Sinica (Ed.) 「Symposium on IT Application and Exchange」 annual Conference 2010 Symposium, 415-430.

Chen, H. H., Chen, S.J. & Lee, SY. (2011). A Case study for multilingual support: applying the AAT-Thesaurus to TELDAP's multilingual projects. In: C. Xing, F. Crestani, and A. Rauber (Eds.): International Conference on Asia-Pacific Digital Libraries (ICADL 2011), Lecture Notes in Computer Science 7008. Springer, Heidelberg.(EI)

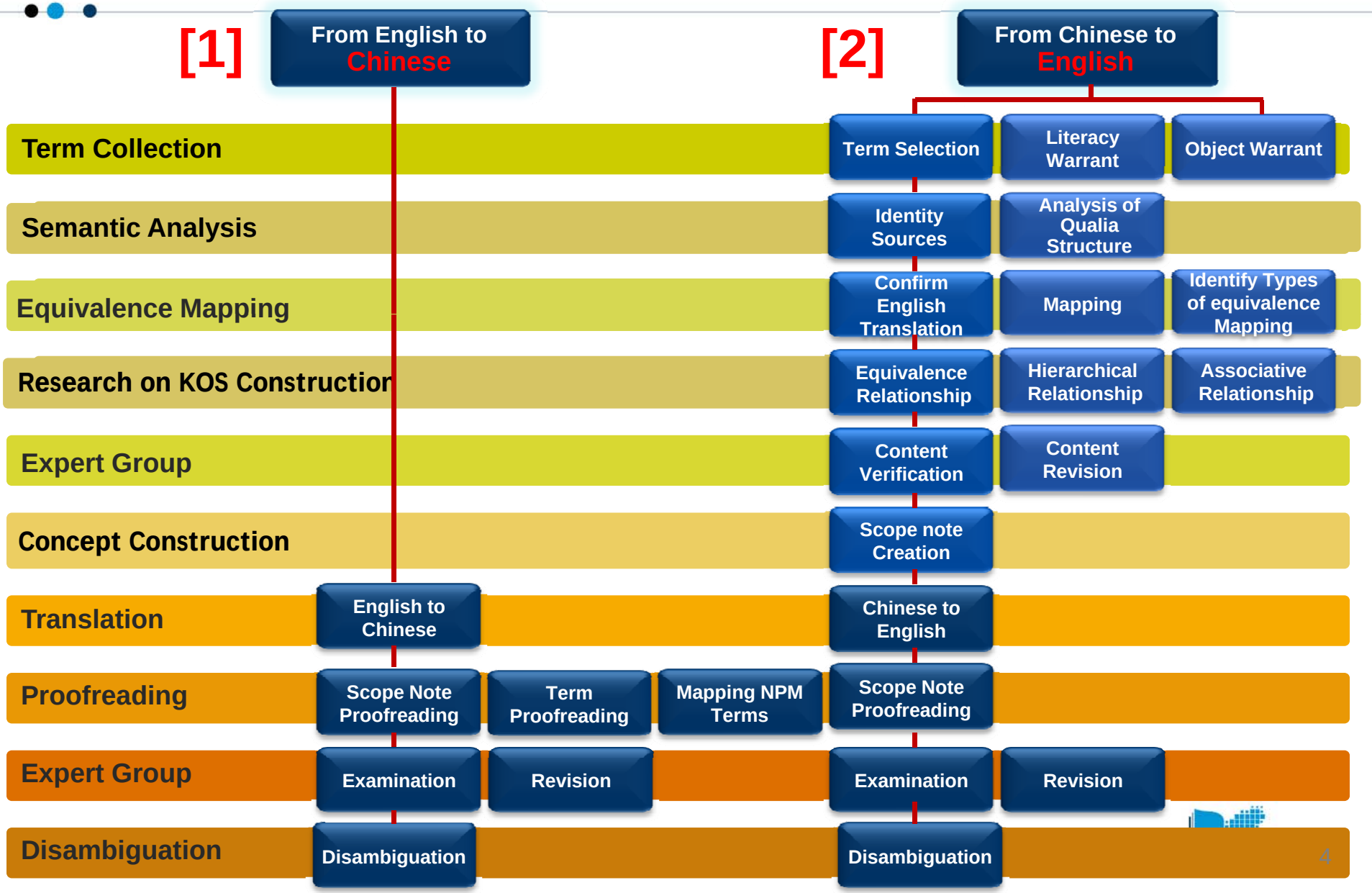
Chen, S.J., Zeng, M.L. & Chen, H.H. (2012). Alignment of conceptual structures in controlled vocabularies in the domain of Chinese art: a discussion of issues and patterns. In: Neelameghan, A. and K.S. Raghavan (Eds.): Categories, Contexts and Relations in Knoledge Organization. Advances in Knowledge Organization, 13, 249-255.

Chen, S.J., Kuo, C.C. (2012). A Study of Knowledge Organization System for Digital Archives: Using Vocabularies of Chinese Festivals as an Example. In Research Center for Digital Humanities, National Taiwan University (Ed.), The 4th International Conference of Digital Archives and Digital Humanities Symposium, 31-51.

C. Thesis

Chen, S.J (2012). A Study of Mapping Chinese-English Lexical Semantics for a Thesaurus in Chinese Art. Unpublished doctoral dissertation, National Taiwan University, Taipei, Taiwan.

The Framework : Localization



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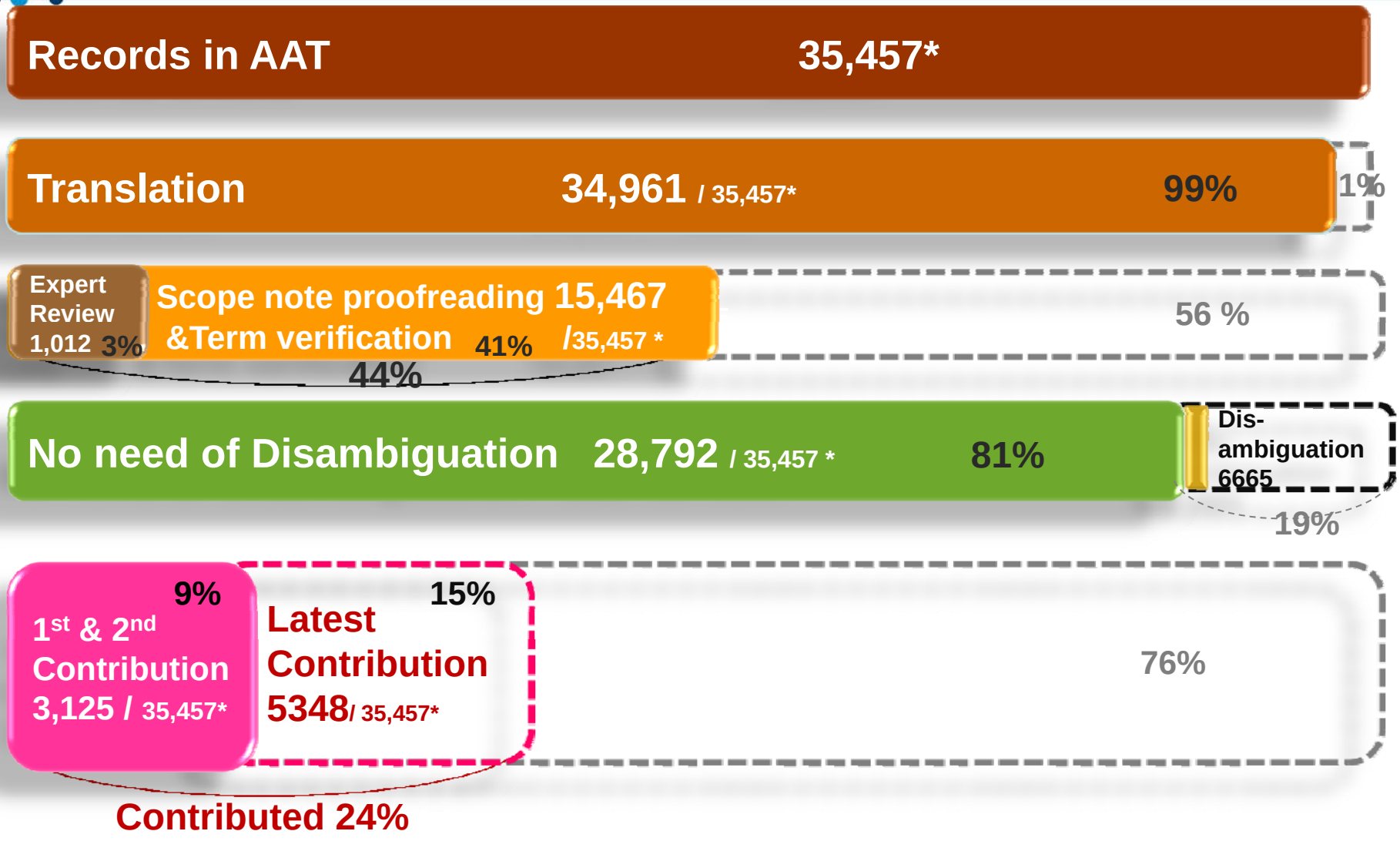
[1]

Project at a Glance



*According to 2012/12/26 AAT- Taiwan database (AAT data version: 2012 May)

ID: 300011154 **Record Type:** conce

aventurine (quartz) (quartz (mineral), mineral, ... Materials (Hierarchy Name))

Note: A quartz mineral that contains shiny flecks of mica. Aventurine is usually green but can also be orange or reddish-brown. It is sometimes used as an inexpensive alternative to jade. Most aventurine comes from Russia, India, and Brazil. A synthetic imitation, "aventurine glass," is used for costume jewelry under the name "goldstone." Aventurine is also sometimes incorrectly called "Chinese jade" or "Indian jade."

Terms:

aventurine (quartz) (preferred,C,U,English-P,D,U,N)

砂金石 (C,U,Chinese (traditional)-P,D,U,U) **(sha jin shi)**

灑金玻璃 (C,U,Chinese (traditional),AD,U,U) **(sa jin bo li)**

金星玻璃 (C,U,Chinese (traditional),AD,U,U) **(jin xing bo li)**

砂金釉 (C,U,Chinese (traditional),AD,U,U) **(sha jin you)**

金星釉 (C,U,Chinese (traditional),AD,U,U) **(jin xing you)**

shā jīn shí (C,U,Chinese (transliterated Hanyu Pinyin)-P,D,U,U)

sha jin shi (C,U,Chinese (transliterated Pinyin without tones)-P,D

sha chin shih (C,U,Chinese (transliterated Wade-Giles)-P,D,U,U)

1 preferred term

4 alternative terms

3 transliterated terms

AAT now has 3000+ records with Chinese terms, scope notes, and reference books contrib by AAT-Taiwan (TELDAP)

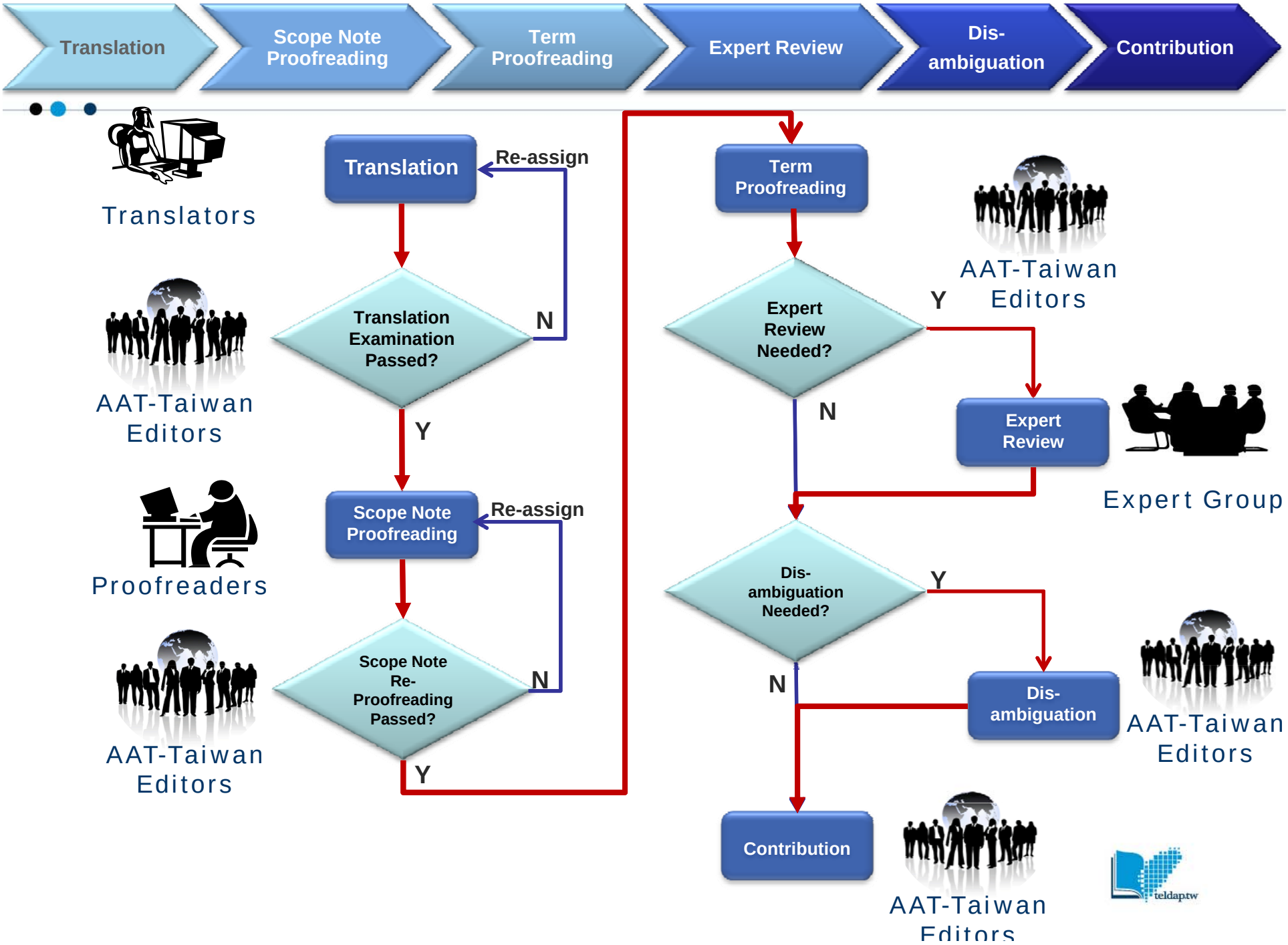
contributors and their translators, the Vocabulary editors, to our ITS colleagues for their tireless, wonderful work.

Additional Notes:

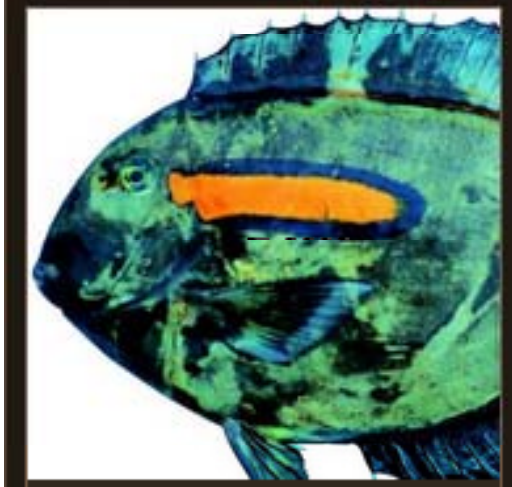
Chinese (traditional) ..... 一種來自烏拉爾山脈（Ural mountains）及印度的石英晶體。以合成方式製成人造珠寶，並取砂金石（goldstone）之名。有時會被誤稱爲「中國玉」或「印度玉」。

Dutch ..... Een soort kwartskristal uit het Oeralgebergte en India; wordt kunstmatig vervaardigd voor namaakjuwelen onder de naam goudsteen.

Spanish ..... Forma de cristal de cuarzo proveniente de los montes Urales y de India, fabricado sintéticamente para gemas de vestuario con el nombre de piedra de oro.


Translation
Scope Note Proofreading
Term Proofreading
Expert Review
Dis-ambiguation
Contribution
Translators
AAT-Taiwan Editors
Proofreaders
AAT-Taiwan Editors
Translation
Re-assign
Translation Examination Passed?
N
Y
Scope Note Proofreading
Re-assign
Scope Note Re-Proofreading Passed?
N
Y
Term Proofreading
AAT-Taiwan Editors
Expert Review Needed?
Y
N
Expert Review
Expert Group
Dis-ambiguation Needed?
Y
N
Dis-ambiguation
AAT-Taiwan Editors
Contribution
AAT-Taiwan Editors
teldap.tw

精選藏品

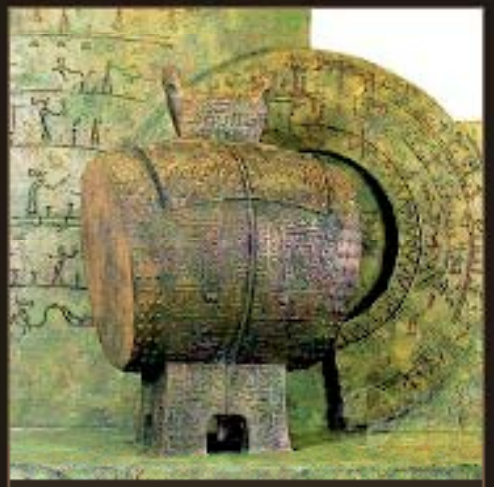


一字粗皮鯛

珊瑚礁魚類，體被小櫛鱗，使得表皮粗糙如砂紙

騎士像

陳景容描繪歐洲的騎士及馬匹



銅鼓

楊英風的青銅雕塑

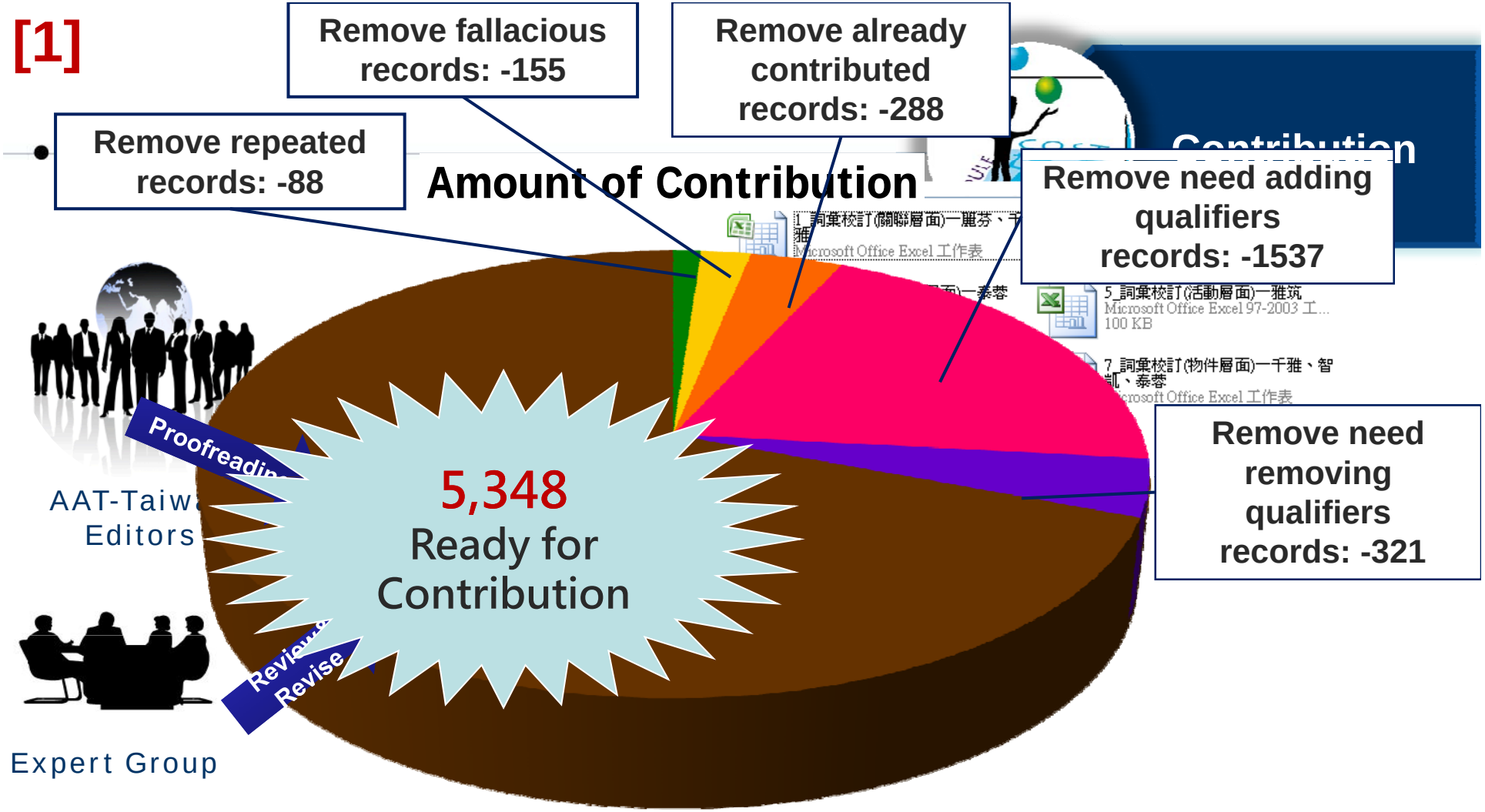
主題分類

依內容主題瀏覽
生物主題
考古主題
地質主題
人類學主題
檔案主題
拓片主題
器物主題
書畫主題
地圖與遙測主題

[1]

From Proofreading to Contribution

[1]



March to September 2012 records for contribution	Repeated	Fallacious	Already contributed	Need adding qualifiers	Need removing qualifiers	Ready for Contribution
7736	88	155	288	1537	321	5348

AAT-Taiwan: Multilingual Research Project

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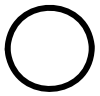
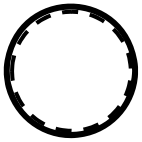
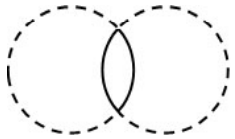
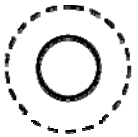
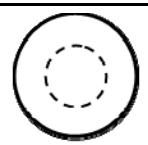
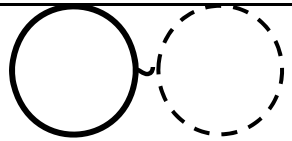
[2]

Chinese to English

 : NPM : AAT

Term Mapping Types (NPM & AAT)

[1]&[2]

Code	Mapping Type		適用情況Definition
=EQ	精準等同 【=】 Exact, simple equivalence		The concepts of the two terms are exactly the same.
~EQ	近似等同 【><】 Inexact simple equivalence		The concepts of the two terms are not exactly the same. These concepts are equivalent in certain contexts while not in others, or these concepts might overlap in scope or are slightly different from each other in connotation.
EQ+	交集等同 【一對多】 Intersecting compound equivalence		The concepts of the two terms can be represented as two or more intersecting compound sets.
EQ|	聯集等同 【一對多】 Cumulative compound equivalence		The concept of one term is equal to the sum of the (two) concepts of another term.
BM	狹廣對應 【<】 Hierarchical mapping (narrower to broader)		The concepts of the two terms are in a narrower-to-broader hierarchical relationship.
NM	廣狹對應 【>】 Hierarchical mapping (broader to narrower)		The concepts of the two terms are in a broader-to-narrower hierarchical relationship.
RM	關聯對應 Associative mapping		The concepts of the two terms are neither equivalent nor hierarchically related, but are associative semantically to a certain degree.

[2] Term Mapping Analysis

Brush Holder with “Ode to the Pavilion of the Inebriated Old Man”
Zhang Xihuang (active early 17th century)
The Metropolitan Museum of Art

Two Daughters of Akhenaten The Metropolitan Museum of Art [Bas-Relief]

故宮詞彙 NPM Term 英譯詞彙 English Translation	對應類型 Mapping Type	AAT詞彙 AAT Term			備註 Remarks
		詞彙 Term	層面 Facet	階層 Hierarchy	
A12026 留青(liu qing) (< 技法 < 器物) Liuqing low relief (H), bamboo skin reserved (H)	BM	ID: 300053623 bas-relief (sculpture technique) (G) (relief (sculpture techniques), sculpture techniques, ... Processes and Techniques)	K	K.KT	UC: 77 PM-A PM-Sophy RM9

Collection Items
Participant Code
Researcher Verification
Expert Examination Code

書目代號(H) Bibliography Code
王殿明、楊綺華編譯(2005)。**漢英文物考古詞匯**／*A Chinese-English glossary of cultural relics and archaeology*。北京：紫禁城出版社。

bas-relief (sculpture technique)淺浮雕
Scope Note：Sculptural relief technique in which the projection of the forms is relatively shallow.(雕塑浮雕技巧，凸起的浮雕外形相當淺)

留青(liu qing) ：
1.留青陽文(liu qing yang wen) ，簡稱留青。**是雕竹的特有技法之一(a technique specific to bamboo carving)**。製作留青陽文時，須留下青筠，將紋飾所不需要的青筠刮除，根據青筠的多寡，以求深淺濃淡變化。該技法在唐朝已有，遲至晚名的竹工’張希黃’才將其發揚光大。
來源：**新辭典(民78)。台北市三民書局。P.1345**

2.留青竹刻(liu qing zhu ke)，竹刻一種。留青，是**留用竹子表面的一層青筠(a technique that carves on the outer layer of green skin on the surface of bamboo)**，作為雕刻圖紋；然後鏟去竹文以外的竹青，露出下面的竹肌做地。故名「留青竹刻」，因留青，是留其表皮一層，所以又名「皮雕」。竹刻留青之法，至明末張希黃時已大備。
來源：**吳山主編。(1991)。中國工藝美術辭典。台北市：雄獅。P.426**

Analysis and suggestion for mapping：
Liuqing is a technique of bamboo carving, and bas-relif is a sculpture technique not limited to a certain kind of material, so it is suggested to place Liuqing under bas-relief.

Activities Facet
.... Processes and Techniques (G)
..... <processes and techniques> (G)
..... <processes and techniques by specific type> (G)
..... <object-making processes and techniques> (G)
..... sculpting (G)
..... sculpture techniques (G)
..... relief (sculpture techniques) (G)
..... bas-relief (sculpture technique) (G)
..... 留青

[2] The Results of Mapping Types between NPM & AAT

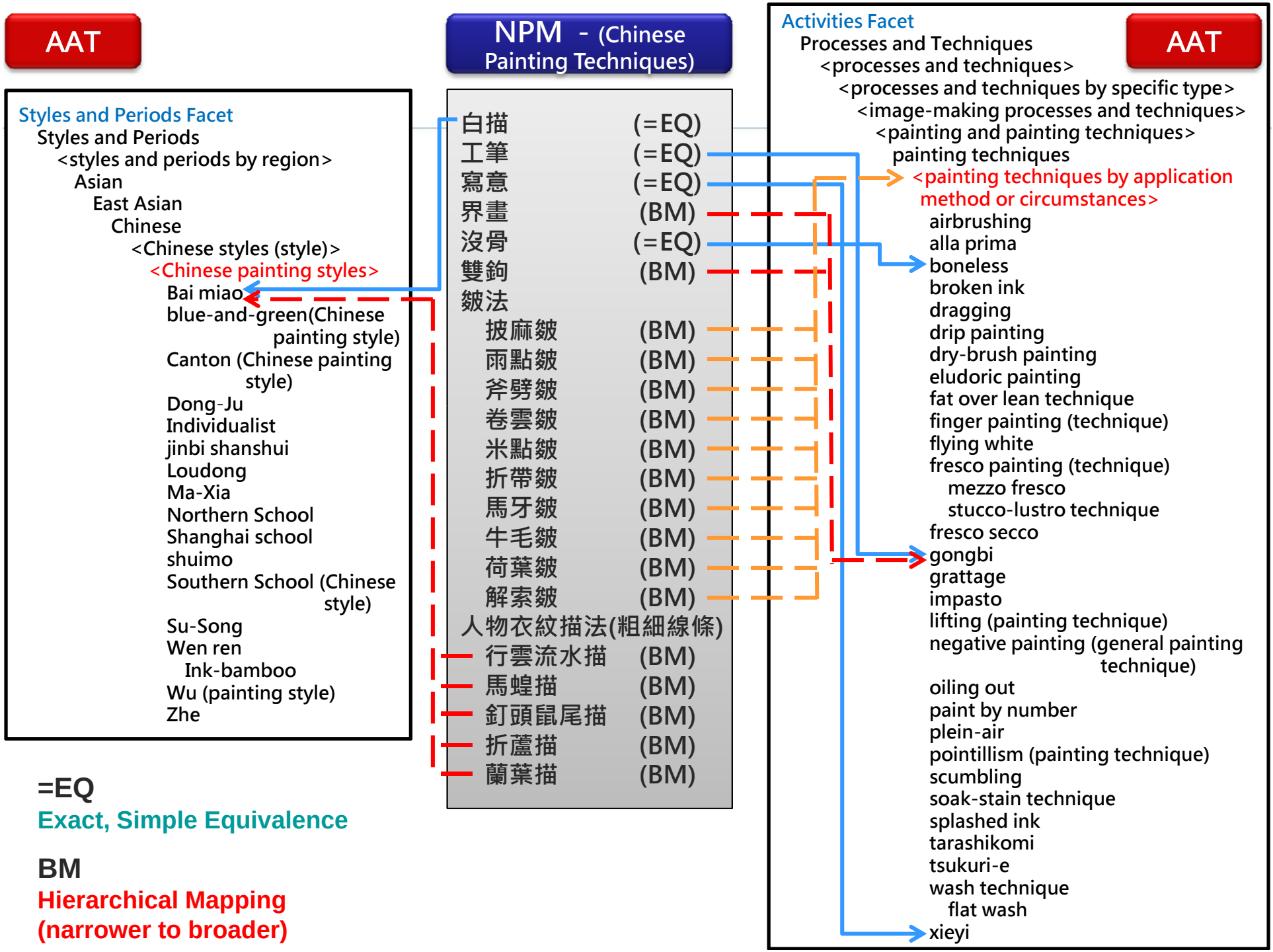
Code	Mapping Types	Quantity (percentage)	例證 Example
BM	**Hierarchical (narrower to broader)**	**1327 （63.19%）**	剔犀 (ti xi) BM lacquering (A12067)
=EQ	**Exact simple equivalence**	**638（30.38%）**	仰韶文化 (yang shao wen hua) =EQ Yangshao (A02002)
EQ |	Cumulative compound equivalence	52（2.48%）	塔(ta) EQ pagodas | towers (A11331)
~EQ	Inexact simple equivalence	37（1.76%）	后妃 (hou fei) ~EQ empresses (P04003)
EQ+	Intersecting compound equivalence	33（1.57%）	春景 (chun jing) EQ springs + scenes (P03001)
NM	Hierarchical (broader to narrower)	9（0.43%）	玉石器 (yu shi qi) NM jades (objects) (A04004)
RM	Associative mapping	4（0.19%）	臺閣 (tai ge) RM pavilions (P14002)
總計		2100（100%）	

[2] Interoperability of Conceptual Structures for Chinese Art Terms

		Structures	
		Specific category in AAT	No specific category in AAT
Vocabularies	Completely covered in AAT	Pattern#1 A02 考古學文化 (13 values) Archaeological Culture A17 時代 (66 values) Chinese Periods	
	Incomplete covered in AAT	Pattern#2 A03 窯系 (19 values) Chinese Ceramic Style	Pattern#3 A08 釉色 (69 values) Chinese Ceramic Glazes P02 中國繪畫技法 (34 values) Techniques of Chinese Painting
	None covered in AAT		Pattern#4 P17傳說動物 (7 values) fabulous Animals P18中國節令 (8 values) Chinese Festivals

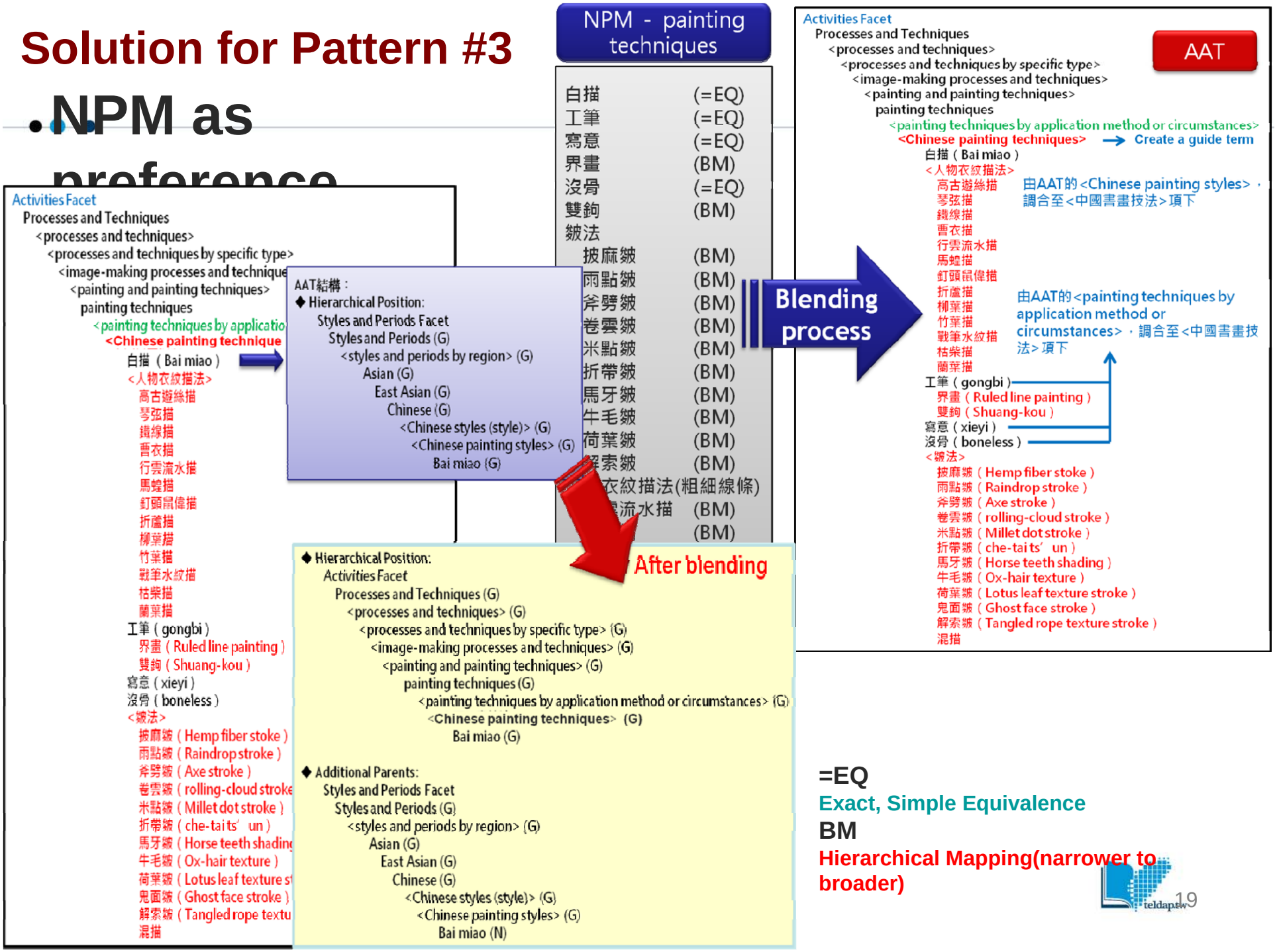
Conceptual structures for the Chinese art concepts covered in AAT - Four Patterns

1. The values in a unit of the NPM are completely covered by the corresponding AAT category.
2. The values listed in a unit in NPM are not completely covered by that AAT category.
3. The values in a unit in NPM are spread in various places in AAT.
4. No specific category and equivalent concept in AAT for the Chinese art concepts


AAT
NPM - (Chinese Painting Techniques)
AAT
Styles and Periods Facet
Styles and Periods
<styles and periods by region>
Asian
East Asian
Chinese
<Chinese styles (style)>
<Chinese painting styles>
Bai miao
blue-and-green(Chinese painting style)
Canton (Chinese painting style)
Dong-Ju
Individualist
jinbi shanshui
Loudong
Ma-Xia
Northern School
Shanghai school
shuimo
Southern School (Chinese style)
Su-Song
Wen ren
Ink-bamboo
Wu (painting style)
Zhe
白描 (=EQ)
工筆 (=EQ)
寫意 (=EQ)
界畫 (BM)
沒骨 (=EQ)
雙鉤 (BM)
皴法
披麻皴 (BM)
雨點皴 (BM)
斧劈皴 (BM)
卷雲皴 (BM)
米點皴 (BM)
折帶皴 (BM)
馬牙皴 (BM)
牛毛皴 (BM)
荷葉皴 (BM)
解索皴 (BM)
人物衣紋描法(粗細線條)
行雲流水描 (BM)
馬蝗描 (BM)
釘頭鼠尾描 (BM)
折蘆描 (BM)
蘭葉描 (BM)
Activities Facet
Processes and Techniques
<processes and techniques>
<processes and techniques by specific type>
<image-making processes and techniques>
<painting and painting techniques>
painting techniques
<painting techniques by application method or circumstances>
airbrushing
alla prima
boneless
broken ink
dragging
drip painting
dry-brush painting
eludoric painting
fat over lean technique
finger painting (technique)
flying white
fresco painting (technique)
mezzo fresco
stucco-lustro technique
fresco secco
gongbi
grattage
impasto
lifting (painting technique)
negative painting (general painting technique)
oiling out
paint by number
plein-air
pointillism (painting technique)
scumbling
soak-stain technique
splashed ink
tarashikomi
tsukuri-e
wash technique
flat wash
xieyi
=EQ
Exact, Simple Equivalence
BM
Hierarchical Mapping
(narrower to broader)

Solution for Pattern #3

- NPM as preference



=EQ
Exact, Simple Equivalence
BM
Hierarchical Mapping(narrower to broader)

[2]

Work To Be Done

National Palace Museum
Full-set controlled vocabularies

Chinese Festivals

Buddhist and Taoist Figures

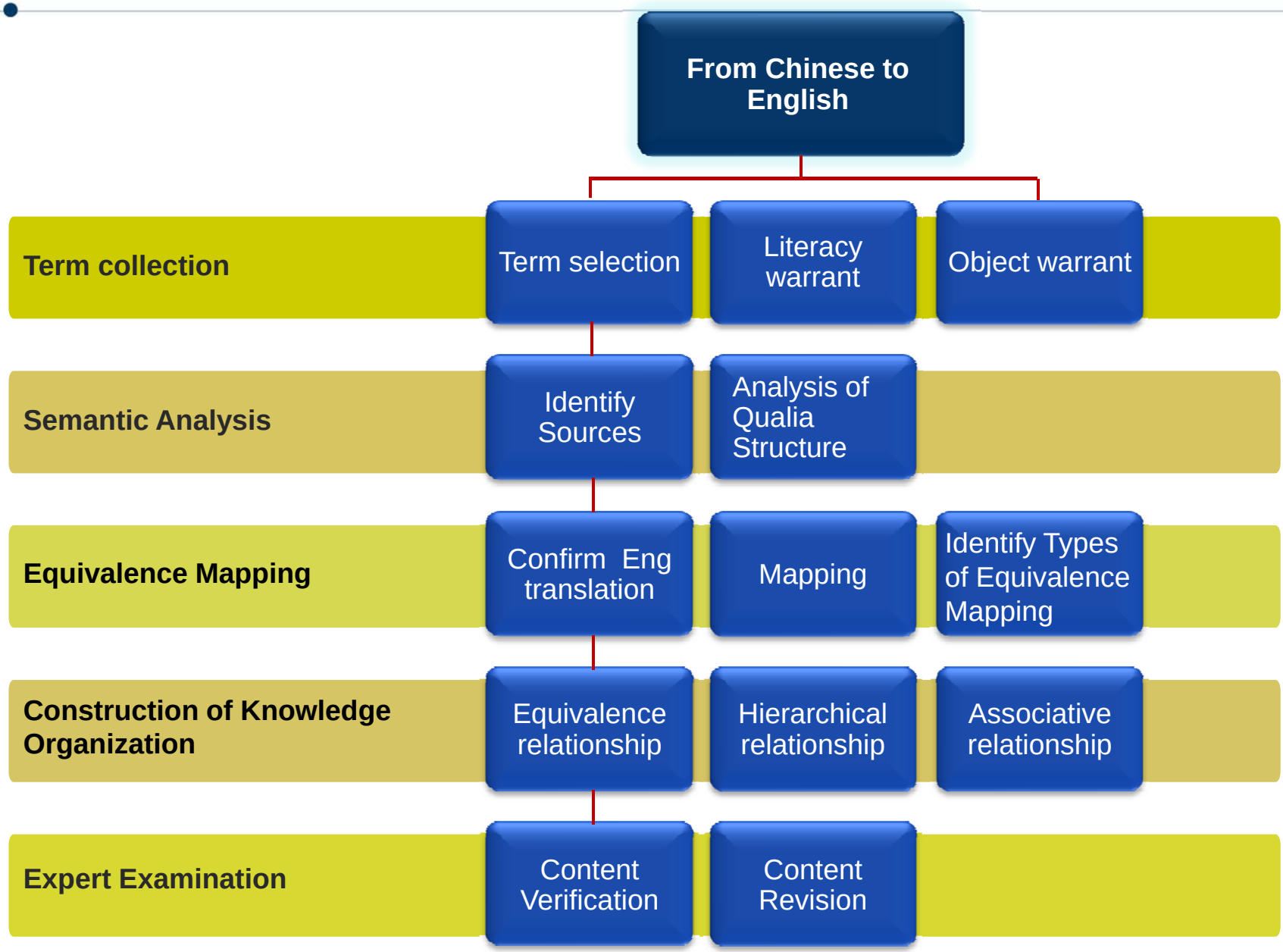
- **Buddhist Deities and Saints**
- **Taoist Immortals**

Chinese Ceramics

Academia Sinica

Chinese Archeology Culture

[2] Research Process



[2] Research theory and methods

1. **Object warrant (TELDAP UC, NPM CVs)**
2. **Literacy warrant(3 sources)**
3. **Thesaurus relationships**
   - **(1) Equivalence relationship**
   - **(2) Hierarchical relationship**
   - **(3) Associative relationship**
4. **Snowball sampling**
5. **Qualia structure**
   - **(1) formal**
   - **(2) constitutive**
   - **(3) agentive**
   - **(4) telic**

[2] Semantic Analysis

Origin of Mid-Autumn Festival

Mid-Autumn Festival	
Definition	**References**
中國民間節日。農曆8月是秋收的季節，15日中秋節，是民間重要節慶。這個節日的由來是漢人自古即以農業為生，農事和季節的關係密切，在收成時，祭祀「土地神」以謝豐收，稱為「秋報」，中秋節祭土地公便是「秋報」的遺俗。	中秋節 (2012)。大英線上繁體中文版。(**Britannica Online Traditional Chinese Edition**, Available at: http://daying.wordpedia.com/content.aspx?id=084266)
關於中秋節的源起，這是一個典型的先民在四季莊稼活動中創造出來的節日。我國以農立國農事和季節習習相關，到了秋收之時，要向「土地公」報告豐收並且向「土地公」謝恩，這就是古老的「春祈秋報」。八月十五日，恰好是稻子接近成熟的時候，這一天，家家拜的也是「土地公」所以中秋節有可能就是「秋報」的遺俗。	陳正之(1997)。台灣歲時記：二十四節氣與常民文化(150頁)。臺中市：省新聞處。
農曆8月15日是中秋節，或稱「八月半」傳說上古天子祭月的禮儀就是中秋節的起源。中秋賞月由來已久，到宋朝正式定名為中秋節。	施美敏、王勇霞、陳貞曦(2002)。歲時節慶-親子共學知節氣(104頁)。臺北市：史博館。

Analysis of Qualia Structure

Three Kinds of references

- Concept dissected into smaller semantic units

Mid-Autumn Festival	
Constitutive	Agriculture (autumn thanksgiving)
Telic	**Function** (autumn thanksgiving, worship, 慶團圓、娛樂) **Purpose** (reporting harvest, worshiping the Land God, 拜太陰星君、拜月、家人團聚賞月、吃月餅、飲桂花酒、賞桂、觀潮、民間戲曲演出)
Agent	**Origin** (reporting harvest and offering thanks to the Land God), **Embellishment** (myths), **Creation** (Legend of Chang-Er, the Moon Goddess、白兔搗藥、吳剛伐桂)
Lexical relations	**Synonym** (Mid-Autumn, August Festival, 團圓節、秋節、團圓節)、**Horizontal Relationship** (In the annual production cycle, Lantern Festival and Mid-Autumn Festival are opposite to each other, representing the times of spring prayers and autumn thanksgiving respectively
Date	Northern Song Dynasty
Ethnic Group	Han, Zhuang, Bu Yei, Dong, 朝鮮、仡佬、畲、京
Festive food	桂花酒、moon cake、pomelo、烤肉

[2] Equivalence Mapping：Identify English Term

Language	Term	Items Found in Union Catalog	References
English	Lunar New Year Festival	5	外研社辭書部（2001）。現代漢英詞典。**(A Modern Chinese-English Dictionary)**
	Spring Festival Holidays	0	吳光華主編。《漢英大辭典》下卷。p.1840 **(The Chinese-English Dictionary)**
	Spring festival	5	臺灣大百科全書 (**Encyclopedia of Taiwan**) Access available: http://taiwanpedia.culture.tw/web/content?ID=2026&Keyword=%E6%98%A5%E7%AF%80 **Online Collection, The Museum of Fine Arts, Boston(MFAB)** Access available: http://www.mfa.org/collections/object/spring-festival-along-the-river-24377 **Online Collection, The Metropolitan Museum of Art.(MMA)** Access available: http://www.metmuseum.org/search-results?ft=%22spring+festival%22
	Chinese New Year	43	**Wikipedia, the free encyclopedia** Access available: http://en.wikipedia.org/wiki/Chinese_New_Year

CV of the MFAB

Spring Festival Along the River
Museum of Fine Arts Boston

CV of the MMA

Spring Festival on the River
Metropolitan Museum of Art

[2] Equivalence Mapping：Mapping

NPM Term /English Translation	Definition	Context of the Concept →	Similar or Equivalent Terms in AAT	Definition of AAT Term
年節 Spring Festival	新年的節日。或指春節前後的數日。 (New Year's holiday, or the several days before and after it.)	中國節令>年節	詞彙：New Year's Day 層級：Holidays 層面：Activities Facet 備註：New Year's Day (national holidays, holidays, events, Activities Facet)	Holidays celebrating the year about to begin or just beginning; many cultures celebrate the new year, usually according to their own calendars.

[2] Identify Types of Equivalence Mapping

Mapping Type

對應代碼	對應類型
=EQ	精準等同【=】 Exact, simple equivalence
~EQ	不精準等同【><】 Inexact simple equivalence
EQ+	交集等同【一對多】 Intersecting compound equivalence
EQ|	聯集等同【一對多】 Cumulative compound equivalence
BM	狹廣對應【<】 Hierarchical mapping (narrower to broader)
NM	廣狹對應【>】 Hierarchical mapping (broader to narrower)
RM	關聯對應 Associative mapping

Chinese Festivals

年節(Spring Festival) (BM)
元宵(Lantern Festival) (BM)
清明(Qingming Festival) (BM)
端午(Dragon Boat Festival) (BM)
七夕(Double Seventh Festival)(BM)
中秋(Mid-Autumn Festival) (BM)
重九(Double Ninth Festival) (BM)
春社(Spring Sacrifice) (BM)

AAT

Activities Facet
Events
events
holidays
national holidays
Independence Day
New Year's Day
Divali (Hindu holiday) [N]

New Year's Day (national holidays, holidays, .

Note: Holidays celebrating the year about to begin beginning; many cultures celebrate the new year, u according to their own calendars.

Activities Facet
Events
events
celebrations
festivals
Carnival (pre-Lenten festival)
Mardi Gras
film festivals
harvest festivals
yam festivals
lantern festivals
fanals

[2] Establish Equivalence Relationships

Language	Term	Items Found in Union Catalog	References
Chinese	春 (c		
	新 (x		
	新 (x		
	新 (x		
	新 (x		
	農 (n xi		

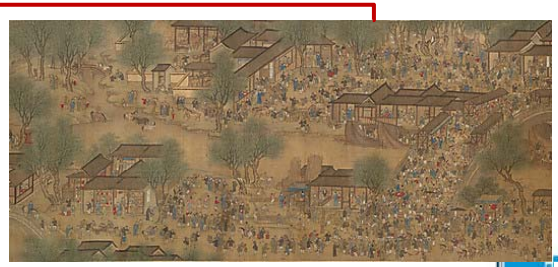
Language	Term	Items Found in Union Catalog	References
English	Lunar New Year Festival	5	外研社辭書部（2001）。現代漢英詞典。 (**A Modern Chinese-English Dictionary**)
	Spring Festival Holidays	0	吳光華主編。《漢英大辭典》下卷。p.1840 (**The Chinese-English Dictionary**)
	Spring festival	5	臺灣大百科全書 **Encyclopedia of Taiwan** http://taiwanpedia.culture.tw/web/content?ID=2026&Keyword=%E6%98%A5%E7%AF%80 **Online Collection, The Museum of Fine Arts, Boston(MFAB)** http://www.mfa.org/collections/object/spring-festival-along-the-river-24377 **Online Collection, The Metropolitan Museum of Art.(MMA)** http://www.metmuseum.org/search-results?ft=%22spring+festival%22 **Wikipedia, the free encyclopedia** http://en.wikipedia.org/wiki/Chinese_New_Year
	Chinese New Year	43	**Wikipedia, the free encyclopedia** http://en.wikipedia.org/wiki/Chinese_New

Use synonyms to find related collections

Joy at the New Year
National Palace Museum

Celebrating Spring Festival
Nation Palace Museum

Festivities for the New Year
National Palace Museum



Spring Festival on the River
Metropolitan Museum of Art

Spring festival along the river.
Museum of Fine Arts Boston

[2] Establish Hierarchical Relationships : Add Guide Terms

Chinese Festivals

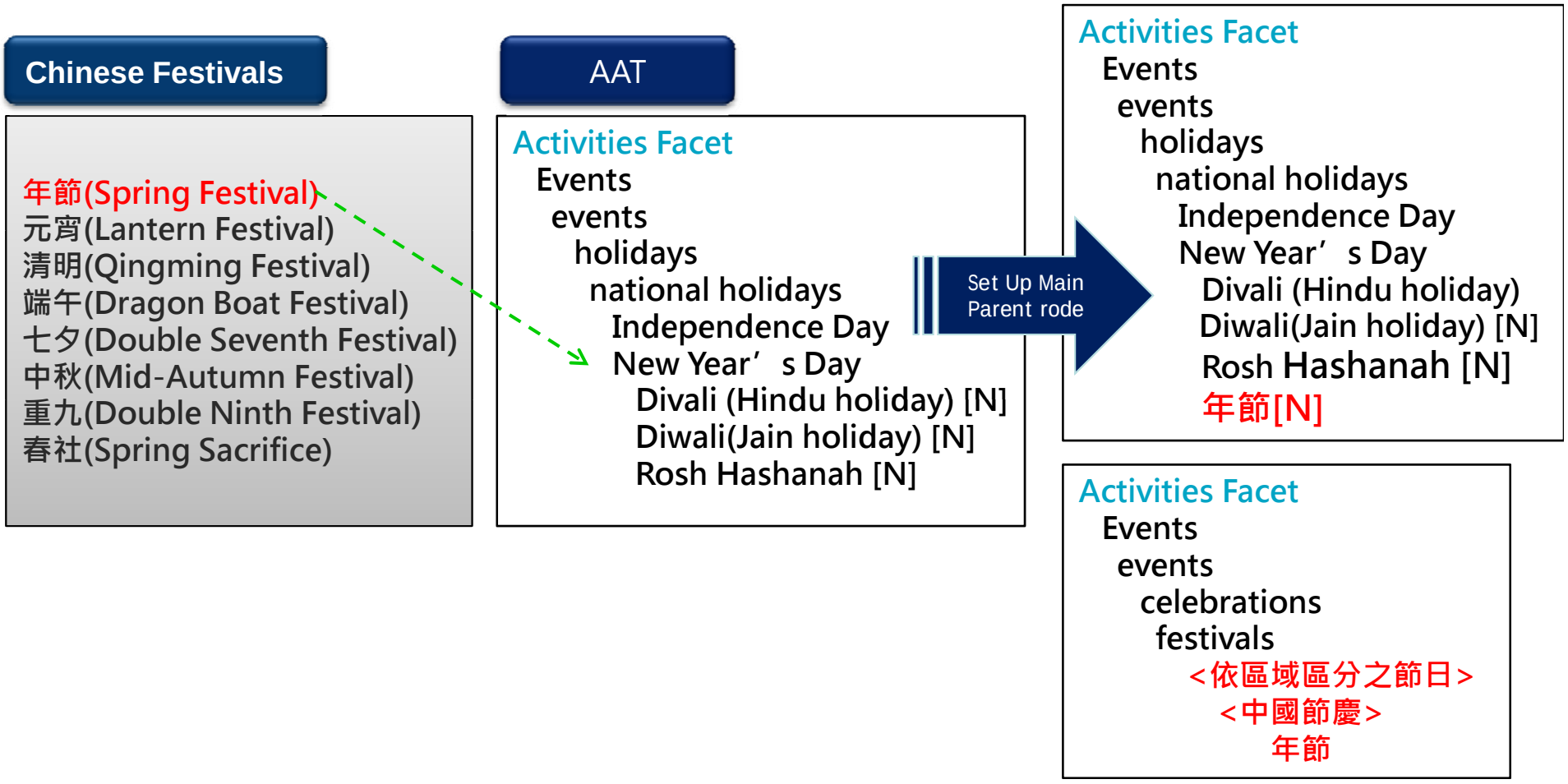
年節(Spring Festival)
元宵(Lantern Festival)
清明(Qingming Festival)
端午(Dragon Boat Festival)
七夕(Double Seventh Festival)
中秋(Mid-Autumn Festival)
重九(Double Ninth Festival)
春社(Spring Sacrifice)

Add Guide Term

AAT-Taiwan suggestion to AAT

Activities Facet
Events
events
celebrations
festivals
<Festivals by region>
<Chinese Festivals>
年節 (Spring Festival)
元宵 (Lantern Festival)
清明 (Qingming)
端午 (Dragon Boat Festival)
七夕 (Ch'i-hsi festival)
中秋 (Moon Festival)
重九 (Double Ninth Festival)
春社 (Spring Sacrifice)

[2] Establish Hierarchical Relationships: Set Up Main Parent node



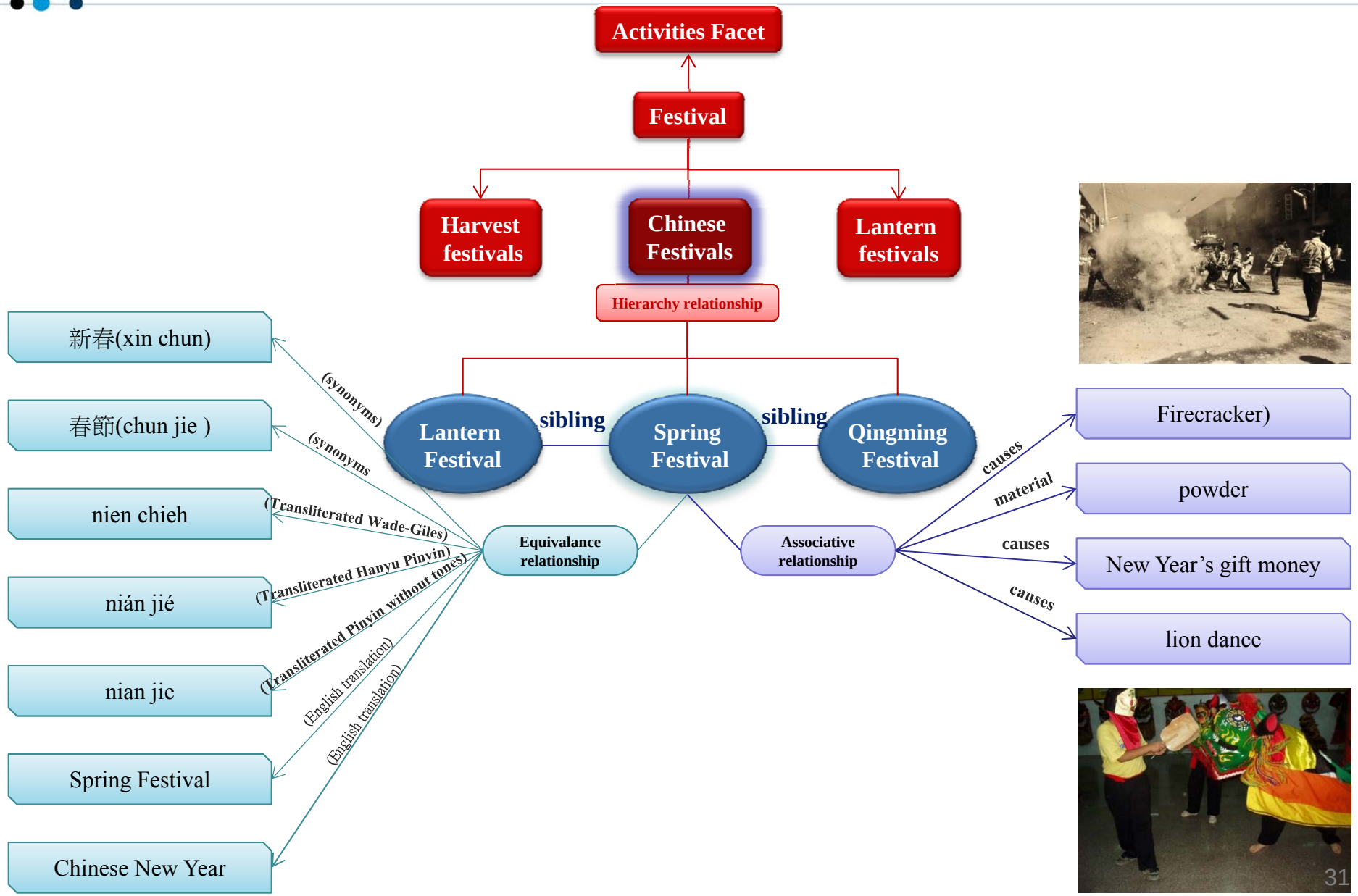
[2] Establish Associative Relationships

Term	Semantic relationship type between the two	Term 2	Items found in Union Catalog, retrieved by 2012.06.29	The Products produced by the activity are…
端午 (Dragon Boat Festival)	Causes <2204>	龍舟(dragon boat)	346	dragon boats
		粽子(rice dumpling)	130	rice dumplings
		艾草(moxz)	66	moxz
		香包(sachet)	47	sachet
		雄黃酒(realgar wine)	13	Realgar wine
		午時水(noon-water)	9	Noon-water

Chinese Festivals

Objects Facet
- Furnishings and Equipment (Hierarchy Name)
  - Transportation Vehicles (Hierarchy Name)
    - <transportation vehicles (Guide Term)>
      - Vehicles (transportation)
        - Watercraft
          - <watercraft by specific type>
            - <watercraft by function>
              - <competition and recreation craft>
                - <competition craft>
                  - Class boats
                    - Development class boats
                    - One-designs
                  - raceboats
                  - **龍舟(dragon boat)**

[2] Knowledge Organization of Chinese Festivals : Take ”Spring festival” for example



EDITORIAL ISSUES

- Disambiguation
- Associative Relationship in AAT
- Structure Conflict…..
- Suggestion to create New Concepts in AGENT FACET

Disambiguation – Rules for creating qualifiers

- **Step 1. Add Qualifiers to Chinese Terms**
  - **Chinese qualifiers are added according to the priority rules below:**
    - **Upper contexts***
    - **Multiple parent nodes***
    - **Special arrangement**
- **Step 2. Remove Qualifiers from Chinese Terms**
  - **Chinese qualifiers are removed according to the elimination of homograph**

* For more information, please see *Art & Architectural Thesaurus Editorial Guide* 3.3.4 Qualifier

Step 1. Add Qualifiers to Chinese Terms:

Rule 1. Upper contexts

Disambiguation

bean	dou
豆 (transliteration: **dou**)	豆 (transliteration: **dou**)
Note： General term for any edible seed of various species in several	Note ： Long-stemmed lidded vessel of the Western Zhou. The shape first appeared in ceramic and lacquer, then in

Materials Facet
.... Materials (Hierarchy Name) (G)
..... materials (matter) (G)
..... <materials by origin> (G)
..... <biological material> (G)
..... plant material (G)
..... <seed and seed components>
..... seed (G) ....種子
..... bean (..... 豆

Objects Facet
.... Furnishings and Equipment (Hierarchy Na
..... Containers (Hierarchy Name) (G)
..... containers (receptacles) (G)
..... <containers by function or conte>
..... ceremonial containers (G)
..... ritual vessels ....禮器
..... dou (G) ..... 豆

豆（種子seed）

豆（禮器ritual vessels）

Step 1. Add Qualifiers to Chinese Terms:

Disambiguation

Rule 2. Multiple parent nodes

Hierarchical Position:

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name)
..... <single built works (Built Environm
..... <single built works by specific t
..... <single built works by functio
..... <agricultural structures> (
..... agricultural building 農業建築
..... granaries (G) 穀倉

Additional Parents:

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G)
..... <single built works by specific type> (G)
..... <single built works 儲藏設施 G)
..... storage facilities
..... granaries (G) 穀倉

穀倉（農業建築或儲藏設施 agricultural buildings or storage facilities ）

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G
..... <single built works by specific type> (G)
..... <single built works by function> (G)
..... <agricultural structures> (G)
..... agricultural buildings 農業建築
..... barns (G) 穀倉

sliding doors, prominent roofs, and predominantly open spaces on the interior, primarily used as storage buildings for hay, grains, and farm equipment and shelters for livestock...

穀倉（農業建築 agricultural buildings ）

Step 1. Add Qualifiers to Chinese Terms:

Disambiguation

Rule 3. Special arrangement 1

bell towers	clock towers
鐘塔 (transliteration: **zhong ta**)	**鐘塔** (transliteration: **zhong ta**)
Note： Towers fitted and prepared for containing **bells,** can be either freestanding	Note ：Towers whose primary function is to contain and prominently display **a clock or clocks**.
"belfries."	

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G)
..... <single built works by specific type> (G)
..... <single built works by form> (G)
..... <single built works by form: massing or s
..... towers (single built works)
..... bell towers (G)

塔 (單一建
鐘塔

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G)
..... <single built works by specific type> (G)
..... <single built works by form> (G)
..... <single built works by form: m
..... towers (single built works)
..... clock towers (towers) (G

塔 (單一
鐘塔

鐘塔（鐘bells）

鐘塔（時鐘clocks）

Step 1. Add Qualifiers to Chinese Terms:

Disambiguation

Rule 3. Special arrangement 2

bell towers	clock towers
鐘塔 (transliteration: **zhong ta**)	**鐘塔** (transliteration: **zhong ta**)
Note： Towers fitted and prepared for containing **bells,** can be either freestanding	Note ：Towers whose primary function is to contain and prominently display **a clock or clocks**.

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G)
..... <single built works by specific type> (G)
..... <single built works by form> (G)
..... <single built works by form: massing or s
..... towers (single built works)
..... bell towers (G)

塔 (單一建
鐘塔

"bellries."

Objects Facet
.... Built Environment (Hierarchy Name) (G)
..... Single Built Works (Hierarchy Name) (G)
..... <single built works (Built Environment)> (G)
..... <single built works by specific type> (G)
..... <single built works by form> (G)
..... <single built works by form: m
..... towers (single built works)
..... clock towers (towers) (G

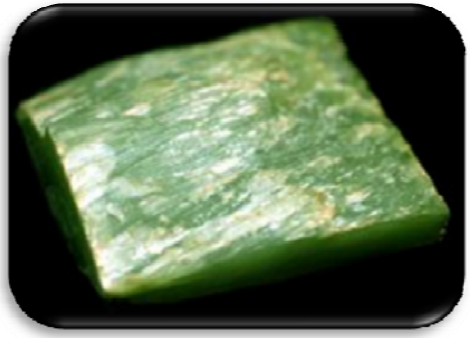
塔 (單一
鐘塔

鐘塔（bell towers）

鐘塔（clock towers）

Step 2. Remove Qualifiers from Chinese Terms

Disambiguation



jade(rock)	jade(color)
玉 （transliteration: **yu**）	綠玉色 （transliteration: **lü yu se**）
Hard, fine-grained rock composed either of jadeite or nephrite and usually having a color ranging from dark green to green-white. Jade takes a high polish and has been used since prehistoric times for …	Refers to a range of greenish colors resembling the color of jade, which is a gemstone composed of nephrite or jadeite.

jade（rock） translated 玉~~（岩石）~~

jade（color） translated 綠玉色~~（色彩）~~

Associative relationship established issue: Qingming Festival

	person	activitity	thing	location	style	general (anything to anything)	species	material
person	2260	2310	2325-creation 2320-equipment	2290				2314
activity	2310		2425-creation 2430-equipment 2204-causes					2414
location	2290	2420	2207					
thing	2325-creation 2324-equipment	2425-creation 2430-equipment 2204-causes	2214-produces 2210-equipment 2600-conjuncted 2604-context 2813-comprise	2207	2550			2500
field of study	2284	2410	2396	2407				
condition	2600	2606	2603					
material	2314	2414	2500					2807-common source 2813-comprise 2816-transform
style			2550		2604-context 2607-common source 2620-based on 2610-preceded 2608-coexisted 2623-parallels			
general (anything to anything)						2000-related to 2001-formerly related 2100-distinguished from 2110-overlaps with		
species							2830	

Spring rolls

Qingming Festival

Sweeping the tombs

Wearing willow

Structural adjustment issue for Chinese festivals: Lantern Festival

ID: 300263480

lantern festivals (

Note: Secular festivals
the African region of Se
Haiti, usually on the oc
featuring parades of la
within by candles.

Terms:
lantern festivals (
lantern festival (
(
festival, lantern (
festivals, lantern (C,U,English,UF,U,U)
lantaarnfestivals
lantaarnfestival (
festival de farole

Facet/Hierarchy Code

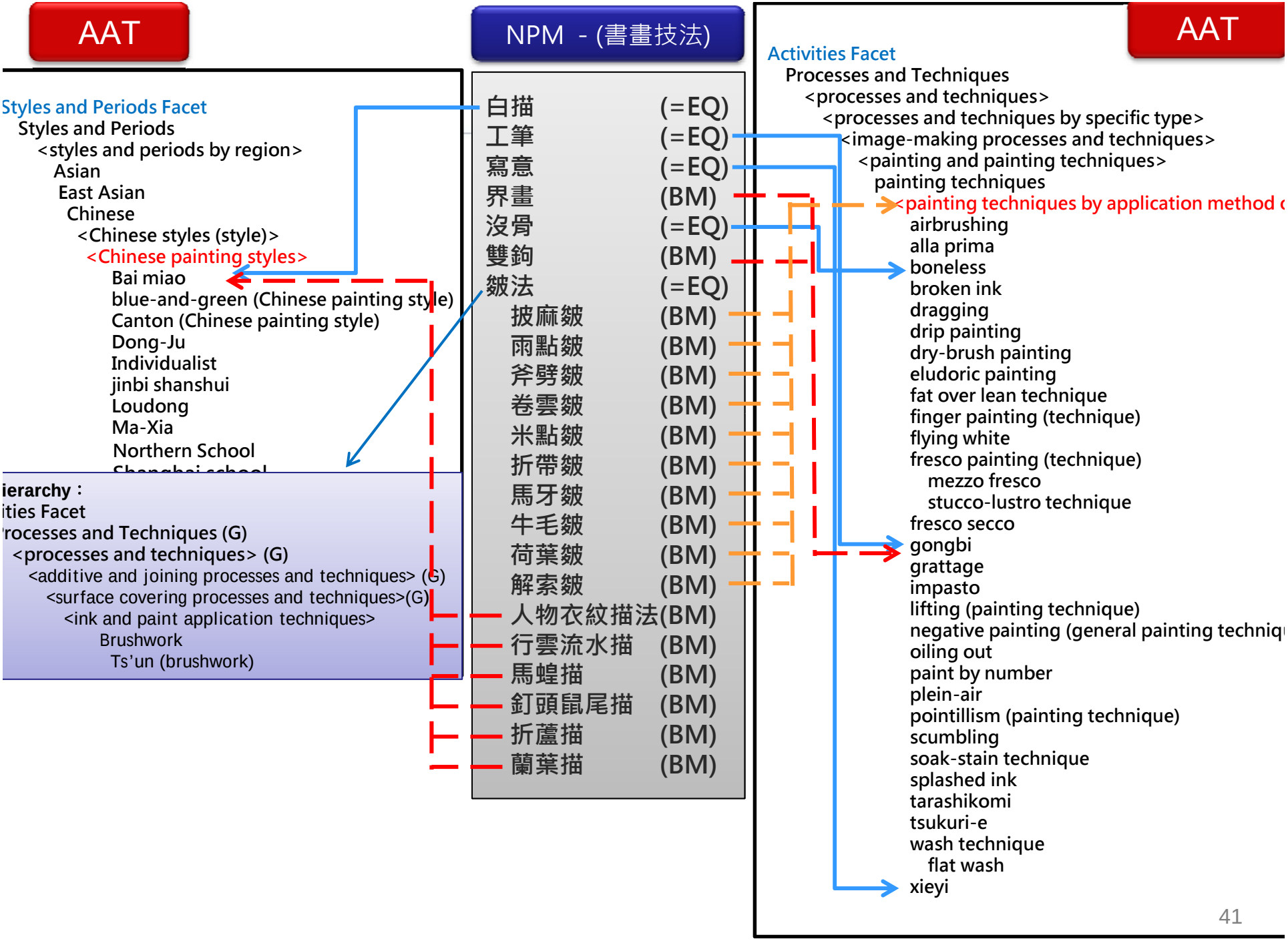
Hierarchical Position:
Activities Fa
.... Events (
..... events
..... cele
..... fe
.....

Lantern Festival in AFRICA region

different Concepts

Lantern Festival in ASIA region

- **Possible solutions：**
  1. Set up an associative relationship between “lantern festivals” and Chinese “Lantern Festival” to facilitate users’ search.
  2. Distinguish “lantern festivals” from Chinese “Lantern Festival” in the scope note of the former.
  3. Establish “Lantern Festival” as the primary node under Chinese festivals, with “lantern festivals” as the secondary node.
     【Problem】For “lantern festivals”, the preferred term should be “燈節(dang jie)” instead of “元宵(yuan xian)”. Can the AATsystem solve this technical problem? Can the preferred term be “元宵(yuan xian)” at the primary node and “燈節(dang jie)” at the secondary node?
  4. Change the English translation of “元宵(yuan xian)” to “Chinese Lantern Festival”, or “Lantern festivals”


AAT
NPM - (書畫技法)
AAT
Styles and Periods Facet
Styles and Periods
<styles and periods by region>
Asian
East Asian
Chinese
<Chinese styles (style)>
<Chinese painting styles>
Bai miao
blue-and-green (Chinese painting style)
Canton (Chinese painting style)
Dong-Ju
Individualist
jinbi shanshui
Loudong
Ma-Xia
Northern School
Shanghai school
ierarchy：
ities Facet
rocesses and Techniques (G)
<processes and techniques> (G)
<additive and joining processes and techniques> (G)
<surface covering processes and techniques>(G)
<ink and paint application techniques>
Brushwork
Ts'un (brushwork)
白描 (=EQ)
工筆 (=EQ)
寫意 (=EQ)
界畫 (BM)
沒骨 (=EQ)
雙鉤 (BM)
皴法 (=EQ)
披麻皴 (BM)
雨點皴 (BM)
斧劈皴 (BM)
卷雲皴 (BM)
米點皴 (BM)
折帶皴 (BM)
馬牙皴 (BM)
牛毛皴 (BM)
荷葉皴 (BM)
解索皴 (BM)
人物衣紋描法(BM)
行雲流水描 (BM)
馬蝗描 (BM)
釘頭鼠尾描 (BM)
折蘆描 (BM)
蘭葉描 (BM)
Activities Facet
Processes and Techniques
<processes and techniques>
<processes and techniques by specific type>
<image-making processes and techniques>
<painting and painting techniques>
painting techniques
<painting techniques by application method
airbrushing
alla prima
boneless
broken ink
dragging
drip painting
dry-brush painting
eludoric painting
fat over lean technique
finger painting (technique)
flying white
fresco painting (technique)
mezzo fresco
stucco-lustro technique
fresco secco
gongbi
grattage
impasto
lifting (painting technique)
negative painting (general painting techniq
oiling out
paint by number
plein-air
pointillism (painting technique)
scumbling
soak-stain technique
splashed ink
tarashikomi
tsukuri-e
wash technique
flat wash
xieyi

Paeonia lactiflora 芍藥(shao yao)

- Use “芍藥(shao yao)” as Keyword to search in Taiwan Digital Archives
- 212 items found

Definition	References
peony, any of the flowering plants in the genus *Paeonia* (family Paeoniaceae) known for their large, showy blossoms…There are two distinct groups of peonies: the herbaceous and the tree, or moutan, peonies…	大英百科全書 **(Britannica Online Encyclopedia: Peony)**
植物名。毛茛科芍藥屬，多年生草本。葉互生，橢圓形或卵形，二回三出複葉。初夏之間開花，形似牡丹，有紅、白、紫等色。根可入藥，有鎮痛、通經等作用。古代人們離別時，常以芍藥贈欲遠行者.....	教育部重編國語辭典「芍藥」

AAT

Agents Facet
- Living Organisms
  - Eukaryota (domain)
    - Plantae (kingdom)
      - Angiospermae (division)
        - Magnoliopsida (class)
          - Saxifragales (order)
            - Paeoniaceae (family)
              - Paeonia (genus)
                - Paeonia lactiflora (species)

Suggestion to create concepts

Peony, Album After Castiglione’s Birds and Flowers by Ch’ü Chao-lin
National Palace Museum
http://catalog.digitalarchives.tw/item/00/60/75/b2.html

Bottle with Peony Scroll, Yuan dynasty
The Metropolitan Museum of Art
http://www.metmuseum.org/Collections/search-the-collections/60019865

Turtledove 斑鳩(ban jiu)

- Use “斑鳩(ban jiu)” as Keyword to search in Taiwan Digital Archives
- **354** items found

Definition	References
turtledove (*Streptopelia turtur*), also spelled turtle dove, European and North African bird of the pigeon family, Columbidae (order Columbiformes), that is the namesake of its genus. The turtledove is 28 cm (11 inches) long. Its body is reddish brown, the head is blue-gray, and the tail is marked with a white tip. It is a ground feeder that eats prodigious amounts of small seeds. A migratory species, it winters in northern Africa.	大英百科全書 **(Britannica Online Encyclopedia: Turtledove)**
動物名。鳥綱鳩鴿目，後頸有黑色的斑輪環。因其善鳴，故稱為「鳴鳩」。亦稱為「鶻鳩」、「鶻鴿」。	教育部重編國語辭典「斑鳩」

AAT

Agents Facet
- Living Organisms
  - Eukaryota (domain)
    - Animalia (kingdom)
      - Chordata (phylum)
        - Vertebrata (subphylum)
          - Aves (class)
            - Columbiformes (order)
              - Columbidae (family)
                - Streptopelia (genus)

→ **Suggestion to create concepts**

Bamboo and Turtledoves attributed to Huang Ch'üan (?-965)
National Palace Museum
http://catalog.digitalarchives.tw/item/00/03/fb/0c.html

Tettigoniidae 螽斯(zhong si)

- Use “螽斯(zhong si)” as Keyword to search in Taiwan Digital Archives
- 249 items found

Definition	references
long-horned grasshopper (family Tettigoniidae), any of approximately 6,000 species of insects (order Orthoptera) that include the katydid, meadow grasshopper, cone-headed grasshopper, and shield-backed katydid. All members of this family, with the exception of the shield-backed grasshopper, are green in colour, have long wings, and inhabit trees, bushes, or shrubs…	大英百科全書 **(Britannica Online Encyclopedia: Long-horned grasshopper)**
直翅目螽斯科的泛稱，約有三千種。體呈綠色、棕色或灰色，觸角等於或超過體長，具長翅，生活於地面、矮草上或灌叢中。雄體鳴聲來自覆翅互相摩擦。有草	教育部重編國語辭典「螽斯」

Silk reelers on the Sponge Gourds by Wang Wu-Mo. National Palace Museum
http://catalog.digitalarchives.tw/item/00/10/92/c1.html

Tettigoniidae
http://catalog.digitalarchives.tw/item/00/5b/2a/c7.html

AAT

Agents Facet
- Living Organisms
  - Eukaryota (domain)
    - Animalia (kingdom)
      - Arthropoda (phylum)
        - Hexapoda (subphylum)
          - Insecta (class)
            - Orthoptera (order)
              - Ensifera (suborder)
                - Tettigonioidea (superfamily)
                - Tettigoniidae (family)

Suggestion to create concepts

Chrysanthemum 菊(ju)

- Use "菊(ju)" as Keyword to search in Taiwan Digital Archives
- **30,412 items found**

Definition	References
Chrysanthemum, genus of ornamental plants in the family Asteraceae, containing about 100 species native primarily to subtropical and temperate areas of the Old World. Cultivated species, often called mums, have large flower heads…	大英百科全書 **(Britannica Online Encyclopedia: Chrysanthemum)**
植物名。菊科菊屬，多年生草本。莖略帶木質。葉互生，卵形，有缺刻和鋸齒。秋季開花，花冠周圍為舌狀，中部為管狀，屬頭狀花序。原產大陸地區，久經栽培，種類繁多，可供觀賞、飲料及藥用。	教育部重編國語辭典「菊」

AAT

Agents Facet
- Living Organisms
  - Eukaryota (domain)
    - Plantae (kingdom)
      - Angiospermae (division)
        - Magnoliopsida (class)
          - Asterales (order)
            - Asteraceae (family)
              - Chrysanthemum (genus)

Suggestion to create concepts

Chrysanthemums by Yun Shouping. National Palace Museum
http://catalog.digitalarchives.tw/item/00/31/b8/86.html

Mountain daisys
http://catalog.digitalarchives.tw/item/00/4e/54/eb.html

Ganoderma lucidum 靈芝(ling zhi)

- Use "靈芝(ling zhi)" as Keyword to search in Taiwan Digital Archives
- **1,295 items found**

Definition	references
Chinese Name：靈芝**(ling zhi)** Kingdom：Fungi Phylum：Basidiomycota Class：Aphyllophorales Family：Ganodermataceae Binomial name：Ganoderma lucidum	國立自然科學博物館「靈芝」 **(Digital museum, National Museum of Natural Science)**
植物名。多孔菌科靈芝屬。子實體有一長柄，其上具有一腎形菌蓋，呈黑褐色，環以雲紋。蓋上有許多細孔，呈白色或淡褐色。古代以靈芝為仙草，服食後可駐顏不老，具起死回生的神效，故稱為「靈芝」。亦稱為「希夷」。	教育部重編國語辭典「靈芝」

Pine and ganoderma by Lu Chih. National Palace Museum
http://catalog.digitalarchives.tw/item/00/10/8d/cf.html

Ganoderma multipileum
http://catalog.digitalarchives.tw/item/00

AAT

Agents Facet
- Living Organisms
  - Eukaryota (domain)
    - Fungi (kingdom)
      - Basidiomycota (phylum)
        - Aphyllophorales(order)
          - Ganodermataceae (family)
            - Ganoderma (genus)
              - Ganoderma lucidum(species)

Suggestion to create concepts

AAT-Taiwan: Multilingual Research Project

	Western Art Resource	Chinese Art Resource
Western users	Getty's AAT Make Western Art Accessible to Western Users	AAT-Taiwan [2] Controlled Vocabularies of Chinese Art → Mapping → AAT-Taiwan Make Chinese Art Accessible to Western Users
Chinese users	AAT-Taiwan [1] Getty's AAT → Translating → AAT-Taiwan Make Western Art Accessible to Chinese Users	Digital Archives Thesaurus (DAT) [3] Controlled Vocabularies of Chinese Art → Structuring → DAT Make Chinese Art Accessible to Chinese Users

數位典藏與數位學習 國家型科技計畫
Taiwan e-Learning and Digital Archives Program

Wikify Digital Collections

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Principal Investigator
Core Platforms for Digital Contents Project, TELDAP
Research Fellow
Research Center for Information Technology Innovation &
Institute of Information Science, Academia Sinica

Introduction

- The integration and management of digital contents has become an important issue as the amount of digital contents produced from different projects and institutions increases rapidly.
- The goal of our project is to achieve optimized preservation, retrieval, and presentation of digital collections.
- Knowledge engineering is needed to achieve the above goal as well as multilingual retrieval.

A Hypothetic Object-Space

Object*1*=< Attr1=Value*11*, Attr2=Value*12*,Attr3=Value*13*,...>
Object*2*=< Attr1=Value*21*, Attr2=Value*22*,Attr3=Value*23*,...>
Object*3*=< Attr1=Value*31*, Attr2=Value*32*,Attr3=Value*33*,...>
.
.
.
Object*n*=< Attr1=Value*n1*, Attr2=Value*n2*,Attr3=Value*n3*,...>

Periods

<Chinese dynastic styles and periods>
... Xia
... Erlitou
... Shang
..... <Shang periods>
..... <Shang styles>
... Zhou
..... Western Zhou
..... Eastern Zhou

Styles

<Ceramics styles>
... Chinese export
..... famille (ceramics style)
..... famille rose
..... famille verte
..... famille jaune
..... famille noire

Processes and Techniques

<pottery techniques>
.... <pottery decorating techniques>
..... bat printing
..... encaustic decoration
..... pâte-sur-pâte
..... slip trailing

Materials

<ceramic glaze by composition or origin>
... alkaline glaze
..... ash glaze
..... peach bloom
... blue-and-white (ceramic glaze)
..... flow blue (ceramic glaze)
... Bristol glaze
... celadon (glaze)
... lead glaze
... slip glaze

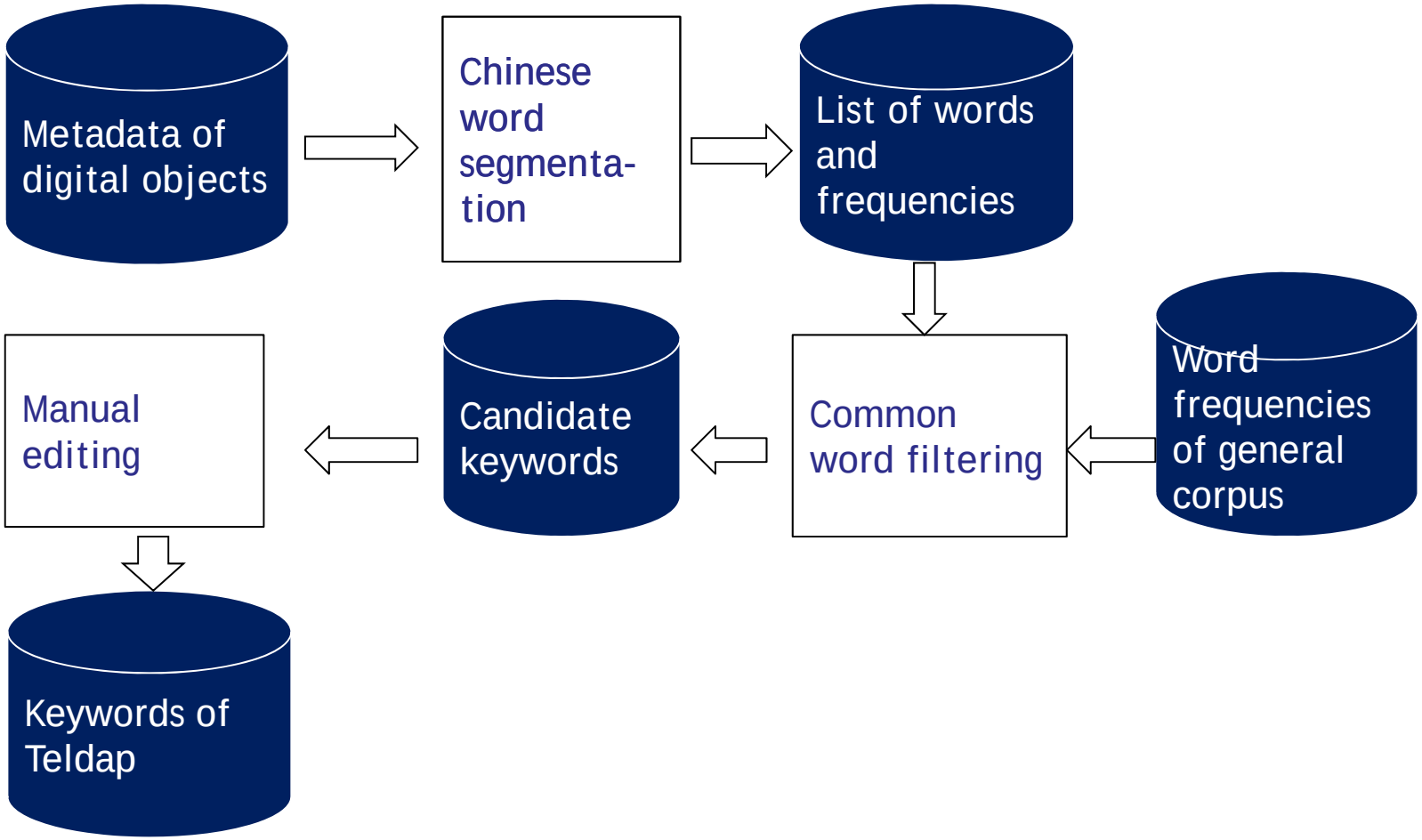
The Difficulties and Problems

- To automate the creation of attribute-value vectors for objects
  - Attribute-values may not explicitly expressed in the objects' metadata
  - Controlled vocabulary for attributes and values is required
- A multilingual thesaurus
  - AAT-Taiwan
  - Sense and meaning facet ambiguities of values

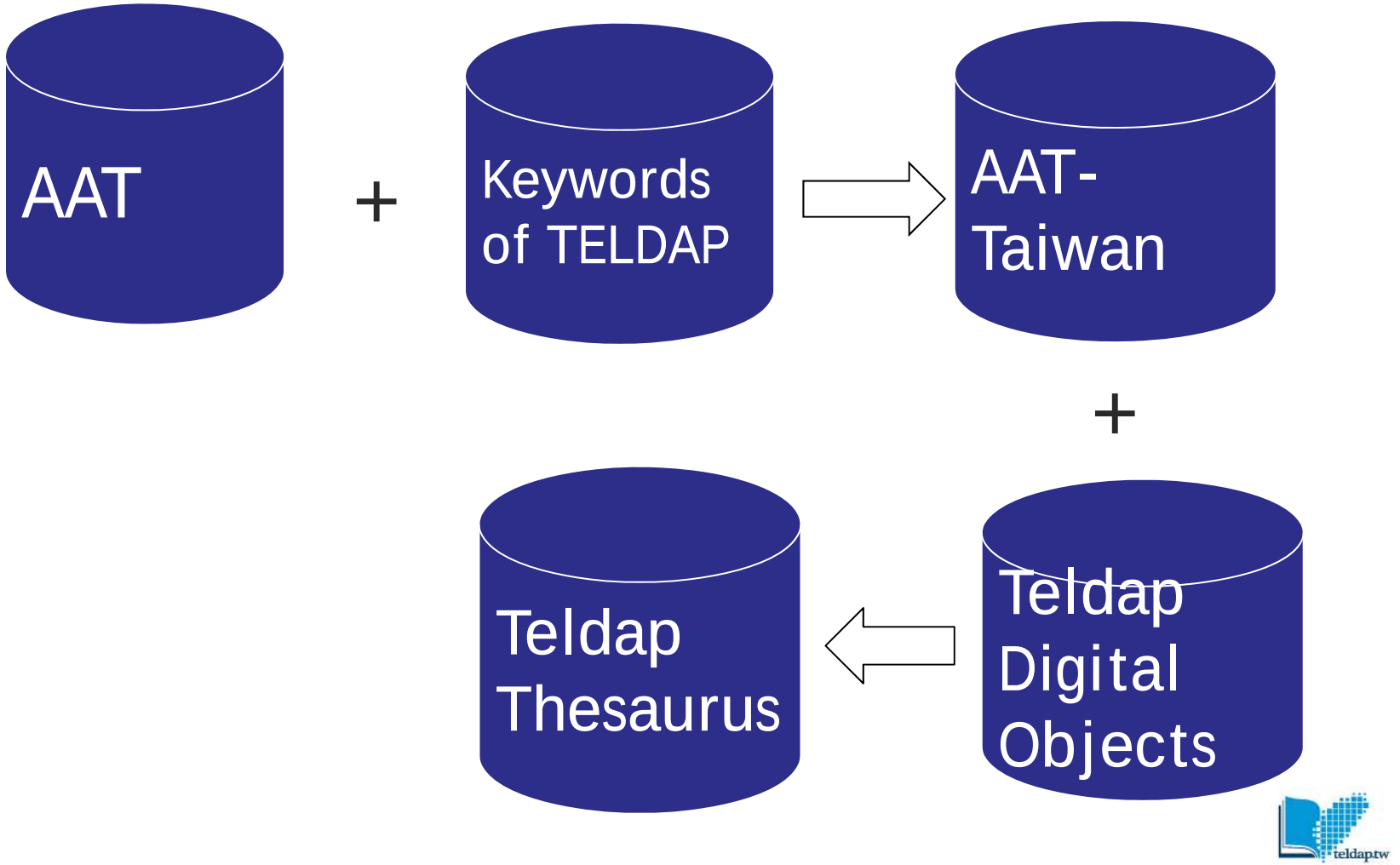
Plans of wikifying digital collections

- Construct keyword dictionary of digital archives
  - Extract keywords from metadata
- Construct AAT-Taiwan thesaurus and TELDAP ontology
  - Localize Art & Architecture Thesaurus of Getty
- Establish links between objects
  - Schema templates extraction from AAT-Taiwan
  - Generation of object-attribute-value triples

Construct keyword dictionary



Teldap Thesaurus Construction



AAT-Taiwan & TELDAP Thesaurus

- Verify and attach keywords to AAT-Taiwan manually.
- TELDAP Thesaurus adopts top level ontology of AAT-Taiwan:
  - Add more TELDAP terms
  - Reconstruct sub-tree structures
  - Association between terms and collections for browsing

Example of TELDAP Thesaurus

AAT-Taiwan

TELDAP Thesaurus

Association between terms and collections

宋高宗書女孝經馬和之補圖上卷　卷

基底材料：　選擇 清空

依形式區分之繪畫作品：冊頁　選擇 清空

中國繪畫：佛像,人物畫,山水畫　選擇 清空

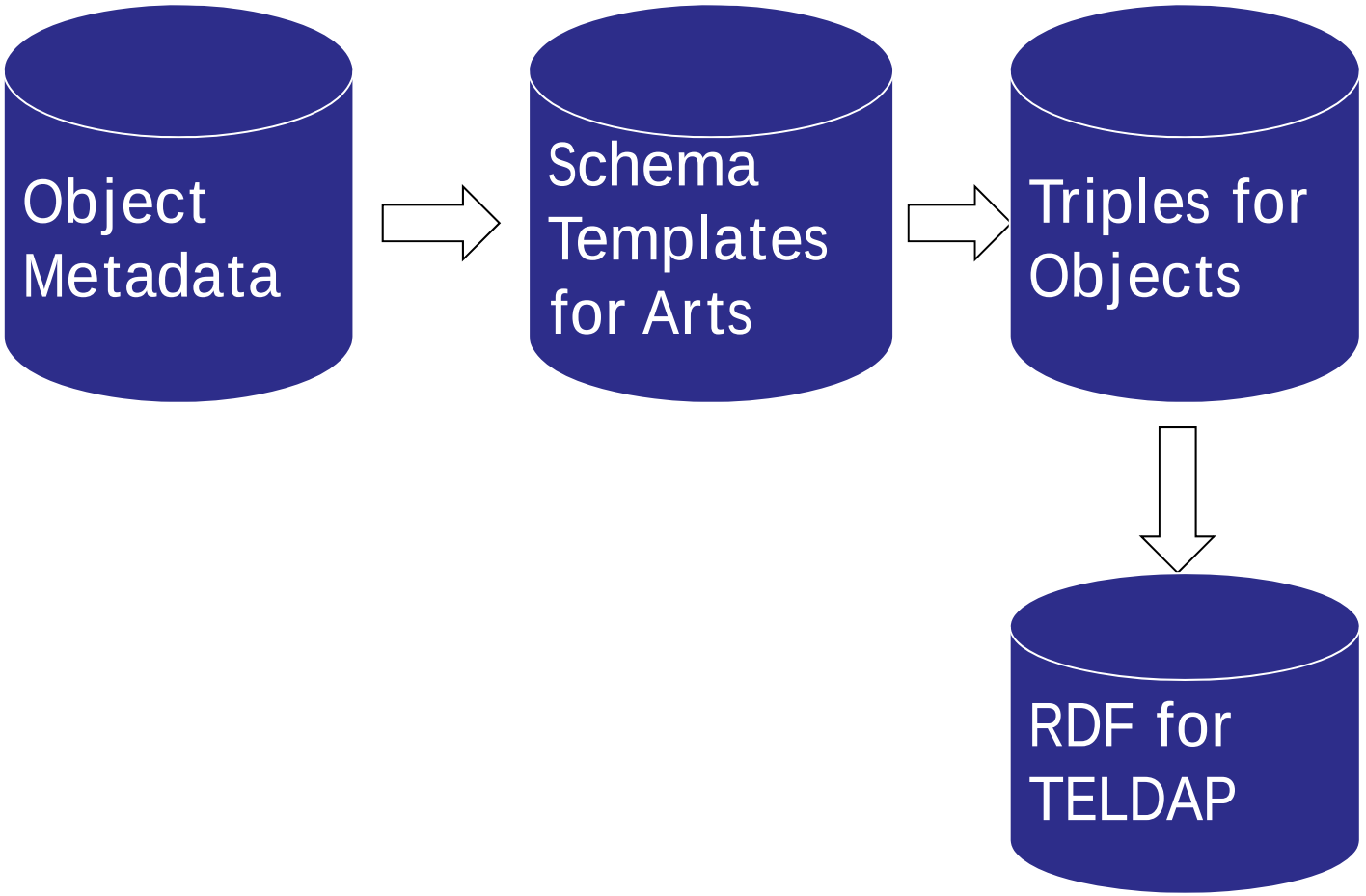
中國繪畫風格：院體畫　選擇 清空

中國書法：楷書　選擇 清空

依形式區分之繪畫作品【300033638】 的下位節點：

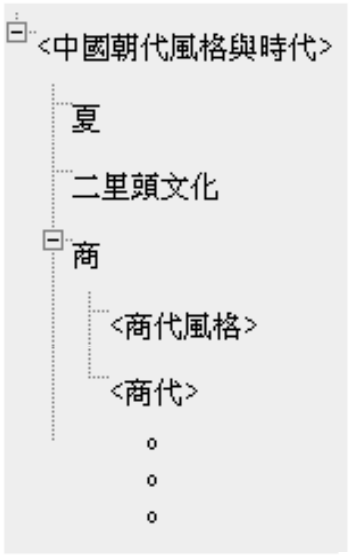
- 依形式區分之繪畫作品
  - 櫥櫃畫 【300033639】 [選取][移除]
  - 人形樣板畫 【300194372】 [選取][移除]
  - 畫架畫 【300177435】 [選取][移除]
  - 纖細畫 【300033936】 [選取][移除]
  - 板面繪畫 【300033656】 [選取][移除]

RDF Generation

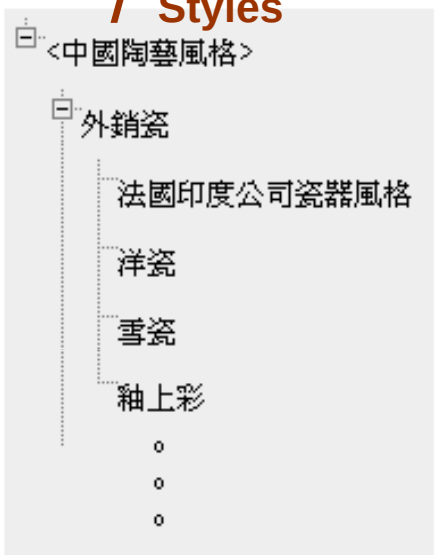


Schema Templates Extracted from Teldap Thesaurus

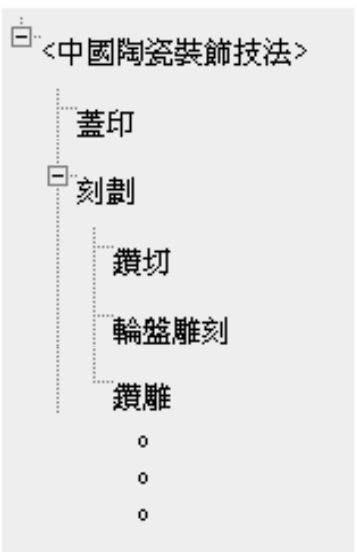
時代 / Periods



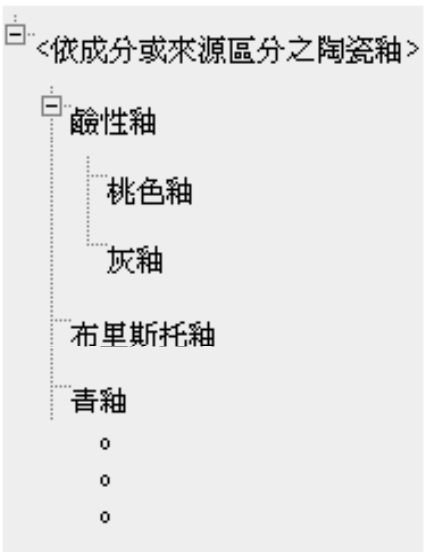
風格 / Styles



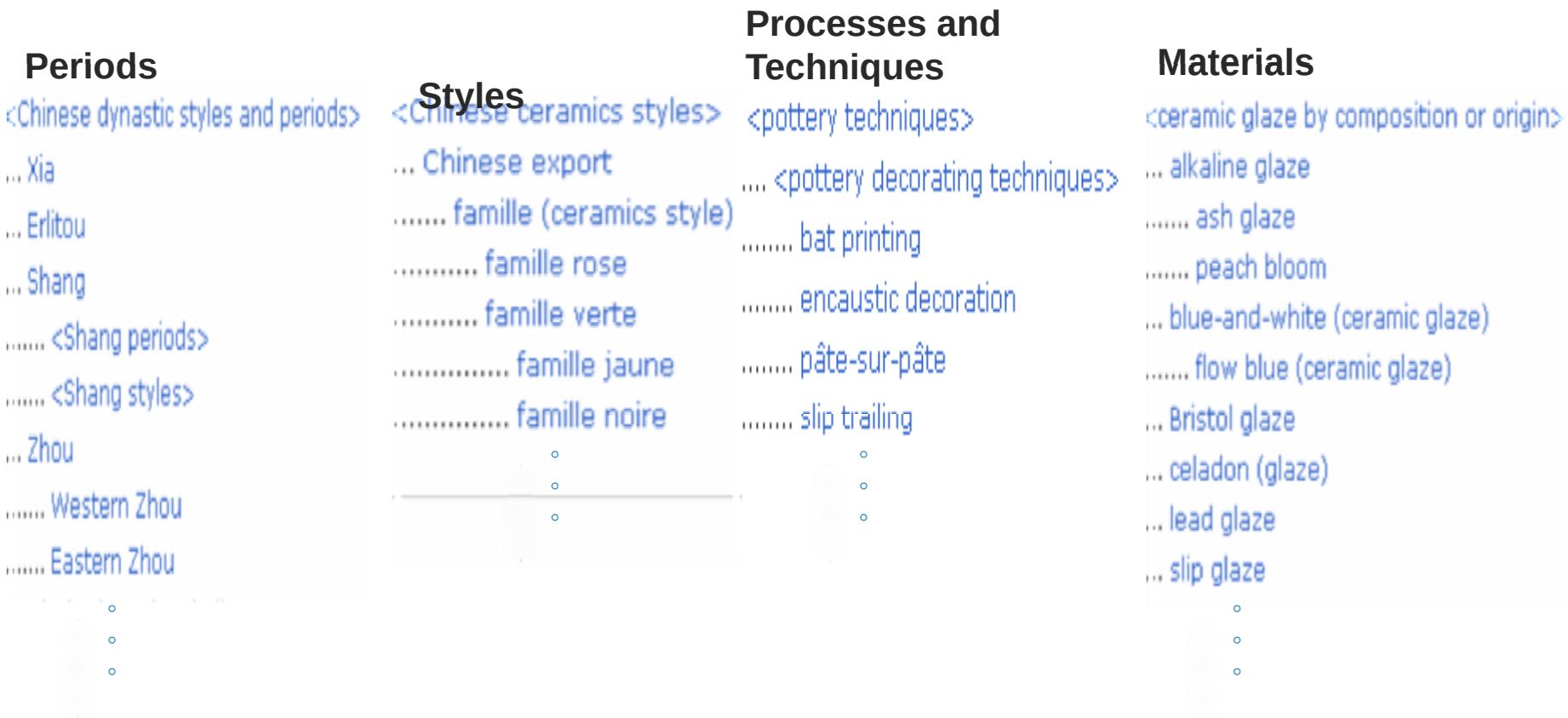
技法 / Processes and Techniques



質材 / Materials

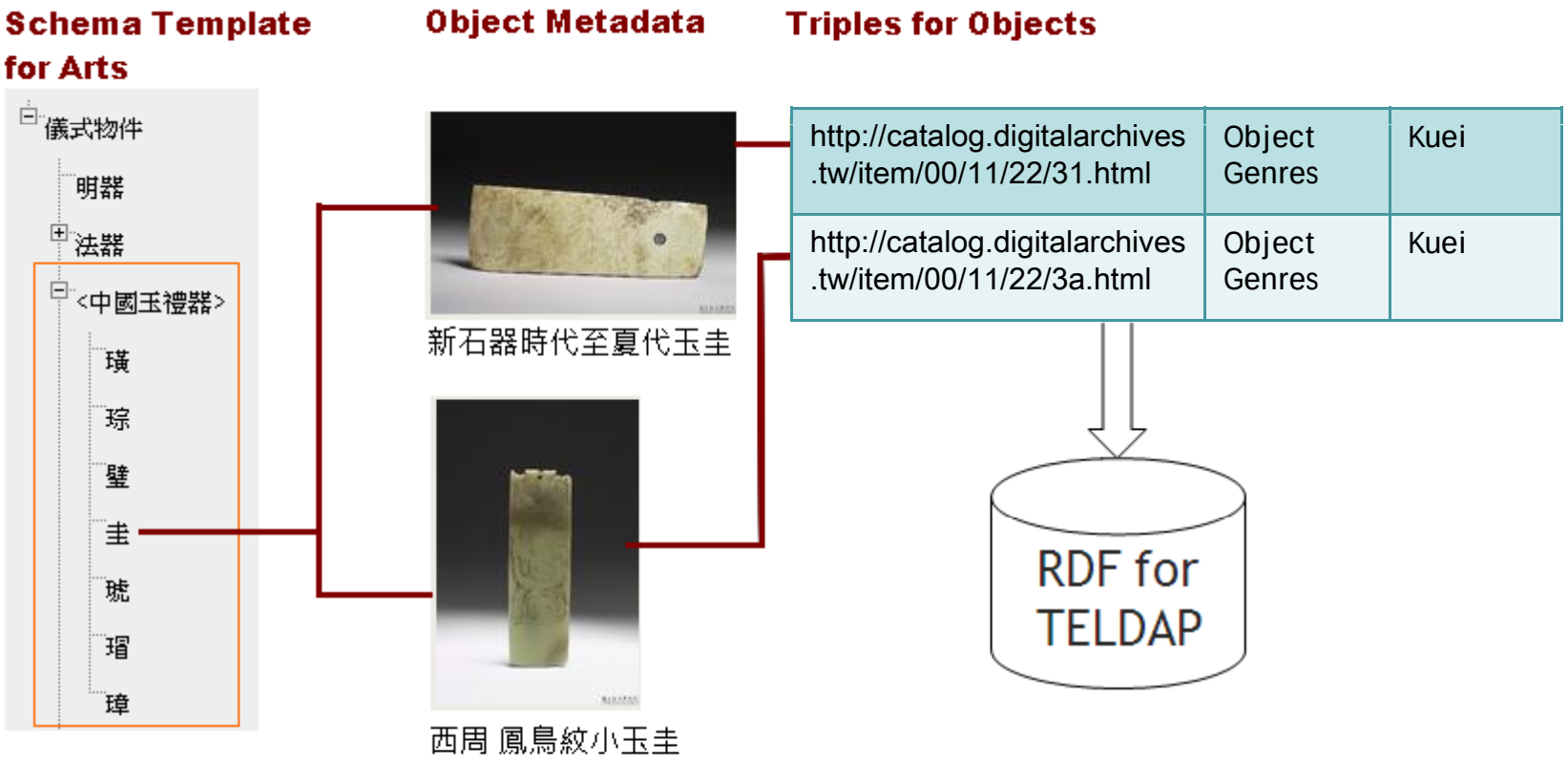


Schema Templates Extracted from Teldap Thesaurus

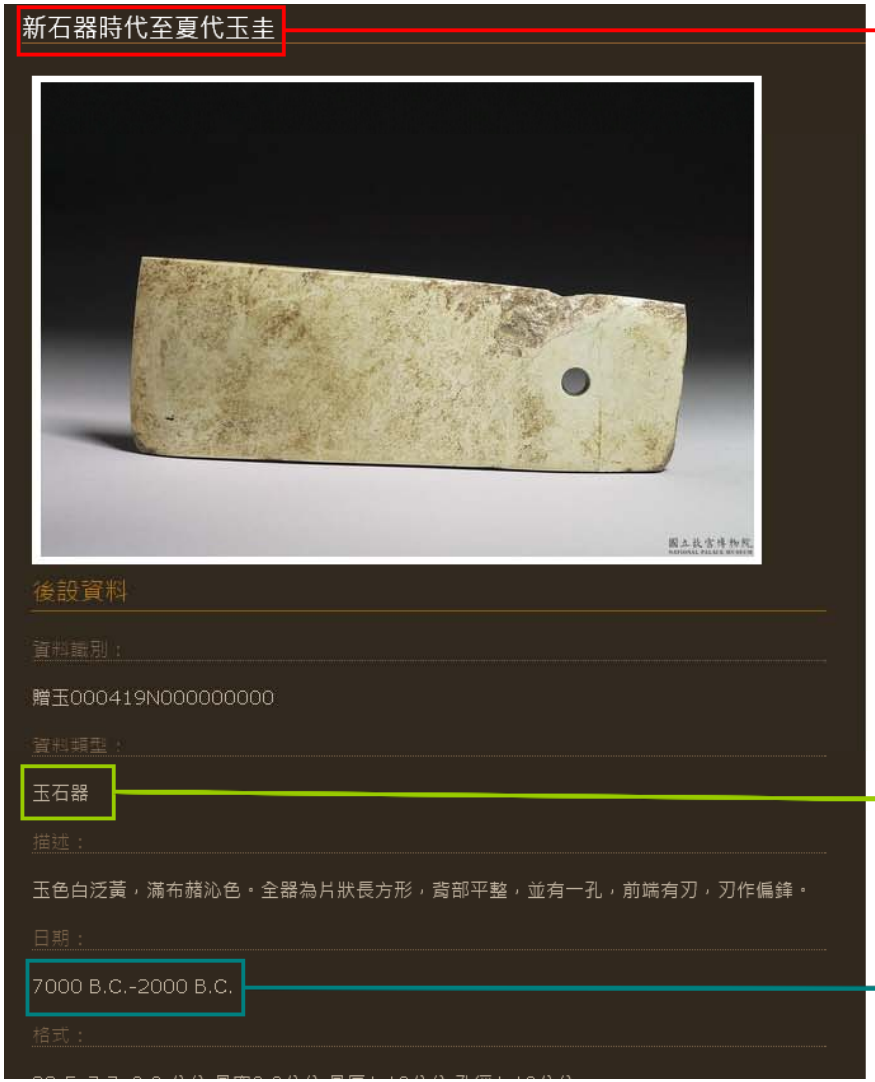


Triple Store Building

- **Triple store generation(machine tagging)**

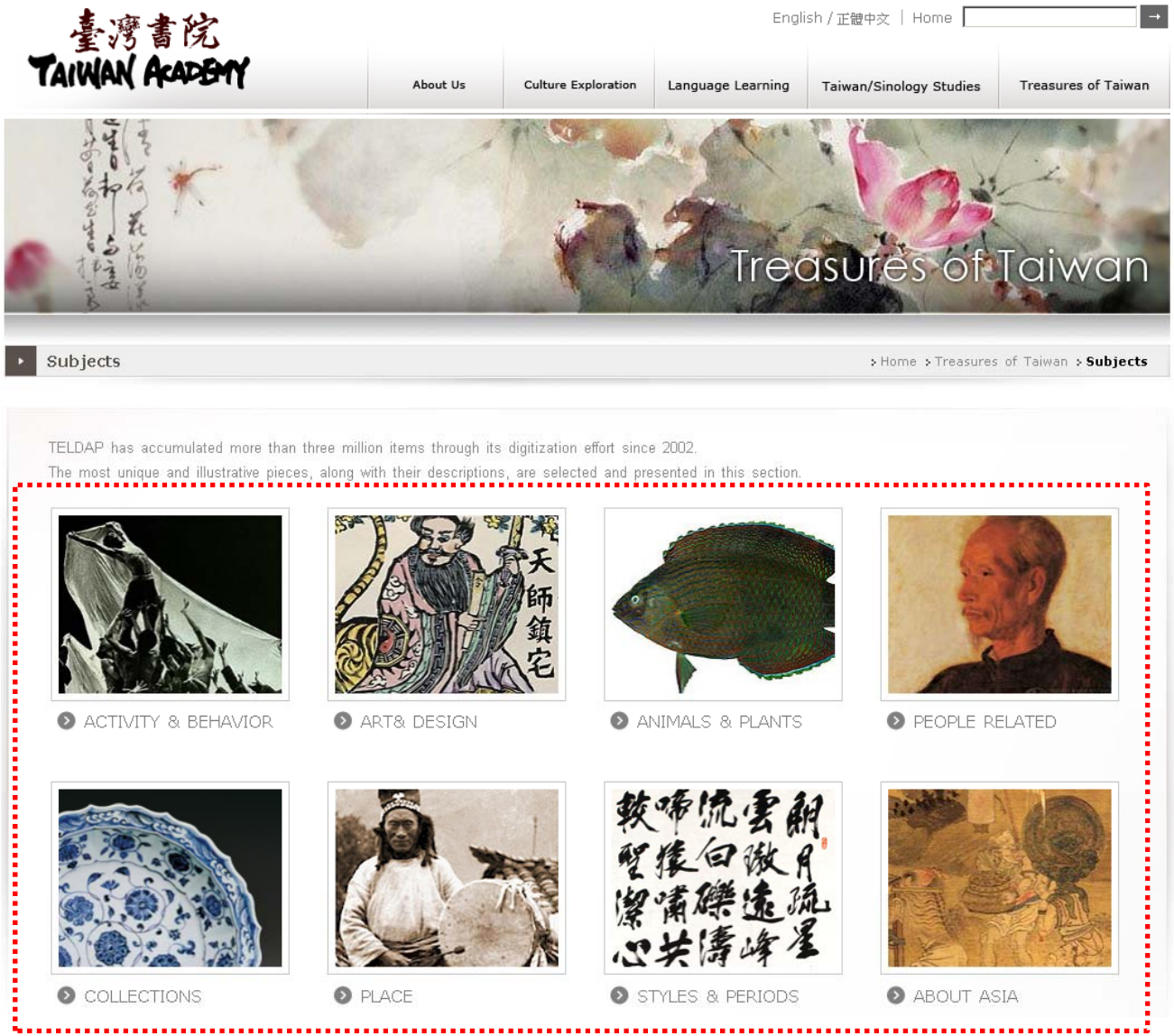


Triple Store Building

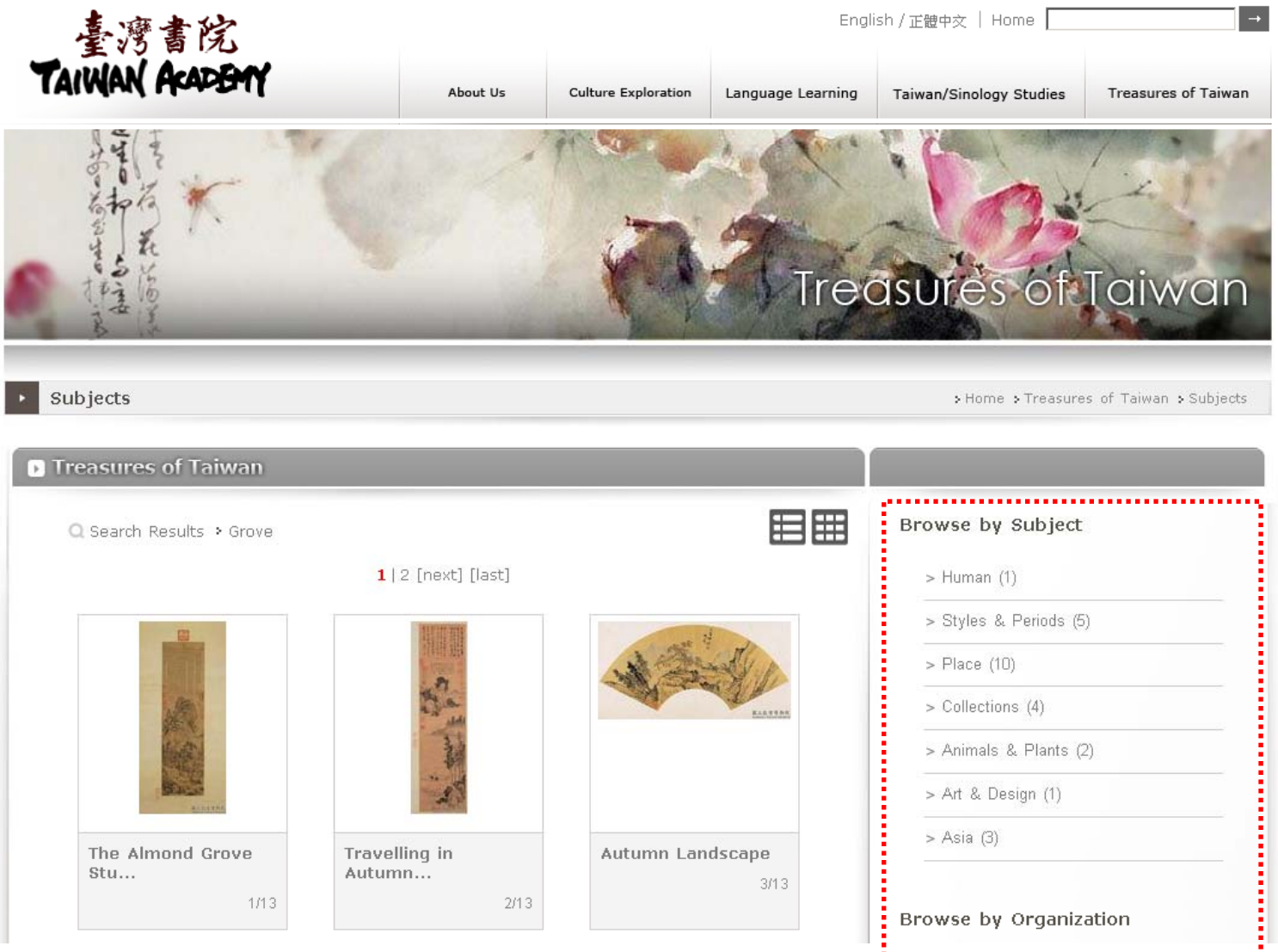


Subject	Predicate	Object
http://catalog.digitalarchives.tw/item/00/11/22/31.html	Periods	Stone Age - Xia
http://catalog.digitalarchives.tw/item/00/11/22/31.html	Periods	7000 B.C.-2000B.C.
http://catalog.digitalarchives.tw/item/00/11/22/31.html	object genres by form	Kuei
http://catalog.digitalarchives.tw/item/00/11/22/31.html	object genres by material	jades
http://catalog.digitalarchives.tw/item/00/11/22/31.html	Materials	Jade

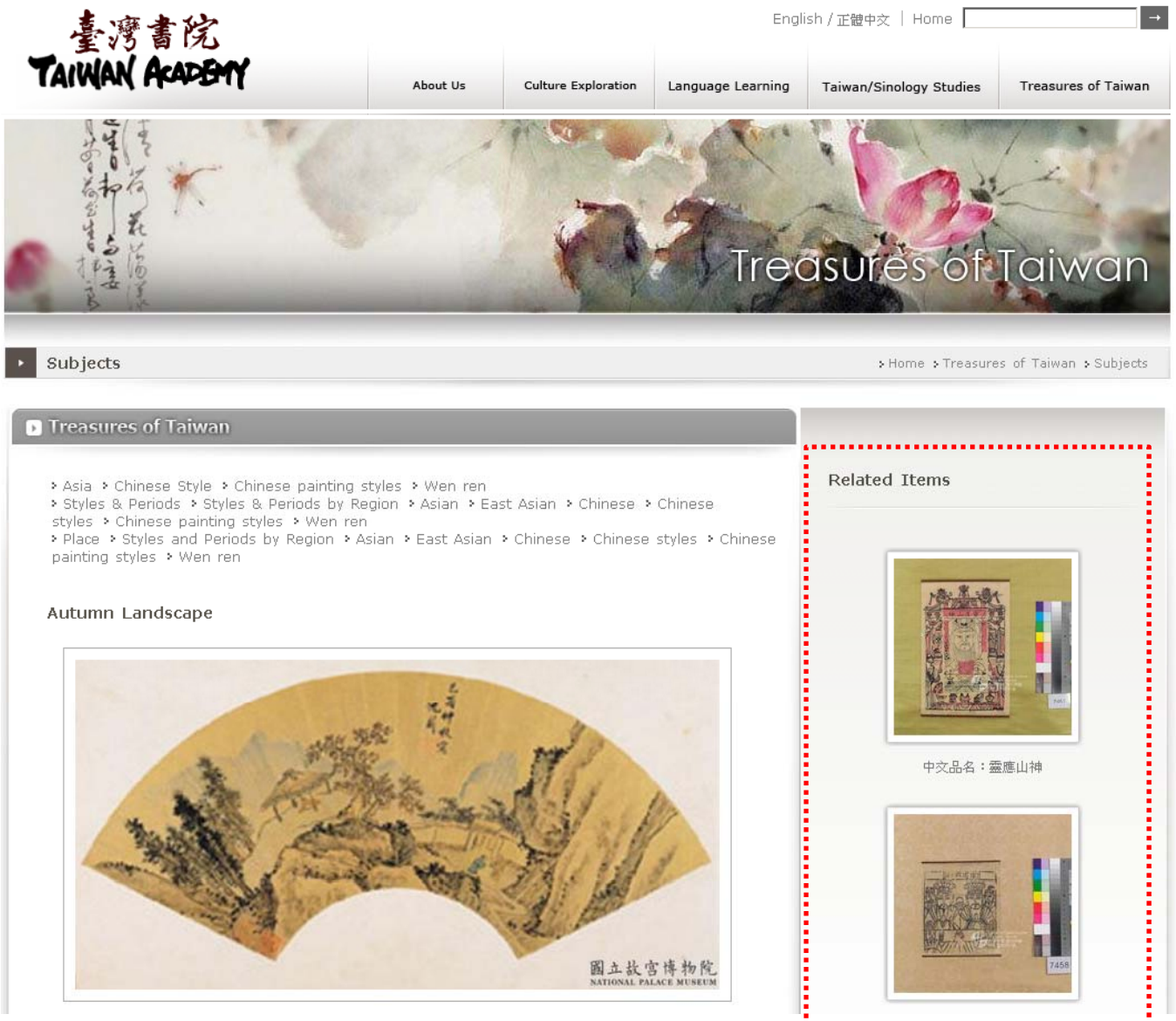
Apply Teldap Thesaurus to Taiwan Academy



Subject search of Taiwan Academy



Recommendation of related items



Thanks

數位典藏與數位學習 國家型科技計畫
Taiwan e-Learning and Digital Archives Program

http://teldap.tw