



# Intellectual Access to Digital Art-Objects:

Image Attributes and Art Historical  
Knowledge Representation

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# Two General Assertions

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- Current metadata schemas for images record information that facilitates organization and retrieval of digital art objects, but can hinder retrieval of intellectual content.
- Intellectual energy spent on subject access to the detriment of other, more easily cataloged, and I dare say, more valuable attributes is misplaced and might even be counter-productive to providing robust and intellectually significant access to images.
- Art Historical basis is not inclusive enough for representation of many types of images.

# Current Theoretical Underpinnings of Image Retrieval

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- Primarily based on subject analysis and indexing. Different theories suggest different significant attributes to consider:
  - **Panofsky**: basis for all current subject indexing (pre-iconographical, iconographical, iconological)
    - **Markey**: primary and secondary subject matter
    - **Shatford**: “*of-ness*” & “*about-ness*”
    - **Krause**: hard and soft indexing
    - **Shatford Layne**: Four Attributes: biographical, subject, exemplified, and relationship



# Practical Outcomes

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- **Structured Vocabularies for visual information**
  - Getty Art & Architecture Thesaurus (AAT), Thesaurus for Geographic Names (TGN), Union List of Artist Names, Iconclass, LC Subject Headings, LC Thesaurus for Graphic Materials.
- **Metadata Schemas**
  - Dublin Core, VRA Core, Encoded Archival Description, CIDOC – Conceptual Reference Model
- **Automatic Approaches**
  - Pattern Recognition, Pixel Level Indexing, Color Indexing, Texture, Shapes / blobs and their relationships



# User Studies / Implications for Important Access Points

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- (Enser, 1993): Uniquely identified entities, with chronological / time based attributes. Specificity in image searches returns more information than broader terms.
- (Keister, 1994): Frequently occurring queries incorporated specific visual elements from the images themselves
- (Collins, 1998) & (Chen, 2001): Detailed level of time, location, events, objects or format
- (Choi & Rasmussen, 2003): Specific or general persons and things, geographical and chronological terms

# User Studies / Implications for Important Access Points...Continued

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- “Aboutness” of image content very important
  - “For optimal access, representations for images should be provide access to the topic of the image and objects within the image. The representation should cover information both “of” and “about” an image.”
  - Majority of users in (Choi & Rasmussen, 2003) “wished that more informative data such as citation status, and structural and contextual information related to an image had been found on the textual descriptions.”
  - “textualizing what is essentially pictorial plays a major role in providing better indexing service in an image retrieval environment.”
  - Very difficult to do within existing framework.



# The curse of Art History 101

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- Ongoing debate about the best way in which to translate “what we see into what we say.”
- Panofskian iconology has been most pervasive methodology, but art historical methods, in their glacier-like progress, are changing.
- Effort to develop a more inclusive, less deterministic language to describe all works of art on an equal footing



Raphael. Madonna of the Meadow. 1505 or 1506. Oil on panel. Kunsthistorisches Museum, Vienna, Austria.



# Conclusions:

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- Librarians should stop beating themselves up about “about-ness”
  - Very difficult, if not impossible, to do well
  - Based on rhetorical tropes and outmoded metaphysical philosophies
  - Often inappropriate and/or misleading
  - Users interested in contextual information
- New ways to index art / New access points

# As a basis...

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- Shatford Layne's Indexing Model:  
Four Attributes:
  - Biographical
  - Subject
  - Exemplified
  - Relational
- It's very robust
- David Summers *World Art* Model

# Biographical Attributes

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## ○ Birth of Object

- Progenitors / creators
- Role of creator
- Time / place of creation
- Name given by creators

## ○ Travels of Object

- Where the object is now
- Where it has been
- Who owned it
- Cost: past, present, future
- Alterations
- **Spaces of Use: Work is always part of a space.**
  - Personal
  - Social
  - Cultural
  - Historical

# Subject Attributes

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## ○ Shatford Layne

- **Of/About:**  
A painting might be of a lion, but about pride, or of a crying woman, but about sorrow
- **Generic / Specific:**  
Photograph of Brooklyn Bridge = generically a bridge, specifically the Brooklyn Bridge
- Time, Space, Activities / Events, Objects

## ○ Summers

- He's not really concerned about the subject *per se*, but about the weight and importance of the artifact.
- If the image is "textual;" I.e., Western, then there is often a subject. But often that is the least interesting thing about the image.
- More of a historical understanding than subjective one.

# Exemplified Attributes

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- Shatford Layne

- “Exemplified Format”?

- Summers

- The idea of format entails much more than what we commonly mean by it. Formats have specific histories. Canvas, for example.
- **Disposition of Materials : Configurations**
  - Functional (function)
  - Conventional (purpose)

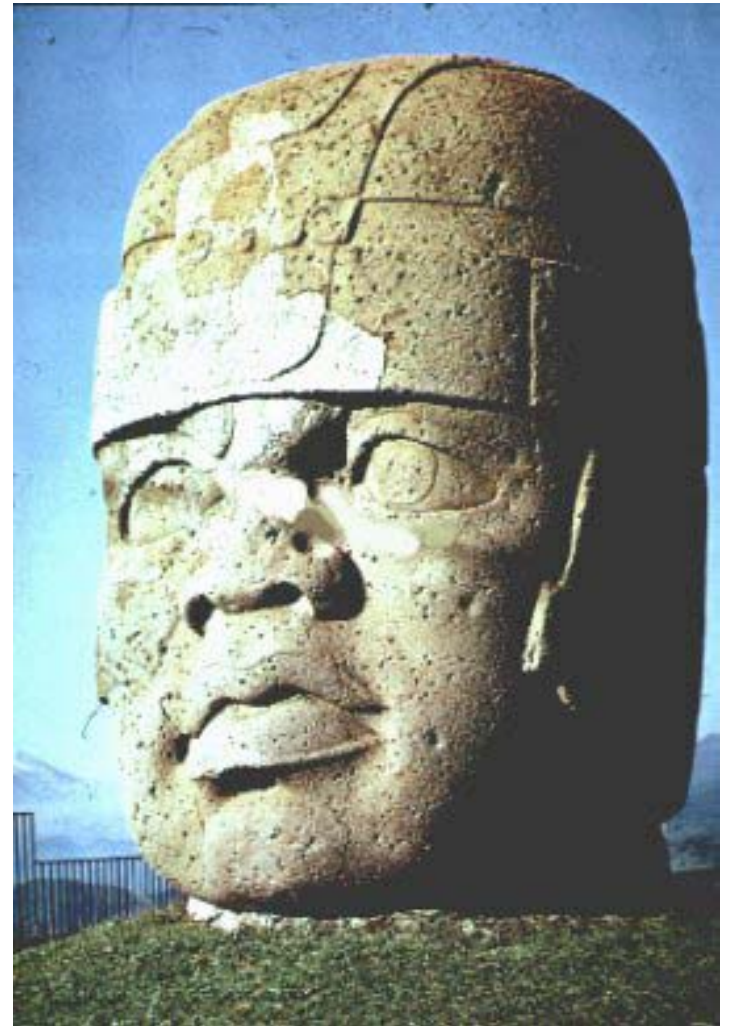
- Summers (cont’d)

- **Facture:** Often goes unnoticed. May be practically invisible to us. Calling attention to the fact that something was **made**. (Inferences can be based on aesthetics or facture)
- **The Arbitrary:** personal choices. Happen very early in the game.
  - Definition, Authority, and Series
  - Technology, Technique and Style (autographic, and collective)
- **The Notional:** decision to make something a certain way demands greater skill, and superfluous effort.

# Relationship with Content-Based Retrieval

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***"Embodied Existence"***  
*(upright, oriented, symmetrical but asymmetrical in motion, handed)*



# Relational Attributes

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## ○ Shatford Layne

- Other images
  - Preliminary drawing
  - Architectural plans
- Textual works
  - Image as illustration
  - Can illustrate a textual work
  - Critical texts
- Objects
  - Object the image documents

## ○ Summers

- It's difficult to list the relational attributes of an artifact in this model, because they're all related in one way or another.
- One artifact can be related to another in ways we can not currently "see," but if we could build a robust system based on this model, the relationships will become evident.



# Conclusions

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- Hooray for David Summers!
  - Provides an inclusive framework in which all cultural artifacts can be included, described and “understood”
  - This framework allows for more objective descriptions
  - Provides a meaningful connection to content-based methodologies

# Conclusions....cont'd

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- Develop scholarly DTD for art history using Summers' model as a template (XML? SGML? RFD? CIDOC-CRM?). If we want to be useful, we must keep up with cutting edge research, even if that involves risk.
- Build system that could handle on-the-fly relationships, scholarly input. Is this the "semantic web"? Difficult to know.
- Develop some more thesauri, and augment existing ones
  - Autographic / Collective Styles
  - Technologies
  - Techniques
  - Series



I have just two words for you:

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# Humanities Computing

- Make scholars aware of the opportunities in that field – allow them to imagine the possibilities inherent in the use of technology.
- Scholars *can* and *should* take an active role in the development of these systems, and get professional credit for doing so – Humanities Computing is an academic discipline, and this sort of scholarship *is* relevant. Finally, they have a professional interest in the successful development of these systems.