

The Future of Searching for Scholarly Literature

Discipline-Specific Research Databases in Web 2.0 and the Semantic Web

or

Leveraging the “Prescience of Artists and the Art of Science”

Cross-Disciplinary Research in Neuroaesthetics

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ICIC – 20th Anniversary Meeting

19-22 October 2008

Nice, France

Leveraging the “Prescience of Artists and the Art of Science”

Cross-Disciplinary Research in Neuroaesthetics



Renaissance

2D → 3D

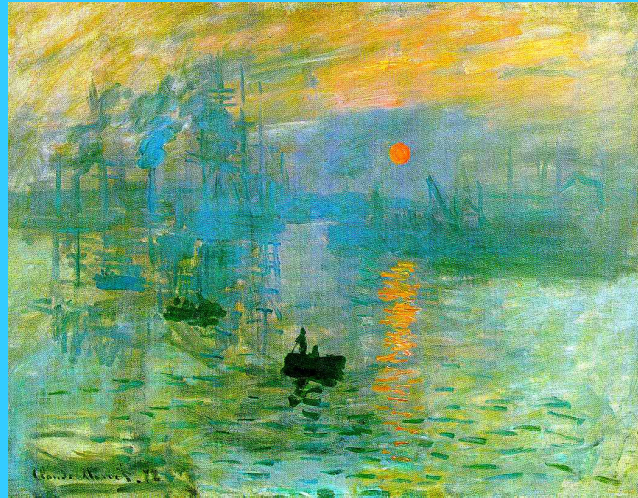


Modernism

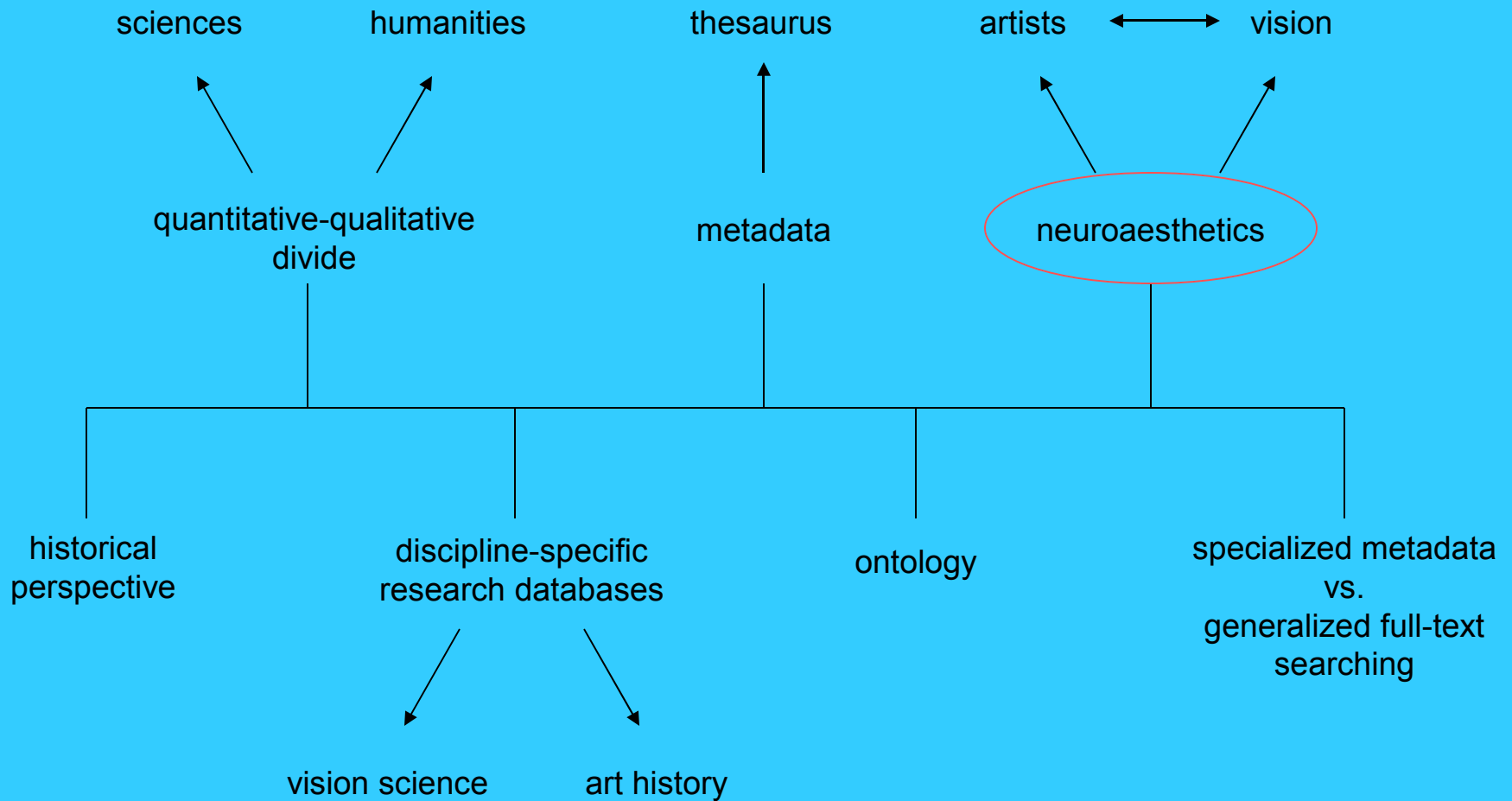
discrete processing of
color, form, and motion

Impressionism

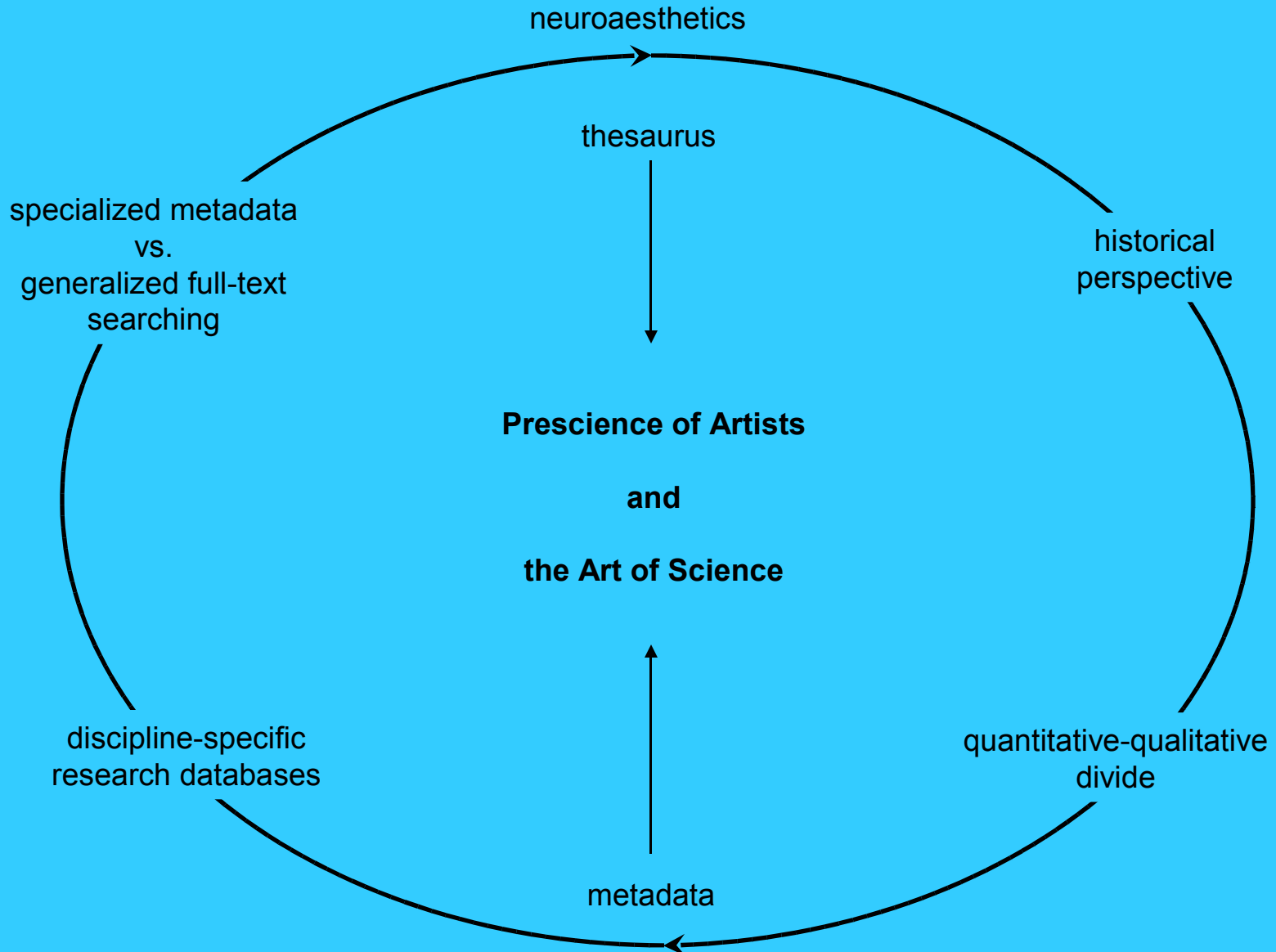
visual information as
incident on the
retina



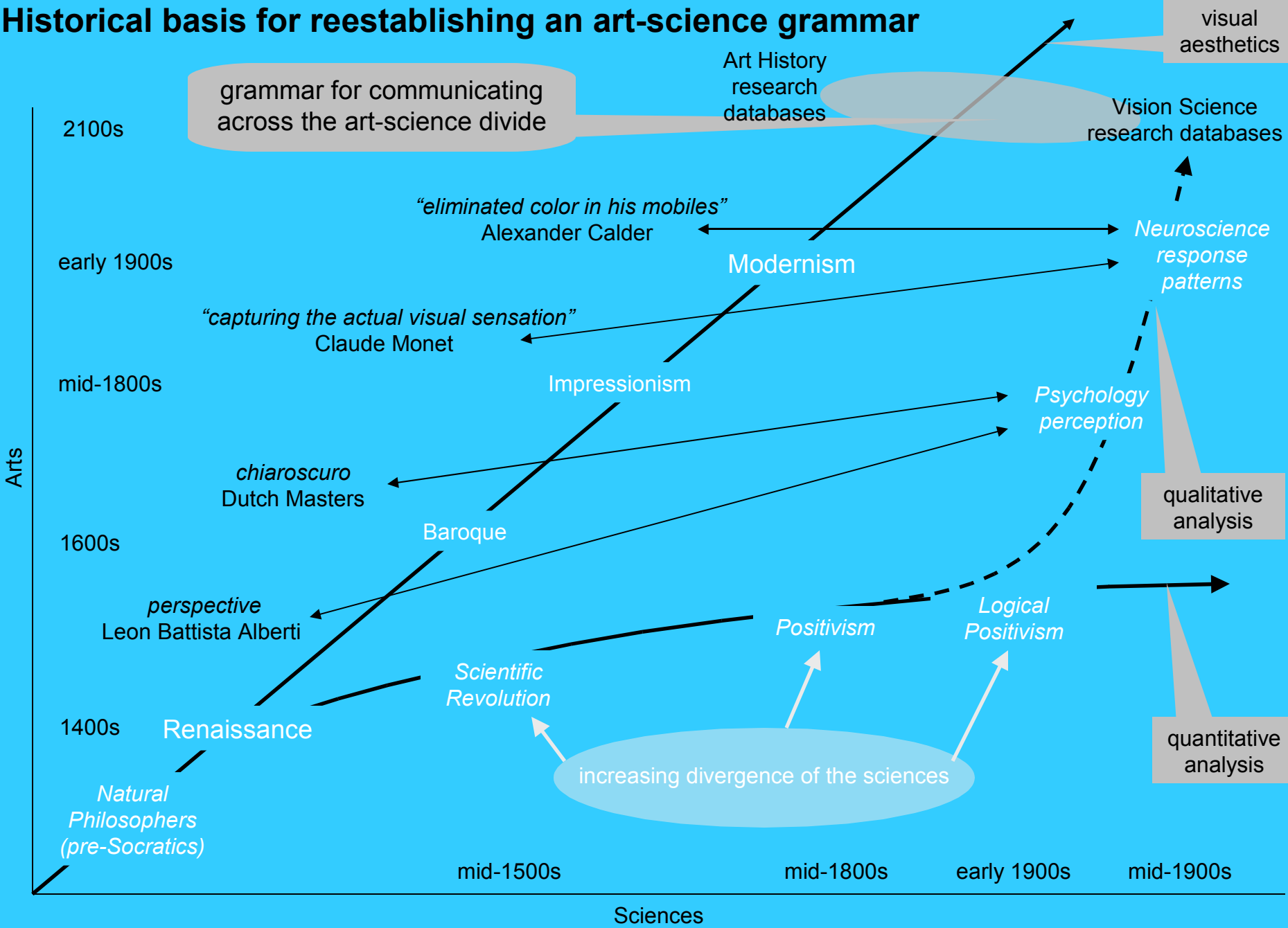
Outline – Modern Development of Neuroaesthetics



Outline – Preexistence of “Neuroaesthetics”

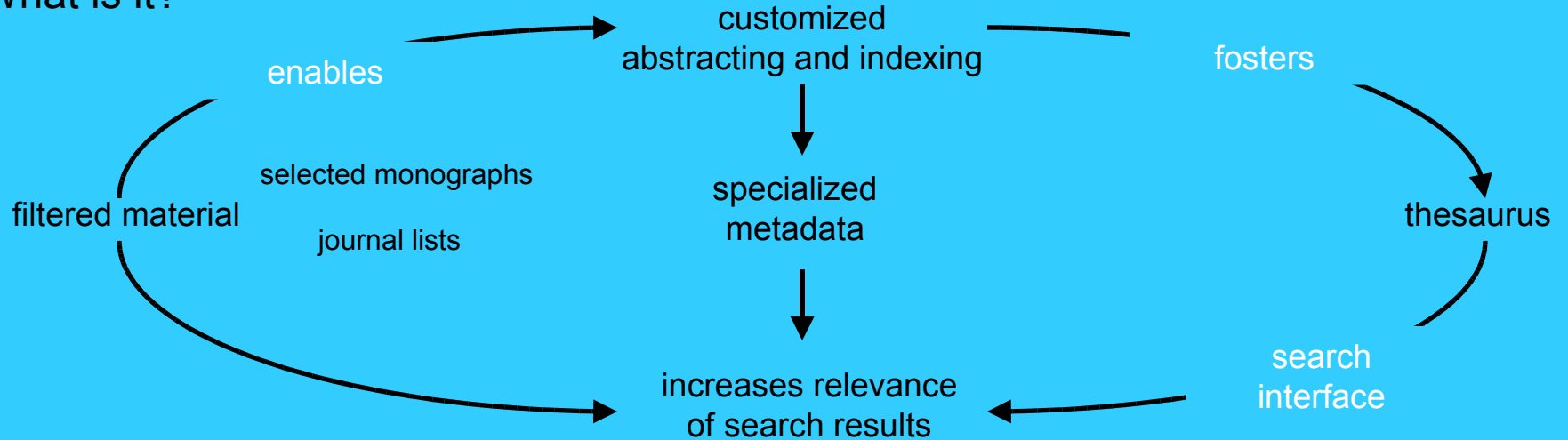


Historical basis for reestablishing an art-science grammar

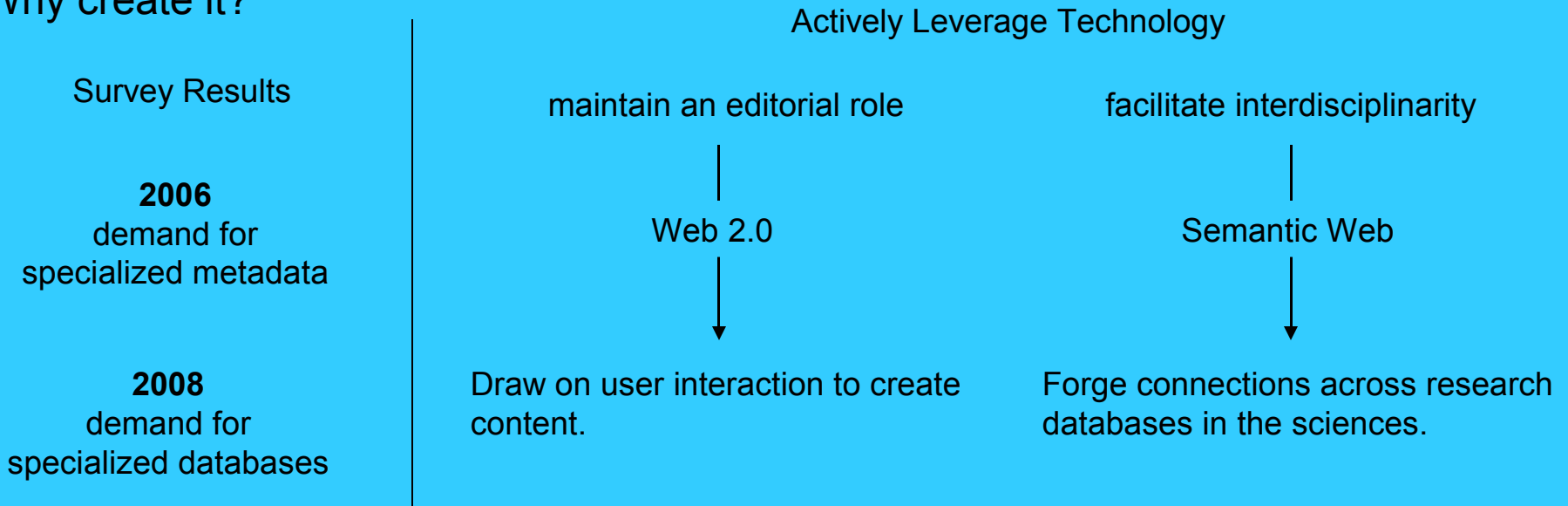


Art History Discipline-Specific Knowledge Base

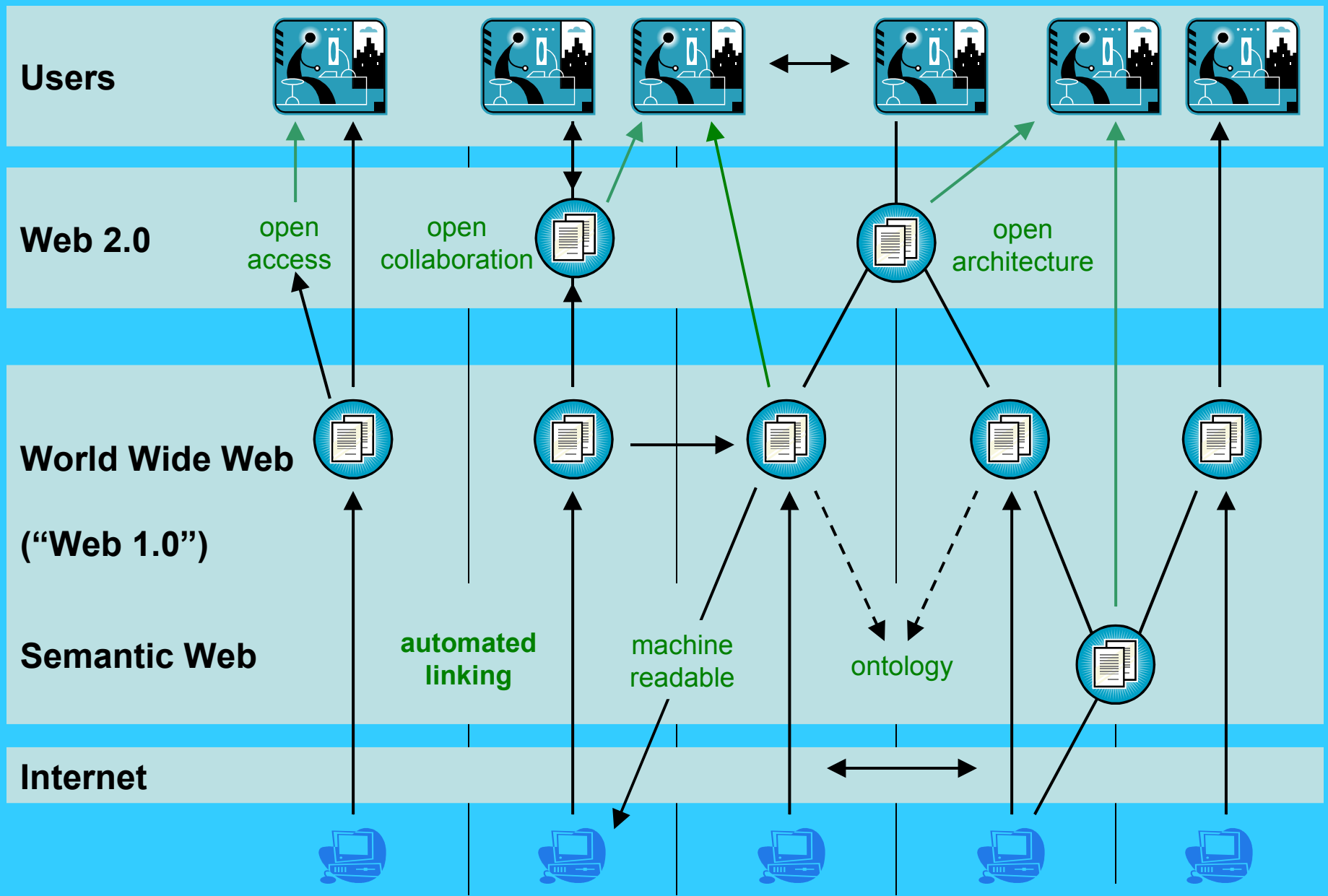
What is it?



Why create it?

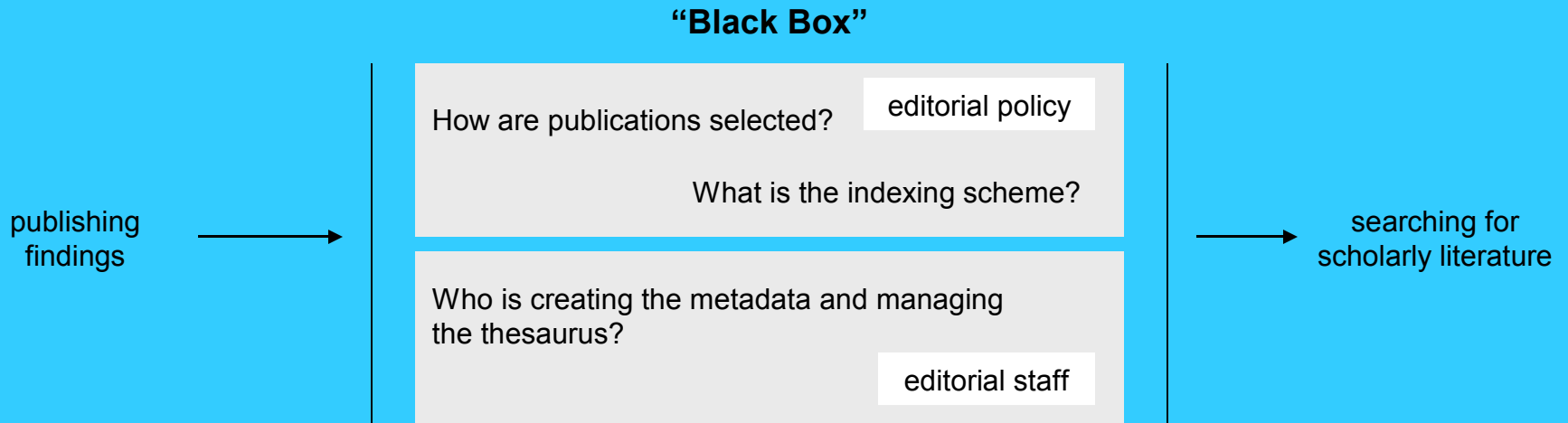


Web 2.0 and the Semantic Web

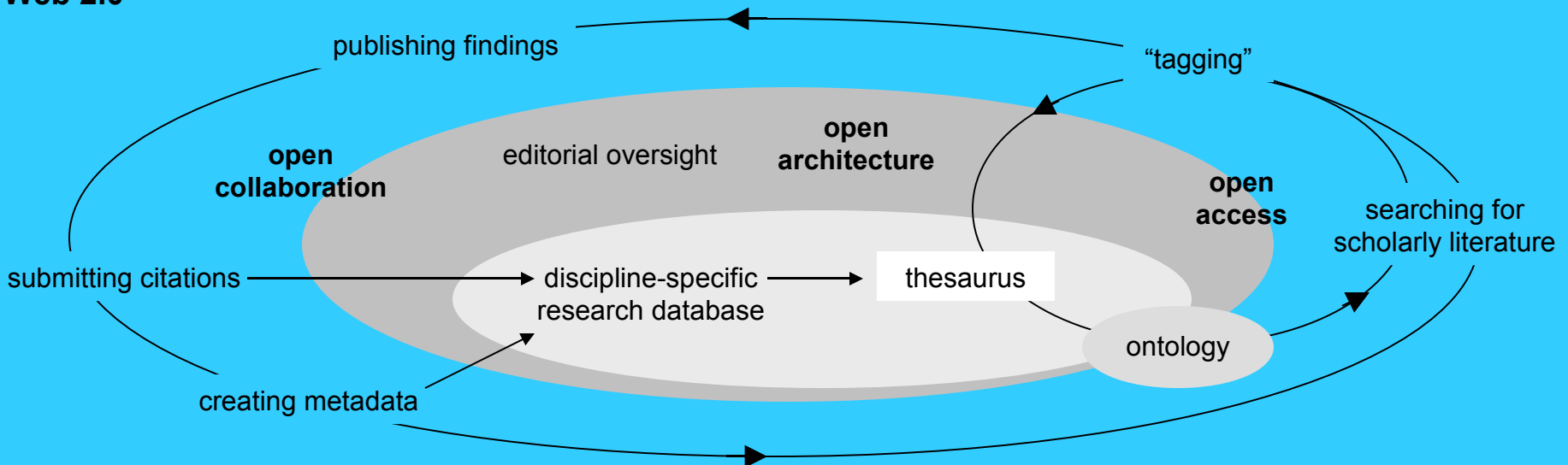


Participation of Scholars in the Evolving Infrastructure

“Web 1.0” and prior

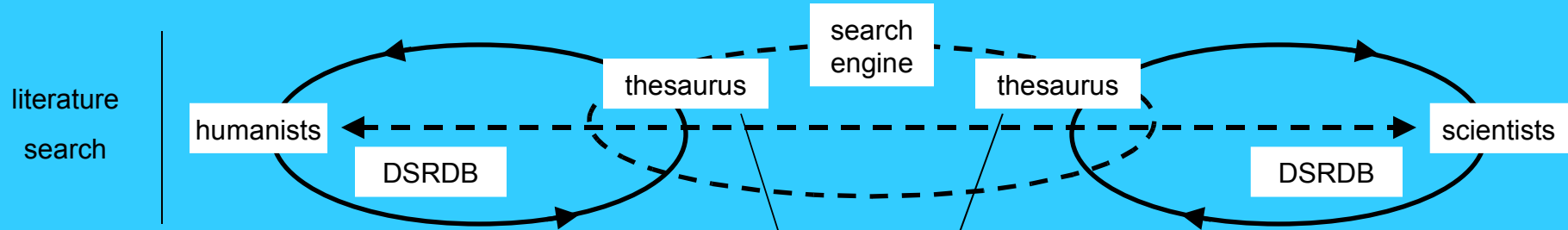


Web 2.0

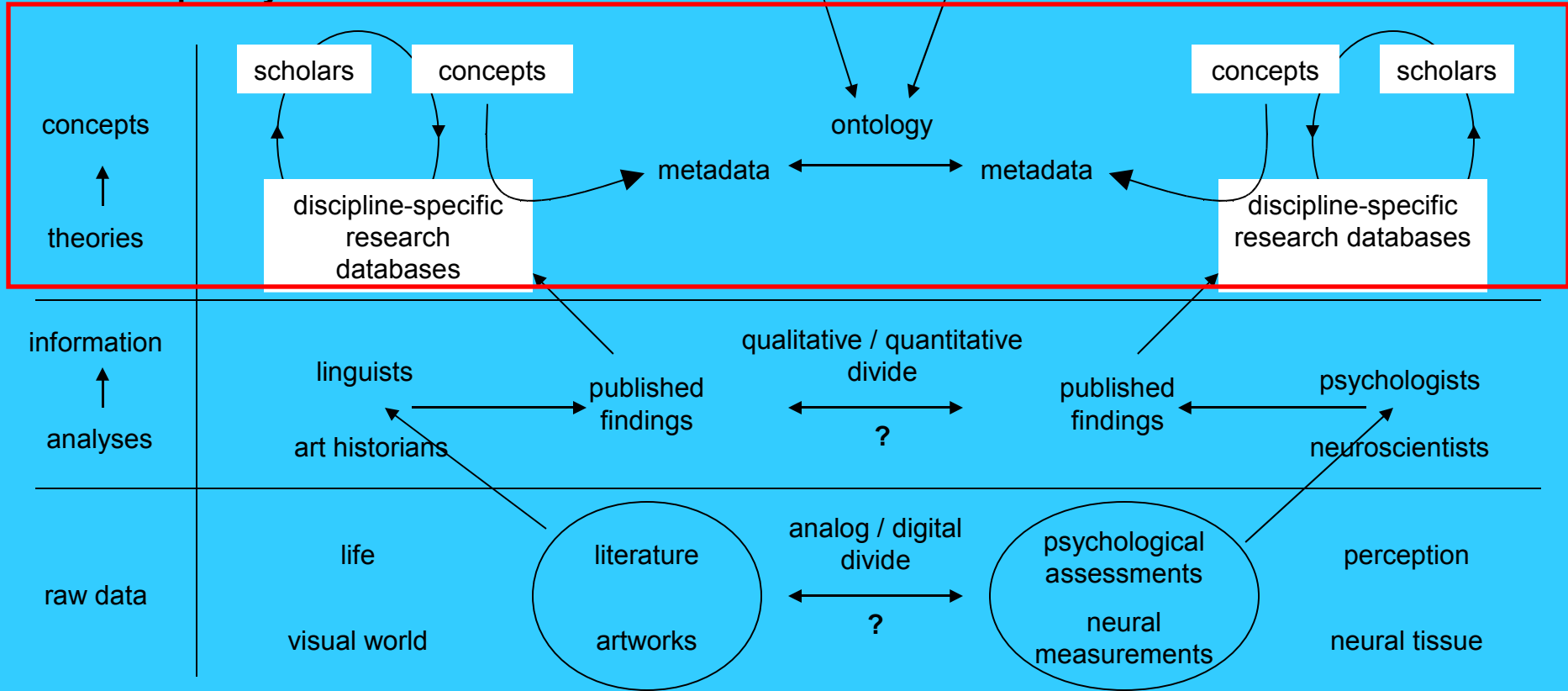


Applications in the Semantic Web to Enable Interdisciplinarity

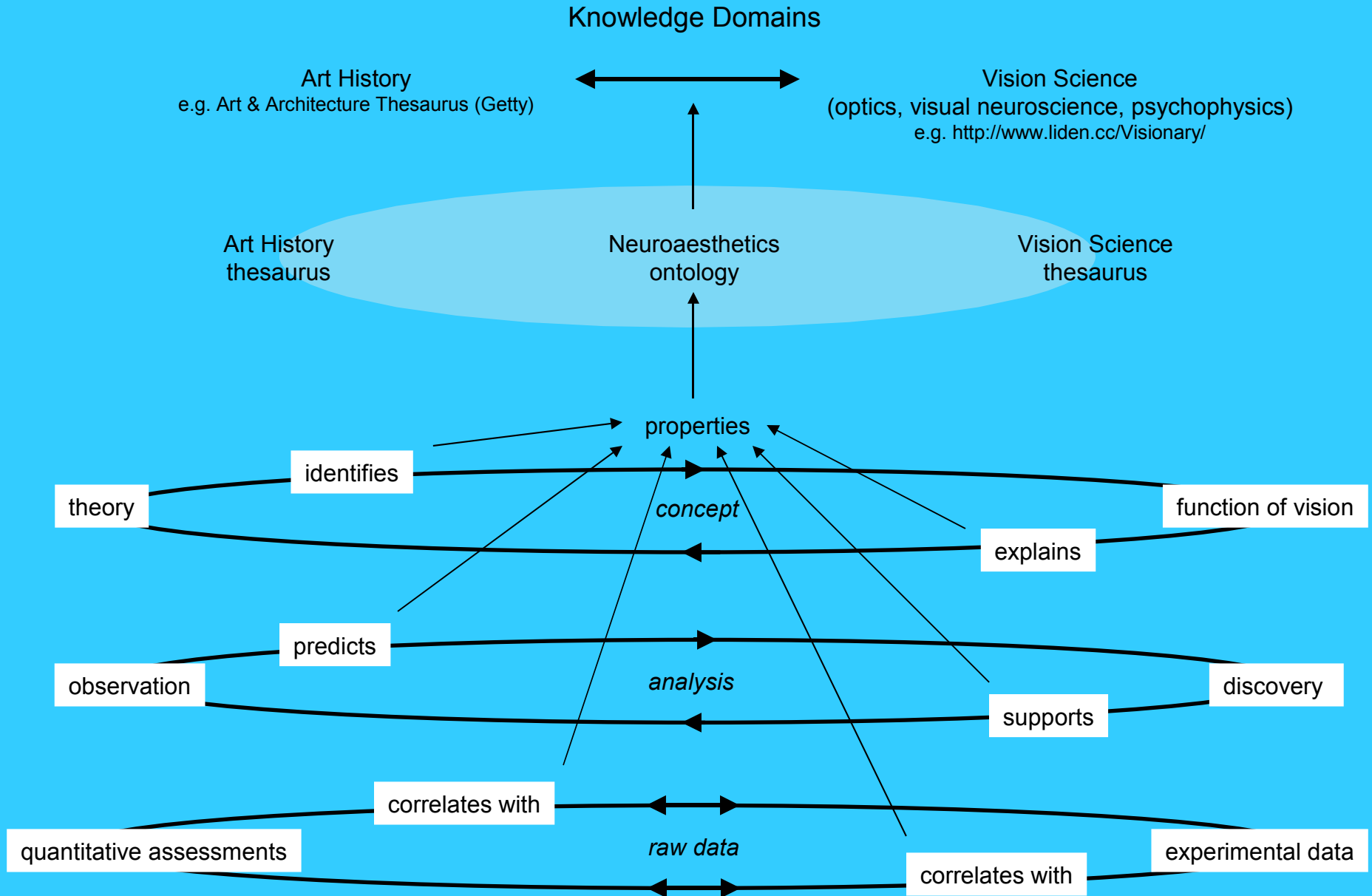
cross-disciplinary searches for scholarly literature



cross-disciplinary correlation of datasets



Developing a Cross-Disciplinary Ontology

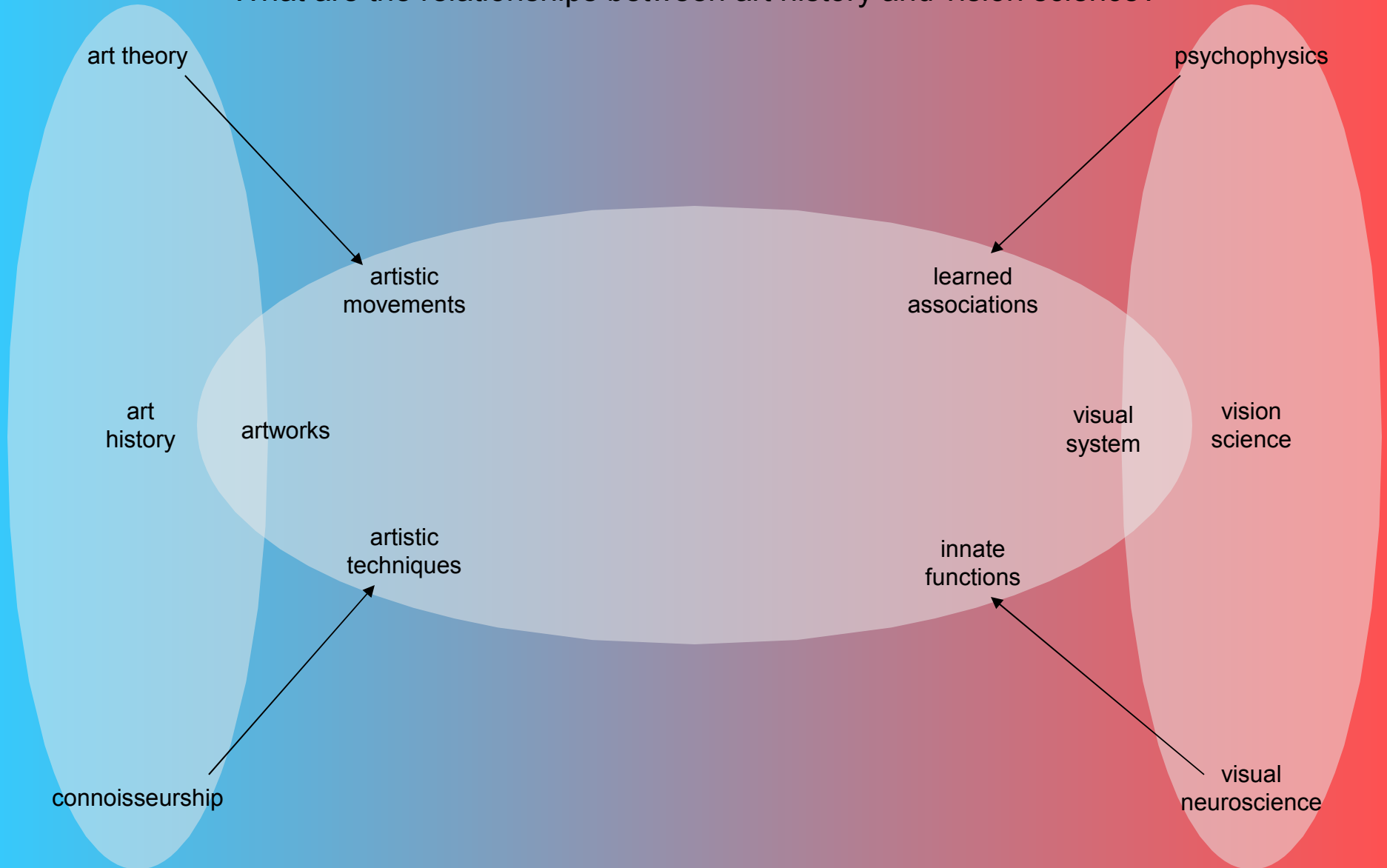


Towards an Ontology for Neuroaesthetics

“qualitative”
analysis

“quantitative”
analysis

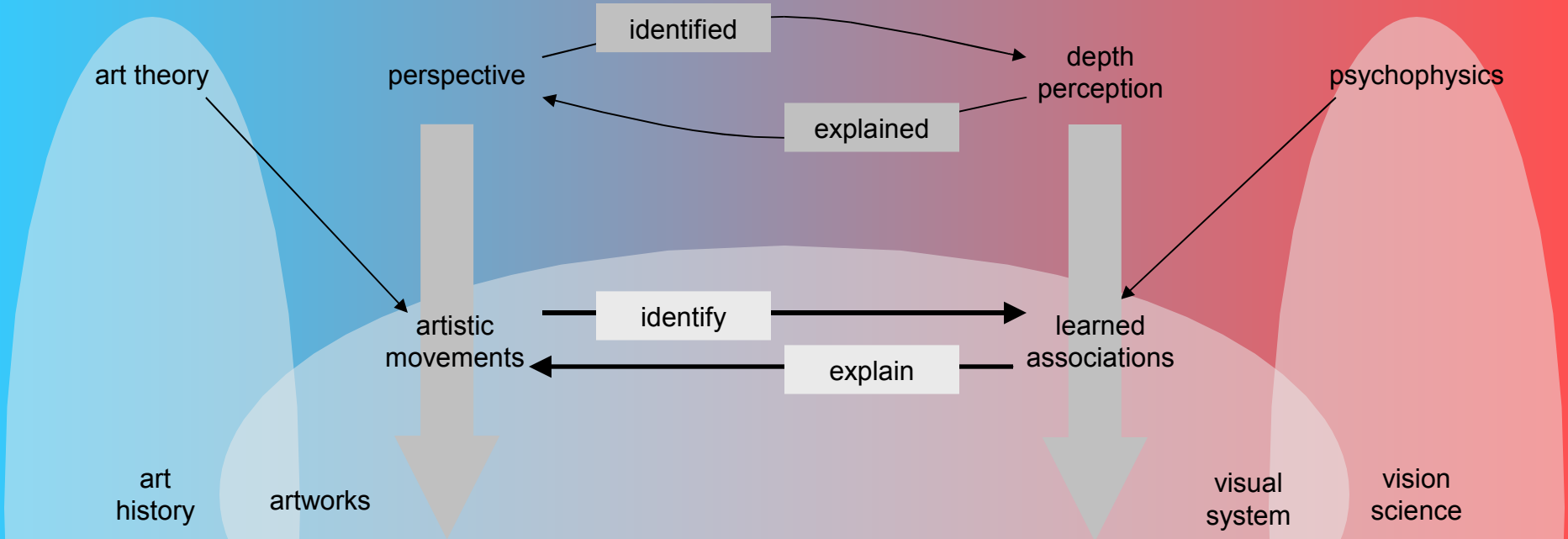
What are the relationships between art history and vision science?



Artists showed prescience in understanding the visual system.

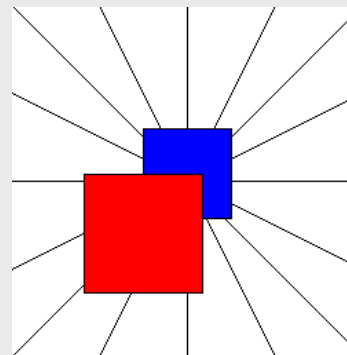
“qualitative”
analysis

“quantitative”
analysis



Piero della Francesca
Flagellation of Christ
late 1450s

linear size and perspectives
previous familiarity
interposition



psychophysics
mid 1800s

connoisseurship

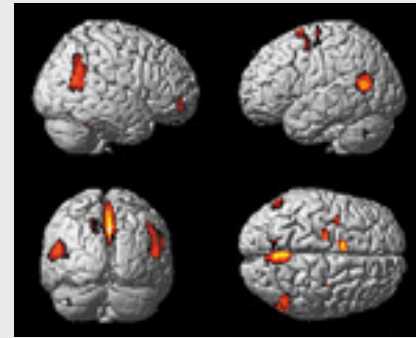
visual neuroscience

“qualitative”
analysis

Marcel Duchamp
Nude Descending a Staircase, No. 2
c. 1910



Newsome, Movshon, Britten
motion selective neurons in monkeys
1990s



fMRI shows selective response
to motion in the Middle Temporal
area (V5)

“quantitative”
analysis

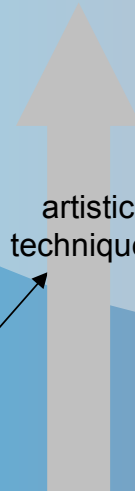
psychophysics

visual
system

vision
science

art
history

artworks



artistic
techniques

predict

support

innate
functions

predicted

supported

kinetic art

vision
centers

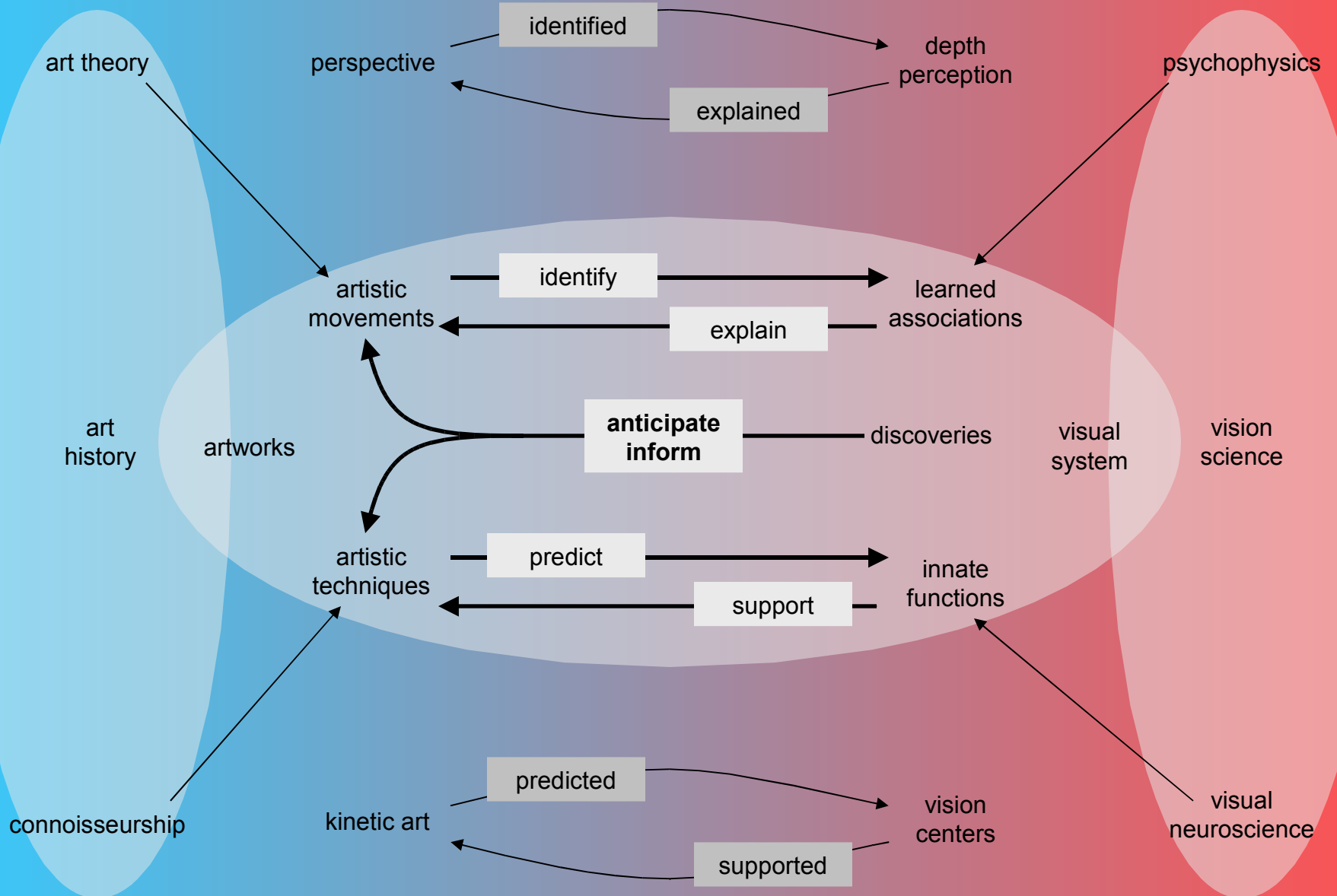
visual
neuroscience

connoisseurship

Eventually, vision science will influence artists.

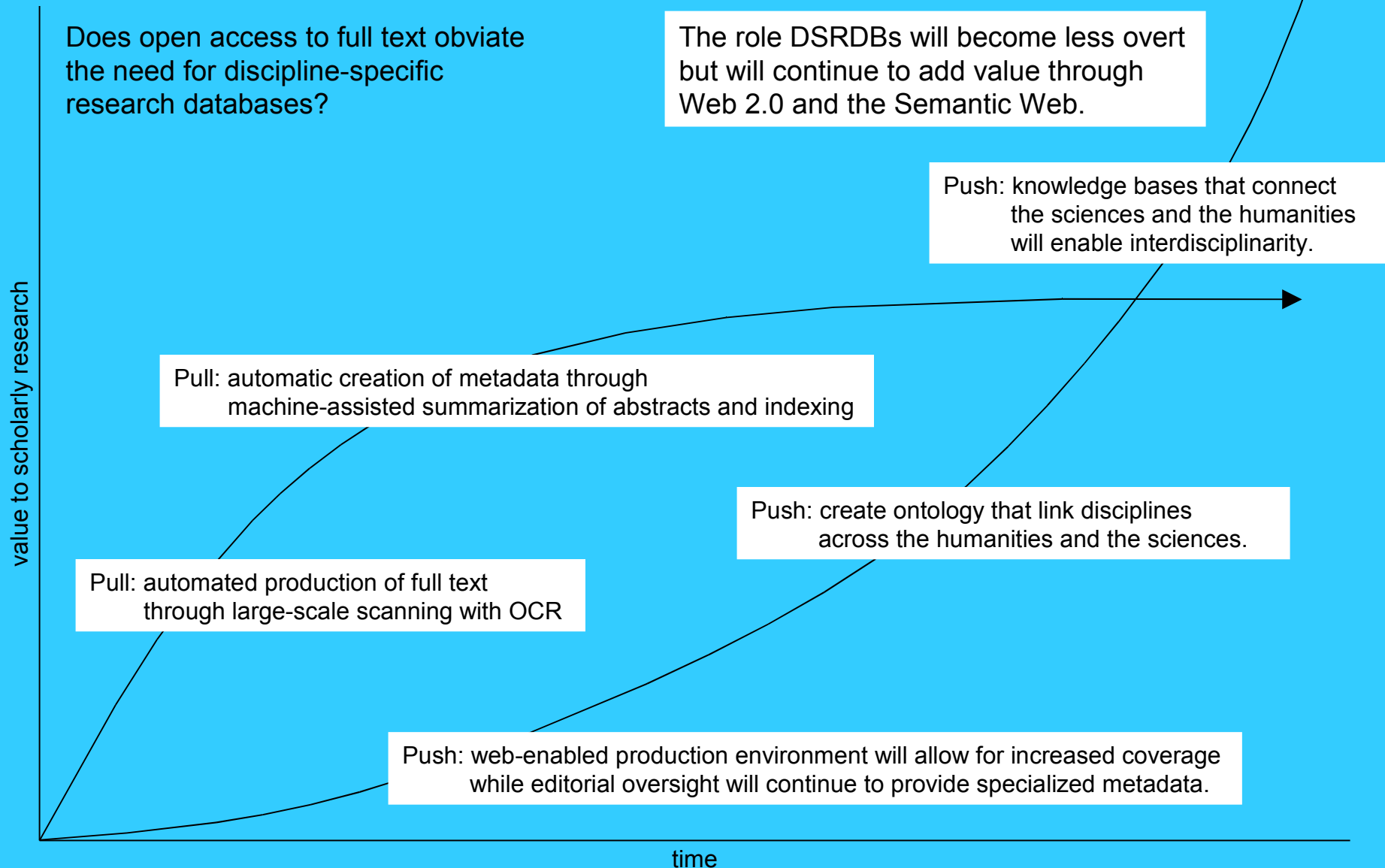
“qualitative”
analysis

“quantitative”
analysis



Conclusion – Push vs. Pull

Will technology undermine or sustain the role of DSRDBs?





http://www.carto.net/neumann/travelling/joshua_tree_np_gettys_2003_11/65_getty_museum_research_building.jpg