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The Shape of Time and Storifying Data Modeling Historical Processes and their Temporal Dimension in Knowledge Graphs

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golden
agents

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Golden Agents: Creative industries and the making of the Dutch Golden Age

NWO-Large Infrastructure Project - funding
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LAB¹¹⁰⁰

Golden Agents: Aim

Understanding the dynamics in the creative industries of the Dutch Golden Age:

- by analyzing interactions between various branches of the creative industries
- by analyzing interactions between producers and consumers of the creative industries

Incorporating these dynamic interactions as storylines in linked data

- using conceptualisations of time in historical literature
- using ontologies as extensions to CIDOC-CRM

PeriodO

A gazetteer of period definitions for linking and visualizing data.

Linked Data for the Humanities

In the last few years, the possibilities for digital humanities research have expanded enormously, not only as a result of the exponential increase in the amount of humanities data freely available online, but also through the development of digital tools that allow the automated, computer-mediated extraction and visualization of information from texts and databases. Yet the humanities are generally much more diverse and idiosyncratic in their terminologies and ontologies than other areas of inquiry, and as the data increase, it becomes harder to find the information we need. One solution to this proliferation of data has been the movement toward the establishment of generally-accepted controlled vocabularies and standardized lists of entities such as people or places. The creation of centralized gazetteers that list geographic locations together with coordinates and alternate names, for example, has made it possible to extract maps from textual references to places (Grover et al. 2010). While such centralization has worked well with geography, it has proven difficult to implement in many other areas of the humanities, especially those that deal with extremely diverse and heterogeneous datasets across national boundaries. Some disciplines, like archaeology, have been especially slow to adopt standardized terminology, even with the rise of digital data-management systems. There has therefore been a recent movement toward approaches that involve “loose coupling” of archaeological datasets: that is, the use of semantic formats to describe information so that relationships between objects can be seen even when the terminologies and metadata schemata used to describe them are different. Relationships are established through the use of common reference points rather than shared vocabularies. The information described in this manner is known as [Linked Data](#). The reference points are provided by [Uniform Resource Identifiers](#), or URIs.

The Problem of Time

Linked Data approaches have already been very successful in creating tools for the discovery and visualization of geographically coded data. Geographic gazetteers have allowed scholars and information scientists who manage

[Linked Data for the Humanities](#)
[The Problem of Time](#)
[A Gazetteer of Period Definitions](#)
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Time Theory, Periodization, Duration

Theory of periodization

Johan van der Post, De periodisering der geschiedenis. Een overzicht der theorieën (1951)

- nomothetic (based on historical laws) + ideografic.

Theories of duration

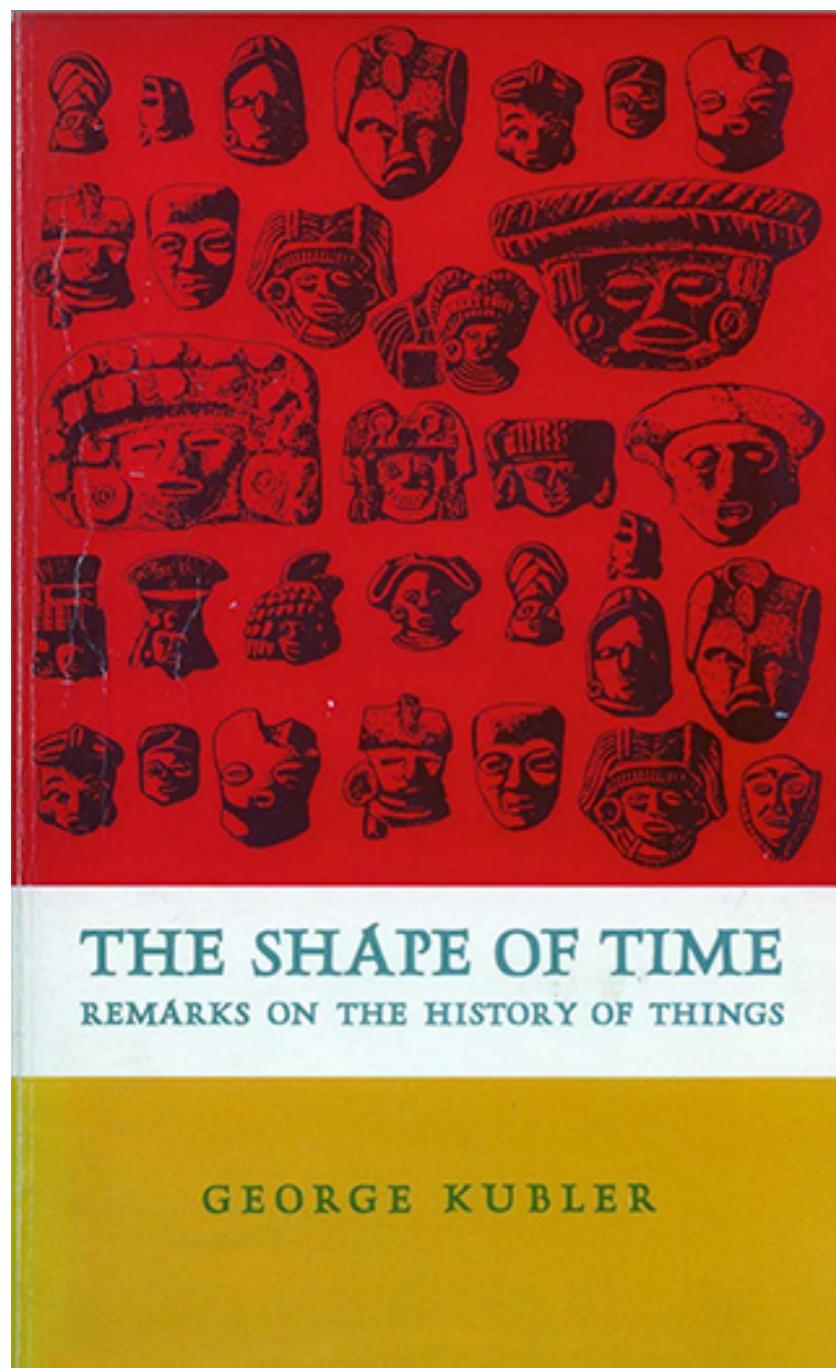
Fernand Braudel, "Histoire et sciences sociales. La longue durée."

Annales: Économies, Sociétés, Civilisations, vol.13 (1958)

- Longue duree, medium-term conjunctures, short-term événements

George Kubler, The Shape of Time. Remarks on the History of Thing (1962)

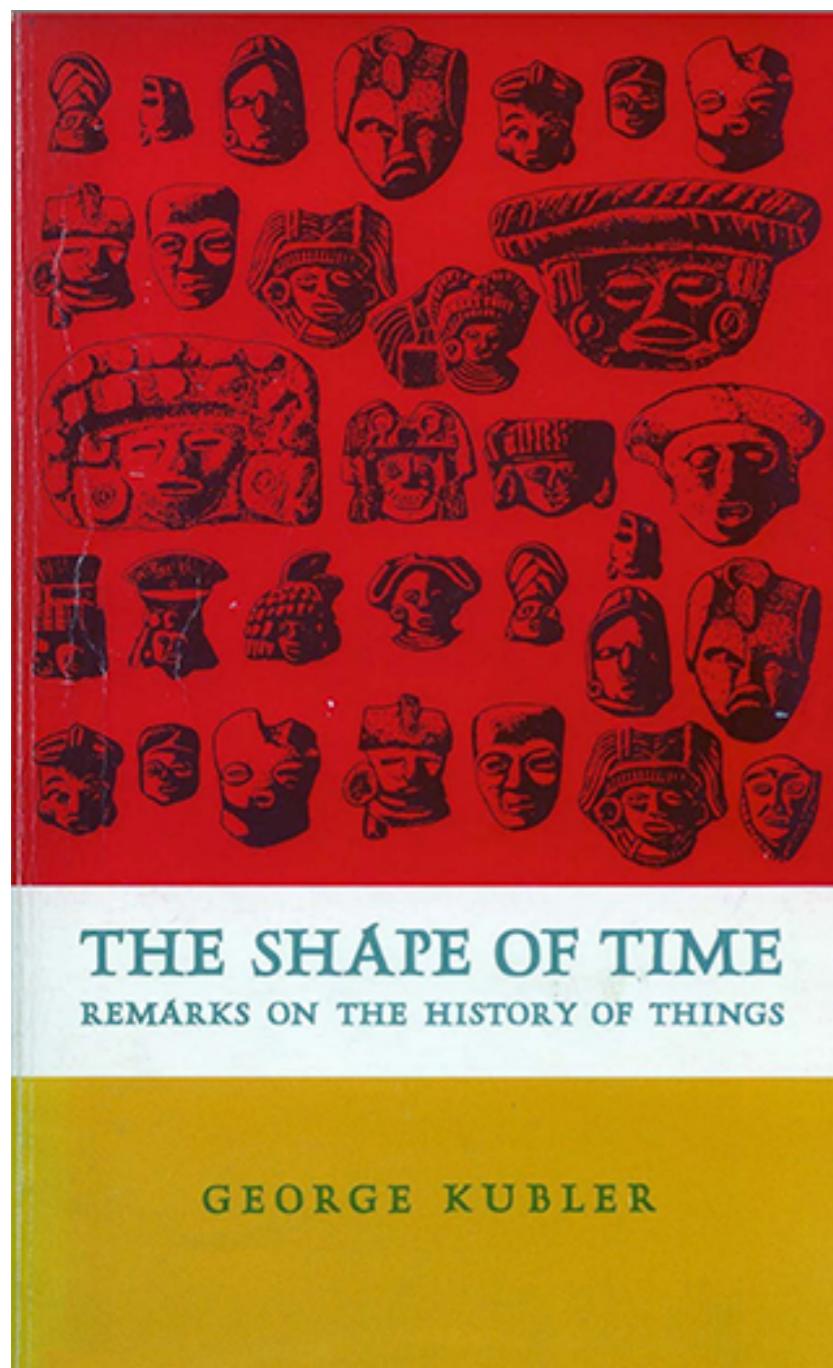
- absolute and systematic age



“ Unfortunately, the tissues of history today have only one dimension that is readily measured; it is calendar time”

“Calendar time indicates nothing about changing of pace of events”

George Kubler, The Shape of Time. Remarks on the History of Things, New Haven/London 1962, p. 83



History of Things is intended to reunite ideas and objects under the rubric of visual forms: the term includes both artifacts and works of arts, both replicas and unique examples [...] From all these things a shape in time emerges.

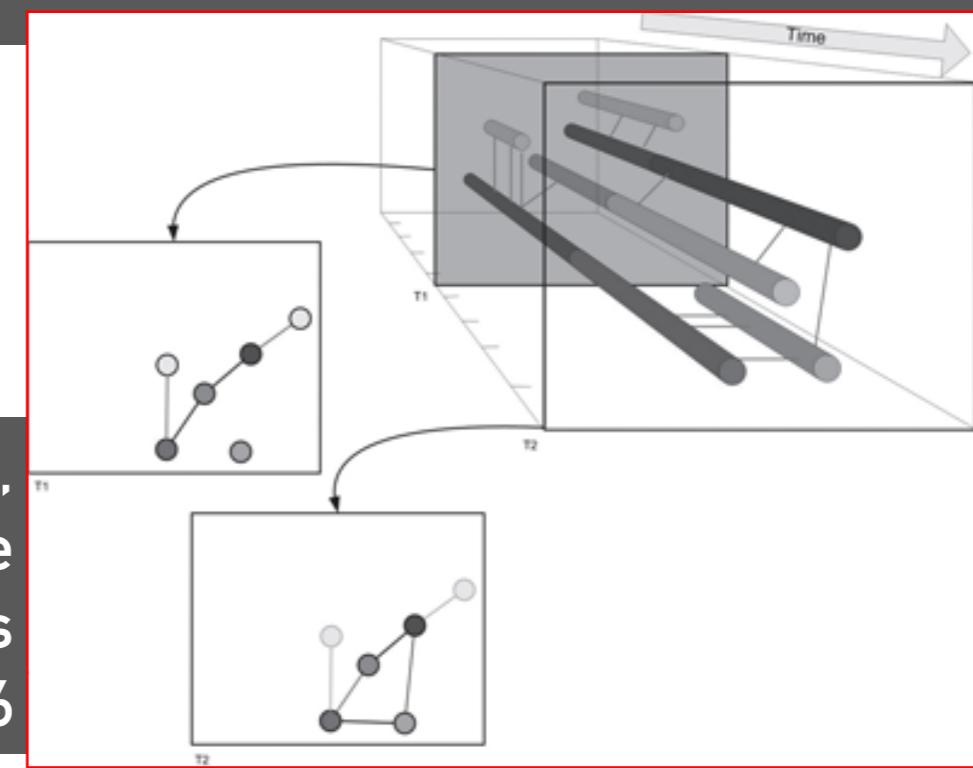
George Kubler, The Shape of Time. Remarks on the History of Things, New Haven/London 1962 p. 9

Formal sequence: historical network of gradually altered repetitions of the same trait [...] In cross section let us say that it shows a network, a mesh, or a cluster of subordinate traits; and in long section that it has a fiber-like structure of temporal stages, all recognizably similar, yet altering in their mesh from beginning to end.

Instead, we can imagine the flow of time as assuming the shapes of fibrous bundled which each fiber corresponding to a need upon a particular theater of action, and the lengths of the fibers varying as to the duration of each need

George Kubler, *The Shape of Time. Remarks on the History of Things*, New Haven/London 1962, pp. 37-38 and p. 121

Matt Jensen (NewsBLIP),
Semantic Timeline tools for History and Critique
Digital Humanities congress
Paris 2006

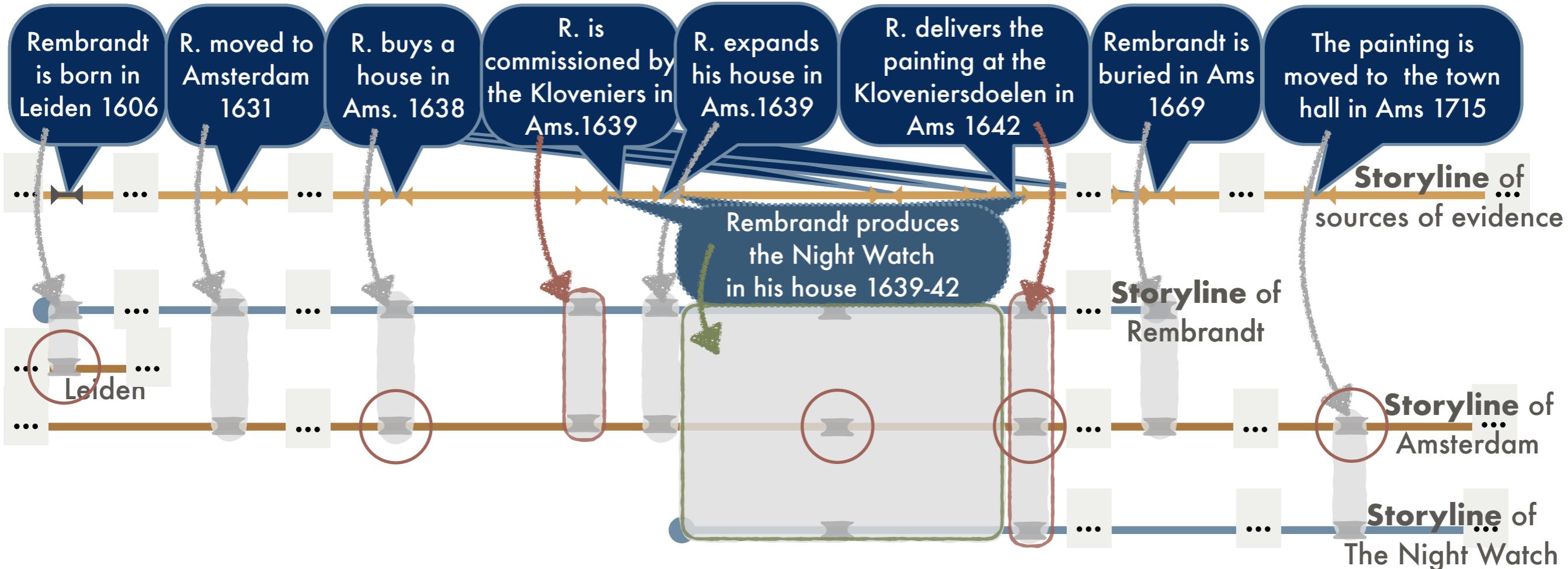




18th century copy with indication of the areas cut down in 1715.

Several related storylines

Rembrandt And The Night Watch

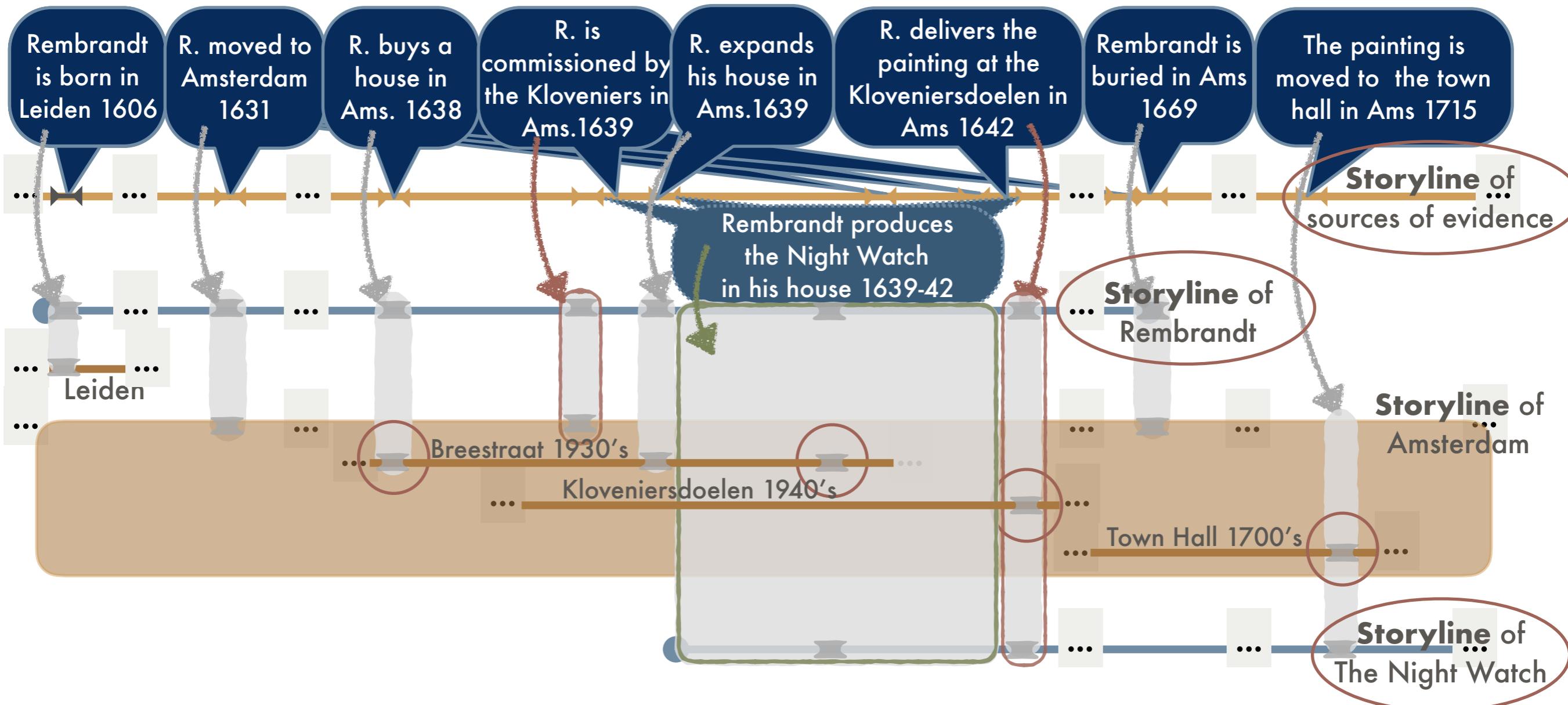


“Indiction measures many distances in historical duration. It is a measure drawn for experience”

George Kubler, The Shape of Time. Remarks on the History of Things
New Haven/London 1962, p. 105

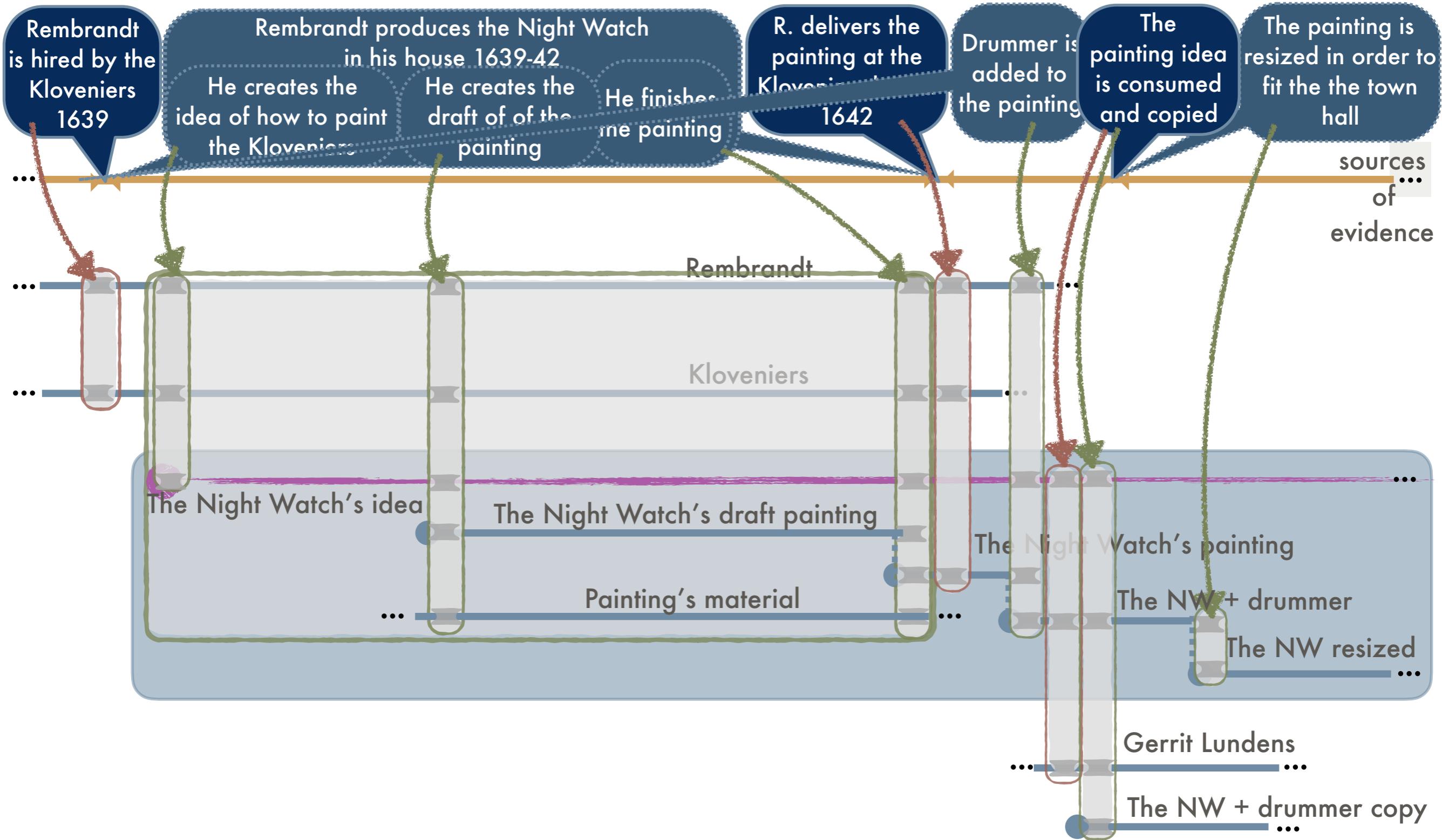
Several related storylines

Rembrandt And The Night Watch



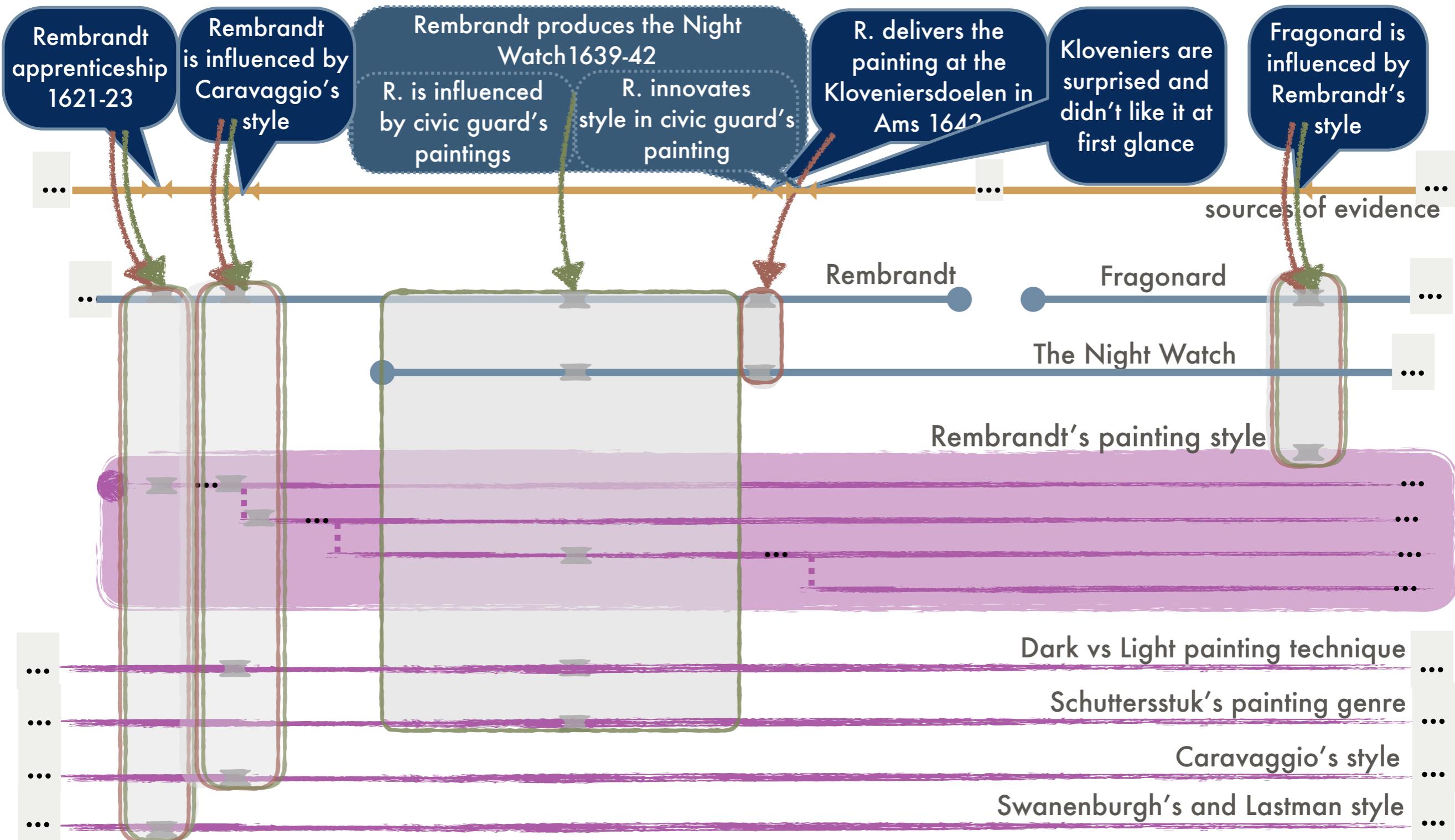
Several related storylines

The Night Watch Production And Alterations

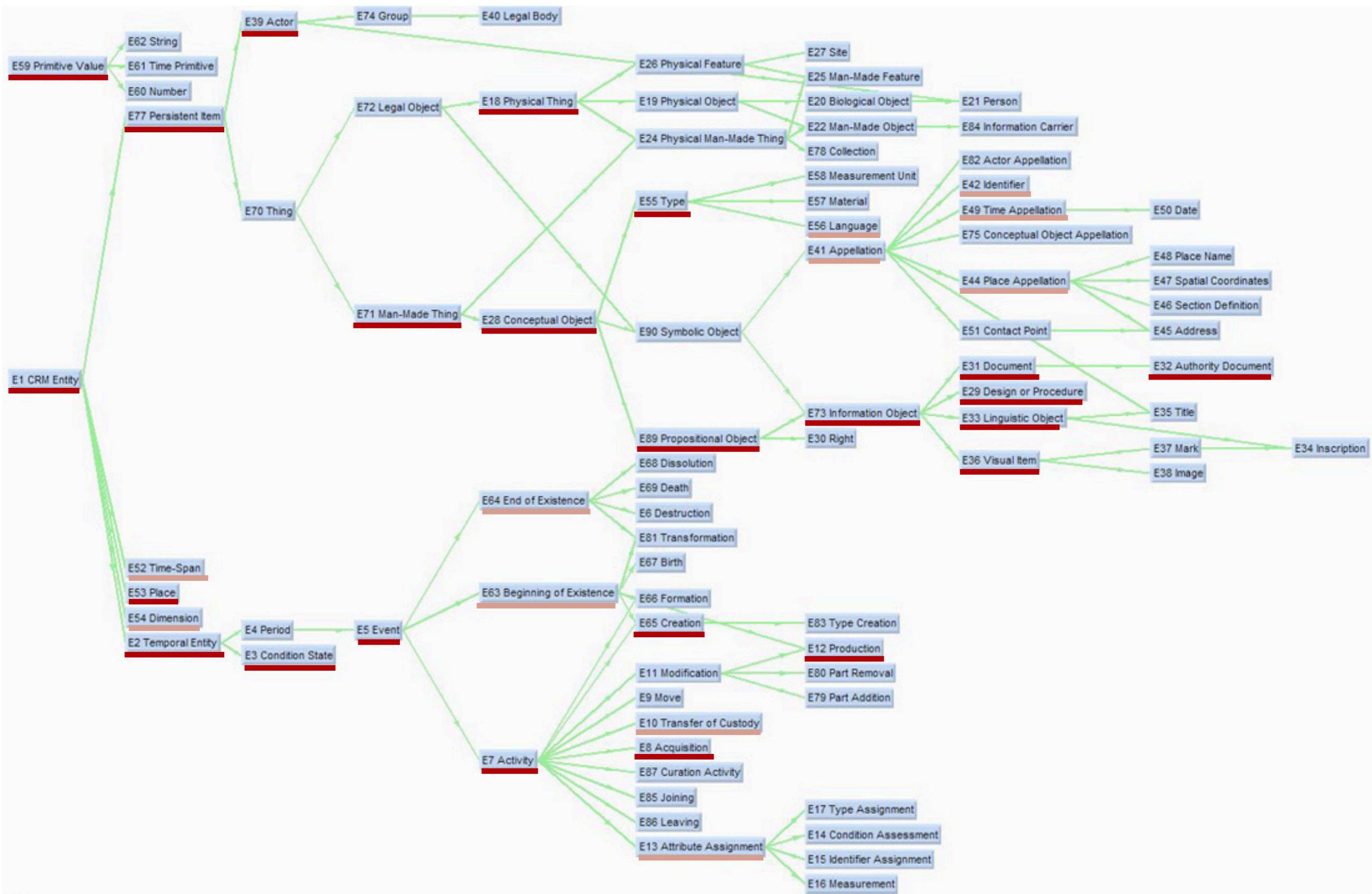


Several related storylines

The Night Watch Story And Derived Products



CIDOC-CRM



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Thanks for your attention!

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