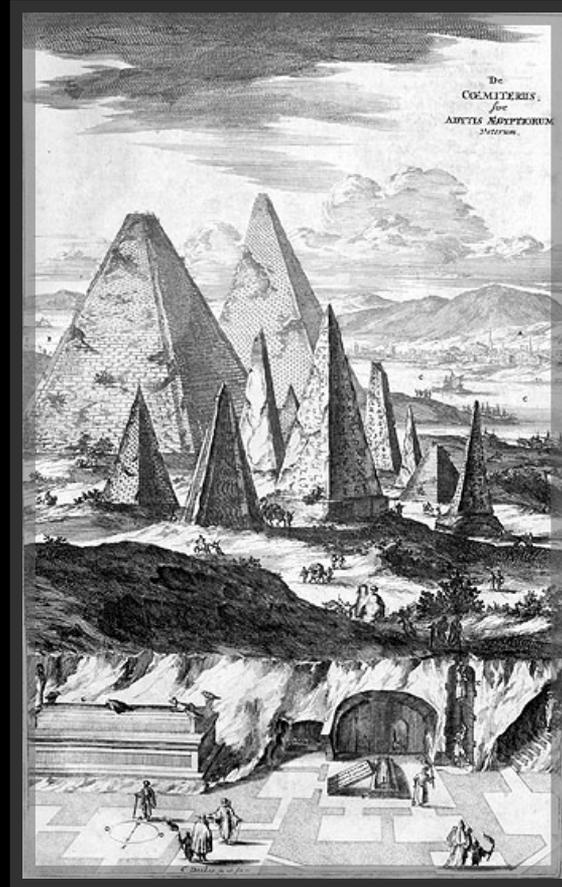


Hierarchies in Range Space

From LMNL
to OHCO

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Balisage 2014
North Bethesda, Maryland
August 7, 2011



Documents are

Ordered Hierarchies of Content Objects

"What is Text, Really?"

DeRose, Durand, Mylonas and Rinear (1989)

...as a poet of the ...
 ...later date ...
 ...Hegemon ...
 ...Aristotle ...
 ...Hegesippus ...
 ...Hegesippus (3) (fl. 100 B.C.), a professional ...
 ...Hegesippus: eight of his poems are in the *Greek Anthology*, most of them authentic inscriptions for votive ...
 ...Hegesippus. His language is noticeably formal, archaic, and impersonal.

INDIAN SIGN LANGUAGE

48	Se calmer Ruhig werden	Quiet Down	Course Wegleitung	Race
Question Frage	Question	Quiet Down	Course Wegleitung	Race
Question Frage	I	Quiet Down	Course Wegleitung	Race

THE PRIMARY ARITHMETIC

Therefore, in this case,

$$\overline{pr | qr} = \overline{p | q} r$$

theorem 7.

There is no other case of r ,

theorem 1.

There is no other way of substituting any case of r ,

theorem 5.6

Therefore,

$$\overline{pr | qr} = \overline{p | q} r$$

in any case.

A classification of theorems

The first four theorems contain a statement of completeness and consistency of representation. Their proofs consist of justification of the use of the primary arithmetic as a system of indicators of the states distinguished by the first distinction. We call them theorems of representation.

The next three theorems justify the use of certain procedural operations. The next three theorems justify the use of certain procedural operations. The next three theorems justify the use of certain procedural operations.

QUESTION
 Hold right 5 hand, palm upwards, at height of shoulders, fingers extended, separated and pointing upwards, turn the hand slightly by wrist two or three times to right and left.
 WHEY WHERE, WHEN, WHICH see.
 QUICK: Make the sign for HURRY.
 QUIET: Make the sign for HURRY.
 DOWN: Hold flat hands, back up, out in front of body, as high as shoulders, hands slow.

INDIAN SIGN LANGUAGE

RABBIT: Show the height of rabbit, then make the sign for JUMP.
 RACE: State kind of race. Then move index fingers forward as in EQUAL.
 RAILWAY: Make the sign for WAGON; then for FIRE with right hand held well in front of head, then sign FAST.
 RAIN (meaning: falling from clouds): In front of head hold closed hands, near each other in some relative positions; lower hands a trifle by wrist action.

5

A CALCULUS TAKEN OUT OF THE CALCULUS

"OHCO thesis" comports well with Document element grammars Markup technologies such as SGML and XML Mapping of documentary structures to "objects" (à la DOM)

Let tokens of constant form

Let tokens of variable form

D Barnard, R Hayter, M Karababa, G Logan and J McFadden (1988)
'SGML-Based Markup for Literary Texts: Two Problems and Some Solutions',
Computers and the Humanities 22: 265-276.

C M Sperberg-McQueen (1991)
Text in the Electronic Age: Textual Study and Text
Encoding, with Examples from Medieval Texts.
Literary and Linguistic Computing, Vol. 6, No 1, pp. 41-42.

The hierarchical structure of most texts is obvious: the Bible is divided into books, chapters, and verses; Dante's *Comedy* is divided into books, cantos, tercets and lines; *Beowulf* is divided simply into verse lines. In modern prose, chapters are subdivided into sections, subsections, paragraphs and sentences. Plays are divided into acts, scenes and speeches. Verse is divided into (stanzas), lines, half-lines, feet, partial-feet. Note the neat hierarchy of each of these. Note, too, that **these hierarchies can co-exist and cross each other's boundaries**. Some structural hierarchies are often ignored....

(Emphasis added.)

David Durand, Elli Mylonas and Allen Renear (1994)
Refining our Notion of What Text Really Is: The Problem of Overlapping Hierarchies
See <http://cds.library.brown.edu/resources/stg/monographs/ohco.html>

On the old view text objects were grouped into families as determined by genre or category of text element (SGML 'document type'). On the new view families are determined by the analytical or methodological perspective on the text.

Some examples of such perspectives and typical elements they might contain are:

Dramatic: act, scene, stage directions, speech, ...
Prosodic: poem, verse, stanza, quatrain, couplet, line, half line, foot...
Narrative: preparatory, villainy, insufficiency, reaction, victory... (Propp)
Rhetorical: proem, narrative, arguments, subsidiary remarks, peroration... (Korax of Syracuse)
Discourse: opening, check, topic changing, ending...
Axiomatic: Primitives, axioms, definitions, theorems, proofs, counterexamples, definienda, definientes, clauses...
Syntactic: Sentence, noun phrase, verb phrase, determiner, adjective, noun, verb...

Any of these structures has a plausible claim to be the 'logical structure of the text -- for instance they all fit the notion of 'content object' both as suggested by the gloss 'having to do with meaning and communicative intention' and as contextually defined by the arguments given above in support of OHCO-1....

Approaches to modeling overlap and Multiple Concurrent Hierarchies (MCH)

XML-based

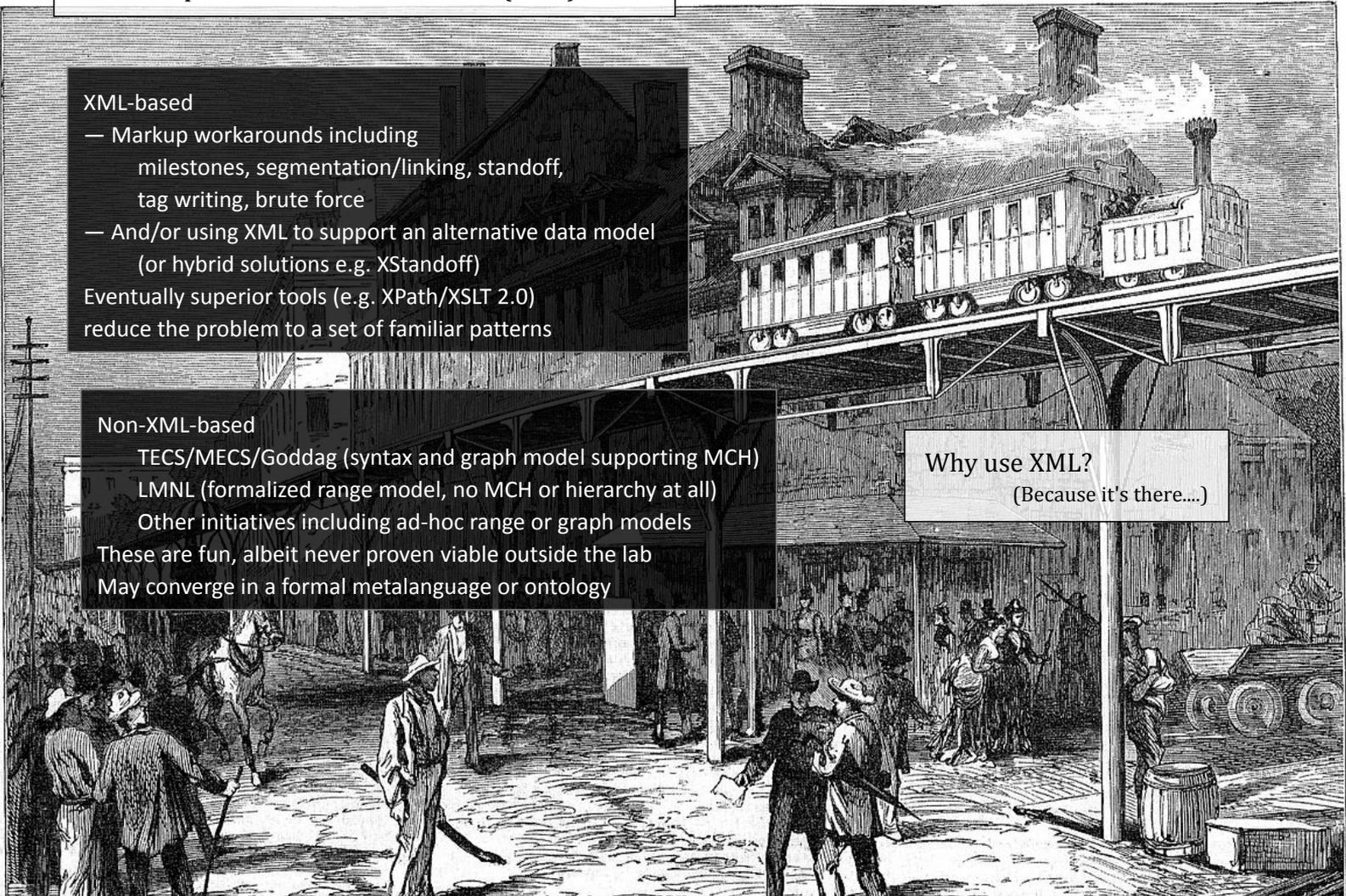
- Markup workarounds including milestones, segmentation/linking, standoff, tag writing, brute force
 - And/or using XML to support an alternative data model (or hybrid solutions e.g. XStandoff)
- Eventually superior tools (e.g. XPath/XSLT 2.0)
reduce the problem to a set of familiar patterns

Non-XML-based

- TECS/MECS/Goddag (syntax and graph model supporting MCH)
 - LMNL (formalized range model, no MCH or hierarchy at all)
 - Other initiatives including ad-hoc range or graph models
- These are fun, albeit never proven viable outside the lab
May converge in a formal metalanguage or ontology

Why use XML?

(Because it's there...)



Multiple concurrent hierarchies (MCH)

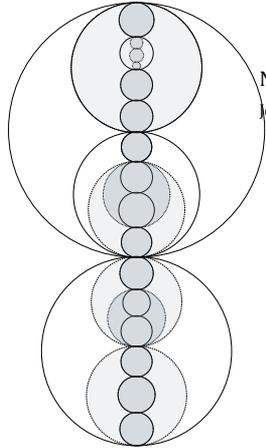
Grammar and prosody

`[sonneteer [id]silkenTent[id]{meta}{author}Robert Frost{author} [title]A Silken Tent{title}]`
`[sonnet]`
`[octave]{quatrain}[line]{s}[phr]She is as in a field a silken tent{line}`
`[line]At midday when the sunny summer breeze{line}`
`[line]Has dried the dew and all its ropes relent,{phr}{line}`
`[line][phr]So that in guys it gently sways at ease,{phr}{line}{quatrain}`
`[quatrain][line][phr]And its supporting central cedar pole,{phr}{line}`
`[line][phr]That is its pinnacle to heavenward{line}`
`[line]And signifies the sureness of the soul,{phr}{line}`
`[line][phr]Seems to owe naught to any single cord,{phr}{line}{couplet}{sestet}`
`[sestet]{quatrain}[line][phr]But strictly held by none,{phr}{line}`
`[line]By countless silken ties of love and thought{line}`
`[line]To every thing on earth the compass round,{phr}{line}`
`[line][phr]And only by one's going slightly taut{line}{quatrain}`
`[couplet][line]In the capriciousness of summer air{line}`
`[line]Is of the slightest bondage made aware.{phr}{s}[line]{couplet}{sestet}`
`{sonnet}{sonneteer}`

A Silken Tent

Robert Frost

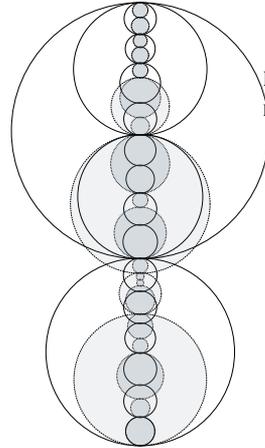
She is as in a field a silken tent
At midday when the sunny summer breeze
Has dried the dew and all its ropes relent,
So that in guys it gently sways at ease,
And its supporting central cedar pole,
That is its pinnacle to heavenward
And signifies the sureness of the soul,
Seems to owe naught to any single cord,
But strictly held by none, is loosely bound
By countless silken ties of love and thought
To every thing on earth the compass round,
And only by one's going slightly taut
In the capriciousness of summer air
Is of the slightest bondage made aware.



Natur und Kunst sie scheinen sich zu fliehen
 Johann Wolfgang von Goethe

Natur und Kunst sie scheinen sich zu fliehen,
 Und haben sich, eh' man es denkt, gefunden;
 Der Widerwille ist auch mir verschwunden,
 Und beide scheinen gleich mich anzuziehen.
 Es gilt wohl nur ein redliches Bemühen!
 Und wenn wir erst in abgemess'nen Stunden
 Mit Geist und Fleiß uns an die Kunst gebunden,
 Mag frei Natur im Herzen wieder glühen.
 So ist's mit aller Bildung auch beschaffen:
 Vergebens werden ungebundne Geister
 Nach der Vollendung reiner Höhe streben.
 Wer Großes will muß sich zusammenraffen;
 In der Beschränkung zeigt sich erst der Meister;
 Und das Gesetz nur kann uns Freiheit geben.

Stable, aligned, consistent
 Not ironic (at least in this respect)



Das I. Sonett
 Rainer Marie Rilke

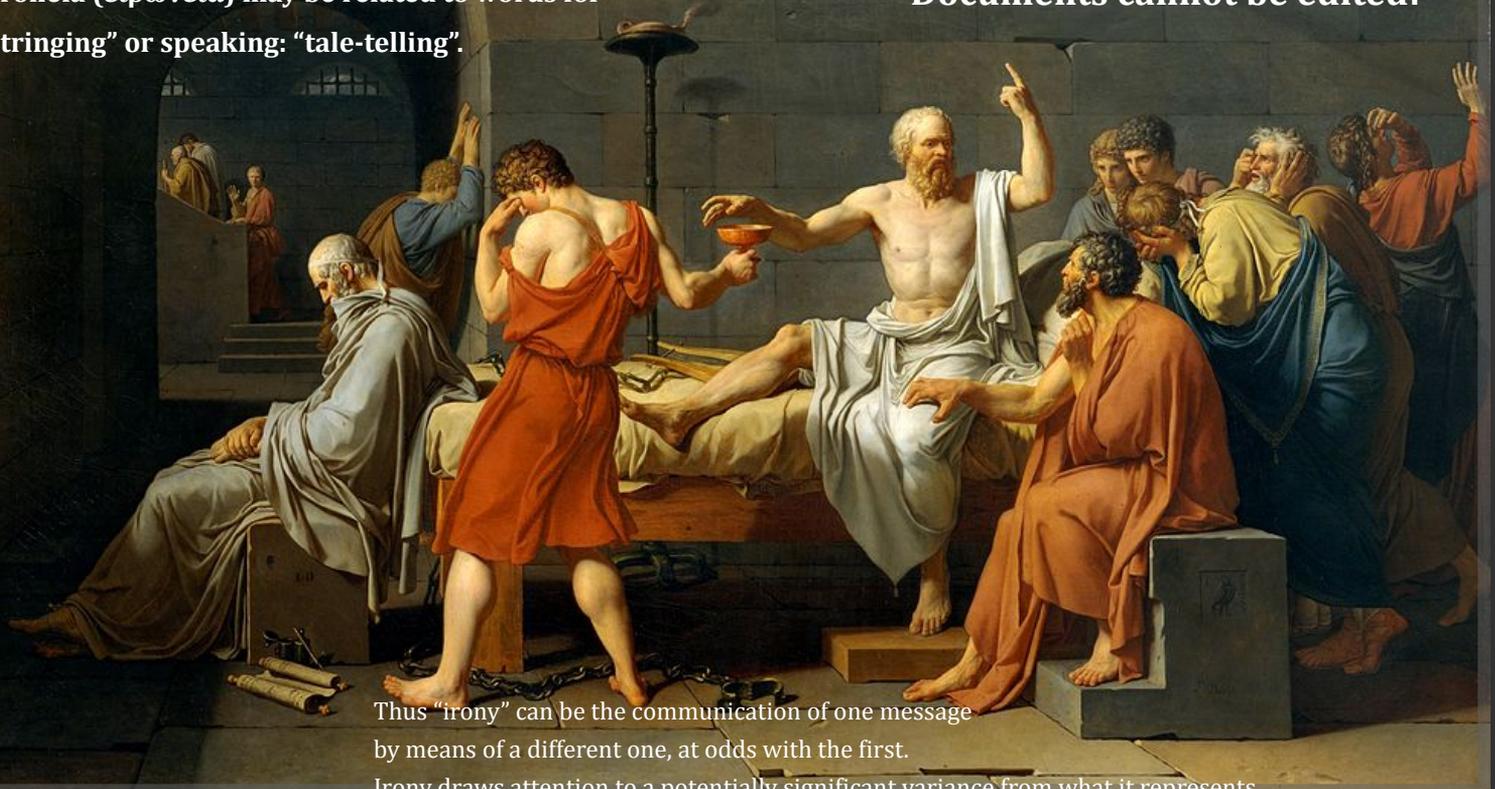
Da stieg ein Baum. O reine Übersteigung!
 O Orpheus singt! O hoher Baum in Ohr!
 Und alles schwieg. Doch selbst in der Verschweigung
 ging neuer Anfang, Wink und Wandlung vor.
 Tiere aus Stille drangen aus dem klaren
 gelösten Wald von Lager und Genist;
 und da ergab sich, daß sie nicht aus List
 und nicht aus Angst in sich so leise waren,
 sondern aus Hören. Brüllen, Schrei, Gerühr
 schien klein in ihren Herzen. Und wo eben
 kaum ein Hütte war, dies zu empfangen,
 ein Unterschluß aus dunkelstem Verlangen
 mit einem Zugang, dessen Pfosten beben, —
 da schufst du ihnen Tempel im Gehör.

Turbulent, conflicted, irregular
 "Ironic"

Eirōneia

Translated usually as “dissimulation” or “affectation” (especially affected ignorance), *eirōneia* (εἰρωνεία) may be related to words for “stringing” or speaking: “tale-telling”.

Documents cannot be edited!



Thus “irony” can be the communication of one message by means of a different one, at odds with the first.

Irony draws attention to a potentially significant variance from what it represents, inviting inspection and consideration.

Representation



Dialectic

Irony

A thing by its contrast

Metaphor

A thing by something else

Metonymy

A thing by an associated thing

Synecdoche

A thing by its part or whole

Against Jakobson, I follow Kenneth Burke in seeing that the fundamental dichotomy in trope is between irony and synecdoche or, as Burke says, between dialectic and representation. There is precious little dichotomy between metonymy and metaphor or, as Burke again says, between reduction and perspective. Metonymy and metaphor alike I would trope as heightened degrees of dialectical irony, with metaphor the more extended. But synecdoche is not a dialectical trope, since as microcosm it represents a macrocosm without necessarily playing against it.

Harold Bloom, "The Breaking of Form". *Deconstruction and Criticism*. New York: Continuum, 1979 (reprinted 1986), p. 11.



Synecdoche

Natur und Kunst sie scheinen sich zu fliehen
 Johann Wolfgang von Goethe

Natur und Kunst sie scheinen sich zu fliehen,
 Das haben sich, oh! man so denkt, gefunden.
 Das Wahre ist ja auch nur verschoben,
 Das Ganze schreien gleich mich zusammen.
 Es gilt wohl nur ein wirkliches Kennwort:
 Das Ganze ist Natur und Kunst verbunden.
 Man freit Natur im Thronen wieder glücken,
 So ist's ein alter Bildungsspruch geworden.
 Vergebens werden ungetriebne Geister
 Nach der Verkünderung neuer Hüte streben.
 Wer Geistes will auch sich zusammenschließen,
 In der Beschreibung magt sich erst der Meister,
 Und das Gesetz nur kann sein Prohibit geben.

Metonymy

Nuns fret not at their convent's narrow room
 William Wordsworth

Nuns fret not at their convent's narrow room
 And breathe an incense with their cells,
 And think with their partners staid,
 Nuns in their hood, the women at the town,
 Of life and danger, how they come to them,
 And all the golden Time of youth and love,
 Will mourning to the hour in English halls,
 In their young years which not were
 Obscured, for prison and bars for me,
 In such a place, have partners in the bond
 Whom the heaven is every place of ground.
 Thought of some kind, or others, much more best,
 Whom the self-ought of the world, being,
 Whom that is not within there, do have found.

Metaphor

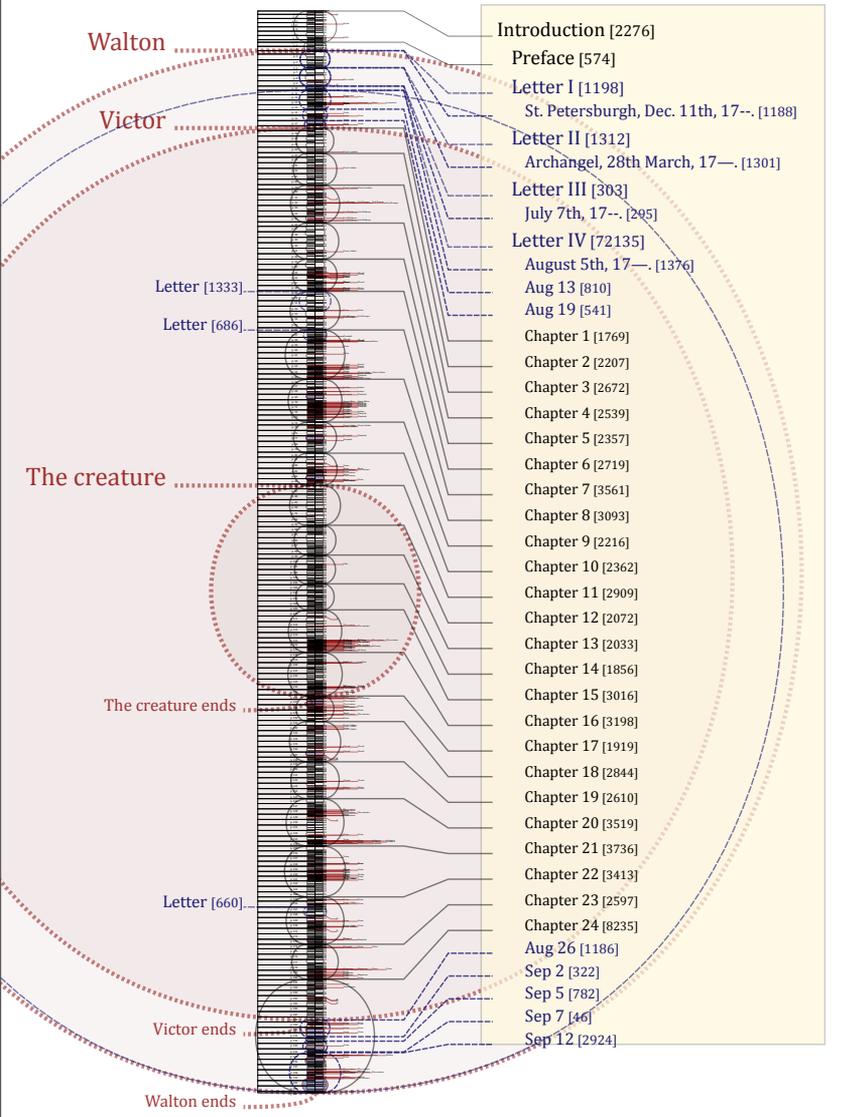
A Silken Tent
 Robert Frost

She is a child, and a child was
 At nothing when the stars were born
 She thought she was all the space there,
 To her to give it gentle ropes or stars,
 And to keep quiet and still,
 To be the light of the moment
 And to be the moment of the soul,
 To be the light of the moment
 And to be the moment of the soul,
 To be the light of the moment
 And to be the moment of the soul,
 To be the light of the moment
 And to be the moment of the soul,

Irony

Das I. Sonett
 Rainer Marie Rilke

Die ringt ein Hauch, O runde Überwölbung!
 O Orpheus singst O hoher Raum in dir!
 Und dich erhebt dich selber in der Höhe rings
 ging unser Anfang, Wirk und Wandlerung
 von dem aus stillt die Augen sind die Klänge
 gelassen Waid von Lager und Geduld
 und die ringt sich, und in nicht von Licht
 und nicht von Angst in sich, in keine wachen,
 sondern aus Hellen, Strahlen, Schen, Geduld
 schenken Leben in ihrem Herzen, Und was eben
 kann ein Hellen was, aber so empfangen,
 ein Überwölbung aus dunkelsten Vertiefungen
 mit einem Zusage, diesem Phänomen haben,
 die Wahrheit die Hellen, Tempel im Gebirg.



Multiple concurrent hierarchies (MCH)

Narrative structures in Mary Wollstonecraft Shelley's
Frankenstein, or the Modern Prometheus
1831 revised edition

Is there any trope (such as metaphor or irony) to be seen
in the representation of the narrative structure
in and by the novelistic ("chapter") structure?

letter

letter entry

story

quote

verse

chapter

paragraph

page

But your direction was northward. You took me on board when my vigour was exhausted, and I should soon have sunk under my multiplied hardships into a death which I still dread — for my task is unfulfilled.

Oh! when will my guiding spirit, in conducting me to the dæmon, allow me the rest I so much desire; or must I die, and he yet live? If I do, swear to me, Walton, that he shall not escape; that you will seek him, and satisfy my vengeance in his death. And do I dare to ask of you to undertake my pilgrimage, to endure the hardships that I have undergone? No; I am not so selfish. Yet, when I am dead, if he should appear; if the ministers of vengeance should conduct him to you, swear that he shall not live — swear that he shall not triumph over my accumulated woes, and survive to add to the list of his dark crimes. He is eloquent and persuasive; and once his words had even power over my heart: but trust him not. His soul is as hellish as his form, full of treachery and fiendlike malice. Hear him not; call on the manes of William, Justine, Clerval, Elizabeth, my father, and of the wretched Victor, and thrust your sword into his heart. I will hover near, and direct the steel aright.

WALTON, *in continuation.*

August 26th, 17—.

You have read this strange and terrific story, Margaret; and do you not feel your blood congeal with horror, like that which even now curdles mine? Sometimes, seized with sudden agony, he could not continue his tale; at others, his voice broken, yet piercing, uttered with difficulty the words so replete with anguish. His fine and lovely eyes were now lighted up with indignation, now subdued to downcast sorrow, and quenched in infinite wretchedness. Sometimes he commanded his countenance and tones, and related the most horrible incidents with a tranquil voice, suppressing every mark of agitation; then, like a volcano bursting forth, his face would suddenly change to an expression of the wildest rage, as he shrieked out imprecations on his persecutor.

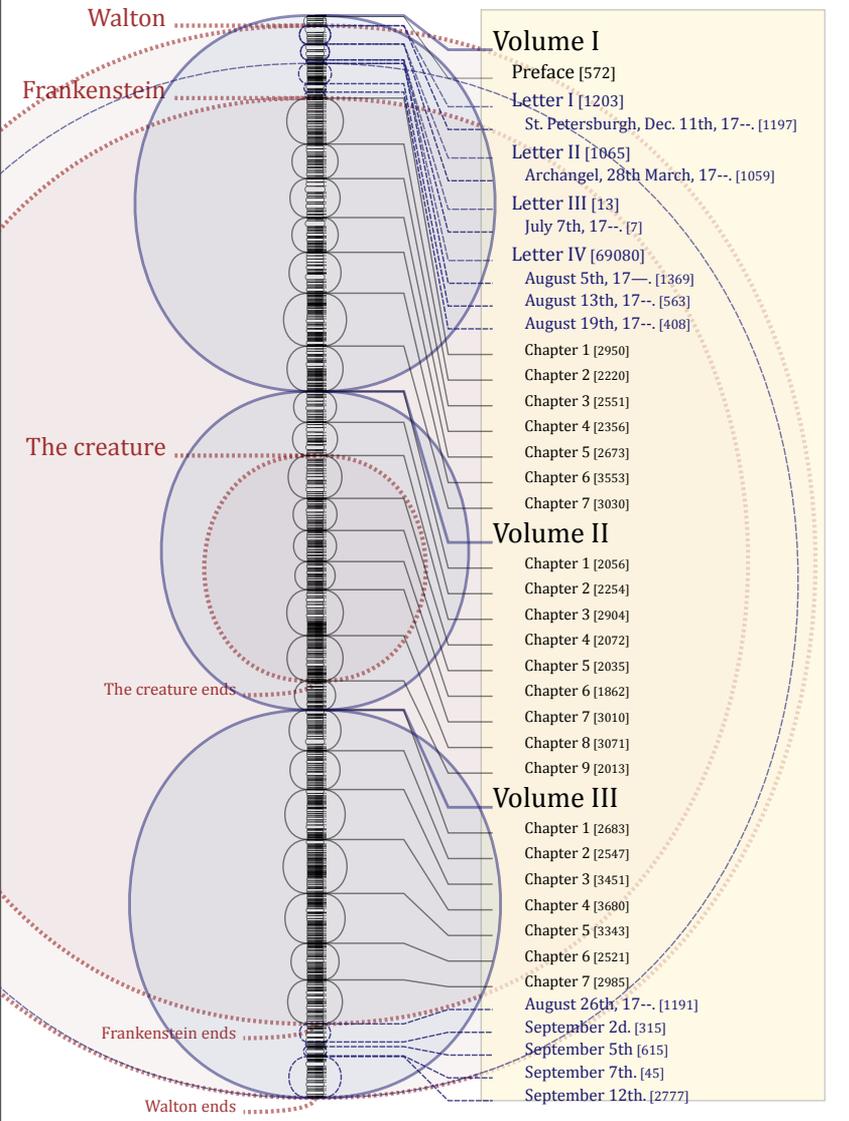
His tale is connected, and told with an appearance of the simplest truth; yet I own to you that the letters of Felix and Safie, which he showed me, and the apparition of the monster seen from our ship, brought to me a greater conviction of the truth of his narrative than his asseverations, however earnest and connected. Such a monster has then really existence! I cannot doubt it; yet I am lost in surprise and admiration. Sometimes I endeavoured to gain from Frankenstein the particulars of his creature's formation: but on this point he was impenetrable.

"Are you mad, my friend?" said he; "or whither does your senseless curiosity lead you? Would you also create for yourself and the world a demoniacal enemy? Peace, peace! learn my miseries, and do not seek to increase your own."

Frankenstein discovered that I made notes concerning his history: he asked to see them, and then himself corrected and augmented them in many places; but principally in giving the life and spirit to the conversations he held with his enemy. "Since you have preserved my narration," said he, "I would not that a mutilated one should go down to posterity."

Thus has a week passed away, while I have listened to the strangest tale that ever imagination formed. My thoughts, and every feeling of my soul, have been drunk up by the interest for my guest, which this tale, and his own elevated and gentle manners, have created. I wish to soothe him; yet can I counsel one so infinitely miserable, so destitute of every hope of consolation, to live? Oh, no! the only joy that he can now know will be when he composes his shattered spirit to peace and death. Yet he enjoys one comfort, the offspring of solitude and delirium: he believes, that, when in dreams he holds converse with his friends, and derives from that communion consolation for his miseries, or excitements to his vengeance, that they are not the creations of his fancy, but the beings themselves who visit him from the regions of a remote world. This faith gives a solemnity to his reveries that render them to me almost as imposing and interesting as truth.

Our conversations are not always confined to his own



Structural rendition of 1818 edition

LMNL version mapped (with some emendation)

from the *Romantic Circles* encoded edition by Stuart Curran

TEI XML by David Rettenmaier, Mike Quilligan, and Laura Mandell

Used courtesy of Romantic Circles

*Is the novel's actual structure
"hiding" behind the structure
of its representation?*

Acknowledgement is due to Prof Charles E Robinson (UDeI)

and Prof Neil Fraistat (UMD/MITH, Romantic Circles)

for providing vital info.

Mary Wollstonecraft Shelley

Schema Designer



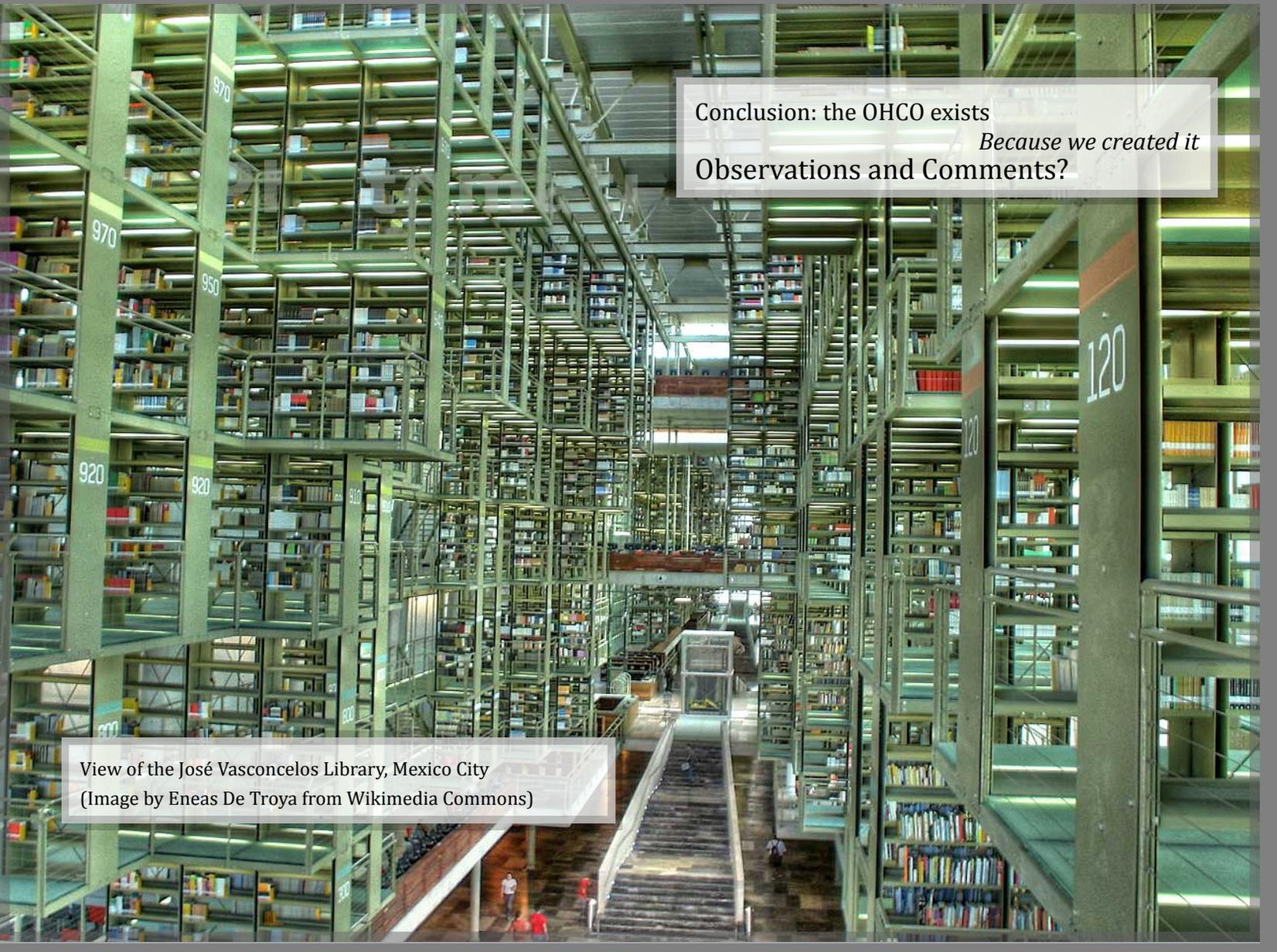
```
start = novel
```

```
novel = element novel {  
  element letter {  
    element to { text }?,  
    element entry {  
      element place { text }?,  
      element date { text }?,  
      ( content | transcription )  
    }+,  
    element signed { text }?  
  }+  
}
```

```
transcription = chapter+
```

```
chapter = element chapter { content }
```

```
content = element p { text }+
```



Conclusion: the OHCO exists

Because we created it
Observations and Comments?

View of the José Vasconcelos Library, Mexico City
(Image by Eneas De Troya from Wikimedia Commons)