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Linguistic information visualization and web services: technical session

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Where we're going

- Quick review of LInfoVis & WebLicht
- Some non-technical questions with (potential) technical consequences
- Technical questions
- Discussion

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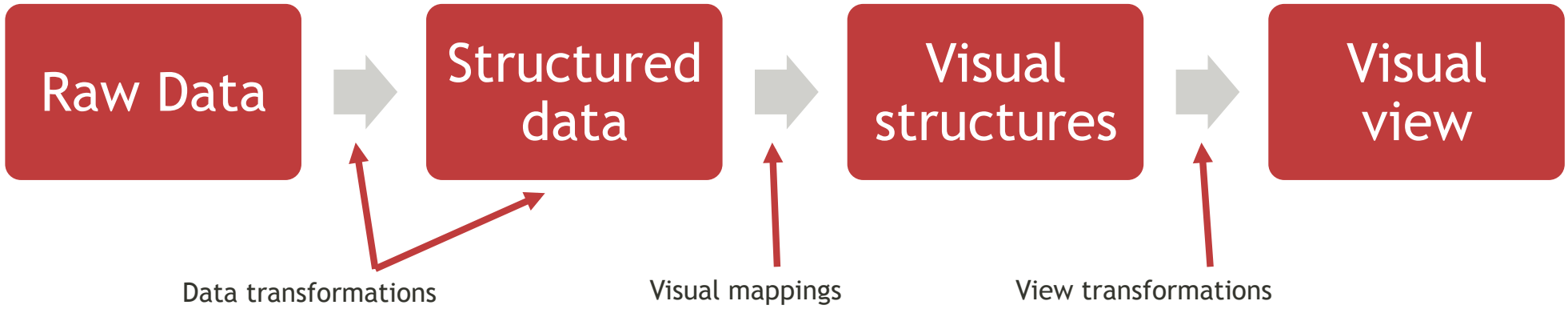
A reference model of LInfoVis

(Culy & Lyding 2008, cf. Card et al. 1999)



1. Raw Data, e.g. texts
2. Data transformations, e.g. counting, sorting, tagging
3. Structured data, e.g. document vectors, word/lemma/POS lists
4. Visual mappings = the *type* of visualization,
   - e.g. POS ↦ color, scatter plot, tree
5. Visual structures = the general visual form, e.g. chart, tree, text
6. View transformations = visual structures are assigned specific visual appearances
7. Visual view = the *visual appearance*, e.g. color, shape, size, position
   - Also includes filtering of data: which data is visible

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LInfoVis and WebLicht, generally

- Functional aspects
  - Visualization for analysis
  - Visualization for data creation/manipulation (tools)
    - E.g. annotation, evaluation, selection

- Structural aspects
  - Visualization as “pure consumer” (= dataflow “sink”)
    - The visualization does not contribute results back to WebLicht
  - Visualization as contributor
    - The visualization does contribute results back to WebLicht
    - It is harder to come up with a scenario for this case

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Some non-technical questions (with consequences)

- What kinds of data do people have for WebLicht?
- Who are the people who will be creating and using the data?
- What kinds of things will those people be trying to do with the data?
  - Are there uses beyond the things we've been thinking of ? – almost certainly
- What are the concrete applications where visualization might be relevant?
- What other issues haven't we thought of

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LInfoVis and WebLicht, research issues

1. What are relevant kinds of visualizations and applications for LInfoVis (in the context of WebLicht)
    - How do we address the special challenges of LInfoVis
    - Who are the target users and what do they need from LInfoVis?
        - Linguists/specialists – in what domains
        - Non-language researchers
        - General public
        - What are the tasks they are trying to accomplish?

2. What is the right level of generality for encapsulating visualizations?

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LInfoVis and WebLicht, research issues (continued)

3. Can we classify the appropriateness of visualizations enough to create a “Vis Assistant”? (cf. “Show Me” in Tableau)

4. How do we deal with the massive amounts of data?
    - This is a current topic in Infovis more generally

5. How do we do evaluation? (Also a more general Infovis question)
    - No consensus, especially for exploratory analysis visualizations

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LInfoVis and WebLicht, even more technical issues

1. What are the input/output specifications/formats needed?
    - Tables are standard (and easy)
    - Some data type inference is possible (cf. Tableau)
        - Probably limited
        - What are the data types?
    - Encoding of the types of relations among information?
    - What about including task-appropriateness?

3. Client side vs. server side visualization construction
    - Most visualization these days is done on the client
    - But there has been some (mostly older) research on server side visualization
    - Depends on amount of data, type of visualization, practicalities
    - Could use help from computer scientists, especially in Grid
        - (There has been some work on visualization in Grid computing)

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LInfoVis and WebLicht, even more technical issues

3. Integrateability
    - Cf. Tom's talk later about loose coupling vs. high integration
    - Cf. Also previous point about sink vs. contributor
    - Standalone (cf. Tableau, Excel)
    - Flexible components (cf. Google VisAPI)
    - Integrated, application specific (cf. *Dolomiten* time series)
        - Cf. Visual Analytics

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Thank you for your attention

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