



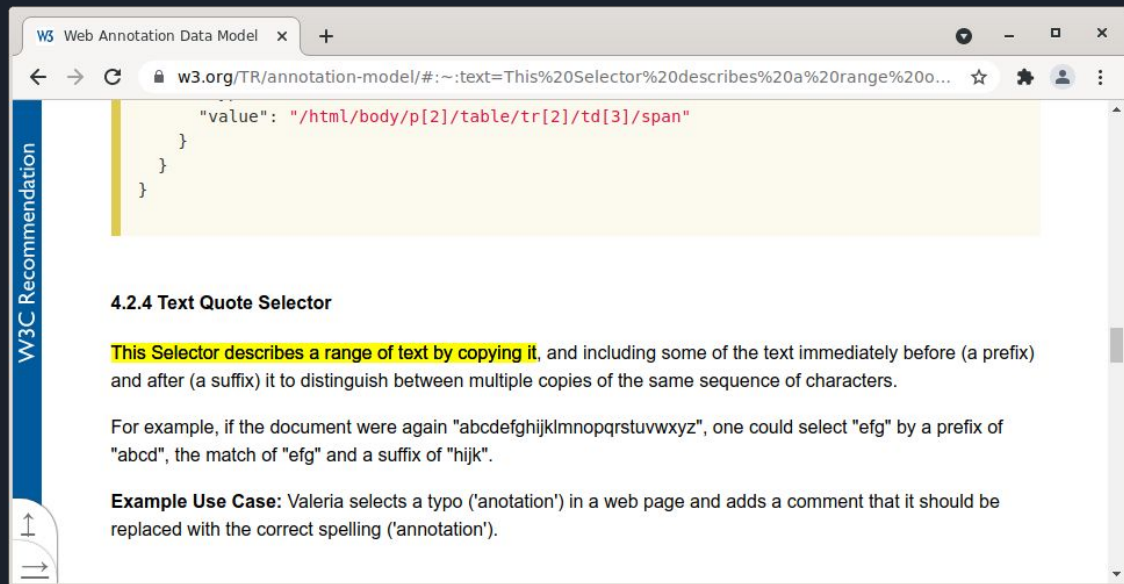
Building Annotation Into Browsers

David Bokan - bokan@google.com

These slides: <https://annotation-slides.glitch.me>

Background

- Text Fragments: <https://github.com/WICG/scroll-to-text-fragment>
- E.g. <https://www.w3.org/TR/annotation-model/#:~:text=This Selector describes a range of text by copying it>



Background

- Link to text and sharing

W3C Recommendation

		The TextQuoteSelector must have this class associated with it.
exact	Property	A copy of the text which is being selected, after normalization. Each TextQuoteSelector must have exactly 1 exact property.
prefix	Property	A snippet of text that occurs immediately before the text which is being selected. Each TextQuoteSelector should have exactly 1 prefix property, and must not have
suffix	Property	The snippet selected. Each TextQuoteSelector must not have

The selection of the text **must** be in terms of unicode code points (the "character number"), not in terms of code units (that number expressed using a selected data type). Selections **should not** start or end in the middle of a grapheme cluster. The selection **must** be based on the **logical order** of the text, rather than the visual order, especially for bidirectional text. For more information about the character model of text used on the web, see



Background

- Natural next steps:
 - Share with a reaction
 - Share with comments/discussion
 - Persistent highlights
- These are annotations!
- What about other browsers/user-agents?
- What about other annotators?



Web Annotation in the Browser

- Explainer: <https://github.com/bokand/web-annotations>
- Missing pieces in web platform?
- Special considerations in general purpose browsers



Disclaimers

- *Very* early stage exploration
- No consensus yet, even within Chrome
- My focus is on the platform
- Newcomer to annotation

Non-Goal





Client vs. Platform

- Want to focus on platform issues
- Platform is the infrastructure on which clients operate
- Everyone needs to agree on the platform
- Clients are free to make choices elsewhere



Annotation Ecosystem



<https://www.w3.org/TR/html-design-principles/#priority-of-constituencies>



Why are browsers different?

- Broad and diverse user base
 - UI and concepts need to be easily understood without training
- Some users will not want annotations
- Users may not understand what the annotations are, where they're coming from, and why they're seeing them
- Will affect authors at a different scale
 - Annotations will now be visible to all their visitors



Lots of potential

- Shared commentary on the web
- More collaborative browsing
- Citations and Knowledge engines
- Corrections and proposed changes
- Aggregator comment sections
- Productivity and Metadata

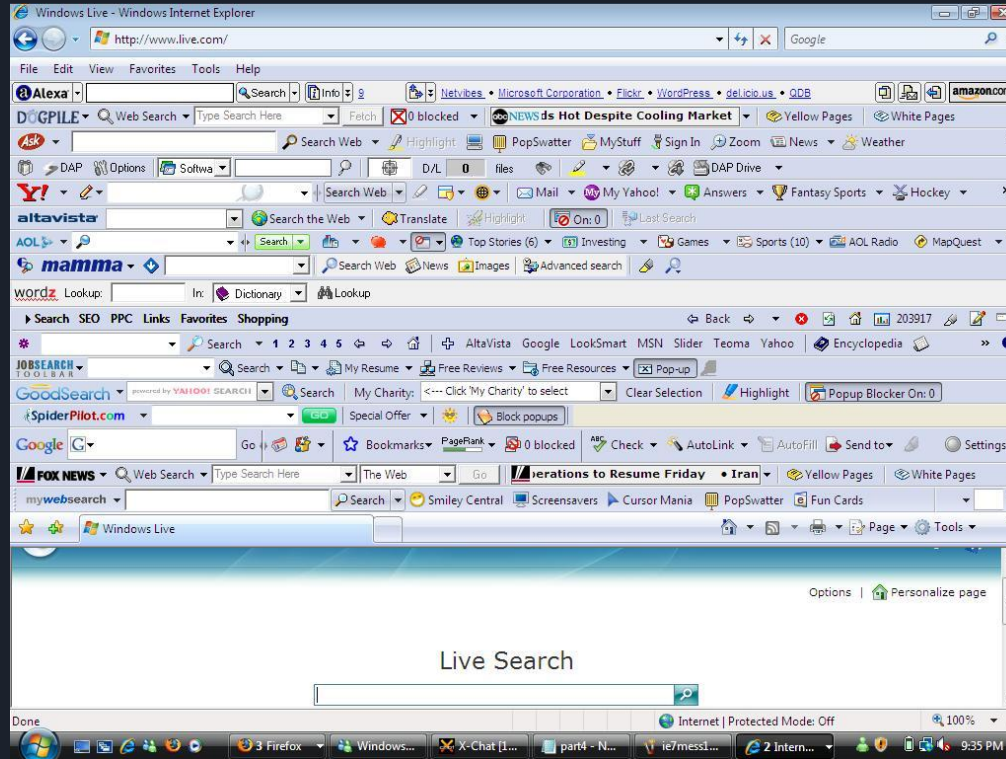


Major Challenges

Moderation

- Abuse, security, spam
- Let services moderate?

Major Challenges



<https://revrvl.com/2012/10/15/internet-explorer-problems/>



Major Challenges

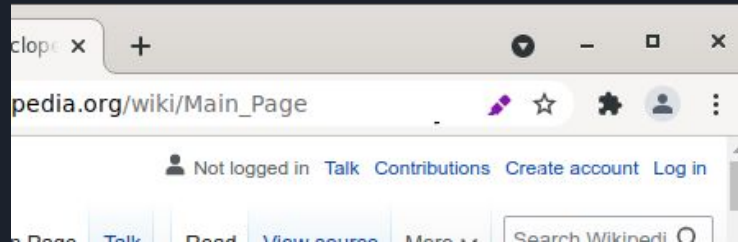
Moderation

- Abuse, security, spam
- Let services moderate?
- How do we make subscribing safe?
- Can annotations always be clearly attributed?
- Can the browser perform some mitigation?
- Feedback loops - what information can we surface to services?
- Defaults and incentives

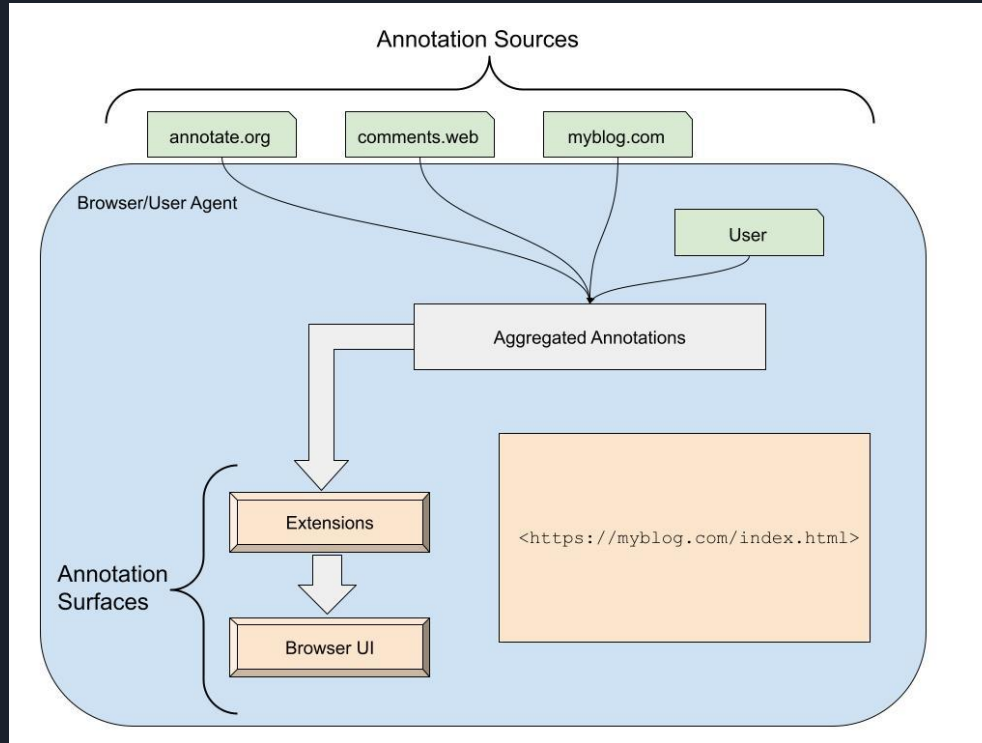
Major Challenges

Author Control

- Complex tradeoffs - good arguments on both sides
- Likely to be more heated when broadened to all browser users
- Some control for authors seems good?
- Should users be able to override authors?
 - What about the user agent?
- Default Presentation



How might this look?



For more detail: <https://github.com/bokand/web-annotations>



Annotation Sources

- Sources could be declared in many ways:
 - Configured in browser or extension settings page
 - A source could be embedded in a URL, using a new fragment-directive, e.g.: `https://news.com/story.html#::~note=https://annotator.example.com`
 - The URL itself can be a source by having the annotation content embedded directly:
`https://news.com/story.html#::~note(selector=foo,text=comment-on-foo)`
 - A page could specify an annotation source in markup, e.g.:
`<!--Commentary by Hypothesis-->`
`<link rel="annotation" href="http://hypothes.is/annotations">`



Annotation Surfaces

- Browser UI provides basic common functionality
 - Styling?
- Extensions supplement browser UI
- Would need to provide new Extensions APIs
- Want to show annotations in one or the other



Annotation Surfaces

```
<script>
```

```
  chrome.addEventListener('annotationAdded', (e) => {  
    if (e.annotatorUrl.origin == 'https://comments.custom-annotator.com') {  
      addCommentUI(e.annotationData);  
      // don't show in browser-UI  
      e.preventDefault();  
    } else if (e.annotatorUrl.origin == 'https://known-spam-annotations.com') {  
      // block without showing  
      e.preventDefault();  
    } else {  
      // show in browser-UI  
    }  
  });
```

```
</script>
```



Annotation Surfaces

- Browser UI provides basic common functionality
- Extensions supplement browser UI
- Would need to provide new Extensions APIs
- Want to show annotations in one or the other
- Extensions augment the browser's UI?



Author Control

- Authors should be able to signal an intent
- Definitely want this as basic markup - some authors don't control the server

```
<script type="annotationrules">  
  // Show only annotations coming from notes.example.com  
  "Annotations": [  
    { "rule": "block", "href": "*" },  
    { "rule": "allow", "href": "notes.example.com"}  
  ]  
</script>
```



Closing Thoughts

- This is a big change!
- Want to do this in an open and inclusive way
- Again: not a sure thing, still very early stage idea
- Careful, incremental progress