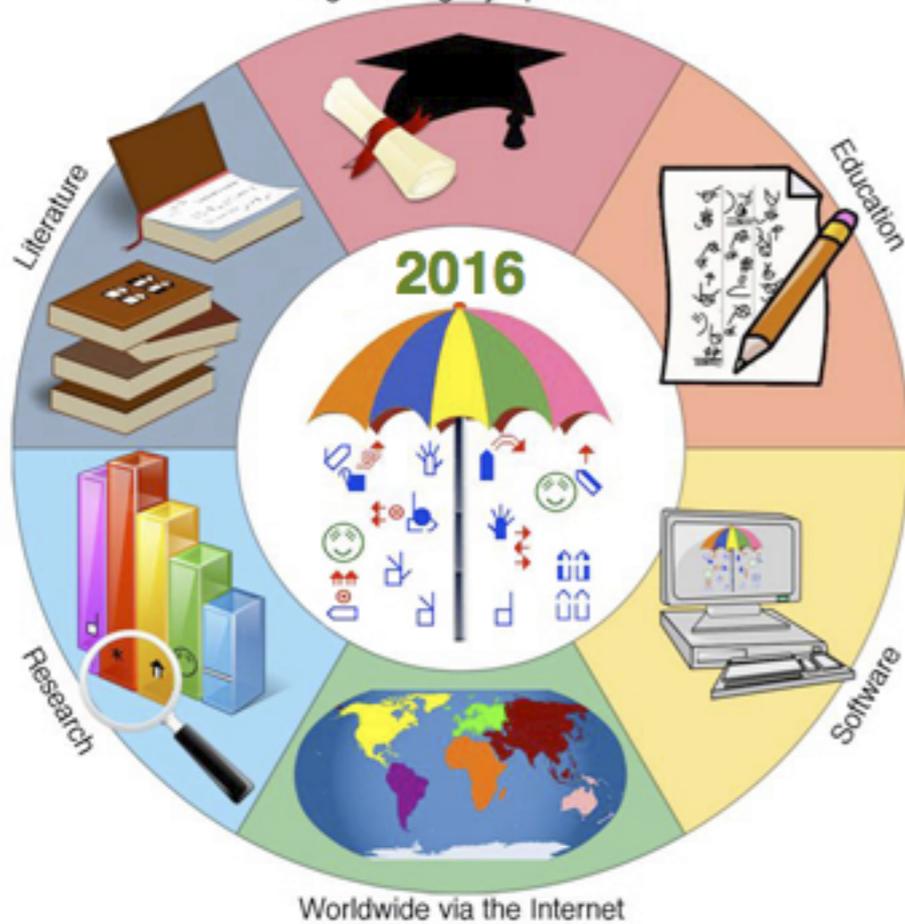


SignWriting Symposium



Moving Forward with Sign Language Projects in Formal SignWriting (FSW)

Presented at the SignWriting Symposium
on July 18th, 2016

Also for WikiConference USA
San Diego, October 7–10, 2016

by Stephen E Slevinski Jr
in association with the Center for Sutton Movement Writing



<http://www.signwriting.org/symposium/presentation0055.html>



Formal SignWriting (FSW) is the cornerstone of the SignPuddle Standard for SignWriting Text

Starting with FSW, the rest of the standard is involved and derived.

Formal SignWriting is...

Style

AS10011S10019S2e704S2e748M525x535S2e748483x510S10011501x466S2e704510x500S10019476x475 AS15a21S15a07S21100S2df04S2df14M521x538S15a07494

Formal SignWriting is...

Simple

A sign is written as a word with 2 parts. The first part is for visual display in 2-dimensions based on math. The second part is for sorting in 1-dimension based on history.



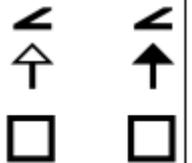
Flexible

All sign languages are supported. Any sign is possible. The writer chooses the spelling.



Powerful

A small footprint, easy transformations, and fast processing makes Formal SignWriting a powerful choice for representing sign language as text.

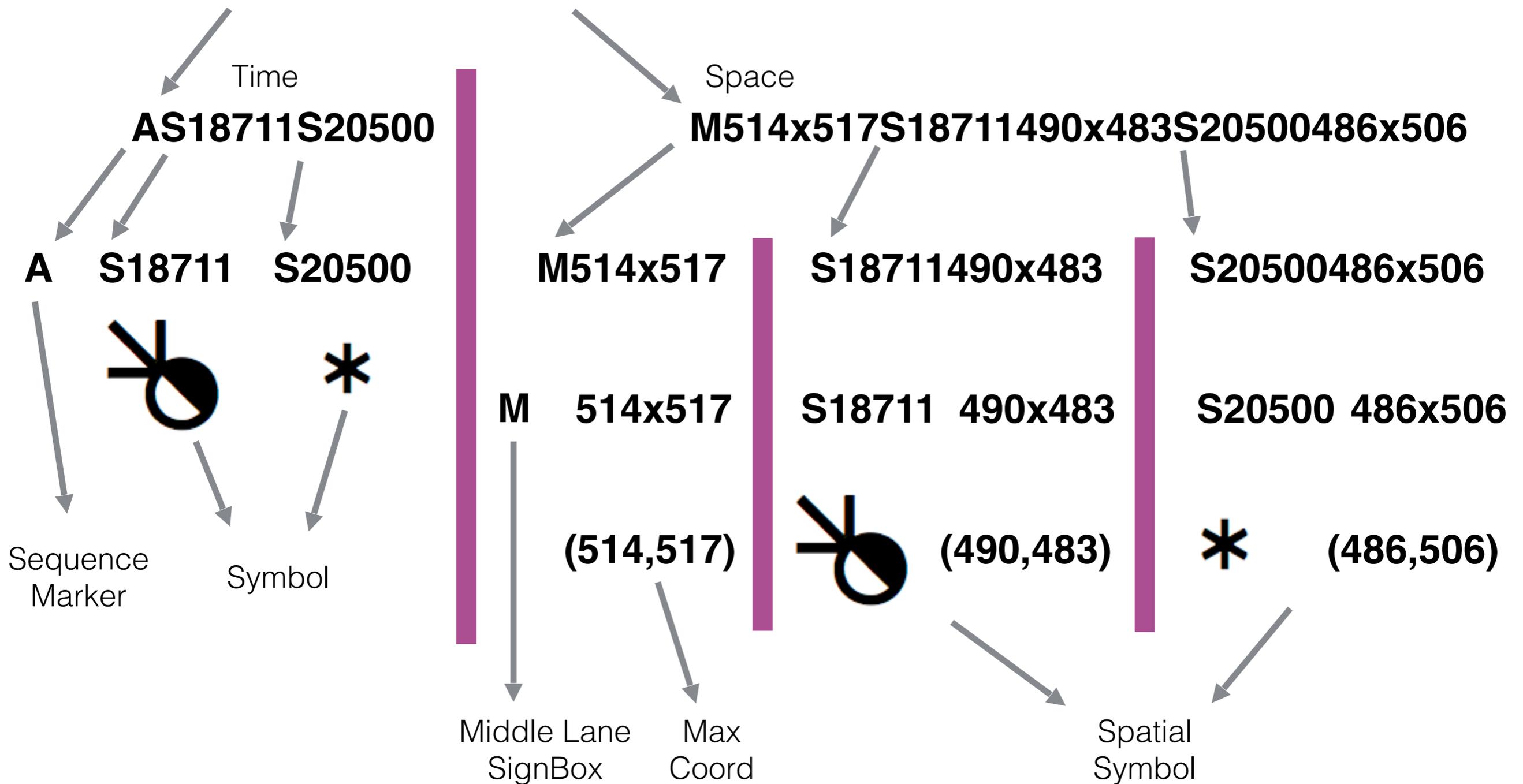


<https://www.youtube.com/watch?v=Gg5oKlpArmE>

Formal SignWriting

FSW is a formal language based on a script encoding

AS18711S20500M514x517S18711490x483S20500486x506



Formal Conventions

Valerie Sutton created a collection of visually iconic symbols that exists in a layered hierarchy

The exact form of each symbol is structured, standardized, and highly featural.

This formal writing is called Block Printing. It is used in education, publishing, and is the basis of the computerized model.

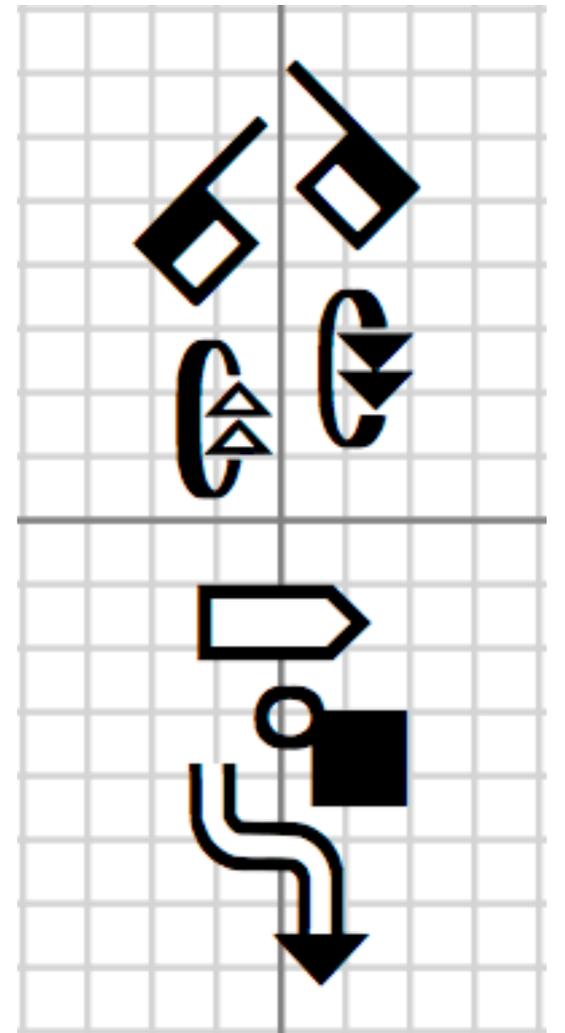
By contrast, handwriting can be used informally with fewer features and less detail. However, this can create notes that are sketchy compared to the clarity of formal Block Printing.

Freeform Construction

SignWriting is an unconventional script because it is not written sequentially. Rather than a string of letters, each sign is written as a 2-dimensional cluster of symbols.

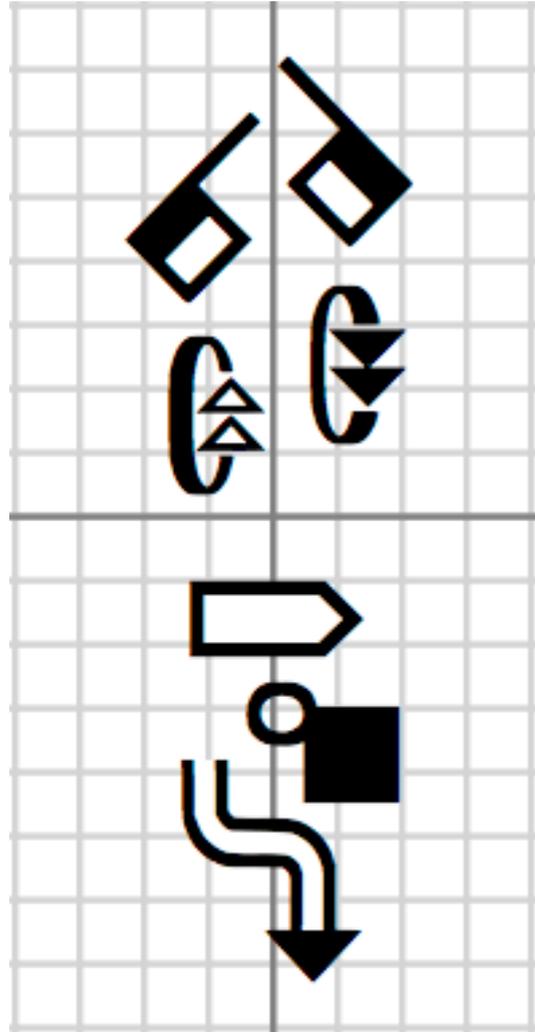
The freeform construction of the signs does not impose any rules or restrictions on the writer. Because of this, any sign of any sign language can be written without limitation.



Formal Order

The 11th Century Song Chinese developed the movable type printing press. Each piece of type contained a single character mostly equivalent to a word. Great block houses developed with hundreds of thousand of type pieces each. However, the Chinese logographic system is open-ended. New words require new type. Each house created their own specialized logograms. Organizing the numerous type pieces became a problem. It was easy to understand how to organize the basic type, but new logograms didn't have a definite place within the established order. The practice developed to attach slips of paper to unusual logograms with a sequential list of more standard writing. This way, each piece of type was easy to organize and it was possible to learn the ordering for the new logograms.

Formal Order



SignWriting has developed a similar mechanism. Since we can not use a 2-dimensional sign definition for sorting, we create a separate list of order symbols. The ordering of the symbols is subjective and based on a particular theory of sorting. The most productive is Valerie Sutton's theory of the SignSpelling Sequence.



Formal Language

According to Wikipedia, "In mathematics, computer science, and linguistics, a formal language is a set of strings of symbols that may be constrained by rules that are specific to it."

Sign as Word

- Mathematical ASCII name
- Optional time for sorting
- Mandatory space for visual



<https://tools.ietf.org/html/draft-slevinski-signwriting-text#section-2>

Formal SignWriting and Fonts

Render FSW with style, zoom, and reflow

https://slevinski.github.io/SignWriting_Character_Viewer/

Version 1: Private Use Area Plane 16

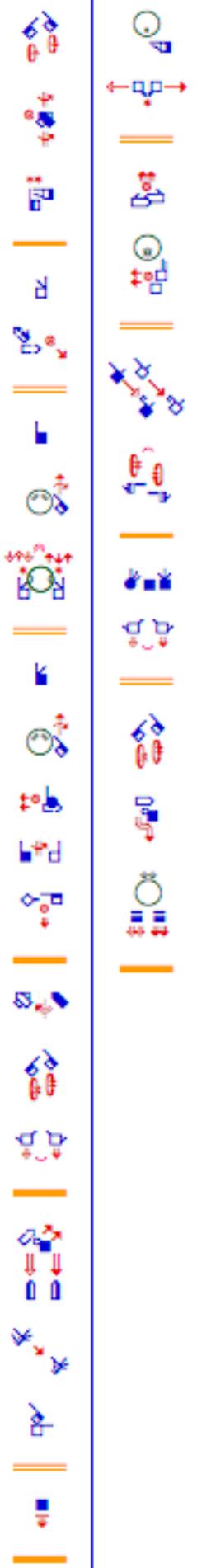
SignWriting 2010 Fonts

Version 2: Proposed Unicode 10 Plane 4

Sutton SignWriting Fonts

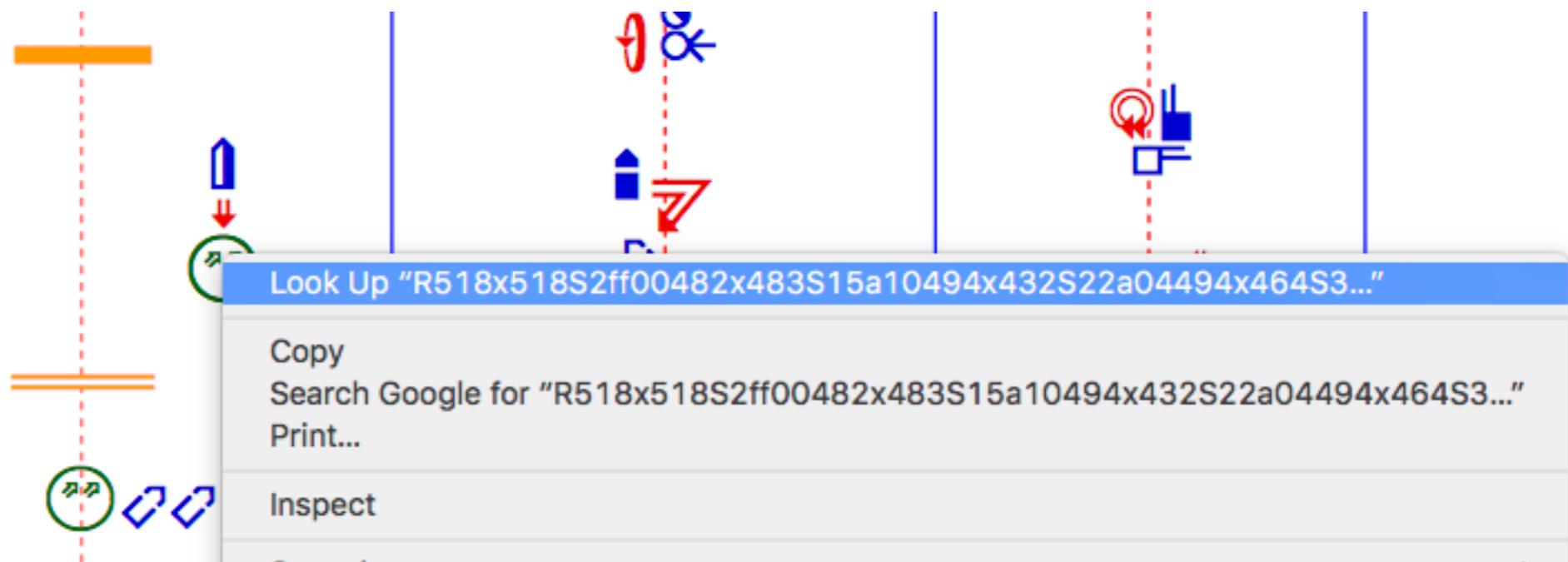
Sutton SignWriting rendered from Formal SignWriting
with 2 KB each of HTML, CSS and JS

<http://codepen.io/Slevinski/full/XKRPzm/>



Formal SignWriting

Individual Sign Copy and Paste



Double-Click or Triple-Click an individual signs to select.
Use the Alternate-Click on the same sign for a menu to copy.
An individual sign may or may not appear selected.

Formal SignWriting

Multiple Sign Copy and Paste



Using the mouse, click and drag to select several signs. The FSW will be selected, possibly with plane 4 or 16 characters.

Formal SignWriting UTF-8 and Unicode Planes

HTML

```
2 <span class="outside">
3   <span class="middle">
4     <span class="inside">
5       <div class="sign" style="width: 56px;height: 35px;margin-right: 2px;"></div>
36 <div class="sign" style="width: 31px;height: 30px;margin-right: 1px;"></div>
59 <div class="sign" style="width: 72px;height: 8px;margin-right: 2px;"></div>
74 <div class="sign" style="width: 36px;height: 86px;margin-right: 152px;">
75   <svg xmlns="http://www.w3.org/2000/svg" width="36" height="86" viewBox="482 432 36 86">
76     <text style="font-size:0%;">
77       FSW source → R518x518S2ff00482x483S15a10494x432S22a04494x464S32107482x483
78     </text>
79     <g transform="translate(482,483)">
80       <text class="sym-fill" style="pointer-events:none;font-family:'SignWriting 2010
81       Filling';font-size:30px;fill:white;">
82         Unicode → □
83         Plane 4 or 16 for S2ff00
84       </text>
85       <text class="sym-line" style="pointer-events:none;font-family:'SignWriting
86       2010';font-size:30px;fill:black;">
87     </g>
88   </svg>
89 </div>
90 </span>
91 </span>
92 </span>
93 </div>
94 </div>
95 </div>
96 </div>
97 </div>
98 </div>
99 </div>
100 </div>
```

<http://codepen.io/Slevinski/pen/zqGNqz>

2016 Highlight - SignCorpus



Formal SignWriting

Web Interface

Generates flat file data

<https://bitbucket.org/unipampa/signcorpus>

A Web Tool for Building Parallel Corpora
of Spoken and Sign Languages.

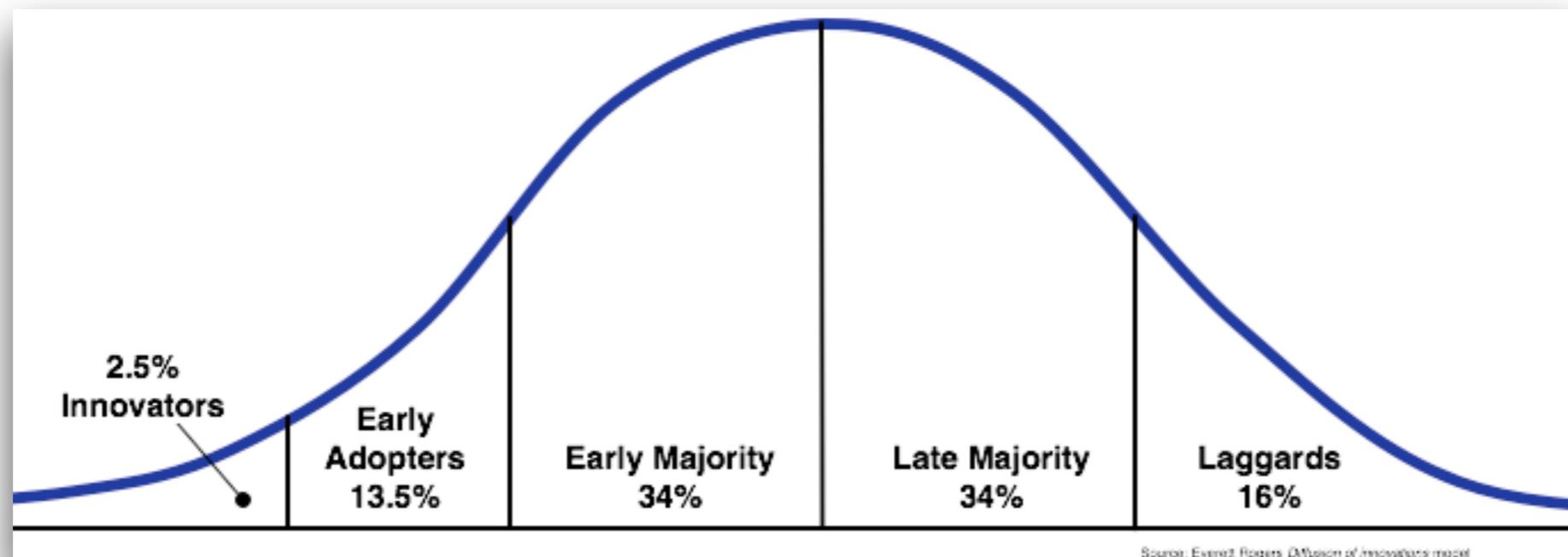
<http://www.signwriting.org/symposium/presentation0057.html>

Imagine

Imagine a world in which every sign language user can freely share in the sum of all knowledge.

Innovation Adoption

The international SignWriting community is working towards a future of written sign language for education and literature and more.



In Brazil, the early majority of Deaf embrace literacy. Many can quickly write Sutton SignWriting by hand.

<https://www.facebook.com/librasescrita/>

32,523 Total Page Likes

Wikimedia

Wikimedia is a global movement whose mission is to bring free educational content to the world.



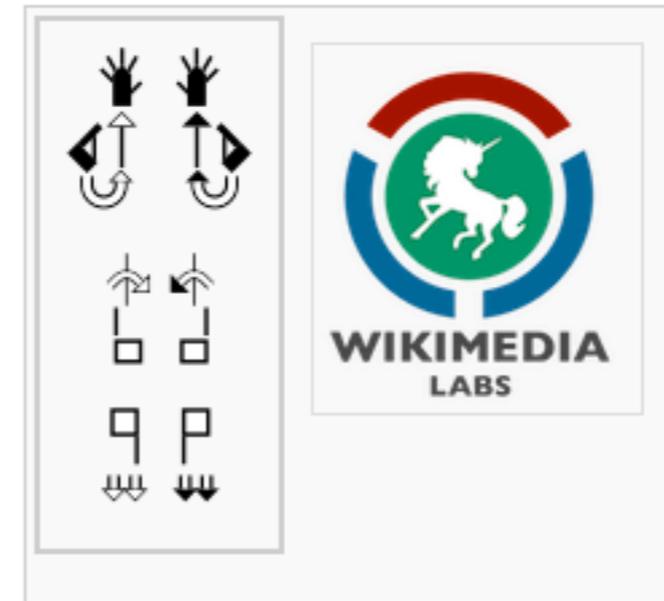
All of these projects can use sign language text encoded in Formal SignWriting. Several projects are underway.

Realize

Sign languages are human languages. Any topic that can be discussed in a spoken language can be discussed in a signed language. It's important to realize the benefits of a person being able to access information in their primary language. It's exciting to realize that sign language wikipedia projects are now possible with Sutton SignWriting.

Wikimedia Labs

Wikimedia Labs provides server virtualization for community projects. SignWriting has an open-ended project involving several instances and websites.



https://wikitech.wikimedia.org/wiki/Nova_Resource:Signwriting



<http://swis.wmflabs.org/>



SignWriting Server

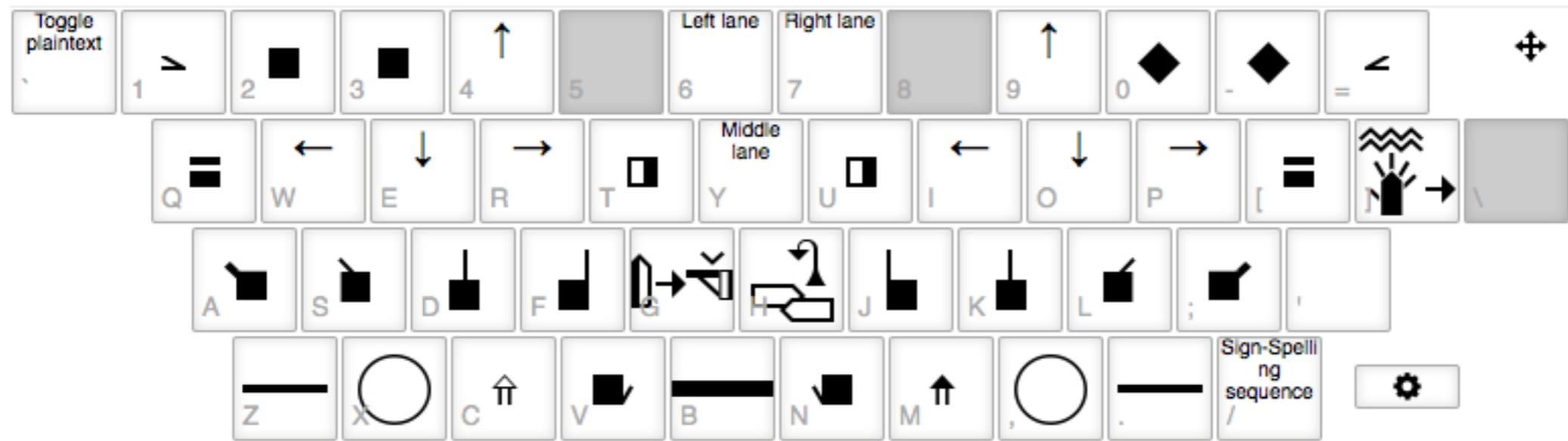
<http://swserver.wmflabs.org/>

Progress

For the past several years, we have been working on the technical infrastructure to make it possible to have a wikipedia in any sign language. We've been using Translate Wiki to localize the user interface. Most commonly, SignWriting is displayed vertically and for MediaWiki this requires a custom skin with the CSS vertical writing mode enabled. The technical details are complex, and we continue to make progress.

SignWriting Gadget and Keyboard

The SignWriting Gadget runs on Incubator and provides the ability to view and edit SignWriting within MediaWiki.



<http://www.signwriting.org/symposium/presentation0041.html>

<https://incubator.wikimedia.org/wiki/MediaWiki:Gadget-Signwriting.js>

Snowball

As we've seen with Wikipedia itself, there is a snowball effect with these types of projects. More people getting involved, leads to more people getting involved. One of the major factors holding back the widespread acceptance of SignWriting is having enough reading material available to make it worthwhile to learn SignWriting. The sign language wikipedia projects are important for the growth of SignWriting and the positive effects of the sign language wikipedias will benefit all sign language users far beyond just the particular wikipedia projects themselves.

Wikimedia Incubator

Wikimedia Incubator provides a platform for new language projects to grow and develop a community.



<https://incubator.wikimedia.org/wiki/Wp/ase>

Spread the word

Sign language wikipedia projects are now possible with Sutton SignWriting. We encourage sign language users to get involved by learning Sutton SignWriting and the MediaWiki software. We encourage technical MediaWiki users of all levels to get involved and help us improve and streamline the technical details. We encourage everyone to imagine a world in which every sign language user can freely share in the sum of all knowledge.

Real World Impact

Moving forward with sign language projects under Wikimedia.

WikiConference USA

October 2016 in San Diego

https://meta.wikimedia.org/wiki/WikiConference_USA

Formal SignWriting
Adoption

Unicode
Considerations

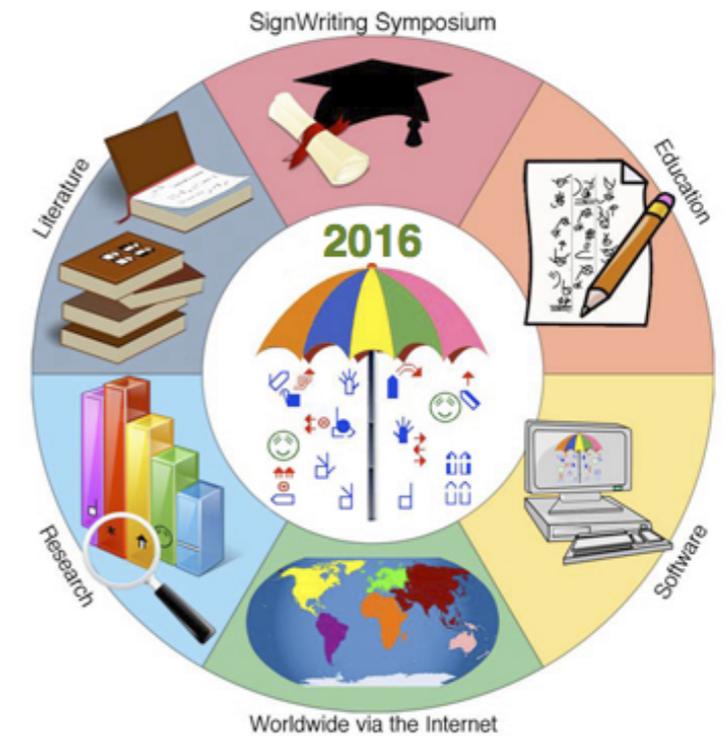
SignWriting Encyclopedia Projects: Wikipedias in
American Sign Language and Tunisian Sign Language

<http://www.signwriting.org/symposium/presentation0064.html>

Moving Forward with Sign Language Projects in Formal SignWriting (FSW)

by **Stephen E Slevinski Jr**

slevinski@signwriting.org



Thanks for viewing.

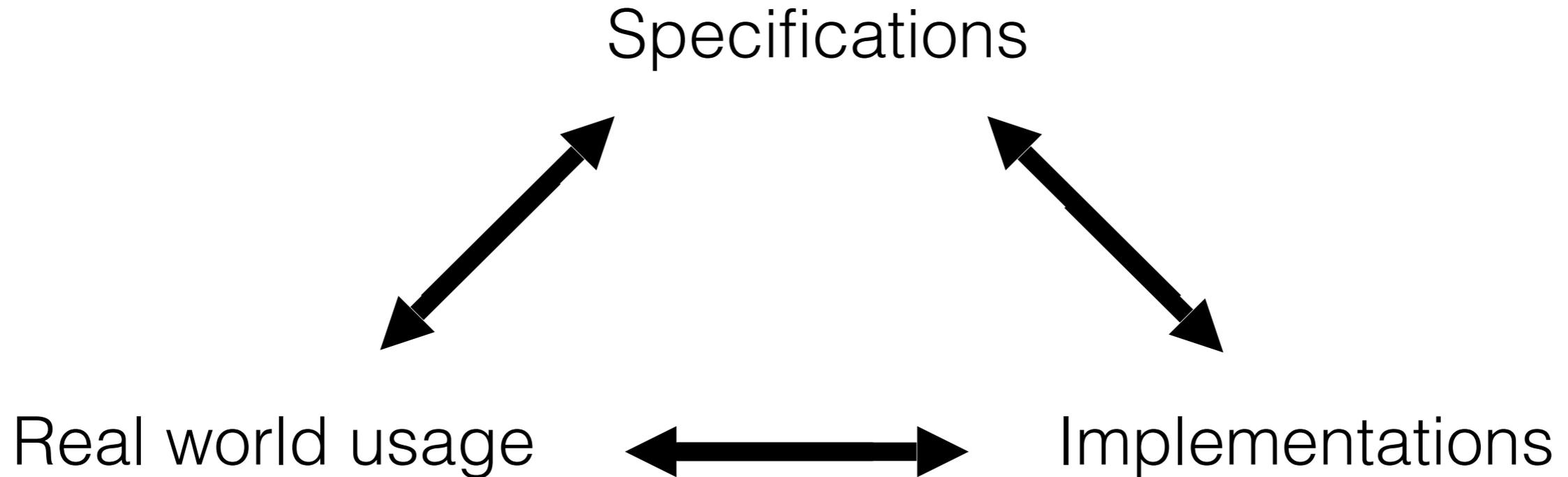
Feedback, opinions, and discussions are welcomed.

AS20310S26b02S33100M521x547S33100482x483S20310506x500S26b02503x520

<http://signpuddle.com>

<http://slevinski.github.io/>

The standards process



A long digression into how standards are made...

Dive into HTML5 by Mark Pilgrim

<http://diveintohtml5.info/past.html>

The standards process

“Implementations and specifications have to do a delicate dance together. You don’t want implementations to happen before the specification is finished, because people start depending on the details of implementations and that constrains the specification. However, you also don’t want the specification to be finished before there are implementations and author experience with those implementations, because you need the feedback. There is unavoidable tension here, but we just have to muddle on through.”

Mozilla Developer

<http://lists.w3.org/Archives/Public/public-html/2010Jan/0107.html>