

FOP: A Formatting Object to PDF Translator

Before FOP

- 1994: Self-published *Index to the Greek New Testament*
 - SGML source: derived from UPenn's lemmatized UBS3
 - custom C code + TeX macros + METAFONT
 - multilingual, multicolumn, dictionary-style headers
 - whole thing took two weeks (mostly spent designing font)
- 1995: Learnt Perl and rewrote C code

Before FOP (cont'd)

- 1996: Internship at Sun Labs
 - goal to learn Java
 - and DSSSL (from draft made available by Jon Bosak)
- 1996: Started designing DSSSL formatters
 - flow object tree to TeX for print
 - flow object tree to Tk for online
 - during email exchange with Jon about this, invited to join W3C SGML Activity

The Birth of FOP

- 18 August 1998

- first XSL working draft released
- I decide to write a formatter that takes XSL FOs and generates PDF
- download PDF spec and start writing Perl to output it

- 19 August 1998

- James Clark releases first alpha of XT

- 21 August 1998

- thread on XML-L leads me to mention formatter
- I ask for name suggestions

The Birth of FOP (cont'd)

- 24 August 1998
 - I announce FOP on XSL-L and xml-dev
 - name suggested by Chris Maden
 - version 0.03, written in Perl, not yet released publicly
 - plan to port to Java after prototyping

A Brief History

- Paul Prescod suggests prototyping in Python
- I learn Python
- Version 0.1.0: first Python version, content still hard-coded
- Version 0.1.2: SAX used to read FOs as XML
- Version 0.3.1: last Python version
- Version 0.4.0: first Java version 30 October 1998
 - loses some functionality such as page breaking
- Version 0.5.1: last version for 1998 (4 November)

A Brief History (cont'd)

- Sun/Adobe announce prize money
- FOP is only XSL formatter available
- I begin radical re-write in light of December working draft
- Start re-re-write in light of April working draft
- Release 0.6.0 (5 May 1999)
- Presentation of FOP at WWW8

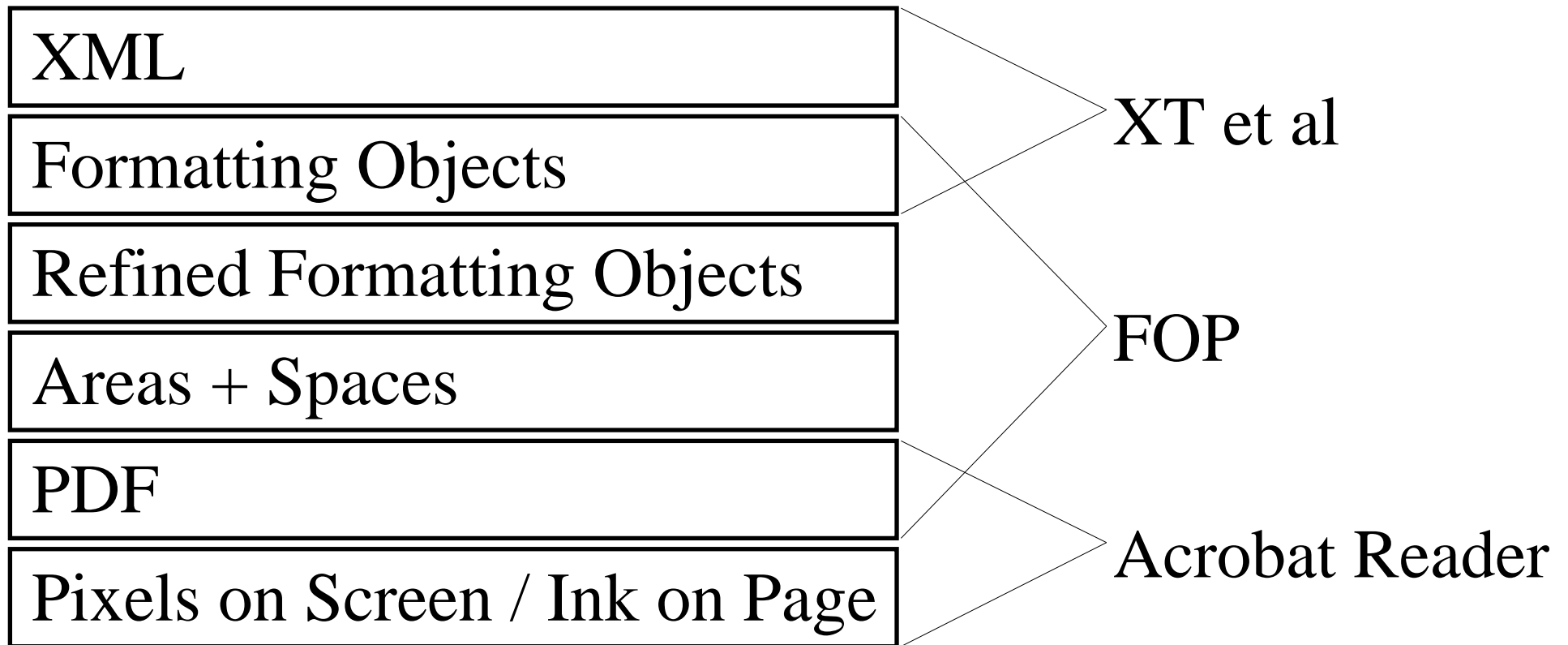
FOP Since Toronto

- FOP goes Open Source at 0.7.0
- PassiveTeX announced
- Lists finally back at 0.8.0
- Colours and basic rules at 0.9.0
- Simple SVG support (not yet released)
- RenderX's formatter announced

PDF

- Text format
- Sequence of numbered objects
 - metadata
 - fonts
 - groups of pages
 - pages
 - streams
- Cross-reference of byte offsets in table
- Streams containing PDF drawing operations

Architecture of FOP



FOP Packages

- `com.jtauber.fop`
- `com.jtauber.fop.apps`
- `com.jtauber.fop.fo`
- `com.jtauber.fop.fo.flow`
- `com.jtauber.fop.fo.pagination`
- `com.jtauber.fop.fo.properties`
- `com.jtauber.fop.layout`
- `com.jtauber.fop.pdf`
- `com.jtauber.pdf`

What I Said in Toronto I'd Do Next

- Increase flow object support: lists, rules, etc
- Increase property support: colour, borders, backgrounds
- Better interfacing: generic SAX parser, DOM support
- Better layout: keeps, vertical justification, columns, out-of-line formatting objects, hyphenation, i18n

Demos

What's Next After Montreal

- Columns, Borders, Backgrounds
- Images
- Writing Modes
- RenderX Test Suite

What you can do

- Download an XSLT processor
- Download FOP: <http://www.jtauber.com/fop/>
- Use them to learn XSL
- Let me know what you need FOP to be able to do

???

- Thank you. Please stay in touch
- jtauber@jtauber.com
- <http://www.jtauber.com/>