II2202: Writing and Oral Presentations

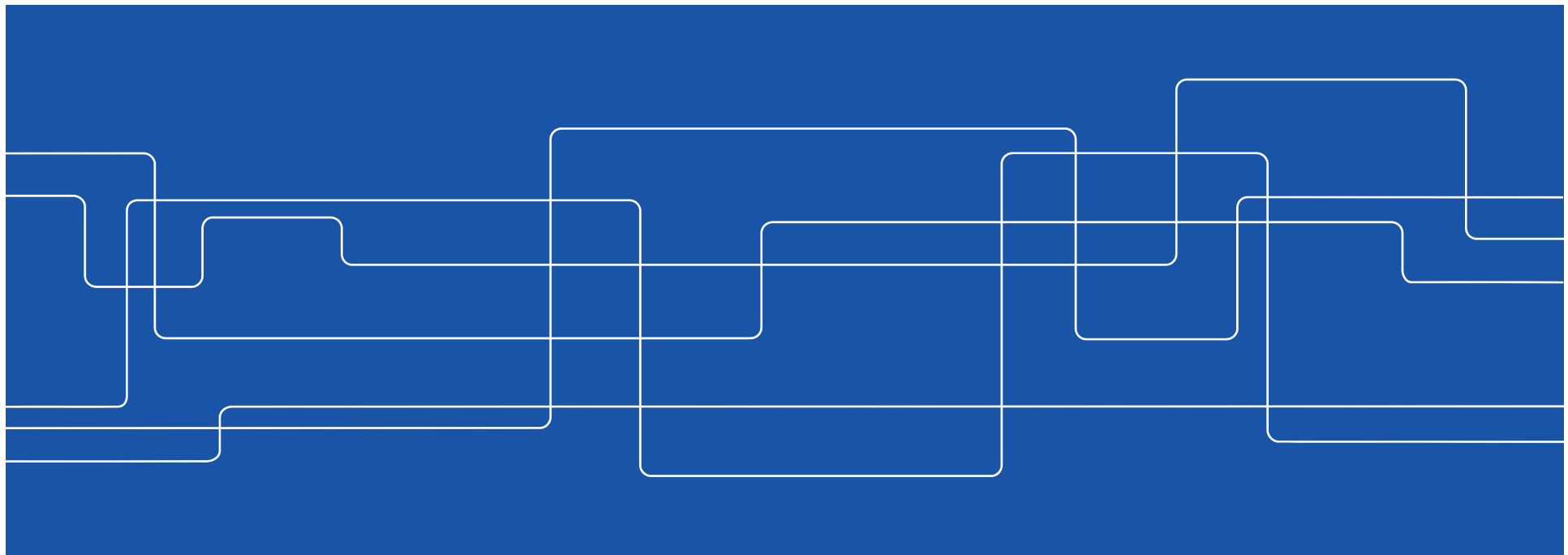prof. Gerald Q. Maguire Jr.   http://people.kth.se/~maguire/

School of Information and Communication Technology (ICT), KTH Royal Institute of Technology

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Communication tools & techniques

Oral presentations

Conference papers, Journal papers, …

Web sites, blogs, …

Open source code/hardware

Applications & Products

News releases

Podcasts, videos & multimedia presentations

Popular books, newspaper columns, …

Communicating with journalists, reporters, …

Identify who is your audience

Given this audience:
- What do they already know? (limitations)
- Who do they need to know? (goals)
- What do they expect?
- What will make them interested in what you have to say? (i.e., what is their motivation)
- What do you want them to do after your presentation? (What do you expect?)

See also: George Gopen and Judith Swan, 'The Science of Scientific Writing: If the reader is to grasp what the writer means, the writer must understand what the reader needs' [Gopen1990] http://www.americanscientist.org/issues/pub/the-science-of-scientific-writing/1

Writing

Get into the habit of reading

Regularly read books, journals, conference proceedings, …

Read **critically**

Write down the (potential) reference's bibliographic information and your notes

- Use a reference manager, such as Zotero to help you

- Could you find the reference again in 6 months, 1yr, … ? If you cannot find it, how can your reader?

- Organize the copies of what you read so that you can find them again

- "If you don't write it down, it is gone!" -- Ted Nelson

Get into the habit of writing

Like any other skill it takes ~10^4 hours to become expert

Some say that if you do not practice **at least 4 hours per day** you will never become expert.

John R. Hayes in his studies of the cognitive and social process involved in writing has emphasized the fact that **limited working memory** affects our writing and that writing is a **generative intellectual activity** that requires time and motivation. [Hayes 1996] and [Hayes 2006]

"Rule 1: Create regular time blocks for writing as appointments in your calendar and keep these appointments."

Elena D Kallestinova in 'How to Write Your First Research Paper' [Kallestinova 2011]

Flower and Hayes cognitive model of writing process

Monitoring

1. **Planning**
   - Generating ideas
   - Organizing
   - Setting goals (generating subtasks)

2. **Translating**

   Converting the plans into text, pictures, …

3. **Reviewing**
   - Reading
   - Editing

[Flower 1981]

Writing strategies

Beethovian

1. Write everything down
2. Edit it

Motzartian

1. Compose everything in your head
2. Write it down

Mike Sharples' external representation model: stages of **planning** and text **production**

	Uninstantiated	Instantiated
Unorganized	(1) Technique: Brainstorming Representation: Idea-labels	(2) Technique: Note-taking, collecting quotes Representation: Notes
Non-linear organization	(3) Technique: Follow a thread, write as dialect Representation: Network of idea-labels	(4) Techniques: Organizing notes, filing Representation: Network of Notes
Linear organization	(5) Technique: Linear planning Representation: list of idea-labels, table of contents	(6) Techniques: Drafting test, revising text, copying text Representation: Linear text

Start in any box and follow any path that gets you to box (6).

Non-linear documents

In addition to traditional linear document it is possible to create **hypermedia** documents

These allow the reader/participant to select their own path(s) through your content.

Four things to think about when writing

1. What you are saying?

   Content

2. What you are going to say?

   Structure & Argument

3. What will your reader think when reading what you have written?

   Communication

4. What do you want your reader to do after reading what you have written?

   Effect

Writing for a thesis

When you think of a question write it down

When you think of an answer write it down

Reflect upon what you have written:

- Look at your table of contents (at least once per week)
- Read what you have written
- Re-read and revise your abstract

Choose your writing tool(s)

- Pencil + paper, Pen + paper

- Emacs or other editor

- Command line tools, LaTeX, …

- What You See Is What You Get (WYSIWYG): Microsoft Word, OpenOffice Writer, Adobe FrameMaker, …

See also Jeffrey Morgan, An Evaluation of Modern Writing Tools, Web page: Usability,etc.: Usability, interface design, human factors and other interactive goodness [Morgan2011] http://usabilityetc.com/articles/modern-writing-tools-evaluation/

Command line tools

- Use command line tools to automate your text processing http://www.techrepublic.com/blog/linux-and-open-source/automatically-analyze-text-with-these-simple-command-line-tools/

- Spell checkers: GNU Aspell

- Writer's Workbench (WWB) diction and style program
http://www.gnu.org/software/diction/diction.html

See also Chapter 11: Grammar and Reference, in Michael Stutz.
The Linux cookbook : tips and techniques for everyday use.
[Stutz2004]

Spell checkers: GNU Aspell

Dictionaries available in many languages

Personalize

dictionary: .aspell.<lang>.pws

$\Rightarrow$ .aspell.en.pws, a.spell.sv.pws, …

configuration: .aspell.conf   lang sv

Linux> aspell check *file.txt*

Linux> aspell --lang=sv check *file.txt*

Linux> aspell --lang=en_GB check *file.txt*

Spell checkers: ispell

Interactive spelling checker

Run inside emacs: M-X ispell, M-X ispell-word,

Princeton University's Wordnet®

Lexical database for English: http://wordnet.princeton.edu/

Command line program: wn

X windows version of the program: wnb
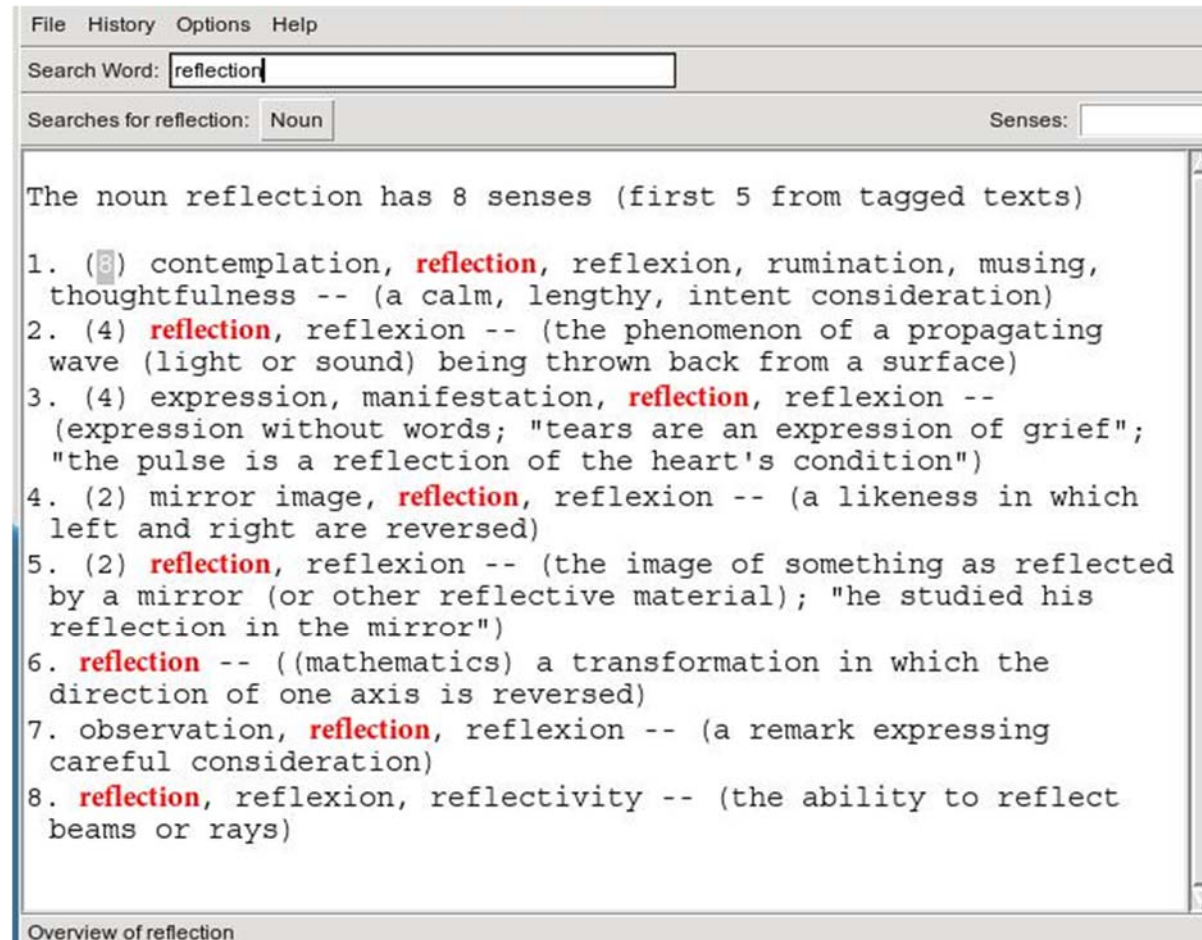
See also: [Miller1995] and [Fellbaum1998]

Another example from Wordnet®

Wordnet® searches

WWB diction: Grammar checking

http://www.gnu.org/software/diction/diction.html

Saved Word file as a text file (.txt)
Linux> diction -s Project_Plan_Template-2015.txt
…
Project_Plan_Template-2015.txt:11: Clients report [which -> (use "that" if clause is restrictive)] blocks [they -> (do not use as substitute for "each, each one, everybody, every one, anybody, any one, somebody, some one")] are missing as a vector of bits, where missing blocks are indicated by a 1 bit.

Project_Plan_Template-2015.txt:12: Problem statement[A6] The project will investigate how to avoid [so -> (do not use as intensifier)]-called ‡acknowledgement implosion† when distributing a file using multicast.

Project_Plan_Template-2015.txt:13: If all of the nodes that successfully receive a packet were to acknowledge it, then the sender [would -> (use "should" if used as conditional statement in the first person or for "shall" in indirect quotation after a verb in past tense. Consider omitting it for repeated actions)] receive a [very -> (use sparingly; try to use words that are strong in themselves for emphasis)] [large number of -> many] acknowledgements, when it [fact -> Restrict use to matters that can be verified.] it is [most -> Do not use as substitute for "almost."] interested in understanding [which -> (use "that" if clause is restrictive)] node did not receive the packet, hence to which node (or nodes) it should retransmit the packet.

Project_Plan_Template-2015.txt:15: What techniques [can -> (do not confuse with "may")] we use and how should [they -> (do not use as substitute for "each, each one, everybody, every one, anybody, any one, somebody, some one")] be used.
…
49 phrases in 100 sentences found.

WWB style: checking for readability

http://www.gnu.org/software/diction/diction.html

Saved Word file as a text file (.txt)
linux> style Project_Plan_Template-2015.txt
readability grades:

    Kincaid: 7.4 ⟵ ————————————— Roughly indicates US grade level
    ARI: 7.4 ⟵ ——————————————————— Automated readability index
    Coleman-Liau: 10.4
    Flesch Index: 62.9/100 (plain English)
    Fog Index: 10.3
    Lix: 40.5 = school year 6
    SMOG-Grading: 10.0

For details about these scores see:

Michael Stutz. Linux.com : Improve your writing with the GNU style checkers [Stutz2006] http://www.linux.com/archive/articles/56833

WWB style (continued)

sentence info:

    5749 characters

    1178 words, average length 4.88 characters = 1.56 syllables

    100 sentences, average length 11.8 words

    45% (45) short sentences (at most 7 words)

    10% (10) long sentences (at least 22 words)

    1 paragraphs, average length 100.0 sentences

    10% (10) questions

    45% (45) passive sentences

    longest sent 52 wds at sent 13; shortest sent 1 wds at sent 29

word usage:

    verb types:

    to be (58) auxiliary (38)

    types as % of total:

    conjunctions 4% (48) pronouns 4% (51) prepositions 9% (109)

    nominalizations 3% (38)

sentence beginnings:

    pronoun (5) interrogative pronoun (10) article (18)

    subordinating conjunction (2) conjunction (0) preposition (0)

WWB style command line options

Usage: style [-L language] [-l length] [-r ari] [file ...]

style [--language language] [--print-long length] [--print-ari ari] [file ...]

Analyse surface characteristics of a document:

-L, --language   set the document language.

-l, --print-long   print all sentences longer than <length> words

-r, --print-ari   print all sentences with an ARI greater than than <ari>

-p, --print-passive   print all sentences phrased in the passive voice

-N, --print-nom   print all sentences containing nominalizations

-n, --print-nom-passive print all sentences phrased in the passive voice or
                             containing nominalizations

-- style –h output

Finding acronyms to put into:
List of Acronyms and abbreviations

List all the words in alphabetical order with a count of how many times they are used:

```
tr -s '[:blank:]' '\n' < file.txt | tr -d '[:punct:]' | sort | uniq –c
```

Sort this list and shows you the most common words first (also useful for deciding which words to **index**):

```
tr -s '[:blank:]' '\n' < file.txt | tr -d '[:punct:]' | sort | uniq -c  | sort -n -r
```

Remove all of the lower case words and numbers:

```
tr -s '[:blank:]' '\n' < draft-maqueda-6lowpan-pgw-00.txt | tr -d
'[:punct:]' | tr -d '[:lower:]' | tr -d '[:digit:]'| sort | uniq -c  | sort -n -r
```
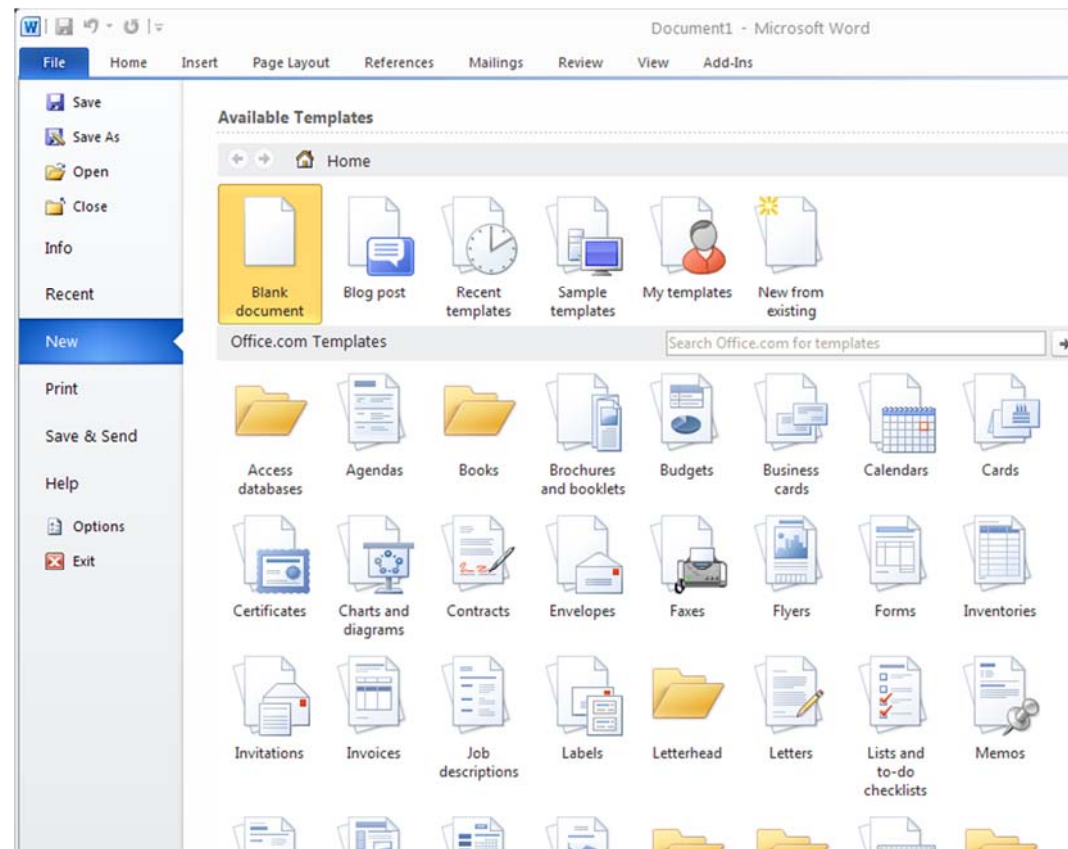
Acronyms that are **not** used frequently should be spellout.

Document processing (Microsoft Word, OpenOffice, LaTeX, …)

Make use of **templates**

Make use of built-in templates: Microsoft Word2010
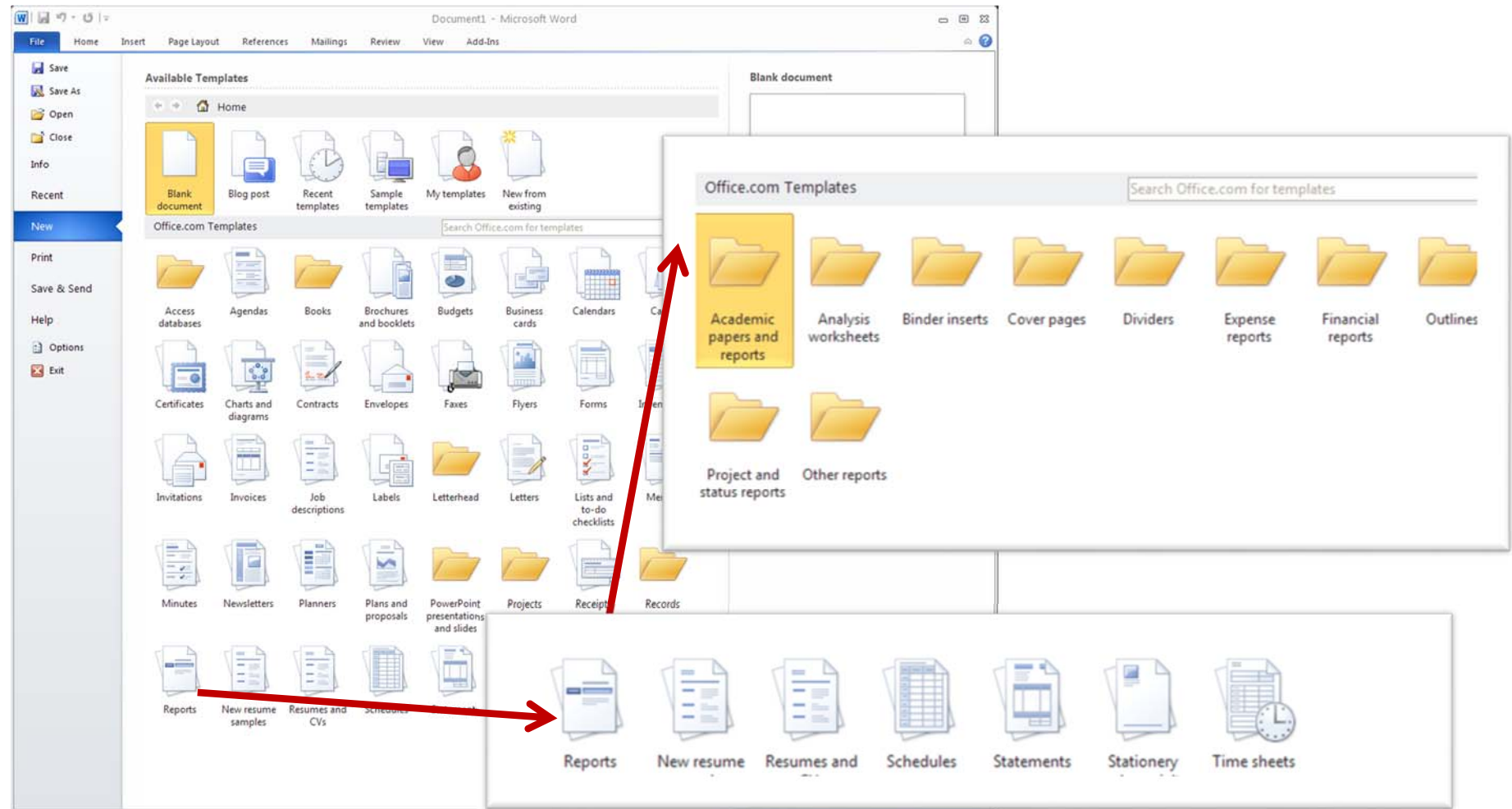
Make use of external templates: Microsoft Word2010

Install additional templates

Use a template file

Making use of Styles

1. Use the **predefined** styles (modify if necessary)
2. Define **new** styles when needed – use logical names (for example; "Preface Heading 1", rather than "18point Helvetica")

Note that for some purposes you may need to "tweak" the style to get exactly what a journal or other publisher wants.

Note that in some settings you are **not** permitted to modify the styles.

Some common mistakes: General

Incomplete references or missing important citations

- Missing date, title and author(s), or other information
- Misspelling the authors name(s), title of document, etc.
- Keep in mind that the goal is to enable someone (perhaps even yourself) to find the reference at a later point in time

Lack of a date - every document should have a date (on the cover)

Lack of page numbers

Poor (or no) editing ⇒ you do not care enough to check what you wrote!

- Failure to spell check the document
- Documents which it is clear that no one looked at after formatting - often these have breaks in the middle of sentences, missing phrases, ...
- Incorrect paper size

Unnumbered sections and subsections - **hide the structure** of the document and **make cross references difficult**

Lack of vertical white space between paragraphs, makes it hard to understand where new paragraphs begin (indent first line 2-3 em)

Some common mistakes: Writing

- Statements made without justification or supporting citations
- Use of contractions
- Use of acronyms or abbreviations without properly introducing them; often failure to use these acroynms and abbreviations consistently through the rest of the paper
- Redundant text
- Using too few refences, often the paper looks like simply a cut and paste edit of these few references.
- Single sentence paragraphs
- Not using **primary** sources when possible
- Not using cross references effectively – for example not referencing your figures, tables, code examples, …
- Not using your tools effectively!

Some common mistakes: Figures

- Using figures from others **without** the copyright owner's permission

- Unreadable text in figures

- Failure to label elements of figures adequately

- Failure to use generally understood icons

- Poor or missing figure captions – explain what the figure shows (imagine someone who is blind who depends upon your caption to explain what the picture shows)

- Using a poor choose of colors and not also using different stipple patterns/styles/… (Keep in mind the readers who are color blind)

Generating plots for in your document: gnuplot

**set term** to one of the available terminal types which include:

dumb	ASCIIart for anything that prints text
epslatex	LaTeX picture environment using graphicx package
fig	FIG graphics language for XFIG graphics editor
gif	GIF images using libgd and TrueType fonts
jpeg	JPEG images using libgd and TrueType fonts
latex	LaTeX picture environment
mif	Frame maker MIF 3.00 format

pbm	Portable bitmap
png	PNG images using libgd and TrueType fonts
postscript	PostScript graphics, including EPSF embedded files (*.eps)
pslatex	LaTeX picture environment with PostScript
pstex	plain TeX with PostScript
svg	svg W3C Scalable Vector Graphics driver
x11	X11 Window System
xterm	Xterm Tektronix 4014 Mode

Network diagrams

Cisco Network Topology Icons are freely available for use when drawing network diagrams.
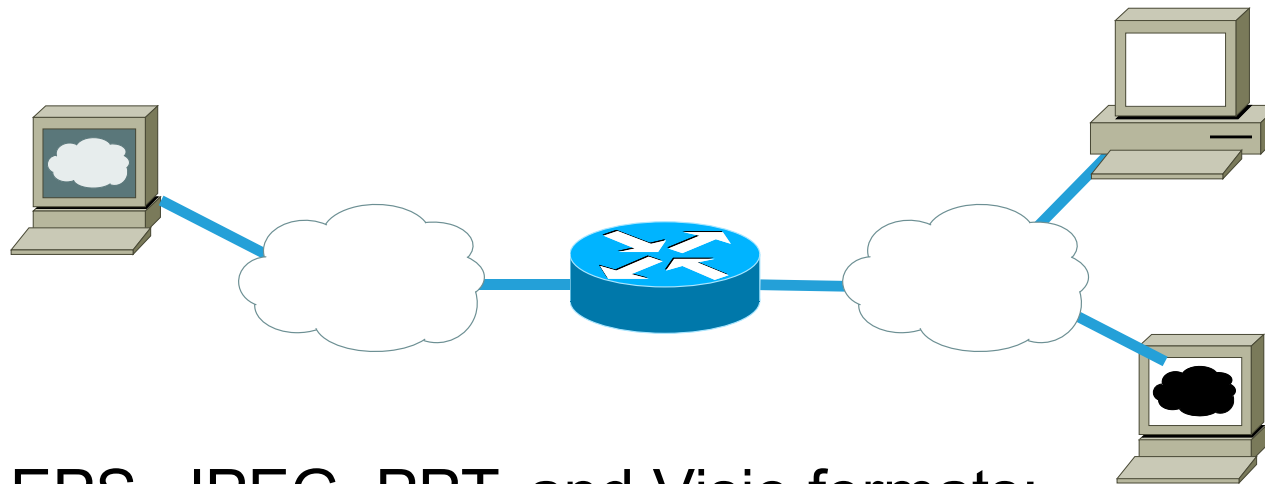
EPS, JPEG, PPT, and Visio formats:

http://www.cisco.com/web/about/ac50/ac47/2.html

More tools for charts, diagrams, etc.

Microsoft's Visio

DIA

OpenOffice Draw, LibreOffice Draw, …

UML:

- StarUML 2
- ArgoUML

yWorks' yEd Graph Editor

CadSoft EAGLE – for circuits, board layouts, …

Tweaking or Making your own CSL Style

If there is not a suitable style in the Zotero Style Repository
http://www.zotero.org/styles

Then you may need to make your own, see: Cornelis Pieters'
"Quick Start Guide for Creating Zotero Citation Styles"
http://www.condast.com/zotero/

Alternatively: Tweak an existing format in Citation Style
Language (CSL)

http://www.zotero.org/support/dev/citation_styles/

Preview with chrome://zotero/content/tools/cslpreview.xul

Starting with IEEE style add URL, DOI, ISBN: CSL Style – Info section

CSL Macros: isbn and access

```xml
<!-- Macros -->
<macro name="isbn">
  <text variable="ISBN" prefix="ISBN: "/>
</macro>
<macro name="access">
 <choose>
   <if type="webpage">
     <choose>
       <if variable="URL">
         <group delimiter=". ">
           <text value="[Online]"/>
           <text variable="URL" prefix="Available: "/>
           <group prefix="[" suffix="]">
             <date variable="accessed" prefix="Accessed: ">
               <date-part name="day" form="numeric-leading-zeros" suffix="-"/>
               <date-part name="month" form="long" suffix="-" strip-periods="true"/>
               <date-part name="year" form="long"/>
             </date>
           </group>
         </group>
       </if>
     </choose>
   </if>
   <else>
   <group delimiter=", ">
     <text variable="DOI" prefix="DOI:"/>
     <text variable="URL" prefix="Available at "/>
     <choose>
       <if variable="issued" match="none">
         <group prefix=" [" suffix="]">
           <text term="accessed" text-case="lowercase" suffix=" "/>
           <date variable="accessed">
             <date-part name="month" suffix=" "/>
             <date-part name="day" suffix=", "/>
             <date-part name="year"/>
           </date>
         </group>
       </if>
     </choose>
   </group>
   </else>
 </choose>
</macro>
```

More macros: edition and issued

```xml
<macro name="edition">
  <choose>
    <if type="bill book graphic legal_case motion_picture report song chapter paper-conference" match="any">
      <choose>
        <if is-numeric="edition">
          <group delimiter=" ">
            <number variable="edition" form="ordinal"/>
            <text term="edition" form="short" suffix="." strip-periods="true"/>
          </group>
        </if>
        <else>
          <text variable="edition" text-case="capitalize-first" suffix="."/>
        </else>
      </choose>
    </if>
  </choose>
</macro>
<macro name="issued">
  <choose>
    <if type="article-journal report" match="any">
      <date variable="issued">
        <date-part name="month" form="long" suffix=" "/>
        <date-part name="year" form="long"/>
      </date>
    </if>
    <else-if type="bill book graphic legal_case motion_picture  song thesis chapter paper-conference" match="any">
      <date variable="issued">
        <date-part name="year" form="long"/>
      </date>
    </else-if>
    <else>
      <date variable="issued">
        <date-part name="day" form="numeric-leading-zeros" suffix="-"/>
        <date-part name="month" form="long" suffix="-" strip-periods="true"/>
        <date-part name="year" form="long"/>
      </date>
    </else>
  </choose>
</macro>
```

Yet more macros:
author, editor, locators, and title

```xml
<macro name="author">
  <names variable="author">
    <name initialize-with=". " delimiter=", " and="text"/>
    <label form="short" prefix=", " text-case="capitalize-first" suffix="." strip-periods="true"/>
    <substitute>
      <names variable="editor"/>
      <names variable="translator"/>
    </substitute>
  </names>
</macro>
<macro name="editor">
  <names variable="editor">
    <name initialize-with=". " delimiter=", " and="text"/>
    <label form="short" prefix=", " text-case="capitalize-first" suffix="." strip-periods="true"/>
  </names>
</macro>
<macro name="locators">
  <group delimiter=", ">
    <text macro="edition"/>
    <group delimiter=" ">
      <text term="volume" form="short" suffix="." strip-periods="true"/>
      <number variable="volume" form="numeric"/>
    </group>
    <group delimiter=" ">
      <number variable="number-of-volumes" form="numeric"/>
      <text term="volume" form="short" suffix="." plural="true" strip-periods="true"/>
    </group>
    <group delimiter=" ">
      <text term="issue" form="short" suffix="." strip-periods="true"/>
      <number variable="issue" form="numeric"/>
    </group>
  </group>
</macro>
<macro name="title">
  <choose>
    <if type="bill book graphic legal_case motion_picture song" match="any">
      <text variable="title" font-style="italic"/>
    </if>
    <else>
      <text variable="title" quotes="true"/>
    </else>
  </choose>
</macro>
```

And yet more macros!
publisher, event, and page

```xml
<macro name="publisher">
  <choose>
    <if type="bill book graphic legal_case motion_picture  song chapter paper-conference" match="any">
      <text variable="publisher-place" suffix=": "/>
      <text variable="publisher"/>
    </if>
    <else>
      <group delimiter=", ">
        <text variable="publisher"/>
        <text variable="publisher-place"/>
      </group>
    </else>
  </choose>
</macro>
<macro name="event">
  <choose>
    <if type="paper-conference">
      <choose>
        <!-- Published Conference Paper -->
        <if variable="container-title">
          <group delimiter=", ">
            <text variable="container-title" prefix="in " font-style="italic"/>
            <text variable="event-place"/>
          </group>
        </if>
        <!-- Unpublished Conference Paper -->
        <else>
          <group delimiter=", ">
            <text variable="event" prefix="presented at the "/>
            <text variable="event-place"/>
          </group>
        </else>
      </choose>
    </if>
  </choose>
</macro>
<macro name="page">
  <group>
    <label variable="page" form="short" suffix=". " strip-periods="true"/>
    <text variable="page"/>
  </group>
</macro>
```

Define format for citation(s)

```
<!-- Citation -->
<citation et-al-min="100" et-al-use-first="1" collapse="citation-number">
  <sort>
    <key variable="citation-number"/>
  </sort>
<!--    <layout prefix="[" suffix="]" delimiter="], ["> -->
    <layout prefix="[" suffix="]" delimiter=", ">
      <text variable="citation-number"/>
    </layout>
</citation>
```

Bibliography information: article journal and paper conference

```xml
<!-- Bibliography -->
<bibliography et-al-min="100" et-al-use-first="3" entry-spacing="0" second-field-align="flush">
  <layout suffix=".">
    <!-- Citation Number -->
    <text variable="citation-number" prefix="[" suffix="]"/>
    <!-- Author(s) -->
    <text macro="author" prefix=" " suffix=", "/>
    <!-- Rest of Citation -->
    <choose>
      <!-- Specific Formats -->
      <if type="article-journal">
        <group delimiter=", ">
          <text macro="title"/>
          <text variable="container-title" font-style="italic"/>
          <text macro="locators"/>
          <text macro="page"/>
          <text macro="issued"/>
          <text macro="access"/>
        </group>
      </if>
      <else-if type="paper-conference">
        <group delimiter=", ">
          <text macro="title"/>
          <text macro="event"/>
          <text macro="issued"/>
          <text macro="locators"/>
          <text macro="page"/>
          <text macro="access"/>
        </group>
      </else-if>
```

Note: *et al.* will only be used if there are more than 100 authors, then the first three will be shown

References numbered: [xx]

List author first in each reference

For each type of publication, indicate which macros are enabled

More bibliography:
report, thesis, webpage, patent, book

```xml
<else-if type="report">
  <group delimiter=", ">
    <text macro="title"/>
    <text macro="publisher"/>
    <group delimiter=" ">
      <text variable="genre"/>
      <text variable="number"/>
      <text macro="access"/>
    </group>
    <text macro="issued"/>
  </group>
</else-if>
<else-if type="thesis">
  <group delimiter=", ">
    <text macro="title"/>
    <text variable="genre"/>
    <text macro="publisher"/>
    <text macro="access"/>
    <text macro="issued"/>
  </group>
</else-if>
<else-if type="webpage">
  <group delimiter=", " suffix=". ">
    <text macro="title"/>
    <text variable="container-title" font-style="italic"/>
    <text macro="issued"/>
  </group>
  <text macro="access"/>
</else-if>
<else-if type="patent">
  <text macro="title" suffix=", "/>
  <text variable="number" prefix="U.S. Patent "/>
  <text macro="issued"/>
  <text macro="access"/>
</else-if>
<else-if type="book">
  <group delimiter=", " suffix=". ">
    <text macro="title"/>
    <text macro="locators"/>
  </group>
  <group delimiter=", ">
    <text macro="publisher"/>
    <text macro="issued"/>
```

Yet more bibliography styles

```
    </else-if>
    <else-if type="article-journal article-magazine article-newspaper broadcast interview manuscript map patent personal
_communication song speech thesis webpage" match="any">
        <group delimiter=", ">
            <text macro="title"/>
            <text variable="container-title" font-style="italic"/>
            <text macro="locators"/>
            <text macro="publisher"/>
            <text macro="page"/>
            <text macro="issued"/>
            <text macro="access"/>
        </group>
    </else-if>
    <else-if type="chapter paper-conference" match="any">
        <group delimiter=", " suffix=", ">
            <text macro="title"/>
            <text variable="container-title" prefix="in " font-style="italic"/>
            <text macro="locators"/>
        </group>
        <text macro="editor" suffix=" "/>
        <group delimiter=", ">
            <text macro="publisher"/>
            <text macro="issued"/>
            <text macro="page"/>
        </group>
    </else-if>
    <else>
        <group delimiter=", " suffix=". ">
            <text macro="title"/>
            <text variable="container-title" font-style="italic"/>
            <text macro="locators"/>
        </group>
        <group delimiter=", ">
            <text macro="publisher"/>
            <text macro="page"/>
            <text macro="issued"/>
            <text macro="access"/>
        </group>
    </else>
    </choose>
    </layout>
</bibliography>
</style>
```
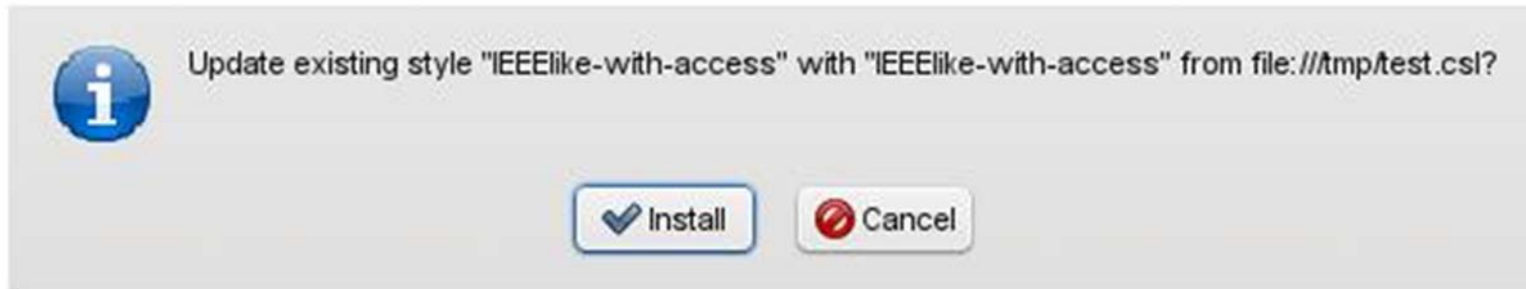
Open xx.csl file in Firefox

Update existing style "IEEElike-with-access" with "IEEElike-with-access" from file:///tmp/test.csl?

✔ Install   ⊘ Cancel

You can just type file:///tmp/test.csl or use File menu or Control-O

Preview new format
chrome://zotero/content/tools/cslpreview.xul

Citation format

References

Preview new format

References

Preview – compare with:
IEEE, ACM SIG proceedings

IEEE

[1-6]

[1] Michael Stutz, *The Linux cookbook : tips and techniques for everyday use*, 2nd ed. San Francisco: No Starch Press, 2004.
[2] Linda Flower and John R. Hayes, "A Cognitive Process Theory of Writing," *College Composition and Communication, National Council of Teachers of English*, vol. 34, no. 4, p. 23, Dec. 1981.
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CSL format resources

'A Step-by-step Guide to Changing CSL Styles'
http://www.zotero.org/support/dev/citation_styles/style_editing_step-by-step

Rintze M. Zelle, 'Citation Style Language 1.0: Primer' http://citationstyles.org/downloads/primer.html

Rintze M. Zelle, 'Citation Style Language 1.0', http://citationstyles.org/downloads/specification.html

When using LaTeX

- Use A4 sized paper rather than US letter
- Improve the look of the document by switching to using PostScipt fonts: http://www.ctan.org/tex-archive/macros/latex/required/psnfss/psnfss2e.pdf
- Turn off hyphenation or at least limit its use with "\hyphenpenalty=5000 \tolerance=1000"
- BibTex for W3C publications: http://webcapita.com/w3cbib/by-year
- BibTex for RFCs: http://www.tm.uka.de/~bless/bibrfcindex.html
- Use the bytefield package to draw packet structures

Helpful for LaTeX

- Useful Latex packages (available via ctan.org): algorithm2e, caption, colortbl, epstopdf, fourier, graphicx, hypens, hyperref, listings, longtable, minted, multirow, parskip, subfig, tabulary, xcolor

- Drawn figures in vector format (SVG) using Inkscape (available from inkscape.org), then imported into Latex in EPS format.

- Generate plots with Graphics Layout Engine (GLE), available from glx.sourceforge.net.

- Format source code listings with keyword highlighted using minted ctan.org/tex-archive/macros/latex/contrib/minted (requires Pygments library: pygments.org)

Oral presentations

Three parts to a (typical) speech

Tell them what you are going to tell them

Introduction
"Executive summary"

Tell them

Body

Tell them what you told them

Conclusion

Why this structure?
1. Because most people will remember the beginng and if this catchs their attention they will follow along.
2. Because we tend to remember the most recent things that we hear: hence we remember the conclusion.

Alternative version of the conclusion

1. Summarize your key result

2. Describe what you want your audience to do (often called a "Call To Action")

Stephen Kosslyn's cognitive principles

"Go for the **BIG** difference" – do **not** be subtle

Follow "Goldilocks Rule": No more than 4 perceptual units per slide

"Signpost changes in information" – use perceptual differences to signal changes in concept

Bob Grant, Pimp your PowerPoint

[Grant2010]

http://www.the-scientist.com/?articles.view/articleNo/28818/title/Pimp-your-PowerPoint/

General presentation tips: Preparation
(adapted from S. J. Bell)

Prepare both **yourself** and the **presentation**

- Know yourself & your audience

- Generic presentation format:
  Introduction/Body/Conclusions {Future work}

- Practice: 3-6 times, focus on the key ideas rather than the exact wording, plan your timing

- Knows the logistics (where to be, what the room is like, how to work the equipment in the room, wear the appropriate clothes)

- Use relevant examples and key words

General presentation tips: Giving the presentation (adapted from S. J. Bell and personal experience)

- Take the stage
  - Be yourself (find your own style), be confident and relax (if you do not know your material, then who does); **start** and **end** on time
  - Look at your audience – look into their eyes, their body language, they will let you know when you are not getting your point across – **engage** your audience
- Questions
  - Be clear about when you will take questions (i.e., interactive or at the end)
  - Repeat the question – for those who might not be able to hear it
  - Do not be afraid to say: "I do not know."
  - Defer detailed questions to afterwards

Michael Alley, The Craft of Scientific Presentations: Critical Steps to Succeed and Critical Errors to Avoid [Alley2003]

Critical **Errors** to Avoid:
#1: Giving the wrong speech
#2: Drawing the words from the wrong well
#3: Leaving the audience at the dock
#4: Loosing the audience at sea
#5: Projecting slides that no one reads
#6: Projecting slides that no one remembers
#7: Ignoring Murphy's Law
#8: Not preparing enough
#9: Not paying attention (to yourself, the audience/room/timing)
#10: Loosing composure

Your slides should

- Identify yourself and where you are from
- Include date of the presentation
- Include a slide number– so people can refer to specific slides in their questions
- Avoid confusing backgrounds
- Carefully use colors as 1 in 20 men and 1 in 200 women are colorblind
- Avoid long lists
- Use **relevant** text/images/pictures/…

Your slides should have a sentence headline.

1. A sentence headline not only identifies the topic, but states an assertion.
2. This sentence headline clarifies the role of the slide - also useful for later review of the material.
3. Clarifies the main purpose of the slide, if it does not serve a useful purpose delete it!

Michael Alley and Kathryn A. Neeley, Rethinking the Design of Presentation Slides: A Case for Sentence Headlines and Visual Evidence [Alley2005] (http://iris.nyit.edu/~klagrand/PowerPoint%20techniques.pdf)

Michael Alley and Harry Robertshaw, "Rethinking the Design of Presentation Slides: The Importance of Writing Sentence Headlines," [Alley2004] (http://writing.engr.psu.edu/speaking/IMECE2004-61827.pdf)

Assertion-Evidence model of slide

- Headline – states the assertion
- Body of slide presents evidence (image, graph, equation, video clip, …)

Michael Alley, Rethinking the Design of Presentation Slides: The Assertion-Evidence Structure, [Alley2011]
http://writing.engr.psu.edu/slides.html

With sample slides and templates!

Storytell model of presentations

1. Write a script

2. Storyboard

   Use the slide sorter view to implement your storyboard.

3. Produce your script to engage the audience

Cliff Atkinson, *Beyond bullet points: using Microsoft PowerPoint to create presentations that inform, motivate, and inspire* [Atkinson2011]

See http://beyondbulletpoints.com/resources/

Cliff Atkinson's three analsys questions

1. In **Slide sorter view**: Can you understand the focus just from the slide titles?

2. In **Notes view**: Is there a balance between what my notes indicate that **I** should say and what the slide presents?

3. In **Normal view**: Will the audience find **each** slide interesting?

[Atkinson2011] Chapter 1, pg. 5

Public speaking

See the many sources, such as:

- Six Minutes: Speaking and Presentation Skills [Dlugan] (http://sixminutes.dlugan.com/)

- Robin Ewing, Presenting with Confidence: 10 Tips for Librarians, [Ewing2004] (http://www.liscareer.com/ewing_presentations.htm)

- 10 Tips for Public Speaking, Toastmasters International [Toastmasters2014]
  (http://www.toastmasters.org/en/Shop/Marketing/Fliers/10%20Tips%20for%20Successful%20Public%20Speaking_105.aspx)

Oral presentation tools

Software

- Microsoft's PowerPoint
- LaTeX Beamer, Prosper, Slides, … classes
- OpenOffice Impress
  - Oracle Presenter Console
    http://extensions.services.openoffice.org/project/presenter-screen
  - OOoLatex http://ooolatex.sourceforge.net/
- Adobe FrameMaker

Projector and your laptop

make sure you know how to make them work together

Wireless presentation remote control

Laser pointer

No matter what tool you use for *oral presentations*, learn to use it

Value your audience's time

$$cost = \ number\ in\ audience\ * average\ cost\ per\ minute$$
$$* \ number\ of\ minutes$$

Value your **own** time – investing a little time to learn how to use your tool well will save you lots of time (in the long run)

Avoid looking dumb – do **not** hurt yourself with your choice of tool

Microsoft's PowerPoint: "power user" presentation short cuts

F1 – for help menu

F5 – to start your presentation (or right click on the file and choose "Show"or save as a 'PowerPoint Show' (.pps) file); Shift-F5 – start with current slide

Escape – to stop a presentation

Space bar, N, or down/right arrow, Page Down – advance to next slide

P – previous slide; up/left arrow, Page Up – repeat previous annimation

Control-Home – to first slide, Control-End – to last slide

Number <return> - go to slide <number>

Right click - go to a slide by title; Control-S show all slides menu

H – go to next hidden slide

Tab – go to first/next hyperlink on slide; Shift-Tab to go to previous/last hyperlink

B or '.' – show blank slide, W or ',' – show whiteout slide

Control-A, A – display arrow pointer (Control-H to hide pointer)

Control-P – display a pen; E – to erase drawings on a slide

Shift-F10 – display short cut menu

Control-T – display task bar

Media shorts cuts during a presentation

Alt-Q – stop media playing

Alt-P – pause/resume media

Alt-U – mute sound

Alt-Up – increase volume

Alt-Down – decrease volume

Alt-Shift-Right arrow – seek forward

Alt-Shigt-Left arrow – seek backward

Alt-End – go to next bookmark

Alt-Home go to previous bookmark

Microsoft's PowerPoint: "power user" preparation/writing short cuts

Alt – display keytips, then press the key(s) shown by what you want to do!

Formatting

- Control-B – bold font
- Control-I – Italic font
- Control-U – underline
- Control-N – normal font
- Control-T – open Font dialog
- Shift-F3 – change the case
- Control-Shift-F – change the font
- Control-Shift-P – change the font size
- Control-Shift-; – decrease the font size
- Control-Shift-: – increase the font size
  (On a US keyboard, use Control-Shift-<, Control-Shift- >)

- Control-E – center
- Control-L – left align
- Control-R – right align
- Control-J – justify

Editing

- Control-Z – undo
- Control-Y - redo
- Control-X – cut
- Control-V – paste
- Control-Shift-C – copy formatting only
- Control-Shift-V – paste formatting only
- Control-Alt-V – open paste special dialog
- Control-K – insert hyperlink
- Control-A – selected all
- Control-F – find
- Shift-F4 – repeat last find action
- Control-H – replace

File

- Control-S – save the file
- Control-D – duplicate slide
- Control-M – new slide
- Control-Shift-M – new slide like last one

Adobe Acroread: Why use it?

- You can include pages of material from any source that can generate PDF.

- All of the fonts can be included in the presentation – so you do not have to worry about missing fonts.

- Nearly every machine has a program (Adobe Acroread, evince, xpdf, …) that can show a PDF file – so you and your audience can access your presentation.

- Easy to print.

Adobe Acroread X: "power user" presentation short cuts

Control-L, F11 – full screen

Escape – end full screen mode

Control-Shift-N – opens dialog to go to a given page number

Control-K – opens Preferences dialog

Right arrow, Page Down, left mouse click – next page

Left arrow, Page Up, right mouse click – previous page

Home – go to first page

End – go to last page

Use Thumbnails to go to a particular page; or use Bookmarks

Control-F – open Find dialog box – so you can easil search for something during your presentation

Control-O – open File dialog

Control-D – open Document Properties dialog

Control-P – open Print dialog

Control-Y – open zoom dialog

Control-+ – zoom in

Control-- – zoom out

In the Preferences→Full Screen menu can set automatic page advance in seconds; with navigation buttons displayed on lower lefthand corner.

Adobe Acroread: "power user" preparation/writing short cuts

Opening the Pages tab, click on the thumnail image of a page and Control-Right Click select Page Transitions, then specify which type of page transition you want!

To add multimedia and buttons – see Michael Dakan, "Start the Show: Creating presentations with Acrobat 7.0 Professional", [Dakan2006]
http://www.cadalyst.com/aec/acrobat-insider-12-pdf-4617

Further information about adding buttons can be found in: John Deubert, Creating a Presentation With Acrobat 8, [Deubert2007]
http://www.graphics.com/modules.php?name=Sections&op=viewarticle&artid=491

LaTeX Beamer: "power user" preparation/writing short cuts

Create a PDF file for presentation with the LaTeX Beamer class

LaTeX Beamer class, web page, 2010-08-07,
https://bitbucket.org/rivanvx/beamer/wiki/Home

Making LaTeX Beamer Presentations, last accessed 2011.07.23,
http://happymutant.com/latex/misce/beamer.php

Presenting information with images

"A picture is worth a thousand words."

Pictures, graphs, flow charts, UML, state machines, … can convey an enormous amount of information if used well.

Consider "a wink" at a party

IguanaTex: Latex Add-In for PowerPoint

\documentclass{article}
\usepackage{amsmath}
\pagestyle{empty}
\begin{document}

\begin{equation*}
D(u,v) = \begin{pmatrix}
1 & 0 & -u & u \cr 0 & 1& -v & v \cr
u & v & 1 - \frac{(u^2 + v^2)}{2} &
\frac{(u^2 + v²)}{2} \cr u & v &
- \frac{(u^2 + v^2)}{2} & 1
+ \frac{(u^2 + v^2)}{2}
\end{pmatrix}.
\end{equation*}

\end{document}

$$D(u,v) = \begin{pmatrix} 1 & 0 & -u & u \\ 0 & 1 & -v & v \\ u & v & 1-\frac{(u^2+v^2)}{2} & \frac{(u^2+v)}{2} \\ u & v & -\frac{(u^2+v^2)}{2} & 1+\frac{(u^2+v^2)}{2} \end{pmatrix} \cdot$$

You can get it from
http://www.technion.ac.il/~zvikabh/software/iguanatex/

Edward Tufte's books

Examples of how to present information well and even beautifully:

- Beautiful Evidence [Tufte2006]
- The Visual Display of Quantitative Information [Tufte2001]
- Visual Explanations: Images and Quantities, Evidence and Narrative [Tufte1997]
- Envisioning Information [Tufte2008]

http://www.edwardtufte.com/tufte/index

PowerPoint

As with any tool, there are those who like it and those who do not.

For the later see:

- Steven J. Bell, "End PowerPoint Dependencies Now!" [Bell2004]
- Edward R. Tufte, *The Cognitive Style of PowerPoint: Pitching Out Corrupts Within* [Tufte2006cs]

Steven J. Bell's suggestions

"Go live or simulate it" – take advantage of wireless broadband connections to connect to the source during your talk

+ give a demo $\Rightarrow$ more dynamic

- Things might not work $\Rightarrow$ you look like an idiot and waste a lot of people's time

If you have to use PowerPoint, then:

- Use the minimum number of slides (~10 per hour)

- Avoid overused templates

- Do **not** handout copies of the slides beforehand, least people focus on them versus what you are saying

Shyam Pillai's LiveWeb (http://skp.mvps.org/liveweb.htm)

Inserts web pages into a PowerPoint presentation - with the pages updated in realtime
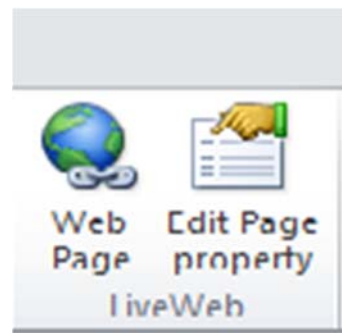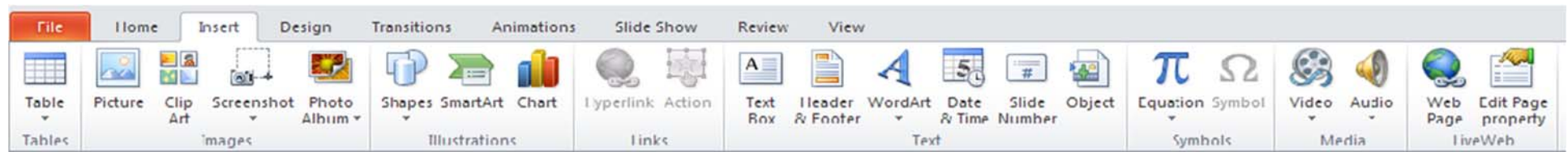
Making better presentations

Ron Galloway, 'Rethinking Powerpoint : Conversations about Slide Design and Presenting' [Galloway2010] – DVD and ebook

Nancy Duarte, *slide:ology: The Art and Science of Creating Great Presentations* [Duarte2008] see also http://www.duarte.com/book/slideology/

Posters

Poster presentations

- A chance to talk to one or a small number of people while standing at your poster or for your poster to be viewed by others without you.
- typically A0 (841 by 1,189 millimetres (33.1 × 46.8 inches) in size – this is 1 m^2
  - Posters may also have different sizes, such as B1 (700 x 1000 mm), so check the requirements of your meeting to see which size and orientation you should use.
- Title, authors, affiliations, abstract, body (Introduction, Materials and Methods, Results, Conclusions), and references.
- Body includes pictures, plots, tables, …
- Poster may also have logos – be sure to check the rules of your organization if you use logos.

Further pointers regarding posters

- LiLynn Graves, Scientific Poster Design: How to keep your poster from resembling an "abstract painting", Cornell Center For Materials Research, Cornell University, Ithaca, NY, 8 March 2012 http://www.cns.cornell.edu/documents/ScientificPosters.pdf
- MAKESIGNS.COM® Poster Tutorial, Graphicsland, Inc. Accessed 2013.07.05, http://www.makesigns.com/tutorials/
- Colin B. Purrington, Designing conference posters, Retrieved 2013.07.05, from http://colinpurrington.com/tips/academic/posterdesign
- …

KTH poster templates and rules (when you work with a faculty member or other KTH employee):

https://intra.kth.se/en/administration/kommunikation/mallar/postermall-1.460843

Read, then edit, revise, and/or re-write

Unless you are Wolfgang Amadeus Motzart or George Gamow, you probably need to repeatedly read and edit, revise, and/or re-write your document

Get feedback from others, then use it!

The more constrained(in page limits, presentation time, poster requirements, etc.) your paper/presentation is, the longer it will take to produce a high quality paper/talk/poster.

Conclusions

- Be your own best critic – reflect on your own writing and speaking to identify what you did well and did not do well $\Rightarrow$ learn from your experience.

- Learn from others – be open to constructive criticism

- Help others to improve (Pay it forward!)

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¿Questions?