R-ladies RMarkdown

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Introduction to Markup languages

WYSIWYG vs Markup:"What You See Is What You Get"

Workflow

- write
- select parts of text and apply format
- visually check layout and structure

Examples

- LibreOffice / OpenOffice
- Microsoft Word
- Google Docs
- Adobe Indesign (mostly)

WYSIWYG vs Markup: Annotated text

Workflow

- write text with annotations
- check syntax
- check visual

Examples

- HTML
- LaTeX
- Markdown

Markdown

"`[website](daringfireball.net/[...])`"

The goal of *lighweight Markup Languages* is to have text that is still **easy to read**, but that can be transformed to different outputs, for example:

- PDF
- HTML
- WYSIWYG documents:
  - Word
  - LibreOffice

It can be written in any text editor!

Markdown syntax

See BasicMDSyntax.md and relative outputs in pdf and .docx.

- headers
- emphasis (**bold**, *italics*)
- lists
- links
- images
- tables

Workflow

1. you:
   - edit Markdown file in text editor
   - save file
   - tell pandoc to generate a pdf
2. computer:
   - Markdown –{pandoc(filter)}–> LaTeX
   - LaTeX –{pdflatex}–> pdf
3. you:
   - look at pdf file

Pandoc

- written by John MacFarlane (philosopher)
- *general markup converter*
- download from http://pandoc.org
- part of RStudio
- converts document structure, not layout
- also converts to output only formats (pdf, docx. . .)

Pandoc - additional features

- settings in YAML[1] header
  - title, author, date
  - template
  - bibliography formatting

```
---
title: R-ladies Rmarkdown
author: Ilaria Torre
tags: markup, markdown, R, talk
bibliography: MyBibliography.bib
---
```

[1] Yet Another Markup Language

Bibliography

- BibTeX
  - references from all big publishers (Springer, Elsevier, Science. . .) + Scholar
  - export from Mendeley
  - easy management in JabRef

References in MD file

See References.md and its outputs

Bibliography setup in text file

- bibliography in same path as MD file
- add YAML header

```
---
...
bibliography: MyBibliography.bib
---
```

References

Torre, Ilaria, and Frank Loesche. 2016. "Overcoming Impasses in Conversations: A Creative Business." *Creativity. Theories – Research - Applications* 3 (2): 244–60. doi:10.1515/ctra-2016-0016.

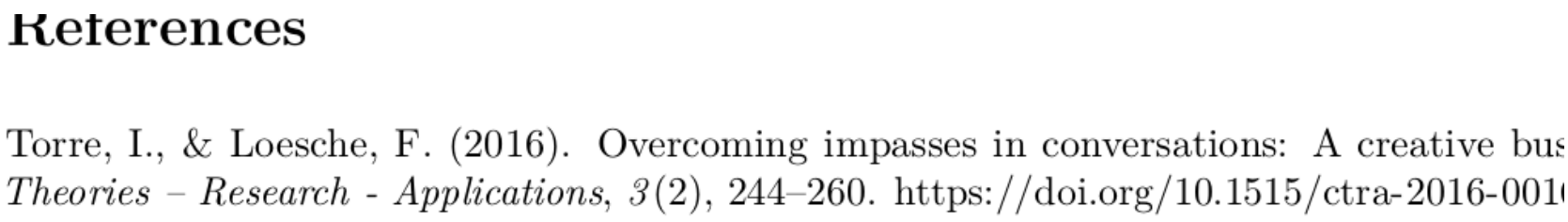
Figure 1: citation

Change Reference style

- download required style in Citation Style Language (CSL)
- more than 8000 at http://citationstyles.org + https://github.com/citation-style-language...

APA

```
...
bibliography: MyBibliography.bib
csl: apa.csl
---
```


References

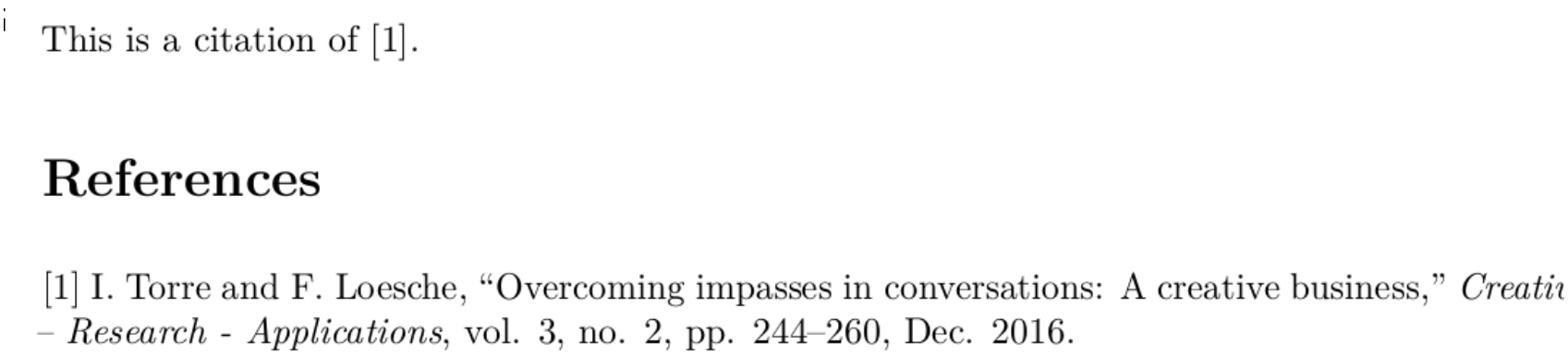
Torre, I., & Loesche, F. (2016). Overcoming impasses in conversations: A creative bus
Theories – Research - Applications, *3*(2), 244–260. https://doi.org/10.1515/ctra-2016-001

Figure 2: citation

- internal: filter pandoc-citeproc
- `bibliography` and `csl` are configured through YAML

IEEE

```
...
bibliography: MyBibliography.bib
csl: ieee.csl
---
```



This is a citation of [1].

References

[1] I. Torre and F. Loesche, "Overcoming impasses in conversations: A creative business," *Creati*
– *Research - Applications*, vol. 3, no. 2, pp. 244–260, Dec. 2016.

Figure 3: citation

RMarkdown - finally!

Markdown vs. RMarkdown

- another layer to the flow: knitr
- Rmd –{R(knitr)}–> Markdown –{pandoc}–> ...

See BasicRMD.rmd

RMarkdown Notebook

- Literate Programming
- mix code and text
- compiler creates output format
- code blocks can run separately (fast turnaround)

From “raw” text to beautiful pdf

The “quick’n’dirty” way:

1. Download LaTex template from journal
2. Export MD/RMD text to .tex
3. Copy all .tex document and paste into template[2]
4. Compile pdf document in perfect format

[2]Note: you will probably need to change some of the parameters in the journal template before it works out. Here Google will be your best friend!

Why bother?

- best possible layout for every medium
  - use screen fonts (sans serif) for editor
  - eye friendly contrast
  - print optimized fonts (serif) for print outs
  - different format for different audiences (docx, pdf, epub)
- accessibility
  - only text files
  - no clash between Word 2016, Word 2003, OpenOffice...
- literate programming
  - reproducible research (replicability crisis)
  - (quantitative) data analysis and description in one document
  - figures in same document
  - no copy&paste errors

Links

The most recent links are in the README.