

Qualitative Research Using Open Tools

Beth M. Duckles, bduckles@gmail.com, [@bduckles](https://twitter.com/bduckles)
Vicky Steeves, victoriaisteeves@gmail.com, [@VickySteeves](https://twitter.com/VickySteeves)

csv,conf,v4

What is Qualitative Data Analysis (QDA)?

The systematic collection, organization and interpretation of unstructured data (e.g. interview transcripts, public documents, focus groups, open-ended survey questions)

After a close reading of the qualitative data, researchers will assign “codes” or themes to relevant quotes and/or sections of video/audio/images.

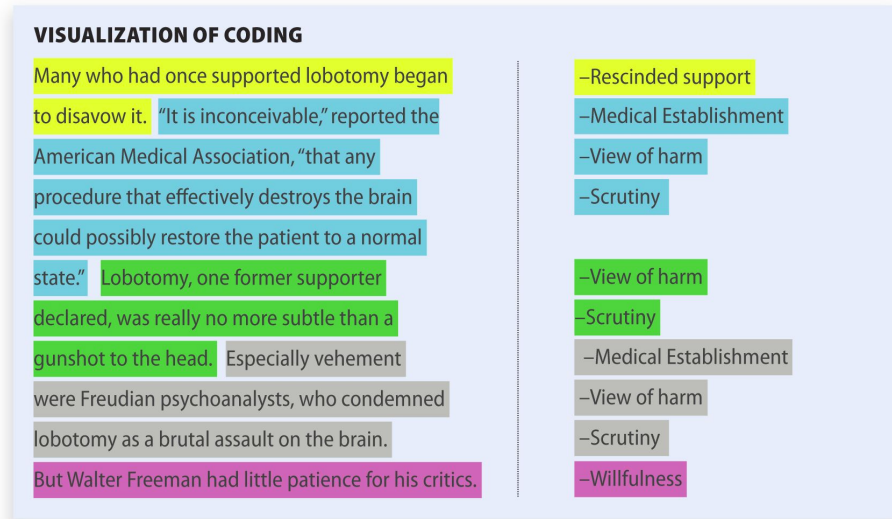


Figure 1 illustrates how color can be used to differentiate between sentences that have been coded.

What qualitative research is *not*

Anything *automatic* is not qual. Qual = deep engagement

- Word counts/clouds (e.g. Voyant)
- Machine learning e.g. text mining, keyword extraction, sentiment analysis
- Artificial Intelligence e.g. predictive learning
- Mixed methods
 - Qual is *one part* of mixed methods (think square <> rectangle)

Why qualitative methods?

Used by a wide range of fields, such as anthropology, education, nursing, information science, psychology, sociology, history, and user experience (UX) /marketing.

Qualitative data is varied: observations, interview or focus group transcripts, public or archival documents, memos, jottings, media (newspapers, magazines, tweets), visuals and more.

Why qualitative methods?

Qualitative methods can generate rich, detailed data that leave cultural contexts and individuals' perspectives intact allowing for deeper understanding of phenomenon.

Answers questions that quantitative studies cannot.

Helps researchers understand the "why".

How QDA works



Collect data
Organize
Gather
documents
and source
materials



Coding
Assigning
concepts to parts
of source material



Patterns
Articulating
connections,
relationships,
patterns



Analysis
Create
theoretical
frameworks that
match data

QDA Tools Comparison

Software	Platforms	Cost	Feature Set
NVIVO	Windows, Mac	\$1,399	Coding, Aggregation, Query, Visualisation, Stats
MaxQDA	Windows, Mac	\$635	Coding, Aggregation, Query, Visualisation, Stats
Atlas.TI	Windows, Mac	\$1,290	Coding, Aggregation, Query, Visualisation
Qualcoder	Linux, Windows (beta)	Free	Coding, Aggregation, Query
<i>Qcoder (R)</i>	<i>All OS's</i>	<i>Free</i>	<i>Coding, Aggregation, Query; access to R pkgs</i>
<i>Taguette</i>	<i>All OS's & browser</i>	<i>Free</i>	<i>Coding, Aggregation, Query</i>

Why FLOSS QDA Tools?

- **Equity:** Under-resourced disciplines, research topics and geographic areas often do not have the resources to support paying for these tools.
 - Default to analog methods or spreadsheets.
 - Makes analysis unavailable to other researchers.
- **Lock in:** Export options vary across paid platforms. This can lock researchers into a platform with no alternatives.

Why FLOSS QDA Tools?

- **Complexity:** Many paid QDA packages have a lot of extras and add-on's that overwhelm newcomers
 - Basic functionality of qualitative textual coding is often all that's needed.
- **Standardization:** Emerging initiatives to create codebook/project standards.
 - Open codebooks make it easier to share and build on existing research.

The Challenges for FLOSS QDA packages

Technology

- Researcher collaboration/intercoder reliability
- Version control and track changes

Culture

- Data privacy concerns (both with their own + open data)
- GUIs, training and easy setup

Open Initiatives in Qual

Past FLOSS QDA initiatives (now defunct):

RQDA (2016), KH Coder (2015), Coding Analysis Toolkit (CAT) (2010)

Qualitative Data Repository: new & safe publishing of qual data run out of Syracuse University

- Annotation for Transparent Inquiry initiative “facilitates transparency in qualitative research by allowing scholars to ‘annotate’ specific passages in an article.” w/ links to data!

A note on the Rotterdam Exchange Format Initiative

Huge collab to develop open formats to encourage interoperability in qual tools!

Projects

Implementation table

The QDA-XML Project Exchange Standard is available for use as detailed in the table below.

Software	Directly involved in developing Project Exchange	Available
ATLAS.ti Mac	Yes	Yes
ATLAS.ti Windows	Yes	Yes
Dedoose	No	May 2019
f4analyse	Yes	May 2019
MAXQDA	No	July 2019
NVivo Mac	Yes	June 2019
NVivo Windows	Yes	Yes
QDA Miner Windows	Yes	Yes
Quirkos	Yes	Yes
Transana Mac	Yes	May 2019
Transana Windows	Yes	May 2019

Codebooks

Software	Directly involved in developing codebook exchange	Tested by coordination group	Implemented
ATLAS.ti Mac	Yes	Yes	Yes
ATLAS.ti Windows	Yes	No	Yes
Dedoose	No	No	Yes
f4analyse Linux	Yes	No	Yes
f4analyse Mac	Yes	Yes	Yes
f4 analyse Windows	Yes	No	Yes
HyperRESEARCH Mac	No	No	Yes
HyperRESEARCH Windows	No	No	Yes
MAXQDA Mac	No	Yes	Yes
MAXQDA Windows	No	No	Yes
NVivo Mac	Yes	Yes	Yes
NVivo Windows	Yes	No	Yes
QDA Miner Windows	Yes	Yes	Yes
Quirkos Linux	Yes	No	Yes
Quirkos Mac	Yes	No	Yes
Quirkos Windows	Yes	Yes	Yes
Transana Mac	Yes	No	Yes
Transana Windows	Yes	Yes	Yes

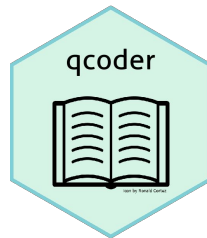
Qual needs more equitable access to software!

The software options for qualitative researchers are far too expensive.

The basic ability to perform qualitative analysis of textual data should be easily available in a GUI.

It's not right or fair that qualitative researchers without massive research funds cannot afford the basic software to do their research.

One approach....qcoder



A team at the rOpenSci Unconference developed a prototype. Still in development.

Goal was a lightweight, open source, textual qualitative data coding package.

Wanted to be able to link qual research with existing R quantitative packages.

- Text mining and sentiment analysis



rOpenSci Unconf

May 21 - 22 2018 • Seattle • WA



Dan Sholler
rOpenSci, UC
Berkeley



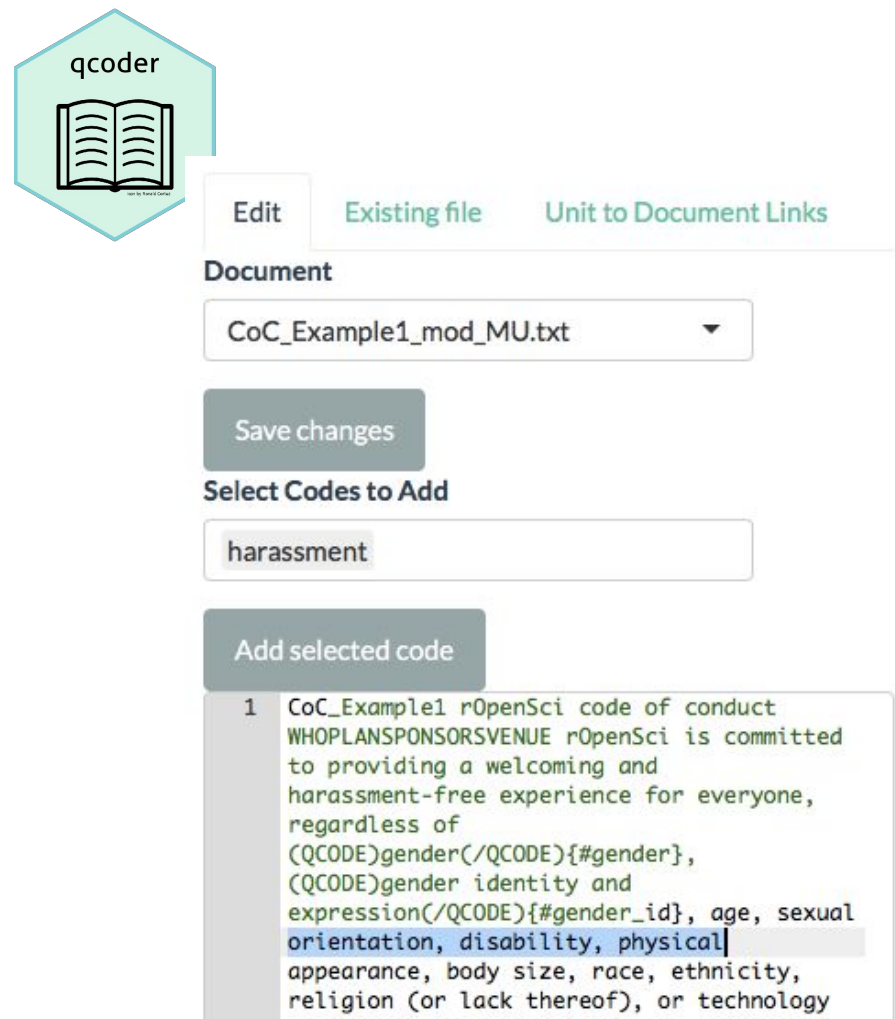
Elin Waring
Lehman College,
CUNY

qcoder

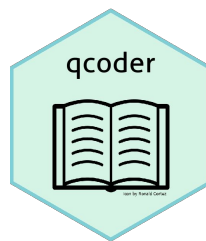
Uses RStudio and Shiny to create an interactive front end interface for users to code textual data.

Supports .doc, .docx, .txt files.

Data remains local.



Coding



Qcoder

Select your project folder

```
[1] "/Users/elinwaring/Code/my_qcoder_project"
```

Select Folder

Add codes to text
data

Codes

Coded data

Units

Summary

code_id	code	code.description
1	harassment	define or describes harassing behavior
2	person_talk	naming a specific person to talk to if there are violations
3	gender	mentions gender
4	gender_id	mentions gender identity or expression
5	consequences	Detailing what happens if someone violates the

Add codes to text data

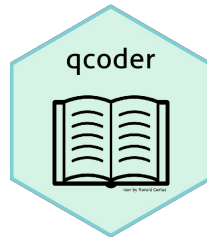
Codes

Add Code

Coded data

doc	qcode	text
1	gender	gender
1	gender_id	gender identity and expression
1	twitter	consequences
1	twitter	consequences
1	harassment	Harassment includes, but is not limited to: deliberate intimidation; stalking; unwanted photography or recording; sustained or willful disruption of talks or other events; inappropriate physical contact; use of sexual or discriminatory imagery, comments, or jokes; and unwelcome sexual attention.
1	stefanie	person_talk
1	stefanie	person_talk
1	consequences	If any attendee engages in harassing behavior, the conference organizers may take any lawful action we deem appropriate, including but not limited to warning the offender or asking the offender to leave the conference.
2	gender	gender
2	gender_id	gender identity and expression

Next for qcoder



Challenges:

- Requires knowledge of R and of the Rstudio interface.
- Not easy to collaborate yet.
- Need to support more file types.

GitHub under rOpenSciLabs <https://github.com/ropenscilabs/qcoder>

We are looking for collaborators and funds for development. Also working with CS students to further develop the package this summer.

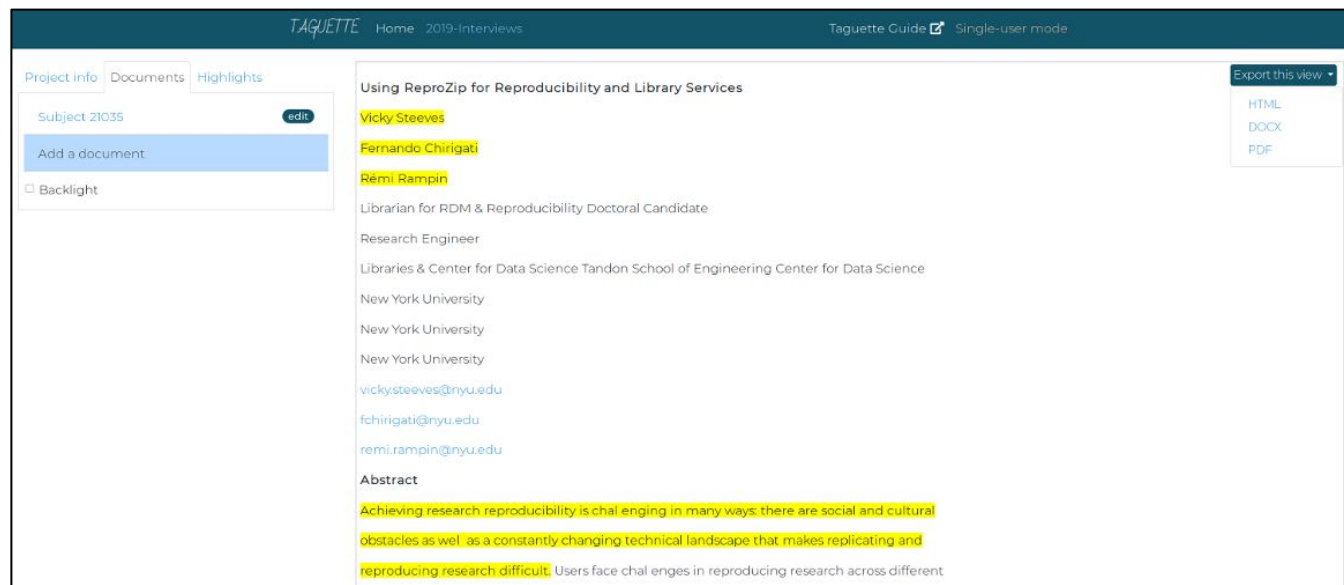
Another approach...TAGUETTE



- Like "baguette" but with a "t" -- a play on the phrase "tag it!"
- You can install Taguette:
 - Locally on your desktop/laptop, no matter the operating system!
 - On a server for collaborative work (e.g. by University IT, a data security center...oneself!)
- You can also use Taguette for free on our server: app.taguette.org
- The development of Taguette takes place 100% openly on GitLab: gitlab.com/remram44/taguette

Features of *TAGUETTE*

- Import PDFs, Word docs, Text files (.txt), HTML, EPUB, MOBI, Open Documents (.odt), and Rich Text Files (.rtf).
- Highlight & tag text
- Backlight!
- Export options for every view in the tool, including your codebook/dictionary
- Group work including adding users with varying permissions and real-time collaboration*



*when installed on server or app.taguette.org

Technical approach to building *TAGUETTE*

- Multi-platform desktop application for individual use (single-user mode)
- Installable on a server for collaborations in real-time!
- Built using Python 3 and Calibre, the FLOSS e-book manager
 - Calibre is used to convert uploaded materials to HTML
 - wv library for old .doc files
- All data is stored in SQLITE database by default, can be changed to other DBs as folks want

Remi Rampin > taguette > Issues

Open 35 Closed 57 All 92

Search or filter results...

exported files - where are the tags? -

#93 · opened 1 day ago by Julia W-waiting-on-author

Can't remove oneself from a project

#92 · opened 3 days ago by Vicky Steeves 1.0 Basic version A-pre-exists C-backend T-enhancement

Add FAQ

#90 · opened 6 days ago by Remi Rampin C-website T-task

Show list of tags when hovering highlight

#89 · opened 6 days ago by Remi Rampin 1.0 Basic version C-javascript&frontend T-enhancement

Ability to filter highlights from multiple tag selection

#88 · opened 6 days ago by JAP T-enhancement W-waiting-on-author

user-based annotation for group shared projects

#87 · opened 1 week ago by Julia A-question C-backend C-javascript&frontend T-enhancement

Add short cuts / keyboard control

#86 · opened 2 weeks ago by hauschke1 C-javascript&frontend T-enhancement

Umlaut encoding does not work in PDF and DOCX export

#85 · opened 2 weeks ago by hauschke1 C-backend T-bug W-waiting-on-author

Adopt qdasoftware.org XML exchange formats?

#84 · opened 4 weeks ago by Remi Rampin 1.0 Basic version A-question C-backend

Show tags next to each highlight in document view

#80 · opened 1 month ago by Remi Rampin 1.0 Basic version A-question C-javascript&frontend T-enhancement

Community outreach & support for *TAGUETTE*

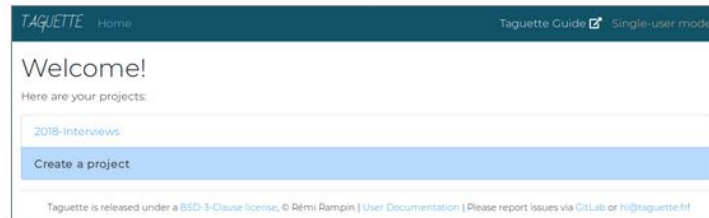
- Detailed documentation with images explicitly showing all features/capabilities
 - taguette.org/getting-started.html
- Open educational materials and presentations for Taguette on the Open Science Framework
 - osf.io/xdszm/
- Inbox where we triage with users directly (if not on GitLab)
 - hi@taguette.org
- Twitter for announcements + help:
 - [@TaguetteProject](https://twitter.com/TaguetteProject)

Getting started with *TAGUETTE*

▶ Start it up!

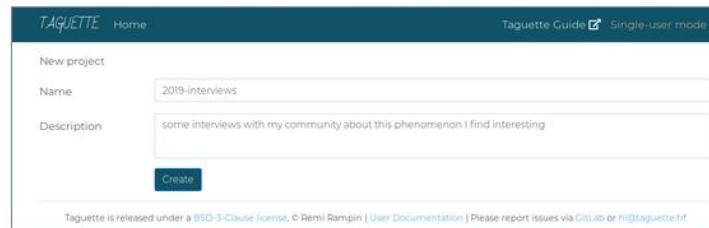
If you are working on <https://app.taguette.org>, after you log-in you should see a welcome page where you can create a new project similar to the screenshot below (just 'account' where you see 'single-user mode').

If you've downloaded and installed Taguette on your computer, you should be able to double-click on the Taguette icon and start it up! You'll see the command line will pop up and be running. This is ok! Don't worry about the terminal but do leave it running. If you exit the terminal, Taguette will stop. Taguette should automatically pop up in your web browser, but if for some reason it doesn't, navigate to **localhost:7465** to begin working on your projects! It should look something like this:



➦ Creating a new project

You will see a page that greets you as the admin and has a button to **Create a project**. Click that button and you'll be prompted to enter a Title and Description for your new project. This can be changed later on if you want.



Upon clicking **Create**, you'll be taken to the **Project View**, which has a left and a right pane. The left pane contains the information about your project information ('Project Info'), uploaded materials ('Documents'), and tags ('Highlights') as tabs. You can go between these tabs as you like. The right pane will render documents and will be the area where you'll do the highlighting and tagging.

Multilingual support & supporting scholars abroad

- Sarah DeMott presented *Taguette* to social science scholars in Vietnam and Syria, and next Algeria!
 - Users in these sessions were able to upload their own materials and get started right away! In any language! For free!

Project infoDocumentsHighlights

Arabic

edit

Add a document

☐ Backlight

هذه نبت

و ، عيسر فلاو ةيزلكنلاو ةيسرافلاو ةيكرتلاك ، ةريثك برخأ تاغل

يف ترثأو ةبيرعلا ةغللا ترثأت

بلغ تاغللا كلت بو عشو برعلا نيب رشابملا ريغو رشابملا كاختلاو لعافتلا ةجيتن اهتادرفم نم ريثكلاب تاغللا

ايملع ةبيرعلا ةغللا ريثأت عجارت ، رشع نمائلا نرقلا رخاوأ ، ابوروأ يف ةيعانصلا ةضهنلا ءدب ذنمو . روصعلا رم

ددع نم ريثكب ريكأ ةبيرعلا ةغل ا بلا ةدراولا ةينحلا تاحلطصملاو تادرفملا ددع حبصاو ، حصاو لكشب "ايفاقنو

نم ، موبلا ةثيدحلا تا عرتخملا ءامسأ مظعمف . برخأ تاغل بلا اهمم جرخت يتلا ةبيرعلا تاحلطصملاو تادرفملا

عورفلا تش يف ةينقتو ةبملع تاحلطصمو نداعمو ةبويحو ةيناميكت تابكرممو ةيعارزو ةبيط ةبودأو تلاأو تاودأ

بلا (لوملا) نم "ءدب ، لاوحلا نسحاً يف "ايظفل ةبرعم وأ ، ةينجأ اهعيمج نوكت داكل ، تاصاصتخلاو

[new highlight]

Questions? Thank you!

Summary:

1. Qualitative research has traditionally been pencil-and-paper or dominated by super locked-down, super expensive proprietary software
2. As such, only elite institutions can access QDA software
3. This is not fair!!!
4. Qual researchers need FLOSS; and we are trying to fix that gap

Read more and try out our tools!

- ❖ Qcoder: github.com/ropenscilabs/qcoder
- ❖ Taguette: taguette.org

Get in Touch!

- ★ hi@taguette.org && [@TaguetteProject](https://twitter.com/TaguetteProject)
- ★ victoriaisteeves@gmail.com && [@VickySteeves](https://twitter.com/VickySteeves)
- ★ bduckles@gmail.com && [@bduckles](https://twitter.com/bduckles)