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Computer Assisted Qualitative Data Analysis

NVivo, MAXQDA, Atlas.ti, QDAMiner,
HyperResearch

Graham R Gibbs, University of Huddersfield

Origins

- Text analysis
 - General Inquirer (content analysis)
- Word processors and desktop computers 1984 onwards
- Dedicated programs - Code-and-retrieve
 - The Ethnograph
 - Hypersoft

Code-and-retrieve

- Coding - mark text with code
- Code list (coding frame)
- Retrieve - show all text coded the same way.
- Some complex retrievals - text coded with two codes.

Current best selling programs

- NVivo (Windows, Mac in beta)
- Atlas.ti (Windows, iOS, Android, Mac in beta)
- MAXQDA (Windows, Mac, iOS, Android)
- HyperRESEARCH (Windows, Mac)
- QDAminer (Windows)
- But still small companies cf. Microsoft.
 - NVivo sold 500,000, vs Millions for Office



QSR NVivo

- Developed by Lyn and Tom Richards in Australia.



- Started as NUD.IST in 1980s. Now NVivo v. 10.
- Published by QSR
- <http://www.qsrinternational.com/default.aspx>

Sample Project.nvp - NVivo

Media

File Home Create External Data Analyze Query Explore Layout View Media

Transcript Home Create External Data Analyze Query Explore Layout View Media

Video Player Fit To Player Split Panes Stop Play / Pause Playback

Start Selection Select Media from Transcript Transcript Rows

Finish Selection Assign Timespan to Rows Media Content

Play Transcript Media Assign Frame as Thumbnail Selection Import

Sources

- Internals
 - Area and Township
 - Aerial
 - Area and Township Info
 - GIS output
 - Interviews
 - News Articles
 - Project Administration
 - Social Media
 - Survey
- Externals
- Memos
- Framework Matrices

Look for: Search In Interviews Find Now Clear Advanced Find

Interviews

Name	Nodes	References	Created On	Created By	Modified On	Modified By
Barbara	41	186	27/05/2010 12:03	WWS	21/07/2010 21:32	WWS
Betty and Paul	15	49	27/05/2010 04:49	WWS	27/09/2010 01:58	WWS
Charles	32	134	27/05/2010 12:03	WWS	26/08/2010 05:18	WWS
Dorothy	34	123	27/05/2010 12:03	WWS	26/08/2010 05:18	WWS
Helen	16	59	17/04/2010 03:59	WWS	22/07/2010 14:49	WWS
Ken	19	57	27/05/2010 04:36	WWS	22/07/2010 14:49	WWS

Person Place Twitter User Memorable quotes Charles Ken

Click to edit

0:00.0 0:10.0 0:20.0 0:30.0 0:40.0 0:50.0 1:00.0 1:10.0 1:20.0 1:30.0 1:40.0

	Timespan	Content	Speaker
1	0:00.1 - 0:02.9	What are your favorite places?	Henry
2	0:02.9 - 0:13.3	Down East? I'd say [Cedar Island] of course. That's where I always grew up, and that's where I live at. That...	Ken
3	0:13.3 - 0:15.3	Home	Henry
4	0:15.3 - 0:17.2	Home. It's my home. I've been here all my life.	Ken
5	0:17.2 - 0:23.9	This area...this particular spot in particular? This is a nice spot. It'd be easy to see...	Henry

In Nodes Code At

GRG 14 Items Linked Nodes: 19 References: 57 Read-Only Unfiltered 0:05.4/1:42.2 1:42.2

NVivo video

- <http://youtu.be/oeIXFnJ-7Ms>

NVivo info

- Most common in UK
- Many universities have site licence
- It's all in there, somewhere
- But can take a lot of clicks
- Some don't like restricted view of coding stripes
- Has hierarchical coding

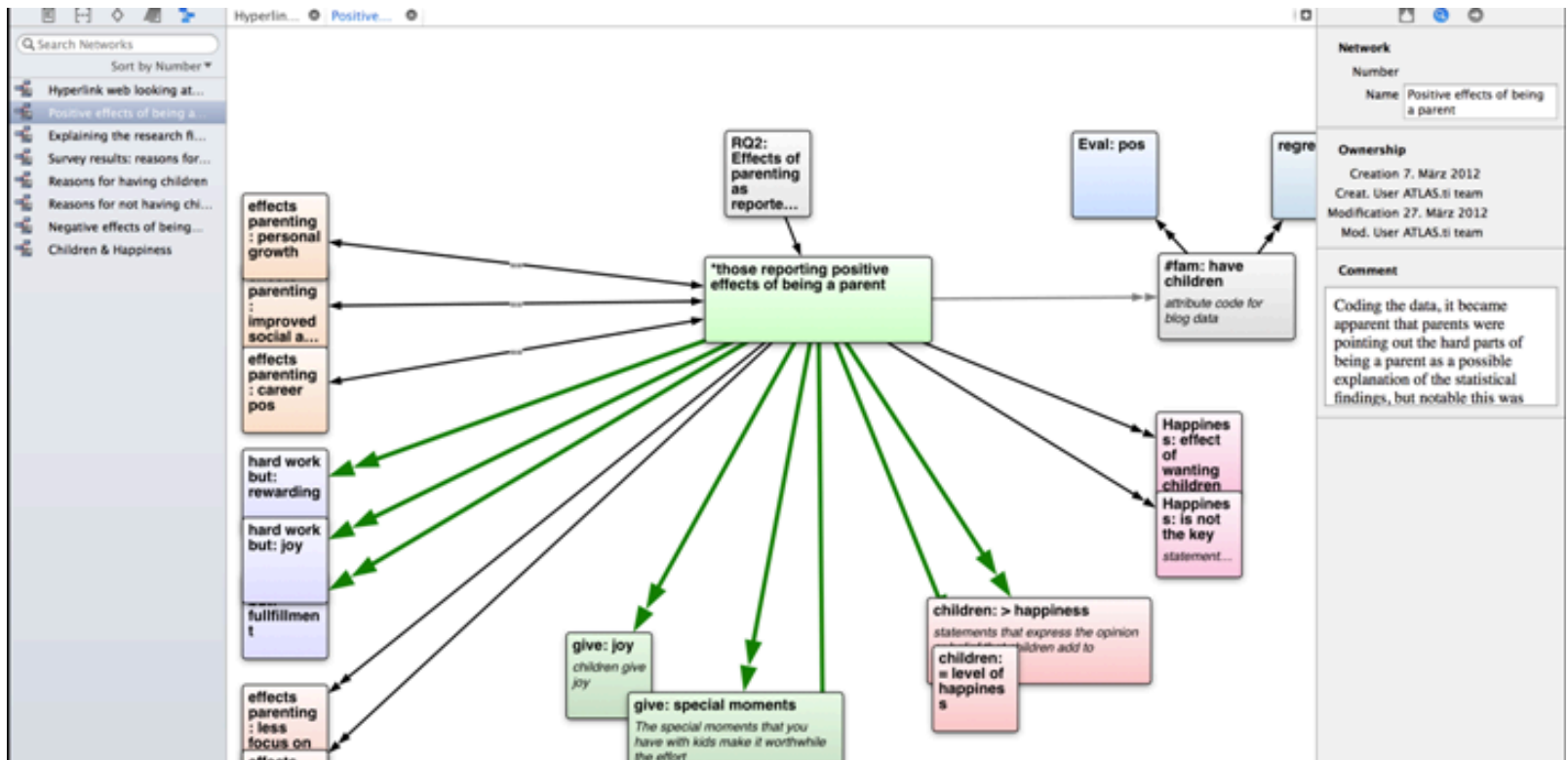
Atlas.ti

- German developer
- English version
- Thomas Muhr



- Scientific Software Development GmbH
- <http://www.atlasti.com/index.html>

Atlas.ti



Atlas.ti info

- First to include diagrams/charts
- Well integrated with data and coding
- Constant view of coding brackets
- Query tool can be extended with GREP.
- No code hierarchy

MAXQDA

- German company
- English version
- Udo Kuckartz



- VERBI GmbH
- <http://www.maxqda.com/>

MAXQDA

The screenshot displays the MAXQDA 11 software interface, which is used for qualitative data analysis. The main window shows a document titled "Life Satisfaction.mxf" with a "Document Browser" pane on the left. This pane lists various documents and their sizes, including "New York" (318), "Teresa" (5), "Joanna" (27), "Jon" (40), "Kim" (11), "Milly" (1), "Mary" (38), "George" (42), "Vincent" (39), "Indiana" (79), "Websites & Literature" (0), "Sukkanen 2011" (0), "OECD 2009" (0), "Spector 1997" (0), "WorldValuesSurvey" (0), "Video" (4), "Interview" (4), "Images" (4), "LifeSatisfaction EU 197..." (0), "Twitter Analysis" (12), and "02.04.2013 - Analysis ..." (5). The "Code Systems" pane on the left shows a hierarchical structure of codes, including "Challenges", "Day-to-Day Issues", "Emotions" (with sub-codes for Sadness, Happiness, Success, and Failure), "Education", "Interests", "Money and Financial Issues", "Religion and Spirituality", "Significantly Positive", "Interview Guide Topics", "Key Quotes", "People", and "Video Interview".

The main text area displays a document snippet with the following content:

griffriend. There are many people seeing people for different reasons. I see it with different aspects. I need to feel that I'm not wasting my time with the certain person. I cannot really explain this, so, I'm stopping here.

SECTION 2 - WORD TO STORY PROMPTS...

FAILURE:
As a 18 year old, I really haven't faced many failures. Except school or academic wise. I'm not saying everything in my life is a success either. I just don't think I had a major failure in my life. School wise, I felt it at my high school graduation. As I was sitting at my seat waiting for my name to be called, I tried to think about what I have done in the past four years. I realized I haven't really done much, and also that I could have done more. Thought about all the little mistakes, I've done, and laughed at them. Nothing so far I have done really made me feel like a failure and I hope that I don't get to feel that. I know that it is impossible, to live life with nothing sour. I think though, people should stop referring it to failure. It's a mistake, and people can cover, or recover from them. As Oprah said, "failure is god's way of saying, "excuse me, you need to turnaround".

SUCCESS:
I guess that I made it to college. I think everyone's life is a success. Without the real events that made you feel like you have succeeded. But knowing you

The "Retrieved Segments" pane at the bottom shows a list of segments with their corresponding text:

- New York - Joanna - 34-34: Happiness does not remind me of one event. It makes me think of my life. Even though there are bad times, overall I am very happy with the way I turned out as a human being, and I like were my life is headed.
- New York - Joanna - 36-36: Sadness reminds me of the death of my grandmother (Dec. 90') and my grandfather (June 96'). Their deaths effected my life greatly. They were like my second parents. These two times were definetely the worst times of my life

MAXQDA

- Best user interface
- Strong on mixed methods research
- Four pane display easy to see data
- Always visible coding brackets
- Hierarchical codes

Getting help

- CAQDAS Networking project, U. Surrey
 - <http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/>
 - JiscMail discussion list (QUAL-SOFTWARE@JISCMAIL.AC.UK)
 - Instructions for advanced uses

- Online QDA <http://onlineqda.hud.ac.uk/index.php>
 - For info on basic qualitative data analysis (& Graham Gibbs YouTube Channel <https://www.youtube.com/user/GrahamRGibbs>)
 - Links to software websites and tutorials

- Software websites
 - Tutorials (also on YouTube)
 - Help system (also from the program)
 - Discussion lists (answered by staff)

Books

- Lewins, A. and C. Silver (2007). *Using Software in Qualitative Research: A Step-by-Step Guide*. 2ND Ed. London, Sage. (New ed. Out soon)
- Bazeley, P. & Jackson, K. (2013). *Qualitative Data Analysis with NVivo*. London, Sage.
- Friese, S. (2012) *Qualitative Data Analysis with Atlas.ti*. London, Sage.
- Kuckartz, U. (2014) *Qualitative Text Analysis*. London, Sage.
- Gibbs, G. R. (2007) *Analysing Qualitative Data*. London, Sage.

Getting started

Sources Document types

Can add:

- Word documents (.doc, .docx) and editable
- RTF files (.rtf) and editable
- PDF files (.pdf)
- Audio files (.mp3, .wav)
- Movie files (.wmv, .mp4)
- Web pages (as pdf via NCapture in IE or Chrome)
- Survey data (spreadsheet format)
- Social media (Facebook, Twitter in NVivo)

Set up a project

- Called Hermenutic Unit in Atlas.ti
- NVivo keeps sources in one file
- MAXQDA, Atlas.ti keeps sources external
- Video files best kept external

What CAQDAS can do

- ▣ Coding
- ▣ Retrievals
- ▣ Queries
- ▣ Memos
- ▣ Search (text and codes)
- ▣ Charts
- ▣ Link with quants data
- ▣ Textual analysis tools
- ▣ Relations
- ▣ Literature review
- ▣ GIS

Variable data

- Also called attributes
- Attached to cases (normally = people)
- E.g. occupation, gender, age, birth town
- i.e. categorical data or measurements
- Sort out cases

Analysis

Types of Qualitative analysis

- Ethnography
- Analytic Induction
- Content analysis.
- Thematic analysis
- Grounded Theory
- Phenomenology
- Narrative and biography
- Conversation analysis
- Discourse analysis

Induction vs. Deduction

- **Induction** - theories and explanations derived from the data. Data led
- **Deduction** - theories and explanations derived from theories and then tested against the data. Theory led.
- Most qualitative analysis approaches are inductive (e.g. Grounded Theory, Analytic induction).
- But we can also test theories against our data.
- Software supports both approaches

Thematic Coding

- ▣ Grounded Theory (Glaser and Strauss + Corbin + Charmaz)
- ▣ Interpretative Phenomenological Analysis (Jonathon Smith)
- ▣ Template analysis (Nigel King)
- ▣ Framework analysis (Ritchie and Lewis)

- ▣ All are types of thematic analysis.

Coding in NVivo, Atlas.ti, MAXQDA

- Select text, then
 - Drag and drop
 - Fast coding bar (NVivo only, with menu of nodes)
 - Menu and dialog box (can code at multiple codes)
- Drag across time-line to select in audio & video
- Drag an area to select in images
- Select a cell in survey data

Coding supports 2 forms of analysis

- ▣ Retrieval
- ▣ Using the coding frame

1. Retrieval

- Retrieve all the text coded with the same label = all passages about the same phenomenon, idea, explanation or activity - Literally cut and paste
- Used envelopes/files - Now done using software – retrieval very fast.
- Enables cross case comparison on same theme.

2. Using the coding frame

- Use the list of codes to examine further kinds of analytic questions, e.g.
 - relationships between the codes (and the text they code)
 - grouping cases
- Hierarchical codes in NVivo and MAXQDA, Coding families in Atlas.ti

Coding hierarchy

▣ Codes can be arranged in a hierarchy

e.g. with these codes from a study of friendship

- ▣ Close, generalised friendships
- ▣ Sporting friendships
- ▣ Sports club members
- ▣ Work friends
- ▣ Making new friends - same sex
- ▣ Making new friends - different sex
- ▣ Losing touch with friends
- ▣ Becoming sexual relationships

Example code hierarchy

□ Friendship types

- Close, generalized
- Sporting
 - Club
 - Non-club
- Work

□ Changes in Friendship

- Making new friends
 - New same sex friends
 - New different sex friends
- Losing touch
- Becoming sexual relationships

Memos

- Theorizing and commenting about codes as you go along
- Notes to yourself

“... the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding... it can be a sentence, a paragraph or a few pages... it exhausts the analyst’s momentary ideation based on data with perhaps a little conceptual elaboration.”

- Glaser, B.G. (1978) *Theoretical Sensitivity: Advances in the methodology of grounded theory*. Mill Valley CA: Sociology Press.

An Example Memo

Word of mouth was mentioned by Harry as important for him in searching for work. Several other respondents talked about this as a method they have used. Two thoughts occur to me.

- To what extent is this a separate method of looking for work, tapping into a network outside the formal one of job centres, agencies etc. or does it overlap? E.g. is some of the word of mouth information about the formal job finding agencies?
- Does it refer to a specific kind of network - mates and relatives finding work for those looking for it, or is it simply a passing on of information that could have been found by those looking in newspapers ads etc?

Above all it raises issues about networking as a way of finding work. Is this an important method? Is it effective? Is it more important in certain areas of work than others? (e.g. in manual work.) Do those with wider social networks have more success in finding work this way?

Graham Gibbs Friday, April 28, 2000

Descriptive vs Analytic/theoretical

□ Descriptive

- Just what the people said
- What happened
- Their terms

□ Analytic

- Use social science theory
- Groups codes together
- Use terms the respondents don't or wouldn't

Example of coding

BARRY

Well, the only thing that we've really given up is - well we used to go dancing. Well she can't do it now so I have to go on my own, that's the only thing really. And then we used to go indoor bowling at the sports centre. But of course, that's gone by the board now. So we don't go there. But I manage to get her down to works club, just down the road on the occasional Saturdays, to the dances. She'll sit and listen to the music, like, stay a couple of hours and then she's had enough. And then, if it's a nice weekend I take her out in the car.

'Dancing', 'Indoor bowling', 'Dances at works club',
'Drive together' **Descriptive codes**

'Joint activities ceased', 'Joint activities continuing' **Categories**

'Loss of physical co-ordination', 'Togetherness',
'Doing for', 'Resignation', 'Core activity' **Analytic codes**

Example showing coding marks

