Lecture 38
Software and Qualitative Research

Welcome back to the NOC course title qualitative research methods, my name is Aradhna Malik and I am helping you with this course, we discussed various things, various aspects of qualitative research, today we have something very interesting for you and today we are going to discuss software in qualitative research and disclaimer upfront I am not going to you know take you through the different software's, I will show you few very few examples but I request you to listen very, very carefully.

And I am telling you about this homework now and I'm going to ask you to do it at the end also I would like you to go through the descriptions of various types of various categories of software's and go to the Internet and find out what the latest, what kind of software or find examples for the software that is used these days currently for this particular categories of activities in qualitative research and that will enrich everybody's understanding a lot more and then I promise you I will add these examples to the slides and then put them up again.

So that is my request please take the descriptions, take these categories and I will remind you about this as we go through the lecture, so that is your homework that is going to be the output of this discussion, so we are going to talk about how computers can help with qualitative research okay.

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Software
&
Qualitative Research

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Minihistory of use of computers in qualitative research (Weitzman, 2000)

- Traditionally,
  - Field notes and interviews – Typed & photocopied
  - Coding –
    - Marking notes with markers or pencils,
    - cutting & pasting the marked segments on to file cards,
    - sorting & shuffling cards
  - Analyses
- Early 1980s:
  - QUALOG

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Software in qualitative research a little bit of the history, this is again, this is from a paper by Weitzman in the handbook of qualitative research methods, edited by the Denzin and Lincoln and I've taken some points from there and I have added some myself. Now Weitzman calls this minihistory of the use of computers in qualitative research and he says that traditionally the computers were used for various activities in qualitative research.

Field notes and interviews were typed and photocopied, so computers was used as typewriters, computers and of course photocopy machine is not a computer, I mean you can't do any computer, but it is definitely the use of technology in qualitative research, then computers were also used for you know and then traditionally field notes in interviews were typed, physically typed and photo copied.

And traditionally the coding was done by marking notes with markers or pencil, so the field worker would go out and then into the field and get the notes and make notes of whatever was observed in the field and mark these notes with markers, or pencils or pens and then these notes would be cut and pasted or these marks segments would be cut and pasted on to file cards and then the shuffle the cards would be sorted and shuffled and then the analysis would be conducted.

Now in the 19th early 1980's a software called QUALOG came into existence, I tried to look for an example of this on the Internet but I was unable to find it, if you are able to find it I request you to please post a link for the software on our forum and that will help all of us get a sense of what it was like, I just read description of it.

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Now again the uses of this are listed here in the early 1980's we have QUALOG which "Emphasises Dewey's induction process. Many relationships are built in to this QUALOG. User formulates queries about codes, such as an if-then query. Replies are confirming and disconfirming instances and it has very unappealing interface and uses LogLisp." Now this is from the SRU webpage of Surrey University.

The other software that was used was the ethnograph, now the ethnograph is currently available and I will just show you this is very interesting, I, it took me about an hour to download it onto my office computer, but I cannot show it to you here it's not available in a

studio, so but you can always go to this website and if you want to try it out the current version is available.

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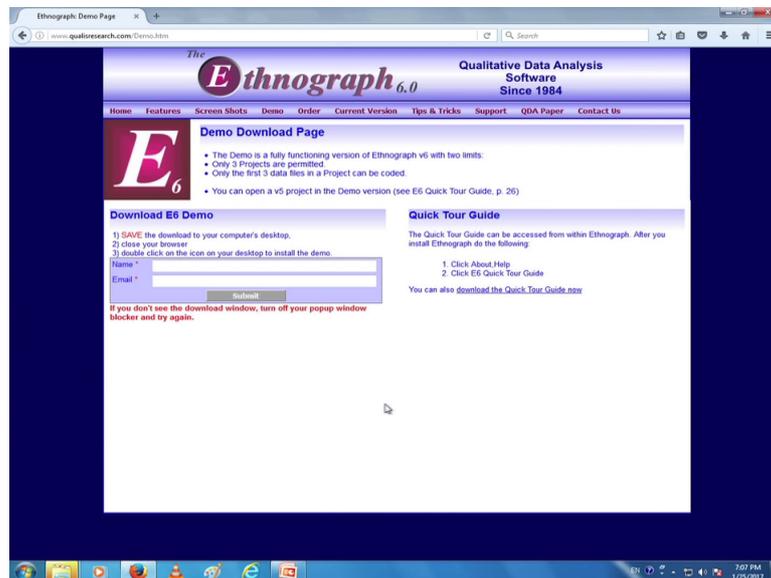
So you can go to this ethnograph is still being used and it's here very interesting, so you can download the ethnograph over here, then you can find out more information about the ethnograph, which helps with coding and compiling data, so the ethnograph can be used to enter data that can be coded and compiled for an output, but I request you to do this on your own and we can suitably modify or add to this lecture after you have done.

So I want you to try out all this things, before we talk more coming in I am trying to simulate this lecture into as close to a real life session as possible, if you had been sitting in front of me while I was recording this I would have asked you to do it for homework, bring it back and we could have discussed it face to face, but this will be added after the class has been taught and after the responses to this have been pasted, okay.

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Minihistory ... (Contd.) (Weitzman, 2000)

- Early 1980s (Contd.):
  - NUDIST (Non-numerical Unstructured Data Indexing, Searching and Theorizing) (Richards & Richards, 1991):
    - "The document system provides for processing and maintenance of the on-line and off-line textual or other documents which form the basic data of the qualitative research project (that's the "NUD" part).
    - A hierarchical indexing system for the documents, which includes a database of indexing data (references to text units in documents), and facilities to create, modify and inspect that database (that's the 'I' part).
    - The analysis system, the most significant part of NUDIST (the "ST" part), is a set of facilities for manipulating the indexing database in various ways in processes of category creation designed to help the researcher define and explore research ideas, find text relevant to complex ideas, pursue wild hunches in all directions, keep the fruitful ones, and formulate and test hypotheses."

Now in the early 1980's the other very important software that was used was the non numerical unstructured data indexing searching and theorizing, you know short form is NUDIST software was used, now the document system provides for, it was, it had three parts to it the first part is the document system in this the document system and I'm reading it directly from the description.

The document system provides for processing and maintenance of the online and offline textual or other documents which form the basic data of the qualitative research project that is the NUD the non numerical unstructured data path. Hierarchical indexing system is a second part of it which is there for the documents, which includes a database of indexing data so that includes references to text units and documents and facilities to create modify and inspect the database that is T part, which is the theorizing part.

The analysis system the most significant part of the NUDIST, ST part which is the searching and theorizing part, so is a set of facilities for manipulating the indexing database in various ways and processes of category creation, designed to help the researcher define and explore research ideas, find text relevant to complex ideas, pursue wild hunches in all directions, keep the fruitful ones and formulate and test hypotheses.

Now I was unable again to find the link to this, through a regular search on the Internet but if any of you have the patience have the time and have access to this I request you to please put it up. Now this is the historical you know historically what was used and if you are able to find it, this is what was taught, when I was in college, but it's no longer available on the

Internet, but if you find a link to it, at least I couldn't find it, if you can find it please let us know and we will share that with everybody okay.

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What is being used these days, this was also develop some time back, Computer-aided-qualitative-data analysis software, or it's also called as computer assisted qualitative data analysis software, for example there are various now, let me show you this is also another very, very interesting set of resources that I was able to find regarding the CAQDAS and here let me just open another link okay.


There's introduction to computer assisted qualitative data analysis is a term introduced by Fielding and Lee in 1991 that refers to the wide range of software now available that supports the variety of analytics styles in qualitative work and many of these programs have been under development, many of these programs have evolved over time and the details are given

on this website, so this is there the other one again there's some more information about this on the website of the University of Illinois at Urbana-Champaign.

And you can also find this information here and maybe we can have our own website that lists you know that can be your homework, that can be a team project that comes out of this whole discussion, that comes out of this whole class and we can have our own little website with all of these different software's that are being used, to you not to support qualitative research.

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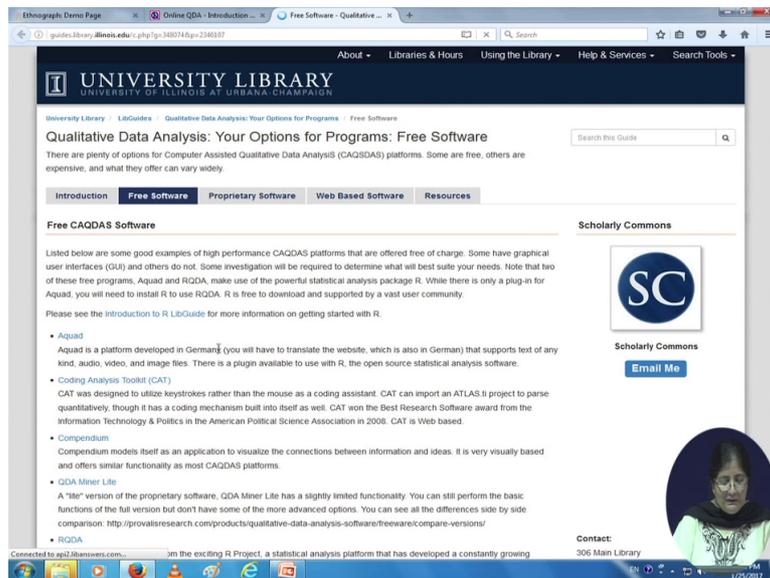
So this is another one this is the University of Illinois at Urbana-Champaign and this is their website and you know some a list of free CAQDAS software is given, Aquad, coding analysis tool kit(CAT), compendium, QDA minor Lite, RQDA, Weft QDA, now the R project, the other one you know the R program analysis quantitative data but then it can also be used to quantitatively analyze data that can be used to supplement the qualitative. The data analyzed through for the purposes of qualitative research, so in variety of methods are available.

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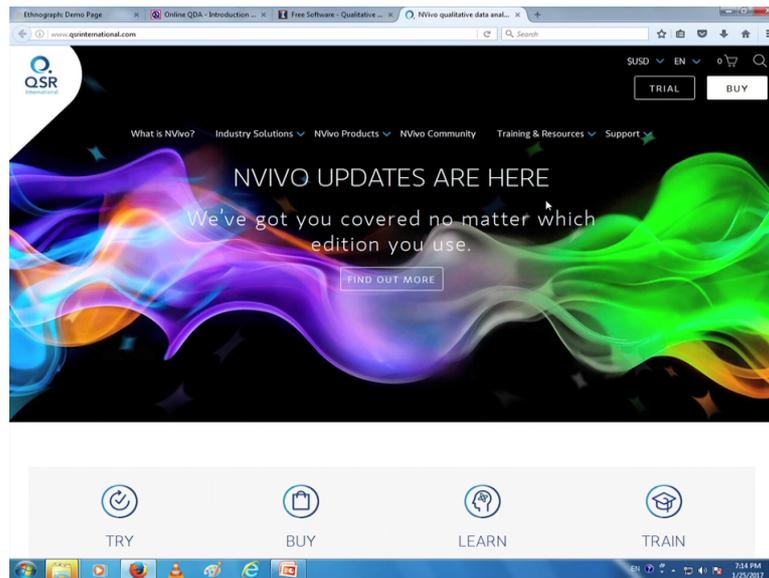
The software that is he being used these days is NVivo is one very important one that is being used, it can be you know the details are available at this, I think the trial version is available, so you can probably download a trial version to see what it looks like, if you're really interested in qualitative research, I suggest that you try out all these software's and find something new also and share with everybody.

And we were qualitative data analysis software, so well the computer is connecting to this, I will share you know there is this Atlas.ti which is there, okay and you go so you can actually find, learn, Train, free trial is available, so you can actually download this and tried and see the output that it produces. The other one is Atlas.ti again the free trial version is available on the Internet and there are some more tools that have been listed that I thought would help you.

So you can actually go to these while this loads I will put in this also here is a free trial version of Atlas.ti qualitative data analytics, various programs have come up and you know the best part is the emergence of these different software's clearly indicates the increasing importance of qualitative research in today's day and age. The fact that so many programs have come up, so many programs are being used, by so many different people you know about qualitative researchers is very, very important in the legal research.

Qualitative research is extremely helpful in Medical Research, were initially in Medical Research and legal research depended largely on case study research, in every case was analyzed to see what it would reveal, it's not like you know a large population of people, who

are you know we can't really observing behaviors of a large population of people for to see how their emotions are affected by the environment and its not like that.

It's like a case-by-case basis, how do you know what is normal recovery, say for a cancer patient, how do you know what is the normal procedure for say interviewing, or a for having a I am out words for in the court of law for interviewing or to find out what a criminal or a murderer has done, so what is the normal procedure? How should you do it? What is the most appropriate way of interrogating criminal or a person who has committed murder? not many cases are there like that.

Or what is the most appropriate way of interrogative an abuser, a child abuser for example, these are very specific cases, so legal research is again dependent on analysis of auto largely upon the analysis of qualitative data to an extent and this is really helpful, so you know various fields' qualitative research is becoming more and more important.

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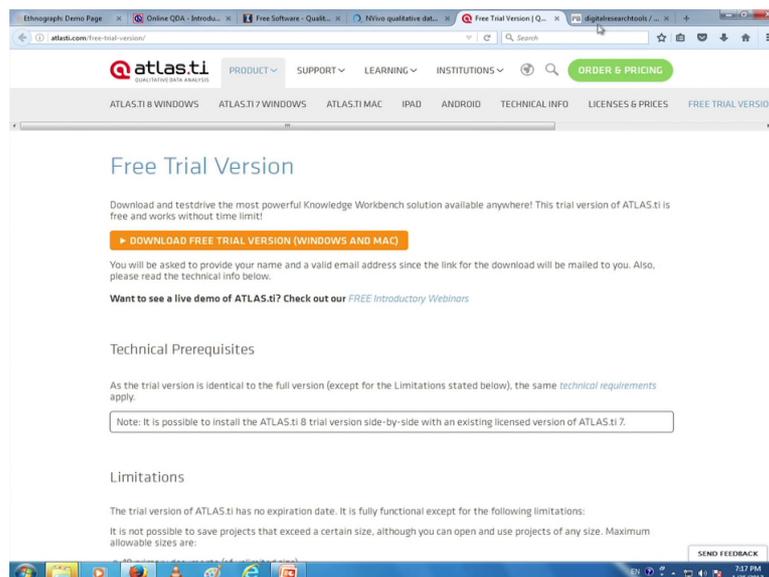
So all the software's are there, this is the other one that I wanted to show you, Digital research tools Wiki is there, so lot of tools are listed here very, very helpful you can go through this entire list, they talk about AnSWR, ANTHROPAC Atlas.ti, CDC EZ-text, C-I-Said, Coding Analysis Toolkit(CAT) is very very helpful.

Event Structure Analysis, HyperResearch, Kwalitan and LIWC, etc, I won't you know, this is a Wiki that lists a lot of qualitative research tools. So you can pick out different ones and add them to your repertoire depending on what you find helpful, very, very exciting stuff.

Now, What Software can help with, Software can help make notes in the field. Software also, so you can record things and they can be transcribed, software can help you bullet point everything, it can help you identify the themes, it can help you write up or transcribe field notes, voice to text software can help you transcribe notes, you can speak into machine and the computer can write as you speak, very helpful.

Editing: correcting, extending or revising field notes. Coding oh my God! So many possibilities exist for coding attaching keywords or tags segments of texts, graphics, audio, or video to permit later retrieval asset, etc.,. Storage: keeping the text in an organized database in a manner that you can retrieve whatever you need, at the click of a button. Storage and retrieval: locating relevant segments of text and making them available for inspection, when you need them.

Data linking: Connecting relevant data segments to each other, forming categories, clusters or networks of Information, and Memoing: writing reflective commentaries on some aspect of the data theory, or method as a basis for deeper analysis. You read the text, you through the text, you code the text, you tag it, you mark them and then you have an idea oh my God!
This is what is emerging for the software also allows for you to make notes, to write down on the side or you know at the base what you want to do with it, how you want to deal with it in future, so that's very, very helpful okay.

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What software can help with (Contd.)
(Weitzman, 2000)

- "Content analysis: Counting frequencies, sequences, or locations of words & phrases
- Data display: Placing selected or reduced data in a condenses, organized format, such as a matrix or network, for inspection
- Conclusion drawing & verification: Aiding in the interpretation of displayed data & the testing or confirmation of findings
- Theory building: Developing systematic, conceptually coherent explanations of findings, testing hypotheses
- Graphic mapping: Creating diagrams that depict findings or theories
- Report writing: Interim & final"

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Software can also help you with Content analysis: counting frequencies, sequences or location the words and phrases. Data display: placing selected or reduced data and condenses in a condensed am sorry this word should be condensed, organized format such as a matrix or network, for inspection. Conclusion drawing and verification, Theory building, Graphic mapping: creating diagrams that depict findings or theories, Report writing, all of these things can be done with the help of software.

Now my request to you is what I asked you to do right in the beginning, please find appropriate software for each of these activities, let's see what you come up with, examples of software list them on the discussion forum, let's get discussion started, if you have, if I simulated enough interest in qualitative research methods, I am hoping to build a large database or a large list, let's not use the word database, really large comprehensive list of software's available for each of these activities.

Let's see what we come up with, collectively you know as I saw today you know there is a large number of registrations for this and we are recording this even before the course has been launched, I'm hoping some more people will get interested and so you know between the over thousand people that have registered, maybe we can come up with a very comprehensive list of software that everybody can use, that will be very helpful, okay, great.

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False hopes and fears (Weitzman, 2000)
- The text can be 'dumped' into a program, which will generate an output that will need to be interpreted.
- The program can build theory

Response:
Developments in Artificial Intelligence may be able to take care of the above some time in future, but the above, even if available in some rudimentary form, need to be supported by personal inputs of the researcher/ expert.

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False hopes and fears, now what do we do, what we use software is very helpful, is great fantastic, but there's always a 'but'. The text you know we feel as researchers, the minute we say software, one hope is that will take this large body of text and just dump it to the machine, we will take this large body of text and just throw it into computer and into a program, which will generate and output that will need to be interpreted.

We also hope that the program can build theory, so that's a hope, that's also of fear, should we be depending so heavily on computers to do these things for us. Response to this is, development in artificial intelligence may be able to take care of the above, a hundred percent sometime in the future.

But the above, even if available in some rudimentary form needs to be supported by, need to be supplemented by personal inputs of the researcher or expert. So that is the response to this hope and fear, there's a hope there's also fear, should we depend so much, should be let the computer do all the work for us, where do we stand we do that.

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Real Hopes: realistically we can hope the computer to give us a consistent output, in terms of search for terms, in terms of location of specific terms, in terms of relationships between terms, etc.,. The speed: computers definitely help us to think faster. Representation: software that provides a graphic map of relationships among codes, can text segments, or cases can help researchers to visualize and extended thinking about the data or theory at hand.

Computer helps you draw all these different links, so when we talk about representation, once we gone through the data sifted through it, return it up, and computer does the linking for it helps see everything visually in the form of a map in front of us and that stimulates for the thinking for the deliberation and further analysis, so it makes our jobs easier.

Consolidation: consolidation of field notes, interviews, codes, annotations, reflective, remarks it should be remarks I am sorry for the spelling mistake, reflective, remarks, diagrams, audio and structural maps of the data and theory of these are the real hope, this is what a computer can really do for us.

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Real Fears, "the ease of searching keywords and autocoding them may encourage the researcher to stick shortcuts." It so easy I put the data in the system and then my work is finished, the computer does everything, so we take shortcuts, big deal I don't even have to worry about how this was done, that can significantly undermine, the human input and that can also or that can significantly reduce the richness that comes with human inputs and that can lead to false conclusions okay.

"There is a possibility that the use of computers may attempt qualitative researchers into quick and dirty research with its attendant danger of premature theoretical closure", so we want to, the computers doing everything for us, so we don't even go beyond, what the computer has given us, we say okay computers done it, it's perfect.

So we might closed the research prematurely, we might say okay whatever the computer has given us is perfect and we might not really venture into the complexities of theory building, which may not be appropriate.
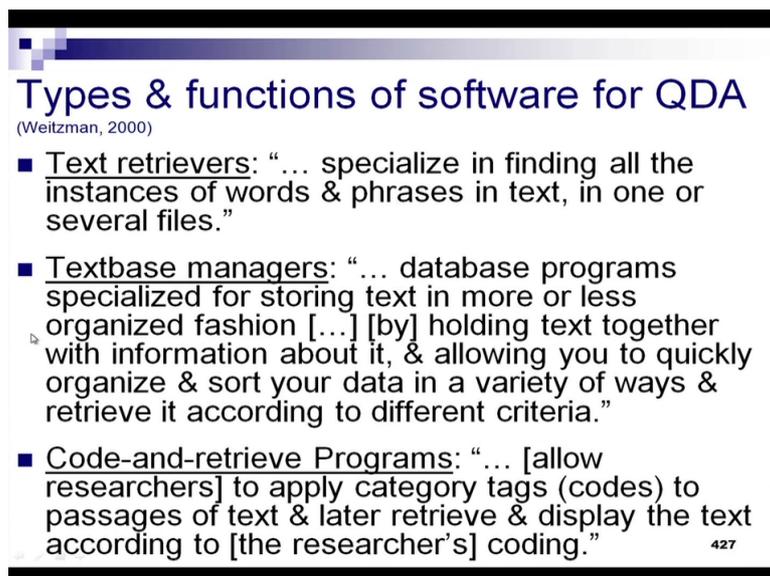
"The availability of software may tempt researchers to skip over the process of learning properly about research." Obviously if you don't do things by hand, you don't know how to do them and this is reflected again through a tangential example, how many of us are actually calculating without a calculator, how many of us accounting things adding, subtracting them without a calculator, how many of them, how many of us are using spell check on our machines.

I am old school that way I prefer to write things accurately, so I try not to edit my documents too much, I try not to depend on autocorrect, I don't have the auto correct option on my computer, the reason for that is that it keeps me on the right track and likely to forget the right correct spelling, correct grammar, if I let the computer do all the work, so that is not right, you know we should you know, it's nice to depend on the computer, but it is also important for us as researchers to know how and why the computer arrived at the decisions.

Why should we let somebody else's thinking govern, what we are trying to analyze, if we depend on our own supercomputer, we learn how things are being done, the chances of us coming up with something brand new, something unique, contributing to the body of knowledge by coming up with really unique idea, by finding something very, very unique are high.

When we go, when we dwell into the analysis process on our own, when we try and understand how these analyses were arrived at, when we do things by hand, we take the time and make the effort to do that, we are you know that stimulates of brain so much that we able to see a lot of things that the computer, this machine, very good machines, but still a machine limited in its capacity, cannot do. So the capacity of this supercomputer our brains, is much, much more than this machine, so we should know how to do things by hand okay.

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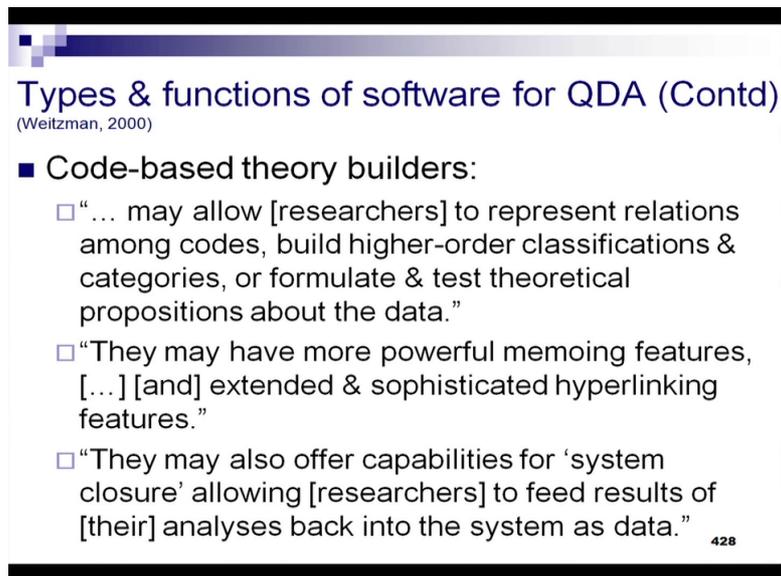

Types and functions of software for qualitative data analysis: the first category again for this, I would like you to find out, different examples for each of these categories of qualitative data analysis softwares, please find out you know examples of Text retrievers, Textbase managers

etcetera and let's create a long list for that. Text retrievers are programs that "specialize in finding all the instances of words and phrases in text in one or several files."

Textbase managers a "database program specialized for storing text in more or less organized fashion by holding text together with information about it, and allowing you to quickly organize and sort your data in a variety of ways and retrieve it according to different category criteria." Code and retrieve programs: are "allow researchers to apply category tags to passages of text and later retrieve and display the text according to the researchers coding."

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Code based theory builders: "may allow researchers to represent relations among codes, so you know its collecting information, its retrieving the text, then it is managing the database of text, it is coding and retrieving programs, then we have code based theory builders after the coding has been done and the codes have been applied.

The analyses have been retrieved, code base theory builders make this relationship, so they allow researchers to represent relations among codes, build higher order classification and categories or to formulate and test theoretical propositions about the data."

They may have more powerful Memoing features and extend the sophisticated and hyperlinking features." "They may also offer capabilities for system closure allowing researchers to feed results of their analysis back into the system as data" and generate more linkages and develop theories and models.

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Types & functions of software for QDA (Contd)
(Weitzman, 2000)

- Conceptual network builders:
  - "… are programs that emphasize the creation & analysis of network displays."
  - "Some of them are focused on allowing you to create network drawings: graphic representations of the relationships among concepts."
  - "Others are focused on the analysis of cognitive or semantic networks."
  - Combine graphical networks with the analytic work that is carried out with text & codes e.g. ATLAS.ti

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Conceptual network builders are what take whatever has been generated before and add to in terms of helping build theory, they "are the programs that emphasizes the creation and analysis of network displays." "Some of the more focused on allowing you to create network drawings; graphic representation of the relationships among concepts."

"Others are focused on the analysis of cognitive semantic networks." Combined graphical networks with the analytic, they also have the capability to combine graphical networks with the analytic work that is carried out with text and quotes for example Atlas.ti.

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Homework

- Find examples for each of the above and add them to the discussion in the Discussion Forum

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Now I told you about this homework again please find examples for each of the above and add them to the discussion in the discussion forum.

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How to make intelligent, individualized software choices, so you need to find out "what kind of computer user are you?" You need to find out about the level of complexity. So this will help you determine the level of complexity "are you choosing for one project or for the next few years?" So that will help you decide the speed of evolution of the programs used.
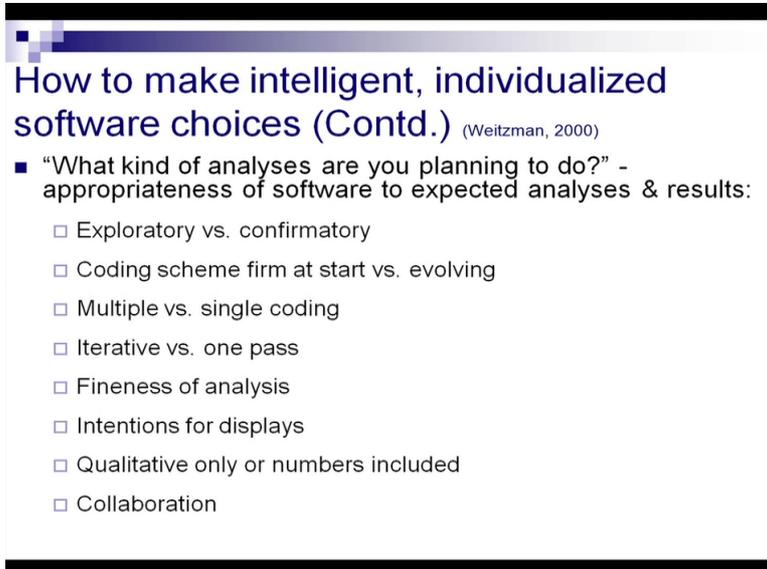
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Then "what kind of database and project will you be working on? So this will help you decide the appropriateness of software to expected data management: so it will help you decide the data sources per case, It will help you decide whether you want to you know analyze or it will depend on the data sources per case.

It will depend on whether you want to use the single or you know whether you want to analyze a single case on multiple cases, weather you have fixed record or you have records

that keep getting revised, that are evolving, that are dynamic, then whether your research is structured or open, whether you have uniform or diverse entries and the size of the database, so what kind of database are you dealing with.

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Then "what kind of analyses are you planning to do? What are you trying to get out of it? so this will help you determine the appropriateness of software to expect and analyses and results: is your research exploratory or confirmatory? Are trying to find out something new or validate or disconfirm something that has already been done. Is the coding system firm the start or is it firm at the start or is it evolving as you go along the collection of data.

Is it multiple coding or is a single coding, is it iterative, which means you go you know go back and keep revising it or is it one pass coding, then other sorry the research process the fineness of analysis is another one, intentions for displays, how do you intend to display the results of your research, qualitative only or numbers included.

Is it just the qualitative research on you want to add an eclectic sides do it, do you want to supplemented with data from quantitative analysis and collaboration with others who may be involved in this, how many going to have access to the database, etc., so all of that will be helpful.

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How to make intelligent, individualized software choices (Contd.) (Weitzman, 2000)

- "How important is it to you to maintain a sense of 'closeness' to your data?"
- "What are your financial constraints when buying software & the hardware it needs to run on?"

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"How important is it to you to maintain a sense of closeness to your data?" is another aspect of your choosing software. What are your financial constraints when buying Software and Hardware it needs to run on?" Okay.

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Debates in the field (Weitzman, 2000)

- Closeness to the data: Over-objectivity leading to lack of familiarity with data?
- Does software drive methodology?: Over-dependence on software is likely to limit the method that is used …
- Should new researchers start of doing analysis by hand?
- Does software really affect Rigor? Consistency? Thoroughness?

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Some debates in the field, one: is the Closeness to data, are we trying to be over objective, now when we try to be over objective, when we try to depend on the computer a hundred percent then that may lead to our lack of familiarity with the data, which is really not intended, we have decided we talked about the relationship between the researcher and researched and the impact that as on the output, right in the beginning, so that is one big debate.

The second debate here is: Does software drive methodology? Over-dependence on software is likely to limit the method that is used, so the method will determine how much or how little we can include and that is likely to limit what we find out. Should new researches start with not start of, start off the should be 'ff' here start off doing analyses by hand? For the reasons cited a little while ago.

Does software early affect Rigour? Consistency? Thoroughness? and that is another one and that is all we have time for in this class, do think about all these ideas, I think I've given you enough stimuli, enough food for thought in this class thank you very much for listening to me, we will talk more next the class.

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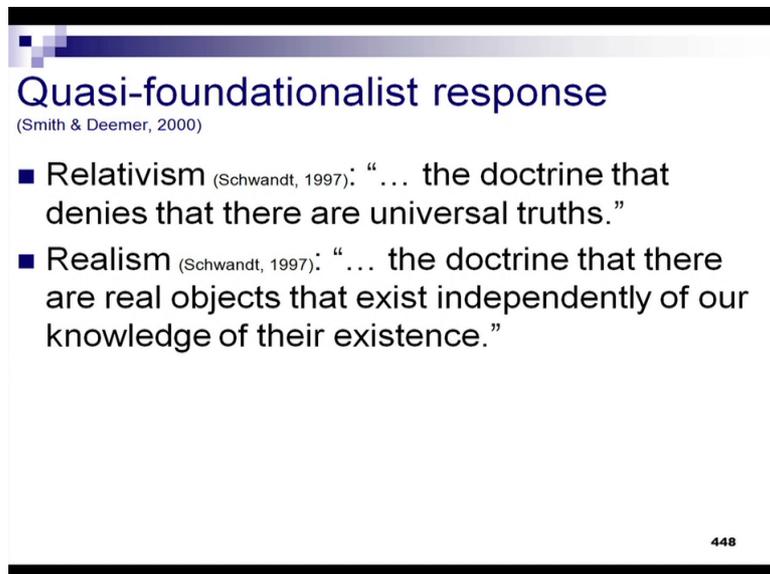
Quasi-foundationalist response to this is, you know there are two aspects to this response and that is relativism. Relativism is "the doctrine that denies that there are universal truths". And you know truths are rooted in context and contextually whatever exist is true that is relativism. Realism is "the doctrine that there are real objects that exist independently of our knowledge of their existence."

And a perfect example you know this means that just because we cannot see it, we cannot feel it, we don't know about its existence, it doesn't exist that is not true, that objects in outer space, in the depths of the ocean, in the core of the earth, that exist without us knowing them. We have yes, our telescopes you know have seen or have found the existence of extra terrestrial bodies like the black hole, like far of galaxies, like the objects found on other planets in our solar system.

But we don't know, just because we haven't seen it, it doesn't mean that it does not exist, there could be a number of new species of plants and animals in the depths of the ocean, there could be one never knows what one may find in the depths of the earth, so just because we have not seen it, we haven't touched, we haven't got there yet, it doesn't mean that it doesn't exist, so that is realism.

There are real objects that can exist without us knowing them and that means that everything we do doesn't have to be rooted in theory, theory is what came out in historically, but qualitative research says yes we do understand the need to connect to theory, but we also realize that in order to find out something new, we must keep our eyes and ears open.

We need to know you know we need to have the courage to and we need to take the risk to go out and find things that we may never have thought existed, okay.

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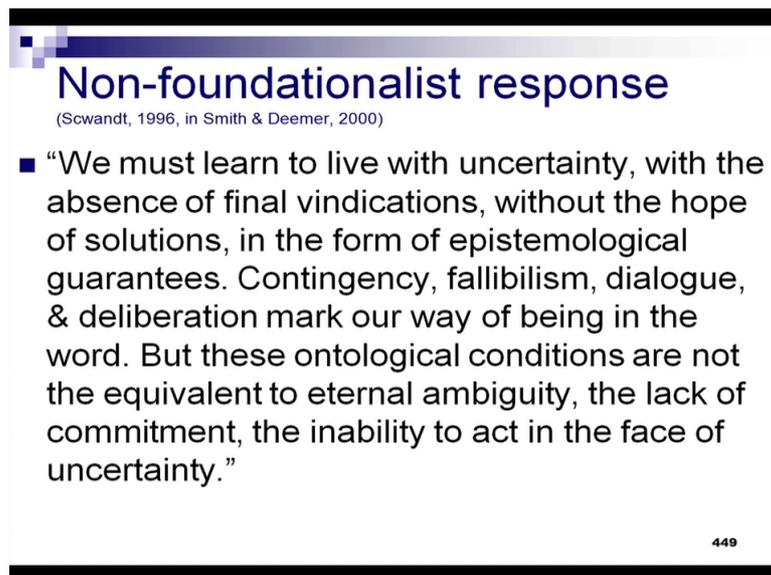
Then Non-foundationalist response to this is "we must learn to live with uncertainty, with the absence of final vindications, without hope of solutions, in the form of epistemological guarantees, contingency, fallibilism, dialogue, and deliberation mark our way of being in the world.

But these ontological conditions are not the equivalent to eternal ambiguity, the lack of commitment, inability to act in the face of uncertainty." And we need to accept that uncertainty exists and we cannot just let go of uncertainty.

The problem here is "making and defending judgments when there can be no appeal to foundations or to something outside of the social processes of knowledge construction." That is the main problem how can we find out what is out there, how can we describe something that is not rooted to what you already know, how what to we categorize it, what do we classify it as, you know what do we connect it to.

The responses that "is it the case that relieve it is it says that relativism is self refuting? When we say relativism? Are we you know contradicting what relativism proposes? "Does it matter that relativism is self refuting?" So what if you are contradicting ourself, so what, does it really matter, does that not open new avenues for research.

"To say that the judgments based on relativistic approach cannot be grounded extra-linguistically which means outside the realms, outside of our capacities to explain them, to describe them, in a language that we are using, does not mean or the language that we know does not mean that we are exempt from engaging in as open and unconstrained in as open and unconstrained dialogue as possible in order to attempt to justify your assessments."

So we need to develop a language, if there's no language to describe what we are finding out that does not connect to theory, we need to create a language for it, we need to create representations in terms of words, phrases, etcetera, to talk about it okay.

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Changing the conversation "a list of characteristics must be seen as always open ended, in part unarticulated, and even when a characteristic is more or less articulated, is always and ever subject to constant interpretation." We have these characteristics of criteria in qualitative research, so it must we must be open to changing them, we must be open to revise them in the light of what we are finding out through the course of research.

"The list of characteristics we bring to judgment are and can only be open-ended it in that we have the permanent capacity to add items to subtract items from the list." "The items on the list can never be the distillation of some abstracted epistemology, they must inevitably be rooted in one's standpoint or they must he was out of and reflect one's effective history. So they must be rooted in what we are trying to find out, we must know what it is that we are after, we must be clear about that in our minds, we cannot just go aimlessly.

But once we know that they can be rooted in, is what we believe we are trying to find out, I am trying to find bodies in X in outer space, I'm trying to find new species of plants in the depths of the ocean, of weeds in the depths of the ocean, I am trying to find out new species of crustaceans in the depth of oceans, so there is some link to theory, when we talk with you and of course I may find some life at the very core, I'm trying to find some life in the ocean.

So when I say life yes there is a definition, it is still rooted to my believe, that some life exists and not saying that okay, I will go to the depths of the ocean and see what I can find, great that's one way going about it, but then I will need to connect it, however tangentially to

something that I know, so it can be and they must evolve out of and if I really find something like that and I must have the power to describe it.

"These lists are expressions of our own particular standpoints and effective histories and are likely to be replete with our expressions of our own prejudices and biases." And that is okay, it is absolutely okay, what I do as a researcher is a function of what I was trained to do as a researcher, is a function of what I have learnt to do as a researcher, is a function of what I am able to express in my capacity as a researcher, it is all limited by human capacity and that is okay. It is important to acknowledge our limitations.

Silences is, on the other hand, are likely to remain silences and on the other hand are liable to be questioned. So we take silences, on the one hand they are likely to remain silences, that are things that we don't know about, but we should also have the power to question, what it is that we don't know about and why don't we know about it, okay so the goal is to achieve a balance between these positions and that is I mean all of this you know I hope is stimulated some ideas regarding the problem of criteria in your mind.

So we need to you know when you look at this whole list of how we can, of ideas of points that can help us change the conversation regarding criteria, I would like to stimulate the discussion among you all because, you heard me talk about various things, difficult things here, so I want you to ponder on each of these points and think about what, how you can explore more.

I wanted to the big all of this particular lectures specifically was to put questions in your mind, just question everything, why are we going in these direction? Why not another directions? And so on. Thank you very much for listening, that's all we have time for today, will continue with some more discussion on qualitative research methods in the next class, thank you.