

Visual Methods and Software Tools : A Mis-match?

Session 25 : Methodological and technical innovations in CAQDAS
: integrating data and analyses

NCRM Research Methods Festival 2010

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Qualitative Innovations in QUIC
CAQDAS Networking Project

Background

- Visual methodologies
 - *Anthropology*
 - *Content Analysis*
 - *Semiology*
 - *Compositional Interpretation*
 - *Discourse Analysis*
 - *Visual Ethnography*
- Approaches to analysis
 - Quantitative
 - Thematic
 - Associative
- Use of CAQDAS
 - Software support variable
 - Less well-established
 - Infrequently reported
 - Limitations
- Photo / Video Editing software
 - Non bespoke
 - Storage & organisation
 - Editing focus
 - Analytic possibilities

Analytic requirements

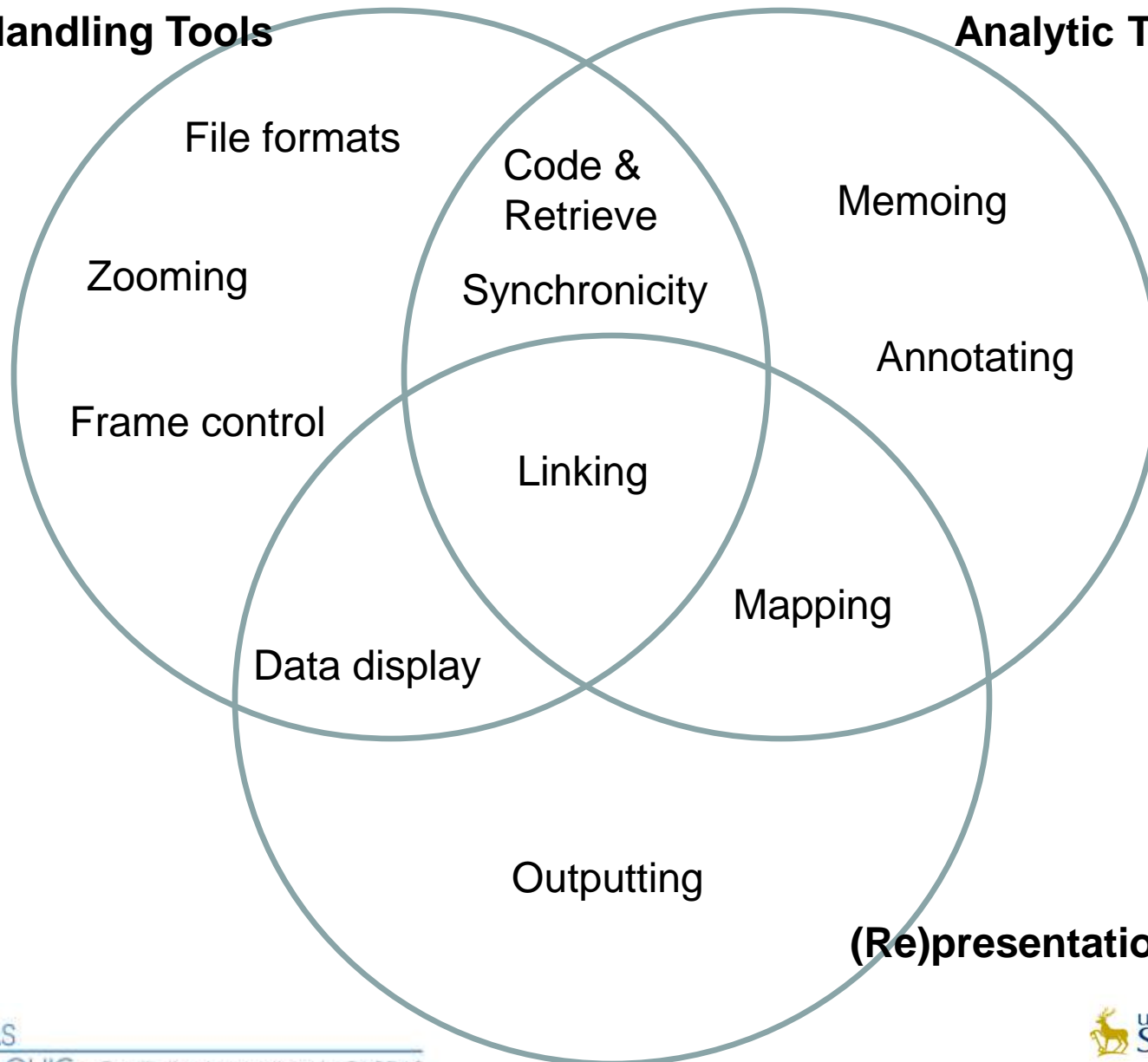
- Informed by
 - Project design and purpose
 - Approaches to analysis
- Practical needs
 - Marking, annotating
 - Organising, sorting
 - Counting
 - Coding
 - Representing

Software Tools for Visual Analysis

- Qualitative software
 - Data Handling tools
 - Analytic tools
 - (Re)presentational tools
- Photo/video editing software
 - Storage, organisation & sharing
 - Editing, storyboarding

Data Handling Tools

Analytic Tools



Data Display

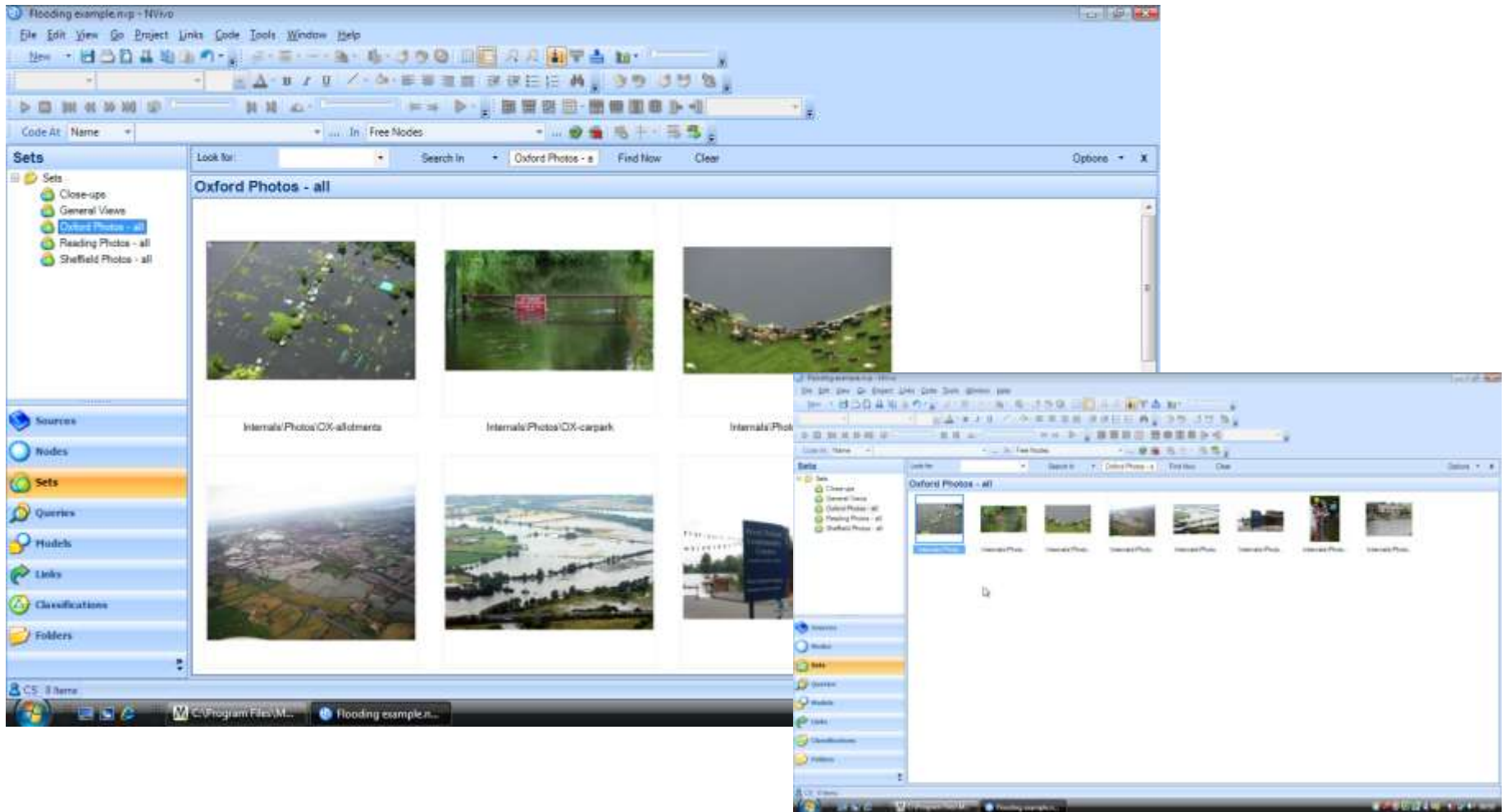
CAQDAS packages

- Variable ability to view images simultaneously
- Limited ability to sort images in alternative sequences
- Rudimentary zooming & resampling options
 - Most allow some zooming, but most do not resample
- Synchronicity between media
 - Sequential & temporal

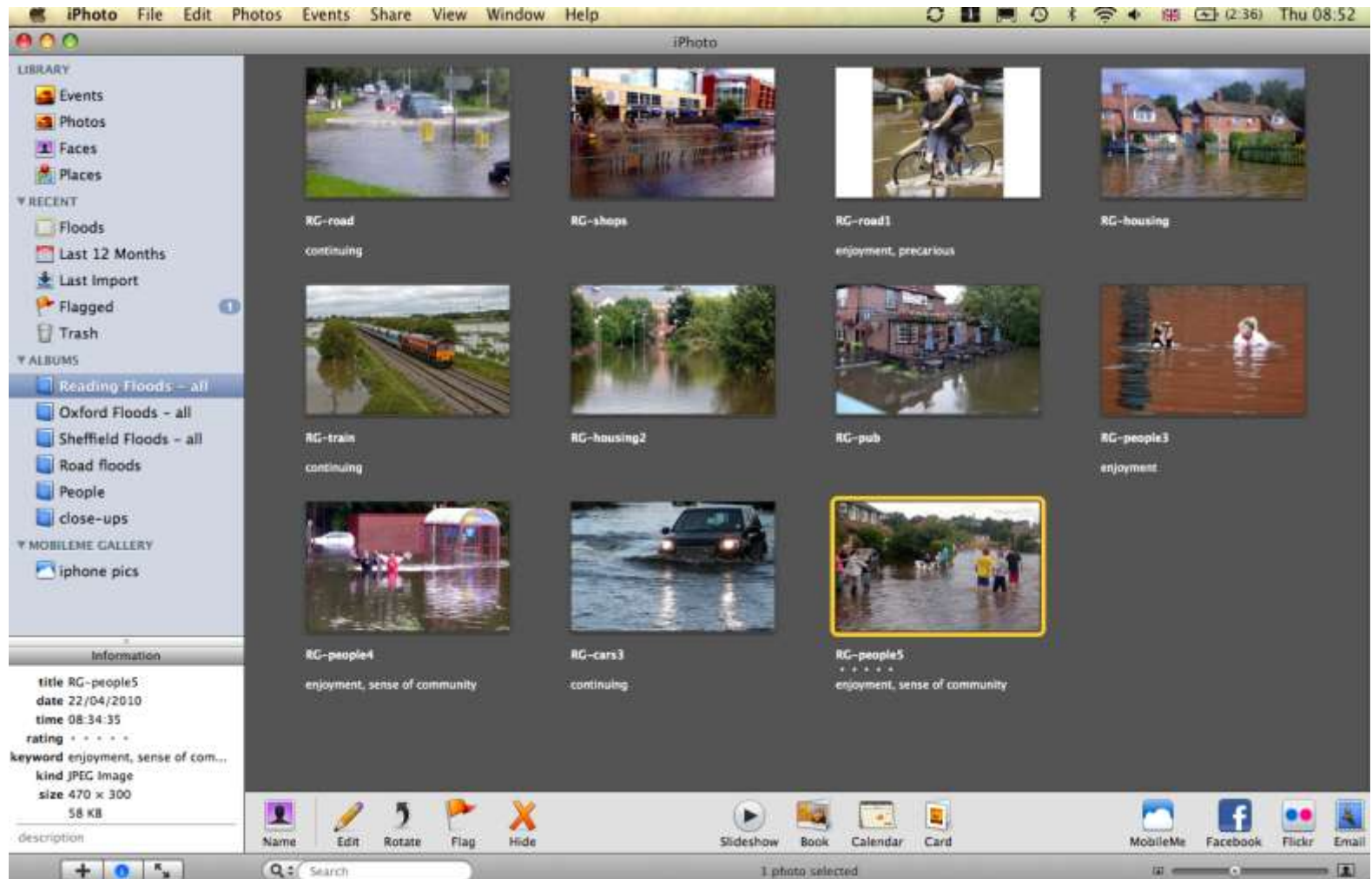
Advantages of Photo Editing software

- Flexible data display options

...viewing multiple images (Example in Nvivo 8)



...viewing multiple images (Example in iPhoto)



...synchronicity between media (Example in Transana)

The screenshot displays the Transana software interface, which is used for analyzing video data. The interface is divided into several windows:

- Visualization:** A window showing a red waveform representing audio or video data over time. The x-axis is labeled with time intervals from 0:10:00.0 to 0:50:00.0.
- Data:** A window showing a hierarchical tree structure of data. The tree is organized into a 'Series' named 'Pilot 1', which contains a 'pilotMPCI' folder. This folder contains three sub-items: '2. Interactions', '3. Presentations / Teaching Issues', and '1. Verbatim'.
- Video:** A window showing a video player. The video content shows a group of people in a meeting room, with a presentation slide visible in the foreground. The slide text includes 'CAQDAS Software Planning Seminar', '17th November 2008, 2nd Year Meeting', 'University of Exeter & University of Surrey', and 'GAILIAN SA / UNIVERSITY OF SURREY'.
- Transcript "1. Verbatim" for Series "Pilot 1", Episode "pilotMPCI":** A window showing a transcript of the video. The text is highlighted in blue, indicating selected segments. The transcript discusses the CAQDAS Networking Project and the use of qualitative software packages.
- Transcript "2. Interactions" for Series "Pilot 1", Episode "pilotMPCI":** A window showing a transcript of the video. The text is highlighted in blue, indicating selected segments. The transcript discusses the researcher's style and interactions with participants.
- Transcript "3. Presentations / Teaching Issues" for Series "Pilot 1", Episode "pilotMPCI":** A window showing a transcript of the video. The text is highlighted in blue, indicating selected segments. The transcript discusses presentational issues and the researcher's reflections on the seminar.

Textual & Visual Annotation

CAQDAS packages - deficiencies

- Marking precise areas
- Using freeform shapes
- Utility of colour
- Isolation of written annotations

Solutions

- Drawing tools
- Layers

...annotating and coding still images (ATLAS.ti)


The screenshot displays the ATLAS.ti software interface. The main window shows an aerial satellite view of a residential neighborhood with several rectangular annotations overlaid on the map. On the right side, there is a 'Quotation Manager' window with a table of quotations. Below the table, a text box contains a note about 'Fyders Way'.

ID	Name	Size	Start	End
16.15	0002 Pathpath here through to...		366	1
17.1	04.04.2009-09.04.09 WPA	0:00:00:46	0:04:47:52	0
17.2	04.04.2009-09.04.09 WPA	0:00:01:53	0:07:08:71	1
17.3	04.04.2009-09.04.09 WPA	0:00:06:73	0:13:25:17	1
17.4	04.04.2009-09.04.09 WPA	0:00:08:28	0:13:54:07	1
17.5	04.04.2009-09.04.09 WPA	0:00:00:15	0:13:14:44	1
17.6	04.04.2009-09.04.09 WPA	0:00:00:22	0:15:00:01	1
17.7	04.04.2009-09.04.09 WPA	0:00:00:22	0:47:07:19	1
17.8	04.04.2009-09.04.09 WPA	0:00:00:24	0:48:14:13	1
17.9	04.04.2009-09.04.09 WPA	0:00:00:32	1:06:23:00	1
18.1	We're going straight down the foot...		5	1
18.2	Let's get on with it around the footp...		3	1
18.3	BT - Are we going to go down the...		3	245
18.4	000 - Going back now to the 04...		1	275
18.5	We are going to take a left here, t...		1	425
18.6	That's the other direction we cod...		1	500
18.1	04.08.2009-09.04.09 WPA	0:00:00:34	0:02:00:43	1
18.2	04.08.2009-09.04.09 WPA	0:00:00:32	0:07:00:00	1
18.3	04.08.2009-09.04.09 WPA	0:00:00:26	0:16:10:35	1
18.4	04.08.2009-09.04.09 WPA	0:00:00:30	0:36:13:07	1
18.5	04.08.2009-09.04.09 WPA	0:00:00:14	0:58:23:44	1
18.6	04.08.2009-09.04.09 WPA	0:00:00:07	1:09:23:44	1
19.1	042 Gloucester/Fyders/Press area	371	472	2
19.2	042 Gloucester/Fyders/Press area	329	260	1
19.3	042 Gloucester/Fyders/Press area	292	36	1
19.4	042 Gloucester/Fyders/Press area	339	349	1
19.5	042 Gloucester/Fyders/Press area	67	477	1
19.6	042 Gloucester/Fyders/Press area	86	252	1
19.7	042 Gloucester/Fyders/Press area	128	379	1
19.1	042 Gloucester/Fyders/Press area	86	119	1
19.1	High 38 to Waterheadon alleyway	281	380	1
19.2	High 38 to Waterheadon alleyway	238	325	1


19.1 Gloucester (1) 282 88 04 - train rep. 2:30

...textual annotation of still images (NVivo)

Sheffield Photos - all




OX-people SF-Cars




	Region	Content
1		This picture shows the extent of flooding on a residential road in Sheffield during the 2007 floods. It is interesting to note the number of vehicles that continue attempting to drive, despite the high water levels
2	350,70 - 460,170	What is the science relating to speed of travel through deep water and extent of subsequent engine damage?
3	90,140 - 260,240	The ability to zoom in onto the expressions of the passengers would be interesting - are they exhibiting any sense of fear, excitement, trepidation etc?
*		

....coding still images (Nvivo)

Oxford Photos - all



OX-people SF-Cars



Region	Content
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Coding Density

OX-people

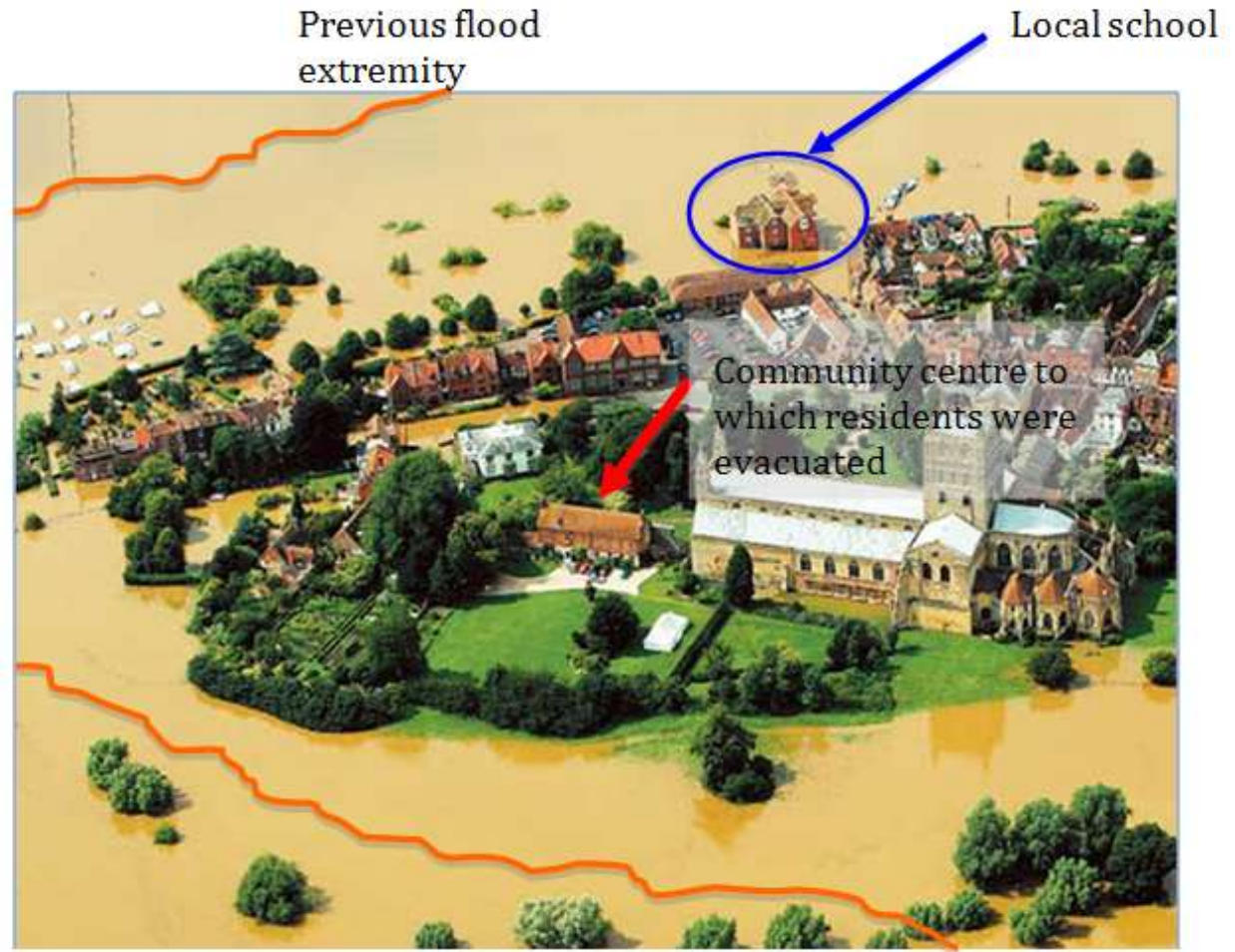
Continuation

Overflowing

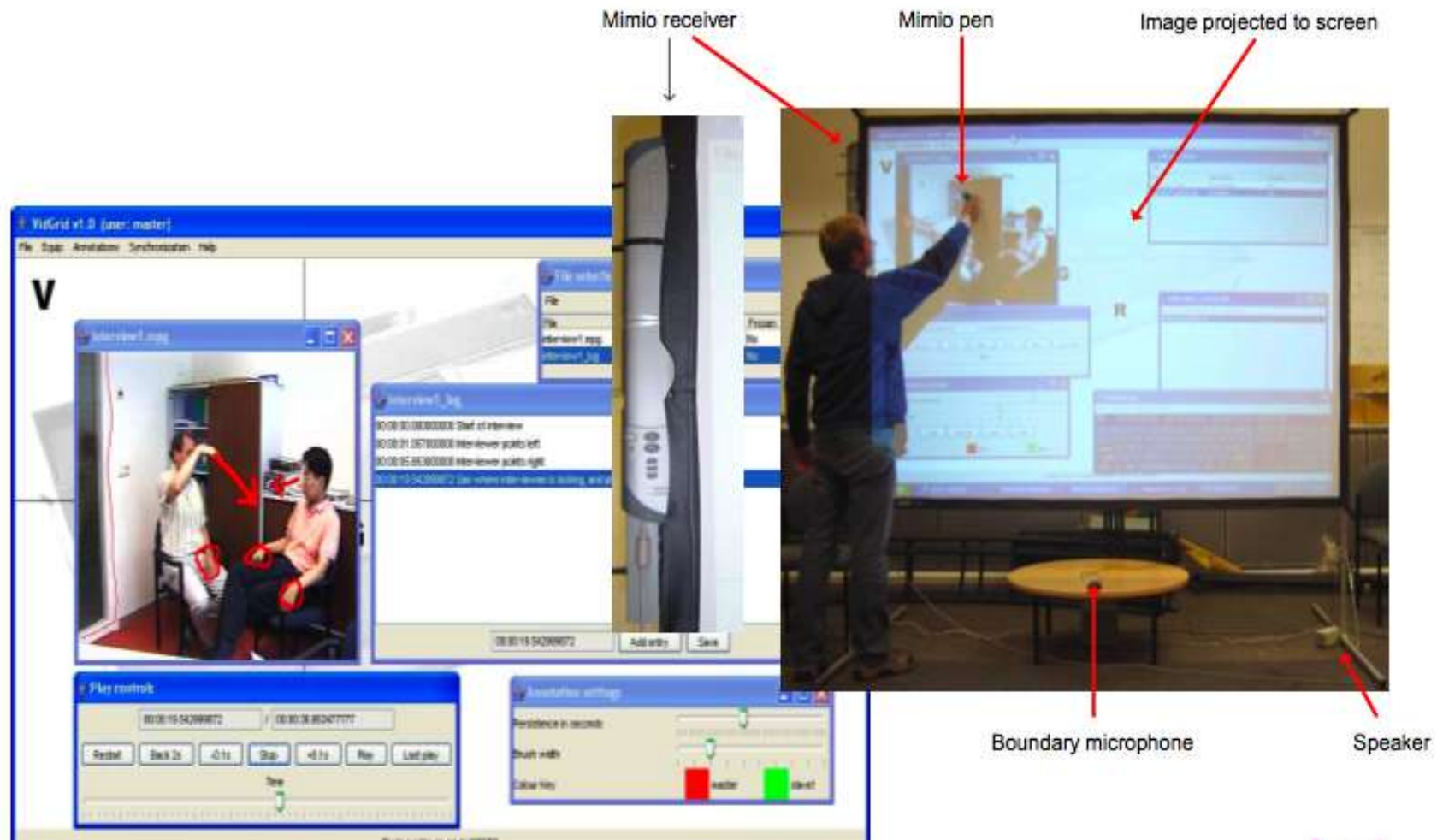
Transportation

Image Log

Ideal : freeform annotation of still images



...real-time visual annotation of video data (MiMeG)



Linking Data

- Linking as an aspect of synchronicity
- Supports associative approaches to analysis
- (Text to media synchronisation)
- Hyper-linking data segments
- Geo-coding/linking
- Synchronising multiple video streams
- Synchronising heterogeneous data

Example : temporal synchronicity in DRS

The screenshot displays the Digital Replay System (DRS) interface, titled "Digital Replay System P: SAABZ A: SAABZ". The interface is divided into several panels:

- Tree View:** Shows a hierarchical structure of tasks and windows, including "Communication Management", "Task Management", "query-V", "explain", "check", "align", "query-W", "instruct", "Main Window", and "Main Window".
- Transcript SAAB.rtf (Left):** A table showing time intervals and content for a transcript. The content includes "um", "it doesn't mov...", "mhm", "um", "what what's this", and "that's a heat e".
- Transcript SAAB.rtf (Right):** A table showing time intervals and content for a transcript. The content includes "yeah I still", "this is slow", "(laugh)", "so annoying", and "it's a coolant".
- Track Viewer:** A central panel showing a timeline with tracks for "Transcript S...", "TaskManA", "MouseControl", and "SAAB_F.wav". The "TaskManA" track shows a sequence of tasks: "align", "query-W", "check", "Communication Management", "instruct", "query-W", and "instruct". The "SAAB_F.wav" track shows a corresponding audio waveform. A vertical red line indicates the current time position at 00:05:06.257.
- Code edit:** A panel at the bottom with buttons for "Insert", "Set codes", and a dropdown menu showing "PRESS_START_PRESS_STOP".
- Video Windows:** On the right side, there are three video windows: "SAAB_screenum", "SAAB_R1.mov", and "SAAB_F.mov", each showing a different view of the system's operation.

Data (Re)presentation

- CAQDAS packages under-developed
 - Mapping tools
 - Outputting tools
- Understanding lack of uptake / discussion
 - Visual narratives
 - Hypertexts
 - Photo essays
- Photo / Video Editing Software
 - More developed

... 'hypertext' representation using network tool (ATLAS.ti)

The screenshot displays the ATLAS.ti software interface. On the left, a satellite map shows a residential area with a red box highlighting a specific location. The map is labeled '9:4 WP48 Allotments'. On the right, a network diagram shows a central node labeled '[1-1][43]' with several arrows pointing to other nodes. These nodes contain text and images, representing a hypertext network. The nodes include:

- Node 1: [1-1][43] (Central node)
- Node 2: [1-2][287] (Left node)
- Node 3: [9-2][51°18'19.32"N 0°32'13.86"W] WP46 Fusion alleyway (Right node)
- Node 4: [9-3][51°18'19.32"N 0°32'25.56"W] WP47 Fusion Gate (Bottom node)
- Node 5: [9-4][51°18'19.32"N 0°32'25.56"W] WP47 Fusion Gate (Bottom node)
- Node 6: [9-2][51°18'19.32"N 0°32'13.86"W] WP46 Fusion alleyway (Right node)

The network diagram also shows arrows labeled 'waypoint' connecting the nodes. The software interface includes a menu bar (File, Edit, Documents, Quotations, Codes, Memos, Networks, Views, Tools, Extras, A+Docs, Windows) and a toolbar. The status bar at the bottom shows the current location: 'P11: Int1 WP48 -> <HUPATH>\GES41.jpg'.

Generating hypertexts from Photo Editing software (iPhoto)

- Sharing Tools
 - Publish to web based photo galleries
 - (e.g. Flickr, Facebook, MobileMe Gallery)
 - Direct burn to cd / dvd
 - Direct generation of web pages / blogs via iWeb

Limitations of CAQDAS mapping tools for visual data representation

- Not designed for generating hypertexts
- Cannot visualise parts of files
- Cannot always view coded textual segments
 - ATLAS.ti the exception

Output options

- CAQDAS packages not editing tools
 - Graphic co-ordinates
 - Time references
- Partial workaround
 - NVivo html output (but only for directly coded references)

Example (NVivo html output)

- [Transportation.htm](#)

Summary

- Focus on data handling tools at expense of analytic and (re)presentational tools
- Analytic tools developed for textual analysis too blunt for visual data
- Development of (re)presentational tools key to providing better support and increasing uptake
- Linking tools and synchronicity need to be refined in order to facilitate real data integration

...in conclusion...

...some points for discussion...

- What are your experiences of analyzing audio-visual data...what tools do you use?
- What additional analytic tools for audio-visual data would you like to see?
- To what extent can we learn from other disciplines and software products?
- How does methodology affect what tools you might require for visual analysis?

References & Resources

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