



Geolinking in MAXQDA

The following paper outlines the new features for the management of geo-references (geolinks) in MAXQDA. Geolinks allow you to establish spatial relationships in your research. These references can be created with Google Earth™ *(or similar software) and saved as data files.

Geolinking in MAXQDA	1
1. How MAXQDA met Google Earth™	2
2. Before starting your work with geolinks	2
3. Basic information for using the MAXQDA geolink function	3
4. Manage geolinks in the MAXQDA overview of links	4
5. Geo Links in MAXMaps.....	5

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1. How MAXQDA met Google Earth™

The use of the new geo-reference tools like Google Earth™ in combination with qualitative data analysis software is a fairly recent development. In 2008, MAXQDA became the first QDA software to provide this functionality. One of the first social researchers to apply this technique was Cesar Cisneros, Professor of Sociology at Autonomous Metropolitan University in Iztapalapa, Mexico. In 2006, Cesar Cisneros explored the possibility of using MAXQDA with geo-references in a research project he carried out in South America. When a paper about his experience was presented at the CAQDAS 2007 conference at the Royal Holloway University in London, we began having very productive discussions about integrating more features for geo-referencing in MAXQDA. These discussions were crucial to the researcher-oriented development that led to the final integration of geolinks in MAXQDA.

We want to thank Cesar Cisneros once again for the crucial role he played in the development of this feature!

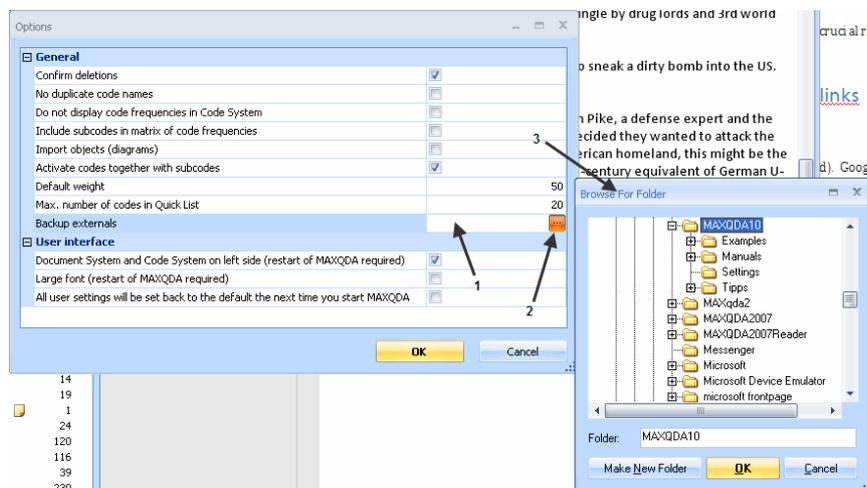
2. Before starting your work with geolinks

2.1. Install Google Earth™

Install Google Earth™ on your computer (free download). Google Earth™ provides an illustrated user guide in the programs help function.

2.2. Create a folder for your external links

With the new update of MAXQDA you can now define a set location for all external objects (photos, videos, audio files, geo-references, etc.) in a given project. This could be a subfolder in your MAXQDA project folder, for example. Taking advantage of this option will guarantee that you have always your external objects together with your MAXQDA project. To define the folder for your external files, choose *Options* from the *Project* drop-down menu. Click on the field to the right of "Backup externals" (1), click the icon that appears (2), and select the folder from the window that appears (3).



The definition of a "Backup externals" folder is not absolutely necessary. MAXQDA saves all external links and refers back automatically to the folder where a link was saved when it was created. If you are working in a team or might need to take your project with you on a USB drive, it's much easier to stay organized with one designated folder.

3. Basic information for using the MAXQDA geolink function

3.1. Search and save locations in Google Earth™

Search for the location using the Google Earth™ search function. You can search (and save) a whole range of different kinds of geo-references: Addresses, locations, tours, place marks, points of interests, and even photos which have been uploaded to Google Earth™. Once you find the reference of interest, you will have to save it as a .kml file in the folder you have defined for your external objects (or another folder of your choice). The .kml file is an .xml file and can be opened with the Windows Explorer or with any other software able to handle .xml files.

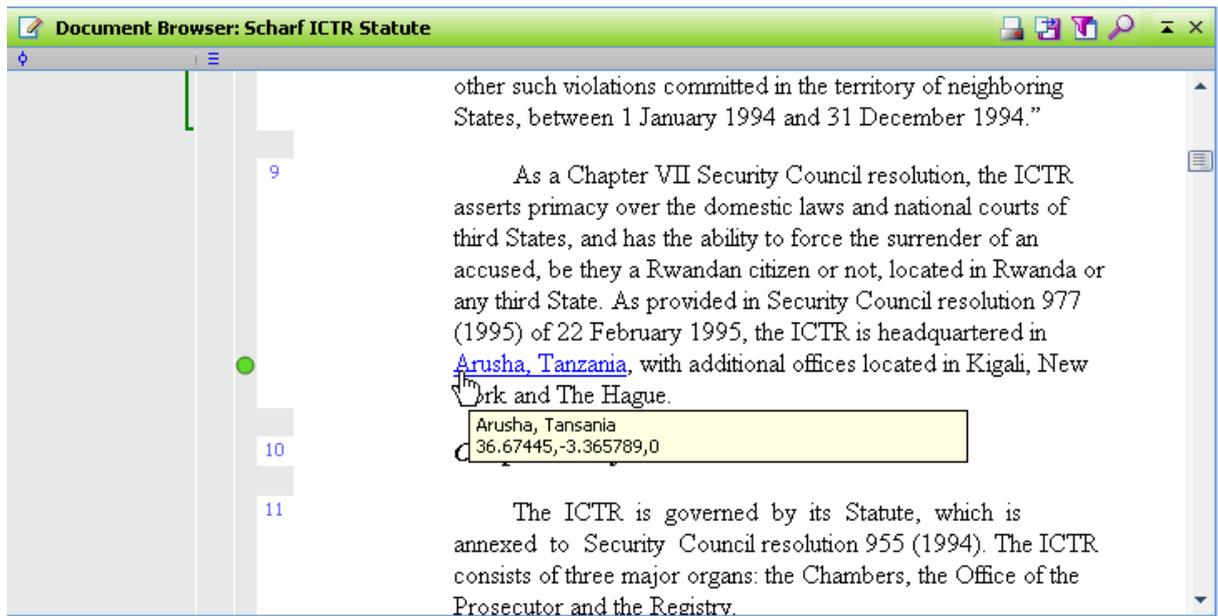
You can also search for multiple locations, saving them first in the Google Earth™ folder "My places" and transferring them later to your private geolinks folder by using the "save" option. An imported .kml file should stay at its location and not be removed; otherwise MAXQDA will lose the geolink information.

3.2. Inserting geolinks in the MAXQDA Text Browser

MAXQDA allows you to link text or pictures with any desired geo-referenced location. In MAXQDA's Document Browser, you can highlight a text segment, right-click, and select "Insert geolink" from the context menu. Simply select the appropriate .kml file from the menu that appears. The .kml file contains the coordinates of your location and all the information necessary to start Google Earth™ and move immediately to the saved location.



As soon as you have finished the link procedure, MAXQDA displays a green ball as a symbol for a geo-reference in front of the text. When you move the mouse over the geolink, the name of the location and its coordinates (longitude and latitude) will be displayed in the tool tip. These geolinked text passages are not otherwise affected – you can still add codes, memos, etc.



3.3 Displaying geolinks

You have the option of hiding or showing the green geolink icons. Simply right-click somewhere on the text or picture and select *Show geolink bar*. This shows or hides the bar. The linked text will remain blue, however, and the coordinates will still be shown when your cursor hovers over it.

3.4. Transferring projects with geolinks to other computers

If you want to share a project that includes geolinks or if you simply want to transfer the project to a different computer, you will have to transfer not only your project but also the related .kml files. If you created a folder for your external files, you can simply copy that folder.

4. Manage geolinks in the MAXQDA overview of links

The overview of links function allows you to see all text links and geolinks for your project, text group, or text. Simply right-click on the document, document group, or  **Documents** icon, and select *Overview of links*. You can also open the overview for the entire project by selecting it from the *Document* drop-down menu. If you sort the table by clicking on the header of the first column, all the geolinks will be positioned on top.



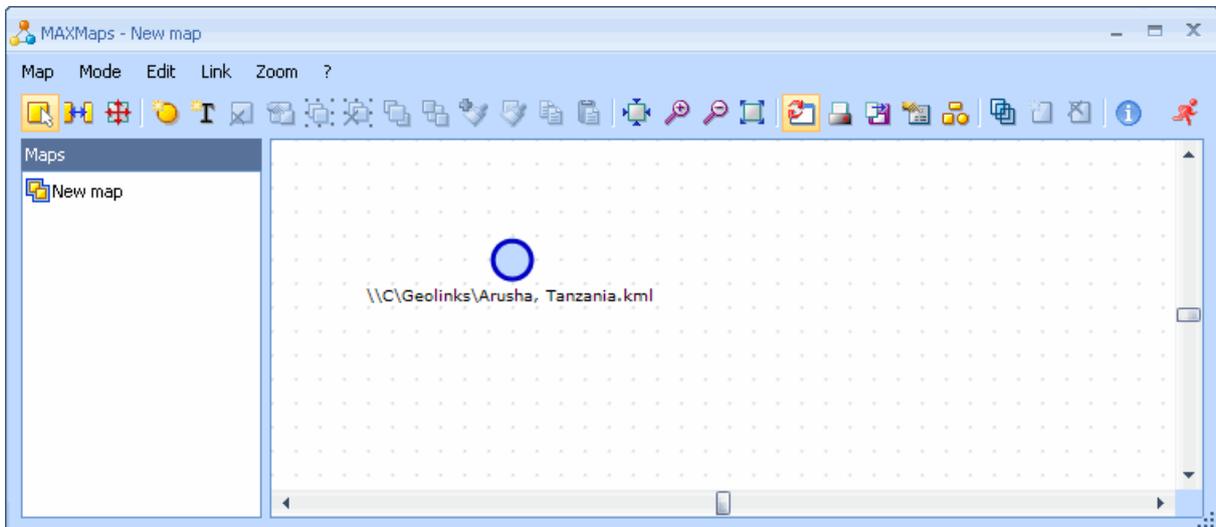
	Text 1	Paragraph 1	Preview 1	Text 2	Paragraph 2	Preview 2	
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•	interviews\inte...	26	Mcluhan		0	D:\MAXQDA-B...	
↔	interviews\inte...	21	e live in a	interviews(Flu...	5	confused. Now	
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5. Geolinks in MAXMaps

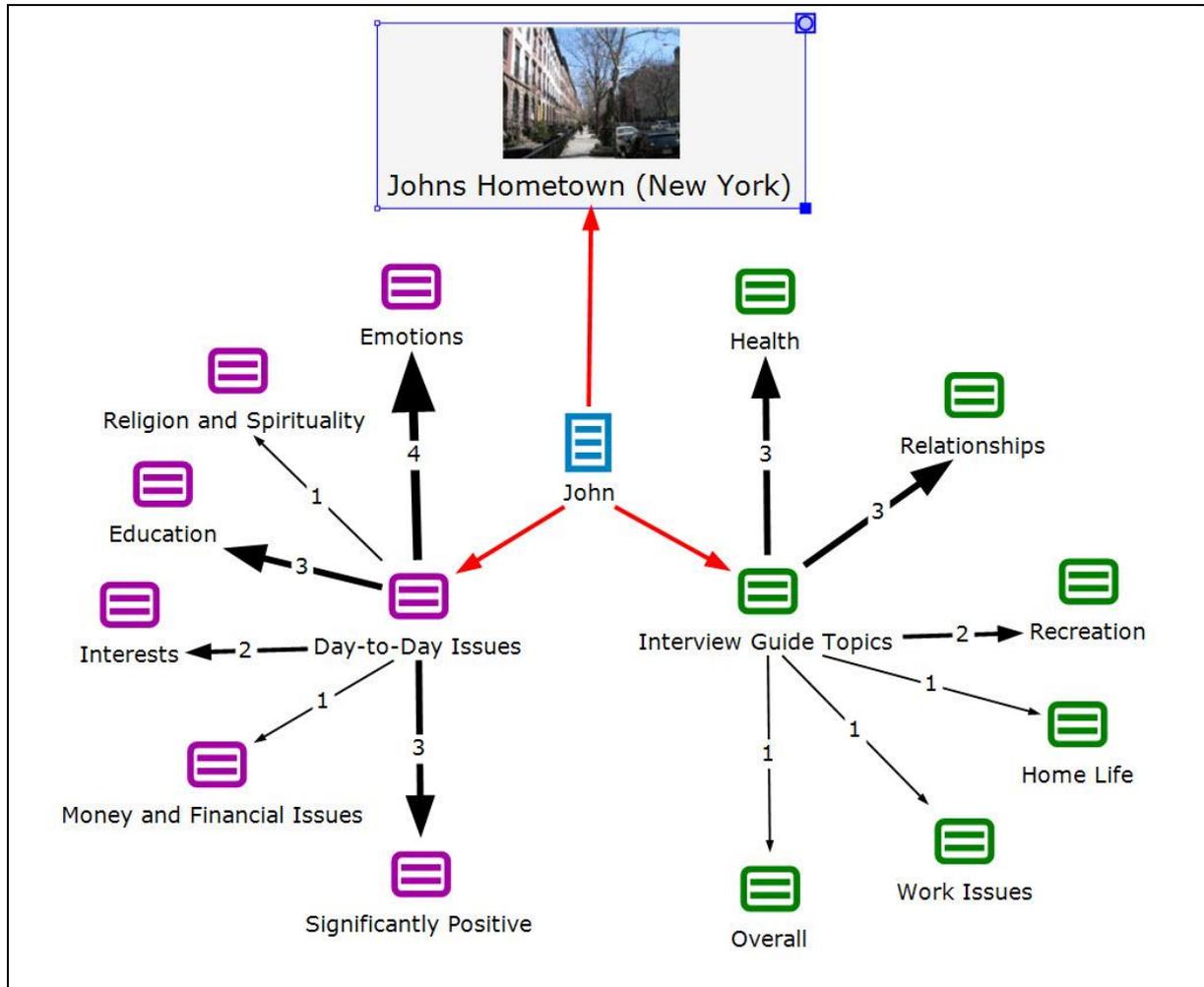
5.1. Inserting geolinks as stand-alone objects

It is also possible to insert geolinks in MAXMaps. Right-click where you want to insert the geolink and select *Insert geolink* and select the appropriate .kml file.

The MAXMaps work space will look like this:

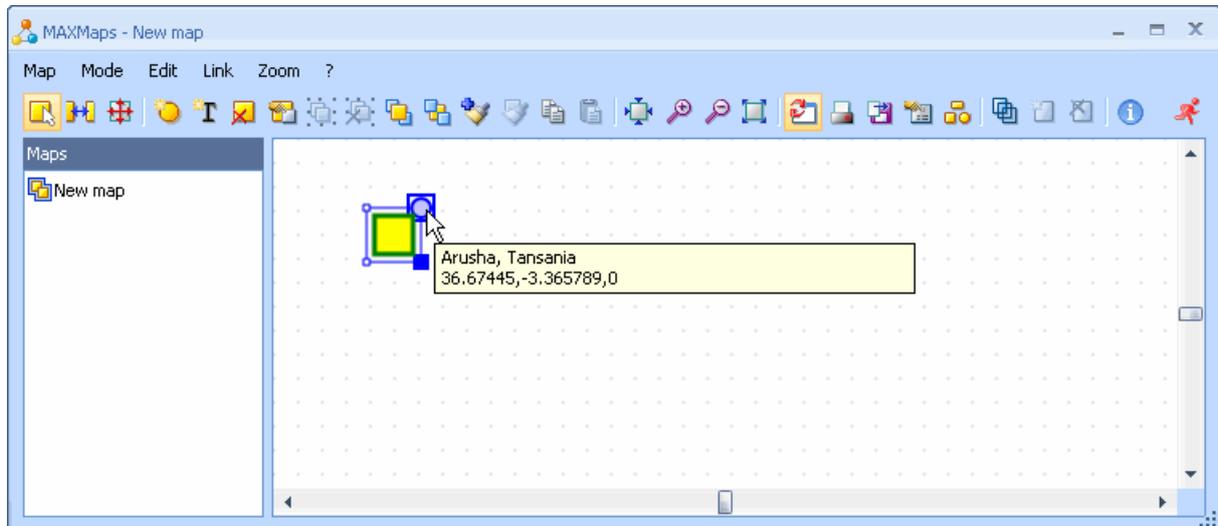


The file path will automatically be assigned as the label. You can change this by right-clicking on the object and selecting *Properties*. The inserted geolink can be formatted like any other object in MAXMaps, which means you can also insert a picture, adjust the size, etc. In the screenshot below, the picture of New York is also a geolink.



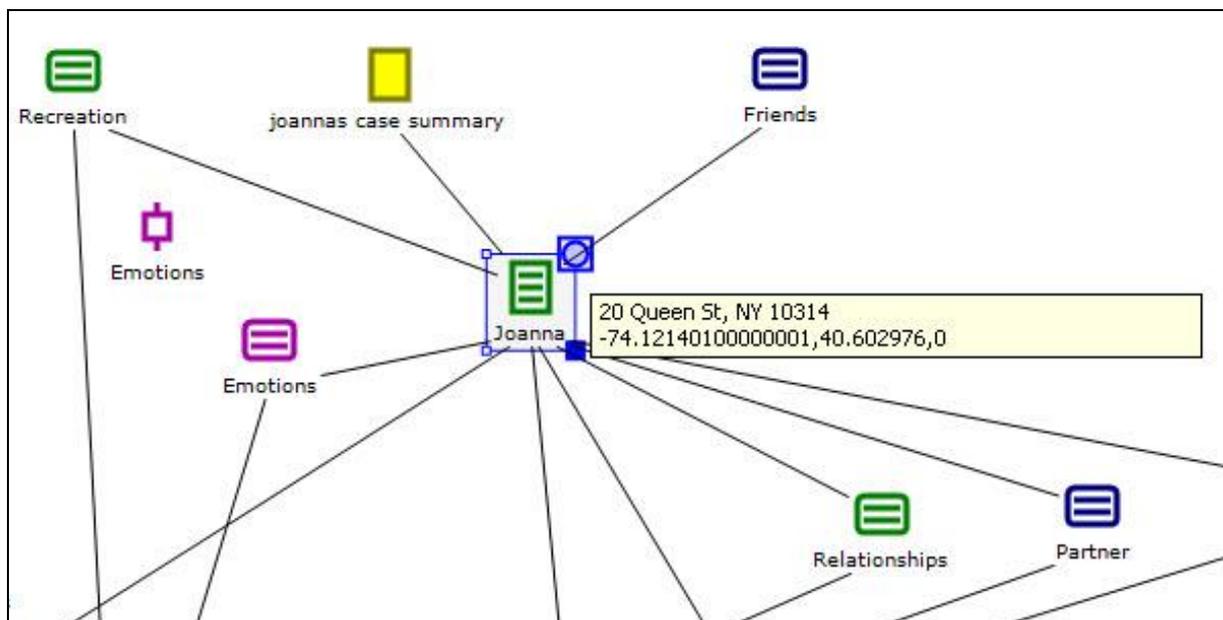
5.2. Connect a geolink to a free object

You can also insert a free object into the workspace and associate it with a geo link. The screenshot below shows such a free object. Moving the mouse over the object causes the name of the location and the coordinates to be displayed. The presence of a geolink is indicated by a blue ball symbol in the upper right corner.



5.3. Attach geolinks to codes, texts, memos, and coded segments

All MAXQDA objects that are displayed in MAXMaps can be linked with a Google Earth™ reference. The following screenshot shows that the text “Joanna” is linked to the location “20 Queen St., NY”.



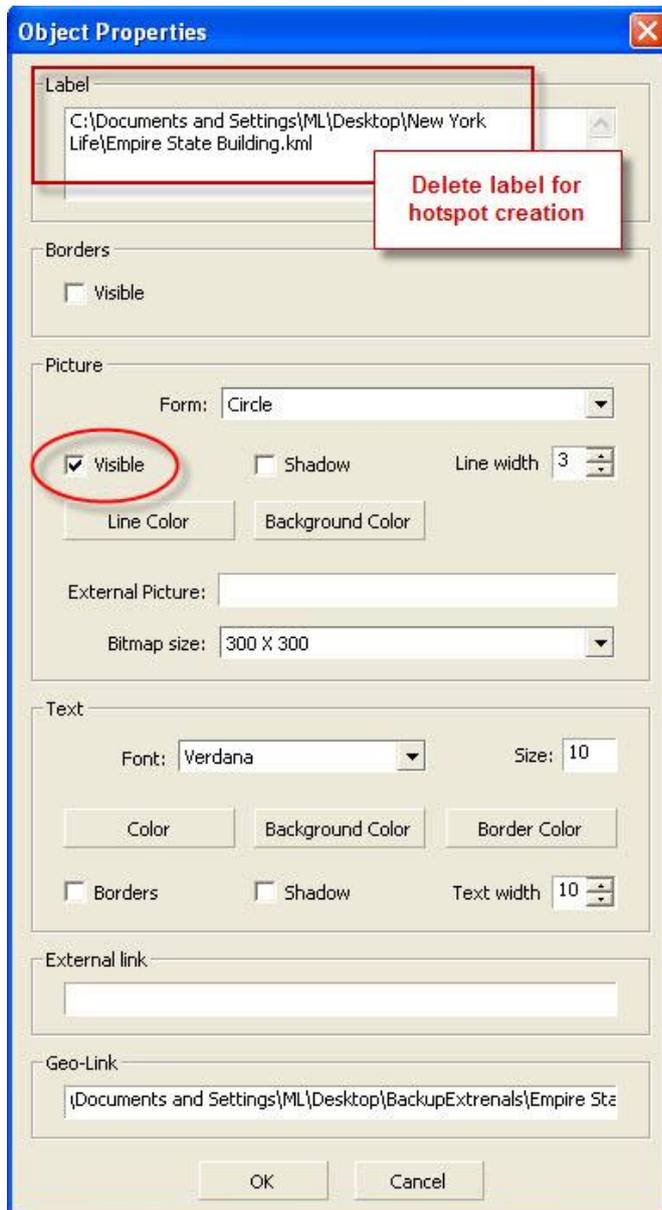
Any element in MAXMaps will display a symbol on the upper right corner as soon as a geolink is attached. By clicking on this symbol, Google Earth™ will bring you to the linked location.

5.4. Geolinks as hotspots

An interesting possibility is to insert geolinks as hotspots. To do this, start by inserting a geolink as explained above. Next, go to the properties menu and delete the label and uncheck the box next to “Visible”. After closing the properties menu, the inserted geolink is invisible, but still



works: if you double-click on it, Google Earth™ moves to the location. Now you are able to move the hotspot anywhere in your map. The invisible hotspots option is especially useful when working with pictures, particularly background pictures; you can place the geolink at any isolated spot within a MAXMap element.



5.5. Using a background picture with geolinks

Google Earth™ allows you to save any map that is displayed by using the option File > Save > Save Picture or the keyboard shortcut Alt+S.

The map is saved in .jpg format.



The new version of MAXMaps allows you to import background pictures. Now you can insert invisible hot spots, or any kind of MAXQDA objects, like texts, codes, memos etc. into the map.



A Google Earth™ Service map as background (for copy right reasons we have replaced the original Google Earth™ Service picture with a private one) together with inserted MAXQDA objects

The above screenshot displays a part of the city as a background. The texts “John” and “Joanna” have been inserted into the map. The exact location of these points can also be attached as geo links to these texts in order to jump directly to their locations and see the surroundings in greater detail.

By moving the mouse over “John” and “Joanna”, you can see the first sentence of the text memo. If you want to read the entire memo, you can also insert the memo beside the text symbol. Then you only need to double-click on the yellow memo symbol to see it.



A Google Earth™ Service map as background (for copy right reasons we have replaced the original Google Earth™ Service picture with a private one) together with inserted MAXQDA objects

Hot spots, created as described above, can be inserted into background pictures as well.

5.6. Present your results in books, papers, and posters

Any map created in MAXMaps can be saved as a high resolution file. This allows you to present your models and diagrams as posters at conferences and meetings as well as to produce high quality printouts.