REDE SprachGIS Workshop, Verona, April 2025

Handout 1 – Navigation and Map Search

In the first part of this workshop, you will familiarize yourself with the interface of the REDE SprachGIS. You will learn how to search, open, and navigate maps. You will learn to operate the layer manager, distinguish between raster and vector maps, and compare maps.

Exercise 1: Logging In, SprachGIS Interface, Map Search, and Navigation

You will get acquainted with the SprachGIS interface and the map search.

To create and design your own maps, registration with your email address at <u>www.regionalsprache.de</u> is necessary.

Step 1: Log in

- Go to <u>www.regionalsprache.de</u>.
- In the top right corner, you can switch to English ⁴.
- Log in via the ^{→ Login} butten in the top right corner.
- Open the REDE SprachGIS (top center menu).
- Close the quick-start menus so that the map view is visible.

Step 2: Navigation

Navigate through the map:

- Move: Click and drag / Arrow keys
- Zoom: Scroll or +/- keys
- Area zoom: Shift + click and drag

See also:

- Navigation field (+/- at the top left)
- **Operation tips (Menu top left >** General handling)

Step 3: Map Search

Open the Map Search (top right) and load map "Milch" (from *Tirolischer Sprachatlas*, 2/64) into the map view.

- Search term entry "Milch" and select "Tirolischer Sprachatlas".
- Click on R Raster at map number 64.
- The map is then loaded into the map view and appears as a new layer in the layer manager.

I Raster maps: Georeferenced scans of maps (pixels – when zooming in you will see the individual pixels).

Vector maps: Map generated by elements in the SprachGIS (mathematically defined relationship between objects – you can zoom in indefinitely).

Task: Find and load the following maps into the layer manager:

- Tirol. SA, Vol. 1, Map #42 "gesagt"
- Tirol. SA, Vol. 1, Map #25 "Herz"
- Tirol. SA, Vol. 1, Map #D "Belegpunkte"

Find the different variants used in South Tyrol. Also use the legend (accessible via layer manager: second tab of the bottom menu \equiv).

Exercise 2: Background Map, Blending Maps, Layer Manager

You will learn layer manager functions, load background maps, and blend maps.

Step 1: Loading a Background Map

- I The currently loaded map is highlighted in yellow. Always check for correct layer selection.
- Change the background map (menu lines, top left ≡) to OpenStreetMap > OSM Mapnik.
- Experiment with other background maps, e.g., change the background to Single-colored (e.g., light blue).
- Make the Tirol. SA map visible again and adjust its opacity to 40% using the slider in the layer manager (dots menu next to the layer ----) or right-click menu in map view.
- Reset the opacity slider back to 100%.

Step 2: Blending Maps

- Search for the dialect classification according to Wiesinger in Map Search and load it into the map view (Map search > Atlas selection > linguistic interpretations (sprachliche Interpretamente) > dialect classifications (Dialekteinteilungen)).
- Blend the dialect classification map with the Tirol. SA map by adjusting the opacity slider. Search for the South Tyrol linguistic area. What are the main variants there?

Step 3: Layer Manager

To change the arrangement of maps in the layer manager, simply drag and drop maps up or down.

Exercise 3: Map Data

Step 1: Exploring Map Elements

Observe elements in the Tirol. SA map.

- Task: Metadata and Legend
 - Check information in the Metadata tab (first tab, note icon).
 - Tip for map search: #MapID#
 - Click on the Legend tab (second tab, list icon ≔).

Handout 2: Research (Focus on Northern Italy / South Tyrol)

In this workshop session, you will deepen your knowledge of the REDE SprachGIS functionalities. Specifically, you will gather geographical and linguistic information on Northern Italy and South Tyrol, crucial for future cartographic visualizations.

Exercise 1: Keyword Search for Administrative Units in Italy

You use the research tool to search for a place or a region.

Step 1: Search

- Open the search tool (Select Tools > Research > Search overall).
- Enter relevant administrative terms. Start with "Italien".
- I The keyword search will most times work best with German terms.

Step 2: Load Results into Map

- Examine the search results carefully.
 - o Identify the Geometry Identifier (GID) for each polygon.
 - Select the three dots [‡] next to each search result to identify the coordinates.
 - Select the target icon

 next to each search result to allocate the polygon in the map.
- I The "Empty layer" has to be activated.
- Load selected results into the map view via the arrow icon •.
- Compare the three polygons of Italy carefully.

Step 3: Investigate Map Elements

- In the layer manager, click on the Elements tab (fourth tab, place icon
- Here you can see the elements in your map. Delete two of the three Italy polygons by clicking on the trashcan icon $\hat{\mathbb{I}}$.

Step 4: Save Map

- Save your map as a user map (three dots in the map layer ...). Give the user map a meaningful name. Confirm.
- I Only if you save a map as user map, you will be able to access it later.

Exercise 2: Filter Search for Administrative Units in Italy

Fortunately, you do not have to know the names of each administrative unit (and especially in German!). You can just use the category filters in the search tool.

Step 1: Category Search

- Remove the text "Italien" from the Search term field.
- Under Category click on the <code>Dicon next to Administrative</code>.

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- Scroll down to Geometry_Type_Italien and click on the <code>deficon next</code> to it.
- Here, you can choose between five different administrative units:
 - o Staat = state -> Italy
 - o Region = region -> Trentino-Alto Adige, etc.
 - o Provinz = province -> Trento, Bolzano, etc.
 - Gemeinde = municipality -> Verona, etc.
 - o Bezirksgemeinschaften = larger units in the province of Bolzano

Step 2: Load and Save Results

- Decide on an administrative unit and select it. Search.
- Load the results into a new map layer using the icon $^{\circ}$.
- Rename the new layer in a meaningful way. Confirm.
- Save the map as user map. You can keep the name.

Exercise 3: Gathering Linguistic Data (Wenker questionnaires)

After looking at geographical data, we will now turn to linguistic data. We will start with the Wenker questionnaires.

Step 1: Search Wenker questionnaires

- Close the Search overall tool.
- Open the Search Wenkerbogen tool.
- Here, we can use the radius search. Select the radius under Permiter, then select the \oplus icon.
- In the map view, click somewhere in South Tyrol.
- Click on the results for Wenker questionnaires (second tab b).

Step 2: Open a Wenker Questionnaire in the Wenkerbogen App

- Select one Wenker questionnaire, then open it $\[mathbb{L}^2\]$.
- A new tab with the Wenkerbogen app will open. Select Aktivieren! to activate session parameters.
- Investigate the Wenker questionnaire.
- The Wenker questionnaires are not a focus of this workshop. We will later return to the Wenkerbogen app and, if applicable, can discuss the app further.
- Close this tab.
- Close the Search Wenkerbogen tool.

Exercise 4: Gathering Linguistic Data (Audio Recordings)

Step 1: Search Audio Recordings

- Open the Search speech recordings tool.
- Under Search options choose Map elements.

- As layer, select the layer with Italy. As map element, select Italy.
- Search.

Step 2: Examine Results

- For Italy, we only have one sound recording in our GIS.
- Click on the results for audio recordings (second tab *).
- Task: Listen carefully to the audio example . In the end, close the Search speech recordings tool.

Exercise 5: Literature Research and Data Export

Step 1: Search Literature

- Use the tool Search literature, to find literature focusing specifically on variational linguistics literature related to grammar or dialect studies.
- In the upper field Search terms you can enter keywords for your search, like "Fersentalerisch" or "Grammatik" again, German will work best.
- In the lower field Search term you can enter the name of a municipality.
- Collect all relevant bibliographic information for a certain municipality (e..g., Bozen). Investigate the results (second tab 5).

Step 2: Export the Bibliographic Results as a CSV or Excel file

- In the results list, select the export icon
- Ensure selected fields include necessary information such as titles, authors, and geographical references (redeInfo -> GOBA). Select a file format. Date Export.
- Review your exported file in a spreadsheet or text editor.

Handout 3: Drawing and Styling a Base Map

In the previous handouts, you discovered various research tools in the REDE SprachGIS. Before creating thematic maps in the SprachGIS later today, this unit introduces the Style Editor and the drawing tools. You will practice creating a base map, applying research skills from earlier sessions.

Exercise 1: Creating a Base Map for Northern Italy

You will create a general base map for Northern Italy, used in future thematic mapping sessions.

Step 1: Create Layer Group

- Click plus icon in layer manager, select Empty layer group, name it "BaseMap_NorthernItaly". Confirm.
- 1 A layer group is automatically a user group.

Step 2: Load Political Elements: Regions

- Click plus icon, select Empty vector layer, name the new vector layer "NorthernItaly_Regions".
- Save the layer directly as a user map.
- Use the Research tool to search for and load the following regions: Lombardia, Veneto, Trentino-Alto Adige, Valle d'Aosta, Piemonte, Friuli-Venezia Giulia. Load by clicking the arrow icon <a>O next to each region.
- Save the layer by clicking the save icon \square .
- The SprachGIS always indicates unsaved changes. Save regularly!

Step 3: Load and Label Cities

- Click plus icon, select Empty vector layer, name new vector layer "NorthernItaly_Cities".
- Save the layer directly as a user map.
- **i** For Italy, the SprachGIS only contains the places with Wenker questionnaires. For a base map, however, we are interested mostly in larger cities from all areas. This is why we must add the cities manually.
- Select Tools > Edit Map Elements > Drawing Tools. The first tab, Draw point, is automatically selected.
- Using OpenStreetMap as a base, add important cities by clicking in the map view (e.g., Milan, Venice, Trento, Bologna).
- Close the Drawing Tools.
- Save layer as user map.

Step 4: Load and Label Rivers and Lakes

- Use the Research tool, set Category to Topographic > Rivers & Lakes. Additionally, only search in certain Map elements, i.e., your layer "NorthernItaly_Regions" > Alles auswählen > Search.
- Load the lakes in a new layer using the icon \mathfrak{O} .
- Give the layer the name "NorthernItaly_Topographic" and save it as a user map.
- In the results list, select the three dots for finding the rivers "•.
- Load the rivers using the icon I select "NorthernItaly_Topographic" as Existing layer.
- Save the map.

Step 5: Combine Maps to Layer Group

- For each map layer, select the three dots > Add to layer group > "BaseMap_NorthernItaly".
- To rearrange the map layers in the layer group, simply drag and drop layers.

Exercise 2: Styling the Map

In the Style Editor, you can change colors, lines, symbols etc. You can also adjust labels (font, size etc.). Styling: Select Tools > Edit Map Elements > Style Editor.

You can add labels manually in the style editor or you can use auto-labelling. E.g., select the map layer "NorthernItaly_Regions", right click in the map view > Select all > right click > Labels > Description > Confirm. This will automatically add the name of each region as a label.

Step 1: Style Regions

Task: Style the regions (polygons). You can either style each polygon separately or all together (Alles auswählen). Save the changes you make regularly.

Step 2: Style Cities

Task: Style the cities (points). You can either style each point separately or all together (Alles auswählen). Save the changes you make regularly.

! As we added the cities manually, you must also label them manually.

Step 3: Style Rivers and Lakes

Task: Style the rivers (lines) and the lakes (polygons). You can either style each line separately or all together (Alles auswählen). Save the changes you make regularly.

If you choose Alles auswählen, beware of the different styling possibilities for lines and polygons.

Handout 4: Data Import and Visualization, Map Export

Exercise 1: Visualizing Distributions

You will load the Excel file ",AlpiLinK_S13_DottoratoLinguistica.xlsx" into the REDE SprachGIS and visualize the distribution data it contains as pie charts and bar charts.

Step 1: Import Data

- Click on the cloud icon 🚳 in the layer manager and drag the Excel file into the drag & drop area of the data import window.
- Alternatively: Open the file, copy the data into the text input area, and then click once outside the text field.

Step 2: Check the Data to Be Imported

- Verify that the GIDs are correctly identified (highlighted in green).
- You can choose to ignore some columns that you do not need for the data visualization (e.g., "Stimulus", "User ID", "Comments").
- Then click on Import data into map.
- You will then be prompted to enter a layer title for your layer. Confirm.

Step 3: Save Layer as Map

- Save the map by clicking Save as User Map in the layer manager.
- Enter a name for the layer and Confirm. (You can keep the same name.)

Step 4: Creating Pie Charts

- Open the Visualization tool (Select Tools > Visualization & Export > Visualization).
- Stay directly in the first tab. The tool is called Visualization: Pie Chart.
- In the tree structure, you will now find the sub-items Variety, Location, and Numerical Values (numbers). De-select Variety and Location.
- Numerical Values (Numbers) contains the individual variant categories. The colors can be customized. Clicking Visualize will then display the distribution of variants as pie charts at the respective locations.
- Under Advanced options, you can adjust the size of the pie charts and decide whether they should be scaled (scaling enables relative adjustment of the pie size). You can also add a border around the pies. Every change must be confirmed by clicking on Visualize.

Step 5: Creating Bar Charts

• Now switch from Pie Chart to Bar Chart (the second tab at the top of the tool). All settings made for the pie chart will be retained.

• Clicking Visualize will now display the distribution of variants as bar charts at the respective locations.

Step 6: Styling the Map

- You will notice that you can see all the municipalities in green.
- Open the Style Editor, select all elements and adjust the opacity of the lines and the filling to 0%.

Step 7: Save

• Save your map by clicking the icon \square .

Exercise 2: Exporting Maps as Image Files or PDFs

Arrange your layers in the layer manager so that the map section you wish to export is clearly visible. Then export this section either as an image (.png or .tiff) or as a PDF.

Step 1: Preparing the Map

Add the base map ("NorthernItaly_BaseMap") created earlier. The easiest way to do this is via the history ¹ in the layer manager. Note: You can hide unnecessary layers using the eye icon next to the layers in the layer manager.

Step 2: Exporting the Pie-Chart Map

- Open the pie chart created in this unit.
- Adjust the background to Single-colored.
- Open the image export under the Visualization & Export tool and click on Image Export.
- A blue frame will appear, indicating the area to be exported. Adjust the frame so that it encloses your area of investigation.
- In the image export tool, you can specify the image format and export size. For simple purposes, such as embedding in a website, the *.png format is suitable. For publications, select *.tiff files with an export size greater than 1000. For maps consisting solely of vector layers, the PDF format can also be selected. The PDF format allows for lossless export, and adjusting the export size is not necessary.
- Clicking Create image will generate and save an image. After image creation, a gallery with your images will automatically open. Here, you can download or delete the image or add a description.
- Currently, you can store up to 100 maps or a total of 100MB in your gallery.
- When you select a vector format like PDF, raster maps cannot be exported. For legal reasons, OpenStreetMap as a background map cannot be exported.
- Close the Image Export.

Exercise 3: Choropleth Map

In a Choropleth map, you can visualize the distribution of one variable alone.

- Switch from Bar Chart to Choropleth (the fourth tab at the top of the tool).
- Select one variant you are interested in and click on Visualize.
- All municipalities with this variant will be highlighted.
- Note: Choropleth maps work best if you have percentages of a distribution of a variable.

Handout 5: Point Symbol and Point Text Maps

In this handout, we will investigate some Wenker questionnaires from South Tyrol and generate maps from this small data set.

Exercise 1: Gather Data from the Wenker Questionnaires

- Search for the Wenker questionnaires from the following places, using either the search tool in the SprachGIS or the Wenkerbogen-App:
 - Altenburg (Castelvecchio)
 - o Bozen-Gries
 - o Bruneck (Brunico)
 - o Gand
 - o Graun (Curon Venosta)
 - o Jaufental
 - Klausen (Chiusa)
 - Prettau (Predoi)
 - o Sexten (Sesto)
 - Tscherms (Cermes)
- For some questionnaires, there are already transliterations. For others, you will need to check the questionnaires yourself.
- Look for Wenker sentence no. 28, in Standard German: "Ihr dürft nicht solche Kindereien treiben!" (You must not engage in such childish behavior!).
- In an Excel file, note the following information in separate columns:
 - o Place name
 - o GID
 - Number of Wenker questionnaire
 - Pronoun at the beginning of the sentence (*ihr*)
 - Verb (*dürft*)
 - Verb ending (-*t*, -*t*s, or something else)
 - Comments (if applicable)

Exercise 2: Point Text Map

Step 1: Import Data

• Click on the cloud icon 🚳 in the layer manager and drag the Excel file into the drag & drop area of the data import window.

Step 2: Check the Data to Be Imported

- Verify that the GIDs are correctly identified (highlighted in green).
- You can choose to ignore some columns that you do not need for the data visualization (e.g., "Comments").
- Then click on Import data into map.
- You will then be prompted to enter a layer title for your layer. Confirm.

Marina Frank, Research Center Deutscher Sprachatlas, Philipps-Universität Marburg

Step 3: Save Layer as Map

- Save the map by clicking Save as User Map in the layer manager.
- Enter a name for the layer and Confirm. (You can keep the same name.)

Step 4: Create a Point Text Map

- Right click into the map viewer, select all localities.
- Right click again, select Labels > redeData > CsvImport > Pronoun > Confirm.

Task: Style and save the map.

Exercise 3: Point Symbol Map

Alternatively, you can create a point symbol map.

Step 1: Preparation

• Repeat Steps 1 to 3 from Exercise 2.

Step 2: Create a Point Symbol Map

- Open the Visualization tool.
- Select the third tab called Symbols.
- In the tree, select only the "Pronoun" column. You can adjust the colour and symbol for each variant.

Task: Visualize and save the map.

Handout 6: Data Export and Map Management

In the following exercises, you will learn how to export data from your maps in GeoJSON format. You will also learn how to enrich your maps with additional information and make them accessible to other users.

Exercise 1: Data Export in GeoJSON Format

GeoJSON is a standard format used for exchanging geographical data.

Step 1: Data Export

- Load one of the maps you created during this workshop into the layer manager.
- Click on the fourth tab Elements in layer/map (location icon), and then select the Export list icon P.
- Under File format select GeoJSON. The file will be downloaded automatically.

Step 2: Open GeoJSON File

• Open the downloaded file with your text editor (such as Editor, TextEdit, etc.).

Exercise 2: Map Management

You will add desired metadata to your map and then grant another person read permissions for your map.

Step 1: Add Metadata

- Select a map in the layer manager.
- Click the Metadata tab (first tab, 🖹 icon) and select Edit.
- A menu will appear where you can edit all map-related information. You can, for example, provide a title for your map at the top of the menu, add a comment about your map in the middle section, and add yourself as the author in the lower part.
- **!** Do not forget to save your changes (bottom right, Save).

Step 2: Open Permissions Management and Setting Read Permissions

- Click the three-dot menu in the active layer (your map) and select Security.
- A new browser window or tab will open.
- In this window, you will see a table with the current permissions for this map.
- At the bottom of the page, select the Add User tab.
- You will need to know and manually enter the SprachGIS username of the person you want to add.
- In the access authorization dropdown menu, select Read. Then click Insert.
- The new person should now appear in the permissions table with read access, meaning they can view your map but not edit it.

Marina Frank, Research Center Deutscher Sprachatlas, Philipps-Universität Marburg

Exercise 3: Deleting Maps

Step 1: Open User Maps

- Click on Map Search and then select the User Maps tab.
- Here you can find all your user maps.

Step 2: Delete Maps

- Select any map.
- You can then delete the map by clicking on Delete Map.