

Martin Fromm

Manual for GridSuite 5+

Berlin May 2020

Table Of Contents

Introduction.....	1
Legend.....	1
About GridSuite.....	1
Theoretical Background.....	1
Personal Construct Psychology	1
GridSuite: The Concept.....	2
The User as Active Interpreter.....	2
Intuitive Operation.....	2
Clearness of Procedures and Results.....	2
Compatibility with other Software.....	2
Functions of GridSuite.....	2
Elicitation.....	2
Editing.....	3
Analysis.....	3
Data Exchange.....	3
Presentation	3
New Functions in Version 5.....	4
General	4
Preparation.....	4
Entry.....	4
Editing.....	5
Analysis.....	5
Output.....	5
Data exchange.....	5
Basics of Operation.....	5
Functions and Icons.....	6
Shortcut Combinations.....	7
General.....	7
GridEditor.....	7
MouseSort.....	7
Preparation.....	8
Profiles.....	8
Preliminary Remark.....	8
The Procedure for Creating Profiles.....	8
Preparation.....	8
Elements.....	8
Constructs.....	8
Triad/Pegasus Elicitation.....	9
Properties of the Constructs	9
Selection of the Constructs	9
Sequential Form	10
Rating.....	10
By Row.....	10
By Collumn.....	10
Conclusion.....	10
Settings.....	11
Starting the Interview.....	12
Client Mode.....	12
Consultant Mode.....	12


Starting the Triad Elicitation.....	12
Starting the Triad Elicitation with Further Inquiries (Pegasus Option).....	12
Starting the Full Context Elicitation.....	12
Starting the River Chart Elicitation.....	12
Starting the GridEditor Elicitation.....	12
Entry.....	13
Entry Steps.....	13
1. Elements	13
2. Constructs.....	13
3. Ratings.....	13
Entry via GridEditor.....	13
Purposes of Use.....	13
Eliciting a Grid Interview with the GridEditor	13
Entering a Paper and Pencil Interview.....	14
Creating an Interview Template.....	14
Procedure.....	14
Entering Basic Data, Elements and Constructs	14
Change Elements/Constructs.....	14
Enter Ratings.....	14
Adding Pictures/Graphics.....	15
Adding Weights.....	15
Entry via interview.....	15
Entering Elements.....	15
Triad Elicitation.....	15
Full Context Elicitation.....	16
River Chart Elicitation.....	17
Entering Constructs.....	18
Triad Elicitation.....	18
Full Context/River Chart Elicitation.....	19
Assigning Ratings.....	19
Rating Scale.....	19
Editing: The GridEditor.....	21
Applications of the GridEditor.....	21
Correcting Errors in Grid Interviews.....	21
Creating Interview Templates.....	21
GridEditor can also be used if an interview template is needed for the comparison of multiple interviews, in which the elements and constructs are provided but the ratings are left to the person interviewed. A new template can be entered, or the template can adopt parts or all of an existing interview.	21
Elements and constructs can be erased, supplemented or rephrased. ...	21
Changing Interviews.....	21
The GridEditor Interface.....	22
Functions and Icons of the GridEditor.....	22
Working with the GridEditor.....	22
Analysis.....	24
MouseSort.....	24
Applications of MouseSort.....	24
The MouseSort Interface.....	24
The Raw Matrix Window	24
Functions and Icons in the Raw Matrix Window.....	25


The Matrix Window.....	25
The Dendrogram Window.....	26
Working with MouseSort.....	26
MouseSort in Comparison to Cluster Analysis.....	27
Cluster Analysis.....	27
Applications of Cluster Analysis.....	27
The Cluster Analysis Interface.....	28
Functions und Icons.....	28
Working with the Cluster Analysis.....	28
Principle Component Analysis (PCA).....	29
Applications of the PCA.....	29
The PCA Interface.....	30
Settings.....	31
Biplot Graphics.....	31
Tables.....	31
Biplot (The Coordinate System of the PCA).....	31
Highlighting/Labeling Elements/Constructs.....	31
Working with the PCA.....	32
Settings.....	32
Extraction.....	32
Correlation Matrix.....	32
Eigenvalues/Scree-Plot.....	33
Commonalities.....	33
Structure Coefficients.....	33
Component Score Coefficients	33
Standardized Component Scores.....	33
Rotations Options.....	33
Selection and Presentation.....	34
Selection Lists for Elements and Constructs.....	34
Extras.....	34
Construct Lines.....	34
Anchor Lines	35
Only Left Pole	35
Element Context.....	35
Construct Context.....	35
.....	35
Further Display Settings.....	35
Saving Biplots.....	36
SharedGrids.....	36
Applications of SharedGrids.....	36
The SharedGrids Interface.....	36
Icons und Functions in the Selection Window.....	37
Icons und Functions in the Data Window.....	37
Icons und Functions in the Comparison Window.....	37
Working with SharedGrids.....	37
Retracing Differences.....	38
Dendrogram Display.....	38
Output.....	39
Reports.....	39
Data Exchange.....	40
GridSuite and other Software.....	40

Import/Export of Individual Files.....	40
Batch Processing with the GridConverter.....	41
Select.....	41
Converting	42
Technical Information.....	43
System Requirements.....	43
Standard Directory.....	43
Registration.....	43
Support.....	44
References.....	45
Glossary.....	46

Introduction

Legend

	Pointer that shows how to reach or activate the described functions in the program
---	--

	Important advice
---	------------------

About GridSuite

Theoretical Background

GridSuite is software for eliciting, editing and analyzing so-called Repertory Grid-Interviews. This special interview concept stems from Personal Construct Psychology.

Personal Construct Psychology

The Personal Construct Psychology was founded by George A. Kelly in the 1950's. The personality model of this psychology stresses man's active examination of his environment ("man as a scientist"). The distinction between perception and experience is assumed to be the psychological base operation of this examination. This distinction ("personal construct") merges experiences according to subjective similarity/dissimilarity and gives them meaning. The body of constructs with which man organizes his experiences make up his subjective world, and he acts according to these constructs.

In order to understand man and his actions, it is important to gain access to his personal constructs. That is the goal of Repertory Grid Interviews. They explore the subjective world of the person interviewed by asking about his or her personal constructs and how the experiences are combined and organized according to similarity/dissimilarity. What is special is that the interview does not ask abstract questions, for example what the person interviewed thinks is important and why or what he finds fun. Rather, the interview allows the person interviewed to differentiate between 'simple' experiences and then asks what this distinction means. The substance of the interview is the concrete demonstration of how the person interviewed orients himself in the world of his experiences and the consultant's monitoring of this process and attempt to understand it.

This understanding of another person is not a correct or false diagnosis but an interpretation based on the construct system of the consultant. There are always different ways of reading something which do not differ in their closeness to reality but in their usefulness.

GridSuite: The Concept

The following aspects were in the foreground during the designing of GridSuite:

The User as Active Interpreter

In comparison to other programs, GridSuite emphasizes the active roll of the user as interpreter of the interview data. His questions about the data are in the foreground. GridSuite is designed in the spirit of "constructive alternativism" (Kelly 1955/1991a, pp. 15/11) as an aid to develop viable readings of interview data and not assumed 'true' results. GridSuite provides various editing and analyzing tools for this purpose. Statistical calculations, which GridSuite, like other programs, makes available to its users, remain in the background as resources.

Intuitive Operation

To facilitate the user's concentration on the data content of his work, GridSuite was designed with great value being placed on clear and intuitive operability. The interpretation work is supported and stimulated by numerous options and special analysis modules (MouseSort and SharedGrids).

Clearness of Procedures and Results

GridSuite offers numerous options for arranging the procedures and results from interviews clearly for counseling, teaching or presentation purposes, to highlight data and their relations, to construct and to save different views of the data, etc.

Compatibility with other Software

GridSuite is programed in Java and can be used just as well under Windows and MacOS. GridSuite uses the XML-data standard, which facilitates a simpler data exchange with other programs. GridSuite also offers an Import/Export Option, which makes the data exchange with other grid programs and SPSS possible.

Functions of GridSuite

Elicitation

Interview data can be elicited in GridSuite in different ways:

- Elicitation of interviews in the client-computer-dialogue
- Manual entry of interview results
- Import/Export of existing data files from different programs (GridConverter)

Various parameters for the eliciting of interviews in the client-computer-dialogue can be preset by the counselor under Profiles.

Editing

The GridEditor allows for the retrospective editing of all interview components: deletion or replacement of elements or constructs, change in ratings, addition of comments, descriptions, etc.

In addition to the correction of mistakes, this also makes the analysis of corrected interviews (What if?) and the creation of interview templates possible.

Analysis

Various analysis options allow different views of the data

- The module MouseSort is a specialty of GridSuite. MouseSort makes it possible to do a computer-supported analysis of Grid-Interviews by hand. Raw data is rearranged according to similarity and displayed graphically (see Cluster Analysis). It is especially suitable for educational purposes, but it is also suitable for experienced users, who want to test alternatives to computer analysis.
- Cluster Analysis arranges the raw data automatically according to similarities and illustrates the similarity clusters in dendrogram graphics (tree structures).
- Principal Component Analysis provides indications for underlying structures in an interview. It displays these graphically in coordinate systems.
- The module SharedGrids is especially suitable for comparing two or more interviews (with the same elements and constructs) and immediately visualizing the similarities and differences.

Data Exchange

GridSuite offers convenient Import-Export-Filters (GridConverter) to allow the functions of GridSuite to be combined with other programs and the results to be displayed in other programs:

- Exchange of data with the most current Grid-Programs
- Exchange with the Statistic Software SPSS
- Export to Microsoft Excel and Word

Presentation

GridSuite offers numerous possibilities for displaying, highlighting and presenting selected data:

- Functions for individually adjusting the display colors, window sizes and views, etc.
- Filters for displaying selected data
- Graphic tools for highlighting and labeling data
- Screen shot functions for saving selected views and adding them to reports
- A profile editor with which reports can be configurated

New Functions in Version 5

GridSuite 5 has a new desktop and has been supplemented and enhanced in many details. The main goal was to make the program even more flexible while maintaining an intuitively simple operation.

An overview of the main changes:

- **Openness**
 - Display texts in the national language
 - Additional Import-Export-Filters
- **Flexibility**
 - Individualized display texts
 - Additional elicitation varieties
 - Pictures/graphics as elements
- **Application**
 - Additional options for analysis and display
 - Profile for interview processes
 - Profile for reports

General

- Client mode: GridSuite can now be started in client mode, which only contains the views and application elements the client needs.
- Display texts: The texts for the client can be formulated freely in any language and then saved as the default.
- Display settings: colors, fonts etc. can be even more individually customized.
- Presentation functions: The elicitation and analysis windows contain new functions for selection, highlighting and naming of display contents.

Preparation

- Default and saving of interview processes in all the significant details:
 - Texts (e.g. for different clients, in different languages)
 - Font size can be preset for elicitation screens
 - Zoom function for dendrogram and biplot screens
 - Elicitation varieties and sequences of elicitation varieties
 - Triad configuration (random, sequential, preset)
 - Analysis modi

Entry

- Further inquiry option (Pegasus option) for the triad elicitation
- Full Context Elicitation: Supplementary to or as an alternative to triad elicitation, it allows for a freer elicitation of constructs
- River Chart Elicitation: Elicitation form, which is especially suitable for autobiographical interviews
- Pictures and graphics are possible as elements
- Weighting of constructs is possible

Editing

- Ratings can be entered by column or by row.
- Import of elements/constructs from other grids
- MergeGrids: Merge grids with same elements but different constructs
- Aggregate grids: Grids with same elements and constructs can be aggregated in a 'median'grid

Analysis

- Context search: graphic option for displaying similar constructs/elements
- Trace function: simple identification of conspicuous elements in SharedGrids
- Extreme ratings of constructs/elements are shown

Output

- Screenshot function continuously available
- Enhanced print function for the relevant interview data
- Report profiles: data for reports can be selected and the selection can be saved as profile

Data exchange

- Import
 - Flexigrid
 - GridStat/GridScal
 - RepGrid2
 - EnquireWithin
- Export
 - Flexigrid
 - GridStat/GridScal
 - RepPlus
 - IdioGrid
 - SPSS
 - Microsoft Excel
 - Microsoft Word

Basics of Operation

GridSuite uses a so-called multiple document interface. This makes it possible to display and compare multiple documents simultaneously with each document appearing in its own window.

The program functions are all accessible in the application menu of the main window:

Frequently used functions can also be activated with icons. Each icon has a short annotation (ToolTip), which appears when the mouse is left on top of the icon for a few seconds.

All program functions for the display and editing of grids (GridEditor, all analysis modules) have a similar structure.



















The tools on the horizontal toolbar directly influence the display of the data in the active window, offer additional support or manipulate the data.

The windows GridEditor, GridConverter, Raw Data, Cluster Analysis and Principle Component Analysis (PCA) are internal windows, which you can manage using the menu title Window.

The windows for the execution of interviews, MouseSort and SharedGrids are external windows and cannot be managed with this menu title. You can find these windows in the Windows taskbar.

Functions and Icons

The menu bar of the main window of GridSuite shows the following icons:

	Create a new grid file
	Open a file
	Save
	Save as
	Save as a PNG graphic
	Print
	Elicit interview
	Triad elicitation
	Triad elicitation with further inquiry (Pegasus Option)
	Full Context Elicitation
	River Chart Elicitation
	GridEditor
	Raw data
	Original data
	Cluster analysis
	MouseSort
	Principle Component Analysis (PCA)
	SharedGrids
M	MedianGrid

Shortcut Combinations

General

F1	Help
Ctrl + Shortcut for the menu item	Options of the Application Menu
Ctrl - P	Profile Editor
Ctrl - C	Consultant Mode
Ctrl - G	Current Grid in the Editor

GridEditor

Ctrl - S	Save
Ctrl - Shift - S	Save under
Ctrl - N	New Grid
Ctrl - Left cursor key	Move highlighted element to the left
Ctrl - Right cursor key	Move highlighted element to the right
Ctrl - Up cursor key	Move highlighted element up
Ctrl - Down cursor key	Move highlighted element down
Ctrl - Delete	Delete highlighted element/construct

MouseSort

Ctrl - Left cursor key	Move highlighted element to the left
Ctrl - Right cursor key	Move highlighted element to the right
Ctrl - Up cursor key	Move highlighted element up
Ctrl - Down cursor key	Move highlighted element down
Ctrl - Delete	Delete highlighted element/construct

Preparation

Profiles

Preliminary Remark

GridSuite has several comprehensive possibilities for running guided interviews using profiles (presettings) starting with Version 4. These various sequences can be saved and used in their saved form or in an adjusted form if required.

Profiles are especially needed if

- various interviews with specific settings are conducted frequently,
- clients carry out the interviews alone and operating errors need to be avoided,
- a standardization of the interview process is important for multiple elicitations.

The Procedure for Creating Profiles

The creation of profiles is geared toward the (chronological) process of the interview and toward the decisions that are to be made in the individual phases.

Preparation

This step allows for the adoption of an existing profile or for the creation of a new one.



The settings of the display texts are particularly important here: individual texts for certain clients, texts in other languages, etc.

Elements

The type of element elicitation and the source of the elements (e.g. taken over from existing grids) can be determined here.

If the elements should be furnished with pictures/graphics, this can take place here.

Constructs

The majority of settings are possible in this window, for example:

- type of elicitation,
- formulation of the questions for the elicitation
- type of choice of elements for the triads

Change the settings on how to elicit the constructs here.

Elicitation Type: Triads
 Pegasus (Triads with query)
 Free (Full Context/River Chart)

Questions

Emergent Pole Question:

Opposite Pole Question:

Pegasus

Pegasus Threshold:

Constructs Properties

Limit number of constructs Limit to Constructs

Elements for triads are randomly chosen

Weighted Constructs

Interview Cycle: Elicit all constructs first, then proceed to rating

Custom Constructs

Triad/Pegasus Elicitation

The Pegasus Elicitation inquires further with a preset threshold value for the similarity of constructs/elements whether the client wants/can differentiate more clearly between very similar constructs/elements.

Of course, this question form can only be used if a standardized inquiry is not necessary. It can be helpful in the consultation as a necessitative question alternative. The Pegasus threshold value should not be set too low, however, because the client can otherwise experience the question as unpleasant criticizing.

Properties of the Constructs

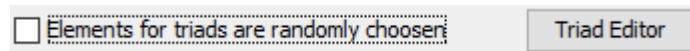
Selection of the Constructs

The random selection of elements for the triad elicitation is unfit for some questions, especially if

- certain elements absolutely need to be regarded
- a standardized questioning is required for the comparison of interviews

The first case exists, for example, when the interviewed person would like to assess himself in relation to others. The interviewed person should then appear accordingly in the triads as a comparison element (often or always). The same would apply, for example, if a business wants to compare its product to the products of its competitors.

In the case of such questions, it can be necessary to determine the triad formation either partially or totally with presettings. The triad editor allows for the appropriate settings. It is activated when the preset check mark by "Random selection of the elements for the triads" is removed.



Sequential Form

Only one element is replaced each time in the sequential procedure form, and the other two elements remain the same. This alternative is mentioned by Kelly but should be handled carefully because it demands a quite differentiated separating capability from the client.

This alternative should, thus, be used preferably when enough previous experience exists that this type of interview seems appropriate for this client.

Rating

One aspect here is whether the ratings should be elicited with the rating scale or inscribed virtually with the form in GridEditor.

The second important aspect is whether the ratings should be elicited by row or by column:

By Row

Constructs are elicited one at a time in the interview. As soon as a construct has been formulated, it is applied to all of the elements.

- The advantage: the elicitation is diversified.
- The disadvantage: the interviewed person only applies his constructs to the backdrop of the constructs that have been elicited up to that point.

By Column

All of the constructs are elicited first, and then they are applied to the elements one element at a time.



- The advantage: The client has all of the elicited constructs in view when he applies the constructs to the elements, and he can choose the ratings in relation to the rest of the constructs.
- The disadvantage: The elicitation of the ratings becomes diligence work.

Conclusion

The question here is whether a specific elicitation sequence should be preset, for instance a Full Context Elicitation subsequent to the triad elicitation.

Such following interviews can be very wise, but it is hardly possible to judge whether they are sensible in advance. Profiles, which allow for a sequence of inquiry varieties, should, therefore, only be adopted after appropriate pilot studies.


Settings

	Extras - Settings
	Icon

Among the different settings (e.g. **font size** in elicitation screens) that are offered here, the settings of **paths** for saving grids, profiles, and plots and of **start options** (especially client and consultant modes) are especially important.

Automatically dock Elements when rating with scale

With this setting elements are either arranged automatically at the rating scale (default) or can be moved freely.


	When working with many elements and pictures automatical docking should be switched off.
---	--

Starting the Interview

Client Mode

In client mode the interview is run according to the settings, which the consultant has set in the Profile Editor.



All operational elements not needed by the client are masked or deactivated. This means that operator errors are avoided as far as possible.

	The transition to the consultant mode is possible at all times with Alt - C . This transition makes all program options available if they are required.
---	--

Consultant Mode



In consultant mode, all of the interview alternatives and their combinations are available.

Starting the Triad Elicitation



	Icon  in the menu bar at the top or in the functions list on the left
---	--

Starting the Triad Elicitation with Further Inquiries (Pegasus Option)



In this option, GridSuite indicates when two constructs have repeatedly been applied similarly or when two elements are repeatedly assessed similarly. The similarity threshold can be set in the Profile Editor. GridSuite then offers the possibility to undertake a subtler differentiation.

	Icon  in the menu bar at the top or in the functions list on the left
---	--

Starting the Full Context Elicitation

	Icon  in the menu bar at the top or in the functions list on the left
---	--

Starting the River Chart Elicitation

	Icon  in the menu bar at the top or in the functions list on the left
---	--

Starting the GridEditor Elicitation

An interview can also be conducted with the help of the GridEditor. The course of the interview consists of virtually filling out a form.

	File-New-Enter Interview Data
---	--------------------------------------

Entry

Entry Steps

A Grid interview typically follows the following steps:

1. Elements

First, the topic of the interview is broken down into examples, so-called "elements." The topic "holidays" is broken down, for example, into a list of types of holidays, and the topic "exam" is broken down into exam-relevant situations.

2. Constructs

The elements are differentiated according to similarity and dissimilarity. These differentiations are the so-called "(personal) constructs." In the Grid interview this differentiation is denoted in a bipolar form, e.g. "intelligent-dumb" or "relaxed-tense." The first pole (the so-called "emergent pole") shows the similarity between elements, and the second pole (the so-called "implicit pole") shows the dissimilarity to other elements. For example, Michael and Laura are characterized as intelligent unlike Lucas, who is characterized as dumb.

3. Ratings

The application of the constructs to the elements can happen with varied differentiation. In the simplest (dichotomous) form, the elements are only assigned to one pole of the construct. One person, for example, will be characterized either as intelligent or dumb. This assessment can also take place with a multi-level scale, whose ends are the two poles of the construct. Depending on the number of points on the scale, the person can be appraised as more intelligent or less intelligent. A 5-point scale is commonly used.

The differentiation and the form of the individual steps is dependent on the purpose of the interview. The River Chart Elicitation is perhaps concerned with only the first step, or the Full Context Elicitation is selectively used to vary step 2.

Entry via GridEditor

Purposes of Use

Interview data can be entered completely or partially with the Grid Editor. Which data is entered depends on the purpose of use:

Eliciting a Grid Interview with the GridEditor

In this case, the GridEditor is practically used as a form, in which the interview data are entered bit by bit. The interactive and graphic possibilities offered by GridSuite in other elicitation alternatives are not used here.


Entering a Paper and Pencil Interview

Interviews in the client-computer-dialogue are not always possible or sensible. These interviews can be entered into GridSuite and further analyzed after the elicitation.

Creating an Interview Template

When multiple interviews should be compared, they have to have been conducted with uniform data. A template can be created with the GridEditor for this purpose. In this case, the template does not include all of the data. It usually contains elements and constructs so that only the ratings are assigned during the interviews.

Procedure


	File-New-Enter Interview Data
---	--------------------------------------

Entering Basic Data, Elements and Constructs

A window appears, in which you can enter the following information for the Grid: topic, client, consultant, general comments, value range for ratings, element and construct notations.

A clear and unambiguous name for the topic and the client is especially important if multiple people will be interviewed about one topic or if one person is to be interviewed about multiple topics.

After the elements and constructs have been added using the appropriate buttons, the elements and constructs will appear in the tree view on the right side for easier orientation.



	Corrections are not possible in this step after elements and constructs have been added; however, corrections are possible in the next step with the GridEditor.
---	--

After accepting this data by clicking OK, the GridEditor will start, among other things, with the following options:

Change Elements/Constructs




Corrections of possible mistakes can now be made by clicking on the names of elements or constructs.

Enter Ratings




Ratings can be entered by clicking on the individual cells in the matrix. By clicking on the appropriate icon, the entry can occur by column  or by row . The cells can be clicked on individually at all times to be corrected.


If an interview template should be created for multiple uses, in which the elements and constructs are provided and only the ratings are to be added, the cells for the ratings should remain free and the grid should be saved in this incomplete form.

Adding Pictures/Graphics


If desired, pictures/graphics can be assigned to the elements. After clicking on the respective element field and clicking on the icon , an explorer search window will open for selecting the picture. The pictures can be hidden with  and removed again with .

Adding Weights

The constructs can be weighted according to their personal relevance and can be organized according to this weight. Clicking on the icon  causes a window to open, in which constructs can be weighted from 1 to 5 (or corrected) by shifting the pointer on a scale. These weights appear as stars behind the construct poles. The weights can be hidden using the icon  and shown with .

	More information about working with GridEditor can be found under Editing .
---	--

Entry via interview

	If a touchscreen is to be used for entries the Windows screen keyboard (menu "ease of access") must be started before starting GridSuite.
---	---

Entering Elements

Triad Elicitation

After the opening screen, in which the topic of the interview and the name (or code) of the client is asked, the screen for entering the elements will open.

The name of the element can be entered in the field at the top left. It will be accepted as an element field in the upper window by clicking on the field "Add Element."

With a right mouse click on the element markers in the upper window, an options menu will be opened, in which the names can be changed and **pictures/graphics** can be assigned to the elements.


Click on **Next** to move to the next step, the elicitation of constructs.

Full Context Elicitation

In the Full Context Elicitation all the elements are given at the same time - not just three at a time as in the triad elicitation.

Transferring Elements

Elements can also be transferred from earlier interviews. The window on the left shows a list of existing element lists to choose from.

	The elements have to be clicked on and then dragged into the right window.
---	--

Using the CTRL key, **multiple elements** can be highlighted and moved simultaneously into the right window.

Entering Elements

New elements can be entered in the field at the top left. After clicking on the button "Add element" the button will start to blink. Clicking on a point within the upper right window will place the element there.

Adding Pictures/Graphics

Clicking on the element markers in the window on the upper right will open an edit menu. The names can be changed, and pictures/graphics can be assigned to the elements. Clicking on these options will open an appropriate selection window.

When the mouse pointer touches the lower right corner of an element marker, it changes into a double arrow, which can be used to change the size of the marker.

Arranging Elements


The element markers can be clicked on and shifted with the left mouse key within the upper right window. The mouse pointer will change in this case to a cross.

Highlighting/Labeling Elements

Individual elements or groups can be framed with a rectangle or a circle, provided with a note or emphasized with an arrow. The necessary buttons are found in the upper right above the right window.



First, the necessary icon has to be clicked on with the left mouse key. Clicking in the upper right window will place note, frame or arrow at this position.

	The arrow requires two mouse clicks in the window: the first click will mark the end of the arrow, and the second click will mark the position of the arrow's point.
---	--

The highlighting graphics can be shifted with the left mouse key. The direction of the arrow can also be changed.

When the mouse pointer touches the lower right edge of the rectangle or circle, it changes and can be used to adjust the size of the graphics.


Right-clicking on the highlighting graphic will open an options menu, in which text and colors can be changed and pictures can be added.

River Chart Elicitation

In the River Chart Elicitation, the elements are organized one after another on a timeline in the upper right window. This line can be seen as the flow of life to which events of life (experiences, situations, etc) are attached.

Transferring Elements

Elements can be prepared for this and made available for selection in the window on the left - especially when they should be illustrated with pictures.

	The elements have to be clicked on and then dragged to the desired position on the blue line in the right window.
---	---

Using the CTRL key, **Multiple elements** can be highlighted and moved simultaneously into the right window. This is not particularly sensible in this elicitation.

Entering Elements

New elements can be entered in the field at the top left. After clicking on the button "Add element" the button will start to blink. Clicking on a position on the blue line within the upper right window will place the element there.


Adding Pictures/Graphics

Clicking on the element markers in the window in the upper right side will open an edit menu. The names can be changed, and pictures/graphics can be assigned to the elements. Clicking on these options will open an appropriate selection window.

When the mouse pointer touches the lower right corner of an element marker, it changes into a double arrow, which can be used to change the size of the marker.

Arranging Elements/Changing the River Chart

The element markers can be clicked on and shifted along the blue line with the left mouse key. Pulling the elements away from the blue line leads to a corresponding curvature of the line.


	Additional deviating points can be added to the blue line by double clicking with the left mouse key. They appear as a black square. The line can be pulled and bent at this point. The points can be removed again by clicking on the right mouse key.
---	--

Highlighting/Labeling Elements

Individual elements or groups can be framed with a rectangle or a circle, provided with a note or emphasized with an arrow. The necessary buttons are found in the upper right above the right window.



First, the necessary icon has to be clicked on with the left mouse key. Clicking in the upper right window will place note, frame or arrow at this position.

	The arrow requires two mouse clicks in the window: the first click will mark the end of the arrow, and the second click will mark the position of the arrow's point.
---	--

The highlighting graphics can be shifted with the left mouse key. The direction of the arrow can also be changed.

When the mouse pointer touches the lower right edge of the rectangle or circle, it changes and can be used to adjust the size of the graphics.

Right-clicking on the highlighting graphic will open an options menu, in which text and colors can be changed and pictures can be added.

Entering Constructs

Triad Elicitation

After entering the elements and clicking on **Next**, three elements will be specified for differentiation. How the elements are chosen and varied depends on the presettings in the Profile Editor.

Depending on the presetting of the interview profile, the question is:

"How are two of these alike in some way, as opposed to the third?"


or:

"How are two of these alike in some way, but different from the third?"

The first case is looking for an opposite (so-called opposite form), whereas the second case is looking for a difference (so-called difference form).

The elements that are alike have to be clicked on and will spring into the left frame, and the third element will spring into the right frame.

The notation of the similarity (of the first construct pole, the emergent pole) can be entered in the text field in the left frame. Hitting **Enter/Return** will confirm this entry and open a second field for the opposite pole (the implicit pole) in the right frame.

	If more than one construct should be applicable this can be entered during the next step.
---	---

If no construct can be found the triad can be **skipped** by clicking the button down on the left.

Next leads to the next step, rating.

Full Context/River Chart Elicitation

Constructs can also be elicited with this alternative. The method differs, however, from the triad elicitation.

Clicking with the left mouse key next to an element or group of elements will open a question window. In the case of the Full Context elicitation, the question is:

"What do these elements have in common?"

In the case of the River Chart elicitation, the question is:

"What is characteristic of this element?"

The answer yields the first pole of a construct. The confirmation of the entry opens a new window that asks for the opposite pole of this similarity or characteristic. After the entry of the opposite pole, the construct will appear next to the element or group of elements. This construct label can be moved with the mouse, for example, if it is blocking important information.

Next leads to the next step, the rating of the constructs.

Assigning Ratings



Rating Scale

The constructs are applied to the elements during the rating. The element markers are relocated on a rating scale, whose ends are the poles of the respective construct. The scale is broken down into as many units as are specified in the interview profile.

In the case of the triad elicitation, the previously differentiated elements are already arranged on the ends of the scale. They can still be moved if this arrangement is too extreme. The remaining elements can be dragged to the scale and placed at a certain position on the scale. It is possible to arrange multiple elements at the same place on the scale.

Using **Ctrl**-key and mouse together all elements can be dragged to the scale.

If the construct cannot be applied to one of the elements, this element can simply be left on the left side of the desktop. A protocol will be created about these elements.

	Elements, that cannot be placed on the scale receive the mean value of the scale to ensure that the results matrix is completely filled.
	If the button Add Element is used the ratings for the constructs elicited up to this point can be filled in at the end of the interview using the GridEditor.

Clicking on the button **Add Construct** offers the possibility to enter and rate an extra construct.

Editing: The GridEditor

Applications of the GridEditor

Saved grids can be retrospectively edited with the GridEditor, and new grids can be created. GridEditor is especially suitable for the following tasks:


- Correcting errors in grid interviews
- Creating interview templates
- Changing interviews

Correcting Errors in Grid Interviews

In addition to spelling mistakes, it is possible to correct false ratings or interchanged scale poles, etc..

Creating Interview Templates


GridEditor can also be used if an interview template is needed for the comparison of multiple interviews, in which the elements and constructs are provided but the ratings are left to the person interviewed. A new template can be entered, or the template can adopt parts or all of an existing interview.

	If an existing interview is taken as the foundation of a template, the ratings have to be filled with zeros:
---	--

Elements and constructs can be erased, supplemented or rephrased.







Changing Interviews














Using GridEditor, interviews can be split up or purged of presumably disturbing elements or irrelevant constructs.

	The result of these changes can only have a hypothetical character because the interview took place with the presumably disturbing elements or irrelevant constructs.
---	---

The GridEditor Interface

Functions and Icons of the GridEditor

	Edit - GridEditor
	Icon 
	File - Open (File will open automatically in GridEditor)
	Icon  (File will open automatically in GridEditor)


	Information about the basic data of the grid
	Add/Delete element or construct
	Import elements/constructs
	Merge Grids
	Enter ratings by row/by column
	Set all ratings to zero/random numbers
	Assign, Show, Hide, Delete pictures
	Weight constructs, show/hide weights, organize constructs according to weights
	Change the role description of the elements
	Move elements/constructs
	Reverse construct poles: The construct poles are reversed so that on a scale of 1 to 5 the ratings change as follows: <ul style="list-style-type: none"> • 1 becomes 5 • 2 becomes 4 • 3 becomes 3 • 4 becomes 2 • 5 becomes 1
	Display the ratings with number/color values
	Undo the last change. This function is not available for: <ul style="list-style-type: none"> • Changes in the structure dialogue • Changes in the scale • Changes in element and construct notations and ratings

The functions of the menu bar in the main window of GridSuite are also available: see **About GridSuite -Functions and Icons**.

Working with the GridEditor

With the GridEditor it is possible to change all constituents of a grid interview. In doing so, the following is true:

- Change element and construct names by double clicking on the respective field.
- Change ratings with a single click on the respective cell.

	If different versions of a grid are to be kept, the changed versions have to be saved under new names.
---	--

Analysis

MouseSort




Applications of MouseSort

MouseSort makes it possible to do a computer-supported analysis of the grid interview by hand. The goal is to make the data clearer. The data of the interview matrix are arranged so that similar constructs and elements are near each other and far away from dissimilar ones.

The advantage of an analysis done by hand over a computer analysis is that various alternative perspectives of the interview data can be played with in addition to the mathematically based analysis of the computer. This is especially helpful:


- when you first start working with grid interviews, so that you can get a feel for the complexity of the information provided by such an interview, rather than simply relying on the computer and
- for experienced users, who want to contrast the purely mathematical computer analysis with an analysis enhanced with alternative views of the data.

The MouseSort Interface

	Analysis - MouseSort
	Icon 

The MouseSort-Interface has three windows:












- the **raw matrix window** (above left),
- the **matrix window** (above right), in which similarity and difference values for constructs and elements are displayed, and
- the **dendrogram window** (below), in which the similarities and differences of constructs and elements are displayed graphically in a tree structure.

	Use the dividing line to change the size of the three fields in MouseSort and the arrows on the dividing line to close and reopen these fields.
---	---

The Raw Matrix Window

The raw matrix window is the workspace, in which the raw data can be rearranged. These changes are immediately displayed graphically in the dendrogram window.

Functions and Icons in the Raw Matrix Window

	Open file
	Save as
	Save as a PNG-graphic
	Print
	Show ratings with number values/colors
	Undo
	Move elements/constructs
	Reverse construct poles: the construct poles are reversed and the scale values are changed accordingly. On a 5-point scale: <ul style="list-style-type: none"> • 1 becomes 5 • 2 becomes 4 • 3 becomes 3 • 4 becomes 2 • 5 becomes 1
	Delete elements/constructs
	Show dendrogram window horizontally below/vertically on the right
	Help

The Matrix Window

The matrix window shows similarities and differences of constructs and elements. Switch between the displays using the following tabs:




The **Similarities Matrix** shows the percentage of agreement between the ratings of the individual elements/constructs in the upper right portion.

To begin with, the differences of all elements/constructs are added among themselves and normalized under consideration of the number of elements/constructs and the gage of the rating scale. The similarity is calculated as 1-difference. Finally, the range is standardized so that it runs from 0 to 100 for the elements and from -100 to +100 for the constructs. The range for the similarity of constructs is, thus, similar to the range of correlation coefficients.

The value **centrality** under the matrix shows the average similarity of a construct/element to all others. It can be seen as an indicator for how 'typical' or unusual an element is, or how 'central' or marginal a construct is.

The value **average centrality** (in Tschudi: total connectedness) as the average of the central values can be seen as a measure for the cognitive complexity of the construct system. Values >60 indicate a less differentiated system - similar in meaning to the eigenvalue of the first component in the PCA.


The matrix data are repeated in a simple format under **basic statistics** with cumulative values for the number of extreme ratings per construct/element and details about the utilization of the scale values.

	Reloads the display after changes in the raw matrix window
---	--

The Dendrogram Window

The dendrogram window graphically shows the similarities/differences of elements/constructs corresponding to the configuration in the raw matrix window. The percentage of agreement between elements or constructs can be read on the vertical number bar on the left (for the elements) and on the horizontal bar on the right (for the constructs).




Shallow bends in the dendrogram show a high percentage of similarity between elements or constructs, and higher bends show a low percentage of similarity.

	<p>Red lines in the constructs in the dendrogram show that the construct has primarily negative relationships to the other constructs and that the poles of this construct probably should be reversed.</p> <p>The length of the red lines is not to scale, but is shortened for lack of space.</p>
---	---

The button **Cluster Analysis** allows for the comparison of one's own analysis with that of the computer.




Working with MouseSort



All changes in the arrangement of the grid raw data occur in the raw data window at the above left. The matrix window provides information about which changes should be carried out. The dendrogram window displays the result of changes graphically.


The potentially necessary **reversing of the construct poles** is possible with the button . The pole notations are interchanged and the ratings are changed accordingly. To reverse the poles, click on the relevant construct in the raw grid (workspace) to highlight this construct and then click on the button . The construct will be marked with the icon  in both the above left window and the dendrogram window. The values in the matrix window will be calculated again. The pole reversal can be repeated for all relevant constructs, and it can be undone again.

All **values of a construct can be highlighted** for better orientation. Clicking on a construct pole in the raw data window highlights all associated values in the matrix window (yellow). Cancel the highlighting of these values by clicking on one of the light blue fields at the top of the raw matrix window, which show the ends of the rating scale.

You can also **highlight individual cells** in the matrix window for better orientation. Clicking on a cell will highlight this cell (blue). Clicking on the cell again will cancel the highlight.

To **move** constructs in the raw matrix window, highlight the construct by clicking on it, and then click on the following buttons to move the construct/element by one position:   . The display in the dendrogram window will change accordingly.


For the realignment, you can choose between the numerical display of the ratings and the display with different shades of color:  .

	In the dendrogram window, the ratings always appear as various shades of color.
---	---

MouseSort in Comparison to Cluster Analysis

The rearrangement of the data matrix as applied in MouseSort is known in the literature as focusing. This work can also be transferred to the computer. As a matter of fact, similarity calculations are taking place the entire time in the background of MouseSort and lead to the similarity and difference values in the matrix and the dendrogram illustrations.

The option **Cluster Analysis** shows where your reading of the data differs from results reached purely mathematically.

	The order of elements and constructs is not important for a comparison. What is important is that comparable clusters develop.
---	--

Cluster Analysis

Applications of Cluster Analysis

The cluster analysis aims to identify clusters/groups among the elements and constructs, which display great similarity to each other and simultaneously clear distinction from other clusters.


The grouping of clusters is based on the similarities between the elements/constructs.

Starting with the element/construct pair with the highest similarity, the clusters are built hierarchically with a gradual increase in size. The element/construct with the greatest similarity to the existing cluster is added until all elements/constructs are integrated in the hierarchy. The results are made particularly clear in the dendrogram illustration.

There are numerous methods of cluster analysis which vary in the way they build clusters.

The problem: When the first data pair has been established as a cluster and the computer is searching for the next value, the question of how to determine the similarity to the cluster arises because the values of the cluster are not the same.




Similar to what? The most common methods are known as: single, complete and average linkage. The single linkage method, which is used by GridSuite, uses the distance from the new value to the nearest value in the cluster, the so-called nearest neighbor. The complete linkage method uses the furthest neighbor in the cluster, and the average linkage method uses the average value of the values in the cluster.

	<p>There are numerous methods of cluster analysis which vary in the way they build clusters. GridSuite uses the single linkage method, which uses the distance from the new value to the nearest value in the cluster (nearest neighbor) as the measure of similarity. The complete linkage method uses the furthest neighbor in the cluster, and the average linkage method uses the average value of the values in the cluster.</p>
---	---






If the internal similarity of elements *or* constructs is being examined, Cluster Analysis and PCA provide similar information in most cases. Cluster Analysis is clearer for clients.

If the relations of elements *to* constructs are being examined, PCA is much more informative.

The Cluster Analysis Interface

	<p>Analysis - Cluster Analysis</p>
	<p>Icon </p>

Functions und Icons

	<p>Numerical/color display of the ratings</p>
	<p>Hide pictures/weighting</p>
	<p>Hide/show z-values</p>
	<p>Display tree structure with straight/slanted lines</p>
	<p>Enlarge/reduce</p>

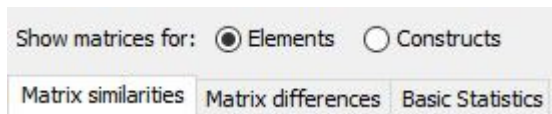
The tab **Cluster Statistics** opens the window with the raw data and the order of the cluster formation.

The **Similarity** and **Difference Matrices** of the Grid can be shown by clicking on the icon in the main menu of GridSuite.

Working with the Cluster Analysis

In addition to the graphic dendrogram display, the similarity and difference matrices are also available for the analysis of data with the icon .

The **matrix window** shows the similarities and differences of constructs and elements. Clicking on the tabs switches between the displays:



The **Similarities Matrix** shows the percentage of agreement between the ratings of the individual elements/constructs in the upper right portion.

The differences of all elements/constructs are added among themselves and normalized under consideration of the number of elements/constructs and the gage of the rating scale. The similarity is calculated as 1-difference. Finally, the range is standardized so that it runs from 0 to 100 for the elements and from -100 to +100 for the constructs. The range for the similarity of constructs is, thus, similar to the range of correlation coefficients.

The value **centrality** under the matrix shows the average similarity of a construct/element to all others. It can be seen as an indicator for how 'typical' or unusual an element is, or how 'central' or marginal a construct is.

The value **average centrality** (Tschudi: total connectedness) as the average of the central values can be seen as a measure for the cognitive complexity of the construct system. Values >60 indicate a less differentiated system - similar in meaning to the eigenvalue of the first component in the PCA.

Analyses with modified interview data and alternative analyses of the original data can be tested in the combination with the **GridEditor** and **MouseSort**.

	Since all elements/constructs are integrated into the calculation, it is possible that not only "real" clusters are generated but also artifacts. The z-value (cf. Johnson) compares the density within the clusters with the purely random expected density. The z-value (cf. Tschudi) should lie above 2.0 and increase upward along the hierarchy.
--	---

Principle Component Analysis (PCA)

Applications of the PCA

The Principle Component Analysis calculates the similarities and differences of the targeted elements and constructs.

It goes beyond the Cluster Analysis by further reducing the amount of information about the (correlative) relationships of the elements and constructs and expressing this more economically through the principle components:

- The goal in the calculation is to express the correlation matrix through a smaller matrix.
- The question is to what extent the observed correlations can be traced back to a common underlying variable.




- For geometric visualization the elements and constructs of a person can be entered into a coordinate system that represents the psychological space (Kelly) in which a person moves subjectively. The relationships of individual constructs and elements to one another can be depicted as relationships in this space and to the axes of the coordinate system.

One feature of the PCA calculation and presentation in GridSuite is that elements and constructs are generally mapped in one coordinate system (thus the name biplot for this twofold display). In addition to the (correlative) relationships between the elements and constructs among one another, the relationships to these coordinate axes are also calculated. These axes are only a mathematical orientation aid, which can be compared to reference points used for orientation in the measurement of different locations on a site. The axes have no actual meaningful content; rather, they relate the variables (in this case: elements and constructs) to each other.





Due to the higher abstraction from the raw data, the affiliation of the results to the raw data is no longer possible, as in the Cluster Analysis.


The PCA is clearly more informative than the Cluster Analysis with respect to the relations of elements and constructs, when searching for elements that are characterized by certain constructs, or when searching for constructs that primarily characterize one or more elements.

The PCA Interface

	Advanced - Principle Component Analysis
	Icon 

The PCA interface contains the following icons:

	Open plot
	Save plot
	View settings
	Hide pictures
	Hide weights
	Enlarge/reduce

	Fix tabs: This can prevent that important windows are closed by accident while changing between multiple windows.
---	---

The tabs at the top of the PCA interface lead to three areas:

- Settings
- Biplot
- Graphics

Very comprehensive settings and analysis possibilities are hidden behind these options, which are explained under **Working with the PCA**. The following only offers a few short tips:

Settings



Here you can set which analyses should be conducted and shown in the PCA.

Biplot Graphics

The above settings determine which graphics should be shown (e.g., whether only rotated plots or all plots). The available indices are then chosen with the straight plates with the type: `PC 1 - PC 2 (Varimax)`.

Tables

The above settings also determine which tables should be shown. The straight plates then choose between the displayable tables.


	Various display and selection options are hidden behind the icon  on the left side of the window.
---	--

Biplot (The Coordinate System of the PCA)

The coordinate system shows two components respectively. In addition to the number of the components, the percentage value of the variance, explained by these components (see **Scree Plot**) is shown on the end of the axis at the top and to the right.

In the biplot, the constructs (rhombuses) and the elements (points) are mapped out together. The element notations are directly beside the points, and the notations of the construct poles are in the margins of the graph.

If constructs/elements have to be placed in the same location or very close to one another, it is possible that they will overlap in the graph. Using the mouse, you can move the labels to a suitable location.


	All labels for constructs, elements and memos can be moved or enlarged in the biplot.
---	---

Highlighting/Labeling Elements/Constructs

Individual elements/constructs or groups can be framed with a rectangle or a circle, provided with a note or emphasized with an arrow. The necessary buttons are found in the upper right above the right window.



First, the necessary icon has to be clicked on with the left mouse key. Clicking in the upper right window will place note, frame or arrow at this position.

	The arrow requires two mouse clicks in the window: the first click will mark the end of the arrow, and the second click will mark the position of the arrow's point.
---	--

The highlighting graphics can be shifted with the left mouse key. The direction of the arrow can also be changed.

When the mouse pointer touches the lower right edge of the rectangle or circle, it changes and can be used to adjust the size of the graphics.

Working with the PCA

There are at least two different ways to work with the PCA: either you see the axes only as a guide or you try to describe them with regards to content.

In the first case, the plot can be seen as a graphic display of clusters that appear as clouds/groups of neighboring constructs and elements. The interpretation comes from the formation of these clouds and from their position in the coordinate system, i.e. their distribution. In the second case, you would normally try to find the similarity of the constructs, which correlate highly with an axis, after a rotation.

Which of the following options for the analysis is useful, depends on the individual case: the purpose of the analysis, the data, and the preferences of the user. The options available are explained below.

Settings

There are two types of settings:

1. Settings that determine how the PCA is **calculated**: how many components are extracted and whether a rotation of the axes is implemented. These settings influence the results.
2. Settings that determine how the results of the PCA are **displayed**. These settings have no influence on the results; rather, they influence which of the results are seen and in what form. The calculations are conducted regardless of these settings.

Extraction

You can indicate the number of principle components to be calculated.

Correlation Matrix


The correlation matrix provides similar information to the similarity matrix in the Clusteranalyse and MouseSort.

The correlation matrix is the basis for the calculation of the principle components.

Eigenvalues/Scree-Plot

How many components it is sensible to calculate can be tested with the so-called "Scree-Plot." The first column 'PC' indicates the number of components, and the second indicates the sum of the squared charges ("eigenvalues") for each component. Similar to the third column (% variance), the information consists of which portion of the total variance is explained by the respective components. The components are arranged in descending order of explained variance percentage so that each contribution to the explanation of the variance (cumulative %) becomes less and less with each further component.

In addition to the explained total variance, another criterium can be used to make a decision about the number of calculated components. Typically (cf. Kaiser), an eigenvalue of 1.0 is attached as the limit for the components, which still need to be calculated (cf. i.e. Tschudi 1993, p.57). The factors below this limit are colored gray in the graphic.

	The results of the Principle Component Analysis vary with the number of components calculated.
---	--

Commonalities

The value in the column "final" shows what percent of the variance of the respective construct is explained by the calculated components.

Structure Coefficients

The coefficients (also called factor loadings) indicate the correlation of each construct with the components. The value ranges accordingly between -1 and +1. The question here is how well the original grid values can be predicted from the component values.

Component Score Coefficients

Are regression values that are dimensioned similarly to the correlation values (ranging from -1 and +1 except for special cases) and can be interpreted accordingly. Compared to the Structure Coefficients, the question here is the opposite: how well the component values can be predicted from the construct values.

Standardized Component Scores

The values of this table show the relationship of the elements to the calculated components.

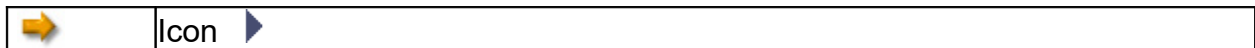
Rotations Options

With the (Varimax) rotation, the rotation of the coordinate axes around the origin, the attempt is made to obtain the purest possible components. In calculations, these are high correlations of a group of variables with a reference axis. Viewed graphically, these are axes as close as possible to clouds/groups of variables.

This rotation does not change the data and the relationships among the data; what is changed is the relation of the variables to the principle components.

Selection and Presentation

Further selection and display options are available for displaying the information of the biplots. Their purpose is to emphasize selected contents of the plot (e.g. for a counseling interview or for a presentation).



On the left side of the biplot window, there is a small vertical bar with an arrow icon. Clicking on the icon opens a toolbox.

Selection Lists for Elements and Constructs

<input checked="" type="checkbox"/> <input type="checkbox"/>	Show/Hide all elements/constructs
<input type="checkbox"/> <input checked="" type="checkbox"/>	Make element symbols smaller/larger
<input type="checkbox"/> <input checked="" type="checkbox"/>	Make construct symbols smaller/larger

In the selection lists, elements/constructs can be hidden or shown all together or individually with a mouse click. Hidden elements/constructs appear light gray in the list.

	Showing and hiding constructs/elements only affects the view, not the calculations. All data is always calculated. If constructs/elements should be excluded from the calculation, the grid can be edited accordingly with the editor.
--	--

Elements or constructs can also be hidden directly in the biplot. The command to show these again is only possible with the selection lists in the toolbox.

The slide control below allows for selecting only weighted constructs for display:



Extras

Construct Lines

In addition to constructs and elements, you can also show or hide the connecting lines of the construct poles (The size and color of the lines can be changed in).

Anchor Lines

The anchor lines and their labels can also be shown and hidden. These anchors are only shown automatically when an element/construct is moved from its original position.

Only Left Pole

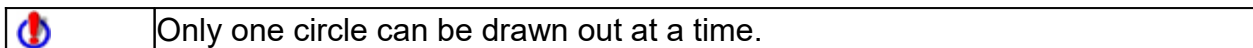
Only the so-called emergent poles, which indicate the similarity of the two constructs in the elicitation, are displayed.

Element Context

This option serves the purpose of selectively showing the elements that are similar to an element or to which a construct is primarily applied.

The Procedure:

1. **Click on Option:** Hides all elements/constructs (They appear light gray in the list.)
2. **Click on elements/constructs:** The elements/constructs appear in the plot.
3. Click on the element/construct symbol and **draw out the circle** without letting go of the pressed left mouse key: the elements searched for will appear in the circle successively.

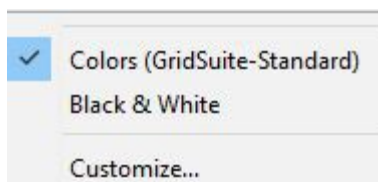


Construct Context

This option serves the purpose of selectively showing the constructs that are similar to a selected construct or which is applied primarily to an element.

The Procedure: see the above procedure for element context.



Further Display Settings




The (quick) choice between color and black & white display can be useful when presentation media (e.g. LCD projectors) do not provide a suitable display.

Colors, fonts and line thickness (e.g. for certain purposes or clients) can be set under **Customize...** and saved as a profile.


Saving Biplots

Save the various (selective) views of the biplot individually with the icon: . Load them into the active PCA interface with the icon: . When a new biplot file is opened, a new tab will appear in the PCA interface. You can load an indefinite number into the active PCA interface and, thereby, easily compare various diagrams.

	The saved plots (suffix: .gpl) are only compatible with the GridSuite version with which they were created.
---	---

When you open saved biplots in the PCA, you can still continue to use all of the toolbox options.

However, the colors and other settings cannot be changed!

To save biplots long-term or to be able to use the files in word processing, use the function: Save as PNG Graphic (Icon: ).

SharedGrids




Applications of SharedGrids

SharedGrids is useful for making it possible to compare two or more grid interviews with each other and to visualize the similarities and differences immediately. These two grids can be:

- Multiple people at the same time (e.g. relationship counseling, team development)
- One person at different times (e.g. process control in therapy, coaching)

The focus of the application is in counseling and training. In SharedGrids the direct and clear feedback are in the foreground. SharedGrids uses colored displays and the dendrogram display of the Cluster Analysis. Numerical information is reduced to a minimum.



The SharedGrids Interface

	Analysis - SharedGrids
	Icon 




The SharedGrids interface consists of four windows:

- Selection window (upper left): Shows the grids that can be compared
- Data window (below): Shows the selected grids as a "stack of cards"
- Comparison window (upper right): Shows the comparison results
- Dendrogram window (lower right): Only appears after the selection of the corresponding option in the selection window




Icons und Functions in the Selection Window


	Select grid
<input checked="" type="checkbox"/>	Include grid in the comparison
<input type="checkbox"/>	Remove grid from the comparison
	Remove all grids

Icons und Functions in the Data Window


	Numerical/Color display of the ratings
	Hide pictures/weights
	Enlarge/reduce


Icons und Functions in the Comparison Window

	Numerical/Color display of the rating differences
	Sort by elements/constructs
	Activate dendrogram display


	Different from other modules from GridSuite, numerical and color display in the comparison window refer to the differences of the ratings in the compared grids. The numerical value indicates the variance in the range from 0-100, and the color display runs accordingly from white (maximal agreement) to dark red (maximal difference).
---	---

Working with SharedGrids

The grids that should be compared have to be loaded into the selection window (upper left) with the icon .

	SharedGrids only tests whether the format of the grids match with respect to the number of elements and constructs. Whether or not the grids are otherwise suitable for a comparison must be decided by the user.
---	---

The grids to be actually compared must be marked with a checkmark. The selection in the selection list can be changed as often as the user wants in order to test different combinations for differences and similarities. By clicking on the selection field of the first column, a grid can be added to or removed from the selection.

	Only the grids that are selected in the selection window will be entered in the subsequent calculations.
---	--


The comparison results will be shown on the upper right in the comparison window. It is helpful to rearrange the columns/rows in the comparison matrix based on the variance value. If both options are selected, the cells with the greatest differences appear in the lower right, and the greatest agreements appear in the upper left.


Retracing Differences

To find out how differences in the comparison grid arose, simply click on the cell in question.

The values in the original grid, from which this comparison value was generated, will be highlighted.

Dendrogram Display

The choice of the dendrogram display  in the comparison window allows for the comparison of entire interviews. The similarity of the total grid is displayed graphically as a dendrogram.

	At least three grids must be chosen in order to display the dendrogram.
---	---

If an element (i.e. the grid of an interviewed person) is clicked on for the more precise inspection of differences/similarities within the dendrogram window, this element will appear immediately in the interview batch.


Output

Reports

	Advanced - Report Profiles
---	----------------------------

Different report profiles can be set up, supplemented with a logo and saved here.

The reports will be saved as (Adobe Acrobat Reader) PDF-files.

	The path for the reports and the path of the Acrobat program files must be specified in the Advanced - Settings menu.
---	--

Data Exchange




GridSuite and other Software

GridSuite arose essentially out of disappointments with other software, which was too cumbersome in handling, unreliable, not capable enough or only suitable for other operating systems.

Other programs offer options, however, that GridSuite does not offer and, in part, does not wish to offer. GridSuite concentrates, for example, on supporting intensive and differentiated work with individual clients with the most diverse problems and questions - and does not supply any tools for analysis of larger sets of grids (except SharedGrids). GridSuite is, thus, optimized for an idiographic approach. It should also stay this way because other suitable software for nomothetic questions already exists, for example SPSS as a comprehensive statistic package, Idiogrid and Gridscal as special Grid-Software. GridSuite offers a bridge to these and other programs, which dependent on the research purpose could be sensibly complemented by GridSuite, through the comfortable import and export functions.

- For individual files, there is the **Import/Export Function**.
- For the batch processing of larger sets of grids, there is the **GridConverter**.

Import/Export of Individual Files

	File - Import
	Icon 


Grids created in other programs can be processed in GridSuite or simply presented differently. Likewise, grids created in GridSuite can be processed with other programs.

Individual grids can be selected, loaded and imported under **File-Import**, and files can be exported in the desired format under **Save under**. GridSuite can process formats from the following programs. These formats are recognized automatically, and non-compatible formats will produce an error message.




Program	Import	Export
Flexigrid	X	X
GridStat/GridScal	X	X
RepPlus		X
EnquireWithin	X	
GridCor		X
Idiogrid		X
SPSS		X
Microsoft Excel		X
Microsoft Word		X

Exchange with **RepGrid5** can use the Flexigrid file format.

RepPlus can read the GridSuite format without conversion.

	GridSuite scales value ranges at most on a scale from 1 to 9. The program attempts to transform values sensibly around the center of the old scale to the new scale. A safer option is to adjust the data before importing it into GridSuite so that only files, which already use scales from 1 to 9 maximum are imported.
---	---

Batch Processing with the GridConverter

	File - GridConverter
	Icon 

The individual import and export functions offered by GridSuite are sufficient for many areas of application.

However, a more powerful tool is required for importing large data sets into GridSuite and for analyzing data, converted from one format to another or already existing in GridSuite, with programs like SPSS. The module GridConverter provides convenient batch processing and conversion of data sets.


The supported formats:

Program	Import	Export
Flexigrid	X	X
GridStat/GridScal	X	X
RepPlus		X
EnquireWithin	X	
GridCor		X
Idiogrid		X
SPSS		X
Microsoft Excel		X
Microsoft Word		X

Select

The button ADD FILES opens a window, in which files appear that should be converted. When you have selected files that cannot be imported, you will receive an indication of this in the status window at the top. The data that cannot be imported will simply be skipped in this case.


The selected files will appear in the conversion window. If necessary, you can select entries from the list and remove these entries with the button **Remove file(s)**.

	The files can be from different directories and in various formats.
---	---

Converting

After selecting the output format with the buttons on the right, the desired destination directory for saving the converted files has to be specified.

Possible problems during the progress of the conversion (red entries) are shown in the status window. The conversion is usually finished in a very short time, even for larger data sets.

	During longer conversion processes, you should never close GridConverter or GridSuite as this can lead to incomplete outputs.
---	---

Right-click on the status window to open a small menu entry, with which you can empty the output in the status window.

Technical Information

System Requirements

- PC with Windows 95 up to 10
- Macintosh-System with MacOS X and Java
- At least 60 MB free on the harddrive for installation
- Screen resolution: 1024 x 768 pixels

Standard Directory

Starting with Version 2.0, GridSuite saves the program settings and standard directories under Windows under:

C:\Documents and Settings\\GridSuite

This makes it possible to use separate settings and profiles on systems with multiple users. This directory will be created automatically when GridSuite is started if it does not already exist. It will not overwrite any files.

Registration

For licenses with time limits, we ask you before activating to check the correctness of your PC clock.

Support

For methodological problems and questions, please contact:

Info-GridSuite@t-online.de

Enjoy working with GridSuite!

References

- Bell, R. C. (1988): Theory-Appropriate Analysis of Repertory Grid Data. In: International Journal of Personal Construct Psychology, S. 101-118.
- Bell, R. (2000): Why do Statistics with Repertory Grids? In: Scheer, J. W. (Ed.): The Person in Society. Challenges to a Constructivist Theory, Gießen (Psychosozial Verlag), S. 124-133.
- Bell, R. C (2003): The Repertory Grid Technique. In: Fransella, F. (Ed.): International Handbook of Personal Construct Psychology. Chichester (Wiley), S. 95-104.
- Caputi, P./Viney, L. A./Walker, B. M.u.a. (2012): Personal Construct Methodology. Chichester (Wiley-Blackwell).
- Denicolo, P./Long, T./Bradley-Cole, K. (2016): Constructivist approaches and research methods. London u.a. (Sage).
- Fransella, F./Bell, R./Bannister, D. (2004): A Manual for Repertory Grid Technique. 2nd Ed. Chichester (Wiley).
- Fromm, M. (2004): Introduction to the Repertory Grid Interview. Münster (Waxmann).
- Fromm, M./Paschelke, S. (2011): GridPractice. Introduction to the Conduct and Analysis of Grid Interviews. Norderstedt (BoD).
- Fromm, M. (2015): Learning and Education. In: Winter, D./Reed, N. (Hrsg.): The Wiley Handbook of Personal Construct Psychology, Chichester (Wiley Blackwell), S. 352-360.
- Jankowicz, D./Thomas, L. F. (1982): An Algorithm for the Cluster Analysis of Repertory Grids in Human Resource Development. In: Personell Review, No. 4 (Vol. 11.), S. 15-22.
- Jankowicz, D. (2004): The Easy Guide to Repertory Grids. Chichester (Wiley).
- Kelly, G. A. (1955): The Psychology of Personal Constructs (2 Vols.). New York (Norton).
- Neimeyer, G. J. (2002): Towards Reflexive Scrutiny in Repertory Grid Methodology. Journal of Constructivist Psychology, 15, No.2, S. 89-94.
- Ravenette, T. (2000): Do we need Grids and Stats? - A Contrary View. In: Scheer, J. (Ed.): The Person in Society. Gießen (Psychosozial-Verlag) , S.134-140.
- Tschudi, F. (1998): Flexigrid 6.0. Oslo.

Glossary

A

anchor: Lines that connect a symbol to a text field

C

centrality: Average percentage of similarity of one element/construct to all others (cf. Finn Tschudi).

centrality, average: Mean of the centrality values in the similarity matrix. Similar to the "intensity score" (Don Bannister), it is a measure for the cognitive complexity of the construct system (cf. Finn Tschudi, called "total connectedness"). It should go along with a high eigenvalue of the first component in the PCA.

cluster analysis: Examines the similarity of elements/constructs among one another based on correlative relationships. The goal is to define groups/clusters, which show a high internal similarity and, at the same time, are clearly distinguishable from other clusters.

construct: A (personal) construct is a distinction of events, phenomena, etc., which a person can make.

construct context: Function in the PCA-Plot for selective displaying of the constructs which especially characterize an element.

construct, bipolarity: Assumption that information about the similarities of elements at the same time implicates a statement about the differences to others. What an element is also implicates what it is not.

construct, elicitation: Constructs can be named by the client (elicited), but they can also be given to him (provided by the consultant).

construct, pole: A distinction is often made between the "emergent" and the "implicit" poles. The emergent pole expresses the similarity between elements, the implicit pole the difference.

construct, range of convenience: The more or less narrow range of elements, for which a construct can sensibly be used for the distinction.

construct, reversing poles: The construct is mirrored on the center of the scale: the poles are reversed and the ratings are changed accordingly. Poles are reversed when a construct pole predominantly exhibits similarities with the opposite poles of other constructs. It can become necessary because the construct poles are assigned at random during the elicitation.

construct, weighting: Constructs can receive a value from 1 to 5 depending on their personal relevance.

constructive alternativism: Assumption (Kelly's) that things, experiences, etc. do not have a meaning "by nature" but that people attribute a meaning to them, and that the meaning can be attributed again and again in new (alternative) ways.

context search: s. element context, construct context

D

dendrogram: Hierarchical tree diagram of the clusters from a cluster analysis

dichotomy: Elements in this case are assigned to one of the construct poles. Rating scales with more than just two values allow for subtler distinctions.

difference form: Type of construct elicitation in which the person interviewed is asked what two elements have in common that distinguishes them from the third

E

eigenvalue: Portion of the total variance, which is explained through a component in the PCA.

element: An object, phenomenon, event etc. which can be judged/allocated meaning to by a personal construct. Elements are examples/subsets of the topic about which the interview is conducted.

element context: Function in the PCA-Plot for selective displaying of the elements to which a construct is especially applied.

element, elicitation: Elements can be elicited from the client, but they can also be given to him.

element, homogeneity: Elements should be selected so that preferably all constructs in an interview can be applied to them.

element, types: Customary elements are, for example: people, objects, places, points in time, situations. Only one type of element should be used within an interview. (see homogeneity)

emergent pole: The pole of a construct, which indicates the similarity of the compared elements and which is named first. It is assigned to the left side of the raw grid.

eyeballing: Content analytical inspection of the data.

F

factor: Hypothetical variable that should explain the correlative relationships between elements and constructs.

factor loading: Shows how close the relation (comparable to a correlation) of an element/construct to the respective component is.

focusing: rearrangement of the raw grid based on similarity of the constructs and elements (cf. Thomas): see MouseSort

full context form: The elicitation alternative, in which all elements are given at the same time and combined into groups. The label of a group shows one pole of the construct applied to this group.

G

gridconverter: Allows for the exchange of data with other grid programs and with SPSS.

I

implicit pole: The pole of a construct, which indicates the difference of an element in comparison to others and which is elicited as the second pole. It is assigned to the right side in the raw grid.

K

Konstrukt, Gewichtung: Konstrukten kann je nach ihrer persönlichen Relevanz ein Wert von 1 bis 5 zugeordnet werden.

L

linkage, average: Principle of cluster building, in which the average distance to the "neighbors" in the cluster is used as a measure of the similarity.

linkage, complete: Principle of cluster building, in which the distance to the "furthest neighbor" in the cluster is used as a measure of similarity.

linkage, single: Principle of cluster building, in which the distance to the "nearest neighbor" is used as a measure of similarity.

M

mousesort: Computer-supported analysis by hand of a grid, in which the raw grid is rearranged with the mouse based on similarity of the elements/constructs.

O

opposite form: Type of construct elicitation: looking for what two elements have in common, as opposed to the third.

P

Pegasus: Triad elicitation alternative, in which further inquiries follow when elements are dealt with similarly or when constructs are applied very similarly. This gives the client the possibility to further differentiate.

principle component analysis (PCA): Tries to display the complex relations of elements/constructs through simpler structures (principle components) based on the correlative relationships of elements and constructs.

profiles: GridSuite allows for the presetting and saving of profiles for the interview process and analysis options.

R

rating: Elements are rated on an interval scale between the construct poles.

raw grid: Result matrix of the grid interview.

river chart: Elicitation alternative, in which the elements are arranged on a winding time line (River Chart).

role construct repertory test: Kelly's primal method is concerned with the relationships to relevant people (role) in the life of the person being interviewed.

role description: Method for eliciting representative elements for a topic. For this purpose, descriptions of types that should absolutely be included are indicated in advance (e.g. funny, sad, old, young people etc.). The role description calls on the client to fill this type with a concrete person (e.g. "The funniest man you know."). We speak of the "role description" because Kelly used this method in his original Role Construct Repertory Test to find out which people play a relevant role in the client's life.

S

scree-plot: Graphic display of the eigenvalues of the components extracted in the PCA; "Scree" because the values decrease and produce the picture of a slope, or scree, in the display.

sharedgrids: Simple, clear comparison of two or more grids.

T

template: A template is necessary for SharedGrids which can be filled out multiple times like a form. The template contains element and construct notations. The person being interviewed has to fill in the ratings.

trace function: Function in SharedGrids which allows for the differences and similarities between people to be traced back to the raw data simply.

triad elicitation: Construct elicitation, in which three elements are specified for distinction.

Z

z-value: Test value (cf. Johnson, Tschudi) for distinguishing "real" clusters from artifacts. According to Tschudi, the value should be >2.0 and should increase with the level in the hierarchy (see dendrogram).