

Quirkos 2.1: Distinguishing features and functions

This document is intended to be read in conjunction with the 'Choosing a CAQDAS Package Working Paper' which provides a more general commentary of common CAQDAS functionality. This document does not provide an exhaustive account of all the features and functions provided by Quirkos but is designed to highlight some of its distinguishing elements. The Comment section at the end details our opinions on certain aspects of functionality and usability. See also Silver & Lewins (2014) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications and software developer website. This document reviews Quirkos version 2.1. Many thanks to Daniel Turner for reviewing this document for accuracy.

Background <http://www.quirkos.com/> Quirkos was developed by Daniel Turner and colleagues in response to what they saw as frustrations with existing CAQDAS packages ■ The company Quirkos was founded in 2013 and the public release of the first version of the software was in October 2014 ■ Developmental impetus was framed by a desire to design tools that open up qualitative analysis to everyone. The aim of Quirkos therefore is to provide software that is accessible to those without extensive research experience, as well as those working within professional research contexts, that is easy to use and that works across platforms ■ The pricing structure for Quirkos is considerably lower than most other CAQDAS packages ■ Quirkos works on Windows, Mac and Linux platforms ■ Quirkos runs on a local installation of the software ■ Future development will include a collaborative cloud version enabling team-members to work concurrently on the same Quirkos project.

Minimum System Specifications (recommended by developer) For Windows, Mac and Linux at least 2GB of RAM, a 2Ghz or higher Code 2 Duo or higher processor

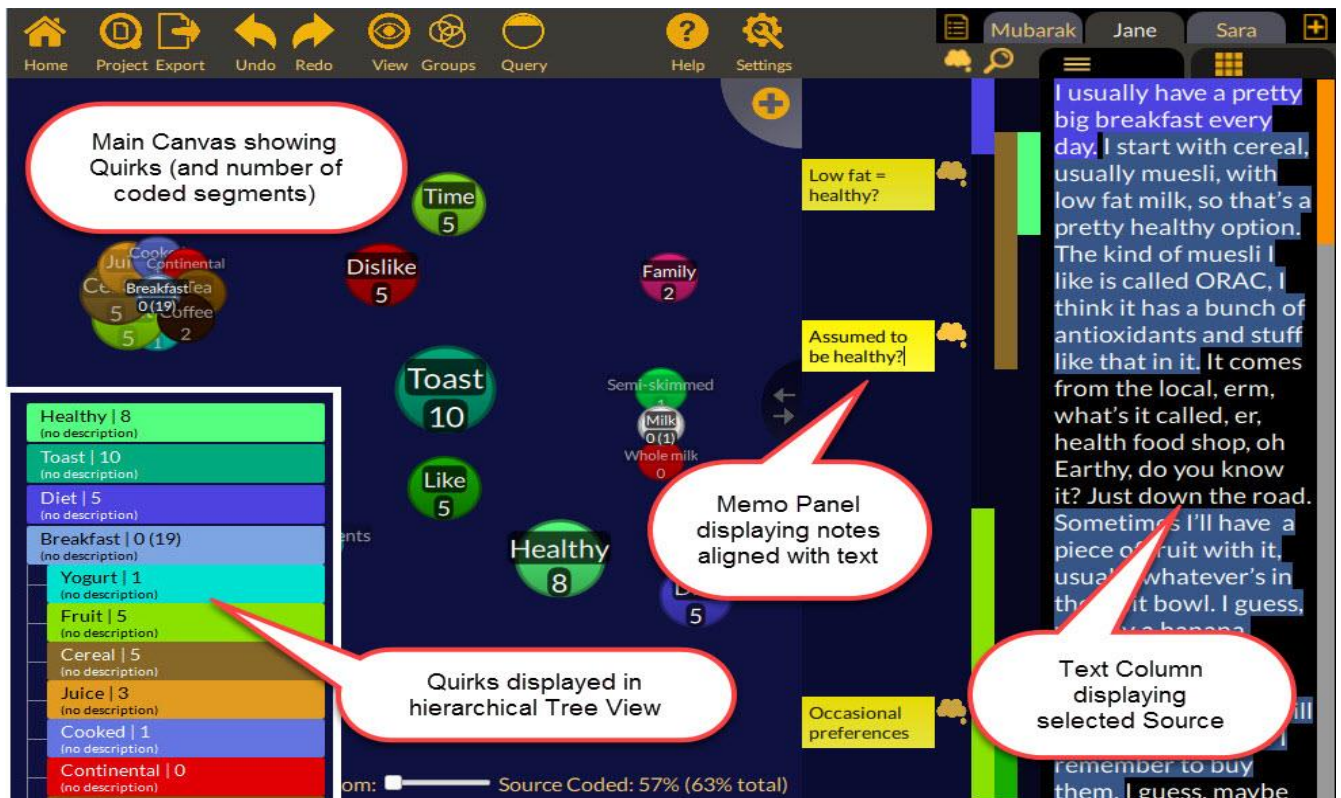


Figure 1. Quirkos interface showing the dark canvas with Quirks, text column, Memo panel and Function buttons

The Structure of work in Quirkos 2.1

Quirkos functions using an internal database system. Data files ('sources') are contained within the Project, and are moved or saved as part of the project ■ The user interface (see Figure 1) comprises two main parts, displayed as columns: the "canvas view" is the space where work is done with Quirks (codes) and the "text column" is where sources are displayed. The columns can be resized according to preference ■ Down the left-hand side of the canvas are buttons providing access to main functions. These are the Home button, the Project button, Undo and Redo buttons, the View button, the Query button, the Export button, the Help button and the Settings button. The classic dark canvas can be changed to a light theme (Figure 3).

Data types and format in Quirkos 2.1

Textual formats: Plain text (.txt), Rich Text Format (.rtf), Word files (.docx), PDF files and CSV files. Text can be copied and pasted from other formats, including PDFs and web content ■ Texts can be easily edited within the software but are safeguarded from accidental changes by read-only properties ■ Text line wraps and paragraphs are not automatically numbered within the software but are numbered in Reports ■ Sources are tabbed at top of the interface for easy access.

Closeness to data and interactivity Quirkos 2.1

The majority of work within Quirkos happens in the main "home" view. This comprises the "canvas" and "text column" in which the Quirks and data (sources) are displayed, respectively. ■ Tabbed access to sources eases the movement between different materials. ■ Some limitations to interactivity exist, for example, retrieved coded segments or outputs of text searches are not fully interactive with the original data. The context of retrieved segments can be seen by expanding the context buttons above and below the returned material, however, navigating to the segment in the original text is not as yet possible.

Coding schema in Quirkos 2.1

The coding schema can be as hierarchical or as un-hierarchical as required ■ Codes are called Quirks. They are created from the "canvas view" where they can be given titles, descriptions and be assigned a level if using a hierarchical system. Quirks can be displayed as circles or in a hierarchal Tree View (see Figure 1) and can be easily reorganized across and within hierarchies via drag and drop ■ Quirks can be moved around the "canvas view" to any position ■ Colour assigned to Quirks appears in the margin and as highlighting once assigned to text segments within sources. ■ Quirks can be organised into groups. Quirks can belong to multiple groups and the visibility of groups Quirks can be toggled on and off.

Coding Processes in Quirkos 2.1

Drag and drop selected text onto a Quirk ■ Quirks grow in size according to the number of text segments that are assigned to them. As more Quirks are created and assigned to text segments the relative size of Quirks changes accordingly ■ User-assigned keyboard shortcuts for applying Quirks to text segments ■ Quirks can be merged, duplicated and removed and their properties can be changed. Quirks assigned to text segments can be removed from the coding stripe margin view.

Basic Retrieval of coded data in Quirkos 2.1

Retrieving text segments coded at Quirks happens by viewing a Quirk overview. This displays only the text segments assigned to the chosen Quirk in the "text column". Additional surrounding context can be added to the Quirk overview display ■ At the time of writing it is not possible to jump from a retrieved segment in the "text column" to see the retrieved segment within the source context from the overview display but this feature is to be developed ■ Retrieving a Quirk overview from a top-level category enables the display of all text segments for associated subcategories. The canvas view changes to focus on the Quirks in the chosen category, ordering them according to when they were created (oldest first) ■ Retrieved text segments can be re-coded from this view to any other quirk within the hierarchy (but not into other Quirks outside the hierarchy's Quirks) ■ The Overlap View retrieves text segments for the Quirk of choice and simultaneously rearranges Quirks on the canvas to visually illustrate Quirks that have text segments in common: the closer Quirks appear on the "canvas" the higher the number of overlapping text segments they have in common (regardless of amount of overlapping text).

Data Organisation in Quirkos 2.1 Descriptive organization at the level of whole Sources according to known characteristics is enabled by applying properties and values to Sources ■ The Properties Overview display shows the proportion of Sources assigned to each Value of each Property. This can be outputted by generating a full report displaying the “metadata summary” and in CSV exports. ■ Properties be imported from a spreadsheet.

Writing Tools in Quirkos 2.1 Writing is enabled in Quirkos by editing Sources, creating Memos and adding Descriptions to Quirks ■ Blank sources can be created in a project. This means transcriptions can be typed up directly in Quirkos ■ Sources can be exported in Word format. Where coding has taken place this can be visualized in various ways in exported documents ■ Memos can be associated with text segments in the Memos Panel using drag and drop ■ Quirks have a Description field where a definition of the concept the Quirk represents and how it is used in the Project can be added ■ Writing can take place in Latin-based alphabets but also in right-to-left languages and logographic, syllabic and featural based systems such as Chinese, Japanese or Korean.

Searching and interrogating the dataset in Quirkos 2.1 The Query Screen enables coded text segments to be retrieved according to combinations of: assigned Quirks; the Values of Properties; Author (when working in teams); Date of Quirk assignation, and Source name (to view results from one or more Sources) ■ Retrieval is provided in the Query screen and can be exported in report format ■ Comparison Query mode allows two queries to be run side-by-side, enabling comparison between, for example, text segments which derive from sources with different properties (see Figure 2) ■ Up to 9 additional criteria can be added to a query to refine retrievals on the basis of combinations of Quirk applications and Source Properties.

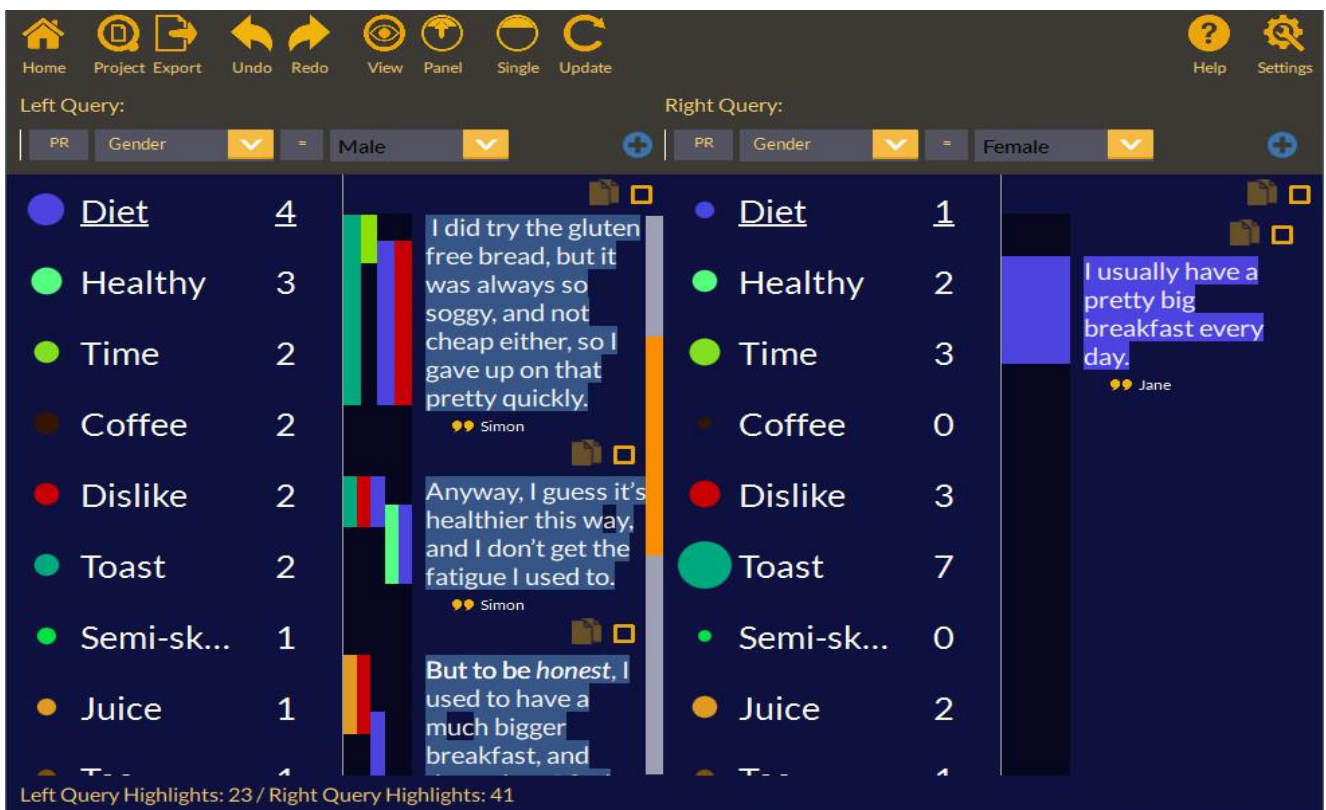


Figure 2. Comparison Query Mode in Quirkos

Output in Quirkos 2.1

A principle means of generating output happens by creating reports. Reports can be generated from the main canvas view (e.g. about the current state of the whole project) or from the Query Screen based on the criteria imposed on a query. Reports are presented in a Report Viewer where it is possible to restrict the display according to various criteria. Reports can be printed, viewed in a web browser and saved as docx, pdf or html. In addition material from within a report can be transferred to an .rtf or .docx format by using copy and paste. In addition, coded sources can be outputted into MS Word files with coded segments highlighted in colour and commented upon, where relevant (see Figure 3). The structure of a Quirkos project can be outputted as .csv files representing different elements of the project in spreadsheet format. Wordclouds and the Word Frequency Analysis Table can also be outputted.

Content analysis features in Quirkos 2.1

Quirkos has a search function which enables individual words and phrases to be located within sources (see Figure 3). It is possible to search for several words around the same issue at the same time by using the synonyms and similar expressions function. This integral synonyms dictionary is based on the Princeton WordNet thesaurus, but cannot currently be edited by the user. Options for refining text searches include searching for whole words only or including alternative endings (stems) and to search only data that have been previously coded. Searches can be refined according to other criteria, such as the properties assigned to sources, as well as to particular sources. Searches return segments of text that are 11 words long - 5 words either side of the searched word. The amount of text displayed can be adjusted within the search results window. The search results can be coded via drag-and-drop, either to an existing Quirk or to a new Quirk. It is not possible to assign all the returned search results to a given Quirk in one go. Searches can be saved and rerun. Wordclouds showing a visualisation of words in Sources can be generated as a Report. This can be filtered according to selected Sources and interpretively irrelevant words can be removed from the visualisation. The Report also includes a word frequency analysis table.

The image shows a composite screenshot of the Quirkos software interface. At the top, a navigation bar includes icons for Home, Project Export, Undo, Redo, View, and Groups. The main area is divided into several panels:

- Main Canvas (Light Theme):** Displays a word cloud with terms like 'Cool', 'Junk', 'Centre', 'Cereal', 'Breakfast', 'Coffee', 'Porridge', 'Adults', 'Family', and 'Children'. A 'Dislike' button is visible.
- Search Results Panel:** Shows search criteria for 'healthy' and a list of search options:
 - Whole words only.
 - Include words with alternative endings (-ed, -ing, etc).
 - Search coded text only.
 - Synonyms and similar expressions.
 Search results include text segments like 'milk, so that's a pretty healthy option. The kind muesli' and 'guess it's not a very healthy lunch, I eat a lot'.
- Quirkos Report Viewer:** Displays a 'Properties Summary' for 'Age' with a horizontal bar chart. A table lists properties:

12: Grandparents
14: Dislike
6: Fruit
7: Children
2: Toast
13: Like
8: Cereal
8: Cereal
2: Toast
8: Cereal
9: Adults

 The report also includes an 'Options' panel with checkboxes for 'Report Info', 'Sources Summary', 'Quirks Summary', 'Authors Summary', 'Properties Summary', 'Include Canvas', and 'Include Metadata'.
- Coded Source Output:** A snippet of text from a source with highlighted segments and a list of codes:
 - 12: Grandparents
 - 14: Dislike
 - 6: Fruit
 - 7: Children
 - 2: Toast
 - 13: Like
 - 8: Cereal
 - 8: Cereal
 - 2: Toast
 - 8: Cereal
 - 9: Adults

Figure 3 Source Searching, Report View and highlighted coding output in Quirkos

Team working in Quirkos 2.1

All actions are labelled with user initials to track contributions across teams ■ Contributions from team members can be compared manually ■ Work can be undone according to when it was undertaken ■ Team members can work on a single Quirkos project file sequentially or separate Quirkos files can be merged ■ Future development will include a collaborative cloud version enabling team-members to work concurrently on the same Quirkos project ■ Ease of use, multiple-platform functionality and touchscreen functionality all facilitate collaborative “around the table” group working that is designed to enable the inclusion of all stakeholders in the project, not just “expert” researchers.

Comment on Quirkos 2.1

- **The Quirkos user interface is very different from other CAQDAS packages but is appealing, tidy and modern.** The default dark background colour for the interface with text appearing in white is unusual but comfortable to work with, especially over long time periods. The addition of the option to use the light theme offers choice for users.
- **The aim of developing an easy to use software package has been achieved** and in comparison to other packages limited instruction in its operation is required. This means users can get up and running quickly and easily. Quirkos is a tool which can be particularly well utilized for participatory approaches to qualitative research in which research participants can actively contribute to analysis without extensive time needing to be given over to learning the package.
- **Quirkos implements core CAQDAS features in straightforward and accessible ways.** In particular the processes of manually coding and assigning properties and values to sources is easy to implement and retrievals based on combinations of these aspects straightforward to action. Functionality that allows work on Latin based languages, right to left scripts such as Arabic and Hebrew, and even logographic, syllabic and featural based systems such as Chinese, Japanese or Korean, is greatly appreciated; as is the ability to password protect projects.
- **Coding as a result of searching for words or phrases is possible** but there are fewer options regarding retrieved text. Currently the unit of text that is returned is a default 5 words either side of the searched word(s) and whilst this can be expanded, it is in set increments, rather than driven by the user. The application of Quirks to the retrieved text is a manual task. Word Cloud and Frequency Analysis Table offer additional ways to explore and display words. However these are retrieved in Reports and therefore the displayed words are not interactively linked to their Source context.
- **Quirkos is a very visual software making excellent use of colour.** In addition the way the size of Quirks as displayed on the canvas view alters relative to the number of coded segments offers a unique and visually interpretable representation of coding frequency, in addition to numeric counts. This visual element of the software will be complemented by future ability to work with non-textual materials.
- **Designed for use on mobile devices, Quirkos enables touchscreen use as well as keyboard and mouse-based working.** This flexibility chimes with the developments in mobile technology and offers good choice to users.
- **Quirkos' Comparison query mode** which combines retrieval based on Quirks applied to text segments and Properties applied to Sources is unique amongst the CAQDAS packages we have reviewed and offers a powerful yet easy way to compare how data have been coded. The flexibility with which the project can incrementally be queried, and Reports generated from the Query Mode means complex interrogations can be generated easily. That said, Quirkos lacks some query options that other CAQDAS packages enable.
- **The ability to export coded sources with coloured highlighting and comments** to a MS Word file is unique and useful.
- **The ease with which Memos can be associated with text segments,** and how they are displayed is excellent, keeping users very close to data and interpretation of segments via coding and commenting in the same visualisation.
- **Quirkos lacks some functionality that other CAQDAS packages provide,** but has plans for adding features as development continues. Users should check the Quirkos website for up-to-date information on intended functional additions, some of which may have been implemented since this review was written.

Further Reading

- Turner, D. (2014) Example project on the Scottish Independence Referendum <http://www.quirkos.com/workshops/referendum/>
- Turner, D. (2015) Technology for participatory qualitative analysis, Presentation given at the Social Research Association Creative Methods Conference, British Library 8th of May 2015 <http://the-sra.org.uk/wp-content/uploads/dr-daniel-turner.pdf>