JASP

A Fresh Way to Do Statistics

# Switching from SPSS to JASP
# Seven Things to Know

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If you have been teaching with SPSS and are considering a switch to JASP, you may be wondering what the practical differences are. The good news: the statistics are the same, the workflow is familiar, and your students will most likely thank you. Below we highlight seven key differences that are worth knowing as you make the switch.

## 1 Everything Happens in One Window

One of the most noticeable differences is the interface layout. SPSS spreads its workflow across multiple windows: a Data View, a Variable View, an Output Viewer, and a Syntax Editor. In JASP, everything lives in a single window with three sliding panels: the data spreadsheet, the analysis input panel, and the analysis output panel. All three panels are resizable and collapsible, so you can adjust the layout to suit your screen. In order to edit the data after they have been loaded, you can click "edit data" in the top-left corner to open the data editor (Figure 1). Here you can add a variable or perform any of the other operations demonstrated in the JASP video library.

JASP does not have a separate Variable View (yet), but it does offer variable settings (Figure 2): clicking on a column header lets you set the variable's measurement level (nominal, ordinal, or continuous), apply labels, and specify filter criteria. You can also annotate your output directly (add notes, images, even LaTeX formulas), and the output tables are already in APA format, ready for copy-pasting into a document. The single-window design means that students never lose track of where their output went.

## 2 Results are Shown in Real-Time

Perhaps the largest pedagogical advantage of JASP is its real-time output. In SPSS, you set up your analysis, click "OK", and then inspect the output in a separate window. In JASP, results update instantly as you change options. This makes classroom demonstrations far more interactive and engaging.

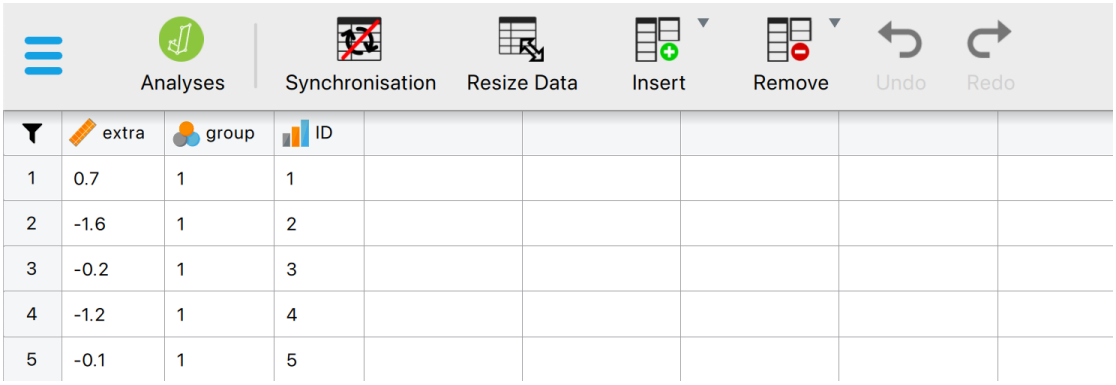


Figure 1: The JASP data editor: edit, add, and remove variables.

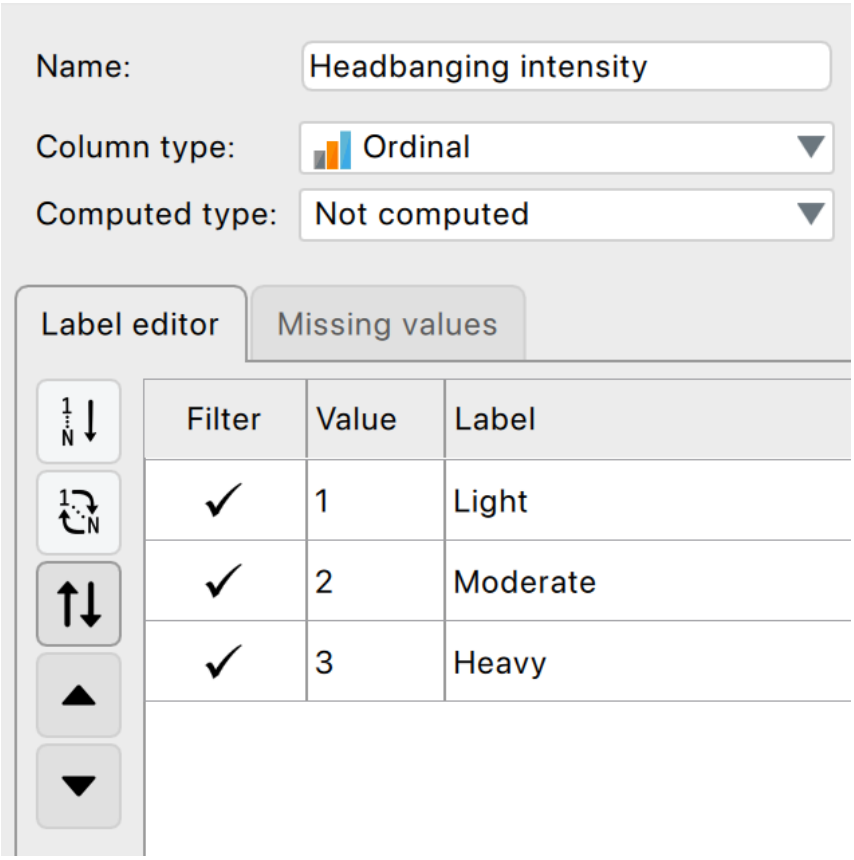


Figure 2: The variable settings: For filtering, reordering, renaming, reverse coding a variable.

For example, you can show students how switching from a Student's $t$-test to a Welch $t$-test changes the results right before their eyes. Tick a box for *effect size* and it appears in the output table; untick it and it disappears. The same interactivity extends to data filtering: apply a filter (e.g., select only participants who scored above a threshold) and watch every analysis update to reflect the subset. Additionally, JASP uses a *progressive disclosure* approach, where you can build up an analysis gradually, discussing

the impact of each successive step as it happens, rather than immediately confronting students with a deluge of output that they then have to make sense of after the fact.

## 3 The Module System

JASP is built around a modular system. Out of the box, the core modules (whose icons are present on the ribbon) cover the analyses that most courses need: Descriptives, *t*-tests, ANOVA, regression, frequencies, and factor analysis. Additional modules can be activated from within JASP by clicking the large "+" button in the top-right corner of the ribbon. This opens a list of available modules where you can tick the checkbox next to a module to enable it, and its analyses immediately appear in the ribbon. Untick it to remove them again. Users who want more control over the versions of their modules can do so in the accompanying online module library that opens when clicking the "+" button. Here, modules can be updated manually or replaced with their beta-versions.

Available modules include the "PROCESS" module (e.g., mediation and moderation analysis), a machine learning module, a meta-analysis module, and many more. Because modules are developed independently, the list keeps growing!

## 4 Plotting Happens Inside the Analysis

In SPSS, creating plots typically involves a separate chart builder or legacy dialog. In JASP, plots are integrated directly into each analysis module. The modules that compare means (*t*-tests, ANOVA) offer options for bar charts, violin plots, and raincloud plots next to the analysis options. The regression module features scatter plots, and the Descriptives module provides general-purpose plots. This means relevant visualizations are always just a checkbox away from the analysis they belong to, reinforcing the connection between statistical tests and their graphical representations.

Those who prefer the flexibility of a chart builder may use the Plot Builder in the Descriptives module. This Plot Builder offers a general-purpose graphing tool similar to the SPSS Chart Builder.

## 5 Syntax Mode Has Become R-Mode

In SPSS, reproducibility is achieved through syntax files: sequences of commands that can be saved, shared, and re-executed. JASP takes a different approach. Since JASP runs on R under the hood, the SPSS "syntax mode" has effectively become an R-mode. Analyses in JASP can display the corresponding R function call that includes all the options needed to reproduce the analysis (for more information, see here). The R integration goes deeper than analysis output: you can use R-code when you compute a new variable or apply a data filter, or even enable a full R console as a module.

# 6 Creating New Variables with Compute Columns

In SPSS, creating new variables typically involves the *Transform* → *Compute Variable* dialog, where you type a formula into a text box. JASP offers a similar approach with its column constructor. To create a computed variable, click on an empty column header, give it a name, and choose one of two modes:

- *Computed with drag-and-drop*: a graphical interface where you select variables and operators (addition, division, square root, $z$-scores, log, etc.) by clicking, and JASP builds the formula for you.
- *Computed with R code*: a text field where you can type any R expression, for full flexibility.

Computed columns update automatically when the underlying data change, and JASP marks them with a special icon so you always know which columns are derived. A button in the lower-left corner lets you toggle between the drag-and-drop view and the underlying R code, which is a nice way to learn R incrementally.

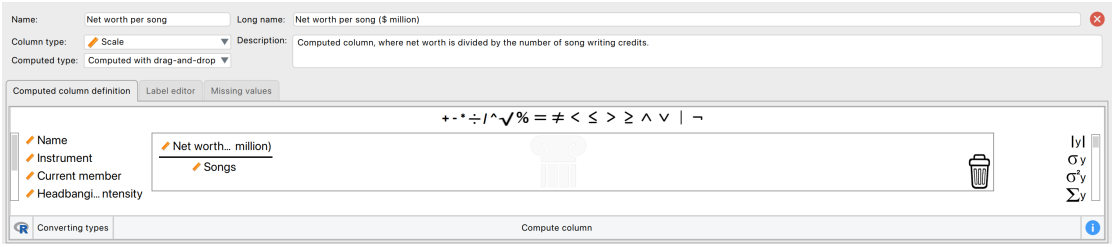


Figure 3: The Compute Columns interface: drag-and-drop formula building with variables, operators, and functions (e.g., z-scores, row means, Box-Cox).

# 7 Sharing Data, Results, and Settings

In SPSS, data lives in the proprietary `.sav` format, and importing other formats (CSV, Excel) requires going through an import wizard. In JASP, you simply open a file. JASP natively reads `.csv`, `.txt`, `.tsv`, `.ods`, Excel (`.xlsx`), SPSS (`.sav`), Stata (`.dta`), Minitab (`.mpx`, `.mwx`), and R (`.rds`) files, so your existing datasets work immediately.

JASP also comes with a built-in *Data Library*: a large collection of example data sets and analyses that can be loaded straight from the JASP start-up screen. The full catalog is also accessible online at https://jasp-stats.github.io/jasp-data-library/. This is a convenient resource for teaching or exploring a new analysis, because everything is already set up and the results are annotated with interpretations (example here).

When you save your work, JASP uses its own `.jasp` format, which bundles the data, all analysis settings, and the results into a single file. Unlike SPSS output files (`.spv`), which are output-only, a

`.jasp` file is a complete, editable snapshot of the entire analysis. For broader sharing, JASP can export the (annotated) results to PDF or HTML. If the R function calls are displayed, they are included in the export, so recipients can see exactly which options were used even without JASP installed. The companion website of Discovering Statistics Using JASP contains many examples of raw data (`.jasp`) and annotated results (`.jasp` and `.html`).

## Bonus: Bayesian Statistics At Your Fingertips

In JASP, every major frequentist analysis has a Bayesian counterpart available in the same module. Running a *t*-test? There is a Bayesian *t*-test right next to it. Running an ANOVA? A Bayesian ANOVA is one click away. This side-by-side availability and similarity between the menus means that you can introduce Bayesian concepts naturally alongside the classical methods, without needing separate software or add-ons. Not a fan of Bayes? You can just as easily ignore these analyses.

**In short:** When switching from SPSS to JASP, the core statistical concepts remain the same but the software gets out of the way and lets you focus on teaching, all while using a software that can be used for free, forever. For more resources, visit `https://jasp-stats.org/` and `https://discoverjasp.com/`.