

Response to Review of Aabel 1.5.7 by Antony Unwin
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The review of Aabel 1.5.7 by Antony Unwin covers less than 50% of Aabel's features, and the nature of the review is selective. Numerous features of general interest to scientists, e.g., data management, data filtering (a simple, unified way of handling groups and subgroups by multidimensional criteria), data manipulator, presentation and publication quality exporting of graphics, have not been reviewed. The review is mainly focused on very narrow aspects of data visualization and charting and makes several incorrect statements (and follow up descriptions) of how certain features in Aabel work. More importantly, regarding the core feature of Aabel that differentiates it from other existing applications (i.e., the pipeline design), he expresses his irritation regarding a single aspect that involves 2 keystrokes to perform, but overlooks the purpose and practical significance of the design for dynamic data exploration. In a scientific review regarding a charting and data exploration application, one would expect a discussion (pros and cons) regarding this core feature. Finally, the reviewer recommends 4 applications, 2 of which are from his own department's projects, as being much better geared towards data exploration compared to Aabel. However, no feature-by-feature comparisons between these applications and Aabel, or any reasoning for this statement have been provided.

(1) We completely agree that Aabel has a few simple statistics and limited multivariate analysis tools for users with needs for numerous statistical methods. Aabel is a multipurpose application with some commonly used statistics and multivariate data analyses, which meet 90-100% of what general users require (based on user feedback). For individuals who would like to see more statistics in Aabel, a new plug-in product is already under development, the API of which will be published later.

(2) The reviewer states, "it is a quite complicated matter to get a simple one-dimensional plot of a variable. You have to start a visualization pipeline, select the chart-type and then select the variable". Using terminology used in other charting applications, this translates to: Create a workspace, choose a chart, and select variables -- a process that involves 2 keystrokes and 2 clicks. Moreover, he does not mention that once you have made those 2 keystrokes and 2 clicks, you can rapidly scan the data by moving from variable to variable using the up and down arrow keys, or move from chart to chart by simply opening a menu and selecting a new chart. His statement that "If you want the same plot of another variable from the same data set, while keeping the first display available you have to open another visualization pipeline (or duplicate the current one)" is incorrect. Firstly, one can create a new chart in the same graphic viewer without opening or duplicating a new visualization pipeline by using the chart layers manager palette. Secondly, if a user prefers to "duplicate the current pipeline" to create a new chart in another window, he/she can make the new chart in a new viewer with 1 menu selection and 2 clicks. (note that the term "display(s)" used in the reviewer's comments is equivalent to "chart(s)" in Aabel)

The reviewer comments, "You have to create a pipeline to choose the data sets you want to use for practically everything you do, which is very irritating". What he does not discuss is that a pipeline can be created from 1 menu command and 1 keystroke, or alternatively, by 2 keystrokes. More importantly, he has overlooked the possibilities that come with the pipeline design for dynamic data exploration and has not explored the advantages. QuickTime movies (around 2 minutes) of Aabel dynamics show, better than a thousand words, the significance of this design for data exploration and real-time interactivity:
<http://www.gigawiz.com/AabelDynamics.html>

(3) The comment that you cannot select cases in the spreadsheet and see them highlighted in the displays is incorrect. The interaction between the data sources (worksheets and/or databases) and data users (e.g., graphic viewer) is two-way. In Abel worksheets, row selections can have a different purpose. To highlight those cases on chart(s) requires the worksheet row selections to also represent chart selections. This can be achieved by a single command from the contextual menu.

(4) The entire description of the reviewer regarding lack of smoothness in changing the size of a chart is incorrect. Both individual charts and the page layout (display area of the window) can be resized smoothly. In Abel, each graphic window is a page layout that can hold many layers of live charts, as well as imported graphics, tables, etc. The resizing of a chart or other graphic object is performed the same way as other widely used graphic applications (e.g., Adobe Illustrator, Canvas), i.e., select and drag or select and Shift+drag (for disproportional or proportional resizing). Instead, the reviewer provides a negative description of how he tried to do this by changing the page magnification.

(5) The reviewer encountered several minutes of spinning cursor when trying to import an 85000 * 400 data set while he had no problems to import and work with a 1,000,000 * 2 data set. A data set of 85000 * 400 will have a minimum size of around 300MB (all float values, compared to around 20MB for the other example). Twice that amount is required during the load operation, and if the reviewer had less than 600MB of unallocated physical memory available, the machine would slow down considerably due to memory paging.

(6) The reviewer states, "Abel does not seem to be able to read in polygon data sets. This limits its use for geographers (and indeed statisticians)". As none of the commercial applications he is recommending provide this feature (other than drawing X-Y pairs that is also possible in Abel), and as only the two recommended applications from his own department include this specific feature, the message to the reader is that only MANET and its Java successor Mondrian have sufficient usability for geographers and statisticians.

(7) The reviewer is critical of the state of the default graphics in Abel (giving an example of a dendrogram plotted with unreadable labels). Curiously, he has tried to overcome the problem by zooming (i.e., changing the magnification), instead of changing the font size. As Abel is used for presentation and publication quality graphics, as well as data exploration, it cannot disregard the user's preferences for font size, and change the font size automatically as the number of labels increases. In Abel, one can set the font size of choice at the application level preferences (applied to all newly created documents), change the document settings, or change the font properties on a chart specific basis.

(8) The reviewer comments, "In the handbook there are plenty of displays illustrating what can be done, but the data sets are never explained, there is no discussion of why those graphics were chosen or of what they reveal". The handbook is the user manual for how to use Abel features, not a collection of scientific articles to discuss the data.

Finally, the reviewer emphasizes that Abel has been written to meet geologist's needs, and recommends 2 commercial applications and 2 freeware from his department's projects as being much better suited for data exploration. The fact that geological graph types in Abel comprise less than 1% of overall Abel features, does not make the case that Abel is designed for geologist. As for the suitability of Abel for data exploration relative to the recommended applications, what is completely missing is a scientific reasoning for this statement.