1.9: Editing and design of tables

Yateendra Joshi
Publishing Consultant
Editage, Cactus Communications
yateendra.joshi@gmail.com

As a science editor, you will be confronted with tables that your authors have prepared and incorporated into their documents; very rarely will you be required to prepare a table from scratch. Given a table as a fait accompli, two categories of editors will look at it differently: the immediate concerns of science editors, the editors responsible for the science, will be different from those of scientific copy-editors, who are responsible for preparing scientific texts for publication. This chapter touches on the concerns of science editors but focuses mainly on what scientific copy-editors do with data tables.

Science editors, once they have established what a given table is all about, will focus on the numbers, asking a series of questions: Is the sample size adequate? Have the data been analysed statistically? Does the magnitude seem reasonable? Are the differences between the treatments and the control, and those within the treatments, marked, significantly different, or possibly due to sheer chance? Lastly, do the numbers support what the authors claim when they mention that table in the text?

Scientific copy-editors may also consider these questions but will ask many more, and will scrutinize every bit in the table to make sure that it is consistent with all other tables in the document, and in line with the publisher's style. The discussion from now on follows the path from the sentence in the text that mentions or refers to a table through all the parts of a table – its number and title, headnotes if any, row heads and column heads, footnotes, and so on – up to the last part, namely, source notes.

Mention of the table in text

Typically, such items as tables, figures and references are adjuncts to text. Data books and similar reference works are, of course, exceptions. Every table in a research paper or report needs to be mentioned in the text by its number. Ideally, the text should go beyond a mere mention by saying something about the table, for example, a key observation, as in 'Minimum temperatures in Moscow are much lower than those in Madrid (Table 3).' Such statements prime the readers when they choose to look at the table; they already know what the table is about. The copy-editor will also double-check that the table in the above example is indeed numbered Table 3 (and not Table 2 or Table 4): mismatches are not uncommon because in revising a paper, the author may have added or removed a table but forgotten to amend the mention suitably. Incidentally, some publishers capitalize the word 'table' (as in the above examples) but some do not.

Table numbers

Tables are numbered sequentially. In multi-authored volumes, a table number usually includes the chapter number, Table 1.3 being the third table in Chapter 1. This system has the advantage that adding or removing tables affects only individual chapters: all the tables in the volume do not have to be re-numbered. In some documents, tables given in annexes or appendixes are numbered separately, Table A3 being the third table in Annex A or Appendix A, and so on. The word 'Table' can be rendered in different ways – Table or Table or TABLE, in normal or italic or bold type – but needs to be set consistently. Similarly, the number may be followed by a colon, a full stop or a space (variable or fixed), and the title of the table may follow immediately or may begin on the next line.

Table title

The title of the table should indicate the scope of the table and ideally include the unit of measurement (if it is common to all the entries in the table). If the data are a time series or apply to a particular year, that information should also be included in the title, as in 'Monthly average maximum and minimum temperatures (°C) in Europe's capital cities: 1900–2009'. A common tag usually appended to the end of the title to show how the table is organized consists of the preposition 'by' followed by the variable, as in 'Coal production (million tonnes) in Europe in 2010, by country'.

Capitalization

The table title usually follows normal capitalization (sentence case) but some publishers choose to capitalize all significant words (title case).

Terminal punctuation

A table title is not usually a complete sentence with a subject and its complement; therefore, it does not require a full stop at the end. However, this again is a matter of style, and the copy-editor should ensure consistency across all table titles in a document.

Turn-over lines and indents

Sometimes, table titles run to two lines or more. The line length, or measure, is the same as that used for text (although the table itself may not be as wide).Turn-over lines are either flush left: that is, the second and subsequent lines also begin from the left margin of the text block, or indented. In this way, the space underneath the table identifier (Table 1, Table 2, etc.) is left clear, and the turn-over lines begin some distance away from the left margin.

Head note(s)

Additional information other than the units of measurement and the date that applies to the data, if relevant, can be given in notes placed between the title of the table and the body of that table. Whereas footnotes (see below) apply to particular cells within a table, a headnote applies to the entire table, as in 'The data have not been adjusted to account for political reorganization in the form of new countries and changes in national boundaries.'

Body of the table

The body of the table comprises the matrix of rows and columns, including column headings and row headings.

Order of rows and columns

Order the columns and rows logically to show the data to their best advantage, by which I mean the arrangement that best serves the argument that the data support. Tables in a data book or other works of reference form a different case, and are organized to facilitate looking up specific bits of information, which usually means alphabetical or chronological organization. Tables in a research paper often arrange entries in ascending or descending order by magnitude. Sometimes, the categories have a natural order, for example, calendar months or seasons, age groups, and stages of crop growth.

Rows or columns?

Tables can be turned ('pivoted') on their axis: columns can become rows and rows can become columns. The choice is more often a matter of what fits in a given space than of logic: printed pages are typically rectangular, and tall rather than broad. This makes it easier to accommodate more rows on a page than columns. When fitting a table to a given space is not an issue, what data go into columns or rows is often a matter of choice. If I were to hazard an opinion, I would say that smaller differences are noticed more easily if the different values appear side by side, that is, as columns; whereas larger differences – of an order of a magnitude or more – are easily apparent when scanned vertically down a column of numbers.

Headings and subheadings

A column heading or a row heading typically consists of a category (a city, a month, a crop, etc.) or a variable and its

unit (mass and kilograms, length and metres, duration and hours, etc.). If, in the case of the variables, the two are separated by a comma or the units are enclosed in brackets, as in 'Weight, kg' or 'Weight (kg)', the units are typically represented by their symbols rather than by their names, space being at a premium. A separate column for units or unit symbols is not recommended when different rows have different units.

If entries in a column are multi-digit figures, it is better to choose a larger unit (tonnes instead of kilograms or gigawatts instead of kilowatts, for example) and reduce the number of digits. In these situations, write out thousands, millions or billions, or use exponents, rather than giving a string of zeros: for example, 'No. of births, in thousands' is preferable to 'No. of births, 000'.

Singular or plural: The heading must agree with the entries in terms of number: if each row presents data on a different city, the column of row headings will be 'City', and not 'Cities', whereas if the rows have such headings as 'London, Manchester, and Birmingham', 'Frankfurt and Munich', and 'Paris, Lyons, and Tours', the column heading will be 'Cities'.

Levels of headings: The row or column headings may have subheadings or even several levels of subheadings. If so, the design should clearly indicate the levels. If a column heading has one level of subheadings (sales figures for a financial year broken down by quarters; temperature split into average, average minimum, and average maximum; power generation given by source – coal, oil, and natural gas – and so on), a table typically uses 'straddle' or 'spanner' rules between the main heading and the subheadings.

If a row heading has subheadings, the subheadings are indented (although this takes up more space). If space cannot be spared, the levels can be distinguished typographically: for example, the main heading can be in bold type and the subheadings in normal type, both set flush against the left-hand margin, with a blank line above the main heading.

Vertical alignment between a row heading and the rest of the row: At times, a long row heading will run to two lines or more. In such cases, should the rest of the row align with the top line of the row heading or the last line of the row heading? The convention is to align the data row with the last line of the row heading (presumably, because readers will read the heading first and then read on); however, if the row contains text instead of numerical data, the text aligns with the first line of the row heading.

Vertical alignment in column headings: A similar choice needs to be made when column headings are of uneven length: within a table, some column headings will fill only

one line, some may fill two lines, and some may run to three lines. Should these headings be aligned from the top, like a clothesline (and therefore referred to as 'hung' headings); should they be aligned from the bottom, or 'stacked', or should they be centred? This is a matter of style, although stacked headings have the advantage of maintaining a consistent spacing between the heading and the body of a column.

Horizontal alignment between the heading and the body of a column: Sometimes, a column heading will be as wide or wider than the body of the column. The copy-editor should check if a long column heading can be divided into two lines or more, to narrow it.

Vertical alignment between the head and the body of a column: A commonly seen choice is centred column heads, which are centred on the widest entry within the body of the respective columns. If spanner or straddle rules are used, the main heading is usually centred on the rule. If column headings are left-aligned, the left edge aligns with the left edge of the widest entry within that column; if right-aligned, the heading and all the entries within that column share a common right edge.

If each column is numbered, the number (an Arabic numeral within brackets) is centred on the column. However, columns should be numbered only when they are referred to by their numbers in the accompanying text or when the numbers in one or more columns are derived from other columns (for example, when entries in column 5 are products of multiplication of the corresponding entries in columns 3 and 4).

Vertical alignment within a column of numbers: Avoid centred alignment because it masks the differences in magnitude: the difference in length between a 5-digit figure, for example, and a 3-digit figure will be less prominent if the numbers are centred within a column, but easily noticed when the numbers are right-aligned. The result is even worse when some numbers contain the decimal point and some are integers: 1234 and 1.234, for example, will appear nearly equal.

As long as all the entries share a common unit, right-align them if all are whole numbers and align them by the decimal point if one or more entries are in decimal numbers. If the numbers do not share a common unit, left-align them since the numbers have no arithmetical relationship. In a column of figures that refer to consumption of fossil fuels, for example, you cannot add up tonnes of coal, litres of diesel, and cubic metres of natural gas unless all are given in TOE (tonnes of oil equivalent), in which case they share a common unit.

If in a column of decimal numbers, the number of digits to the right of the decimal point varies, do not add zeros to

make the numbers consistent, since the differences may reflect differences in the accuracy of measurement. It is best to query the author, but the difference may be acceptable.

Footnotes

Whereas headnotes apply to the entire table, footnotes apply to specific cells, rows, or columns. Footnotes to a table are placed at the foot of the table and not at the foot of the page on which the table appears.

Footnote markers

In tables containing numerical data, it is better to use letters of the alphabet as footnote markers; in tables containing text, numerals will be the better choice. The traditional footnote markers – the asterisk, the obelisk, the section mark, and so on – are seldom seen in the 21st century. The asterisk is also associated with probability levels and therefore best avoided.

Formatting footnote markers: Footnote markers are usually set as superscripts. In addition, setting them in bold type makes them stand out, and setting them in italics separates them slightly from the number they refer to. Footnote markers may interfere with proper alignment. A 'quick and dirty' approach is to insert the marker before the number, that is to the left of the number (assuming that the numbers are either right-aligned or decimal-aligned).

Explaining the footnotes

Footnotes are usually short, and several footnotes may be run together in a single line below the table, perhaps separated by an em-space. Although footnote markers are typically superscripts, many publishers print them 'in line' when the markers are repeated at the foot of the table. Leave a slight gap (a hair space is one possibility) between the marker and the explanation that follows, and avoid starting it with a capital letter so that the marker will not be obscured, at least in some cases. As with table titles, footnote text seldom consists of complete sentences, and hence does not require a full point.

Source note(s)

The convention is that if no source is given, the table is credited to the author. If the data in the table are not the author's own, cite their source in keeping with the citation format adopted for the document: author–date (Harvard) or numbered citations (Vancouver). Alternatively, give the full reference, including the table number and page number on which the table appears in the source document.

The heading for the source note may be 'Source' or 'Sources', depending on whether the data are from one source or more. The word may be in italics, small caps, or whatever, depending on the publisher's house style: the copy-editor should ensure compliance and consistency.

If the table has been modified in some way, by updating the statistics or by adding or removing one or more columns or rows, and by pooling data from several sources, indicate this with a tag 'Adapted from' or 'Modified from' before the citation.

Large or unwieldy tables

Some tables may be too large to fit on a page or within a page spread. If fitting such tables into the available space is part of the copy-editor's responsibilities, several choices are possible and may be used in combination by:

- using a smaller font (although anything smaller than 7 points should be generally ruled out);
- reducing line spacing;
- doubling up (if rows are many and columns are few, two or more sets of identical columns may be printed side by side);
- printing the table in 'landscape' format (sideways on a page);
- 'pivoting' (making rows into columns and columns into rows);
- splitting a table across pages, and so on.

Alternatively, the table can be made into a supplementary table and put only on the publisher's website or supplied on a disk. In printed documents, fold-outs are another possibility: the table is printed on a larger sheet, which is folded to fit the size of the document. This is easy enough if only a few copies are to be printed, but seldom used when print runs are large, because of the additional costs.

If a table is split across pages, the usual form is to put 'continued', typically in italics and right-aligned on the page, at the point where the first part ends. The next page begins with 'Table # continued' at the top, and the rest of the table below this line. The column headings are repeated.

Some reminders

The minutiae should not prevent copy-editors from examining a table as a whole: being unable to see the wood for the trees is an occupational hazard, which the following points may help you avoid.

Does the table duplicate information?

Some authors present the same data twice in one document, once as a chart and once as a table. Robbins addresses the explicitly posed question, "When should I use a table, and when should I use a graph?" and provides a brief and clear answer, which begins with the elegant one-liner: "Graphs are for the forest and tables are for the trees."[1]

Does the table contain any redundant information?

Any text that occurs repeatedly in many columns or rows should alert the copy-editor to look for ways to eliminate the repetition. Most often, this happens with units of measurements (which can be moved into the row head or column head as appropriate and removed from all other rows or columns); however, these units can take other forms. For instance, in a table giving data on a number of rivers, instead of repeating the word 'River' in each row, as in River Danube, River Tiber, and River Seine, give the column the heading 'River', and reduce the row headings only to the name of the river in question. The only redundancy you may consider allowing is to repeat the percentage sign as appropriate: as Koomey puts it, 'label the column heading "% of total" AND put a percent symbol in every cell . . . people make mistakes in their calculations'.[2]

Does the table contain enough data?

Sometimes tables are used without enough thought; information that can be given in a single sentence is parceled into rows and columns and dignified with a table number and title. If this happens, the copy-editor should suggest that the table be deleted and the information given in running text.

Does the table yield meaningful 'test sentences'?

A test sentence is a useful device in checking whether everything is shipshape as it were. Construct a sentence by reading across the columns and see if it is meaningful, as in 'The River Danube is 2857 km long; the mean altitude of the river basin is 475 m, and the mean flow of the river is about 6550 m³/sec.' If a unit of measurement is missing, the test sentence will not be meaningful.

Conclusion

Think of tables not as repositories of boring data but as gemstones that you can polish. Finney says it all: 'good tables and diagrams are not born without pain. They require at least as much effort as the sentences of the text. An author may revise the text repeatedly in order to improve the presentation, yet may never think to change the first drafts of tables and diagrams.'[3]

References

1. Robbins N.B. Creating more effective graphs. Hoboken, NJ: John Wiley, 2005.
2. Koomey J.G. Turning Numbers Into Knowledge. Oakland, CA: Analytics Press, 2008.
3. Finney D.J. On presenting tables and diagrams. Journal of Scholarly Publishing 1986; 17: 327–342.