

What's So Sacred About Justified Composition?

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TRADITIONALLY, justified composition has been considered the epitome of typographic excellence in the publishing business. This trend probably was started by the ancient monks who made their lines equal in length by “cheating” (*perish* the thought!) on the space between words of their beautifully hand-written scrolls. Johann Gutenberg, possibly imitating the men of the cloth, followed suit when he set the famous Gutenberg *Bible* with flush-right lines of his moveable type. Throughout the history of the printed word, most of us in the editing and writing profession have fallen in line by saying, “If it isn’t justified, it isn’t a professional piece of typography.” Recent typographic research, however, indicates that expensive justified composition is no more readable than its much cheaper unjustified counterpart. Indeed in some instances, unjustified copy is easier to read than flush-right copy.

Modern Typographic Research

The modern research trend into the investigation of justified versus unjustified composition probably was started by Stanley Powers’ research for his master’s thesis at the University of Florida in 1962(1). Powers’ study indicated that reading material presented in unjustified form can be read slightly faster than justified copy. Furthermore, he reported that readers seem to have little objection to the use of ragged-right margins.

In 1965, John Scott Davenport and Stewart A. Smith, two Scripps-Howard researchers, published the results of their investigation into the effects of three typographical variables on news-

paper readability—justified versus unjustified composition, hyphenated versus nonhyphenated words, and type size(2). Like most typographic researchers, Davenport and Smith used statistical methods encountered by many agriculture editors in scientific reports; *i.e.*, they used analysis-of-variance models and a factorial design to test for significance in the total words read, reading accuracy, and reading comprehension of 408 adult subjects.

Based on educational levels, they divided the 408 subjects into the following eight 51-member treatment groups:

1. Justified composition, hyphenated words, 9-point type.
2. Justified composition, hyphenated words, 7½-point type.
3. Justified composition, nonhyphenated words, 9-point type.
4. Justified composition, nonhyphenated words, 7½-point type.
5. Unjustified composition, hyphenated words, 9-point type.
6. Unjustified composition, hyphenated words, 7½-point type.
7. Unjustified composition, nonhyphenated words, 9-point type.
8. Unjustified composition, nonhyphenated words, 7½-point type.

Davenport and Smith found that justification, hyphenation, and type size “. . . do not affect how much, how quickly or how accurately newspapers are read”(3). Although they caution that generalizations from their results should not be hastily applied across the board to real-life reading situations, Davenport and Smith do feel their research should be encouraging to publishers contemplating such typographic variations.

In 1967, three other researchers—Ralph Fabrizio, Ira Kaplan, and Gilbert Teal—conducted two related experiments with typewritten manuscripts: (1) reading performance was assessed with standardized, multiple-choice tests designed to measure speed and level of comprehension; and (2) eye movements were recorded to determine reading rate(4).

The first experiment consisted of giving the Davis Reading Test, which measures speed and level of comprehension, to 216 U.S. Navy enlisted men. The following three typewritten formats produced essentially *equal* results:

1. Justified right-hand margin.
2. Irregular right-hand margin.
3. Irregular right-hand margin with a printed guideline.

The second experiment of Fabrizio *et al.* consisted of determining the reading rate of 18 of the 216 subjects used in the first experiment. The reading rate of the selected subjects, measured by ocular photography, also showed essentially the same results for the three formats.

Still another experiment conducted on typewritten material was performed in 1967 by D. E. Payne. Payne, however, was concerned with proportional-spacing versus standard-spacing(5). Proportional-spacing typewriters provide copy similar to typeset copy in that the space taken up by individual characters varies (e.g., an “i” takes up only one-third the space of an “m”); standard-spacing typewriters provide the same space for all letters, numbers, symbols, etc. (e.g., an “i” and an “m” take up the same amount of space).

Payne recruited 100 men and 98 women from passersby at a suburban supermarket as his subjects. Payne, like Fabrizio *et al.*, also gave the Davis Reading Test to his subjects. Payne found that passages typed with proportional-spacing typewriters were read significantly faster than those typed with standard-spacing typewriters. Overall, there was a 6 percent advantage in reading speed with no statistically significant difference in comprehension.

What is even more important to agriculture editors is the fact that Payne’s findings indicate a greater difference in favor of proportional-spacing in reading speed for “hard” passages, such as the technical copy of agriculture reports. The reason for this possibly was pinpointed by H. Smith and E. V. Dechant who reported that readers adjust their reading speed to the difficulty of the material to be read(6). Thus, following this line of reasoning, the increase in readability for hard-to-read copy may be explained as follows: proportional-spacing reduces recognition time; consequently, reading speed can be increased without loss of comprehension. For easy-to-read material, comprehension is quite rapid, and the advantage of proportional-spacing is less(7).

Summary of Research Findings

At this point, let's look at a brief summary of the research findings related so far in this article:

- Powers' research indicated that unjustified composition is slightly easier to read and that readers seem to have no objection to ragged-right margins.
- Davenport and Smith report that their research indicates that justification, hyphenation, and type size "... do not affect how much, how quickly or how accurately newspapers are read."
- Experiments by Fabrizio, Kaplan, and Teal revealed that three typewritten formats—justified right-hand margin, unjustified right-hand margin, and unjustified right-hand margin with a printed guideline—provide essentially equal speed and level of reading comprehension as well as an essentially equal rate of reading.
- Payne's findings revealed an overall 6 percent increase in reading speed, with no loss in comprehension, for proportional-spacing typewritten material versus standard-spacing typewritten material.

Present-Day Applications of Research Findings

With the case for unjustified composition pretty well established by scientific typographic research, the question arises: Why isn't it being used in professional documents? The fact is many printed documents *are* being composed with ragged-right margins.

For example, in 1967, the *Rotterdamsch Nieuwsblad*, a daily newspaper in Holland with a combined circulation of approximately 80,000, switched to unjustified composition on the recommendation of Jan van Keulen, an expert in newspaper typography and a typographic designer and teacher at the Royal Academy of Design in The Hague(8). Three important results of the change are especially worth noting: (1) considerable savings in production time were realized (as much as 13.5 percent in one department alone); (2) unjustified lines took up *less* space (rather than more space as would be expected); and (3) hardly anyone except

insiders seemed to notice the change to unjustified composition (the paper received only two letters from people who mentioned the ragged-right margins).

Another example of unjustified composition being put into practice is the best-selling book *Up the Organization* by Robert Townsend, who in three years took Avis Rent-a-Car from 13 years of operating in the red to earnings of \$9 million(9). I must confess that I had been in the publications business for eight years when I read the book, and I did not notice the unjustified composition until I was nearly halfway through.

Still another case is the recent practice of top advertising agencies in their use of ragged-right margins even for body type in magazine ads. I recently conducted a quick spot check of a single issue each of *Business Week*, *Time*, *Reader's Digest*, and *Playboy* with the following results:

1. *Business Week*—full-page justified ads, 27%; full-page unjustified ads, 73%; partial-page justified ads, 46%; partial-page unjustified ads, 54%.
2. *Time*—full-page justified ads, 37%; full-page unjustified ads, 63%; partial-page justified ads, 64%; partial-page unjustified ads, 36%.
3. *Reader's Digest*—full-page justified ads, 59%; full-page unjustified ads, 41%; partial-page justified ads, 58%; partial-page unjustified ads, 42%.
4. *Playboy*—full-page justified ads, 45%; full-page unjustified ads, 55%; partial-page justified ads, 58%; partial-page unjustified ads, 42%.

Table 1 provides the issue of the above magazines as well as the total number of ads considered in the analysis. Ads *not* considered were those that had centered lines of body type, ragged-*left* margins, or a mixture of justified and unjustified body type. In multi-page ads, the pages counted were the total pages that contained body type. It is interesting to note from the "Totals" column of the table that an average for the four magazines of 43 percent of full-page ads were justified, while 57 percent were unjustified. For partial-page ads, however, the averages were reversed (57 percent were justified and 43 percent were unjustified). I can only specu-

**Table 1. Justified Versus Unjustified
Ad-Copy Breakdown in Four Magazines**

<i>Magazine</i>	<i>Full Page</i>		<i>Partial Page</i>	
	<i>Justified</i>	<i>Unjustified</i>	<i>Justified</i>	<i>Unjustified</i>
<i>Business Week</i> (April 28, 1973)	17 ads (27%)	47 ads (73%)	5 ads (46%)	6 ads (54%)
<i>Time</i> (May 7, 1973)	15 ads (37%)	26 ads (63%)	9 ads (64%)	5 ads (36%)
<i>Reader's Digest</i> (March, 1973)	45 ads (59%)	31 ads (41%)	7 ads (58%)	5 ads (42%)
<i>Playboy</i> (May, 1973)	24 ads (45%)	29 ads (55%)	18 ads (58%)	13 ads (42%)
Totals	101 ads (43%)	133 ads (57%)	39 ads (57%)	29 ads (43%)

late as to the reason for this reversal, but perhaps ad agencies are operating under the misconception that more words can be squeezed into justified lines than into unjustified lines in their copy for the smaller partial-page advertisements.

Probably the most flattering backing for unjustified composition is provided by *Visible Language*, the Journal for Research on the Visual Media of Language Expression, which is published with a ragged-right margin. *Visible Language* was titled *Journal of Typographic Research* until 1971.

Conclusions and Recommendations

What do the research findings and applications described above have to do with agricultural editors? They provide you with a cheaper and, in some cases, a more readable method of getting from rough-copy input to final-published output for documents you are now having composed with flush-right margins.

IBM manufactures two machines that are especially suited to unjustified, proportional-spacing composition: (1) the IBM Selectric Composer, which has a wide selection of type faces that range from 6 to 12 points in type size; and (2) the proportional-spacing

IBM Selectric Mag-Card Executive Typewriter, which has a variety of type faces but only 10-point type size. At this writing, the composer leases for \$150 per month, including maintenance, and the magnetic-card typewriter leases for \$235 per month, including maintenance. The body type can be composed with either of these machines. The composer can be used for headlines up to approximately 30 points by typing 11-point type on a special fine-grained, clay-based paper designed for the machine and having them photographically enlarged to around 280 percent (inexpensive direct-photo processes such as Agfa prints or Kodak PMT prints are ideal for headline enlargements).

Two production methods can be used for the main body, depending on the nature of the job. For documents such as reports that have a large amount of continuous main-body type and a standard page format, the composition can be done directly on reproduction pages that are pre-printed with non-reproducible, light-blue guidelines. When this method is used, space must be left for illustrations, tables, and headings larger than those provided by the composer or typewriter. After the main body is typed, these elements are simply pasted up except where photographs are to be used, in which case "windows" should be made slightly smaller (say 1/8 of an inch all around) than the screen negatives to give the printer room to strip up. Windows can be made by pasting up red or black art paper or by burnishing artists' aids such as Zip-A-Tone to the photo area on the repro. A third system for making windows is to carefully cut out the desired area, leaving a hole in the repro, back of which the offset printer can put red or black paper to provide a corresponding clear area on the line negative.

A second main-body production method is to have the composer operator or typist type galleys of the copy and paste it up along with line illustrations, tables, headings, etc. Once the line work is pasted up, windows must be made for photos as described above. This second procedure is recommended for documents such as brochures, and flyers that do not have a standard page format.

For those who are inexperienced with the production aspects of "camera-ready" copy for offset printing (which is what the above methods provide), the procedures just described probably seem

complex and time-consuming. Actually with a little practice, they become second nature to many editors and production assistants.

Thus by using unjustified, proportional-spacing composition, the editor can prepare camera-ready copy that will result in a much cheaper printing and composition bill. Furthermore, you will have absolute control over the final layout, for *what the printer sees is what you get*.

References

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- (3) *Ibid.*, p. 388.
- (4) R. Fabrizio, I. Kaplan, and G. Teal "Readability as a Function of the Straightness of Right-Hand Margins," *Journal of Typographic Research*, I, 1 (January, 1967), pp. 90-95.
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- (7) Payne, *op. cit.*, p. 135.
- (8) C. H. Evers "Adjustment to Unjustified Composition on the *Rotterdamse Nieuwsblad*," *Journal of Typographic Research*, II, 1 (January, 1968), pp. 59-74.
- (9) Robert Townsend *Up The Organization* (Greenwich, Conn.: Fawcett Publications, Inc., 1971).