Style Manuals for Technical Writing, Especially for Translations*

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In a Technical Information Service, the problem of communication between writer and typist is quite different from that encountered in the usual business office. In the latter there is day-to-day contact which permits direct communication and the clarification of doubtful points. The need for standardization of written material to be given the typist is not so urgent. However, in our operation, copy is usually prepared by a writer who may never have any direct dealings with the typist and, in fact, a number of different writers usually supply handwritten or typed copy for typing by any one of several typists. Obviously it is essential that there be complete uniformity in presentation of material, and preferable that nothing be left to the judgment of the typist.

From the typists's point of view the text matter to be processed is, at best, difficult. Unlike the material typed in the usual office, the far wider subject range demands a far more extensive vocabulary. There can be no standardized "office jargon" when today we must type a paper on pharmacology, tomorrow on metallurgy, and, who knows, next week one on some phase of the dairy industry! Correctness of spelling is highly important and the typist must not be left in doubt as to whether the writer meant "a b s o r b" or "a d s o r b"; "d e m e t h y l" or "d i m e t h y l"; "s i l i c o n" or "s i l i c o n e". The typist cannot be expected, nor permitted, to make decisions on such technical matters. Her function is to type what the writer has prepared for her. And this means that she must be presented with material which *can* be typed faithfully.

Another aspect of the problem, more directly affecting the writer particularly when translations from foreign language literature are involved, is that of uniform treatment. Translations prepared by various individuals in a Technical Information Service must *not* reflect the individuality of the writer. While this is always the case, it is specially true when different sections of the same paper are prepared by different people. Thus, to cite a very simple example, where the original paper reads "gr.", it is disconcerting to find "g." all through the translation of "Part I," and the "gram" all through the "Second Part" (and this can happen unless we have standardization).

The need for a standardized STYLE MANUAL in work such as ours is therefore evident. A style manual is particularly helpful to the technical writer who is new in the field, and also to the typist who has never previously had experience along these lines.

Let us select a few of the points which should be covered in a style manual and indicate how we have dealt with them. These will fall under three major groupings: (A) instructions to the writer to ensure uniformity of treatment; (B) instructions to the writer to ease the task of the typist; (C) instructions to the typist. (Of course, both groups will receive all three sets of instructions, so each knows what the other has been told.)

A. INSTRUCTIONS TO THE WRITER TO ENSURE UNIFORMITY OF TREATMENT

1. General.—The objective of technical translation is to produce a *technically correct*, clearly understandable, readable version in good idiomatic English. The watchwords here are accuracy, clarity, and readability, in that order. Translators translate meanings, not merely words, and accuracy here means, insofar as possible, reproducing the exact shade and scope of meaning in the original, being just as vague or specific as the original, taking in just as much territory as the original, not more nor less. (This last comment is particularly pertinent to the translation of patents.)

Fortunately, it is usually possible to satisfy all of these requirements and to produce a translation which reads as if the author knew English as we do and had originally written in that language. (People accustomed to poor translations and to the idea that all translations must be poor are invariably astonished when they first read a good translation.)

This often requires the introduction of some improvement in verbiage or style; it may mean a deviation from sentence structure or length. Except in the translation of patents, it may be desirable to make several sentences out of one, particularly when working with those languages which tend to be overly verbose or complex in sentence structure. Occasionally, fragments of sentences must be combined into one coherent English sentence. If the original is "sloppy" the translation need not be so; if the original is elegant, it presents a challenge to the translator to equal this performance.

2. Specific Excerpts.—"... an English equivalent for a foreign-language term, once established, should be used

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consistently as long as the original uses the term in the same sense."

"... be careful about the grandiose language encountered in some papers, particularly in Latin or Slavic languages ... avoid superlatives when we would not use them in English. ... "

"Do not hyphenate English terms except when this is called for ... for example, *Oberflächenwirksamkeit* means surface activity, but *Oberfläheniwirksam* means surface-active. ... "

"Americanize punctuation; for example, use decimal points when appropriate and where the foreign-language paper used commas, and conversely; also, parentheses are often preferable where foreign languages use dashes."

"In chemical nomenclature, follow the original if it is reasonably consistent in designating known chemical compounds by name or formula. Use names for names and formulae for formulae. ... "

"Convert foreign abbreviations to the corresponding American abbreviations; for example, g.d.l. (*gradi di liberta*) becomes d.o.f. (degrees of freedom), etc."

"Wherever degrees Centigrade are understood, but not so indicated, show °C in the translation ... ."

" ... if formulae (or whatever) in Russian are designated as "$XV_а$, $XV_б$, $XV_в$, $XV_г$, $XV_д$," these should not be transliterated ("a, b, v, g, d") but replaced (consistently throughout) with English letters in the same ordinal position ("a, b, c, d, e")."

"If symbols in a Russian mathematical equation are in Roman type but with Russian subscripts, it may be necessary to translate the latter (*i.e.*, $I_{нач}$—"initial"—to I_{in} and $I_{общ}$—"total"—to I_{tot}). But care should be taken that this is done consistently throughout in equations, text, and (often overlooked) in figures."

"Organic nomenclature is international, and by altering the endings and making other minor changes it is usually possible to convert foreign nomenclature into recognizable form, but this still must be converted into the approved (usually *Chemical Abstracts*) form. For example, "khloretan" is obviously "chloroethane" but in unofficial nomenclature should be changed to "ethyl chloride"; "Asparaginsäure" translates easily into "asparaginic acid," but is correctly "aspartic acid." "Kolumbat" (especially in older literature) is recognizable as "columbate" but is preferably called "niobate," and similarly if the symbol Cb occurs in a formula, it should be changed to Nb. If a formula shows alcohol as "C2H5OH" or "C^2H^5OH", or potassium iodide as "KJ," there should be no hesitation in correcting it."

"We do not translate the name of a company or institution (*e.g.*, Badische Anilin-und Soda-Fabrik) in a country using the Latin alphabet; but those of non-Latin-alphabet countries are usually translated (*e.g.*, Moscow State University)."

3. Reference Citations (1) The Paper Itself.—In the reference from which the translation is made, titles of periodicals should be abbreviated, and this should be done in a way that is sure to be understandable to clients. (In this connection, we provide our associates with copies of the *Chemical Abstracts* standard practice. This will cover many of the situations they encounter.) The name of the periodical should be followed by the volume number, issue number in (), page numbers, year; *e.g.*, J. Am. Chem. Soc. **53**, 1234–8 (1931).

(2) Literature Lists.—Follow standard practice as indicated above (see also special comments under part B).

B. INSTRUCTIONS TO THE WRITER TO EASE THE TASK OF THE TYPIST

1. General.—"Bear in mind that the typist is not expected to do anything other than to prepare professionally excellent typed copy of the material you prepare for her and that technical material is far more difficult to copy than normal business language. Special care must be taken to insure that technical words are written correctly and legibly. Hand-written copy may require more than normal care in this respect. ... "

The guiding principle in preparing a manuscript for a typist should be to make it possible for her to combine your manuscript with the original article and arrive at an exact English equivalent without necessarily knowing anything of languages or of science. Tables, for example, may be sketched by the translator in skeleton form, with all column headings and notations translated, but the figures missing (to be copied in by the typist from the original). Similarly, for a figure, we translate the caption under it, and seek out any notations buried in the figure itself (most particularly the abscissa and ordinate designations). The typist types, cuts, and pastes these, and *voila*!—an accurate English version.

2. Specific Excerpts.—"When there is an English-language summary, indicate where it is found in the paper and where it goes in the translation. ... "

"Make symbols unmistakably clear, and hand-print unfamiliar technical terms. ... "

"Designate locations of tables, charts, and illustrations, leaving ample space to alert typists that matter is to be inserted. Translate captions and all wording on graphs and in tables, pointing out any places where wording or symbols in the text should be replaced by the English-language equivalent. If there are many terms, or if the same terms are frequently repeated, prepare an appropriate glossary. ... "

"Copy simple and easy equations; otherwise give adequate instructions as to what should be copied and where. Where American practice calls for different symbols, indicate what changes are needed. ... "

"Take particular care to make sure that the typist knows whether your 1 means 'el' or 'one'. Also, note that some foreign manuscripts use I for (Arabic) "figure one," particularly in tabulations. You may not discover this until you get to "two" and observe whether it is written '2' or 'II'. ... Crystallographic notation may be confusing in this respect, *e.g.* (h k l). Your instructions must make perfectly clear which symbol is to be used or. ... "

3. References.—A special problem arises when references appear page by page and are not numbered consecutively throughout the paper. Since pages of the translation do not coincide with the pages of the original, it becomes necessary for the typist to renumber all references consecutively throughout the finished copy of the translation. It may further be necessary to indicate just how this new numbering scheme ties in with the old scheme in the paper itself. ... "

C. INSTRUCTIONS TO THE TYPIST

1. General.—The two most important points for the typist to bear in mind are: (a) the need for extreme care in accuracy of spelling, particularly in the case of unfamiliar technical words, and in the organization of data in graphs, charts, tabulations, etc., and (b) that you should not attempt to "second guess" the writer who prepared the material you are typing. Of course, this does not mean that you should not check the spelling of non-technical words if you have any doubt about them.

Be sure you distinguish carefully between the material the writer has given you for inclusion in the typed paper, and the instructions he has written for *you* and *you only* (*not* to be typed in the final product!!). These instructions will usually be in brackets or parentheses, often marked "transl.," or occasionally they will be in the margin. *Be specially careful* about this.

2. Specific Instructions.—(Since there must be uniformity with regard to such routine matters as spacing, margins, number of copies, and general arrangement of material, our instructions cover these in detail. Some of the details follow.)

"Double space in text; single space in tables when an entry, caption, or footnote takes up more than one line in its allotted space. . . ."

"Number all pages consecutively. . . ."

"For headings, follow manuscript copy; the translator will normally follow the pattern of the original. . . ."

"Footnotes must be at the bottom of the same page as the footnote signal. Plan ahead and line off the page below the last line of the text, leaving adequate room for the footnote."

"In the absence of any instructions otherwise, allow a separate page for each table and illustration, leaving ample space above the captions and notations to paste in a photocopy of the table or illustration. When tabular matter is to be typed, copy from the original in the indicated columns, separating columns only by spaces, and not by drawing lines."

"When lines must be drawn, use pencil and straightedge. . . ."

Coining New Terms for Polymer Science

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Until recently, the idea that polymers could be named in the same way as other chemicals has not been seriously entertained. Flory has pointed out[1] that during the first part of the present century chemists seemed to ignore polymers, perhaps because they were of indefinite weight and structure, and therefore not suitable for study by the classical methods of chemistry. Within the past decade it has become apparent that polymers could be made with as good chemical purity as most products of modern research. The term *polymer*, however, is clearly established by usage to embrace all products made by polymerization, including copolymers of the most indefinite chemical composition.

Because polymers historically have been named by process of preparation rather than by structure, polymer nomenclature has been at once confused and confusing. As a result, indexing of polymers has been extremely difficult. If, as now seems likely, linear polymers can be made with a "purity" or "regularity" of structure comparable to that obtainable in crystalline solids, it can be predicted that this will also be accomplished with more complex structures, such as ladder or network polymers. The realization that such uniformity now appears attainable encourages a serious attempt to achieve consistency and uniformity in naming and indexing polymers. Our present effort is designed to prepare the way for such a classification.

Our purpose in the current discussion is to coin new terms to describe explicitly a specific type of polymer. The polymer that we have in mind is one of ideal chemical

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(1) P. J. Flory, "Principles of Polymer Chemistry," Cornell University, Ithaca, N. Y., 1953.