

# Commentary : Methodological Problems in Research on Simplified Alphabets and Regularized Writing-Systems

John Downing

Two major criticisms may be made of Edward Fry's article (6) in the January, 1967, issue of *The Journal of Typographic Research*: (1) a major fault in the design of his research; (2) a serious underestimate of the problems of transfer from one writing-system to another. Besides these, there are some minor errors of fact which will be pointed out in footnotes.

## 1. *A Major Fault in Fry's Research Design*

Fry tells us (p. 20) "the real problem is: Will some system of improving the phoneme-grapheme relationship increase the efficiency of a child or adult learning to read. . . ." To answer this question Fry compared children learning a system of improved phoneme-grapheme relationships (either his Diacritical Marking System<sup>1</sup>—"DMS"—or the Initial

Teaching Alphabet<sup>2</sup>—"i.t.a.") with other children learning the more irregular traditional orthography ("t.o.") of English. But Fry's critical test was *not* one of reading in the writing-system which the children had learned. Instead, after only 140 days, all the children were tested in the t.o. writing-system, which was taught to only one of the groups. The sur-

<sup>1</sup> The seventeenth-century inventor of a system of diacritical marks for beginning readers was *Richard* (not "John," as stated by Fry) Hodges (9).

<sup>2</sup> The initial teaching alphabet (i.t.a.) devised by Sir James Pitman has more than "16 new characters" as stated by Fry. I.t.a. has a total of forty-four distinct characters, made up of the conventional lower-case roman alphabet except *q* and *x*, plus twenty other characters. A full description of i.t.a. is provided in Downing (1).

prising result was that the i.t.a. and DMS children could, after such a short period of learning either i.t.a. or DMS, read t.o. as well as the t.o. pupils, who had been learning t.o. systematically and continuously from the beginning, but Fry concludes, "It does not make much difference which method is used to teach beginning reading" (p. 28). Fry does admit on the third page of his description of the experiment and its results that "It is worth noting that the Stanford test used was the regular test, that is, it was printed in t.o. Only about half of the DMS children and a little less than half of the i.t.a. children had formally 'transferred' to t.o. materials" (pp. 27-28).

Fry's conclusion in the preceding quotation then follows at the foot of the same page! This obviously false conclusion is a consequence of a serious error in research design which in turn arises from Fry's confusion between variables *on different dimensions* in reading. For instance, research on basal readers as compared with individualized reading could be on the dimension of the *language-content* of the instructional materials. Because i.t.a. is a writing-system, the only legitimate comparison that can be made in evaluating i.t.a. is between the i.t.a. writing-system and some other writing-system for English (e.g., t.o.). Thus, it is quite meaningless to compare i.t.a. with a basal approach, as did five of the twenty-seven U. S. Office of Education First Grade investigators referred to by Fry. Hahn (8), for example, compared i.t.a. with the language-experience approach and the basal reader approach. But these cannot be compared because they are on different dimensions. For instance, you can teach the language-experience approach using the i.t.a. writing-system or the t.o. writing-system, and you can use basal readers printed in i.t.a. or printed in t.o.

This same basic confusion of the dimensions of reading research variables which is apparent in Fry's treatment of i.t.a. as a "package deal" leads to a second serious error. This is his failure to control the variables on the other dimensions. In comparing one approach with another it is essential to make sure that all major dimensions and factors in reading are controlled except the one being investigated. The contrast to be made is between i.t.a. (or DMS) and t.o. Therefore, in the i.t.a. classes and the t.o. classes in a research project everything else of significance in reading should be as nearly as possible the same. But in almost all the i.t.a. researches currently being conducted in America one major variable has not been equated in the i.t.a. and t.o. classes. This is the actual

language content and methodology of the reading program. For example, Fry (7) in his own experiment compared i.t.a. with his Diacritical Marking System (DMS) and the Sheldon basal reader series in t.o. The DMS materials were the Sheldon Readers with the print altered according to the DMS, but they were not identical with the t.o. series, because they were sub-standard in their lack of color in the illustrations. What is much worse, the i.t.a. materials were not the Sheldon Readers printed in i.t.a. but an entirely different basal series by Mazurkiewicz and Tanyzer. Thus, not only were the writing-systems different, but also that major factor—the content and methodology of the teaching materials—varied too, and, therefore, one cannot tell whether any differences that are found (or any failures to find differences) are caused by the writing-system variable or by the materials variable. This meaningless comparison is made worse (if that is possible) by the fact that the i.t.a. basal series by Mazurkiewicz and Tanyzer is not only very different in content and methodology from the Sheldon Series but it is also very different in content and methodology from any of the other major basal series in i.t.a. Thus, it is not even representative of i.t.a. basal series in general.<sup>3</sup>

Fry actually admits (p. 26) that the Initial Teaching Alphabet special beginning reading series, written by Mazurkiewicz and Tanyzer has “more of a phonic and language experience approach (emphasis on children’s writing) than the Allyn and Bacon series.” Here some conflict of opinion between Fry and other reading experts should be noted. His assessment of the unusual emphasis on phonics fits other reviews<sup>4</sup> of the Mazurkiewicz and Tanyzer readers. For instance, Ohanian’s (10) independent analysis of this i.t.a. series describes it as “unmistakably a phonic approach,” but her description also conflicts with Fry’s evaluation. She says, “*Though it is possible* for teachers to construct language experience charts using the above symbol-sounds in word wholes, clearly the focus is *not* on teaching word wholes . . .”, and “The mode of teach-

<sup>3</sup> For a detailed criticism of the methods and content of the Mazurkiewicz and Tanyzer *Early-to-Read* i.t.a. series, see Downing (2).

<sup>4</sup> But Sheldon (personal communication) comments on Fry’s comparative evaluation of his (Allyn & Bacon) series: “A careful analysis of our reading program reveals a complete phonics program beginning at the readiness level. As for the emphasis on children writing the Activity Book and Independent Activity pads, as well as countless directed lessons, focused in our manuals, indicate a heavy emphasis on the development of writing skills.”

ing and learning is largely through telling or being told respectively, and *much less through guided discovery.*"

In all the British experiments on i.t.a., one basal series (*Janet and John*, by O'Donnell and Munro) has been used in *both* the i.t.a. and the t.o. classes. Both versions—i.t.a. and t.o.—were identical in format and content, thus ensuring the same quality of production for the experimental and control groups. Therefore, any differences found can be attributed with greater certainty to the change of writing-system. This plan is being followed also by Helen Robinson at Chicago and by Jack Holmes in California. In their studies they are using i.t.a. and t.o. editions of the Scott Foresman basal series which are identical apart from the change of writing-system. Andrew Taylor at the University of Ibadan in Nigeria is also using this scientific approach of having identical series in i.t.a. and t.o. for the experimental and control groups.

Many other studies (such as Fry's), however, have failed to control this variable,<sup>5</sup> and it will, therefore, necessarily be impossible to evaluate the effects of i.t.a. as compared with t.o. in such experiments.

Failure to appreciate that the i.t.a. experiments are concerned solely with the writing-system dimension also leads Fry (as it has others) to use inappropriate criterion tests. Because he sees i.t.a. as a total "package deal" or "method" of teaching "reading" he assumes that the only possible object of an i.t.a. experiment can be reading *in t.o.* (i.e., the goal of teachers who begin normally with t.o.). But the truth is that reading is still reading, whether it be in i.t.a. or in t.o. What we want to know is—do the complexities and irregularities of t.o. (in contrast to a more simple and more regular writing-system such as i.t.a. or DMS) restrict children's access to the English language in print? To find out the answer we must not only teach the i.t.a. students in i.t.a. but *we must test them in i.t.a.* The only valid way to tell whether i.t.a. makes printed English more accessible to young beginners is to use the same sample of the English language for teaching i.t.a. students as we do for teaching t.o. students (e.g., the same basal series in i.t.a. as in t.o.) and then to test both the i.t.a. students and the t.o. students on identical samples of the English language printed in i.t.a. for the i.t.a. students and in t.o. for the t.o. students. This was not done by Fry, and therefore we cannot tell from

<sup>5</sup> Hahn used a more representative i.t.a. basal series—but the t.o. pupils still had different instructional materials.

his experiment what are the effects of simplifying English orthography by means of either i.t.a. or DMS.

## 2. *Transfer Is Not a "Sham Problem"*

Another misleading conclusion in Fry's article arises from his method of observations. Instead of rigorous test procedures, he used "informal observations" (the phrase is not defined), and this leads him to believe "that transfer is somewhat of a sham problem for both DMS and i.t.a." (p. 28). The recently published report (Downing—3) on the British experiments with i.t.a. includes the results of objective tests of transfer from i.t.a. and t.o. which show that Fry's generalization may be dangerously misleading to teachers who may use i.t.a.

The truth of the matter is that transition from i.t.a. to t.o. is a more complex process than appears to have been envisaged originally. For example Sir James Pitman (1) said that in i.t.a. the Monotype Corporation "have left almost undisturbed what might be called the 'top coast-line' of words and sentences," and he proposed that this would lead to easy transition once the child "has become familiar with word-forms, and is no more than glancing at the print—and then only at the 'top coast-line' of it." The British i.t.a. research report states that, although subjective impressions indicate that transition from i.t.a. to t.o. (for the average child at about the end of the second year) is "painless," nevertheless the objective test results show that children's reading attainments in t.o. drop below their i.t.a. attainments for about six months. By the end of the third year the i.t.a. students' recovery from this setback gives them a significant advantage in their t.o. reading, as compared with the pupils who have had t.o. from the beginning, but even so we need to be very much concerned about the causes of the plateau or even regression that occurs in the development of literacy skills at the stage of transition from i.t.a. to t.o. So far, our investigations suggest that i.t.a. students do not transfer in units of whole-word configurations (as Sir James Pitman seems to have expected), but instead a smaller unit needs to be considered. When we study i.t.a. students' errors in reading t.o., it becomes clear that some difficulties are being caused through sources of proactive interference in i.t.a. A detailed discussion of these results of the research on transfer from i.t.a. to t.o. is being published in Downing (5). There it is proposed that "urgent consideration should be given to . . . a series of laboratory studies to shape the new system to provide

greater effectiveness in transfer to reading and writing in the conventional orthography of English.”

Thus transfer of learning from i.t.a. to t.o. is far from being a “sham problem.” If one is interested only in i.t.a.’s longer-term effects in transfer to t.o. (Fry’s reluctance to test in i.t.a. or DMS suggests that this is his real position) then it must be stated that the consensus of the objective research evidence to date shows that i.t.a. appears to be a promising innovation, but if its promise is to be fully realized further improvements in the i.t.a. writing-system itself will need to be made after appropriate empirical tests in further research. Some of the problems which may face designers who wish to attempt to improve i.t.a. are discussed in a recent article in *Phi Delta Kappan* (Downing—4).

If, on the other hand, one is interested in the effects of “improving the phoneme-grapheme relationship” in English orthography on the accessibility of the English Language to the reader (which Fry says is “the real problem”), then i.t.a. must be recognized as very much more than just a promising idea. The effects of i.t.a. in developing literacy in English are very considerable. For example, the British research found that after one and one-half years of learning i.t.a. the average pupil could read more than twice as many English words in i.t.a. as the pupil brought up on t.o. could read of the same samples of English printed in t.o. Therefore, although it is in direct contradiction to Fry’s opinion, the conclusion from the British research, published in *The i.t.a. Symposium* by the National Foundation for Educational Research in England and Wales, seems reasonable: “The unequivocal conclusion from the results of these experiments is that the traditional orthography of English is an important cause of difficulty in teaching and learning reading and writing in English-speaking countries. So long as t.o. is used for beginning reading and writing one must reckon that children are more likely to become confused about the tasks of reading and writing than they would be with a more simple and more regular system for English.”

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John Downing is senior lecturer in educational psychology and director of the Reading Research Unit at the University of London Institute of Education (2 Taviton Street, London WC1). Beginning in June, 1967, he will be a visiting professor of education at the University of California, Berkeley. Dr. Downing planned and conducted the original experiment with the Initial Teaching Alphabet (i.t.a.). He is the author of some fifty articles and four books on the teaching of reading. Besides his university experience, Dr. Downing has been nine years a classroom teacher and spent three years on communication research with Unilever. He was the founder president of the United Kingdom Reading Association.

# the initial teaching alphabet

æ b c d ee  
face bed cat dog key

f g h ie j k  
feet leg hat fly jug key

l m n œ p r  
letter man nest over pen girl

r s t ue v w  
red spoon tree use voice window

y z s wh ch  
yes zebra daisy when chair

th th sh z r  
three the shop television ring

a au a e i o  
father ball cap egg milk box

u ω ω ou oi  
up book spoon out oil



## A Reply by Edward Fry

One of the main criteria of a science is that the results be replicable. If a statement is true in Kansas, it should also be true in London and Pennsylvania, given reasonably similar conditions.

The chief problem with John Downing's statements about i.t.a. is that other people do not seem to be able to replicate them. For example, in 1963 Downing told the International Reading Association, "We have recently tested all the experimental i.t.a. pupils in seven classes on their ability to read *the conventional alphabet and spelling*, although not more than 40% of them had been taken off i.t.a. books by their teachers at this time. . . . The most important fact which emerges from these tests is that the i.t.a. group achieved significantly higher scores for accuracy in comprehension in reading the *conventional alphabet and spelling*" (1). [Downing's italics.]

Now, when I do not find this and neither do five other investigators, Downing complains of faults in our research design. Table 1 shows the

TABLE 1: *Stanford Achievement Test Paragraph Meaning Raw Scores of Studies Comparing i.t.a and t.o. Taught Populations after 1 Year of Instruction*

<i>Study</i>	<i>i.t.a.</i>	<i>Basal t.o.</i>	<i>N</i>
Hahn—Oakland, Michigan (6)	21.5	20.9	885
Mazurkiewicz—Lehigh (10)	20.6	21.1	730
Hayes—Pennsylvania (7)	21.0	19.8	365
Fry—Rutgers (3)	17.6	20.4	393
Tanyzer—USOE Study (15)	23.1	16.4*	656
Tanyzer—N.Y. State Study (14)	21.4	21.4	102

\*Sig. .05

results of five studies which do not confirm his statement. Downing, ignoring his own pronouncement, states that we are at fault for not testing i.t.a.-taught children in i.t.a. However, the better answer for that statement is simply to wait until all children have transferred out of i.t.a. and

then to test them in regular print. As far as I know, there are no tests standardized in i.t.a. (merely transliterating tests and applying regular norms is dangerous). Since the testing for my article in *The Journal of Typographic Research* (5), I and other investigators, Mazurkiewicz (9) and Monson (12), have reported test results at the end of the second year, and there is still no difference. In fact, I have seen, though not yet published, my mid-third year results and there is no difference.

It certainly would be superior to have a better controlled experiment with exact translations, but we were unable to do this. I hope that the experiments by Holms and Robinson will be completed soon. But I would like to note that all of the U. S. studies did not use the Mazurkiewicz and Tanyzer materials. One of the investigators, Hahn (6), used a set of readers written by Downing, and the test results did not show them to be superior to traditional readers.

Whether or not transfer from i.t.a. to regular readers is a problem as Downing claims, or not much of a problem as I claim, is of minor importance. Most research reports are beginning to tell us that most people will not be using i.t.a. anyway.

As for Downing's final quotation that "Unequivocal conclusion from the results of these experiments is that the traditional orthography of English is an important cause of difficulty in teaching and learning reading and writing in English-speaking countries," perhaps that statement was written some time ago, as certainly it does not jibe with most current U. S. research, or even with the research of Terence Swales at Reading University (England), who after a three-year study comparing i.t.a. and regular readers concluded that "Children taught by i.t.a. for three years were neither superior nor inferior in reading achievements to those taught by t.o. (traditional orthography) from the onset" (13). Like the U. S. studies, he did not find any differences favoring i.t.a. for boys or girls, or favoring i.t.a. for bright or dull pupils.

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Dr. Fry is director of the Reading Center and professor of education at Rutgers University (New Brunswick, N.J. 08903), where he heads the graduate program for reading specialists.