This bibliography is a first edition designed to aid the work of the Textual Communication Research Unit and will be followed by a further edition in two years' time. Sources relevant to textual communication, except those pertaining exclusively to broadcasting or children's texts, are arranged as either pertaining to language or to visual design. A few useful references not directly relevant to the design of texts are included at the beginning as a matter of record. The language area is divided into philosophy, linguistics, instructional psychology, programmed learning, readability, analysis of texts, reading and writing style. The visual design area is divided into general, graphs-charts-tables, scientific and technical diagrams, algorithms, maps, typography, scripts and symbols. (WH)
MONOGRAPH No. 3

Bibliography for
Textual Communication

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BIBLIOGRAPHY FOR
TEXTUAL COMMUNICATION

Publications relevant to research on the design of texts for the adult learner.

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Senior Lecturer

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Eleanor B. Smith

Institute of Educational Technology
Monograph No. 3
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Preface

This bibliography is the first production of the Textual Communication Research Unit (TCRU). The work has taken twelve months, and the products include a filing system containing reprints and research reports as well as the present bibliography. I am grateful to the Board of the Institute for providing funds from its research budget (incidentally, the total cost of this work came to under £1000), and to the Director, Professor David Hawkridge, for his support and encouragement.

My chief debt is to Mrs. Eleanor Smith, an information scientist who was appointed part-time consultant for the duration of the project. Her initiative and hard work has made a major contribution to the bibliography, and I am truly grateful to her.

The comments that precede each section are, of course, mine. They help to explain why the bibliography is structured the way it is, and act as a running commentary on the current status of textual research as it appears to me. Also, the responsibility for the structure of the bibliography (and any mistakes that may exist) is mine.

This is the first edition. I hope to benefit from the advice of experts in the major fields covered by the bibliography; and expect to produce a further edition in two years' time. Therefore, any comments on the structure or content of the bibliography are welcome and may be addressed to me at the Institute.

M. Macdonald-Ross
Institute of Educational Technology
December 1973
Introduction

A bibliography is produced for a purpose, and its whole structure is dictated by that purpose. The primary function of this bibliography is to support the work of the Textual Communication Research Unit (TCRU) which I direct as part of the Institute's research programme. The aim of the TCRU is to conduct research into Open University printed materials (correspondence texts, set books, etc.) and to advise on the construction of these materials.

Although the bibliography is thus adapted to meet the needs of the Open University, it will no doubt have its uses elsewhere. We are not the only people who face the problems of designing sophisticated messages in printed form. Therefore, a secondary function of the bibliography is to make links with the invisible college of researchers whose interests are in some way similar to ours.

It is as well to be clear about what the bibliography has not attempted to do. We have not listed research into the design of texts for young children (unless it has relevance for adults). We have not listed research into broadcasting (unless it has relevance for texts). We have not tried to list every single reference where there already exist perfectly good review sources. Above all, remember that a bibliography lists things that exist; not things that don't exist (but ought to). Some areas of great concern are virtually unrepresented in the literature: they may form the basis of future work, but cannot be catered for here.

The reader will notice the striking variations in the quality and quantity of research in different sections of this bibliography. These variations are real, and cause great trouble for the TCRU, since the practical problems which face us are no respecters of discipline boundaries and state-of-the-art limitations.

The format of the bibliography deserves a few notes of explanation. Most journal style codes make use of italic: usually titles of books and names of journals are in italic. This has led some authors to use underscoring instead of italic when a bibliography is produced from typescript. The resultant mish-mash of horizontal black lines distracts the eye and make the bibliography inelegant and almost certainly less readable. In this bibliography we have adopted a "clean" style stripped bare to the essentials. Thus, instead of:


We type thus:


PRESSEY, L.C. (1924) The determination of the technical vocabularies of the school subjects. School and Society 20: 91-6

Note the removal of all distracting features: underscoring, quotation marks and unnecessary capital letters. The author and date are stressed because they are often used by the reader in deciding whether to read further. The date should usually be the date of first publication (it is a trifle strange to read references like "Darwin, C (1971)"!). Place of publication is left out whenever possible, and in our case that means whenever the place is London or the publisher is a University Press. If a book is simultaneously published in two countries in hardback and paperback we list just one publisher - usually the British hardback, or if this is out of print, the British paperback. This brevity should not cause hardship, for standard reference sources will reveal the full publishing history of any book in or out of print.

The classification system is the simplest we could devise for our purposes (we are "lumpers" rather than "splitters"). At the start of the bibliography are general references of indirect relevance to the design of texts. Here we list a few key works, and make no attempt to be comprehensive. Later, the bibliography lists references of direct practical significance. Here we have tried to be comprehensive by listing all relevant items, or by listing key review papers (for example, the list of references on ordinary language algorithms - 6.4 - is as complete as we could make it).
A. GENERAL

The first part of the bibliography contains references which are not of direct relevance to the design of texts. They were reached after back-tracking from more practical concerns, and are placed in the bibliography as a matter of record.

A.1 Communication

This short section contains a number of works on communication which go beyond the province of language, and so do not fit comfortably in part B.


BRYSON, L., ed. (1948) The communication of ideas. New York, Cooper Square


LAO TZU (1962) The way of life according to Lau Tzu, ed. by W. Bynner. New York, Capricorn


MCCLUHAN, M. (1964) Understanding media, the extension of man. Routledge

MCCLUHAN, M., and FIORE, Q. (1967) The medium is the massage, an inventory of effects. Penguin

MEREDITH, P. Instruments of communication: an essay on scientific writing. Pergamon

A.1. Communication - continued


This section owes its genesis to my discontent at the present status of content analysis (see section B.6.3 below). Briefly, the argument runs thus: our experimental work (for instance, learner strategies x structure of text) presupposes adequate ways of describing the meaning structure of a text. We need content analysis methods which describe not just the cognitive content, but the style and structure of the writer's arguments. No such methods exist. Therefore, we are driven back either a. to construct improved procedures for content analysis, or b. to make better use of non-quantitative textual criticism. Both these avenues are explored in this bibliography. The present section asks "what is known about human thinking and reasoning?" If some consensual framework existed, it could form the basis of the analysis procedures we seek. Judging from the works listed below, no such consensus yet exists; the variety of conceptual schemes erected in this field is quite striking.

ABERCROMBIE, M.L.J. (1960) The anatomy of judgement, an investigation into the processes of perception and reasoning. Hutchinson

ADAMS, P., ed. (1972) Language and thinking. Penguin


BOERWINKEL, F. (1971) Inclusive thinking. Lutterworth

BOLTON, N. (1972) The psychology of thinking. Methuen


DIESING, P. (1972) Patterns of discovery in the social sciences. Routledge


HARRIS, R.T., and JARRETT, J.L. (1956) Language and informal logic. Longman

A.2 Thinking - continued


POLYA, G. (1957) How to solve it, a new aspect of mathematical method. 2nd ed. New York, Doubleday


STEBBING, L.S. (1939) Thinking to some purpose. Penguin


WASON, P.C., and JOHNSON-LAIRD, P.N. (1968) Thinking and reasoning. Penguin


Apart from its intrinsic interest, recent work in information science touches our research needs in three ways. First, it shows what may be obtained by a macro-level type of content analysis. Second, it offers some quite interesting insights into those systems of technical terminology which are so integral a part of science, technology and mathematics. Third, it faces the task of representing the structure of knowledge in an unambiguously straightforward manner. The references chosen centre around the problems of building, representing and using classification schemes based on technical terms.

A.3.1 Indexing

ARTANDI, S. (1963) Roles and links, or forward to Cutter. American Documentation 14: 74-7


JOHNSON, A. (1959) Experience in the use of unit concept coordinate indexing applied to technical reports. J. Documentation 15:146-55

A.3.2. Thesaurus compilation

AITCHISON, J. (1972) Thesaurus construction, a practical manual. ASLIB

AITCHISON, J. and GILCHRIST, A. (1979) Thesaurus compilation. ASLIB


ENGINEERS Joint Council (1967) Thesaurus of engineering and scientific terms. New York

GILCHRIST, A. (1971) The thesaurus in retrieval. ASLIB


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A.3.3 Information retrieval

ALLEN, T.J. (1968) Organizational aspects of information flow in technology. ASLIB Proceedings 20:433-54


McGARRY, K.J. (1972) Semantics in the organisation of knowledge: a programmed text for students of information retrieval. Bingley

MOERS, C.N. (1960) The next twenty years in information retrieval. American Documentation 11:229-236

NEEDHAM, R.M. and SPARCK-JONES, K. (1964) Keywords and clumps: recent work on information retrieval at the Cambridge Language Research Unit. J. Documentation 20:5-15


ROLLING, L. (1964) Role of graphic display of concept relationships. International Study Conference on Classification Research, 2nd. Elsinore, Denmark

SARACEVIC, T., ed. (1970) Introduction to information science. New York, Bowker

VICKERY, B.C. (1973) Information systems. Butterworth
B. LANGUAGE

One of the denoting marks of the twentieth century is a self-conscious interest in the uniquely human tool of language. The century opened with the realisation by philosophers that language was not the transparent, trouble-free medium they had so long taken it for; and by the close we shall surely have natural language communication with machines. The size and scope of this part of the bibliography is directly related to this progress in human understanding, for language plays the primary role in most kind of textual communication.

B.1 Philosophy

This section lists major works in the philosophy of language. It serves as a cultural background to the research which follows in later sections.


AYER, A.J. (1936) Language, truth and logic. Gollancz


KOLAKOWSKI, L. (1972) Positivist philosophy from Hume to the Vienna circle. Penguin


MORRIS, C. (1946) Signs, language and behaviour. Braziller


B.1. Philosophy - continued

QUINE, W. van O. (1963) From a logical point of view. 2nd ed. New York, Harper & Row


WAISMANN, F. (1968) The principles of linguistic philosophy. Macmillan

WITTGENSTEIN, L. (1922) Tractatus logico-philosophicus. Routledge


B.2 Linguistics

In this section we get closer to practical concerns. Most papers on readability and instructional psychology have some direct or indirect dependence on linguistics. We have included semantics and general semantics under this section; they could have been placed separately, but we preferred to use the term linguistics with a broad connotation.

B.2.1 General


BAR-HILLEL, Y. (1964) Language and communication. Reading (Mass.) Addison Wesley


CHOMSKY, N. (1957) Syntactic structures. The Hague, Mouton


CHOMSKY, N. (1972) Problems of knowledge and freedom. Fontana/Collins


B.2.1. Linguistics, general - continued

The Hague, Mouton


HEATH, S., MACGABE, C. and PRENDERGAST, C., eds. (1972)
Signs of the times, introductory readings in textual semiotics. Granta

App. Maths 12:99-103

HOGBEN, L. (1943) Interglossa: a draft of an auxiliary for
a democratic world order, being an attempt to apply
semantic principles to language design. Penguin

syntactic study based on an analysis of scientific texts.
Cambridge U. Press

The Hague, Mouton

JESPERSON, O. (1933) Essentials of English grammar. Allen
& Unwin

JOHNSON, R.E. (1970) Recall of prose as a function of the
structural importance of the linguistic units. J. Verbal
Learning and Verbal Behaviour 9:12-20

JOHNSON, W. (1946) People in quandaries: the semantics of
personal adjustment. New York, Harper & Row

KATZ, J.J. (1972) Semantic theory. New ed. New York,
Harper & Row

KORZYBSKI, A. (1958) Science and sanity: an introduction to
non-Aristotelian systems and general semantics. 4th ed.
New York, Science Press


MACKLEY, W.F. (1965) Language teaching analysis. Longman

MARKEL, N.N. (1969) Psycholinguistics: an introduction to
the study of speech and personality. Dorsey

MARKS, M.R. (1952) Verbal context and memory span for
meaningful material. American J. Psychology 65:293-300

MILLER, G.A. (1951) Language and communication. New York,
McGraw-Hill

Amsterdam Psychologist 17:748-62

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13.2.1. Linguistics, general - continued


SCHLESINGER, I.M. (1968) Sentence structure and the reading process. The Hague, Mouton


STRANG, B.M.H. (1968) Modern English structure. 2nd ed. Arnold


WHORF, B.L. (1956) Language, thought and reality. MIT Press


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B.2.1. Linguistics, general - continued


B.2.2 Sociology


B.3 Instructional psychology

This section represents the efforts of experimental psychologists to tackle some of the problems of meaningful learning from texts. Virtually all the references are post - 1965, which is a sign that the chains of certain theoretical prisons are at last being cast off.

B.3.1 General


CARROLL, J.B. (1968) On learning from being told. Ed. Psychology 5:5-11


B.3.1 Instructional psychology, general - continued


GAGNE, R.M. Context, isolation and interference effects on the retention of fact. J.Ed. Psychology 60:408-14


B.3.1. Instructional psychology, general - continued


ROTHKOPF, E.Z. (1965) Some theoretical and experimental approaches to problems in written materials. in Learning and the educational process, ed. J.D.Krumboltz. Chicago, Rand McNally

B.3.1. Instructional psychology, general - continued


WASON, P.C. (1957) The effect of compressing information on its retention. Institute of Scientific and Technical Communicators (PTI: DG 10; see section B.8.2.1.)

WASON, P.C. (1962) Psychological aspects of negation. Communications Research Centre, University College London


B. 3.2. Instructional psychology: Questions


BULL, S. (1973) The role of questions in maintaining attention to textual materials. Rev.Ed.Res. 43(1)83-7

FRASE, L.T. (1968) Effect of question location, pacing and mode upon retention of prose material J.Ed.Psychology 59(4)244-49


FRASE, L.T. (1968) Some unpredicted effects of different questions upon learning from connected discourse. J.Ed.Psychology 59:197-201


B.3.2 Instructional psychology: Questions - continued


B.4 Programmed learning

If this bibliography had been constructed ten years ago the literature of programmed learning would have figured prominently. For these programs were instructional texts designed according to theoretical specifications, and subsequently subjected to extensive empirical tests. But we now have to accept that programmed learning is no longer a coherent movement. Isolated groups of workers exist here and there, but very few programs are now written in the old formal styles. The better ideas have been absorbed into instructional psychology and educational technology.

In the early 1960s many psychologists tried their hands at programmed learning, usually to test the claims made by the rival schools of Skinner and Crowder. These studies are not listed here, not only because few such programs are now written, but because (alas!) many of these experiments were rather poorly designed, and the results of doubtful value. But we have listed certain source-books and reviews; from these the whole network of research papers can be retrieved.

The style of the Open University correspondence texts owes a lot to the programmed learning movement; we made a self-conscious attempt to use the concepts we regarded as valid, whilst discarding arbitrary rules about frame construction. The resultant correspondence text is, of course, the prime research object of the TCRU.

B.4 Programmed learning


B.4. Programmed learning - continued


B.5 Readability

Readability measures are one of the established methods of research into textual communication. The literature that supports them is extensive. There are two classic surveys of the field: Chall (1958), which is itself readable and a good introduction, and Klare (1963), by far the most complete source. This bibliography assumes that the serious researcher will have Klare’s book at hand, and is consequently rather selective: earlier references are only provided where they meet a specific need.

Before he starts on this subject, the reader should note that there are certain familiar views or positions that are apt to occur whenever readability measures are used:

1. First, a few people tend to dismiss the usefulness of these measures entirely, either because they feel that humans are more reliable judges than any formula, or, contrariwise, because readability measures do work, but don’t solve all the problems of human communication. The first view (naive common-sense) is just plain wrong: the better formulae are markedly more reliable than human judges at estimating the readability and comprehensibility of prose. The second view is too idealistic: if we waited for perfect solutions we would be paralysed; moreover it is not the intention of readability measures to solve all problems.

2. The position I take is that the job of readability measures is to identify, to point out those places where the act of communication may break down or run into trouble. More sophisticated methods of analysis can then be used to diagnose the cause of the trouble and advise on a cure. For example, the Open University produces three hundred correspondence texts and dozens of set books and readers every year: we cannot possibly submit every item to detailed critical scrutiny. What we need is to be sure our heads are pointing in the right direction; readability formulae are one way of achieving this. In passing, this view of readability explains the role played by content analysis and textual criticism in this bibliography (for, clearly, more sophisticated tools can be used once the span of attention has been suitably narrowed).

3. In contrast, a more ambitious position is taken by Bormuth. In his view, a modern readability formula should both identify trouble spots and diagnose the cause of the trouble. In his opinion this extra penetration is achieved by connecting modern readability formulae with the results of linguistic research.

4. Even more ambitious is to expect a formula to identify, diagnose and prescribe the treatment. Thus, a few people have thought that prose could be improved by
shortening sentences and words in a crude fashion (that is, without re-thinking and re-designing the communication as a whole). As far as I know, no serious worker now holds this view. It is quite true that readability measures use sentence and word length as basic variables. These variables do correlate highly with measures of comprehension and readability; and this gives the formulae their predictive power. But what one then does to improve the communication is altogether a more complex affair.

B.5.1. General


B.5.1. Readability, general - continued


NEUBERGER, S. (1954) Readability. Institute of Scientific and Technical Communicators. (PTI:DG 5; see section B.8.2.1)

B.5.2 Readability in special disciplines

Readability formulae are basically designed to cope with continuous prose. Some formulae started life as measures of children's reading material; others were validated on adult material. All of them were originally standardised on ordinary language continuous prose. So, to what extent may they be used for scientific, technical or mathematical texts?

The problem can be put like this: any aspect of a text which is not ordinary language prose threatens the accuracy of prediction obtainable by the use of these formulae. In these disciplines a text may have a complex structure which is not specifically catered for by the formula. (The word "structure" is used here with these senses: first, the technical terms, diagrams, formulae and equations which are the visible structure of a discipline; and second, the meta-level discourse about the learning process - the objectives, instructions, questions and answers directed at the student).

Nevertheless, readability measures may have their uses in the scientific domain; after all, the dreadful quality of most scientific prose is renowned, and there is at least a prime facie case for using the measures on any type of continuous prose. The whole issue is complex; scientific texts differ so much in their structure: what would be a valid use of a formula in one case would be inappropriate in another case. The need for caution is clear.


CLINE, T.A. (1972) Readability of community college textbooks. J.Reading 16:3-37


GRIBERT, C.D. (1972) An examination of readability levels for selected basic science texts EDO59860 (ERIC)
Maths Teacher 50:105-10


KLARE, G.R., MABRY, J.E. and GUSTAFSON, L.M. (1955) 
The relationship of human interest to immediate retention and to acceptability of technical material. J.Applied Psychology 39:92-5


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NEWPORT, J.F. (1965) The readability of science textbooks for elementary school. ED010756 ERIC


SHAW, J.A. (1967) Reading problems in maths texts. San Diego State College


TAQUE, J.V. (1953) Readability of texts. High Points 35.16-20


WIEGAND, R.B. (1967) Pittsburgh looks at the readability of maths textbooks. J.Reading 11:201-204


B.5.3 Formulae and techniques

The formulae listed below are all respectable and may be used with confidence. For a more complete list see Klare's book.

**Cloze procedure**

This is an important modern procedure, especially interesting in view of Bormuth's research aims. For a list of Cloze references see Klare, Sinaiko and Stolurow.

Reading Research Qu 1:79-132


Elementary English 45:420-36


**Dale-Chall formula**

This is the most extensively validated technique, and the soundest of the older methods. It is rather time-consuming owing to its use of vocabulary lists.

DALE, E. and TYLER, R.W. (1934) A study of the factors influencing the difficulty of reading materials for adults of limited reading ability. Library Qu. 14:384-412


Elementary English 26:19-26


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Flesch formula

This is the formula I have been using on Open University materials. It uses syllabus counts, and so is quicker to use than Dale-Chall. The scores correlate highly with Dale-Chall, and there is an extensive literature describing its use.


FLESCH, R.F. (1951) Reply to criticism by Jenkins and Jones. J. Applied Psychology 35:69

JENKINS, J.J. and JONES, R.L. (1951) Flesch's 'Measuring the level of abstraction' J. Applied Psychology 35:68


Lorge formula

This older formula is not much used now, but is quite sound.

LORGE, I. (1944) Predicting readability. Teachers College Record 45:404-19


LORGE, I. (1949) Readability formulae, an evaluation. Elementary English 26:86-95

LORGE, I. (1949) Reading and Readability. Teachers College Record 51:90-97
B.5.3. Formulae and techniques - continued


Other techniques

May I draw your attention to McLaughlin's SMOG method, and to the possibility of automated readability counts (Coke, below, and Smith and Kincaid in section B.5.2. above).


Fry, E. (1968) A readability graph that saves time. J. Reading 11:513-6


B.5.4 Sentence structure

This and the following section could have been placed under linguistics or instructional psychology. For convenience they are left here next to the readability measures which so frequently refer to them.


Vocabulary


BORMUTH, J.R. (1964) Mean word depth as a predictor of comprehension difficulty. California J.Ed.Res. 15:226-231


DALE, E. (1965) Vocabulary measurement: techniques and major findings. Elementary English 42:895-901


KLARE, G.R. (1968) The role of word frequency in readability. Elementary English 45:12-22

LANGER, J. (1967) Vocabulary and concept development. J. Reading 10:448-56

LUDWIG, M.C. (1949) Hard words and human interest, their effect on readership. Journalism Qu. 26:161-71

PRESSY, L.C. (1924) The determination of the technical vocabularies of the school subjects. School and Society 20:91-6


STAUFFER, R.G. (1966) A vocabulary study comparing reading, arithmetic, health and science texts. Newark, Delaware, International Reading Association


WEST, M.P. ed. (1953) A general service list of English words, with semantic frequencies and a supplementary word list for the writing of popular science and technology. Longman


WITTY, P.A. (1930) Vocabulary and reading. School and Society 31:268-72
Once trouble spots have been located a wide variety of sophisticated tools of analysis and criticism can be used to clarify the problems faced by the reader. Clarification is, of course, a rather unfixed term. No text ever can be unambiguous, and every sentence uttered can be misconstrued. Nor do we suggest that difficult concepts may be grasped without interpretive skills on the part of the reader. Once again, we do not seek any simple solution to the fundamental problems of human communication (many of these problems almost have the status of laws, so closely united are they to our nature as human beings).

If we could adequately describe the meaning structure of a text we should be better placed to explain the difficulty students have in understanding some of our texts. Much of this difficulty is quite gratuitous, caused by the way texts are constructed, not by the intrinsic nature of the writer's conceptual schema or the inadequacy of the reader's decoding strategies.

B.6.1. Literary criticism

Which is the more fruitful way to describe the structure of a text and the task of interpretation faced by the reader: the critical methods of the humanities or the quantitative methods of the social sciences? This section is an oblique comment on present-day content analysis (below, B.6.3.).


EMPSON, W. (1949) Seven types of ambiguity. Chatto


HILDECK, W. (1965) Word for word: a study of authors' alterations with exercises. Faber


B.6.1. Literary criticism - continued

RICHARDS, I.A. (1943) How to read a page: a course in effective reading. Routledge


RICHARDS, I.A. (1929) Practical criticism. Routledge


WEITZ, M. (1972) Hamlet and the philosophy of literary criticism. Faber
B.6.2. Hermeneutics

This subject is closely allied to literary criticism. Hermeneutics started originally as a form of biblical criticism to tackle the question: how can one adjudicate between two different interpretations of the same piece of text? The literature of the subject (which can be retrieved from the short list below) raises fundamental questions about human communication in text form.

HABERMAS, J. (1972) Knowledge and human interests. Heinemann


B.6.3. Content analysis - general

The unsatisfactory state of content analysis is due, in my opinion, to an over-concentration on the problems of politics and mass communication. These are "soft" targets which yield to simple procedures; procedures which tend to be situation-specific because they are not well grounded in theory. Nevertheless, the idea of content analysis is important. For an optimistic view, see Carney, a good general introduction and an interesting attempt to bridge the methods of the humanities with the quantitative techniques of the social sciences.


Aister, D. (1956) Content analysis in audio-visual communication research. AV Comm. Rev. 4:2

Backman, C.W. (1956) Sampling mass media content, the use of the cluster design. American Sociological Rev. 4:102-8


Dance, E.H. (1964) History the betrayer: a study in bias. Hutchinson


Kaplan, A. (1943) Content analysis and the theory of signs. Philosophy of Science 10:230-49


B.6.3. Content analysis, general - continued

LERNER, D., DE SOLA POOL, I. and LASSWELL, H. (1951)
Comparative analysis of political ideologies. Public
Opinion Qu. 15:713-33

LINDZEY, G., ed. (1968) Handbook of social psychology.
2nd ed. Reading (Mass.) Addison-Wesley

New York, Holt, Rinehart & Winston

NAFZIGER, R.O. (1963) Introduction to mass communication
research. Louisiana State U. Press

NORTH, R.C., et al. (1963) Content analysis, a handbook
with applications for the study of international crisis.
Northwestern U. Press

SPIEGELMAN, M., TERWILLIGER, G. and FEARING, F. (1953)
The reliability of agreement in content analysis.
J.of Social Psychology 37:175-87

STEWART, M.D. (1943) Importance in content analysis.
Journalism Qu. 20:286-93

STONE, P.J. (1962) The general inquirer, a computer system
for content analysis and retrieval based on the
sentence as a unit of information. Behavioural Science.
7:484-94

STONE, P.J. (1968) User's manual for the General
inquirer. MIT Press

STONE, P.J., et al. (1966) The general inquirer, a
computer approach to content analysis. MIT Press

WILLIAMS, R. (1968) Britain in the sixties: communications.
Penguin
The content analysis of textbooks is in a primitive state, but the items listed below do contain the occasional idea which might be of use.


COMMITTEE of the National Council of Teachers of Mathematics. (1965) Aids for evaluation of mathematics textbooks. Maths Teacher 58:467-73


B.6.4. Content analysis: textbooks - continued


This bibliography is not concerned with research into the learning processes of young children; which explains why most of the extensive literature on reading has been omitted. We are interested in the reading strategies of adults and the basic limitations on speed of reading; the items below provide an introduction to these topics.

B.7.1. General


DAVIS, F.B. (1972) Psychometric research in comprehension in reading. Reading Research Qu. 7:628-78


GEYER, J.J. (1972) Comprehensive and partial models related to the reading process. Reading Research Qu. 7:541-87


B.7.1. Reading, general - continued

MORTON, J. (1959) Investigation into the effects of an adult reading course. Occupational Psychology 33:222-237

SMITH, H.K. (1967) The responses of good and poor readers when asked to read for different purposes. Reading Research Qu. 3:53-83


WRIGHT, P. (1968) Reading to learn. Chemistry in Britain 4:x, 445-50

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B.7.2. Reading speed


This section is prescriptive rather than descriptive. It advises directly how good prose should be constructed; it contains the distilled experience of professional writers.

B.8.1. General

The books listed here are justly famous and influential. The advice to journalists (Evans and Sellars) deserves a wider audience: sub-editors have a whole range of tools that might be used to advantage by educational writers.

BROWN, J.C. (1942) A word in your ear. Cape

BROWN, J.C. (1943) Just another word. Cape

CASSON, J. (1968) Using words: verbal communication in industry. Duckworth


Book One: Newsman's English
Book Two: Handling newspaper text in preparation
Book Three: News headlines in preparation


HERBERT, A.P. (1935) What a word! Methuen

PARTRIDGE, E. (1953) You have a point there: a guide to punctuation and its allies. Hamilton
B.8.1. Writing Style, general - continued


RAY, R.M. (1970) Revising and refining a manuscript. Reading Teacher 23(5)436-9, 465


VALLINS, G.H. (1951) Good English: how to write it. Pan Books


B.B.2. Writing scientific and technical texts

By way of contrast, most books on "technical writing" are second-rate and derivative. One exception is Kapp, who gave a brief glimpse of the possible.


COOPER, B.M. (1964) Writing technical reports. Penguin


FUNKHOUSE, G.R. (1969) Levels of science writing in public information sources. Journalism Qu. 46(4)721-6


KAPP, R.O. (1948) The presentation of technical information. Constable


B.8.2. Writing scientific and technical texts - continued

My comment on Kapp can now be expanded. He was Professor of Engineering at University College London, and the initiator of the Presentation of Technical Information group (PTI). Under the guidance of Kapp and B.C. Brookes this small group of academics, engineers and writers held regular seminars for some years. The intellectual standards of these discussions were generally high; leading academics from many disciplines joined in actively. Some of these seminars were recorded, and are listed here. Kapp is now dead, and the PTI no longer exists as a separate entity. The Institute of Scientific and Technical Communicators (ISTC) was formed from the PTI and two larger groups; it is a worthy, but unexciting organisation which has ambitions to become a professional body for technical communicators. For my part, I would rather have the excitement, the ideas and the calibre of the PTI any day.

BROOKES, B.C. Style manuals for research departments, n.d. DG29

BROOKES, B.C. and HARRIS, N.L. Getting writers to start, n.d. DG21


GODFREY, J.W. (1952) The preparation and production of technical instructional manuals DG1

GREENAWAY, F. (1954) Some historical aspects of the preparation of scientific information DG4


HOCKLEY, H., ROBERTS, F. and WILTSHIRE, R. Training technical writers, a symposium, n.d. DG14

HOLLOWAY, A.H. The presentation of technical information in other countries, n.d. DG15

HORNE, J. (1956) PTI in a foreign language. DG12

KAPP. R.O. Standardisation of technical concepts and terms, n.d. DG16

KAPP. R.O. (1953) The first draft DG3
Kirkman, J. (1970) Assessing technical writing DG34


Parr, G. (1952) Technical publications DG22


Basic English is, in my opinion, the best of the many attempts to build an international second language. Ogden created an integrated linguistic system based on 850 words which are used according to strict rules, and may be extended under prescribed conditions. It is possible to write serious scientific works in Basic; there is even a Basic science dictionary. The use of Basic in Open University Foundation Courses is an idea worth considering: our system might thereby be made accessible to a wider range of students.


FLESCH, R. (1944) How basic is Basic English? Harper's 188:339-43


GRAHAM, E.C. and FLORENCE, P.S. (1964) Basic English as an international language for science and the social sciences. Evans


LOCKHART, L.W. (1942) Basic English picture talks. BEPC

NEURATH, O. (1937) Basic English by Isotype. BEPC

OGDEN, C.K. (1932) Basic words, a detailed account of their uses. BEPC


OGDEN, C.K. (1937) Basic English and grammatical reform. BEPC

OGDEN, C.K. (1940) The general Basic dictionary. Evans

OGDEN, C.K. (1942) Basic English for science. Routledge


B.8.3 Basic English - continued

ROSSITER, P. M. (1937) Basic English for geology. BFPC

The third part of the bibliography covers those aspects of visual design which are relevant to the design of educational texts for adult readers. Research into television presentation has not been listed unless it relates to the field of text design.

C.1 General


BOWMAN, W.J. (1968) Graphic communication. New York, Wiley


CHRISTENSEN, C.M. and STORDAHL, K.E. (1955) The effect of organisational aids on comprehension and retention. J.Ed.Psychology 46(2)65-74


Dwyer, F.M. (1970) Exploratory studies in the effectiveness of visual illustrations. AV Comm Rev. 18(3)235-40


ENRICK, N.L. (1972) Effective graphic communication. Princeton, Auerbach


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C.1. Visual design, general - continued

FLEMING, M.L. (1970) Perceptual principles for the design of instructional materials. Bloomington, Indiana University, AV Center


GROPPER, G.L. (1963) Why is a picture worth a thousand words? AV Comm.Rev. 11:75-95


IVINS, W.M. (1953) Prints and visual communication. Routledge


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C.1 Visual design, general - continued


C.1.1. Visual perception

ARNHEIM, R. (1956) Art and visual perception. Faber and Faber


C.1.1 Visual perception - continued


Otto Neurath's Isotype system is a coherent set of ideas especially adapted to the presentation of quantitative information. Anyone who regularly handles such data should study carefully the work of this group. The Isotype Collection has been donated to Reading University by Marie Neurath, where it now awaits classification. Of the other items listed below, the book by Brinton is an interesting historical source.


NEURATH, M. (1965) Living with one another. Max Parrish


NEURATH, O. (1973) Basic by Isotype. Kegan Paul
C.2 Charts, graphs and tables - continued


VERNON, M.D. (1951) Learning and understanding. Qu.J.Exp. Psychology 3:19-23


WRIGHT, P. (1973) Understanding tabular displays in The visual presentation of technical data, ERS/SIAD U.of Reading Typographic Unit

C.3 Scientific and technical diagrams

Our understanding of scientific diagrams is pre-scientific: we use them all the time, yet virtually nothing of significance is known about them.


HOW Things work, the universal encyclopedia of machines. (1972) Paladin

JAKES, B. (1973) An introduction to FIMS and DDS. The Communicator No.15, 2-7


SPENCER, J. (1973) Presentation of information on engineering drawings. in The visual presentation of technical data, ERS/SIAD. U.of Reading, Typography Unit


C.3 Scientific and technical diagrams - continued

With relief we come to an area where something is known: the use of ordinary-language algorithms for presenting instructions, decisions, rules and regulations. An ordinary-language algorithm may take the form of a branching tree or a list structure; it is (in the words of Lewis) "a canonical form for representing the structure of 'if... then... unless' conditionals". The theory and practice of algorithms was hammered out more or less independently and simultaneously in two places: the Psychology Department of University College London (Wason and Jones) and Cambridge Consultants Ltd (especially by Lewis). Most of the papers listed below are of high quality; those by Lewis unite conceptual depth with clarity of expression, and are especially recommended. Almost all the papers listed are English; this work is virtually unknown in North America.

BUNGE, K. ed. (1967) Programmed Learning and the language laboratory: collected papers. Longmac

CAMBRIDGE Consultants (Training) Ltd. (1967) Evaluation report on a training programme for instrument artificers

CAMBRIDGE Consultants (Training) Ltd. (1969) Employer's guide to claiming grants. Wool, Jute and Flax Industry Training Board


GARLAND, K. (1968) Some observations and proposals relating to the design of block diagrams and flow charts, in The visual communication Artists' and Designers Conference, Harwell
C.4 Algorithms - continued

JONES, S. (1964) Why can't leaflets be logical. New Society No.102

JONES, S. (1968) Design of instruction. HMSO

LANDA, L.J. (1965) Algorithms and programmed instruction in Papers of the IVth all-Russian conference on programmed instruction and the application of technical means. Moscow (in Russian)


LEWIS, B.N. (1970) Decision logic tables for algorithms and logical trees. CAS occasional papers No.12 HMSO

LEWIS, B.N. (1971) Getting the message across. NCSS Working Seminar: the methods of communicators applied to social workers


LEWIS, B.N., HORABIN, I.S. and GANE, C.P. (1967) Flow charts, logical trees and algorithms for rules and regulations. CAS occasional paper No.2. HMSO


WASON, P.C. and JONES, S. (1965) The logical tree project. University College London, Department of Psychology


WRIGHT, P. (1973) Written information: some alternatives to prose for expressing the outcomes of complex contingencies. J.Applied Psychology 57(2)160-66
Maps


DAVIS, O.L. (1968) Graphic illustrations with geographic text. Peabody J.Ed. 46(1)39-44

HOPKIN, V.D. (1969) Information on maps for air and ground use. RAF Institution of Aviation Medicine, report No.S.91

HOPKIN, V.D. (1973) Human factors in the design of maps. in The visual presentation of technical data. U.of Reading, Typography Unit


MURRELL, J.F. (1970) Aircrew choice of information on a topographical maps. RAF Institute of Aviation Medicine, report No.481


SHAW, A. (1973) Some methodological problems in legibility research in The visual presentation of technical data, ERS/STAD. U. of Reading, Typography Unit


This is an extensively researched field. The standard reference work is Tinker (1963), though the newcomer should start with the more digestible books by Burt and Spencer. The keen student will also need the recent bibliography by Hartley, Fraser and Burnhill which lists typographic research relevant to the production of instructional materials. Because these excellent sources exist I have contained my list to a small number of items which are relevant to our interests. Special mention again goes to journalism (Evans and Hutt) for throwing a refreshing light on the problems of typography and layout.


BOWLER, B. (1970) The word as image. Studio Vista


C.6 Typography - continued


C.6  Typography - continued

serifs are important: the perception of small print.
Visible Lang. 5(2)353-9

SIMIN, O. (1963) Introduction of typography. Faber and
Faber

Visible Lang. 5(4)365-9

SOCIETY of Industrial Artists and Designers. (1968)
Working party on typographic teaching, interim report

SPENCER, H. (1968) The visible word. 2nd ed. Lund
Humphries

SPENCER, H., REYNOLDS, L. and COE, B. (1973) A comparison
of the effectiveness of selected typographic variations.
Royal College of Art, Readability of Print Research
Unit

SPENCER, H., REYNOLDS, L. and COE, B. (1973) A report
on the relative legibility of alternative letter faces.
Royal College of Art, Readability of Print Research
Unit

J. Applied Psychology 44:83-7

TINKER, M.A. (1963) Legibility of print. Iowa State
U. Press

TSCHICHOLD, J. (1967) Asymetric typography. Faber and
Faber

TURNBULL, A.T. and BAIRD, R.N. (1968) The graphics of
communication: typography, layout and design. 2nd
eed. New York, Holt, Rinehart and Winston

International Printing 1:33-41

WENDT, D. (1972) On effects of indentation and underlining
in reference work. Visible lang. 6(2)167-71

WIGGINS, R.H. (1967) Effects on three typographical
variables on speed of reading. J. Typographic Res.
1:5-16

WHICOCK, B. Problems in the design of scientific and
technical journals. Institute of Scientific and
Technical Communicators (PTI: DG 30; see section
B.8.2.1)
C.6 Typography - continued

ZACHRISSON, B. (1965) Legibility of printed text.
Stockholm, Almquist and Wiksell
C.7 Scripts

DOBLOFER, E. (1973) Voices in stone, the decipherment of ancient scripts and writings. Paladin

FAIRBANK, A. (1965) A handwriting manual. Faber and Faber


KLEE, P. (1953) Pedagogical sketchbook. Faber


READ, K. (1972) Sound-writing: George Bernard Shaw and a modern alphabet 1892-1972, written for an exhibition in the library. U.of Reading, Typographic Unit

ROBINSON, L.J. (1972) Dictionary of graphical symbols. Avis

