https://doi.org/10.25159/0256-5986/5469

English for South African Scientists

The Medium of Natural Language

by Kathleen M. Abbott

(NB THIS IS THE SECOND PART OF A TWO-PART CONTRIBUTION; THE FIRST PART APPEARED IN VOL 7, NO 1, THIS YEAR, UNDER THE SUB-TITLE ONLY AND AN ABBREVIATION OF THE AUTHOR'S NAME. WE APOLOGISE TO THE AUTHOR FOR THESE ERRORS.)

5. PREPOSITIONS

A preposition is a word that connects two other terms and shows the relationship between them. The awkward and ambiguous statements that result when prepositions are removed from a sentence are clearly illustrated in the description of nominal compounds on page 22 of Part 1, which should be re-read now.

(a) *Position in sentence* Much clumsy writing results from the so-called rule that a preposition must not be used at the end of a sentence. We say, quite naturally, that 'we must not use a preposition to end a sentence with'; but, quite unnaturally, that 'we must not use a preposition with which to end a sentence'. The latter, said Winston Churchill, is 'the kind of English up with which I will not put'. Good advice, therefore, is to keep a preposition where it comes naturally and will not be noticed, even if this is at the end of a sentence.

(b) *Simple preposition and correct preposition* As in Afrikaans, it is often difficult to choose the right prepositions because choice is bound up with idiom. Moreover, it is probably here that the two official languages embarrass each other most (see AFRIKANERISMS). Writers in English should consult an *English* dictionary such as the COD (see DICTIONARIES), which indicates the prepositional idiom following most words.

Unfortunately a number of wordy compounds have crept in, as Gowers[22] says (p. 64), 'to save a writer the labour of selecting

the right preposition'. These result in clumsy statements like those below, which would be better with the simple prepositions shown in brackets;

(i) Present production is *of the border of/in the neighbourhood of* 80 tons per month. (about)
(ii) Recommendations *in regard to/in connection with/in respect of/with respect to* future action ... (for)
(iii) Decisions *with regard to/in connection with/with respect to/in relation to* ... (on)
(iv) Research or investigations *in connection with/relative to/with reference to* ... (into)
(v) Progress must be limited *in the case of/as regards* these restrictions ... (by, OR under)

Whenever you realize that you are about to perpetrate a padded preposition, therefore, you would run through a list of such simple ones as: about, above, against, below, by, for, from, in, into, of, on, to, under, with, etc. One of these will probably relieve your congested sentence and make it easier to read.

(c) *Common prepositional idioms* Scientists often use the words tabulated below but find it difficult to choose the prepositions which should follow them. The table is an adaptation and extension of one given by Treble and Vallins[27] (p. 146).

affix	X *to* Y
agree	*to* a proposal, *with* a person, *on* a matter, *in* an opinion
compare	X *with* (like thing) Y to examine similarities and differences. X *to* (unlike thing) Y, where a similarity is claimed for X.
consist	*of* a substance or *of* parts, *in* qualities or characteristics. (cf. 'comprise', which must never be followed by 'of')
contrast (verb)	(accent on second syllable), X *with* Y
contrast (noun)	(accent on first syllable, X is a contrast *to* Y *between* X or Y OR other plural: *'in* contrast *with* X, Y appears to be ...' (BUT 'to set off *by* contrast')
deduce	X *from* Y

differ	*from* X, *with* a person, *on* a matter
different	*from* X is preferable to different *to* X
direct	*to* a person, 'direct attention *to* a matter' (not 'at')
essential	*to* X
extrapolate	*from* series X
identical	*with* X
independent	*of* X
induce	X *in* Y, person *to do* something
infuse	X *in* Y
interpolate	X *in* series Y
opportunity	*to* do (seek an opportunity *to* do), *for* action, *of* doing (take the opportunity *of* doing)
preface	X *with* Y
prefer	X *to* Y (not 'above' Y — i.e. like X better than Y)
replace	X *by* Y
substitute	X *for* Y (cf. 'replace' above) 'When A is substituted for B, B is replaced by A.' (Treble & Vallins)

6 CONJUNCTIONS AND OTHER LINKING WORDS

(a) *Conjunctions* Conjunctions should prevent trouble, for by relating groups of words or sentences correctly, they contribute much to the logical development of ideas. In this they offer far greater advantages than decimal numbering — like a fully assembled machine compared with a box of 'do-it-yourself' parts.

Here we shall ignore conventional labels and treat all linking words and phrases under the heading of conjunctions, even though the same words (e.g. 'while', 'since'), may also be used in other grammatical roles.

Conjunctions must be used appropriately, according to their meanings. Each of the following familiar conjunctions sets the reader thinking in a different direction:

and, but, or, nor, if, although, because, for, that, lest, since, until, therefore, however, nevertheless, provided that *(not* providing).

If conjunctions are used inappropriately, the reader will be put onto what Fowler[4] has called a 'false scent', as in the following examples:

(i) 'This report is concerned with R & D performance rather than R & D financing. The statistics referred to, *therefore,* cover all South African R & D activities ...'
(Since the 'report' concerning a limited part is contrasted with 'statistics' concerning the whole, the conjunction should express a reservation or comparison, as in *however,* not a consequence, as in *therefore.)*

(ii) 'There are many methods that do not produce the predicted results; *nevertheless* predictions are seldom reliable.' (Not *'nevertheless';* 'for' would more correctly convey the implied reason or parallel.)

(b) *'Tie-back words'* is a name given by Ironman[28] to words which link present matter with what has gone before and therefore also contribute to logical development and readability. For example, on page 2 of Part 1 we find the following words and phrases:

'language' in lines 15 and 36; 'authoritative texts' in lines 22 and 24; 'forms and conventions' in lines 33 and 35.

This repetition of a word here and there is repetition in the right place if the words link paragraphs and ideas and make it easier for the reader to get a coherent message. It is not so easy when he has to build one up for himself from abruptly changing thoughts in numbered sentences.

7 VERBS

Of all the elements in a sentence, verbs offer most opportunity for effective writing, because they name the action that we want to hear about. Below we discuss their difficulties under various headings and also refer back to previous discussions.

(a) Agreement with subject

As stated under NOUNS, lack of agreement is probably the commonest fault in English anywhere. Perhaps South African English is particularly affected because the Afrikaans *is,* being 1st, 2nd and 3rd person, both singular and plural, tends to blur the

distinction between singular and plural in South African speech generally.

Please re-read page 18 of Part 1: it concerns both nouns *and* verbs.

(b) Verbs emphasize action

We should take the trouble to use more challenging verbs. In scientific writing, we do not use verbs for their poetic imagery; nor do we use verbs for advertising shock effect. But our verbs should be both precise and forceful.

Some verbs have more punch in them than others. The verb *to be* is weakest of all, especially when it merely connects the subject to a complementary description, as in 'The moon *is* bright'. Compare 'The moon *shines* brightly', with its exciting verb. Compare also the impressions conveyed by 'He *wrote* his report' and 'He *scribbled* his report'; OR 'He *sent* his report' and 'He *dispatched* his report'. In each comparison, the verb in the second sentence includes the idea of haste and so is more emphatic. Stronger verbs would make all our reports more interesting.

Above all, actions must not be smothered in abstractions, a point well illustrated in the examples on page 20 of Part 1. Please re-read this page now, and note how precisely all the revised verbs perform their functions.

(c) Tenses

Tenses are necessary to make clear the relative timing of events being described. All tenses are used in technical reports. There are no rigid rules but tenses should be appropriately chosen. Those which concern us most are:

(i) The Present Tense, used for generalizations, unchanging conditions and data ('Scientists *write* reports.' 'The world *is* a sphere.')

(ii) The Past Tense, used for events which are past and finished. ('I *wrote* my report.')

(iii) The Future Tense, used for planned or future work ('I *shall write* ...')

(iv) The Present Perfect Tense, used for events which are past but have consequences continuing into the present ('I *have written* my report but it has not yet been published.')

(v) The Past Perfect Tense ('I *had written* my report'), which is often not used when it should be and is much missed by English readers. Instead, a monotonous flat past is employed, as in —

'After the trisonic blow-down tunnel *was* erected, extensive calibration tests indicated that the Mach number distribution in the last section *was* unsatisfactory.' (Clearly, both actions were in the past and one necessarily preceded the other. For this earlier action, the past perfect *'had been erected'* is essential.)

This is a very common fault, and one which provides uncomfortable reading.

There are correct tense forms in both English and Afrikaans but speakers of both languages use them carelessly.

The tenses of common English verbs are familiar to most people. However, if you feel uncertain when you have to decide between *rang* and *rung*, or between *sank* and *sunk;* or if you can't spell the past tense of *pay*, then you should possess Berry's little book[29] in which the principal parts and tenses of all the common verbs you are likely to need are set out simply and clearly.

(d) Sequence of Tenses

Once an appropriate basic tense has been chosen, it should be used as consistently as possible throughout a report until there is good reason for changing it. There should, for example, be no jumping about from the 'has beens' to the 'was's' as the basic tense.

When the main verb is in the past tense, it is important to remember that subordinate verbs will change under its influence.

Thus:

(i) 'He said he *will* finish the titration tomorrow.' is wrong, even though 'tomorrow', like 'will finish', is still in the future. After 'said', the sentence changes to '... he *would* finish tomorrow.'

Likewise:

(ii) 'From experimental data, it appeared that the eleven-year modulation of cosmic rays *can* be represented by the modulation function x' is also wrong. After 'appeared' 'can' must change to 'could'.

(e) Active or Passive?

Statements in the passive voice are more difficult to remember

Experimenting with simple sentences of different grammatical forms, Mehler[30] found that university students recalled the active, affirmative statements more easily than the passive or the negative ones. If we want our writings to be remembered, therefore, then positive, active statements will carry our message more effectively than statements in the traditional passive voice.

Statements in the passive voice are longer

Examples

(i) 'Experiments were carried out simultaneously and separately by Robins and Bosman, as this was believed to be the best way in which impartial readings could be obtained'. (27 words, 3 passives)

(Say, 'Robins and Bosman carried out experiments simultaneously and separately, believing they could best obtain impartial readings in this way.') (19 words, active)

(ii) 'The problem was investigated by two officials from this department and the decision was reached that the tests were unnecessary.' (20 words, 2 passives)

(Say, 'Two officials from this Department investigated the problem and decided that the tests were unnecessary.' (15 words, active)

(f) Verbals

Verbals are verb forms or words derived from verbs. We draw attention here only to infinitives and participial forms.

Infinitives — to split or not to split

In English, 'to' is sometimes part of the infinitive and sometimes not, as in 'I made him *do* it' OR 'I forced him *to do* it'.

Avoid splitting the second form by putting a word or phrase between 'to' and the rest of the infinitive when such splitting results in a clumsy construction. (e.g. 'He tried *to gradually and carefully withdraw* the obstructing sheet'.)

But sometimes splitting the infinitive gives the neatest statement (e.g. 'It is not sufficient *to half fill* the petrol tank'.)

Or splitting may be the only way to make the meaning certain (e.g. 'We plan to further improve relations' is changed in meaning by either 'We plan further to improve relations' OR 'We plan to improve further relations'.)

Participial forms

Misplaced or 'dangling' participles were quoted under (b) on page 14 of Part 1.

Gowers (p. 155) gives a short but comprehensive survey of *-ing* endings. But overuse of this form is common enough to be mentioned here — and, as this collection shows, it makes a poor impression:

'The institute is collect*ing* data concern*ing* the problems of financ*ing* build*ing*, with the aim of determin*ing* how modern techniques are influenc*ing* build*ing*'.

8 MISCELLANEOUS DIFFICULTIES

1. Enumeration

Enumeration need not be difficult if it is approached with a whole and orderly pattern in mind. Haphazard listing, however, will actually be more difficult for the author to handle, and is certainly one of the most troublesome and time-consuming faults that editors of scientific papers have to correct.

In writing, numbered points are often introduced by a short clause or sentence, followed by a colon (with or without a dash) which, in Fowler's phrase, 'delivers the goods that have been invoiced in the preceding words'. The introductory words are intended to remain alive in our minds as one dependent thought after another is attached to them. If the list and individual items are short, the whole can easily be remembered. But, however long the list,it is important to remember that we must be able to refer each numbered item back to the introductory words and find that it follows on the same grammatical way as other items, and makes sense.

With this in mind we can see that both (a) and (b) in Example 1 can be attached grammatically to the introductory clause, and make sense.

Example 1

'Metabolic studies on normal and diabetic baboons reveal the facts:

(a) that there is a relationship between serum amylase and blood sugar;
(b) that there is more than one serum amylase; and
(c) the range of these enzymes in baboons of both sexes.'

On the other hand, (c) is incomplete; it has no verb; it cannot be attached grammatically to this particular introduction; and it does not make sense if it *is* attached, so that with (c) the orderly presentation breaks down and our reading is brought to a sudden stop. Either, therefore, this (c) must be supplied with the missing parts or the rest of the sentence must be changed to suit it.

In some enumerations of this type (very often after words like 'as follows:'), the dependent thoughts (a), (b), (c), etc. are merely nouns, or other single words, separated by commas. Sometimes each individual numbered part is a complete sentence on its own, or even a multi-sentence paragraph; but in any enumeration all parts must be of the same kind, on grammatically equal terms.

Clearly, enumerations of this type cannot be considered apart from the vexed problem of punctuating them. Example 1 has been correctly set out and punctuated as a single sentence — down to the end of (b). It is important to remember that in any enumeration set out in this way, *either* the whole passage must be punctuated as a single sentence, *or* each of its parts must be a complete sentence (or paragraph) on its own; but whole sentences and parts of sentences must not be mixed.

The conditions for successful enumeration apply also when there is no introductory 'as follows:' or similar words.

Example 2

'Processed or specially manufactured forms of timber such as laminated *beams,* boxed plywood *beams,* the socalled Tac *system* making use of specially built up timber I-section beams, warped *plates and shells* and similar *techniques,* are becoming increasingly important.'

In this sentence the writer sets out to enumerate 'processed or specially manufactured *forms of timber* ... [that] are becoming increasingly important'. But his enumeration ends up as a mixed

bag, comprising laminated beams, plywood beams, a system, warped plates and shells, and techniques: a rather striking example of what Fowler calls 'Bastard Enumeration'. In fact, all the examples given in this article are bastard enumerations in one way or another.

To sum up: in any enumeration all items must have the same grammatical status, and no feature must be common to two or more items that is not common to all. Examples like those given must be recast until they meet these requirements. The remedy is not too difficult when we are aware of the problem.

2. Comparisons

Comparisons afford much opportunity for misused idiom or inexact expression, as in these examples:

(a) *'As large as it is,* the CSIR is not the largest scientific organization in S.A.' (Omit the first 'as'. Say, *'Large as it is,* the CSIR is not ...' The following correct sentence illustrates this idiom first, followed by the comparative statement with which it has been confused:
'Young as he is, he can already run faster than his mother; but when he is *as old as she is,* he too will move more slowly.'

(b) 'More *doctors* use Dentex *than any other toothpaste.'* ('Doctors' than 'toothpaste'? This is a common advertiser's 'mistake', but scientists do just as badly below. Correct (b) by changing word order to 'Doctors use more Dentex than ...'

(c) 'Untrained assistants will cost more in the long run than this proposal to test them all.' ('Assistants' than 'this proposal'?)

(d) 'The range of variation at Z is smaller by a factor of 3 as compared with Hermanus' ('Range of variation compared with Hermanus'? Say, 'compared with that at Hermanus.')

3. 'a' or 'an'?

Go by the sound, not by the spelling of the noun's initial letter.

Write a history, *a* historical work,	
a hotel	where the *h* is sounded.
an hour, *an* honour, *an* hotel	where the *h* is silent.
a unit, *a* European, *a* one	where the vowel is preceded by the sound of a consonant like *y* or *w*
an MSc, *an* LLB, *an* F, H, N or S	where the consonant is preceded by a vowel sound like *e*

4. Some Afrikanerisms

(1) 'The Government established the Building Advisory Council which *resorts under* the Minister of Public Works'.
(This comes from the Afrikaans *ressorteer,* meaning 'to belong or fall under'.
In English, you may say *'falls under* the Minister'; but 'resorts under' is not English at all.)

(2) 'Parents of trainees are asked please not to write to the Minister of Defence, the Chief of the Army, or *any other instance'.*
(Here the Afrikaans *instansie* is equated with two military *authorities,* so in English say '... or any other authorities'. In English, 'instance' means only 'example' or 'case' and must be attached to a precedent.)

(3) 'The matter was *brought under* the Director's attention'.
(In Afrikaans, *onder die aandag bring van* ...; in English, *'bring to the notice of'.*)

(4) 'The system is *preferred above* that outlined in the Frascati manual'.
(Afrikaans *verkies bo;* English *preferred to.)*

(5) 'The purpose was to *bring a short visit to* the laboratory'.
(Translation from *'kort besoek aan die laboratorium bring'* should have been *'pay a short visit to the laboratory'.)*

(6) 'Principially, promotion should be on merit'.
('Principial' was an English word, no longer in use, that meant 'initial', 'standing at the beginning', but *not* 'on principle'. The mistake probably stems from the Afrikaans *prinsipiële kwessie,* a question of principle.)

9 ENGLISH DICTIONARIES AND GUIDES TO ENGLISH USAGE

The linguistic errors described in this article show that scientists either do not consult their dictionaries at all, or consult the wrong dictionaries. It is very important that English dictionaries should be chosen by an English-speaking authority.

The *Oxford Dictionaries* (especially the Concise Oxford Dictionary (COD), smallest and most up-to-date member of this old family) still set a splendid standard on the language side but offer little else to scientists and scientific editors. On the other

hand, *Webster's International Dictionary*[32] is a vast store of scientific terms but a very misleading guide to good English usage, especially for authors whose home language is not English.

The *American Heritage Dictionary of the English Language*[33] is a good modern general dictionary, with generous coverage of today's English vocabulary (rightly containing a large proportion of scientific and technical words) and many comparisons of British and American usage. Copies of this should be available in the library and in each Institute's Publications Division.

In addition, the following smaller books should be made available in quantity to Authors, Editors, and also Typists. (Note that items 1–4 and 6 together cost less than one copy of the widely issued *Tweetalige Woordeboek.*)

1. Penguin edition of *Roget's Thesaurus of English Words and Phrases,*[34] an invaluable aid in finding a word to fit your idea. (Every Author and Editor should have a copy.)
2. *The Concise Oxford Dictionary* (COD)[35]
   Still unsurpassed as a Dictionary in which you can check the exact meaning of your chosen word. Derivations — essential for Editors — are also given.
   (All Authors and Editors — and any Typists who want them — should have copies.)
3. *The Penguin English Dictionary*[36]
   A good small Dictionary, more up-to-date but more superficial than the COD, with clear definitions but no derivations.
   (This is recommended as an extra for Authors and Editors but there should be a copy on every Typist's desk.)
4. *Penguin Dictionary of Science*[37]
   An up-to-date small Dictionary of Scientific and Technical words to supplement the language dictionaries.
   (For all Scientists and Editors.)
5. *Penguin Specialist Dictionaries*
   Available for Biology, Civil Engineering, Commerce, Computers, Electronics, Geography, Psychology, etc.; Medical Encyclopaedia. (For Specialist Scientists and their Editors.)
   A complete set of items 4, and 5, should be available. They are more up-to-date than Webster's International, and collectively, as more titles come out, could largely replace it.

6. *Deskbook of Correct English,* by West and Kimber[38]
   The Dictionary of Spelling in the first part of this Deskbook contains the 10 per cent of English words liable to be misspelt. Some of these appear again, with words that are easy to spell but difficult to use, in the section on Grammar and Usage. Further sections concern spelling rules, punctuation and letter-writing. An easy-to-use, problem-oriented hand-book that everyone should possess.

   Here it is instructive to compare the Deskbook with some of the reference books already in use:
   The content of the Deskbook is more general and less literary than that of Treble and Vallins's also useful *ABC of English Usage,* which resembles a pocket edition of the authoritative Fowler's *Modern English Usage* used by specialists. The Deskbook is also more compact and easier to use than *The Complete Plain Words,* by Gowers. Gowers gives well considered and expressed expert opinion, which every Editor should read; but the book may be rather discursive for others.

The fact that small, specialist dictionaries are recommended for, say, Electronics, does not preclude any scientist from using other specialized dictionaries from France, Germany, etc. — any more than this article precludes English editors from consulting more specialized books on language than scientific authors are expected to read.

Translating dictionaries (e.g. 39a and 39b in Reference List) *SHOULD NOT BE USED* for guidance on English vocabulary or usage. They cause many errors in English texts when they are used to lead authors straight to English equivalents of Afrikaans words. Correct English equivalents must be checked with the aid of an English dictionary, as after using Roget's Thesaurus. Further, many of the English expressions given in these dictionaries are no longer current English idiom.

WRITING YOUR REPORT

The author's eleven steps

The following steps should enable you to get started, keep going, and keep to the point. References are to the research record in *CSIR Guide K2* (e.g. K2, p. 9) or to pages (e.g. p. 9) in 'English for S.A. Scientists' which is organized around the problems of report-writing in South Africa.

1. *Write one sentence,* stating as completely as possible what your work is all about. (This approach was suggested in K2, p. 31, Point 1, and later by Woodford and others.)
2. *Write an informative title* which expresses the central idea in about ten words, possibly taken from your sentence.
   (See analysis of informative titles, K2, p. 21)
3. *Expand your first sentence-statement* by jotting down (in any order) words and phrases that refer to every additional aspect of your work and every other idea that you wish to mention.
4. *Author's Abstract* Make sure that your Title, Sentence and jottings contain all the elements necessary to constitute a Synopsis or Author's Abstract (K2, pp. 22–23 & UNESCO[40].) Number or arrange your words and phrases in logical sequence. With these as guide, write a *factual* Author's Abstract in up to 200 words. (K2, pp. 24, 29, 30)

   Place this Author's Abstract between the Title and the Text. Your abstract may be revised later, but writing it at this early stage will give you the best possible control over your entire work.
5. *Subdivision of matter* Read K2, p. 18 on how to divide your subject matter into preliminary, centre, and reference parts; read K2, pp. 35 and 36 on how to divide it into Introduction, Body, Conclusions and Recommendations. Decide what chapter headings (derived from the theme of your work) will give a reader the most immediate insight into the contents.
6. *Headings and Paragraphs* Using your sequence of words and phrases as subordinate headings, write a paragraph or more around each, linking the paragraphs smoothly with suitable conjunctions and 'tie-back' words.
   (See Conjunctions and other Links)
7. *Summary* (optional, because the Abstract has already given the gist of the work).
8. *Keywords* Select Keywords and place them as shown (K2, pp. 25, 26).
9. *References* (K2, pp. 41 and on) Number references in sequence in the text as they appear, and record each one correctly on a card at the same time. Then list them at the end of the work or chapter, in Alphabetical order, according to the Abbott Dual-access System (to be called the Abbott System[41] to avoid loss of identity in translation).
10. *List of Contents* Arrange your chapter and section headings to form a List of Contents as in K2. For most types of scientific

publication, this will be sufficient guide to the general plan and contents of your work.

11. *Index* If you have written a major work that may be used for reference, you should draw up a detailed subject index (K2, p. 48).

This work is published with the kind consent of the CSIR. It first appeared as part of the CSIR Guide to K2.

REFERENCES

[27] Treble, H.A. & Vallins, G.H. *An ABC of English Usage.* London, Oxford University Press, 1936–1959, 92 p.

[28] Ironman, R. Writing the research report. *Research and Development.* Heywood-Temple Industrial Publications Ltd., Bowling Green Lane, E.C.I.

[29] Berry, Thomas Elliott. *The most common mistakes in English usage.* London, Pitman & Sons, 1963, 151 p.

[30] Mehler, Jacques. Some effects of grammatical transformations on the recall of English sentences. *Journal of verbal learning and verbal behaviour* 2, 346–351, Harvard University, 1963.

[31] Oxford English Dictionary. Clarendon Press, 2nd edition, 1933.

[32] Webster's New International Dictionary, 3rd edition, Bell & Son.

[33] American Heritage Dictionary of the English Language. American Heritage Publishing Co. 1969–1971.

[34] Roget's Thesaurus of English Words and Phrases. Penguin ed.

[35] Concise Oxford Dictionary, Oxford University Press, 4th edition, 1952.

[36] Penguin English Dictionary. Penguin Books, Harmondsworth, 2nd Ed. 1969.

[37] Penguin Dictionary of Science. Penguin Books, Harmondsworth, 3rd Ed. 1964.

[38] West, Michael and Kimber, P.F. *Deskbook of Correct English,* London, Longmans, Green & Co. 6th Impression 1968.

[39] (a) Tweetalige Woordeboek. Bosman, D.B., van der Merwe & Hiemstra, L.W. Cape Town, Johannesburg. Tafelberg, 1972.
(b) Groot Woordeboek, Kritzinger, M.S.B., Steyn, H.A., *et al* Pretoria, van Schaik.

[40] Unesco. *Guide for the preparation of authors' abstracts for publication.* Unesco SC/MD/5, Paris 29 Aug. 1968 *OR* Unesco Bull. Libr., vol. XXIII, No. 2, March-Apr. 1969.

[41] Abbott, K.M. References — a new system used by the CSIR. *Scientiae* Jan./Feb. 1974, pp. 27–28.