INTRODUCTION

At the request of the Editor-in-Chief, in this article I highlight some common mistakes in the use of English that are often made by authors who do not have English as a first language (and by those who do!). As is immediately apparent to those ‘learning English as a foreign language’, the basic rules are relatively simple, and many of the complexities in other languages (varied verb endings and forms, effect of gender, changes in plurals, etc.) are absent. However, because English has developed from many languages (Norse, Anglo-Saxon, Norman French, Latin, Greek, etc.) it has not only richness of expression and a vast vocabulary, but a bewildering variation in spelling, pronunciation and idiomatic usage.

This complexity provides a challenge for authors, but the misuse of English by English writers of medical papers also creates problems. Because urologists read papers originating mostly from Europe and North America, they adopt the ‘bad habits’ common in these reports. Thus several words and phrases used commonly in urological papers are the source of most of the corrections made by a Technical Editor. How these poor expressions have developed is not easy to determine, but many tend to fall into the category of ‘infectious verbal pomposity’ [1], i.e. they seem to be used to make the author(s) sound more erudite and ‘scientific’. In the following sections I have taken some examples of typical errors, for instruction and amusement. There are many other examples; authors should read the various guides to writing scientific papers, e.g. [2–4], and not published papers, to learn how to write clearly. Importantly, many of the examples given here have been discussed in previous articles by the present author, and I recommend the reader to consult these for greater detail.

NUMBERS AND COMPARATIVES

Expressing numbers is obviously central to scientific research and generally, apart from an obsession with percentages, urologists have no problems. The difficulties seem to arise with expressing approximate and relative quantities. The most useful words in English are ‘few’, ‘many’, ‘less’, ‘more’, ‘some’ and ‘several’, and these can be used to replace dozens of lengthy phrases, e.g.:

- a considerable/large/significant number of – can be expressed simply as ‘many’;
- a small number of – ‘few’;
- a number of – ‘some’ or ‘several’;
- a much smaller number of – ‘fewer’;
- a decline in the number of – ‘fewer’.

Indeed, a very common grammatical error, made even by BBC reporters, is the misuse of ‘less than’ instead of ‘fewer’. The simple rule is that ‘fewer’ is used for any countable object (‘there were fewer patients in group B’) but ‘less’ is used for quantities (‘patients in group B produced less urine’). While it is now common to hear the misuse as e.g., ‘less people attended
the meeting’, speakers never use the reverse, e.g. ‘would you like fewer sugar in your tea’, although both are equally incorrect.

These numerical constructions often occur in sentences using ‘compared with’ (or ‘to’), e.g. ‘there was a decrease in the number of episodes in the treated group compared with the controls’. A better expression would be ‘the treated group had fewer episodes than the controls’, a shorter and clearer sentence.

Simple statistics

Percentages are an understandable obsession; no doubt patients often request some estimate of the chance of cure after a drug or surgical treatment, or of the potential side-effects, so the physician is forced to say ‘well, about 20% of patients have no trouble after this intervention’, or ‘only 5% of patients have indigestion when on this drug’. The problem arises when the number of events or patients is too low to calculate a meaningful percentage (statistically or simply by ‘common sense’). This leads to the frequent use of, e.g. ‘...two of four patients (50%)...’, which is not only an insult to the reader, but misleading and statistically invalid, because inevitably this will be cited in future papers as ‘...and Smith reported that 50% of the patients ...’ without giving the absolute number. Some journals do not accept this misuse and authors should avoid it; if the total is less than about 20, only give the numbers, and even the least numerate of readers should be able to compute the percentage.

‘Non’ words

The use of the prefix ‘non’ in English is an excellent way of defining the opposite of a condition or meaning. Obviously it occurs in common words like ‘nonsense’ and ‘nonentity’ but it cannot be applied at whim to negate any word. Many words already have standard negatives, but these appear to be unknown to many urologists. The greatest offenders are those who attempt to detect, e.g. testes or tumours. The testes or tumours are often described as palpable or ‘nonpalpable’; of course, they should be termed ‘impalpable’, that being the correct opposite of palpable. The use of nonperfect language makes the real meaning nonpossible to understand!

Other examples are words which normally take ‘in’ or ‘un’, like ‘obstructed’, the opposite of which is ‘unobstructed’, and ‘significant’, the opposite being ‘insignificant’; neither nonobstructed or nonsignificant are correct, but are often used by urologists. There are some examples which fall on the borderline, like nonfunctioning or nonresponder. These are difficult to replace with simple phrases (‘a kidney that is not functioning’ rather than ‘a nonfunctioning kidney’) but probably mislead authors into thinking that ‘non’ can prefix any word to produce the opposite, so that phrases like ‘non-aspirin takers’ (to mean ‘those not taking aspirin’, rather than ‘those taking a non-aspirin’) begin to appear. So when using ‘non’, authors should think again about whether an opposite already exists, or whether a simple phrase might avoid any ambiguity.

Stealing words: parameters and variables

As discussed in a previous article [4], another common error is the misappropriation of terms to mean other than their original (or dictionary) definition, usually so they sound more complex and ‘scientific’. The commonest example is ‘parameter’, which is used instead of ‘variable’. Another typical example is ‘global’, often used as a ‘global’ assessment or ‘global’ score; global means ‘worldwide’ (over the globe) and presumably not what the author intended, i.e. an overall score, summing the range of factors assessed.

Extending the words

Another frequent ‘infection’ in scientific writing is the misuse of ‘-ology’ endings to make simple words longer, and using long but often wrong words, the best examples being ‘aetiology’, ‘methodology’, ‘symptomatology’, and ‘modality’. There are many treatments for urological conditions, but currently they seem to be ‘modalities’ or ‘different methodologies’. Both examples of verbal pomposity simply mean ‘methods’. ‘Aetiology’ to mean ‘cause’ should be avoided, as its first meaning is ‘the study of causes’. Symptoms are what a patient has, not symptomatology (or worse, symptomatologies). An interesting exercise would be to identify the first user of some of these words; who first used ‘modality’ instead of ‘method’, and why? As stated previously [5]: ‘Why use complex words and convoluted sentences when simple words and simple sentences will do? The habit probably crept in because authors felt the need to seem learned and sophisticated, even though the language they were using was detracting from the meaning.’

Tautology

Preparing a scientific paper lulls people into writing things they probably would never say in normal conversation. For example, people might say, ‘the red box is bigger than the blue one’, but the equivalent in a urology paper usually reads as ‘the box coloured red was of a larger size than the one coloured blue’. Things are frequently reported to have a ‘spherical (or rectangular) shape’ (the adjective already implies the shape) or ‘of a blue colour’ (blue is a colour), and phrases like ‘the cells were of a thinner thickness than...’, although uncommon, have appeared in manuscripts. All these are examples of tautology; there is often no need to specify the characteristic of the object, it is implicit in the adjective. Other common examples are ‘a time period’ (what is a period in this context if not time?), or ‘a follow-up time of x months’, where the ‘months’ imply time and therefore ‘time’ is redundant. The unnecessary use of words not only lengthens the paper, but increases the background ‘noise’ which distracts the reader when trying to understand the message.

Another minor pitfall lies with abbreviations where the last word of the full term is repeated. The most common example in everyday use is ‘PIN number’, where PIN stands for ‘personal identification number’, so that PIN should be sufficient. In urology, the commonest example is the use of ‘IPSS score’, where ‘score’ is tautology, as the last S of IPSS is ‘score’; another example is ‘MRI imaging’.

Phrasal verbs

Most native English speakers are unaware of the enormous difficulty that phrasal verbs cause to those who are learning or have learned English as a second language. Native English speakers
are perfectly happy with ‘clear up’, ‘dry off/up/out’, ‘wash up/down’, ‘build up’, ‘slow down’, ‘catch up’ and a myriad more. The liberal use of apparently random prepositions with verbs is difficult to understand for those with languages based in, e.g. Latin. Because most journals are read worldwide (in English) these constructions should be avoided. Some are unavoidable, the best example being ‘follow-up’, which is part of the technical language of medicine. However, other terms have better alternatives; a ‘cut-off point’ (or worse, ‘cut point’) is better expressed as a ‘threshold’ (or limit); and a ‘work-up’ of the patient better expressed as an ‘evaluation’. Many prepositions can simply be omitted; ‘cooled down’ and ‘heated up’ are examples of the use of unnecessary prepositions, as ‘cooled’ and ‘heated’ mean the same thing. Others can be replaced with simple verbs; ‘build up’ with ‘accumulated’, ‘clear up’ with ‘resolve’, etc.

**Misused pairs**

There are many examples of ‘misused pairs’ of words in scientific reports, and excellent and comprehensive list is provided in [2]. However, a few of the more common pairs are listed here to illustrate them.

**Alternate/alternative**

‘Alternate’ is strictly defined as changing between states, and can be used as a verb or adjective, e.g. ‘countable numbers alternate between odd and even’, or ‘alternate values are odd’. An unfortunate North American habit is to use alternate instead of ‘alternative’, which is a choice between states or objects, e.g. ‘the alternatives to life is death’.

**Affect/effect**

Both these words can be used as a verb or noun, and particularly because ‘effect’ is uncommon as a verb, they are often confused. This article should ‘affect’ the way you write and produce the ‘effect’ of improving your style; I hope to ‘effect’ that change. An ancillary point here is the misuse of ‘impact’ instead of ‘alternative’, which is a choice between states or objects, e.g. ‘the alternatives to life is death’.

**Use/employ/utilise**

It is better to use ‘use’ than utilise ‘utilise’! Employ should be reserved for engaging a person to work.

**Perform/execute and demonstrate/exhibit/show**

‘Perform’ and ‘demonstrate’ are probably the two most over-used words in most medical papers. The common phrases ‘...a measurement/analysis was performed of x’ or ‘the IVU demonstrated obstruction’ are both examples of verbosity. In the first, ‘x was measured/analysed’ and in the second ‘the IVU showed obstruction’, or it was detected (or even visible).

This misuse of ‘performed’ is probably a result of the convention that scientific reports should be written with passive verbs (avoiding ‘we’ `I`, etc.). If an author were to give a lecture, the spoken statement would probably be ‘We retrospectively analysed the results of these patients’, but what actually appears in the report is ‘We performed a retrospective analysis of the results of these patients’; in written passive form it should have been expressed as ‘The records of these patients were analysed retrospectively’. There are other examples; many biopsies are ‘performed’, when it is more than likely that they are simply ‘taken’, and should be reported as such.

Results are often claimed to ‘demonstrate’ or ‘exhibit’ something, and similarly radiological images also ‘demonstrate’ particular features; strictly, ‘demonstrate’ means to illustrate some action (e.g. during a lecture) and exhibit mean to put on display (as in a museum). Why do urologists ‘take’ photographs but ‘perform’ radiographs, and why do the photographs ‘show the wonderful scenery’ but the radiographs ‘demonstrate ureteric obstruction’?

**Stacked nouns**

An increasingly common construction is the ‘freight-train phrase’, where terms (nouns, adjectives, etc.) are strung together, making the relationships among the objects difficult to discern. These phrases occur often in descriptions of methods or techniques (‘fast fourier transformed turbo spin echo magnetic resonance imaging’) and are best re-written using hyphens to link the related terms, and abbreviations for common terms, e.g. ‘fast fourier-transformed turbo-spin-echo MRI’. However, they can also occur in descriptions of, for example, patients or experimental animals, e.g. ‘older insulin dependent diabetic prostate cancer patients’, where again the use of hyphens and some rearrangement make the meaning clearer, e.g. ‘older patients with both prostate cancer and insulin-dependent diabetes’.

**Conclusion**

Writing clear, concise and grammatically correct English in medical papers is difficult, not only because English usage can be complex, but also because novice authors inevitably read many examples of papers that are not well written, and thus are infected by the bad habits of other writers. So authors should learn from the many books and articles on ‘how to write a medical paper’ rather than copying the style of what they read in popular urology journals.

**References**

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