Mission statement: "A shining beacon, guiding every action"

CAROL CARTER

Promote positive health: ostentatiously do something that is good for you, like going jogging or eating brown bread? Can you promote negative health?

Purchasing intelligence: a contradiction in terms.

Resettlement plans: move clients/residents/patients out of the institutions where they have lived for years and that they probably regard as their homes.

Seamless care: care will be seamless when LAs do everything that HAs think they should. And vice versa. Until then, the holes in the seams will still need patching up.

Share: tell; pass the problem on to someone else. "I would like to share this with you" *never* means their last Rolo.

Smooth take off: no discernible change.

Targeted briefs: Y fronts.

Tight deadline: 12 noon today, or yesterday.

Top down, bottom up (not a strip wash in a youth hostel): involving the whole organisation.

Trolley wait: it's not the trolley we're concerned about, but the patient on the trolley.

Unavailable data: as in, "Region will not ask for

unavailable data except where the NHSME require it." You will probably have to make the answer up.

Up front: say what you mean even if it isn't what others want to hear. This can be very irritating.

Vision day: 1993 version of an Away Day.

Readers may like to test their new found fluency by translating the following paragraph:

The robustness of the targeted brief for the hospital's discharge policy depends on frontline managers working top down and bottom up. Within the existing financial and policy context the flagship will be empowered to provide a seamless service for its users and carers with its resettlement plans preventing the inappropriate use of institutional care in future. In order to keep a level playing field, the key stakeholders will have a knock-for-knock agreement to permit money to follow the patient.

Answers on the back of a postage stamp please; a consortium approach is not allowed.

Contributions from colleagues at Merton and Sutton Health Authority are gratefully acknowledged.

Paradigm, parameter, paralysis of mind

Neville W Goodman

When Watson and Crick wrote their famous short paper in 1953¹ they chose the word novel to describe the structure of DNA. This was apt; novel means "of a new kind or nature, previously unknown." The use of novel is now rife in scientific papers and the word is devalued. Of 211 000 papers published in 1970 and searched by the PaperChase medical database, 0.047% had novel in the title. By 1980 the figure was 0.148%, by 1990—with 381 000 papers—0.525%; and in 1992, 0.96%—almost one in every 100 papers—had novel in the title. Novel is in danger of becoming no more than its synonym, new. "A *new* idea may be original, but a *novel* idea is sparkling and ingenious": what word to use for sparkle when every nucleotide sequence is novel in the eyes of its discoverer?

Words are copied, as methods are, because they impress. Scientists do not copy methods slavishly, however impressive; they think about them first. Not so, too often, with words. Words induce paralysis of the mind. Novel is more impressive than new, so novel is preferred—even though a little thought (and a dictionary) shows a difference. Two novel words doomed to share its fate are paradigm and parameter.

A paradigm . . .

Paradigm is a technical grammatical term for the pattern of inflection of a word, that is, the way a word changes with number, tense, mood, and gender. Thomas Kuhn used paradigm, at least when he first defined it, as a "term that relates closely to 'normal science' [where] 'normal science' means research firmly based upon one or more past scientific achievements [that supply] the foundation for its further practice."² Having defined the word, Kuhn could then write that those "whose research is based on shared paradigms are committed to the same rules and standards for scientific practice." To have used a more everyday word, such as ideas or beliefs, would not have been right: ideas is too weak; beliefs are not a good

basis for science. Instead, Kuhn took a word from another discipline, linguistics, and redefined it for his purpose—that of discussing the development of scientific thought.

This is a form of metaphor. To use another metaphor, Kuhn's paradigm is a global word, not a local one. The global meaning is useful, but its devaluation is under way.

. . . and its devaluations

Consider this use of paradigm: "traditional or classical medicine has always coexisted with alternative therapies, both paradigms sharing the social function of palliating suffering, healing, and controlling biological disorders." It works here, although "systems" might be better. But later in the same article "medicine is unimaginative because it is incapable of conceiving explanations beyond the realm of the scientific paradigm." Now the writer is in difficulties. He invokes two paradigms, traditional medicine and alternative medicine, but by "the scientific paradigm" means no more than science. (The presumption that science is unimaginative is too ridiculous to be taken seriously.)

Defining one paradigm as the whole of traditional medicine is useful—it is global; but consider this, from an editorial about possible adjuvant drugs in anaesthesia, "early reports do not . . . give hope that they will deliver the anticipated anaesthetic paradigm." Paradigms within paradigms: is there also a gene therapy paradigm or a clotbusting paradigm?

A TRIPARTITE EXAMPLE

A review of the control of breathing invokes three paradigms. Firstly, "Most researchers using reduced preparations typically interpret their data using the reductionist hypothesis as an operating paradigm"—here, paradigm is unnecessary. The sentence loses nothing if rewritten. "Most researchers using reduced preparations typically interpret their data using the

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reductionist hypothesis," although hypothesis—a testable idea—is entirely the wrong word. Reductionism is not a testable idea; it is a way of thinking about things. "Most researchers using reduced preparations are reductionists" will do.

The writer later tells us, "The classic experimental paradigm in physiology is to constrain the preparation as much as possible," using paradigm instead of method or technique. Further on, "At our current state of knowledge, it is an act of faith (paradigm) that . . . reduced preparations can tell us anything relevant [to normal physiology]." Paradigm, having served already as hypothesis and method, becomes an act of faith. Three meanings for the same word in one article seems excessive. (Kuhn himself is less than rigorous.⁴ Discussing Newton's Laws, Kuhn considers them "sometimes a paradigm, sometimes parts of a paradigm, and sometimes paradigmatic."⁵)

Paradigm has a respectable pedigree as a word meaning *example*; it was used by Caxton.⁶ In this general sense, away from science paradigm is "an [overused] word for 'pattern' or 'model' or 'archetype' or 'framework of argument.'"⁷

Parameters in context

Philip Howard wrote about words that "have pretentiousness thrust upon them"; words that consist "principally of technical terms . . . misappropriated and carelessly applied . . . The user's intention is to clothe . . . with spurious learning, and blind readers and auditors with fashionable science."⁸ One of the words considered by Howard, parameter, is being devalued as much as any other by writers in the biomedical sciences.

Parameter has a scientific feel to it. A health minister said, "We will have to define the parameters of health care." This sounds impressive but is a statement without meaning—one that could have whatever meaning the minister chose. Parameter is a word which in general usage depends for its meaning entirely on its

context; without context it is, in the true sense of the word, meaningless, as illustrated by the examples in the box, in which parameter could just as well be replaced by any similarly impressive sounding word unknown to the reader (try "proxemics").

In only two of the examples in the box is the meaning of parameter unambiguous: scope, for the only use of parameter in the singular, and distance. We cannot, though, know precisely what the Officer Commanding had in mind; exclusion zone fits the example just as well.

Parameters for insiders

Philip Howard considered parameter a technical term misappropriated by "ignorant outsiders"; Howard would justifiably be more upset that it is misappropriated by (if not ignorant, then misguided) insiders. As insiders, following scientific discipline for our descriptions, we should use the correct words. A parameter as a scientific term is a "quantity which is constant (as distinct from ordinary variables) in a particular case considered, but which varies in different cases."⁹ To give a particular case, when measuring changes in the concentration of a drug with time, measurement of the concentration of the drug in various compartments of the body (the measured variables) allows calculation of the constants (the derived pharmacokinetic parameters) that determine the drug's distribution within an individual. Different cases, which might be different drugs or different types of patient, have different parameters. Investigators referring to measured variables (or measurements or findings) as parameters risk confusion. Eventually we shall need a new word for parameter or shall have to fall back on the redundancy of measured parameters and derived parameters. This could still be ambiguous: for example, body surface area is a derived variable, not parameter, calculated from the measured variables of weight and height (the determinants of body surface area).

Parameters in statistics

A common, and correct, use of parameter in the biomedical sciences is in the distinction between parametric and non-parametric statistics. (Parametric applies to the distribution of the data, strictly to the distribution of the population from which the sample of data is drawn. The parameters enable a complete mathematical description of the distribution. The parameters of the normal distribution are the mean, and the standard deviation, but other distributions have different parameters.)

What idea can scientists who have described their variables (their data) as parameters have of this distinction? I think they interpret parametric simply as a synonym of (statistically) normal. This is scarcely logical when, as in the examples in the box, parameters include the presence of radiological leak—and death within three months. Even the most statistically ignorant are unlikely to consider these normal.

In "A practice parameters overview" (*Anesthesiology*), the "practice parameters" are collectively guidelines and standards, which commonly include advice about which parameters (in this case, variables) to monitor. With risk of even further confusion, a manufacturer described a new anaesthetic machine as having "integrated monitoring of more respiratory parameters," while the representative from the company, giving instruction in the machine's use, said, "You adjust the parameters by selecting with this button, then turning the dial." He was describing how to alter the alarm limits, not how to adjust the

methods? standards? limits?
boundaries? distance?
characteristics? perimeter?
edges? border? surroundings?
composition? scope?

Replacements for ill-chosen parameters

"given the present parameters for testing sea water" (Ministry official discussing the leak of water from a tin mine into the river Fal: BBC News, January 1992)—methods? standards?

"This car . . . has . . . altered the parameters of contemporary grand-prix car performance" (*Guardian*, 2 March 1992)—limits? boundaries?

"We will do the same within the same parameters of the Argentine coast." (Officer Commanding, Falklands: BBC News, 2 March 1992)—distance

"The perennial and most trenchant complaint against Michelin is that it refuses to recognise the existence of a cuisine that defies the parameters of classical French cookery, or a specific ethnic base" (*Independent*, 14 March 1992)—characteristics?

"in the middle of one of [the] group shots, [a character] suddenly walks straight up to the camera and starts looking around the room, as if absentmindedly surveying the parameters of the cinema screen" (*New Statesman and Society*, 7 August 1992)—perimeter? edges? border? surroundings?

"for the first time in many months, the parameters of the political constellation in the former Yugoslavia have become clear, even if they do remain exceptionally complicated" (*New Statesman and Society*, 23 October 1992)—boundaries? composition?

"but will it come within the parameter of the review?" (During discussion of closure of coal mines: BBC News, October 1992)—scope

Ill-chosen medical parameters

"We noted the following parameters: time of closure of colostomy, presence of radiological leak, histological differentiation" (*Annals of the Royal College of Surgeons*)—omit parameters

"The following cardiovascular parameters were measured: heart rate, systolic and diastolic blood pressure, central venous pressure, pulmonary artery wedge pressure" (*British Journal of Anaesthesia*)—variables

"using death within three months as a parameter of surgical morbidity" (*British Journal of Surgery*)—measure? index?

"Total and HDL cholesterol and triglycerides were analyzed [according to the standardization] for all 3 lipid parameters" (*American Journal of Cardiology*)—types? species?

"it is important that the patient be given the truth about the parameters of treatment available" (*British Medical Journal*)—types and effects

monitored variables to give a more favourable picture of an otherwise disastrous anaesthetic.

Who gets it right?

Just as much as the outsiders, insiders use parameters for anything they choose it to mean: "The

diagnostic process is thus therapeutically normative, for it establishes the parameters that must be changed in order to gauge the efficacy of treatment and the elimination of disease" (*Journal of Laryngology and Otology*).

The writing in medical science comes from investigators and reviewers, but is as much the responsibility of editors and their editorial boards,⁸ and of publishers. Editors could correct the misuse of parameter for variable or measurement at a stroke of the red pen, with little effort, and with less risk of upsetting writers than with many other changes they make.

Can we, though, rely on the publishers to support the aim of clear English? Here is some publicity from Butterworth-Heinemann: "In an environment of increased threat of litigation within medical practice, this book provides a clinical common-sense guide to the parameters of minimum and maximum standards of patient care to which every anaesthetist should aim."

1 Watson JD, Crick FHC. Molecular structure of nucleic acids. *Nature* 1953;171:737-8.

2 Hayakawa SI, ed. *The Penguin modern guide to synonyms and related words*. London: Penguin, 1971.

3 Kuhn TS. *The structure of scientific revolutions*. Chicago: University Press, 1970.

4 Masterman M. The nature of a paradigm. In: Lakatos I, Musgrave A, eds. *Criticism and the growth of knowledge*. Cambridge: Cambridge University Press, 1970.

5 Simpson JA, Weiner ESC, eds. *The compact Oxford English dictionary*, 2nd ed. Oxford: Clarendon, 1991.

6 Greenbaum S, Whitcut J, eds. *Guide to English usage*. Harlow: Longman, 1988.

7 Howard P. *Weasel words*. London: Corgi, 1983.

8 Gregory MW. The infectiousness of pompous prose. *Nature* 1992;360:11-2.

The wood engravings in this issue are the work of Professor Alan Woodruff, who died last year. Despite the demands of international professional life and during 12 years of "retirement" as professor of medicine at the Juba University Medical School, southern Sudan, he found time to engrave. He became an honorary member of the Royal Society of Painters, Etchers and Engravers.

Because of the civil war, Juba Medical School had to move

to Khartoum. Alan Woodruff was still teaching there when he died. The engraving below was completed in 1992, after a visit to the unoccupied campus.

Salisbury (p 1594) is linked with Juba—after visiting Juba in 1983, Bishop John and Mrs Baker set up the Salisbury/Sudan Medical Link to help equip the teaching hospital. With this dedicated and generous support, essential medical supplies got through.

Somami lecture hall, Juba—last glimpse