A concordance-based study of metaphoric expressions used by general practitioners and patients in consultation

John R Skelton, Andy M Wearn and F D Richard Hobbs

SUMMARY

Background: All languages use metaphoric expressions; some deliberately chosen, some (for example, 'digesting information') not usually perceived as metaphoric. Increasingly, it is suggested metaphoric expressions constrain the way we conceptualise the world, as well as being a means of achieving stylistic effect.

Aim: To study metaphoric expressions used by doctors and patients in general practice.

Design of study: Concordance-based language analysis of spoken data.

Method: A database containing transcriptions of 373 consultations with 40 doctors in a UK general practice setting was scrutinised for metaphoric expressions, using 'concordancing' software. Concordancing enables identification of strings of text with similar lexical properties. Comparators (for example, 'like'), selected verb-types (for example, of feeling), and the verb 'to be' were used as starting points for systematically exploring the data. Quantitative and qualitative thematic methods were used in analysis.

Results: Doctors and patients use different metaphors. Doctors use mechanical metaphors to explain disease and speak of themselves as 'problem-solvers' and 'controllers of disease'. Patients employ a range of vivid metaphors, but fewer metaphors of machines and problem/solution. Patients use metaphors to describe symptoms and are more likely to use metaphoric language at the interface of physical and psychological symptoms ('tension', 'stress').

Conclusion: The different patterns of metaphoric expression suggest that doctors make limited attempts to enter the patients' conceptual world. This may not be a bad thing. One function of the consultation may be to reinterpret vivid and unique descriptions as accounts of the familiar, and systemically comprehensible. Doctors may use different conceptual metaphors as a reassuring signal of expertise.

Keywords: communication; general practice; language; lexical concordance; metaphor.

J R Skelton, BA, RSA, MA, senior lecturer in communication skills; A M Wearn, MMEDSc, MRCGP, Sir Siegmund Warburg lecturer in communication studies; and F D R Hobbs, FRCGP, professor of primary care, Department of Primary Care and General Practice, University of Birmingham, Edgbaston, Birmingham.

Address for correspondence

Mr J R Skelton, Department of Primary Care and General Practice, Learning Centre, Primary Care Clinical Sciences Building, University of Birmingham, Edgbaston, Birmingham B15 2TT. E-mail: j.r.skelton@bham.ac.uk

Introduction

MOST doctors are probably conscious of using metaphors with patients, and may indeed have one or two well-tried analogies.[1] However, few probably understand the extent to which metaphors condition the ways that people conceptualise and make sense of the world.

There are two contrasting ways of thinking about metaphors. One is to regard them as conscious attempts to render something vivid. The other is to note that languages use so-called 'dead metaphors' all the time. Thus academics 'construct' hypotheses while time 'flies', or 'crawls', or just 'passes'. We are not consciously aware of these. However, there is linguistic and neuropsychological evidence that everyday language is substantially constructed on metaphoric principles.[2] Therefore, the term 'dead' does not mean that the metaphors lack power to influence us. Rather, languages have 'conceptual metaphors' which exemplify profound truths about the way we perceive the world.[3] These are conventionally noted in the form 'A is B' — 'The body is a container for the self' is a well-established example covering 'he withdrew into himself', 'he's thick-skinned', and so on. A 'master list' of conceptual metaphors is accessible on the Internet.[4]

This present study looks at both approaches to metaphor, but it should be borne in mind that these are held to operate in different ways.

Incidentally, similes are normally distinguished from metaphors only by the presence of the word 'like', or its equivalent: the distinction is seldom relevant. In this paper, 'metaphor' covers both similes and metaphors.

There is a recent, approachable, review by Cameron and Low of issues in metaphor study.[5] Within science, metaphor is acknowledged as playing a part in the construction of theory[6] and in the often pictorial and aesthetic imagination at work in, for example, the labelling of things.[7] Within the health sciences there is a substantial literature on the way in which psychiatry images the mind.[8] The best-known study of metaphor in medicine is Sontag's polemic on those surrounding cancer and AIDS[9]: she argues that metaphors should not be used to describe illness since they are 'untruthful'. There is also a narrative study of patients (based on recall rather than consultation data) which concludes that while patients think broadly of 'illness' rather than 'disease', they can 'actively relate to and make sense of the disease model'.[10] The general way in which illness metaphors point up the distinction between the Cartesian dualism of the professional and the holism of the patient is well discussed in Helman[11] and Gwyn[12]: the former also discusses cultural variation, while the latter has an interesting critique of

Sontag.

If metaphors are indeed the embodiment of experience rather than, or as well as, surface analogies for the sake of lucidity, an understanding of metaphor is as important for doctors as is an understanding of patient health beliefs.

Method

This study is part of a larger project exploring the language of the general practice consultation. Forty general practitioners (GPs) from 21 practices in the West Midlands region of the UK audiotaped consecutive consultations. All practices agreed to participate and individual GPs volunteered to have their surgeries recorded. Patients gave written consent or declined to participate on arrival for their appointment. Consultations were transcribed verbatim and imported into the lexical concordancing program, 'Cobuild' (details of the software are described elsewhere[13]). The final database consisted of 373 consultations. GPs were of differing levels of experience (from GP registrars in their training year to established principals); 28 were male and 12 were female.

Concordancing programs interrogate large databases of text for the presence or absence of words or phrases, and the context in which they appear. The basic computer output (Figure 1) can be manipulated with respect to length of context. The word or phrase around which the search is made is termed the 'node' or 'nodal expression'.

The identification of metaphors is controversial, and it follows that any claim to precision is dangerous. A common definition is that a metaphor is 'the act or process of denoting one concept (the tenor) with a sign conventionally tied to another (the vehicle)'.[14] But although there are statements which are clearly metaphors ('Peter is Newton reincarnate') and statements which clearly are not ('Peter is clever'), there are gradations between that cannot be resolved with certainty ('Peter is quick/quick-thinking/quick-witted/quick on the uptake/quick on his feet'). This is clearly a matter of subjective impression.

Searching for metaphors

Search terms are called 'nodes'. Likely metaphoric nodes were identified by the research team (see (i) to (iii) below). Using these words or phrases, the data was trawled and the resulting text strings examined. This process identified clear metaphors and suggested other search nodes. This iterative process bears some similarity to aspects of qualitative methodology and, as in general with qualitative study, statements about frequency are best regarded as approximations.

i) *Comparators*. The program was queried for contexts in which the following three comparators appeared: 'as if', 'as though', and 'like'. This yielded examples of similes, such as: '[the swelling] makes me look *as if* I'm about four months pregnant', or '[the pain] feels *as though* somebody's hit me' (nodal expression in italics). The use of explicit comparators in this way was selected to identify clearly metaphorical uses which could then act as a springboard for identifying other key words and phrases.

ii) *Verbs of feeling and describing*. From the results of (i) it was hypothesised that verbs such as 'feel', 'look', 'resemble', 'describe' ('look like' and 'be like' were already identified under step (i) would yield further, relatively explicit, metaphors; for example, 'I can feel it sort of aching and burning'. Verbs of this sort were identified using a functional approach.[15]

iii) *The verb 'to be'*. For simplicity, this was considered last, since it was recognised that there would be many thousands of lines of text, in the expectation that many key decisions and examples would already be identified.

For each of the search groups, (i) to (iii) above, a three-stage process was undertaken:

1. The individual lines of text (node plus context) were assessed using criteria derived from Cameron. A metaphor was thus recognised if there was (a) 'reference to a topic domain by a vehicle term'; (b) 'potential

<Erm this looks very/<P> I feel better in myself than I did on Monday definitely/ so I just think it
< better? <P> I'm feeling a lot better in myself, it seems to be lif[ted] lifted and clearing,// erm
< yeh, I fe[el] I feel I feel better in myself, yeh. <D> The thing to concentrate on is it will get
< no worse I'm, in fact I'm better in myself than I was. I did think I was starting a bit of a
< <P> Cos I do feel quite happy in myself and erm coping with life in general <D> Good, we'll
<come out now and I think I'm not down in myself/ <D> Not feeling down? <P> I sometimes do get me
< inside? How are you feeling? <P> In myself? <D> Mmm <P> Well of course just things getting on
< mean that's been great I feel better in myself in in certain ways I don't get the PMT which used to
< really, no / I feel / gr[eat] great in myself. <D> no / right // but you just get these episodes

(All examples from the database, with a few words of context on either side, of patients using the string in+myself)

Figure 1. Example of basic Cobuild printout: Patient use of 'in myself'.

incongruity' between the domains of vehicle and tenor, and (c) a 'coherent interpretation' was possible.[16] This results in, for example, the phrases quoted in (i) above.

2. Such phrases were then in turn selected as node expressions, to see whether there were other examples of them being used metaphorically. Thus, 'pregnant' and 'hit' became node terms, and all occurrences were studied.

3. These other occurrences were then assessed against Cameron's criteria. For instance, with the two examples given, we considered whether other uses of 'pregnant' and 'hit' were metaphorical: there were no other metaphorical uses of 'pregnant', but several of 'hit'.

All identified metaphors were then grouped or themed as seemed appropriate. This process was shared by members of the research team and agreed by consensus.

Analysis

Though concordancing programs readily give quantitative information, standard statistical tests are used relatively infrequently, as language is not random data.[17] For this reason, quantities in this paper are given simply in terms of the number of occurrences per million words. Patients in the database sometimes had a companion; for example, a mother with a young child. Unless the contrary is clear, the word 'patient' is used to mean 'lay participant'.

Results

The mean number of words per consultation was 1742 (total number of words = 649 692). The mean number of words spoken by different parties per consultation was: doctors 933 (54%), patients 794 (46%) — other parties; for example, nurses, contributed less than 1%. The number of metaphors identified was 965. A further 904 uses of words around the concept of 'problem' were identified but not counted as metaphors, though often the word 'problem' itself seemed to have the metaphorical sense of 'puzzle'.

Figures are adjusted for the greater frequency of doctor language in the database: all figures are quoted as occurrences per million words (pmw). The Kruskal–Wallis test showed that there were no significant differences between the doctors and their use of a particular metaphor.

There were some clear distinctions between doctor and patient metaphors as well as those shared by both, though with difference in detail (Tables 1 and 2).

Doctor metaphors

An illness is a puzzle. Doctors were more likely to speak of 'problems' (doctors = 1627 pmw, patients = 901 pmw), of 'answers' or 'solutions' (doctors = 121 pmw, patients = 54 pmw), and of 'cases' (doctors = 34 pmw, patients = 3 pmw).

A doctor is someone who controls (not cures) diseases. Doctors used the word 'cure' only eight times (23 pmw), and on five of these occasions it was to deny the possibility of cure; for example, 'it's not a miracle cure', or 'veins are not a terribly good hunting ground for cures'. The concept of making better or of getting better was the more likely phrase (doctors = 190 pmw, patients = 61 pmw). However, doctors were most likely to talk of 'controlling' disease (doctors = 221 pmw, patients = 64 pmw).

The body is a machine. Examples of machine metaphors were all weighted in favour of the doctor. The urinary tract was the 'waterworks' (doctors = 20 pmw, patients = 7 pmw), the body itself was a 'system' (doctors = 63 pmw, patients = 17 pmw). Thus, tranquillisers 'affect what is a finely balanced system'. Bodies could be 'repaired' (doctors = 14 pmw: unattested in patient language) as a result of surgery, back pains could be 'mechanical' (a single doctor use, 3 pmw), and arthritic joints suffered 'wear and tear' (doctors = 20 pmw, patients = 3 pmw).

Patient metaphors

The body is a container for the self. In all but one case, examples where selfhood was pictured as being inside the body are patient metaphors, the exception being the phrase 'in yourself/myself' — for example: 'How are you in yourself?' (doctors = 95 pmw, patients = 51 pmw). Patient metaphorical uses were either expressive and idiosyncratic ('[her temper's] like Satan's got into her') or described psychological wellbeing with reference to physiology ('my body seems full of nerves').

An illness is beyond description. On 13 occasions (therefore 44 pmw) patients introduce a metaphor by apologising for their inability to describe or explain their sensations. The effort to do so produces a wide array of vivid metaphors (Table 3). A sense of being out of touch, for example, is described as 'I'm the cotton wool man'. Pain was described as torture — for example, a patient who ascribed the 'burning' sensation to the baby in the womb expanded the metaphor: '…burning, I know what it's like, it's like a Chinese burn, it just gets tighter and tighter … a twisting pain'.

Metaphors equally distributed between doctors and patients

Illness is an attack. Illness 'attacks' the body (doctors = 126 pmw, patients = 125 pmw): in these data, 'panic attacks' or 'anxiety attacks', asthma and 'heart attacks' were particularly mentioned. On three occasions, patients described pain as 'killing': the word 'painkiller(s)' occurred 51 times, or 78 pmw (doctors = 80 pmw, patients = 78 pmw). One patient who talked of urinary tract infection (UTI) symptoms as 'burning' said 'it's like you know somebody's hit you'. Another, recovering from pleurisy, said 'I still get aches as though I've been pummelled'. Examples of 'battle/defence/fight' occurred at 23 pmw (doctors = 26 pmw, patients = 20 pmw) Adjectives for pain were used very differently (Box 1).

Illness is fire. Certain conditions are liable to be 'inflamed' (doctors = 201 pmw, patients = 47 pmw), though both doctors and patients speak of 'flaring up' (doctors = 26 pmw, patients = 24 pmw). 'Burning' pain for the doctor referred only to the pains of UTI and reflux. Patients used it more widely, and on two occasions a patient rejected doctors'

> 'I feel as if I nearly fall over with pain.'
>
> *Doctor:* 'Show me again where it hurts …'
>
> *Patient:* 'It seems as if it's all joined round … hips and tummy.'
>
> 'My arms feel as if they should be in a couple of slings to hold them up they just ache so much.'
>
> 'It's as if [my ear] wanted to click.'
>
> [As a result of cystitis] 'I felt as if … I was like a wet leaf.'
>
> [Talking about depressive symptoms] 'It's hard to explain how I feel, it's just as if I'm just … staring into space.'
>
> [Talking about an allergic skin rash] 'Tell you what it feels as well I get as if there's something crawling up like a maggot.'
>
> 'It feels as though I've got a hair at the back of my throat and I can't get nothing up.'
>
> [The result of photosensitivity] 'It literally looks as though you've painted your face.'
>
> 'My toes really really do feel ever so funny at times, you know as though there's like a plaster stuck on them, it's the only way I can describe it.'
>
> [Of migraine] 'It's like if you've looked into the sun.'

Box 1. Patients talking: 'An illness is beyond description'.

Table 1. Doctor and mutual metaphors: frequency per million words (pmw).

	Doctor	Patient/companion
Doctor metaphors		
An illness is a puzzle		
Problem	1627	901
Answer/solution	121	54
Case	34	3
A body is a machine		
System	63	17
Other	60	14
A doctor is a controller		
Control	77	19
Mutual metaphors: similar use		
Illness is an attack		
Attack	126	125
Painkiller(s)	80	78
Fight/battle/defence	26	20
Mutual metaphors: dissimilar use		
Causes of 'burning' pain		
Urinary tract infections	46	17
Reflux	32	13
Skin rashes	0	13
Rheumatic pain	0	13
Pregnancy pain	0	7

suggestions that UTI pain was 'burning' (Table 1).

The physical is the psychological and vice versa. There was disagreement between doctor and patient about the vocabulary of psychological unease. The fundamental metaphors were to do with 'nerves', 'tension', spatial orientation ('high', 'low', 'up', 'down') and 'pressure'. The latter two were evenly distributed, the first two were not (Table 2). It is worth noting that on the only (three) occasions when the doctor used 'pressure', it was in the context that he or she was under pressure. Similarly, on the three occasions when patients used 'nerves' literally, he or she was simply reporting the words of another doctor.

Discussion

Metaphors are exceptionally difficult to identify with certainty and any claim to precision should be regarded with scepticism. Moreover, within the confines of this brief study, two general approaches to metaphor have been drawn together. One argues that metaphors are relatively vivid, selected by speakers for effect: the other argues that metaphors are built into human cognition, often in ways which are not vivid. The patient who describes migraine as like 'look[ing] into the sun' (Box 1) and the doctor who talks about 'heart attacks' exemplify these views.

The existence of some of these metaphors is well known. In particular, the range of metaphors surrounding psychological distress is standard, as is the notion of illness as battle, from such dead metaphors as 'painkillers' and 'heart attack' to the clichés of the obituary column: 'He died after a brave battle'. Such metaphors support an essentially allopathic view of medicine, in which the body may be invaded by foreign bodies, or rebel against itself. The related metaphor, of the body as a state (and of the state as 'the body politic') is at least as old as Hobbes.[18]

Within familiar metaphors, however, there may be surprises. Metaphors of pain are used differently, with doctors tending to reject the more vivid sharp/dull metaphor in favour of the concept of 'severity', and restrict the concept of 'burning' pain to refer, specifically and quasi-technically, to reflux or urinary tract infection.

The notion of the body as the container of selfhood is of particular interest. Doctors' more literal use might casually be interpreted as a medical attempt to repackage the psychological as the mechanical. In fact, there are, as we have seen, three occasions (9 pmw) when a doctor, picking up this difficult topic,[19] goes to the trouble of explaining a link between body and self. Nevertheless, on the whole, a central difference between doctors and patients appears to be that doctors use a greater frequency of metaphors to do with machines. Similarly, doctors talk of themselves as solvers of problems and controllers of illness, metaphors which hint at knowledge and power in obvious ways.

Patients employ a wider range of metaphors, often quite dramatic, to describe their problems. This may be a desire to legitimise their presence in the surgery by rendering problems more graphic, or an attempt to articulate difficult and nebulous thoughts and sensations. The picture here is of patients coming to the surgery with a range of vivid, particular, and personal descriptions and of doctors reinterpreting these as emotionally neutral problems of a general, depersonalised type.

Patients may be reassured by having their images reinterpreted into recognisable disease states that enable categorisation and alleviation. It has long been suggested[20] that metaphors used in science differ from those of expressive language because they are well-defined and 'valid' (a well-chosen metaphor leads to a number of correct inferences). That is, the doctor's metaphorical system may be regarded as an appropriate way of imposing ordered calm on a disparate mass of expressive data.

Table 2. Literal and metaphorical uses of psychological terms: frequency per million words (pmw). All figures are rounded to the nearest whole number.

	Doctor			Patient/companion		
	Literal	Metaphorical	Total	Literal	Metaphorical	Total
Tense/tension	34	3	37	3	37	40
Relax(ed)/ relaxation	63	37	101	3	64	67
Nerve(s)/nervous	89	37	126	24	84	108
Totals	187	78	264	30	186	216

Table 3. Frequency per million words (pmw) of descriptors for aches and pains.

	Doctor	Patient/companion
Dull pain	0	47
Stabbing pain	0	20
Sharp pain	0	67
Severe pain	49	51

Conclusion

This study has categorised the common uses of certain metaphors in primary care consultations. Differences between doctors and patients are noted. Whether the patients influence doctors' responses or whether doctors' responses provide adequate explanation and reassurance to patients is worthy of future study. It may also be salutary for practitioners to reflect upon their own repertoire of expressions.

Acknowledgement

References

1. Olweny CL. Effective communication with cancer patients. The use of analogies — a suggested approach. *Ann N Y Acad Sci* 1997; **809:** 179-187.
2. Gibbs R. *The poetics of mind: figurative thought, language and understanding*. Cambridge: Cambridge University Press, 1994.
3. Lakoff G, Johnson M. *Metaphors we live by.* Chicago: Chicago University Press, 1987.
4. Lakoff G. Conceptual metaphor. http://cogsci.berkeley.edu/ (Accessed 10/9/99).
5. Cameron L, Low G. Metaphor. *Language Teaching* 1999; **32:** 77-96.
6. Harman JE. The uses of metaphor in citation: classics from the scientific literature. *Technical Communication Quarterly* 1994; **3:** 179-194.
7. Banville J. Beauty, charm, and strangeness: science as metaphor. *Science* 1998; **281:** 40-41.
8. Borbely AF. A psychoanalytic concept of metaphor. *J Psychoanal* 1998; **79:** 923-936.
9. Sontag S. *Illness as metaphor: AIDS and its metaphors*. London: Penguin Books, 1991.
10. Mabeck CE, Olesen F. Metaphorically transmitted diseases. How do patients embody medical explanations? *Fam Pract* 1997; **14:** 271-278.
11. Helman C. *Culture, health and illness*. Oxford: Butterworth-Heinemann, 1984.
12. Gwyn R. 'Captain of my own ship': metaphor and the discourse of chronic illness. In: Cameron L, Low G (eds). *Researching and applying metaphor*. Cambridge: Cambridge University Press, 1999: 203-220.
13. Skelton JR, Hobbs FDR. Concordancing: use of language-based research in medical education. *Lancet* 1999; **355:** 108-111.
14. Veale A. The metaphor homepage: dedicated to computational models of metaphor and analogy. http://www.compapp.dcu.ie/~tonyv/metaphor.html (Accessed 10/9/99).
15. Leech G, Svartvik J. *A communicative grammar of English*. 2nd edition. London: Longman, 1994.
16. Cameron L. Identifying and describing metaphor in spoken discourse data. In: Cameron L, Low G (eds) *Researching and applying metaphor*. Cambridge: Cambridge University Press, 1999: 105-132.
17. Stubbs M. Collocations and semantic profiles: on the cause of the trouble with quantitative studies. *Functions of Language* 1995; **2:** 23-55.
18. Hobbes T. *Leviathan*. 1651. Tuck R (ed). Cambridge: Cambridge University Press, 1996.
20. Martin P. *The healing mind: the vital links between brain and behavior, immunity and disease*. New York: St Martin's Press, 1997.
21. Gentner D. Are scientific analogies metaphors? In: Miall DS (ed). *Metaphor: problems and perspectives*. Sussex: Harvester Press, 1982: 106-132.