

groups working on differentiated activities and questioned the effectiveness of topic work.

Conclusion

The burden and pace of change has fallen heavily upon the teachers. The organization of the National Curriculum, training in assessment procedures, the communication of assessments to parents, the local management of schools especially in financial aspects and the continual need to respond quickly to new guidelines has called for an extraordinary stamina and flexibility. In return there has been little to enhance professional self-respect. Successive Secretaries of State have demanded more but offered nothing proportionate in terms of financial reward. Local management, while attractive as a dimension of self-government has in practice been meanly resourced and has been too often more of a burden than a blessing. In consequence, teacher morale is low in many schools and stress is a sign of the times. The government has been compelled to withdraw some changes such as elements of testing in the early key stages. It now remains to be seen how compliant the teaching profession will be in the face of a government assault upon its favoured classroom methods.

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Current Research

Sven-Johan Spånberg of Uppsala is conducting a project entitled "The Weak Male and his Image of Woman". The project falls within the theoretical framework of Gender Criticism, drawing on historical and psycho-analytical method. Specifically, Spånberg is investigating the male role in late Victorian poetry, concentrating on the discrepancy between ideal and reality, as seen for instance in the contrast between the Arthur figure in Tennyson's poetry and characters based on the Wagnerian Tannhäuser figure in the works of e.g. Morris, Swinburne, Wilde. Address: Sven-Johan Spånberg, Department of English, University of Uppsala, Box 513, S-751 20 Uppsala, Sweden.

The research project "Male and Female Terms in English: A Diachronic Study of a Semantic Field", run jointly by the English Departments of Uppsala and Umeå, was started in 1990. The purpose of this sociolinguistic project is to study terms for men and women in their various social and sexual roles, relating changes in the naming of human beings to changing socio-economic factors. Addresses: Mats Rydén, Department of English, University of Uppsala, Box 513, S-751 20 Uppsala, Sweden; Gunnar Persson, Department of English, University of Umeå, S-901 87 Umeå, Sweden.

JOHN KIRKMAN

Which English Should We Teach for Scientific and Technical Communication?

John Kirkman var tidigare *Director* för enheten för kommunikationsstudier vid University of Wales Institute of Science and Technology i Cardiff. Numera driver han ett konsultföretag inom området vetenskaplig och teknisk kommunikation. I den här artikeln diskuterar han vikten av stilistisk och kommunikativ medvetenhet i samband med undervisning i fackspråklig engelska.

My main job is to help engineers and scientists learn to speak and write effectively. The emphasis in my courses is on the professional tasks that confront people from day to day in commerce, research, or industrial production. Much of the time, I work outside the UK, in companies, research centres, and educational institutions where English is a foreign or second language; but English is a primary working medium for the people I teach. As I plan my courses for those people, I am faced with the question "WHICH English should I teach for effective communication in scientific and technical contexts?"

"Typical" technical English or "good" technical English?

When I ask myself "WHICH English?", I am not concerned to establish a list of functions or situations on which to base my syllabus and my teaching strategy. Certainly, there comes a time at which I have to consider what forms of language will be needed for "making requests", or what will be the best way to describe an instrument in order to obtain Customs clearance for temporary export of that instrument; but my prior concern is to answer the question: should I teach a special, heavy, passive style of technical writing, typical of much of the expression in professional journals, or should I teach a readable, natural style of expression, such as is used in serious day-to-day communication?

This is a real issue. My classes want to learn how to speak and write "good" English. Professional scientists and engineers know that the credibility and esteem accorded to them *as scientists and engineers* are influenced by the quality of their communication skills. They know that much scientific and technical communication is clumsy and difficult to assimilate. They recognise this both in their own languages and in English. They want to learn to imitate the "best" models of scientific and technical expression, not just "typical" or "average" ways of speaking or writing.

Accordingly, it is incumbent on me to make clear which styles and tactics will be accorded greatest esteem in scientific and technical contexts.

In doing this, I find myself greatly hindered by the frequency with which language teachers currently talk about ESP (English for Special Purposes), EST (English for Science and Technology) and even “Special Languages” for science and technology. These terms suggest that there is a separate version of the English language that is used in science and technology. There is not. There are no structural forms that are used in scientific and technological contexts but are not used in “general” English. There are no rules of lexis, grammar, punctuation, intonation or stress that are peculiar to scientific and technical communication.

There are, of course, many words that are used in scientific and technical communication that are not used elsewhere; but there are many words that are peculiar to the activities of basket-making, rugby football, and catching a plane at an airport; should we therefore accord special status to EBM (English for Basket-Making), ERF (English for Rugby Football) and EAT (English for Air Travel)?

It is a serious, alarming deception to lead scientists and engineers to believe that they must learn a special language for communication in science and technology. Certainly, to handle the concepts of their sciences and technologies, they must learn the English equivalents of the special vocabulary they have had to learn in their own languages; but beyond that, they must simply become skilful in handling the normal conventions of English. They must learn to handle those conventions in ways that will express their information accurately, manageably, and in an appropriate tone. It is in deciding what usage or style will be judged manageable and appropriate that the difficulty lies.

Establishing what is “good” usage

Which ways of using English should we teach as appropriate for communication in science and technology? Should we just survey the usage of 50 or 500 engineers and scientists who are native speakers of English, and teach our students to imitate that “typical” or “average” usage, or should we teach *what engineers and scientists themselves* consider to be “good” style?

Modern linguistic attitudes would have us do the former—analyse what a sample of scientist *do*, and then teach our students to do likewise. I can accept that attitude only with an important proviso: that the sample on which we base our analysis should be a sample of engineers and scientists whose communication is considered by their peers to be good of its kind.

A mass of ill-expressed scientific and technical information is presented to the world every day. Scientists and engineers themselves protest at the extra work demanded from them by the poor expression. They have promoted and supported extensive research to find out what can be done to improve the readability and listenability of their daily diet of information. That research is virtually unanimous about the linguistic measures that can be taken to improve the readability and listenability of technical information. We should base our teaching content and strategies on the findings of that research.

Unfortunately, many of the publications designed for use in EST classes seem to be based on poor models of scientific expression—on guidelines drawn from an analysis of examples that the majority of engineers and scientists would say is not typical of the most effective scientific and technical communication.

I emphasise the *majority* of engineers and scientists. And I would emphasise that the *majority* are *not* in academic institutions. The majority work in what I call for descriptive convenience “real-world contexts”.

I make this distinction in order to stress an important point. Most of the textbooks that I have reviewed for use in EST classes describe, discuss, exemplify, and give practice only in English for academic writing and speaking. The objectives, strategies, tactics, and language styles appropriate for effective academic writing and speaking are not the same as those for effective writing and speaking in real-world contexts. One of the major complaints I hear as I visit companies and research centres is that teachers have failed to show students the distinction between communication as a display activity, and communication as a means of getting things done. In particular, we have failed to equip our students with the linguistic skills needed not only to *make knowledge available* (academic communication, in essays, laboratory reports, journal articles, and discursive speaking) but also to *put knowledge to work* in industrial, commercial and research contexts (real-world communication, in proposals, instructions, procedure manuals, project reports, and persuasive speaking).

One illustration of the effect both of poor models and of the failure of coursebook-writers to prepare students for the real world is the way many EST books handle the use of passive constructions. They point out, reasonably, that in much scientific description, it is inappropriate to emphasise the actors: more importance is attached to the action. Therefore, in the words of one coursebook, “We would not normally write ‘Bill and I measured the extension in the steel bar’: instead, we would write ‘The extension in the steel bar was measured’”.

So far, so good. But the coursebook-writers then go on in exercises to train students to rewrite *in the passive* sentences such as the following:

1. Two other forces act on the roller.
2. Two electrodes lead the current into the electrolyte.
3. The new machinery can wind an armature in half the previous time.
4. Fleming's right-hand rule gives a rapid way of relating the directions of flux, motion and e.m.f. (A rapid way... is... by...).
5. We now find that we have an example of a three-force system. (It... now... that we...).

I would argue that, in all five examples, the rewritten sentence would be *poorer* style than the original. Also, the authors of the textbook jump carelessly from the use of the passive to remove unnecessary stress on the agent, to the use of the passive in a way that changes the emphasis of the sentence (for example, in (2) from focus on *two electrodes* to focus on *current*). It is careless teaching like this, which implies that active and passive constructions are casually interchangeable, that is responsible for much of the clumsily roundabout and often wrongly focused writing that causes complaints among scientists and engineers. This clumsy writing has become identified as the norm for scientific and technical writing, and further generations of scientists and engineers are advised to imitate it.

Regrettably, such teaching leads learners to believe that a passive style is generally preferred by engineers and scientists, and that use of personal pronouns, followed by active constructions, is inappropriate in scientific and technical writing. Both these beliefs are wrong. All research that I am aware of has shown that the majority of engineers and scientists prefer a mainly active style, with judicious use of passive variations. And in real-world writing in particular, most managers *require* clear indications of when the writer(s) is presenting his/her (or their) view (by using *I* or *we accept that...*) and when a generally held belief is being quoted (by use of the impersonal *It is accepted that...*).

So, we must not look at scientific and technical writing and say: "Because much of it is exclusively passive and impersonal, we must teach our classes to write exclusively passively and impersonally". We must find out what is normally judged *by engineers and scientists* to be accurate, readable and acceptable—what they consider to be "good" style—and base our teaching on that. That will require us to teach appropriate use of passive verbs for various reasons, and to teach appropriate use of personal and impersonal constructions in varying tasks and contexts.

I have space for just two more examples of what is implied by the need to base our teaching on "good" style, not just on "typical" style.

It implies that we should discourage our classes from extensive premodification of nouns (especially premodification with other nouns); and it implies that we should teach punctuation as an intrinsic part of English for effective communication in science and technology.

First, premodification. As one recent textbook remarks: "Complex noun groups are extremely frequent in technical writing and merit special attention if the learner is to tackle them successfully; even for the native speaker accurate interpretation is often far from easy". Here are two typical examples:

- ... a complex frequency error correction procedure ...
- ... the raw mill gas flow regulation valve sequence has yet to be designed ...

Obviously, we must teach our EST classes to disentangle groups such as these; but we should *not* teach them to imitate this style, for such "lumpy" structures are difficult for receivers to digest. Brevity in number of words is being raised to a higher priority than accuracy of meaning and ease of assimilation for receivers. The following revisions use more words, but are clearer and easier to assimilate. They therefore represent better style for scientific and technical communication:

- ... a complex procedure for correcting frequency errors ...
- ... the sequence of valves to regulate gas-flow in the raw mill has not yet been designed ...

Comprehension and assimilation are particularly difficult when writers insert premodifiers between a preposition and the head noun it is meant to govern (or between a preposition and its noun complement):

- ... is important in sub-station site selection ...
- ... this stage of the project will be followed by control equipment selection and purchase ...

The normal convention in English is that the first noun after the preposition is the complement. For example, sentence (1) below would seem normal, sentence (2) would seem abnormal:

- (1) ambient light and temperature are major influences on *the attentiveness* of pupils in classrooms.
- (2) ambient light and temperature are major influences on *pupil classroom attentiveness* ...

Unfortunately, in a well-intentioned effort to economise in the use of words, technical writers have got into the habit of packing nouns between the preposition and its complement, as in (2) above. This causes at least reader discomfort (or better, discomfort for readers!), and at worst, a breakdown in communication. We should certainly teach our students to understand the use in English of nouns as pre-

*Comfort J, Hick S, and Savage A, *Basic Technical English*, Oxford University Press, 1982, Teacher's Book p.4.

modifiers; but we should not encourage them to imitate the worst examples. Indeed, we should encourage them to avoid such constructions, and to write instead:

- ... is important in the selection of substation sites ...
 ... this stage of the project will be followed by selection and purchase of control equipment ...

Finally, punctuation. "Average" scientific and technical writing is desperately short of punctuation, and in consequence is often ambiguous or at least irritating to read. Especially, engineers and scientists have got out of the habit of using commas to mark off preliminary phrases and clauses, and to distinguish defining clauses from non-defining clauses. They have also lost sight of hyphens:

- (1) The assembly file may be used to create a final assembly listing for the library. To get a clean assembly load the assembled equals table before the assembly is run.
- (2) For the third session running assistance was provided to the Dept. of Veterinary Services ...
- (3) ... is designed for optimum signal-to-noise performance. To achieve this computer simulation and optimisation has been used extensively ...
- (4) The sand grains which are almost entirely quartz are not cemented together.
- (5) ... deposits of heavy oil. The largest of these is the Athabasca deposit which is currently being exploited by two companies ...
- (6) ... non-leguminous crops show a considerable response to nitrogen fertiliser which is critically dependent on correct placement, timing of applications, and the provision of other nutrients ...
- (7) ... these products when burned do not produce sulphur containing gases ...
- (8) ... some constituents in the surface wax are feeding deterrents ...
- (9) The following points are six minute average values of the inputs from the analyzers.

Should we teach our EST classes to imitate this punctuation-less writing? Certainly not. And yet, few EST texts make any effort to teach English punctuation.

(Improved versions of the punctuation examples:

- (1) ... a clean assembly, load ...
- (2) ... session running, assistance ...
- (3) ... achieve this, computer ...
- (4) ... sand grains, which are almost entirely quartz, are not ...
- (5) ... Athabasca deposit, which is currently being exploited ...
- (6) ... nitrogen fertiliser, which is critically dependent ...
- (7) ... sulphur-containing ...
- (8) ... feeding-deterrents ...
- (9) ... six-minute ...)

You might wish to argue that the points I have made about style for scientific and technical communication can be taught only in advanced classes. I do not accept that the policy of teaching "good" style rather than "typical" style must be reserved for advanced and/or adult EST classes. Classes interested in learning English for use in scientific and engineering work should be taught to imitate good models *from the outset*.

Deutsche Populärliteratur

Eine kurze Forschungsübersicht sowie Bemerkungen zu einigen Liebesromanen von Leni Behrendt

1. WAS IST POPULÄRLITERATUR?

Für das Phänomen der Populärliteratur gibt es im Deutschen eine Reihe von Begriffen: „Kitsch“, „Schmutz- und Schundliteratur“, „Afterliteratur“, „gesellschaftlich nicht anerkannte Literatur“, „Trivilliteratur“ und „Massenliteratur“. Diese Begriffe spiegeln deutlich die jeweilige Einstellung desjenigen wider, der sich mit dieser Literatur beschäftigt. Im folgenden werde ich den Begriff Populärliteratur verwenden, weil er m.E. am wenigsten abwertend klingt.¹

Wichtig ist zu notieren, daß es die Populärliteratur im modernen Sinne erst seit dem 18. Jahrhundert gibt.² Zu dieser Zeit findet nämlich eine Zweiteilung (Dichotomisierung) der Literatur statt.³ Autoren wie Schiller, Goethe und Karl Philipp Moritz propagieren die sog. Autonomieästhetik.⁴ Nach dieser Auffassung bestünden keine direkten Bezüge zwischen Literatur und Gesellschaft, die literarischen Texte sollten wie die Lampe in Mörikes Gedicht sein, von der es heißt: „Was aber schön ist, selig scheint es in ihm [sich] selbst“ (Mörrike (1975), 85).

Im Gegensatz zu dieser Literaturauffassung im Sinne einer Schönheit ohne gesellschaftliche Bezüge stand die noch weiterwirkende Aufklärungsästhetik, nach der Literatur gesellschaftlich wirksam sein sollte, da sie eine didaktische Funktion hatte. Diese Ästhetik der Aufklärung prägte tatsächlich den Hauptteil der Literatur im 19. Jahrhundert und nicht etwa der Literaturbegriff im Sinne der Klassik. Durch die Entstehung des literarischen Marktes wurde die Gruppe der Leser immer größer und der Bedarf an unterhaltender Literatur wuchs.⁵ Er wurde durch die populären Lesestoffe befriedigt, die wenig Gemeinsamkeiten mit dem Kunstschönen im Sinne von Goethe und Schiller bzw. Mörikes „Lampe“ hatten.⁶

Der Gegensatz zwischen der hohen und niederen Literatur wurde bald ideologisiert. Die Aufteilung in eine „richtige“ und eine „minderwertige“ Literatur mit einer unüberbrückbaren Kluft dazwischen ist zum Teil immer noch lebendig und hat bis in unsere Zeit die Debatte geprägt.⁷

Die Historizität der Kategorie Populärliteratur ist überhaupt wichtig und grundlegend wie auch die Tatsache, daß sie in den ästhetischen Urteilen der jeweiligen Epoche wurzelt. Helmut Kreuzer hat diese Epochengebundenheit stark betont: