A Framework for Analyzing Varieties of Writing in a Discipline

Kate Chanock, La Trobe University

Abstract

Writing across the curriculum means more than creating opportunities to learn by writing; it means, also, focusing on the nature of writing for particular purposes, in particular fields. In Australia, B.A. students are required to write extensively for all of their courses, but usually receive no theoretically-informed instruction about writing itself. This paper offers a framework that discipline specialists and their students might use in analyzing the varieties of writing in their field, to inform the students' subsequent choices of suitable forms and language when they write for different audiences in a professional role. The paper follows the application of this framework in an archaeology subject where an academic skills adviser collaborated with an archaeology lecturer in inviting upper level students to closely examine the discourse of their profession.

Introduction

While writing across the curriculum developed in North America in an effort to carry the focus on writing from freshman English into further disciplines and later years, the situation in Australia has been very different. Here, as in Britain and in other education systems derived from the British model, writing has always been a central mode of learning throughout the humanities, and is often the only way that students demonstrate

their learning for assessment. At the university where I work as an academic skills adviser, students write as much as 15,000 words each semester, across the range of subjects that they study. Virtually none of this is personal writing or opinion pieces, but academic argument based on reading and research.

In many ways this is an enviable situation, as it promotes writing-to-learn, the generation of authentic, extensive writing tasks within the contexts of the disciplines, and response, by discipline teachers, to both the learning and the writing. On the other hand, although so much writing is required, hardly anybody teaches it. There is no composition course, nor any English requirement. Students are expected to come from school with the skills they will need to write at university, even though the kind of writing we require is different from the personal or public writing they are used to. If they are successful in writing at university, it is because they pick up ambient clues to the differences, or read (good) books on study skills, or consult an adviser like myself, or attend the classes that such advisers offer—usually for no credit, and seldom, therefore, very well-attended.

Thus, while writing is at the forefront of academic learning, the teaching of writing is not, so that students can approach the end of their degree proficient in essay writing but lacking any strategies for analyzing the features of different kinds of writing and adjusting their approach to the more varied demands of writing in their profession. For this reason, I have been asked in recent years to work with the coordinator of an upper-level archaeology subject, helping her students to think about the ways in which reading and writing for colleagues are different from reading and writing for the public. An archaeologist is at various times an academic, a negotiator, an advocate, and a popularizer, and needs a range of styles for every change of hat. In developing an approach for archaeology students, however, I tried to arrive at one that could be used in any field to examine its varieties of writing, one that could be used by teachers in the

disciplines as well as by writing teachers. I would like to describe this process here, in the hope that readers will find it useful as our own staff and students have.

Collecting "texts" on which to focus

I approached this as an ethnographic project of identifying what archaeologists do and the discourse patterns they use, and inviting the students to look at the range of choices available. First, I collected samples of oral texts by attending the weekly departmental seminar and noting the patterns of sentence structure. For my written samples, the subject coordinator provided two pieces by the same authors, and concerned with the same subject matter: a cluster of sites that Aboriginal people had occupied in the distant past. These publications, however, were addressed to very different audiences, which made them ideal for the kind of comparison I wanted to do. One was an article in an academic journal, reporting on the dates of occupation of these sites and their significance for the discipline (Bird, Frankel, & Van Waarden 1998). The other was a booklet addressed to a non-specialist audience of Aboriginal stakeholders in this project, to let them know what the academics had discovered about the lifeways of their ancestors who had occupied these sites (Bird & Frankel 1998). By producing this booklet, the archaeologists sought to acknowledge the partnership between academics and indigenous people in the exploration of the sites (rather than simply appropriating such remains, as an earlier generation of scientists had done). To fulfill this social function, the booklet needed to be accessible, but also somewhat formal to express respect for the work and for the audience. My third text (Keyser 2000)—an article in National Geographic about a newly-excavated hominid site in Africa—was also written for non-specialists. This one, however, was a hybrid of popular science crossed with adventure story. It had the science of the stakeholders' booklet, but lacked its gravitas.

Analyzing the texts

In order to analyze these texts with the students, I set up a table with a list of salient features down the side and space, reading across, to note how each of these features was manifested in each of the three texts. This framework revealed both consistencies within each text and differences between them. It could be used to examine a range of written products in any field of study, as it gives students an easy way of lining up the common and divergent characteristics of different kinds of texts.

Table 1

Features of writing	journal article	stakeholders' booklet	popular magazine

• Author(s)
• Venue/ audience
• Purpose
• Structure
• Accommodation to/ interaction with audience (in prose & in visual aids)
• Language
    Technical terms
    Sentence length (average & range)
    Lexical density
    Grammatical metaphor
    Passive verbs
    Use of first person
    Emphatic expressions			

Purpose

In completing the table above, we generated many pages of observations, which there is space only to summarize here. I have noted the authors of the samples from archaeology above, and described the publications and their intended readers. The purpose of the academic article was to report to the discipline community on the authors' testing of dates obtained by previous re-

searchers for a cluster of excavations. In the stakeholders' booklet, the same authors had a dual purpose: to provide archeological information about Aboriginal art and occupation in the region to the community which had given permission for the study; and to raise the awareness of local people about the need for good site management. The magazine article sought to inform an interested public about a new hominid site in the process of being excavated.

Structure

The structures of these texts matched the purpose and audience in every case. The academic article roughly followed the conventional structure of a research article: a sequence of abstract, introduction, findings, and a discussion section canvassing the implications of the new dates, which contradicted previous assumptions about the depth of settlement in the region. It concluded by outlining the next phase of the work.

While the article built up to the significance of the findings for activity within the discipline of archaeology, the booklet addressed itself to its readers' interest in their own cultural past. The significance of its findings, therefore, was explicit early on: "that Aboriginal occupation of the ranges goes back more than 20,000 years" (Bird & Frankel 1998, p. 1). As in the academic article, the middle section discusses the earlier research in the area, then the present research. Unlike the academic article, however, the booklet does not confine itself to the testing of dates, but is broader and more informative. It describes the styles of rock art present and what can be inferred from the excavation about the lifeways of the early inhabitants—their environment, their diet, and their tools. The text finishes with a section on site management, stressing the need for cooperation in protecting the sites and reporting new discoveries. The second half of the booklet comprises 48 slides, each with a paragraph of explanatory text, as a resource for those involved in the project to disseminate its work.

The article in *National Geographic* begins with a paragraph superimposed upon a full page photograph, identifying the nature and age of the find, and the site. There follows a narrative of discovery, an explanation of the process of site formation, a description of the lifeways inferred from the remains that have been found, and a discussion of the problems of interpreting the finds.

Interactions with the audience

In any piece of writing, the writer interacts with the audience either overtly or covertly, and in these pieces we see a range of interactions, from the stylized distance conventional in academic articles, to the equally fictitious proximity constructed in the popular magazine. Rather like actors blinded by the footlights but nonetheless acutely conscious of the audience seated around, academic authors acknowledge their readers—the other members of their discipline—in a number of ways, all of them indirect. There is the abstract, which flags the work for others who will search the databases. There is the account of earlier work by the authors' predecessors, and the in-text references by which colleagues are shown to their seats in the first few rows. The significance of the data being reported lies in its implications for the work of these others, who are told about these implications without being directly addressed. The authorial "we" surfaces only in the acknowledgements, where it is difficult to envisage a graceful alternative.

In the brief space of the *National Geographic* article, by contrast, "I" is used 36 times! This is consistent with an early editor's prescription for communicating the "living, breathing, human interest truth about this great world of ours…. Each [article] was [to be] an accurate, eyewitness, firsthand account" (Grosvenor, 1957, pp. 23-4, quoted in Gero & Root 1990, p. 21). "You" appears only once, but there are other devices that work to make the audience feel that they are present in the writing. For example, the writer identifies himself with his readers, and invites them to share his feelings as he made his discovery: "I was

just a geologist looking for a retirement hobby [just regular folks, like you]… poking around….I stumbled across ….I was thrilled, but I had no idea…. Imagine my feelings…" (Keyser 2000, p. 78). At the same time, readers are brought closer to the subject matter by photographs of researchers at work on the site. Moreover, the writer identifies his subject with both himself and his readers, by describing his project as "the continuing search for our origins." Again, this identification is a matter of policy at *National Geographic*, according to a study of the magazine by Gero and Root (1990). This, in turn, is supported by dramatic imaginative drawings of hominids in human-like social groupings, with familiar gendered behavior (based on nothing in the article!): males are advancing with weapons and threats, defending against some unseen menace, a group of females and children huddled in the background.

In the booklet, the authors are not a strong presence, but they do come out from time to time. They use the first person roughly once per page, but mainly to comment on what they can or cannot conclude from their findings, rather than to tell a story. There are some devices that invite the reader to identify with the project, but not many. The cover is a photo of some rock art, which invokes the ethnic heritage of the reader, and it says the booklet was "prepared for Aboriginal Affairs Victoria and Aboriginal Communities in Western Victoria." There are photos, too, of Aboriginal participants in the project. The study is introduced, on p. 1, as "A recent research project involving local Aboriginal communities…", although the academic article describing the same research makes no mention of this fact. Finally, the booklet discusses the implications for heritage management, and instructs the client group on their responsibilities in this regard: "Any artifacts found should be left in place…" (Bird & Frankel 1998, p. 3).

Accommodation to the audience's needs

Envisaging a particular audience, each writer provides the information and explanations the readers will need in order to

follow the presentation, and no more. The academic article uses many technical terms, the others few, and while the academic article provides no explanation of things unlikely to be known to lay readers—because none are expected to read it—the others take care to put readers in the picture with visual aids and verbal explanations.

The booklet, for example, sets the scene with colored photographs that locate each research site in space. More photographs show people at work, the methods used, and the objects found. A time line locates the research in time, while colored maps show how the environment has changed. The booklet explains several unfamiliar concepts: what archaeologists mean by "recent," sources of site disturbance, processes of site formation and of contamination, behaviors associated with particular types of remains, changes in environment, methods of making pigment for rock art, and the methods of tool making and functions of the tools. None of this is needed by readers of the academic article on the same research project, and none of it is offered there.

Like the booklet, the magazine article offers explanations that will help a lay audience to appreciate the meaning and significance of the information. Together with an inset timeline, verbal explanations focus on the time scale ("*A. robustus* lived successfully for a million years—eight times the reign so far of modern humans." Keyser 2000, p. 79), physical and behavioral comparisons with modern humans, site formation, and the process of archaeological reasoning from finds. Another strategy that lends immediacy to the information is the presentation of the hominids' adaptation to their environment in the form of a narrative. "About 2.5 million years ago southern Africa was drying….the forest largely turned into grassland….For *A. robustus*…this meant living on tough foods like roots, tubers, and seeds instead of softer foods like fruit. The hominids developed large jaws and molars to handle this fare…" (Keyser 2000, p. 81).

Also like the booklet, the magazine article makes much use of pictures and diagrams. There are color photographs of the site,

of people at work, and of their finds, as well as drawings, diagrams, and an artist's imagined reconstructions. Maps take the reader into the site, and a simple representative drawing of a cross-section of the landscape (complete with grass) shows how a debris cave is formed. And where anatomical features of the hominids are illustrated—skulls and muscles—they are juxtaposed with those of modern humans.

Although the academic article has illustrations, they are of a very different sort: aimed at locating the information in the work of the discipline, rather than in time and space. The schematic map lacks any textural features that could suggest a physical place. The data are identified by technical terms, and tabulated for scientific comparison under headings such as square, spit, sample number, lab number, radiocarbon date, and calibrated range. For two of the sites, the finds are plotted in a figure with years BP on a vertical axis, and depth below surface on the horizontal axis. These visual aids are ones that would help fellow scientists—and only fellow scientists—to understand the meaning and significance of the information.

Language

In their structure, information, and visual aids, then, the publications were demonstrably designed for different kinds of readers. In their language, too, this was to prove the case; but to examine this, we needed to establish some metalanguage with which to talk about the varieties of style that we encountered. While I drew on Joseph Williams and on systemic functional linguistics for this, I tried to devise economical, non-technical explanations as far as possible. It was necessary to establish the basic terminology of subject and verb, on which Australian students are typically quite shaky. I told them that an English sentence usually tells us that "someone or something is or does something"; the someone or something is the subject, and what they are or do is the verb. Grammarians will see many things lacking in this rather primitive formulation, but it does the job.

Readability

As was to be expected, technical jargon was common in the journal article but rare in the others. However, the students' expectation that "plain English" meant short sentences was not borne out. In the booklet, sentences were generally shorter than in the academic article (1/2 to 2/3 as long), but in *National Geographic*, which certainly "felt" the most readable of the three, the sentences were often longer than in the academic article, without detracting from readability. For example, Keyser (2000) explains why his fossils are found only in caves:

> One popular theory is that in order to avoid competition from scavengers like hyenas, leopards ate their prey in trees that clustered near caves, and the remains of their meals fell into the cave entrances. [35 words] I think it's more likely that the cats cached their prey in the caves. (p.77)

What seemed to distinguish less from more accessible writing was not the length or complexity of sentences, but the sense of engagement communicated—a greater or lesser degree of distance both between the author and the research, and between the author and the audience. To show the students how language choices contributed to this distance, I asked them to think about the processing demands made on the reader.

Introducing some metalanguage: density and grammatical metaphor

An audience's comprehension depends partly on what they already know about the field of study, the topic, and/or the technical terminology. Processing is also affected, however, by how tightly ideas are packed into a sentence. One measure of this is lexical density, or the proportion of words in a sentence that must be attended to, an imprecise but useful notion (Halliday 1985, pp. 61-75). Even more important, however, is the degree of abstraction in the writing. Academic writing achieves a high degree of abstraction by rolling lots of actions into nouns, which are then allowed to stand for that whole complex of activities:

for example, industrialization, urbanization, excavation, population explosion, theory, structure, data, results. In archaeology, a term like "desertification" conveys a whole complex and gradual process, but only to someone who already knows what it means.

When one of these is used as the grammatical subject of a sentence, it is not literally true, because the various actors in the process have disappeared into the word, and what remains visible is not capable of agency. For example, data cannot really show something; when we say "the data show x," we really mean that people infer x from the data. In speaking of an inanimate thing or a process as if it could do things, we are speaking metaphorically; we are making the listener or reader reconstruct who actually did what in that process—and this can be difficult. (For more on this, see Halliday 1989; for a discussion of grammatical metaphor in writing about history, see Eggins et al. 1987; Rubino 1989; for discussions addressed to students, without invoking systemics, see Booth, Colomb, & Williams 1995; Williams 1995; for an account of teaching the ideas of density and grammatical metaphor in another context, see Chanock 1999.)

To give the students an example within their experience, I offered them this sentence (the numbers indicate important words, as an indication of density):

<div align="center">

1   2   3   4

"Desertification forced pastoralists south."

</div>

We can see how dense this is, both lexically and cognitively, if we unpack it to show who did what:

<div align="center">

1   2   3   4

"Cattle-keepers moved south because their traditional grazing

5   6

lands had turned into desert."

</div>

This version, congruent with our experience that *people* do things, is half as dense as the previous one, with 6 out of 12 words that need to be attended to. Of course, Archaeology students do not need to unpack this sentence, as they already know what it means; but when I gave them a sentence of exactly the same structure, about something they did not know about, they could see the problem:

"Nominalization increases sophistication in writing."

They really did need this to be unpacked, to say who does what:

"If you use a noun to describe a process, you make your writing sound more sophisticated."

To underline the difference that congruent grammatical subjects make to ease of processing, I showed the students my record of the subjects and verbs that the speakers had used in their seminar presentations. They saw that the presentation they had found most difficult to comprehend had used a lot of inanimate subjects, while the most accessible had used animate ones (Table 2, subjects in bold):

Table 2

Least accessible	Most accessible
I shall try to argue...	People were living in...
These **arguments** are based on...	**People** were eating off...
An important **point** is...	of very plain china...
Material culture plays a role...	The **people** were kind of...
Gender has always been involved...	having a regression...
Naturalized views were rejected...	**They** were going back to...
The **discipline** was attacked...	**This** seemed to me...
Gender ideology is seen...	**It** looked a lot like...
A **framework** was developed...	**It** got me started looking at...

We noted two other features of the more accessible presentation, as well, that created a sense of engagement with both the subject matter and the audience. First, it was a narrative of the presenter's thinking about a problem; by unfolding her thought process in this way, she invited the audience to go along with her. Second, this effect was enhanced by her use of the first person – "I"and"me."

Density and grammatical metaphor in the texts

When we counted the important words per sentence in the first few paragraphs of each text, we were surprised to find that the texts for non-specialist readers were not less dense than the scholarly journal article. The stakeholders' booklet was about the same – one word in two required attention, on average – but the *National Geographic* piece was actually higher, ranging from 1/2 to 2/3. If it was more demanding, then, in terms of density (as well as sentence length), what was it that made it more readable?

The impressionistic answer to this is that it was livelier, and the grammatical explanation lay in the grammatical subjects the author had chosen. While the journal article had a low proportion of animate subjects, and the stakeholders' booklet had a low to medium proportion, the proportion in *National Geographic* was medium to high, e.g.:

Table 3

Journal article	Stakeholders' booklet	Magazine article
Reports were produced	**Phases**... can be identified	the **site** has yielded
Much...**work** remains unpublished	The oldest **art**...comprises	**protohumans** became
It is...unfortunate	**Pigment** would have been made	**I** found
The **program** was never brought to a proper conclusion	Bar **motifs** are...important	**I** stumbled
The **project** focuses	Human **figures** are also found	**I** had
Establishing a framework was considered	**Sites** are...dominated	**I** would find
	The drawing **phase** follows	**We've** excavated
	We do not know	**Australopithecus** lived

Moreover, in *National Geographic*, the subject was often the author himself, and like the seminar presenter mentioned above, he crafted his piece as a narrative—this time, a narrative of discovery. The narrative form, generally considered the most natural and least demanding, seemed to balance the other demands made by the length and density of sentences.

The booklet was, perhaps, the best example of plain English, because it *was* plain, where the *National Geographic* piece was not. The booklet's authors made their findings more accessible by avoiding technical terminology, and by putting much of the information into visual form. They did not, however, use any of the devices that characterize a popularization, such as personalizing the writing, or recasting it as a narrative with animate subjects. Imagination plays no part in the writing. The result of this restraint—the authors describing mainly what was present at the sites, and much less often guessing what the occupants had done—is that the booklet comes across as scientific, and also somewhat sluggish.

I checked whether passive constructions were partly responsible for this sluggishness, but found active verbs in the majority. Even in these, however, there was often very little sense of activity, because they were not about actions, but natural processes:

> The **deposits** *built* up….
> **Conditions** *were getting* wetter….
> **Pieces** of charcoal *may have fallen*…
> The **climate** *started* to improve….
> The **bedrock** *slopes*….
> **Water** *dripped*….

When it comes to describing the archaeologists' work, the active verbs denote a little more activity, but only a little; and when the agents of these verbs are all inanimate, the overall effect is static.

> The **survey** *conducted*…
> **Work** *remains*….
> **Archaeology** *provided*….
> **this** *should provide*….
> [the] **project** *focuses*…

The problem of sluggishness is combated, in *National Geographic*, by presenting an adventurous narrative of the scientists' and writers' experiences. As Gero and Root, who have studied the magazine's style, observe, "the archaeologists pictured in *National Geographic* exhibit extraordinary hyperactivity. Photographs depict archaeologists crawling, clambering, climbing, scaling, burrowing, swimming, diving, slinging sledgehammers, driving dog teams, and more, all in the direct line of duty" (1990, p. 27). We can compare the level of activity described by verbs like these with the likes of "slopes," "dripped," or "remains," in my list.

Gero and Root do not, however, endorse this strategy of foregrounding the adventures of the discoverer to make up for the inertia of what is discovered, for they point out that it makes for "an absurdly improbable dramatization of doing archaeology" (1990, p. 27). For this reason it would not be sensible to recommend to our students, as so many books on writing do, that they should always choose vivid, vigorous verbs; in the stakeholders' booklet, drama is eschewed in favor of a plain, accessible account.

The choice of active or passive verbs, and the length and complexity of sentences did not prove very good indicators of how direct, engaged, or vivid an impression the text would actually convey. This depended more on whether the author addressed the audience, and told them stories: narratives of discovery, of reasoning, or of the doings of animated beings in days gone by.

For scholars who are addressing non-specialist audiences, then, we were able to identify a range of ways in which they can make their presentations both easier to comprehend, and more engaging:

- A moderate degree of density in each sentence
- Avoidance, or else explanation of, technical terms
- Animate subjects, where possible, with verbs denoting activity, where possible
- Use of the first person

While some students will gather intuitively that writers and speakers make particular kinds of choices that maintain or close the distance between themselves and their audience, and between themselves and their subject matter, others may not realize that this is a matter of craft, and, as such, is something they can learn to control. Even when they do realize this, they still need to pinpoint what those choices are, and why they have the effects they have.

Conclusion

For students whose writing has developed by adjusting to feedback on what teachers in their discipline approve of, it is important to focus more explicitly on audiences beyond the essay context: on who these audiences are, what they need, and what they are likely to appreciate. The situation of writing as an undergraduate is necessarily artificial, and the imagined audience for an essay – i.e., a reader in the discipline who knows less than the essay writer – does not actually exist. When a course provides opportunities to look beyond the essay genre, therefore, we should exploit these if we can. In this paper, I have shown how a focus on the craft of creating texts that work with different audiences can be introduced by discipline teachers or writing teachers, in just a few hours (our class takes 3), whether or not the students have had foundational instruction in writing.

References

Bird, C. & Frankel, D. (1998). *Aboriginal sites in the Grampians-Gariwerd Region.* Melbourne: La Trobe University.

Bird, C., Frankel, D. & Van Waarden, N. (1998). New radiocarbon determinations from the Grampians-Gariwerd region, western Victoria. *Archaeology in Oceania 33*, 31-36.

Booth, W., Colomb, G. & Williams, J. (1995). *The craft of research.* Chicago: University of Chicago Press.

Chanock, K. (1999). Using Systemic Functional Linguistics in university teaching: A postgraduate class on making writing more 'readable'. *Monash University Linguistics Papers 2* (1), 61-68.

Eggins, S., Wignell, P. & Martin, J. (1987). The discourse of History: Distancing the recoverable past. *Working Papers in Linguistics 5*. Dept. of Linguistics, University of Sydney, 66-116.

Gero, J. and Root, D. (1990). Public presentations and private concerns: Archaeology in the pages of *National Geographic*. In P. Gathercole & D. Lowenthal (Eds.), *The politics of the past* (pp. 19-37). London: Unwin Hyman.

Grosvenor, G. (1957). *National Geographic Society and its magazine: A history.* Washington, D.C.: National Geographic Society.

Halliday, M. (1985). *Spoken and written language*. Geelong: Deakin University.

Halliday, M. (1989). Some grammatical problems in scientific English. *Australian Review of Applied Linguistics Series 5* (6), 13-37.

Keyser, A. (2000). New finds in South Africa. *National Geographic* 197 (5), 76-83.

Rubino, A. (1989). The discourse of History: a cross cultural perspective. *Australian Review of Applied Linguistics* Series 5 (6), 70-108.

Williams, J. (1995*). Style: Toward clarity and grace*; with two chapters coauthored by G. Colomb. Chicago : University of Chicago Press.