Disciplinary voices

Interactions in research writing

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The concept of voice has become central to studies of discourse, composition, and literature, but in this paper I want to shift its meaning a little to explore an area where voice is thought to play only a minor role: that of academic writing. I intend here to explore the idea of 'disciplinary voice' by focusing on the interpersonal features of academic writing and elaborating how writers position themselves and their readers. Essentially, I believe the idea of voice can shed light on aspects of disciplinary argument and am interested to see what these features tell us about writers' notions of appropriate relationships and what this means for writing in the disciplines. I will begin by looking briefly at the notion of voice, and go on to sketch an interactional model based on the ideas of *stance*, or how writers convey their attitudes and credibility, and *engagement*, or the ways they bring their readers into the discourse. I will then show how the choices writers make from these systems construct authorial voice, academic arguments, and the disciplines themselves.

1. The notion of Voice

The term 'voice' is often used to refer to the ways writers express their personal views, authoritativeness, and presence. It is common for teachers to say, "I can really hear your voice in this piece of writing", for example, meaning that they have a strong sense of the writer's views. Academic writing, however, is a site where this sense of voice is generally unwelcome as readers often look for evidence rather than opinion. As a result, students learn to efface their personalities when they write and science has numerous ways of removing the author from a text and distancing interpretation from explanation.

But while this meaning of 'voice' has attracted most attention in the literature, it isn't the one I am concerned with here. I want to emphasize that writing always has voice in the sense that it conveys a representation of the writer. In this sense,

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writing can't **not** have voice. 'Voice', then, is not an optional extra but an aspect of how we position ourselves in relation to our communities. In other words, we should see all writing as containing 'voice' in the Bakhtinian sense of 'voice types' which locate users culturally and historically. As writers we show who we are by the choices we make in our texts in much the same way that our speech, clothes and body language index our social class, occupation, group memberships and so on. Equally, however, writers do not construct these self-representations from an infinite range of possibilities, just pulling on an identity from the wardrobe, but draw on culturally available resources when they write. They make choices which align them with one discipline rather than another.

In other words, we achieve a voice through the ways we negotiate representations of ourselves and take on the discourses of our communities. So this notion of voice as self-representation subsumes the traditional view of voice as authoritativeness. But it does not eradicate personal choice in how we express ourselves. We still decide how aggressive, conciliatory, confident, or self-effacing we want to be. In other words, we do not sacrifice a personal voice by writing in the disciplines — we just recognise the boundaries which constrain it and which give it meaning in contrast to other possible choices.

2. Disciplinary voices

The idea that voice is essentially social rather than personal is an important one for understanding academic writing and the ways persuasion is achieved in different fields. It also enables us as teachers to identify the features typical of writing in particular disciplines to better help our students control valued ways of writing. The concept of 'voice' helps us to understand how writers typically position themselves and their work in relation to other members of their groups. Writers set out their ideas to negotiate a credible account of themselves and their work by claiming solidarity with readers, evaluating ideas and acknowledging alternative views, so that controlling their disciplinary voice, or level of authorized personality in a text, becomes central to building a convincing discourse. This view sees academics as not only producing texts that plausibly represent an external reality, but using language to acknowledge, construct and negotiate social relations. Put succinctly, every successful academic text displays the writer's awareness of both its readers and its consequences.

Persuasion, then, is accomplished with language; but it is language that demonstrates legitimacy. Writers must recognize and make choices from the rhetorical options available in their fields so they can convey a persona and appeal to readers from within the boundaries of their disciplines. The notion of voice is therefore

closely related to that of interaction, and especially to the ways we convey our personal feelings and assessments.

This understanding of voice has become a heavily populated area of research in recent years and has been conducted under various labels, including 'evaluation' (Hunston 1994, Hunston and Thompson 2000), 'intensity' (Labov 1984), 'affect' (Ochs 1989), 'evidentiality' (Chafe and Nichols 1986), 'hedging' (Hyland 1998), and 'stance' (Biber and Finegan 1989; Conrad and Biber 2000). The expression of evaluation and stance in academic research writing has been especially productive (e.g. Bondi 1999; Hunston 1994; Hyland 2001a) and much of this work focuses on features such as the use of hedging devices to express tentativeness and possibility (Hyland 1998), authorial self-mention (Hyland 2001b) and reporting verbs (Thompson and Ye 1991; Hyland 2000). This line of research has been extended by looking at how authors actively try to involve the reader in the communication process through the use of addressee features (Hyland 2001) and directives (Hyland 2002a).

All of these features in some way address the idea of 'positioning' and in academic writing this means adopting a point of view to both the issues discussed in the text and to others who hold points of view on those issues. Writers have to display a competence as disciplinary insiders to be persuasive and this is, at least in part, achieved through a writer-reader dialogue which situates both their research and themselves. This means adopting a disciplinary voice; using language which establishes relationships between people, and between people and ideas. In other words, claims for the significance and originality of research have to be balanced against the convictions and expectations of readers, taking into account their likely objections, background knowledge, rhetorical expectations and processing needs. All this is done within the broad constraints of disciplinary discourses.

3. Stance and engagement

Interactions are accomplished in academic writing through the systems of stance and engagement. **Stance** refers to the writer's textual 'voice' or community recognised personality, an attitudinal, writer-oriented function which concerns the ways writers present themselves and convey their judgements, opinions, and commitments. **Engagement**, on the other hand, is more of an alignment function, concerning the ways that writers rhetorically recognise the presence of their readers to actively pull them along with the argument, include them as discourse participants, and guide them to interpretations (Hyland 2001a). Together, they recognise that statements need to both present the writer and his or her ideas as well as anticipate readers' possible objections and alternative positions, incorporating an appropriate awareness of self and audience.

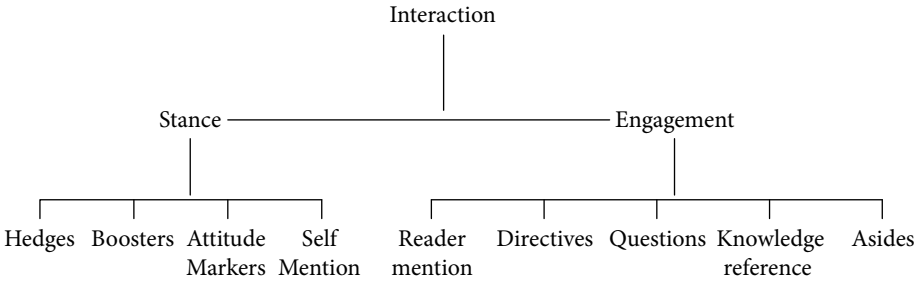

Figure 1. Key resources of academic interaction

Stance and engagement are two sides of the same coin and, because they both contribute to the interpersonal dimension of discourse, there are overlaps between them. Discrete categories inevitably conceal the fact that forms often perform more than one function at once because, in developing their arguments, writers are simultaneously trying to set out a claim, comment on its truth, establish solidarity and represent their credibility. In addition, the marking of stance and engagement is a highly contextual matter as writers can employ evaluations through a shared attitude towards particular methods or theoretical orientations which may be opaque to the analyst. Nor is it always marked by words at all: a writer's decision not to draw an obvious conclusion from an argument, for example, may be read by peers as a significant absence (Swales 2004). The present study is therefore restricted to grammatical devices that express stance and engagement, identifying predominant meanings to compare the rhetorical patterns in different discourse communities. The key resources by which these interactional macro-functions are realised are summarised in Figure 1.

Together, these resources have a dialogic purpose in that they refer to, anticipate, or otherwise take up the actual or anticipated voices and positions of potential readers (Bakhtin 1986). Distinguishing between these two dimensions is a useful starting point from which to explore how voice operates and how interaction contributes to persuasion in academic discourse.

4. Corpus and Methods

The description has emerged through studies I have conducted over the last decade into a corpus of 240 research articles of 1.4 million words. This corpus was selected to represent a broad cross-section of academic practice and comprises three papers from each of ten leading journals in eight disciplines. The fields are mechanical engineering (ME), electrical engineering (EE), marketing (Mk), philosophy (Phil), sociology (Soc), applied linguistics (AL), physics (Phy) and microbiology (Bio).

These sub-corpora were searched for 320 potentially productive items based on previous research, grammars and the most frequently occurring items in the texts themselves. The analyses were supplemented with interviews with experienced writers from the target disciplines to discover respondents' attitudes about writing and their own discoursal preferences and practices. The next sections briefly sketch out the key resources of stance and engagement. Then I go on to discuss what differences in their use tell us about the epistemological and social beliefs of disciplinary cultures.

5. Stance and writer-oriented interaction

Stance concerns **writer-oriented features** of interaction and conveys different kinds of personal feelings and assessments, including attitudes that writers have about particular information, how certain they are about its veracity, how they obtained access to it, and what perspective they are taking to it and to the reader. I take it to have three main components: *evidentiality*, *affect* and *presence*. **Evidentiality** refers to the writer's expressed commitment to the reliability of the propositions he or she presents and their potential impact on the reader; **affect** involves a broad range of personal and professional attitudes towards what is said; and **presence** simply concerns the extent to which the writer chooses to project him or herself into the text. It is comprised of four elements: *hedges*, *boosters*, *attitude markers* and *self-mention*, which I will briefly describe below.

Hedges are devices which withhold complete commitment to a proposition, allowing information to be presented as an opinion rather than fact (Hyland 1998). They imply that a claim is based on plausible reasoning rather than certain knowledge and so both indicate the degree of confidence it might be wise to attribute to a claim while allowing writers to open a discursive space for readers to dispute interpretations. This is an example from biology:

(1) We propose several *possible* reasons for this: (1) pressures increase upon freezing and thus *may* force bubbles back into solution at the time of thaw; (2) since xylem water is degassed by freezing there is *a strong tendency* for bubbles to redissolve at the time of thaw; and (3) xylem water *may* flow in advance of ice formation and *could* refill some of the previously embolized vessels. (Bio)

Boosters, on the other hand, allow writers to express their certainty in what they say and to mark involvement with the topic and solidarity with their audience (Hyland 2005). While they restrict opportunities for alternative voices, they also often stress shared information and group membership as we tend to get behind

those ideas which have a good chance of being accepted. Like hedges, they often occur in clusters, underlining the writer's conviction in an argument:

(2) *Of course*, I do not contend that there are no historical contingencies. On the contrary, the role of contingencies *should be* stressed. If there were no contingencies, there would be no innovations, whether scientific or moral. On this point, we *must definitely* stop following Hegel's intuitions. *Nobody* can foretell that tomorrow totalitarian regimes will not reappear and eventually spread over the planet. (Soc)

Both boosters and hedges represent a writer's response to the potential viewpoints of readers and an acknowledgement of disciplinary norms of appropriate argument. Both strategies emphasise that statements don't just communicate ideas, but also the writer's attitude to them and to readers.

Attitude markers indicate the writer's affective, rather than epistemic, attitude to propositions, conveying surprise, agreement, importance, frustration, and so on, rather than commitment. Attitude can be expressed in a wide range of ways, as Martin (2000) and White (2002) have attempted to show by mapping the options available to speakers in conveying *affect* in their model of appraisal. Attitude is most explicitly signalled by attitude verbs, sentence adverbs, and adjectives, and this marking of attitude in academic writing allows writers both take a stand and align themselves with disciplinary-oriented value positions.

(3) No doubt there are a number of criticisms that adherents to the justice-based paradigm might make of the moral model Dworkin proposes. Still, *I believe that Dworkin's* investment model has *remarkable* resonance and *extraordinary* potential power. *The worry I have* about Dworkin's proposal arises from inside his model. It is *interesting* right off the bat to notice that … (Phil)

Self-mention refers to the use of *first person pronouns* and *possessive adjectives* to present information (Hyland 2001b). Presenting a discoursal self is central to the writing process (Ivanic 1998), and we cannot avoid projecting an impression of ourselves and how we stand in relation to our arguments, discipline, and readers. The presence or absence of explicit author reference is a conscious choice by writers to adopt a particular stance and disciplinary-situated authorial identity.

(4) *Our* investigation of writing at the local government office comprised an analysis of the norms and attitudes of each individual. *We* asked the different employees about their norms concerning a good text and a good writer. *We* also asked them about their attitudes toward writing at work. What *we* found interesting about this context, however, is the degree of uniformity of their norms and attitudes. (Soc)

6. Engagement and reader-oriented interaction

Unlike stance, the ways writers bring **readers** into the discourse have been relatively neglected in the literature. Engagement seeks to build a connection with readers to both stress solidarity and position them by anticipating possible objections and guiding their thinking. Based on their previous experiences with texts, writers make predictions about how readers are likely to react to their arguments and craft their texts to explicitly address them at certain points (Hyland 2001a). Engagement markers include *reader pronouns, personal asides, references to sharedness, directives* and *questions*.

Reader pronouns offer the most explicit ways of bringing readers into a discourse but *you* and *your* are rare in research articles, perhaps because they imply a separation between participants, rather than seeking connections, and this helps to account for the high use of inclusive *we*. There are several motivations for using this form, but most centrally it identifies the reader as someone who shares similar understandings to the writer as a member of the same discipline. At the same time as expressing peer solidarity, however, *we* also anticipates reader objections, presuming mutual understandings while weaving the potential point of view of the reader into the argument.

Directives are mainly expressed through *imperatives* and *obligation modals* and they direct readers to engage in three main kinds of activity:

- *textual acts*: direct readers to another part of the text or to another text (e.g. *see Smith 1999, refer to Table 2*, etc.)
- *physical acts* direct readers how to carry out some action in the real-world (e.g. *open the valve, heat the mixture*).
- *cognitive acts* instruct readers how to interpret an argument, explicitly positioning readers by encouraging them to *note, concede* or *consider* some argument or claim in the text.

Personal asides allow writers to address readers directly by briefly interrupting the argument to offer a comment on what has been said. By turning to the reader in mid-flow, the writer acknowledges and responds to an active audience, often to initiate a brief dialogue that is largely interpersonal, adding more to the writer-reader relationship than to propositional development:

(5) And — as I believe many TESOL professionals will readily acknowledge — critical thinking has now begun to make its mark, particularly in the area of L2 composition. (AL)

(6) He above all provoked the mistrust of academics, both because of his trenchant opinions (often, it is true, insufficiently thought out) and his political opinions. (Soc)

Appeals to shared knowledge are marked by explicit signals asking readers to recognise something as familiar or accepted. These constructions of solidarity ask readers to identify with particular views and in so doing construct readers by assigning to them a role in creating the argument, acknowledging their contribution while moving the focus of the discourse away from the writer to shape the role of the reader:

(7) It is, *of course*, possible to realise capacitors using the inter-metal, linearmetal-poly, metal-diffusion, or poly diffusion (with an SiO2 dielectric) capacitances. (EE)

(8) This tendency *obviously* reflects the preponderance of brand-image advertising in fashion merchandising. (Mkt)

Questions are the main strategy of dialogic involvement, inviting engagement, encouraging curiosity and bringing interlocutors into an arena where they can be led to the writer's viewpoint (Hyland 2002b). Over 80% of questions in the corpus, however, were rhetorical, presenting an opinion as an interrogative so the reader appears to be the judge, but actually expecting no response. This is most apparent when writers answer their question immediately:

(9) Is it, in fact, necessary to choose between nurture and nature? My contention is that it is not. (Soc)

(10) What do these two have in common, one might ask? The answer is that they share the same politics. (AL)

The process of audience evaluation involved in making choices from the options of stance and engagement clearly assists writers to construct an effective voice in their arguments, but in addition, it reveals something of how language is related to specific institutional contexts. In the remainder of this paper I explore what these choices tell us about disciplinary communities.

7. Stance and engagement: Disciplinary practices

Overall, it appears that the expression of stance and engagement is an important feature of academic writing, with about one occurrence every 28 words. Table 1 shows that stance markers were about five times more common than engagement features and that hedges were by far the most frequent feature of writer perspective in the corpus, reflecting the critical importance of distinguishing fact from

Table 1. Stance and engagement features in the research articles

Stance	Items per 1000 words	% of total	Engagement	Items per 1000 words	% of total
Hedges	14.5	46.6	Reader pronouns	2.9	49.1
Attitude Markers	6.4	20.5	Directives	1.9	32.3
Boosters	5.8	19.2	Questions	0.5	8.5
Self Mention	4.2	13.7	Shared knowledge ref	0.5	8.2
			Asides	0.1	1.9
Totals	30.9	100		5.9	100

opinion and the need for writers to present their claims with appropriate caution and regard to colleagues' views.

When we compare these frequencies with other common features of published academic writing, we find that overt interaction markers are an important element of academic prose. Biber et al (1999), for instance, record 18.5 cases per thousand words for passive voice constructions and 20 per thousand words for past tense verbs in a large corpus of academic writing. More interesting, however, are the disciplinary distributions. Table 2 shows the density of features in each discipline normalised to a text length of 1,000 words. As can be seen, the more discursive 'soft' fields of philosophy, marketing, sociology and applied linguistics contained the highest proportion of interactional markers with some 75% more items than the engineering and science papers.

I do not want to dwell on these frequencies, but it is clear that writers in different disciplines represent themselves, their work and their readers in different ways, with those in the humanities and social sciences taking far more explicitly involved and personal positions than those in the science and engineering fields. We do not have to search far for an explanation for this. As I noted at the beginning of this paper, the resources of language mediate their contexts, working to construe the characteristic structures of knowledge domains and argument forms of the disciplines that create them. Most centrally, these discourse conventions embody the particular sets of values, practices and beliefs which are held by, and help define, academic disciplines.

In broad terms, rhetorical practices are inextricably related to the purposes of the disciplines. Natural scientists tend to see their goal as producing public knowledge able to withstand the rigours of falsifiability and developed through relatively steady cumulative growth. The fact that this research often occupies considerable investments in money, training, equipment, and expertise means it is frequently concentrated at a few sites and commits scientists to involvement in specific research areas for many years. Problems therefore emerge in an established context so that readers are often familiar with prior texts and research, and that the novelty

Table 2. Stance and engagement features by discipline (per 1,000 words)

Feature	Phil	Soc	AL	Mk	Phy	Bio	ME	EE	Total
Stance	**42.8**	**31.1**	**37.2**	**39.5**	**25.0**	**23.8**	**19.8**	**21.6**	**30.9**
Hedges	18.5	14.7	18.0	20.0	9.6	13.6	8.2	9.6	14.5
Attitude Mkrs	8.9	7.0	8.6	6.9	3.9	2.9	5.6	5.5	6.4
Boosters	9.7	5.1	6.2	7.1	6.0	3.9	5.0	3.2	5.8
Self Mention	5.7	4.3	4.4	5.5	5.5	3.4	1.0	3.3	4.2
Engagement	**16.3**	**5.1**	**5.0**	**3.2**	**4.9**	**1.6**	**2.8**	**4.3**	**5.9**
Reader ref	11.0	2.3	1.9	1.1	2.1	0.1	0.5	1.0	2.9
Directives	2.6	1.6	2.0	1.3	2.1	1.3	2.0	2.9	1.9
Questions	1.4	0.7	0.5	0.3	0.1	0.1	0.1	0.0	0.5
Shared knowledge	1.0	0.4	0.6	0.4	0.5	0.1	0.3	0.4	0.5
Asides	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Totals	**59.1**	**36.2**	**42.2**	**42.7**	**29.9**	**25.4**	**22.6**	**25.9**	**36.8**

and significance of contributions can be easily recognised. The soft-knowledge domains, in contrast, produce discourses which often recast knowledge as sympathetic understanding, promoting tolerance in readers through an ethical rather than cognitive progression (Hyland 2000).

8. Authorial involvement in knowledge construction

While there are clear dangers in reifying the ideologies of practitioners, these broad ontological representations have real rhetorical effects which are clear in the use of stance markers and particularly apparent in the use of hedges and self mention.

Both **hedges** and **boosters** tended to be more common in the humanities and social science papers with about 2½ times as many devices overall and hedges particularly strongly represented. This is mainly because the soft-knowledge fields are typically more interpretative and less abstract than the hard sciences and their forms of argument rely more on a dialogic engagement and more explicit recognition of alternative voices. Research is influenced far more by contextual factors, there is less control of variables, more diversity of research outcomes, and generally fewer unequivocal bases for accepting claims. Writers in the soft fields cannot therefore report their research with the same confidence of shared assumptions. They must rely far more on focusing readers on the claim-making negotiations of the discourse community, the arguments themselves, rather than relatively unmediated real-world phenomena.

This tends to mean that arguments have to be expressed more cautiously in the soft disciplines, remaining open to heteroglossic diversity in the community by using more hedges:

(11) Wilson leaves us disappointed, *it seems to me*, in the sense that his theory is far from being general. (Soc)

(12) *We tentatively suggest that* The Sun's minimalist style creates an impression of working-class language, or restricted code, while the very wordy Times themes remind one of academic, formal discourse. (AL)

The fact that methodologies and results are more open to question also means that writers in the soft fields need to work harder to establish the significance of their work against alternative interpretations. As a result, they also have to restrict, or fend off, possible alternative voices, closing them down using boosters to emphasise the strength of the writer's commitment and thereby convince the reader through the force of the argument. Two comments from informants typify this view:

> *You have to be seen to believe what you say. That they are <u>your</u> arguments. It's what gives you credibility. It's the whole point.* (Phil interview)

> *I'm very much aware that I'm building a façade of authority when I write, I really like to get behind my work and get it out there. Strong. Committed. That's the voice I'm trying to promote, even when I'm uncertain I want to be behind what I say.* (Soc interview)

This kind of commitment is evident in these extracts:

(13) *It is certainly true* that many arguments involve multiple premises. (Phil)

(14) This particular result is *undoubtedly* attributable to the impending incorporation of Hong Kong into the People's Republic of China. (Mk)

In the hard sciences, argument is very different as an important aspect of a positivist-empirical epistemology is that the authority of the individual is subordinated to the authority of the text and facts should be allowed to 'speak for themselves' (Hyland 1998). Writers generally seek to disguise both their interpretative responsibilities and rhetorical identities behind linguistic objectivity. The less frequent use of hedges and boosters is one way of minimising the researcher's role in this process, as is the preference for modal verbs over cognitive verbs such as *think, believe* and *suspect*, which downplay the person making the evaluation and can more easily combine with inanimate subjects:

(15) The theory given above simply provided some insight into the various mechanisms and configurations that *might or might not* yield a polarimetric effect. (Phy)

(16) There was a good correlation between the four values. For V. trifidum, ANOVA showed a significant increase from L to L' and FI, which *could be interpreted* as reflecting the dynamics of fungal colonization. (Bio)

Two scientist informants commented on this kind of use:

> *Of course, I make decisions about the findings I have, but it is more convincing to tie them closely to the results.* (Phy interview)

> *You have to relate what you say to your colleagues and we don't encourage people to go out and nail their colours to the mast as maybe they don't get it published.* (Bio interview)

For similar reasons, we also find different uses of **self mention** across these domains. The reason for this is that strategic use of self-mention allows writers to claim authority by expressing their convictions, emphasizing their contribution to the field, and seeking recognition for their work (Hyland 2001b; Kuo 1999). It sends a clear indication to the reader of the perspective from which statements should be interpreted, distinguishing the writer's own work from that of others. It is not surprising therefore that some 69% of all cases of self-mention were in the humanities and social science papers, with an average of 38 per article, compared with only 17 per paper in science and engineering. Successful communication in the soft fields depends far more on the author's ability to invoke a real writer in the text. As we can see in examples 17 and 18, personal reference is thus a clear indication of the perspective from which a statement should be interpreted, enabling writers to emphasize their own contribution to the field and to seek agreement for it.

(17) I argue that their treatment is superficial because, despite appearances, it relies solely on a sociological, as opposed to an ethical, orientation to develop a response. (Soc)

(18) I bring to bear on the problem my own experience. This experience contains ideas derived from reading I have done which might be relevant to my puzzlement as well as my personal contacts with teaching contexts. (AL)

So in the humanities and social sciences, self-mention can help construct an intelligent, credible, and engaging colleague by presenting an authorial self reflecting an appropriate degree of confidence and authority:

> *Using 'I' emphasizes what you have done. What is yours in any piece of research.. I notice it in papers and use it a lot myself. (Soc interview)*

> *The personal pronoun 'I' is very important in philosophy. It not only tells people that it is your own unique point of view, but that you believe what you are saying. It shows your colleagues where you stand in relation to the issues and in relation to where they stand on them. It marks out the differences.* (Phil interview)

While the first person assists soft discipline authors to make a personal standing in their texts and to demarcate their own work from that of others, hard science

writers are generally seeking to downplay their personal role in the research to highlight the phenomena under study, the replicability of research activities, and the generality of the findings. Research usually consists of conducting experiments to propose solutions to specific disciplinary problems and typically involves familiar procedures, broadly predictable outcomes, and relatively clear criteria of acceptability. By electing to adopt a less intrusive or personal style, they suggest that research outcomes are unaffected by individuals, strengthening the objectivity of their interpretations and subordinating their own voice to that of nature. One of my respondents expressed this view clearly:

> *I feel a paper is stronger if we are allowed to see what was done without 'we did this' and 'we think that'. Of course we know there are researchers there, making interpretations and so on, but this is just assumed. It's part of the background. I'm looking for something interesting in the study and it shouldn't really matter who did what in any case.… In theory anyone should be able follow the same procedures and get the same results. Of course reputation is important and I often look at the writer before I look at a paper, but the important thing is whether the results seem right.* (Bio interview)

9. Participant relationships and interpersonal engagement

In addition to creating an impression of authority, integrity and credibility through choices from the stance options, writers are able to either highlight or downplay the presence of their readers in the text. Engagement devices refer to the various ways writers bring readers into the discourse to relate to them and anticipate their possible objections. As shown in Table 2, these devices were far less frequent than stance items, but exhibited similar variation across disciplines.

Reader pronouns were the most frequent engagement items in the corpus and over 80% of these occurred in the soft discipline papers where they functioned to appeal to scholarly solidarity, presupposing a set of mutual, discipline-identifying understandings linking writer and reader.

(19) Adopting a reflexive and continuously critical approach towards *ourselves* and *our* sociological practices is especially necessary because *our* profession is an all-embracing calling that penetrates *our* self and collective identities, and serves for many of *us* as a functional equivalent of ideology or civil-religion. (Soc)

(20) *We* would expect that over time, plant genotypes that maximize mycorrhizal benefits would be at a selective advantage. (Bio)

In addition, however, reader pronouns also claim authority as well as communality, addressing the reader from a position of confidence as several of my informants noted:

> *I suppose 'we' helps to finesse a positive response–we are all in this together kind of thing. I use it to signal that I am on the same wavelength, drawing on the same assumptions and asking the same questions.* (Mkt Interview)

> *It helps to locate you in a network. It shows that you are just doing and thinking what they might do and think. Or what you would like them to, anyway.* (Soc interview)

By weaving the potential point of view of readers into the discourse, writers are able to claim collegiality and authority as they anticipate reader objections, stepping in to voice their concerns and views. Thus *we* helps guide readers through an argument and towards a preferred interpretation, as can be seen here:

(21) Now that *we* have a plausible theory of depiction, *we* should be able to answer the question of what static images depict. But this turns out to be not at all a straightforward matter. *We* seem, in fact, to be faced with a dilemma. Suppose *we* say that static images can depict movement. This brings *us* into conflict with Currie's account, … (Phil)

(22) Although *we* lack knowledge about a definitive biological function for the transcripts from the 93D locus, their sequences provide *us* with an ideal system to identify a specific transcriptionally active site in embryonic nuclei. (Bio)

Several of my informants were well aware of this more Machiavellian purpose:

> *Part of what you are doing in writing a paper is getting your readers onside, not just getting down a list of facts, but showing that you have similar interests and concerns. That you are looking at issues in much the same way they would, not spelling everything out, but following the same procedures and asking the questions they might have*. (Bio interview)

> *I often use 'we' to include readers. I suppose it brings out something of the collective endeavour, what we all know and want to accomplish. I've never thought of it as a strategy, but I suppose I am trying to lead readers along with me.*(ME interview)

There was an even greater disciplinary imbalance with the use of **questions**, which were almost exclusively confined to the soft fields. Here they served to structure the text and rhetorically position of readers by responding to a question immediately, simultaneously initiating a dialogue to engage readers and closing it to present a claim:

(23) Does the Brain-in-a-vat thereby succeed in including the relation in which it stands to its environment in the extension of its term 'the delusive relation'? There are, I think, compelling reasons to say that it does not. (Phil)

(24) What do these two have in common, one might ask? The answer is that they share the same politics. (AL)

The fact that they reach out to readers was seen as a distraction by my science informants:

> *Questions are quite rare in my field I think. You might find them in textbooks I suppose, but generally we don't use them. They seem rather intrusive, don't they? Too personal. We generally prefer not to be too intrusive.* (ME interview)

> *I am looking for the results in a paper, and to see if the method was sound. I am looking for relevance and that kind of dressing is irrelevant. People don't ask questions as it would be seen as irrelevant. And condescending probably.* (EE interview)

In contrast, the soft knowledge writers saw them as an important way of relating to readers:

> *In my field that's all there are, questions. Putting the main issues in the form of questions is a way of presenting my argument clearly and showing them I am on the same wavelength as them.* (Phil interview)

> *Often I structure the argument by putting the problems that they might ask.* (Mkt interview)

Finally, **directives** were the only interactive feature which occurred more frequently in the science and engineering papers than those in the humanities and social sciences. Generally, explicit engagement is a feature of the soft disciplines, where writers are less able to rely on the explanatory value of accepted procedures, but directives are a potentially risky tactic as they instruct readers to act or see things in a certain way. As a result, most directives in the soft fields were textual, directing readers to a reference rather than informing them how they should interpret an argument. Two of my respondents noted this in their interviews:

> *I am very conscious of using words like 'must' and 'consider' and so on and use them for a purpose. I want to say 'Right, stop here. This is important and I want you to take notice of it'. So I suppose I am trying to take control of the reader and getting them to see things my way.* (Soc interview)

> *I am aware of the effect that an imperative can have so I tend to use the more gentle ones. I don't want to bang them over the head with an argument I want them to reflect on what I'm saying. I use 'consider' and 'let's look at this' rather than something stronger.* (AL interview)

The more linear and problem-oriented approach to knowledge construction in the hard knowledge fields, on the other hand, allows arguments to be formulated in a highly standardised code. This helps explain why cognitive directives, potentially the most threatening type, were overwhelmingly predominant in the natural science corpus. These explicitly position readers by leading them through an argument to the writer's claims (25 / 26) or by emphasising what they should attend to in the argument (27 /28):

(25) *Consider* a sequence of batches in an optimal schedule. (EE)

(26) … a distinction *must be made* between cytogenetic and molecular resolution. (Bio)

(27) What *has to be recognised* is that these issues … (ME)

(28) *It is important* to remember that primary electrons induce x rays. (Phy)

This facilitates succinctness and an economy of expression highly valued by space-conscious editors and information-saturated scientists as several informants noted:

> *I rarely give a lot of attention to the dressing, I look for the meat–the findings — and if the argument is sound. If someone wants to save me time in getting there then that is fine. No, I'm not worried about imperatives leading me through it.* (EE interview)

> *I'm very conscious of how I write and I am happy to use an imperative if it puts my idea over clearly. Often we are trying to work to word limits anyway, squeezing fairly complex arguments into a tight space.* (ME interview)

10. Conclusions

I have argued that all writing has 'voice' and that it is an integral aspect of self-representation in academic discourse. While we can still make decisions about our authoritativeness and presence, the kinds of people we can be in academic writing are very much framed by the options our disciplines make available for author intrusion and reader involvement. The notions of stance and engagement I have suggested here are an attempt to model how writers convey such a voice: the ways they deploy community-sensitive linguistic resources to represent themselves, their positions and their readers. Taken together, these different features are important ways of situating academic arguments in disciplinary communities and of enabling us to present ourselves as competent engineers, sociologists, linguists or whatever.

In other words, by making reference to the writer or the reader, we send a clear signal of membership. Our voice textually constructs both the writer and the reader as people with similar understandings and goals. This not only helps writers persuade their colleagues of their claims, but it also helps us to understand something about disciplinary communities and the ways they construct knowledge. These different features, taken together, are important ways of situating academic arguments in the interactions of members of disciplinary communities. They represent relatively conventional ways of making meaning and so elucidate a context for interpretation, showing how writers and readers make connections, through texts, to their disciplinary cultures.

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