

(KID) GLOVES ON OR OFF? ACADEMIC CONFLICT IN RESEARCH ARTICLES ACROSS THE DISCIPLINES

Sally Burgess and Anna Fagan
Universidad de La Laguna

ABSTRACT

The interdisciplinary study of academic conflict (AC) presented in this paper expands on a growing body of research. We examined research articles from six distinct disciplines. From the data obtained, we developed a taxonomy of the rhetorical strategies used by the writers in these fields, expanding on earlier work by introducing the concept of writer mediation. The application of this taxonomy to the disciplines showed that those with extra-mural ties were more likely to avoid or mitigate AC, but few other correlations were discernible. It is suggested that future research on AC should take a qualitative approach and that more attention should be paid to reception.

KEY WORDS: academic conflict, rhetoric, writer-reader relations, research articles, academic disciplines.

RESUMEN

El estudio interdisciplinar que se presenta en este artículo continúa en la línea de recientes investigaciones del conflicto académico. Examinamos artículos de investigación de seis disciplinas distintas. De los datos obtenidos, desarrollamos una taxonomía de las estrategias retóricas que emplean los autores en estos campos para expresar el conflicto académico, incluyendo el concepto de mediación del “redactor” en la expresión de la crítica. La aplicación de esta taxonomía mostró que disciplinas con contactos fuera de la comunidad académica normalmente evitaban o mitigaban la crítica, pero por otro lado no se pudo establecer ninguna otra correlación. Sugerimos que sucesivas investigaciones deberían aplicar un enfoque más cualitativo y tener más en cuenta la recepción.

PALABRAS CLAVE: conflicto académico, retórica, relaciones lector-autor, artículos de investigación, disciplinas académicas.

1. INTRODUCTION

The social relationships between professional writers and their readers and the implications of these relationships for the crafting of texts have continued to provide researchers with a range of questions to address. A major area of interest since the publication of Myers (1989) and Swales (1990) has been the various rhe-



torical strategies available to writers when presenting knowledge claims. Myers (1989), as is well known, sees the scientific article as essentially addressing both a general readership and a group with specialist knowledge of the topic. Writers, when making knowledge claims, are faced with the task of mitigating Face Threatening Acts (Brown & Levinson, 1987) perceivable as such by both these audiences. In Swales' (1990) CARS model, writers of research articles, having claimed centrality for the issue they address, frequently go on to 'create a niche' for their research. This may, on occasions, involve their offering alternative claims to those made in the literature they review or suggesting that there are deficiencies or gaps in previous research. Both strategies involve criticising the work of one's peers.

Engaging in criticism of members of one's own discourse community in a manner that is acceptable to both the types of audience Myers posits is clearly a delicate matter. It is not surprising, therefore, that there has been considerable interest in the rhetorical management of academic conflict or criticism by discourse analysts specialising in professional and academic writing.

Becher (1989:99) quotes from Hagstrom's (1965) study, surely one of the earliest examples of research into academic criticism. He finds evidence in this and his own study, as well as that of MacRoberts and MacRoberts (1984 cited in Becher 1989), of a 'damping down', as he puts it, of the force of academic criticism when it is made. Salager-Meyer (1998) and Salager-Meyer and Zambrano (1998) examined instances of academic conflict in medical research papers in English and French and note a gradual reduction in the degree of directness of academic criticisms in the English papers over the last century. This leads them to the same conclusion as the researchers cited above, namely that in papers written in English indirectness is the norm. Criticise one must while avoiding, wherever possible, offence to the individuals criticised or to the discourse community as a whole.

While Salager-Meyer has devoted most of her attention to medical discourse, interdisciplinary analyses of academic criticism have been undertaken by Hunston (1993), Kourilova (1996) and Motta-Roth (1998), the latter examining book reviews in academic journals. Hyland (2000) has also examined book reviews from the point of view of the pragmatics of criticism. The role of citation, integral to academic conflict (hereafter AC), has also been a focus of Hyland's work. According to Hyland (1999), writers cite not only in a bid to justify, persuade and/or establish the novelty of the research they present, but also to show their allegiance to a particular discourse community and to establish credibility with that community. In his interdisciplinary study he found variation in terms of the structure and number of citations used by writers across the eight disciplines he analyzed (Hyland, 1999).

The study we report seeks to synthesize the work carried out so far. Our research builds on Salager-Meyer's (1998) analysis of academic criticism in which she looked at directness and on Salager-Meyer (2000) in which a distinction is drawn between personal and impersonal criticisms. At the same time we have sought to extend her work by covering a further dimension, namely the presence or absence of writer mediation in the criticism.

Our study involves an examination of AC in research articles drawn from six disciplines. In our choice of the disciplines we sought to offer range, as in Hyland's



(1999) study. Like Hyland we have included newer disciplines with strong links to extramural professional communities.

In the second section of the paper we will outline the various ways the disciplines might be grouped and classified and what the implications for AC might be of the characteristics of the disciplines. In section three we will describe the way in which the corpus was compiled and analysed. The taxonomy we have developed for academic criticism is described in section four. Section five provides results of the comparative application of the taxonomy in the six disciplines while the sixth and penultimate section takes a closer look at the preferred strategies of the groups of writers working in the disciplines. Finally, we will propose some refinements to the taxonomy and discuss future directions research into ACs might take.

2. CHARACTERISTICS OF THE DISCIPLINES AND THEIR IMPLICATIONS FOR ACADEMIC CRITICISM

Our corpus consisted of research articles (RAs) published by writers working in the following disciplines: Chemistry (Chem), Medicine (Med), Psychology (Psych), Computer Science (CS), Linguistics (Ling) and Tourism (Tour). Our choice of disciplines was in part dictated by our teaching responsibilities: five of the ten members of the research team¹ teach ESP courses to students working in one or other of the disciplines chosen. As was stated above, the desire to provide a broad cross-section of disciplines was also a factor in the choices we made. The result was a study that includes a natural science (Chemistry), two science-based professions (Medicine and Computer Science), two social sciences (Psychology and Linguistics) and a social science-based profession (Tourism).

The use of the term 'discipline' begs a definition. Can one claim the same status for Chemistry and Tourism or Computer Science and Medicine? In the university where we work all but one of the six disciplines used in the study is also the name of a faculty. The existence of a department or faculty is often cited as a reason for labelling a body of research and practice 'a discipline'. Linguistics, the one exception in this regard, is an *área de conocimiento* (area of enquiry) in the Spanish university system, and there are a large number of courses taught that include the word 'linguistics' in their titles. No one would argue that Linguistics lacks professional journals and associations, two further criteria often used to establish the status of a discipline as such. These criteria are satisfied equally by all the disciplines used in our study.

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Becher (1981) was among the first to begin mapping out the discursive territories disciplines occupy. Prompted in part by his curiosity about the reasons for the relative lack of success of interdisciplinary programmes in British universities, he undertook an ethnographic study of Physics, History, Biology, Sociology, Mechanical Engineering and Law departments. Becher (1981) found that the disciplines had much in common, though unsurprisingly there were also many contrasts. Epistemologies, the role of ideology, modes of publication and the status and role of the previous literature were all sites of substantial difference.

There is a plethora of criteria one might use to categorise disciplines. Hyland (2000), while conceding that the hard-soft division can be seen as reductionist or as privileging certain disciplines over others, cites studies (Biglan, 1973; Kolb, 1981) in which the participants themselves perceive their discipline in terms of disciplinary groupings which correspond to the hard-soft distinction. Since it is a distinction that is meaningful to members of the various discourse communities he studies, Hyland adopts it with the important proviso that it should be regarded as a continuum rather than a polarity.

In his study of academic attribution, Hyland (2000) found that the continuum served to illuminate differences across the disciplines. Writers in the soft fields cited previous research far more frequently than those in the hard sciences. A second difference was that the author (the person cited) was not as prominent in the hard disciplines as in the soft. Hyland suggests that these differing discourse practices may be due to differences in social activities, cognitive styles and epistemological beliefs of the specific disciplinary communities. In our study we would expect to find that the softer disciplines (Tourism, Linguistics and Psychology) with higher frequencies of citations would also have higher frequencies of AC and that the ACs would tend to be directed towards named researchers.

Becher (1989) provides an extensive review of the literature of disciplinary classification, citing a number of possible criteria apart from the hard-soft distinction. He begins his review with Pantin's (1968 cited in Becher, 1989:8) restricted/unrestricted distinction. This, as Becher notes, parallels the division of disciplines into hard or soft in that it looks at how permeable they are to values, beliefs, knowledge and practice from outside. Unrestricted disciplines might, for example, use theories or research methodology from elsewhere as well as citing work from contiguous disciplines. Restricted disciplines, on the other hand maintain their disciplinary boundaries. In our study, Tourism would be a good example of an unrestricted discipline in that it is permeable to Anthropology, Sociology, Economics and Management Studies, among others. Chemistry, on the other hand, is relatively restricted, drawing as it does on its own resources almost exclusively. The permeability of the discipline may have implications for the frequency and nature of a academic criticism. Writers in unrestricted disciplines may feel more comfortable engaging in AC of work carried out in other parallel discourse communities.

While Pantin and Hyland focus on the way academics perceive themselves and the work they do, other commentators have been more concerned with epistemological differences. Still building on the hard-soft division, they see some disciplines as showing a linear development and clear consensus when it comes to evalu-



ating knowledge claims. Others disciplines are characterised by reiteration and recursion and a lack of consensus. One might, Becher (1989:17) suggests, parallel this to a distinction in terms of concern with discovery and invention as opposed to reinterpretation. Chemistry, Medicine and Computer Science would be linear disciplines while most branches of Linguistics, Psychology and Tourism are more likely to involve recursion and reiteration and less consensus on what level of claim is acceptable. Clearly, if there is less agreement as to the status of claims, one would expect to find more AC.

Bex (1996) provides a means of classifying disciplines that parallels the distinction drawn in Becher (1989) between restricted and unrestricted disciplines. Bex suggests that 'social network theory', as described in Milroy (1987), also provides a useful way of looking at discourse communities. As is well known, in social network theory a distinction is drawn between close-knit or 'multiplex' social networks as opposed to loose-knit or 'uniplex' networks. While members of close-knit networks are interconnected in many ways, connections among members of loose-knit networks are less dense, communication between members may be less frequent and rights to participate in communicative events may be less evenly distributed. Once again the disciplines in our study might be seen as falling along a close-knit-loose-knit continuum, though, as we shall see below, their position on the continuum is determined both by relationships within the academic community and the extent to which the writers in the disciplines might also be seen as addressing a professional community outside the university context. Thus Medicine, Chemistry, Psychology and Computer Science might be seen as dense networks. Linguistics and Tourism, on the other hand, we would regard as loose-knit, with members quite readily drawing on other disciplines and occasionally participating in the activities of other discourse communities. Once again the density of the network may have implications for AC such that in very dense networks we might expect to find less AC.

The impact of a relationship between an academic discourse community and an extramural professional community may be considerable. A second implication of network density may be that those disciplines with stronger relationships to practitioners outside (Medicine, Computer Science and Tourism) may wish to display rather more internal loyalty as discourse communities than those with looser links to communities of practice. The result of this would be lower rates of AC, of personalization and of directness.

Becher (1981), in examining the modes of communication used in the disciplines, introduces a contrast between urban and rural communities, a distinction which he further develops in his later account of communication patterns across the disciplines (Becher 1989). He finds marked differences in the published output of the two types of discipline. In urban communities articles are the favoured mode while books are preferred in rural disciplines (Becher, 1989:82). Becher (1989:84) attributes this basic difference to the fact that short-term problems are the focus of attention for urban communities whereas rural communities concern themselves with broader-reaching questions, the complexity of which demands the book-length text. When they do choose the article as a vehicle for their work, those in rural disciplines experience longer delays between acceptance and publication



than their colleagues in the urban disciplines. The length and frequency of publication also varies so that in urban communities, where shorter articles are the norm, community members publish more. In a rural discipline like modern Linguistics, where average journal article length is between 8000 and 12000 words, publishing one article a year is an achievement (Becher, 1989:86). Citation practices vary in the way one might expect, considering the differences in article length, with urban researchers citing less than their colleagues in rural disciplines (Becher, 1989:86). In our study we have set out to include disciplines that might be regarded as falling along various points on an urban-rural continuum with Chemistry and Medicine at one end and Linguistics and Tourism at the other. At the mid-point we might place Psychology and Computer Science. In the same way that there was variation in terms of frequency of citations in the hard and soft disciplines, rural disciplines with more citations can also be expected to have more ACs.

A final distinction one might make is in terms of the 'age' of the discipline. The length of time over which the discipline has been established may well have an impact on the behaviours of members of the discourse community. Arguably longer-standing, high status disciplinary communities may have more clearly defined 'codes of behaviour'. Though these will, for the most part remain tacit, constant reiteration of the conventions in a large volume of publications means that members of the discourse community become very familiar with them, and that consequently there is less variation in terms of practices. Younger, lower status disciplines on the other hand, one might expect to exhibit more intradisciplinary variation in terms of frequency and modes of performing ACs.

In sum, following Hyland (1999) we would expect the softer disciplines (Tourism, Linguistics and Psychology) to have higher rates of AC. We would also hypothesise that unrestricted disciplines (Tourism and Linguistics) would have higher rates of AC and that there will be a tendency for realizations to be personal and more direct. Recursiveness of a discipline (Tourism, Linguistics and Psychology) will also produce higher levels of AC, more personalization and more directness. Finally, network density too will have implications, so that variation in terms of frequency, personalization and directness will be seen across the disciplines; disciplines with low social network density we would expect to show lower levels of AC, personalization and directness. At the same time, the relationship of the discourse community to the profession may result in the desire to maintain and display internal disciplinary loyalty by engaging in less AC of a less personal and less direct nature. Finally, 'younger' disciplines may not yet have firmly established conventions in terms of AC and may show greater internal variation in discourse practices than the older more established disciplines.

3. THE CORPUS AND METHOD OF ANALYSIS

In each of the six disciplines we sought to identify five key journals. In most cases this was done by examining the relevant citation indexes and by consulting those working in the field. Tourism was the one exception. Although the number of



journals in the field is growing rapidly, there were only five English-language publications in our library. The fact that members of the Tourism Faculty had chosen to subscribe to these journals suggested that they were among the most influential in the field.

Tourism was also an exception when it came to selection of individual RAs. In the other five disciplines we took the last decade of the twentieth century and made a random selection of five papers published in that period in each of the five journals chosen. As the journals available to us in the field of Tourism did not have such a long history, we made our selection from all the issues of the journal available in the library. We thus arrived at a corpus of 150 articles, twenty-five from each of the six disciplines. In each of the disciplines the articles were of approximately the same length.

The articles were copied and examined by members of our research team. Pairs of researchers examined the journals from Linguistics, Medicine, Computer Science and Tourism, while individuals took responsibility for analysing the texts in Chemistry and Psychology.

Initially we examined a selection of five articles from each of the disciplines in an effort to identify instances of direct as opposed to indirect criticism and to further classify these ACs as personal or impersonal, following Salager-Meyer (1999) and Salager-Meyer (2000). We then met to compare our analyses and to discuss possible refinements to the categories. It was at this point that we added a further dimension for comparison of ACs, *viz.* writer mediation of the AC (see below) and arrived at the taxonomy for AC we present here. This was then applied to the corpus in its entirety.

4. A TAXONOMY OF ACADEMIC CRITICISM

Salager-Meyer's (1998, 2000) categories could be regarded as 'recipient-focused' and 'criticism-focused'. They are 'recipient-focused' in that they look at the AC, from the point of view of its target (the author(s) of the cited paper, book etc.), as either personal or impersonal; they are 'criticism-focused' in that they illuminate the strategies writers use to mitigate the potential impact of the criticism. Both these focuses open up the terrain for finer-grained analyses of ways of referring to individuals and communities and of degrees of indirectness.

Nevertheless, a third potential focus emerged as we began to examine our corpus in detail. We observed that on some occasions the writers of the research articles are explicitly present in the critical speech act as in the following examples (our emphasis):

(1) *I* find (cf. Leith 1995a) that usage is more complex than Wolfson and Schiffrin suggest; and *I* call into question some established notions about the status of audience as a sociolinguistic variable, the issue of meaning, the individuality of the storyteller, the relevance of quantification, the issue of genre, and the problems of treating a single performance feature in isolation from the others. (Ling)



We favour this value over that of 96.6kcal reported by Shum and Benson¹⁸ for CH SCHH because in *our* work there appears to be little or no difference in BDEs for ROC-H and RSC-H type bonds¹² and the BDE from ROCH bonds appears to be firmly established in the 92.93 kcal range. (Chem)

We have termed this 'writer-mediation' following Cherry (1998) and Hyland (2001), preserving Groom's (2000) distinction between the writer (the person writing the RA) and the author (the person cited in the RA).

Cherry (1996:399) applauds the recognition that scientific and technical discourse is 'inherently rhetorical' and notes the resultant acknowledgement of the importance of self-portrayal. Hyland (2001: 209) too notes that to get their work into print, writers must walk a rhetorical tightrope between showing loyalty and allegiance to the community and making it clear that their contribution is both a novel and an individual one. Citing Kuo (1999), Hyland (2001:210) notes that the use of first person pronouns allows writers to foreground the individuality of their contribution. As Hyland observes, although the use of first person pronouns is, in English-language academic discourse, still occasionally proscribed, it is a strategy that is gaining acceptance and is in fact more and more frequently employed. Groom (2000: 19), in his study of attribution and averral, notes the important role of writer-mediation in academic argumentation while acknowledging that this is often not transparent to novice writers. Like Hyland, Groom sees the writer as having to achieve a balance between locating the knowledge claim in the consensual discourse of the disciplinary community and positioning herself as the dominant voice in the text.

Given the growing frequency of writer-mediation in academic argumentation, it is not surprising that instances of it should occur in the examples of AC we have collected. Since it is a device that remains at best problematic and at worst totally unexplored for the novice writer, its use in research papers and particularly in the rhetorically delicate area of criticism merits close examination.

That said, for the most part the writer is only implicitly the voice uttering the criticism. Syntactically she is absent. Instead the subject slot is occupied by authors or 'abstract rhetors' (Hyland 1996) as in the following examples (our emphasis):

(2) *The problem with Fonseca's approach* is that it requires previous knowledge of the ranges of each objective function, which could be excessively expensive or even impossible in some cases. (CS)

The Trails tests of the Halstead-Reitan battery have also been considered sensitive to frontal-lobe lesions, although *the evidence* for this is equivocal. (Psych)

In our taxonomy such examples are classified as being without writer mediation (-writer mediation).

Further examination of the corpus produced examples in which there was not only an absence of writer-mediation but in which the criticism was in fact reported. We saw this as being at the opposite end of the continuum from '+writer-mediation' in that the critical speech act is in fact 'uttered' by another voice in



another text. In example 3 rather than making the criticism themselves the writers cite ACs in the work of other authors.

(3) Finally, *Rüchardt* has pointed out that no clear relationship between the spin delocalisation, as detected by ESR, and thermochemical stabilization energies has been formulated, and *Sustmann and Korth* state in their review that it “should be stressed that spin delocalization by ESR spectroscopy can be related to the overall thermodynamic stabilization of a radical only if the interaction of the substituent with the radical center constitutes the only, or at least the dominant contribution to the stabilization of the radical species as a whole”. (Chem)

The taxonomy (Fig. 1) we ultimately arrived at includes the writer (the person writing the article), the author (the target of the criticism), and the act of criticising itself. In our model, we perceive the writers as having several rhetorical choices when venturing some kind of AC. They can acknowledge their presence through writer-mediation, merely imply a presence through a lack of mediation or withdraw further by reporting an AC by another author in another text.

Having decided on the degree of writer mediation, as in Salager-Meyer’s (2000) study, writers can direct their criticism to a person or study (personal AC, example 4), mentioning the author’s name either in the same sentence or somewhere else in the text.

(4) Eade (1992) and Indinopulos (1996), analyzing pilgrimages in Lourdes and the Holy Land respectively, object to *Turner’s* definition of pilgrimage, especially to the *communitas* element. (Tour)

Alternately, as in example 5, the community in general can be the target (impersonal AC).

(5) Unfortunately, *few previous studies* of sepsis or related disorders have reported duration or follow up. (Med)

The writers can hedge and thus mitigate the threat to face inherent in the AC (indirect AC, example 6), or choose to express their disagreement baldly, without hedging (direct AC, example 7).

(6) Robinson et al. (1980) argue that, since the data from Milner’s (1963) study were based solely on seizure patients undergoing lobectomy, they *may not be generalizable* to patients with different types of damage. (Med)

(7) Lehmann (1978:19-20) claims that ‘nominal modifiers precede nouns in OV languages and follow them in VO languages’ but claims the opposite pattern for verbal modifiers: ‘verbal modifiers follow verbs in OV languages and precede them in VO languages’. *The data cited below shows that neither of these claims is true.* (Ling)

Figure 1. Shows the taxonomy as a series of rhetorical options:



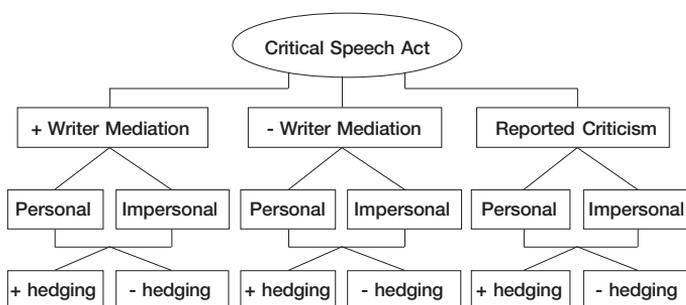


Figure 1. A taxonomy of rhetorical strategies.

5. RESULTS

Total instances of ACs for the disciplines were calculated before the taxonomy was applied. These results are shown in Table 1.

TABLE 1. FREQUENCY OF ACs ACROSS THE DISCIPLINES		
	TOTAL NUMBER OF AC	% OF ARTICLES WITH AC
Computer Science	319	100%
Psychology	245	95%
Linguistics	165	100%
Medicine	94	90%
Tourism*	53	55%
Chemistry	48	52%

* only 11 articles analysed

The frequency of ACs varied considerably, from a high of 319 instances with AC present in all the articles in Computer Science, to only 48 instances in Chemistry. In fact Computer Science, Psychology, Linguistics and Medicine all show high frequencies of ACs while in Tourism and Chemistry frequency is relatively low.

A different clustering of disciplines occurs when ACs are broken down in terms of our taxonomy. Table 2 focuses on writer-mediation. Here what is immediately striking is that Computer Science is exceptional across the three possible strategies, showing the highest levels for both writer mediation and for reported ACs and the lowest rate for instances of ACs without writer mediation. Psychology and Medicine also stand out in that they show a marked preference for unmediated forms over both mediated and reported. In terms of this category a relationship exists between Linguistics and Chemistry in that rates for all three types of AC are almost identical.

TABLE 2. WRITER-MEDIATED, UNMEDIATED AND REPORTED ACs
(EXPRESSED AS PERCENTAGES OF TOTAL ACs)

	COMP. SCI	TOURISM	CHEMISTRY	LINGUISTICS	PSYCHOLOGY	MEDICINE
+Writer mediation	29	20	15	15	5	4
-Writer mediation	31	68	77	76	87	93
Reported	40	12	8	9	8	3

Yet another pattern emerges when looking at the personalization dimension as in Table 3.

TABLE 3. PERCENTAGE OF PERSONAL ACs

	PERSONAL
Psychology	61
Linguistics	58
Chemistry	56
Computer Sci	45
Medicine	35
Tourism	24.5

Here the disciplines fall roughly into two groups: those in which over half the ACs were personal and those in which personalization was dispreferred. Psychology shows a tendency to name individuals in the critical speech act. This tendency can also be observed, though to a lesser extent, in both Linguistics and Chemistry. Tourism is the discipline where personalization is avoided most frequently, followed by Medicine and Computer Science.

The directness of the ACs (Table 4) produces yet another grouping with four of the disciplines using direct ACs in over half the cases (in Medicine almost three quarters), while the other disciplines fall below the half way mark.

TABLE 4. PERCENTAGE OF DIRECT ACs

	DIRECT
Medicine	74.5
Chemistry	58
Psychology	57
Tourism	53
Comp. Sci.	44
Linguistics	34



When the three dimensions are combined still more patterns emerge. In Table 5 writer-mediation is combined with personalization and directness.

TABLE 5. WRITER-MEDIATED ACs IN TERMS OF PERSONALIZATION AND DIRECTNESS
(EXPRESSED AS PERCENTAGES OF TOTAL ACs)

	TOTAL	PERSONAL/DIR.	PERSONAL/IND.	IMPERS./DIR.	IMPERS./IND.
Computer Science	29	10	8	3	8
Tourism*	19	8	9	2	0
Chemistry	15	8	6	0	0
Linguistics	15	3	6	2	4
Psychology	5	3	2	0	0
Medicine	3	1	0	1	1

Once more Computer Science comes out on top with a high percentage of writer-mediated ACs, compared to the other disciplines. This was often personal as it was in Tourism. Computer Science and Tourism have the highest levels for direct writer-mediated ACs as well. Chemistry and Linguistics also show some acceptance of writer-mediated criticism, as we saw earlier, although impersonalization was avoided in Chemistry. In the case of Tourism 17% of the ACs combined writer-mediation with personalization. 10% of the ACs in Tourism combined directness and writer mediation. The figures are lower for Linguistics, where personal writer-mediated ACs make up 9% of the total and direct ACs in this category only 5%. In Psychology and particularly in Medicine, combining the rhetorical strategies in this way was dispreferred.

As the writer-mediation results show, in all disciplines except Computer Science the great majority of ACs are not writer-mediated. Table 6 shows the results for ACs without writer mediation, breaking these ACs down, once more, in terms of personalization and directness.

TABLE 6. NO WRITER MEDIATION WITH PERSONALIZATION AND DIRECTNESS
(EXPRESSED AS PERCENTAGES OF TOTAL ACs)

	TOTAL	PERS./DIR.	PERS./INDIR.	IMPERS./DIR.	IMPERS./INDIR.
Computer Science	31	12	2	4	13
Tourism	70	0	0	38	32
Linguistics	76	12	25	11	28
Chemistry	77	19	19	27	12.5
Psychology	87	39	13	7	28
Medicine	93	22	9	46	16

In Medicine, the vast majority of the unmediated ACs were impersonal, whereas in Psychology they tended to be personal. Linguistics has an almost even distribution between personal and impersonal, but there is a clear tendency to use indirect forms (70% of the total in both mediated and unmediated forms). Medical writers, in contrast, express their unmediated ACs directly very frequently with 68% of the total ACs in Medicine being both direct and unmediated.

The third option in our taxonomy, it will be recalled, is reported AC. Table 7 shows the results for this strategy in combination with personalization and directness.

TABLE 7. REPORTED AC WITH PERSONALIZATION AND DIRECTNESS (EXPRESSED AS PERCENTAGES OF TOTAL ACs)					
	TOTAL	PERS./DIR.	PERS./INDIR.	IMPERS./DIR.	IMPERS./INDIR.
Computer Science	40	13	1	3	23
Tourism	12	4	4	2	2
Linguistics	9	3	2	2	2
Chemistry	8	4	0	2	2
Psychology	8	3	1	4	0
Medicine	4	3	0	1	0

Where reported ACs are used the majority tend to be personal. Here it is Psychology that stands apart with ACs dividing down the middle into a personal and an impersonal group. In Chemistry there was a preference for indirectness in reported ACs (73%). This was even more marked for Medicine and Psychology with 100 and 87%, respectively.

One final table will be presented in this section. This shows the preferred combination of strategies for each discipline with the percentage of ACs realised by means of this rhetorical option.

The high percentages for single combinations of strategies in Medicine and Tourism indicate high levels of intradisciplinary uniformity. In fact these two disci-

TABLE 8. PREFERRED COMBINATION OF STRATEGIES		
DISCIPLINE	COMBINATION OF STRATEGIES	% TOTAL
Medicine	Unmediated Impersonal Direct	46
Tourism	Unmediated Impersonal Direct	46
Psychology	Unmediated Personal Direct	39
Chemistry	Unmediated Impersonal Direct	27
Linguistics	Unmediated Impersonal Indirect	25
Comp.Sci.	Reported Impersonal Indirect	23



plines make use of a restricted number of combinations, using some very little or not at all. To a lesser extent this is also true of Psychology, while in Chemistry and Linguistics, and above all in Computer Science, the most frequently used combination makes up a quarter or less of the total. In these disciplines ACs are distributed across almost all the possible combinations of rhetorical strategies, suggesting much less internal consistency in terms of realizations of critical speech acts than in the other three disciplines.

6. DISCUSSION

What emerges from the results is a series of groupings of the disciplines that runs counter to much of what we had anticipated. The hard-soft dichotomy does not correspond to frequency of AC, preferences for writer mediation, personalization or directness. The same is true of the restricted/unrestricted distinction, for recursiveness versus linearity, for density of social networks and for the age and status of the disciplines.

The only factor that does seem to show some correlation to type of academic criticism is a connection with an extramural professional community. Disciplines with non-academic communities of practice, who are at least a notional audience and clientele for the research reported, in this instance show lower rates of personal AC. That said, Computer Science is clearly distinguishable from the other two disciplines, Medicine and Tourism, in terms of the overall frequency of ACs. The only proviso one can make with regard to the very high rates of AC in Computer Science is that the preferred combination of strategies for the discipline is one that involves the greatest degree of mitigation in terms of threats to face both to the writer and the recipient of the criticism. Computer Science, aside from emerging as the discipline with the highest total number of ACs, was also the only discipline showing a high proportion of reported ACs and, it should be emphasised, with a preference for reported, impersonal and indirect ACs. This preference for reduction of the force of the AC across the three dimensions must be seen as counterbalancing the high rate of ACs overall. Another apparent contradiction lies in the fact that Medicine shows very high rates for direct ACs. Once again, directness has to be seen in relation to the other two dimensions, personalization and writer mediation. Medical writers often make direct ACs but they are reluctant to single out individual targets or to 'own' the AC explicitly through writer-mediation. In Tourism there was a relatively high rate of writer mediation, but correspondingly low levels of personalization. In this way the three disciplines may be regarded as using the rhetorical resources available to them to reduce the force of AC and any resultant impression of internal disunity.

It is, however, difficult to account for many of the other pairings and groupings that emerge among the disciplines. One such is Chemistry with Linguistics. These two disciplines are similar in the fact that they use almost the full range of combinations of strategies and that they show similar rates in terms of writer mediation, not only for writer-mediation itself but also for reported ACs.



One of the ties that binds Linguistics and Chemistry is the fact that they are both macro-disciplines with a large amount of intradisciplinary variation according to the subfield or even the specific area of inquiry. This presented us with a considerable problem when it came to choosing the journals and in both cases we sought to ensure a representative sample by drawing RAs not only from journals devoted to particular branches such as *Language and Society* or the *Journal of Organic Chemistry*, but also included papers from general journals covering the whole gamut of research in the field *viz.*, *Tetrahedron*, *The Dalton Transactions*, and *The Journal of the American Chemical Society* for Chemistry and *Language* and the *Journal of Linguistics* for Linguistics.

We have not as yet examined the corpus more closely to see what patterns emerge across sub-disciplines, individual journals or even, as MacDonald (1994) suggests, in terms of particular problems the discourse communities address. Myers (1993) too, in his examination of 'boundary setting' in linguistics notes that linguists employ a variety of rhetorics because the various sub-disciplines have very different methods and goals. This may be true of some if not all the disciplines in our study and it may be that viewing the disciplines in terms of particular questions and issues would ultimately prove more fruitful than regarding them as monolithic separate disciplines as we have done here.

It is also true to say that quantification of instances of mediation tells far less than the whole story. Closer examination of the entities used as agents and subjects, much as MacDonald (1992 and 1994) suggests, would clearly point up differences between the disciplines that simply counting instances of writer mediation does not reveal. Cases in point are the use of the first person plural in papers produced by a single author and the distinction between first person pronoun use *per se* as opposed to possessive adjectives in nominal groups e.g. 'I' versus 'In our laboratory'.

The same acknowledgement of the limitations of quantification applies to directness. Here ACs are seen as either direct or indirect and our taxonomy currently makes no allowance for *degrees* of directness, though few would deny that what is involved is a continuum rather than an either/or choice. This may also result in low levels of interrater agreement for directness. One rater's 'gloves off attack' might be another rater's 'kid glove treatment'.

Even personalization is not entirely amenable to quantification. For Salager-Meyer mention of specific individuals is enough to render an AC personal. But how near to the AC in the text does the naming have to occur? Surely there is both explicit and implicit personalization. And where do we mark the bounds of the text? For many of us responsibility for knowledge-making is derivable from the text *exophorically* almost as readily as it is anaphorically or cataphorically. Members of discourse communities who work on similar problems probably have little difficulty recognising the specific target of a criticism even if not a single mention is made of the individual.

This is a good argument for looking at academic criticism in terms of reception and production in addition to the discourse analytic studies that have been conducted to date. By asking members of discourse communities to explicate the

decision making process they go through while writing we might better understand when and why writers opt for specific mention of the author in the text. Similarly, by tapping into the perceptions of readers, perhaps by asking them to label and categorise instances of AC, we might pick up on occurrences we as outsiders inevitably miss. We might at the same time gain a more precise picture of how clearly aimed at specific individuals they are and how intense the AC seems to community members.

7. CONCLUSIONS

In this paper we have reviewed a number of criteria for classifying academic disciplines. Among these were the hard-soft continuum, the restricted/unrestricted distinction, recursiveness versus linearity, social network density and age and status. Having suggested the ways in which characteristics of the disciplines might potentially impact on frequency and type of academic criticism, we presented a taxonomy of academic criticism which we developed in our study of RAs in Chemistry, Computer Science, Linguistics, Medicine, Psychology and Tourism. The taxonomy includes three dimensions: writer mediation, personalization and directness. Results of the application of the taxonomy produced only one correlation between type of discipline and the rhetorics of AC, namely a tendency for disciplines with links to extramural professional communities to avoid or mitigate AC.

It was suggested that rather than looking at large macro-disciplines, an approach that examined sub-disciplines, individual journals or particular problems addressed by communities might prove more illuminating.

The limitations of a quantitative approach to academic criticism were also discussed. Principal among these is the fact that each of the three dimensions, rather than representing either/or options, may be better understood a continuum. Finally, the need for studies of production and reception of academic criticism was highlighted.



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