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WHO IS SPEAKING IN RESEARCH ARTICLE ABSTRACTS? I/WE, IMPERSONAL AGENTS OR PREVIOUS AUTHORS IN CITATIONS?

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American National Standards for Abstracting (ANSI 1979) recommends that the abstract should not mention its writer nor include any citations except in such urgent cases in which argumentation proceeds on the basis of a citation. My study comprised 300 research article abstracts from academic journals in the fields of the humanities, the social sciences and the natural sciences. My aim was to discover whose voice was heard in the abstract. I investigated these three disciplinary domains in view of the use of, first, citations, and second, the active (the first person pronouns) and the passive voice. The humanities abstracts in my data clearly differed from those of the social and natural sciences since they included approximately four times as many citations as did the social and natural science abstracts. The writer's voice, in turn, was most often heard in the natural science abstracts, while humanities and social science abstracts preferred the passive voice and impersonal metaphor.

Keywords: research article abstract, first person pronoun, citation, interdisciplinary

1 INTRODUCTION

This article addresses the question of whose voice is heard in research article abstracts. Choosing between personal and impersonal writing has continued to stimulate interest in both the practising and the teaching of academic writing. The issue has its roots in the philosophy of science. On the one hand, academic research may be reported as the product of an investigation process, which pursues 'objectivity' in the positivist tradition and hides the actor through metaphorical and impersonal language and the use of the passive voice. On the other hand, academic research may be reported as processes in which real people project their voices and can be seen and heard as actors in the 'narrative of science' (Myers's 1990 term), thus endorsing the tenets of social constructivism.

My study attempted to discover, firstly, who was speaking in research article abstracts, and secondly, whether previous authors were cited in abstracts. These questions seemed interesting since ANSI (American National Standards for Abstracting 1979) suggests that there should be no reference to the writer of the abstract and references to previous research should only be made when absolutely urgent, that is, in cases where a reference is needed as the basis of argumentation. It appears, however, that abstract writers respond to this recommendation in different ways. Since the present study is part of an interdisciplinary study of research article abstracts, the more general purpose of this research is to discover how abstracting varies across the disciplines.

2 DATA

My data consisted of 300 research article abstracts, which were randomly photocopied from a variety of journals (N=51) on

display in the local university library at the end of the year 2000. All the abstracts appeared to be written by the authors of the research articles. The abstracts were divided into the domains of the humanities¹ (N=100; totalling 16,023 words; including general and applied linguistics, literature, cultural anthropology, cultural studies and history); social sciences (N=100; totalling 14,064 words; including education, psychology, sociology, human geography, economics and business administration) and natural sciences (N=100; totalling 18,543 words; including ecology, soil science, botany, animal biology, limnology, oceanography, terramechanics, forestry, physics, chemistry, mathematics and mathematical statistics).

My initial aim was to attempt to confine potential cultural variation in the corpus as much as possible by choosing abstracts from Anglo-American journals only, so that culture-dependent differences could be kept to a minimum. Yet the academic community has become so international that this attempt turned out to be unfeasible. Moreover, the names of authors do not necessarily coincide with the same language background or native country as before, and thus that idea was rejected. However, most journals used as sources in the study were published in English-speaking countries, most often, in the USA, the UK and Canada, and abstracts from journals with a more national flavour, such as *Lithuanian Forestry*, were not included in the data. The analysis was performed manually using discourse analytical tools.

¹My allocation of different subjects to the three disciplinary domains follows the division common to Finnish universities.

3 METHOD

The first research question asked whether the abstracts under study included citations, in other words, references to previous research. The second question focused on the abstractor's voice, that is, whether the abstract was drawn up in the passive or active voice. In the latter case the number, that is, 'I/we', was also distinguished. These differences were examined across the three major disciplinary domains of the humanities, social sciences and natural sciences.

Voice in academic writing can be discerned by means of the concepts of **averral** and **attribution**, first suggested by Sinclair (1986). He defines the term averral as 'the verbal assertion that something is the case' (1986: 44), which means that the utterance is presented as the writer's own idea or argument. For example, an utterance of Bhatia's such as *The two seemingly similar genres [research article abstracts and introductions] are very different in their communicative purposes, and, hence, are instances of different genres* means that he, as the writer of the book (Bhatia 1993) is alone responsible for the utterance. Attributions, in turn, make references to previous authors² but may vary in the amount of responsibility that they grant to the author of the original proposition (Thompson 2002; Groom 2000). Hyland (2000: 20) regards academic attributions as some 'of the most important realisations of the academic writer's concern for interactions with an audience: that of reporting, or attributing propositional content to another source.'

Another concept related to attributions is their placement within utterances. Swales (1990: 141) calls the two possible positions **integral** and **non-integral**. The former, the integral attribution is part of the syntax of the utterance, and the author

² I make a distinction between the writer and the author so that the writer refers to the abstractor and the author to the previous writers mentioned in the references.

is then the subject or agent in the citation or utterance glossing the object of the reference: Swales (1990) has developed.... A further type of integral attribution is naming: *Swales's (1990) CARS model*. In addition, I have distinguished a further type of naming, which is a repeated reference to naming, which I call weak naming: Swales's CARS model. In the latter case, the non-integral attribution is placed in brackets at the end of the utterance. An example of this is: *the famous CARS model (Swales 1990: 141)*.

According to Thompson (2002), the function of an integral citation is to emphasise the author of the cited text, whereas a non-integral citation places emphasis on the proposition rather than its original presenter. The authorial position in attributions can vary from one in which the writer is more dominant than the author, e.g., in the non-integral *The two seemingly similar genres are very different in their communicative purposes, and, hence, are instances of different genres (Bhatia 1993: 76)*, to such positions in which the author takes the dominant authorial position, e.g., *Bhatia (1993: 76) argues that the two seemingly similar genres are very different in their communicative purposes, and, hence, are instances of different genres*. Variation of responsibility in authorial position is achieved by means of enhancing evaluation in the reporting verb. Hence, moving from a reporting verb such as 'point out', via 'suggest', to 'argue' indicates an increase in the author's responsibility for the proposition.

Tang and John (1999) have distinguished a typology covering six different functions which the first person can perform in the genre of the academic essay and which are also applicable to the academic research article. These comprise, first, **'I' as the representative**, which means 'we in general'. That is a way of referring to the reader and the writer, i.e., people in general, and here the writer manifests the least powerful authorial presence. The second of Tang and John's types is **'I' as the**

guide through the piece of writing. In other words, these are metadiscursive statements with verbs of perception such as ‘we observed’ and ‘let us see’. The third type is **‘I’ as the architect** of the piece of writing, which organizes and structures the object of writing, e.g., ‘I examine/ discuss’. The fourth type, **‘I’ as the recounter of the research process**, takes the reader through the different phases of the research process; e.g., ‘we compared/computed/analyzed’. In the fifth category, **‘I’ as the opinion-holder**, the writer takes a more active role by employing such reporting verbs as ‘thinking/agreeing/disagreeing’ regarding the information provided in the study. The final category is **‘I’ as the originator**, which is used in making claims of new knowledge and ideas, in other words, manifesting the most powerful authorial presence in the discourse.

In the following analysis attention will be paid to the use of averral and attributions in abstracts as well as to the integrality or non-integrality of the attributions. Furthermore, the role of the first person in abstracts will be examined.

4 FINDINGS

4.1 CITATIONS

Firstly, I counted the number of abstracts which did or did not contain any attributions or citations. It turned out that citations were roughly four times as common in the humanities abstracts as in the social and natural science abstracts, the two last mentioned domains showing fairly similar proportions, as Table 1 reveals.

TABLE 1. The number of abstracts including citations ($1 \leq$ per abstract).

Abstract with citations			
Disciplinary domain	Includes citations	No citations	Number of abstracts
Humanities	31	69	100
Social sciences	8	92	100
Natural sciences	7	93	100

Some generally known concepts were not counted as citations. These included, for example, ‘Chirico’s painting’, ‘Disraeli’s political strategy’ and ‘Bakhtin’s endorsement’ in the humanities. In the field of the social sciences such concepts included ‘the neo-Gramscian concept of hegemony’; ‘the Walrasian model’ and ‘the psychoanalytic theory of Jacques Lacan’. In turn, in the natural sciences, for example, ‘the Collins formula’; ‘the James-Stein estimator’ and ‘Laguerre polynomials’ were regarded as generally known concepts since no exact citations were given to them concerning their original sources.

Contrary to the ANSI recommendations, the reasons for using citations in the abstract turned out to be various. In the humanities the primary reason for including citations in the abstract was the object of study. This was particularly common in literature abstracts, which usually focused on a book or play and obviously therefore had an immediate need for mentioning the author of the literary work. The second most important category of integral citations was that naming someone’s theory, method, model, form, theorem, construct, constraint, concept, notion or inventory. This was common in linguistics, but also in economics, statistics and mathematics. The basis for an analysis or argument formed another ground for citations, as did the evaluation of earlier research, and comparison of present with

previous findings. Table 2 provides a more precise breakdown of the use of citations.

TABLE 2. Rhetorical functions of integral and non-integral citations in abstracts.

Function	Humanities		Social Sciences		Natural Sciences	
	Integral	Non-integral	Integral	Non-integral	Integral	Non-integral
Object of study	22	1	1		1	
Basis for analysis		2	2			
Basis for argument		1	1			
Previous research	9	4		2	3	
Model/method/theory	18	3	5	1	3	
Comparison of newly obtained results with previous results	1			2	1	
Extra info/examples	2					

As Tables 2 and 3 indicate, integral citations were preferred to non-integral ones in most rhetorical functions, and they were the only type of attributions used in the natural science abstracts.

TABLE 3. The type of integral citations and the number of integral and non-integral citations in abstracts.

Integral vs. non-integral citations				
	Integral: subject or agent	Integral: namign (year)	Integral: weak naming (no year)	Non-integral
Humanities	20	23	27	11
Social sciences	11	1	6	5
Natural sciences	5	3	2	

Thus, if citations were used in the abstracts, the responsibility concerning the proposition was usually passed on to the previous author who was frequently given a dominant position in the sentence by being part of the syntax as the subject or agent. The reason for the high incidence of weak naming in the humanities abstracts is, firstly, the great number of literary abstracts which only mentioned the author and the title of the book (usually with no year of publication given). The second reason is that original naming citations were frequently repeated and referred to in the abstracts, which increased the number of items included in this category. Social science abstracts used some integral citations but otherwise references were not resorted to very often in science abstracts, which, in turn, appeared to make more use of the writer's explicit voice, *averrals*, than did the humanities.

4.2 THE FIRST PERSON

Table 4 below shows the breakdown of abstracts that mention the first person and also include citations.

TABLE 4. Expression of the first person in abstracts.

Expression of the 1 st person (I/we/our)			
	Includes citations	No citations	Total
Humanities	4	14	18
Social sciences	1	26	27
Natural sciences	2	40	42

Table 4 indicates that the expression of the first person, i.e., the writer's explicit voice in the abstract, does not seem to coincide with the mention of citations, i.e., the previous authors' voices.

Out of the 46 abstracts which included citations in the present corpus, 31 belonged to the domain of the humanities, eight to the social sciences and seven to the natural sciences (see Table 1). As can be seen from Table 4, only four humanities abstracts contained both the abstractor's own voice and references to previous authors. In the science abstracts this was even less frequent since only one such case was found in the social sciences and two in the natural sciences. What was surprising, however, was the high number of natural science abstracts that resorted to the active voice, whilst not making any citations. Social science abstracts were between the other two disciplinary domains.

That the use of the first person, and thus the emphasis on the researcher's own identity, was most common in the natural science abstracts may partly be explained by reference to the large research groups typical of scientific investigation who commonly publish their findings together. In the humanities, in contrast, articles are more often than not written by individual researchers. In the present corpus only seven abstracts out of the 42 (mentioned in Table 4) in the natural sciences were composed by one writer, while the mode, i.e., the most common number of writers, was two (in 16/42 abstracts) and the largest group of researchers numbered twelve writers. Moreover, three natural science abstracts (out of the seven written by one person) made use of the 'royal we' (only 1/18 in the humanities and none out of 27 in the social sciences), whereas the 'general we', in Tang and John's typology 'I' as the representative, which includes the reader and the writer, was not used at all in the natural sciences and only once in both the humanities and the social sciences abstracts.

4.3 REPORTING BY 'I/WE'

The abstracts making use of the first person did so mainly by means of reporting verbs, although some nominal groups with 'our + a noun' indicating some part of the research process were also found. The reporting verbs used in the first person (singular or plural) in the three disciplinary domains reflected the major principles and methods of research in the field, although obviously there was a great deal of overlap. As listed in Table 5, the most common reporting verbs in the humanities abstracts were 'argue', 'find', 'present' and 'suggest' (2 occurrences each), followed by only one occurrence of 'ask', 'assess', 'conclude', 'consider', 'demonstrate', 'draw on key ideas', 'employ tools of', 'examine', 'explain', 'explore', 'identify', 'propose', 're-examine', 'show', 'sketch out' and 'survey'. In addition, three nominal groups were found: 'our hypothesis', 'to my mind' and 'my earlier work'. Apart from arguing, the humanists typically seem to resort to quite gentle means of research, since they 'assess', 'explain', 're-examine', 'suggest' and 'sketch out'.

The most preferred reporting verb in the social science abstracts was 'argue' with as many as six occurrences (see Table 5). The verbs 'observe' and 'use' had four occurrences, whereas 'find', 'outline' and 'show' had three occurrences, and 'compare', 'conclude', 'demonstrate', 'discuss', 'identify' and 'propose' were each used twice. The other reporting verbs employed in the social science abstracts included one mention of the following 18 lexical items: 'analyse', 'conduct a study', 'describe', 'draw upon', 'embed', 'examine', 'explore', 'extend', 'illustrate', 'investigate', 'make three points', 'present', 'reflect', 'return to these themes', 'review', 'rule out', 'study' and 'undertake an analysis'. Moreover, there were seven instances of nominal groups, such as 'our theory' (two occurrences), 'our approach', 'our hypothesis', 'our findings', 'our argument' and 'my final set of results'. Social scientists clearly

‘argue’, ‘observe’, ‘discuss’ and ‘reflect’ in their abstracts, as seems appropriate regarding the research problems characteristic of their field.

TABLE 5. Instances of reporting verbs used with the first person pronoun in the abstracts.

Humanities Verb and its occurrences		Social Sciences Verb and its occurrences		Natural Sciences Verb and its occurrences	
argue	2	argue	6	examine	8
find	2	observe	4	find	5
present	2	use	4	show	5
suggests	2	find	3	investigate	4
ask	1	outline	3	use	4
assess	1	show	3	consider	3
conclude	1	compare	2	construct	3
consider	1	conclude	2	measure	3
demonstrate	1	demonstrate	2	propose	3
draw on key ideas	1	discuss	2	study	3
employ tool	1	identify	2	compare	2
examine	1	propose	2	conclude	2
explain	1	analyse	1	define	2
explore	1	conduct a study	1	demonstrate	2
identify	1	describe	1	prove	2
propose	1	draw upon	1	report on	2
re-examine	1	embed	1	test	2
show	1	examine	1	census	2
sketch out	1	explore	1	compute	2
survey	1	extend	1	conduct	2
		illustrate	1	develop	2
		investigate	1	eliminate	2
		make three points	1	quantify	2
		present	1	etc.	
		reflect	1	(see Footnote 3)	
		return to these themes	1		
		review	1		
		rule out	1		
		study	1		
		undertake an analysis	1		

Since the natural sciences featured as many as 42 abstracts in which the first person was explicitly expressed, the verbs used with the first person pronouns displayed a wide range of reporting verbs. The most frequent verbs were ‘examine’ (8 occurrences), ‘find’ (5), ‘show’ (5), ‘investigate’ (4), ‘use’ (4), ‘consider’ (3), ‘construct’ (3), ‘measure’ (3), ‘propose’ (3), ‘study’ (3), ‘compare’ (2), ‘conclude’ (2), ‘define’ (2), ‘demonstrate’ (2), ‘prove’ (2), ‘report on’ (2) and ‘test’ (2). In addition to those verbs, the abstracts featured 35 other reporting verbs³ with one instance each, including such lexical items as ‘census’, ‘compute’, ‘conduct’, ‘develop’, ‘eliminate’ and ‘quantify’, all typical of the description of research processes in hard sciences.³ The nominal groups consisted of ‘our estimators’ (2 instances), ‘our results’ (2), ‘our objective’, ‘our analysis’, and ‘we explain why our understanding of ... dictates that....’ Interestingly, the verb ‘argue’ did not appear at all in the natural science abstracts, in which the human actors focused on narrating the research process, and the claims of new knowledge were made by other means than verbal ‘arguments’. Table 5 summarizes the most common reporting verbs in each disciplinary domain.

As regards the use of references and the first person in the present abstracts, it was noticeable that there were some intra-disciplinary tendencies in their employment across the curriculum. In the domain of the social sciences it seemed to be the economists who made most use of both attributions and the first person active voice averrals, while within the natural sciences the same applied to the ecologists and (mathematical) statisticians. Some citations were also found in physics and math-

³ The other verbs used in the science abstracts included: address, apply, describe, discuss, employ, exhibit, explain, expose to, fix, give, follow the course of, identify, initiate, introduce, need, observe, obtain, present, provide, reject, remove, replace, review, sample, select, simulate, suggest, utilize and vary.

ematics. In the natural science abstracts it was the ecologists who employed the first person pronouns most often.

In the light of Tang and John's (1999) typology, what the first-person abstractors seemed to be doing in the present abstracts was that they acted as architects of the study and recounted the research process to the reader. Since the abstractors were expert writers in contrast to Tang and John's student essay writers, the categories of 'I' as the opinion-holder and 'I' as the originator were obviously also used throughout the abstracts. A case in point regarding these functions is presented by claims of new knowledge through the use of 'argue' in the humanities and social sciences, whereas the natural sciences effected the same with 'show' or 'prove'.

5 CONCLUSIONS

The abstracts belonging to the three disciplinary domains under study here differ from each other, as do the articles which they summarize. This study showed that citations were most common in the humanities abstracts in comparison with the social science and natural science abstracts. The reason for this may be a higher proportion of previous knowledge that is used as the explicit foundation of new research in the humanities in contrast to experimental research, which is the norm in the social and natural sciences. As Hyland (2000: 30) has put it, 'reference to prior research clearly plays a more visible role in the humanities' [than in the two other major disciplinary domains]. It was somewhat surprising that impersonal metaphor and the passive voice were much more common in the humanities, famous for its qualitative studies, than in the natural sciences, often regarded as the stronghold of quantitative study and positivism. The social sciences held the middle ground in this respect. The natural sciences had a clear pref-

erence for the active voice and the expression of the writer's own identity. This may be attributed to the importance of large research groups and the greater scope for teamwork in science research.

On the other hand, there has been a trend towards the use of first person pronouns in academic writing in general (Tang and John 1999; Ivanic 1998), which makes this finding concerning the humanities abstracts unpredicted. It is possible that humanities writing goes in for more metaphorical language than the factual and more straightforward scientific narrative, and the use of impersonal actors belongs to the tradition of written academic discourse. With such a small sample this is only a speculation and would need to be studied further using large interdisciplinary corpora.

It has been suggested that research article abstracts do not need to mention references as these are in any case listed in the bibliography of the article. Nevertheless, in the present world, where the knowledge industry is churning out new publications at an exponential rate, in many fields it is only the abstracts, and in extreme cases, only the titles of the articles that busy professionals have time for. In that kind of situation full referencing in the abstract is undoubtedly to the advantage of the reader.

Tadros (1993: 101) has labelled *averral* as the 'default condition' of written text (Thompson 2002). The relatively small number of attributions in these 300 abstracts attests to the same. And since the imminent purpose of the research article abstract is to promote the study and to attract a readership for the published research, *averrals*, whether in the active or passive voice, are the most effective way of attaining these goals.

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