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Avoiding Prolixity in Academic Prose; the Use of Quantity Metadiscourse in Research Articles

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Abstract

As part of a wider attempt to bestow the spirit of scholarly prose upon the research articles' rhetorical structure, academic writers invariably take advantage of quantity metadiscourse markers to avoid prolixity and live up to the implicit and explicit maxims of quantity category as suggested in Gricean CP and similar models. In order to develop a clear understanding of quantity strategies distribution in academic prose, 120 research articles were selected from among recently published journals in *Sciencedirect* database. The articles were selected equally from two disciplines in social sciences (SS) including *applied linguistics* and *sociology* and two disciplines from natural sciences (NS) including *chemistry* and *medicine*. The linguistic realizations of metadiscursive quantity strategies comprised of *endophoric markers* and *collapsers* were estimated through a manual analysis of the corpus. The results showed that collapsing is a widespread strategy specifically among NS writers. Differences were found between SS and NS writers in their use of initials, citations and footnotes\endnotes. It is argued that collapsing is an inherent property of NS disciplines giving rise to the dense use of such markers. At the end, the implications of the study to teaching and learning writing research articles are discussed.

Key words: research articles, metadiscourse, quantity markers, endophoric markers, collapsers.

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1. Introduction

The attempt to characterize genres of communication in terms of linguistic and formal structure, discursive and metadiscursive features, rhetorical and argumentative format is now a widespread practice among text linguists and ELT practitioners (Groom, 2005; Johns, 2011; Swales 2004; Tseng, 2011). From among several popular genres of communication, research article (RA) is admittedly the most firmly established one among academia. The popularity of this genre merits and has attracted the attention of researchers both for applied and pure purposes (Rubio, 2011).

While writing for publication is generally considered as a means of sharing knowledge for the top members of academic discourse communities (Hewings, 2006), it has at the same time been a challenge for the mediocre and novice members, which has given rise to an array of applied research in the area (e.g., Li & Flowerdew, 2007; Benfield & Feak, 2006; Kaplan & Baldauf, 2005). Moreover, discourse analysts have also embarked on pure research to investigate the RA language for a variety of theoretical purposes.

RAs have been investigated in many disciplines such as Applied Linguistics (e.g., Basturkmen, 2009; Biber, Conrad, & Cortes, 2004; Lim, 2010; Oztürk, 2007: Yang & Allison, 2003), Education (Lim, 2010), Management (Lim, 2006), Medicine (Li & Ge, 2009; Nwogu, 1997), and Social Sciences (Brett, 1994; Lewin, Fine, & Young, 2001), to mention a few. More specifically, RAs were analyzed in terms of grammar (Salager-Meyer, 1992), lexical bundles (Hyland, 2008), evaluation (Tucker, 2003), move structure (Samraj, 2005; Kamoksilapatham, 2005), discourse markers (Berlin, 2011), metadiscourse markers (Abdi, 2002, Abdi, et. Al, 2010, Dahl, 2004), and an array of other features.

Effective communication in general and effective authoring of RAs has always been a prominent concern among discourse community members. Therefore, scholars have always been

trying to explore what constitutes an ideal communication in various genres. Attempt is made, such as the studies mentioned above, to characterize effective communication both rhetorically and linguistically which is supposed to provide a concrete framework followed, or expected to be followed, to secure a successful and optimal communication.

In view of the above, there has been a particular interest among language teachers and practitioners in characterizing effective communication in that the whole enterprise of teaching a language is to enable to communicate effectively in a new language. Such a trend is more favored in Genre-based pedagogy as it views language as an open dynamic system, and suggests that knowledge about language should be taught in an explicit manner (Firkins, Forey & Sengupta, 2007). The popularity of focus on form and consciousness-raising activities in genre-based pedagogy, on the other hand, has persuaded language teaching practitioners to opt for discourse and genre analysis studies to unravel and introduce visible and invisible features of different genres.

One interesting model which is argued to possess fundamental features of successful communication in implicature-stripped genres, such as research articles, is the *Cooperative Principle* (CP) as introduced by Grice (1975). He posits the CP and its attendant four categories (*quantity, quality, relevance* and *manner*) as a way of characterizing a plain and standard communication. He (1975, p. 45) couched his CP in the following words: "*Make your contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged*". He calls a communicative event in which this principle is observed as a *standard* way of communicative behavior. It should be noted his idea of implicature is built upon intentional violation of the above maxims, and, therefore, in implicature-free genre of communication such as RA a strict observation of the following maxims is always expected. In a

similar line of argument, Davies (2007) contends that when we produce or hear an utterance we assume that it will generally be true, have just the right amount of information, be relevant, and will be worded in understandable terms.

It is for such a view that many studies used the CP for a variety of purposes (see Lindblom, 2001) in spite of the fact that Grice's idea was primarily for oral language and it was initially introduced to foreground his conversational implicature argument. Of course, Grice himself believed that such a principle can be seen in even non-linguistic human transactions as well.

An example of adopting the CP in written discourse is found in Celce-Murcia and Olshtain (2000, p. 147) who argue that in written discourse production, the CP maxims are of great help, particularly during revision and editing and they explain how each maxim can be adapted for written discourse:

The maxims of *quantity* require that the writer carefully consider the amount of information that should be imparted in the text or, in other words, what content elaboration might be necessary. The maxims of quality, on the other hand, require the writer to provide support and justification for his\her position in order to render the text accurate and give it truth-value. The maxims of relation require the writer to create a text that makes sense within the potential context in which it will be read. Finally, the maxims of manner require bottom-up techniques to make the text unambiguous, to make it clear in terms of its linguistic forms and sentence structure as well as clear in the physical shape or format in which it is presented, so that form and content are compatible and processing made possible.

There have been a few studies in the literature which tried to explain metadiscourse marking through the Gricean CP (e.g., Kumpf, 2000; Lovejoy, 1987; Riley & Parker, 1998). However, a recent and more systematic adoption of the CP and metadiscourse in academic writing was introduced be Abdi,

Tavangar, and Tavakoli (2010) who used it to explain employment of metadiscourse (see Table 1). They formulated maxims that (expected to) act as a hypothetical underlying mental construct governing appropriate use of metadiscursive forms. The metadiscursive strategies are classified in the light of their contribution to realize the CP. Thus, the term quantity metadiscourse signifies the metadiscursive strategies employed to meet the requirement dictated by the maxims under the category of quantity. In their model, a group of metadiscursive strategies including *endophoric markers* and *collapsers*, comprised of initials, citations and endnote\footnote, was introduced, which is arguably employed by the authors to help meet *quantity* requirement.

Endophoric markers forgo undue repetition of tables, as an example, by referring to one entity several times; initials avoid otherwise lengthy phrases; citations provide a short label to refer to an otherwise extensive work; and finally endnotes\footnotes are only small superscript numbers referring the interested readers to a broader explanation in the footnote or the endnote of a work. In research articles, endophoric markers are found referring backward or forward. Collapsers, on the other hand, are found in the forms of initials, citation, and footnotes\endnotes.

It should also be noted that there could be several other ways of building quantity into a text. In fact, an effective writing style which excludes redundancy both conceptually and linguistically is essentially the most basic way of observing quantity. From a conceptual perspective, writers are advised not to repeat a concept already said. In the meantime, techniques like nominalization are also employed to take care of quantity on a linguistic and formal level. However, such quantity-observing techniques are not assumed as metadiscursive strategies in that they directly deal with the discursive level. Nominalization, for instance, is not a dummy representative of

a concept, rather it is the concept itself which is worded frugally.

Table 1. *A CP-based Model of Employing Metadiscourse Strategies in Research Articles (Abdi, et al., 2010:1677)*

Metadiscourse Strategy	Maxims	Cooperation Category	Overall Orientation
Endophoric markers	1. Make your contribution as informative as is required. 2. Refer the audience to other parts of the text to avoid repetition. 3. When repetition is inevitable, acknowledge to avoid inconvenience.	Quantity	Avoid prolixity to make the text manageable and friendly
Collapsers	Avoid undue repetition by using proper referents.		
Transitions	1. Properly signpost the move through arguments. 2. Be perspicuous.	Manner	Clarify steps and concepts to make the text comprehendible
Frame markers	1. Be orderly. 2. State your act explicitly.		
Code glosses	1. Avoid ambiguity. 2. Avoid obscurity of expression.		
Evidentials	1. Do not say that for which you lack adequate evidence. 2. Cite other members of the community to qualify your propositions.	Quality	Build on evidence to make the propositions tenable
Hedges	1. Do not say what you believe to be false. 2. Do not say that for which you lack adequate evidence. 3. Mark if evidence is not enough. 4. Do not use hedges in widely accepted or supported propositions.		
Boosters	1. Do not say what you believe to be false. 2. Do not say that for which you lack adequate evidence. 3. Mark if evidence is notable. 4. Do not use emphatics if evidence is not enough.		
Disclaimers	1. Do not say that for which you lack adequate evidence. 2. Outline the framework within which you would like your propositions to be interpreted. 3. Explicitly distance yourself from untenable interpretations.		
Attitude markers	Express your feelings or avoid them according to the norms and conventions.	Interaction	Make participants and feelings visible to promote rapport
Self-mentions	Enter your text or sidewalk it according to the norms and conventions.		
Engagement markers	1. Draw the audience in or ignore them according to the norms and conventions. 2. Give directions to your readers to follow when appropriate.		

As examples of non-metadiscursive view of quantity in academic prose, I can refer to Engelhardt, Bailey and Ferreira (2006), Olson (1970), Sedivy (2003), Livnat (2011), and Atifi,

Mandelcwajg and Marcoccia (2011) who carried out discourse analysis studies where they investigated building quantity requirements into the writings in one way or another.

However, a systematic study of quantity marking in RAs in general, and metadiscursive quantity marking in particular, based on an established model is still wanting. Some attempts are made to relate discursive and metadiscursive choices of writers to the CP, yet no study, to my knowledge, has investigated the normal employment of such features in RAs. Therefore, this study is designed to find out the normal distribution of quantity metadiscourse markers including endophoric markers and collapsers in research articles, and also differences among NS and SS writers in order to introduce a rough image of how they are employed in academic research articles.

Method

For the purpose of this study, 120 RAs were selected from among recently published journals in *Sciencedirect* database through cluster random sampling. The articles were selected equally from two disciplines in social sciences including applied linguistics and sociology and two disciplines from natural sciences including chemistry and medicine. On the whole, 15 journals from each discipline with two articles from each were included in building the corpus. Furthermore, the articles written only by native speakers (at least one author) were chosen to avoid probable style problems. Native authors were judged by the affiliation and name appearing in the articles. The method section of the articles was not included in the analysis on the grounds that it normally reports the design and the procedure of the studies in a descriptive style.

As seen in Table 1, quantity metadiscourse includes two strategies of endophoric markers and collapsers and according to Abdi, et al. (2010), endophoric markers are further divided

as *referring forward* and *referring backward*, and collapsers are broken into *initials*, *citations*, and *endnote\footnote* markers. A list of linguistic tokens realizing quantity metadiscourse strategies was developed following Hyland (2005) and Abdi, et al. (2010). Then, the corpus was carefully read by three colleagues to find the occurrences of quantity metadiscourse tokens and the final results were averaged out to give a more reliable estimate. The results are presented and discussed below.

Results and Discussion

The corpus was searched for the tokens of the above categories the results of which appear in Table 2 below.

Table 2

Distribution of Quantity Markers in Research Articles (Total Corpus)

			Endophoric markers		Collapsers			Total
			Referring backward	Referring forward	Initials	Citation	Endnote\ footnote	
SS	Applied linguistics	I	22	28	105	411	20	586
		RD	54	46	241	395	12	748
		T	76	74	346	806	32	1334
	Sociology	I	19	26	98	551	35	729
		RD	71	46	158	485	50	810
		T	90	72	256	1036	85	1539
	Total	I	41	54	203	962	55	1315
		RD	125	92	399	880	62	1558
		T	166	146	602	1842	117	2873
NS	Chemistry	I	11	29	821	351	24	1236
		RD	90	65	4667	355	18	5195
		T	101	94	5488	706	42	6431
	Medicine	I	15	39	356	84	101	595
		RD	85	45	2081	154	177	2542
		T	100	84	2437	238	278	3137
	Total	I	26	68	1177	435	125	1831
		RD	175	110	6748	509	195	7737
		T	201	178	7925	944	320	9568
Grand-total		I	67	122	1380	1397	180	3146
		RD	300	202	7147	1389	257	9295
		GT	367	324	8527	2786	437	12441

Table 2 demonstrates in the first place that quantity marking, specifically collapsing (about 95%), is a widely used resource in RAs as part of the attempt to adhere to the maxims of quantity as outlined by Grice (1975), Celce-Murcia and Olshtain (2000), Abdi et al. (2010). However, in order to have a more palpable base for the discussion and to provide a more feasible estimate of quantity marking in a single research article, I reduced Table 2 into Table 3 where an average number of markers that appear in a single hypothetical research article is displayed. This reduction will make it possible to develop a more tangible image of the distribution of quantity markers. Note that in Table 3 the bold numbers show the highest and the underlined ones mark the lowest use of relative type among the four disciplines. As long as a full discussion of the table could be avoided due to the straightforwardness of the table, I would only discuss some salient features of the corpus.

Table 3
Hypothetical Distribution of Quantity Markers in One Research Article

			Endophoric markers		Collapsers			Total
			Referring backward	Referring forward	Initials	Citation	Endnote\ footnote	
SS	Applied linguistics	I	0.73	0.93	3.5	13.70	0.67	19.53
		RD	1.8	1.53	8.03	13.17	0.40	24.93
		T	2.53	2.47	11.53	26.87	1.07	44.47
	Sociology	I	0.63	0.87	3.27	18.37	1.17	24.30
		RD	2.37	1.53	5.27	16.17	1.67	27.00
		T	3	2.4	8.53	**34.54**	2.84	51.30
	Total	I	0.68	0.9	3.38	16.03	0.92	21.92
		RD	2.08	1.53	6.65	14.67	1.03	25.96
		T	2.76	2.43	10.03	30.7	1.95	47.88
NS	Chemistry	I	0.37	0.97	27.37	11.70	0.80	41.20
		RD	3	2.17	155.57	11.83	0.60	173.17
		T	**3.37**	**3.13**	**182.93**	23.53	1.40	214.37
	Medicine	I	0.5	1.3	11.87	2.80	3.37	19.83
		RD	2.83	1.5	69.37	5.13	5.90	84.73
		T	3.33	2.8	81.24	7.93	**9.27**	104.57
	Total	I	0.43	1.13	19.62	7.25	2.08	30.52
		RD	2.92	1.83	112.47	8.48	3.25	128.95
		T	3.35	2.96	132.09	15.73	5.33	159.47
Grand-total		I	0.56	1.02	11.5	11.64	1.5	26.22
		RD	2.5	1.68	59.56	11.58	2.14	77.46
		GT	3.06	2.7	71.06	23.22	3.64	103.68

Table 3 shows that on the average in any research article about 103 metadiscursive items were employed to avoid undue repetition. About 25% of markers appeared in the introduction section and the remaining 75% were used in the RD section. This could be partly due to the length and partly due to the nature of the sections. The RD sections are longer and they host more topics as compared to the introduction sections. This number was 159 for one article in NS and 47 for SS, which is more than 3 times higher among the NS group as compared to the SS corpus. This finding suggests that NS disciplines are replete with items lending themselves to quantity marking. As can be seen in the table, the majority of quantity markers are

from the strategy of collapsers, and initials (68%) are the most frequently used quantity markers type. The use of initials is about 82% for NS writers, while it is about 21% among SS authors. The highest use of initials is seen among writers of chemistry among the four disciplines. This finding is not surprising as it is quite common for chemistry and also medicine writers to abundantly use quantity markers, in general, and initials, in particular.

The use of citation (about 64%), which is an abbreviation referring to an otherwise long work, was found to exceed other collapser types and quantity markers among SS writers. Sociology writers cited more than other disciplines in this study. On the whole, its use was found to be three times higher compared to NS counterparts. It could be due to the fact that SS arguments are mainly presented against the backdrop of other arguments. The scarcity of citation in medicine RAs could be justifies on the grounds that medical writers focus on the ongoing work more than the literature when compared to other disciplines.

The use of endnote\footnote, though quite meager compared to other types (3.5%) in the whole corpus, was found to be used 2.7 times higher among NS writers than SS ones. This could also be attributed to the nature of NS disciplines which require such explanations. As can be seen in the table, medicine writers took advantage of footnote\endnote type more than other disciplines. It could be said that marginal reminders are always necessary to include in the high-stake discipline of medicine.

The use of endophoric markers, however, appeared not very much different among the two groups of writers. Among the writers of the four examined disciplines, chemistry writers used endophoric writers more often. In the meantime, the introductions and RD sections were expectedly different from each other in the use of endophoric markers. The two types of endophoric markers, that is, referring backward and referring

forward, were also not significantly different from each other. It demonstrates an almost equal distribution of the two types.

Overall, the findings of this study demonstrates that collapsing is an outstanding metadiscursive strategy for writer of both science groups as compared to endophoric marking which is meagerly used throughout the corpus.

Conclusion

This study investigated the use of quantity metadiscourse strategies in a corpus comprised of 120 research articles from NS and SS disciplines. The overall findings and the differential distribution of quantity markers, more precisely collapsers, suggests the following.

Firstly, quantity marking could be seen as a widely employed strategy to secure maximum cooperation among members of the academic discourse communities. In other words I can conclude that, using Engelhardt, et. al,'s (2006) term, RA writers are notably Gricean. The extensive use of quantity metadiscourse reveals that metadiscursive choices of meeting quantity requirements are a favored convention among academic writers. Secondly, it could be concluded that the conventions of disciplines could vary considerably on the grounds that they deal with inherently different areas of activity requiring differential linguistic choices. This conclusion is supported by the differences seen between disciplines which are examined in this study. Thirdly, as an implicational conclusion of this study, it could be suggested that any syllabus of teaching writing RAs needs to incorporate a consideration of marking quantity metadiscursively.

It should be noted that investigating quantity metadiscursively is a new area of research prone to be

challenged and examined in many ways, which is hoped to provide a clearer image of this cooperation category in authoring RAs. Meanwhile, metadiscourse types other than collapsers and endophoric markers, such as visual tools, could also be investigated to provide insight and broaden the concept of quantity marking.

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