Evaluative adjectives in academic writing in the humanities and social sciences

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CHAPTER ELEVEN

EVALUATIVE ADJECTIVES IN ACADEMIC WRITING IN THE HUMANITIES AND SOCIAL SCIENCES

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Abstract

This study deals with evaluative adjectives in French academic writing in the field of humanities and social sciences (linguistics and economics) through a corpus study of various kinds of texts (research articles, theses, course books). Although not as much attention has been paid to adjectives in French as to other parts of speech, I believe that this category plays a prominent role in argumentation and persuasion and can shed light on the rhetorical strategies used by an author. Following Kerbrat-Orecchioni's (1980) typology of subjective adjectives, I performed a corpus study on evaluative adjectives referring to scientific nouns such as scientific artifacts, scientific observables*,* relations, and qualities in order to study disciplinary variation and to identify the most common patterns.

The results show that axiological evaluation is not very common, in contrast to more "neutral" evaluative types such as novelty, importance, time, comparison and complexity. Firstly, in order to convince the reader, authors seem to avoid very subjective evaluation in scientific writing. Secondly, recurrent associations are often cross-disciplinary and exhibit strong selectional preferences between nouns and evaluative adjectives: for example, temporal adjectives generally refer to scientific artifacts while axiological adjectives mainly refer to results. Thirdly, contrary to my expectations, evaluative adjectives of all semantic types are more numerous in economics than in linguistics, and especially those expressing importance and novelty, something that seems to highlight the importance of authorial self-promotion in this discipline. Finally, the use of evaluative adjectives seems closely linked to rhetorical strategies: they are especially numerous in introductions (and in conclusions in economics), where they are used mainly to justify and promote the author's work.

1. Introduction

In French academic writing, as compared to English, limited attention has been paid to adjectives (e.g. inter alia Soler 2002; Hewings and Hewings 2002; Swales and Burke 2003). However, adjectives play a prominent role in argumentation and have a strong interpersonal dimension: they reveal much of the speaker/writer's attitude toward the textual content and are widely used to persuade the reader that the topic under study is of interest and that the demonstration and results are valuable (cf. Thetela 1997). Recent studies (Hyland 1998, 2005; Fløttum, Dahl and Kinn 2006; Rinck 2006 amongst others) have convincingly shown that academic writing is not the neutral genre it has been claimed to be, but that it is a highly dialogic genre where authorial presence and subjectivity are prevalent. Explicit evaluative markers such as evaluative adjectives are part of this authorial presence and a close examination of their use in academic writing can shed light on the rhetorical strategies used by the writer. They are especially relevant in the observation of persuasive strategies used towards the reader and the kind of arguments (novelty, salience, quality, inadequacy, for example) put forward to qualify scientific objects in various disciplines.

In this study, evaluative markers are examined in several kinds of French academic writings in two disciplines of humanities and social sciences: linguistics and economics. This corpus-based study focuses on evaluative adjectives (hereafter EvAdj) associated with general academic nouns, e.g. *valid hypothesis, interesting results, recent literature.*

Several avenues are explored in this work. First of all, I assume that the evaluation process obeys conventions in academic writings, which can be observed especially in recurrent noun-EvAdj associations across disciplines. I also assume that scholars tend to use a rather stereotypical evaluative phraseology in order to assess their membership in the "academic tribe". The first goal of this work is to collect and characterize this phraseological lexicon. Secondly, like other interpersonal markers in the same disciplines (e.g. Fløttum et al. 2006) and studies on evaluation in English (e.g. Stotesbury 2003), evaluation markers in economics and evaluative markers in linguistics probably differ significantly. The study of evaluation markers can shed light on the criteria used to ensure scientific quality in a discipline (e.g. is scientific quality related to the novelty of an approach or the complexity of a problem? Does the author use specific evaluative markers to guide the reader's attention?). Finally, I assume that the kind of evaluative markers used is closely linked to specific pragmatic and rhetorical functions in the academic text (e.g. justifying the interest of a study in the introduction; demonstrating a sound knowledge of the literature; providing new results, etc.). I presume that evaluative adjectives will be particularly frequent in strategic textual parts, that is, in introductions and conclusions.

I will firstly present the topic of evaluation. Then, I explain the methodology, based on a corpus study, including the treatment of the lexical framework. Finally, I will present the main results in detail and discuss their implications.

2. Evaluation in linguistics and in academic writings

Evaluation, as outlined by Hunston and Thompson (2000), is a slippery notion, which has been given several labels: for example, Martin (2000) and Martin and White (2005) prefer *appraisal*, Conrad and Biber (2000) use the term *stance* while Hyland's *attitude markers* (Hyland 2005) and some of the linguistic items he describes as hedges can be considered as evaluative markers. In this paper, I use the term *evaluation* and borrow Hunston and Thompson's definition:

> […] evaluation is the broad cover term for the expression of the speaker or writer's attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about. (Hunston and Thompson 2005, 5)

For me, evaluation includes comparison, subjectivity in a broad sense, value-laden terms and to a certain extent modality, but I do not consider affective lexicon as belonging to the evaluative type.

In academic writing, evaluation has been the topic of several studies, both written and oral (Swales and Burkes 2003; Anderson and Bamford 2004; Freddi 2005; Römer 2005; Stotesbury 2005, 2006; Lopez Ferrero and Oliver del Olmo 2008, amongst others). In this study, I exclusively deal with evaluative adjectives in French, for which I adapted Kerbrat-Orecchioni's (1980) fine-grained typology of "subjective adjectives".[1] Table 1 summarizes the typology used for this study which includes axiological and non-axiological adjectives, as well as modal adjectives like *certain* or *possible* (the types included in my study have been underlined).

Subjective adjectives			**Modal adjectives**
Affective adjectives Reflect an emotional state: *sad, unpleasant*	**Evaluative adjectives** Reflect an evaluation in relation to a norm or to an ideology. **Non-axiological evaluative adjectives** Evaluation in relation to a norm: *big, recent, new*	**Axiological evaluative adjectives** Evaluation in relation to a system of values**:** ***interesting, famous, good***	Reflect the attitude towards the propositional content: *possible, incredible, certain* Express attitude toward the statement *likely, possible, certain*

Table 1. Typology of subjective adjectives adapted from Kerbrat-Orecchioni (1980).

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[1] Soler (2002) uses the same typology for her study on adjectives in scientific writings.

Borrowing Dixon's typology (Dixon 2004) of adjectives (based on a typological perspective), my typology of evaluative adjectives includes the following semantic types: dimension, value, difficulty, similarity, qualification and quantification. Syntactically, being predicative, evaluative adjectives are characterised by the following properties (e.g. Noailly 1999):

- they can be used predicatively, e.g. *Ces résultats sont cohérents avec* ... (these results are consistent with) ...
- they are generally gradable, e.g. *Cette méthode apparaît très prometteuse.* (this method seems very promising).

I suggest using a lexico-semantic test to identify evaluative adjectives: they can be used with an evaluative verb such as *consider* or *find* in English (*trouver* or *considérer* in French), which is impossible with non-evaluative adjectives like *red* :

- *Je trouve cette approche traditionnelle.* (I consider this approach traditional).
- **Je trouve cette voiture rouge.* (*I find this car red).

3. Methodology

This study is based on a 1.3 million word corpus, in which I selected and annotated the most frequent evaluative adjectives (cf. details below) associated with general academic nouns in the corpus. The corpus contains 100 research articles (belonging to Kjersti Fløttum's French KIAP corpus) (Fløttum et al. 2006) and also several theses, reports and course books. Two disciplines are equally represented: linguistics and economics, as is shown in Table 2 below.

	Linguistics	Economics
50 research articles (KIAP Corpus)	285,881 words	374,516 words
Theses, reports, course books	364,812 words	286,653 words
Total	650,693 words	661,169 words

Table 2. Composition of the corpus.

I annotated EvAdj-Noun associations in the corpus with the help of a corpus processor. In order to exclude non-academic paradigms and to limit my study to scientific metadiscourse[2], the study of evaluative adjectives was restricted to a set of cross-disciplinary nouns (or general academic nouns), i.e. nouns specific to the academic writings that refer to academic reasoning, academic experience, evaluation and metatext (Tutin 2007), e.g. *hypothèse* (hypothesis)*, qualité* (quality)*, résultats* (results), *chapitre* (chapter)[3]. The following types of nouns were included:

- Scientific artifacts: *étude* (study), *modèle* (model), *approche* (approach) …
- Scientific observables: *données* (data), *exemple* (example), *résultats* (results), ...
- Quality nouns: *fréquence* (frequency), *importance*, *pertinence* (relevance), ...
- Relation nouns; *cause, conséquence, effet* (effect), ...
- Nouns of scientific medium : *littérature* (literature), *chapitre* (chapter), *section*, ...

Of course, this method does not claim to be comprehensive of evaluative markers and can leave out the evaluation of an object if specific words do not occur (e.g. the evaluation of a particular procedure without using the word *procedure* or *method*)[4].

As regards adjectives, I selected the most frequent adjectives (more that 15 occurrences in both disciplines), and selected the evaluative ones (according to the criteria mentioned in the previous section). Nine dimensions have been used:

(1)
Axiological (true axiological adjectives, comparable to "value" in Dixon's typology): *résultats intéressants* (interesting results), *analyse pertinente* (relevant analysis), *mauvais résultats* (bad results), …

(2)

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[2] For example, evaluative associations like the following do not belong to scientific metadiscourse and were excluded: *une rémunération élevée* (high salary), *nouveaux consommateurs* (new consumers).
[3] Lists of this cross-disciplinary vocabulary are available at: http://w3.u-grenoble3.fr/tutin/lexique
[4] This problem has been relevantly highlighted by an anonymous reviewer that I would like to thank here.

Non-axiological
2.1. <u>degree</u> (comparable with "dimension" and "quantification" in Dixon's typology): it includes intensity and quantity. *grande quantité* (large quantity), *nombreux problèmes* (numerous problems)
2.2. <u>comparison</u> (comparable to "similarity" in Dixon's typology): involves comparison with other models, or other results. *résultats comparables* (similar results), *méthode différente* (different method), …
2.3. <u>importance</u>: *rôle crucial* (essential role), *principal problème* (main problem),
2.4. <u>complexity</u> (comparable to "difficulty" in Dixon's typology): *problème facile* (simple problem), …
2.5. <u>novelty</u>: *nouvelle méthode* (new method), *problème classique* (classical problem) …
2.6. <u>time</u>: *travaux récents* (recent work), *concept ancien* (old concept), …
2.7. <u>other</u>: *conclusion paradoxale* (paradoxical conclusion), …

(3)
<u>modal</u>: *analyse possible* (possible analysis), *conséquence certaine* (likely consequence), …

Some of these dimensions are close to Swales and Burke's (2003) classification,[5] in particular to what they termed assessment (≈ axiologicals). In order to study the occurrences of evaluative adjectives and academic nouns, they were integrated in a corpus processor, NooJ[6] (Silberztein 2004), in a local grammar including attributive and predicative uses of the evaluative adjectives. This grammar, which uses finite-state transducers in a graphic interface, is presented in Figure 1 below. The local grammar is organized in a modular way: evaluative adjectives (adj_eval in Figure 1) and general academic nouns (non_trans) are first defined in a transducer, then used in a syntactic pattern.
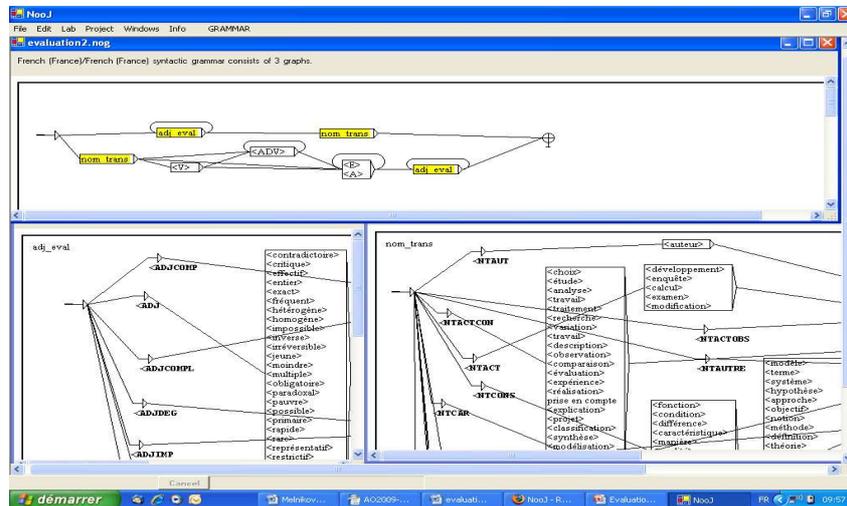

Figure 1. A local grammar of evaluative adjectives using NooJ.

Relevant associations have been semi-automatically annotated, but manual intervention was required to deal with difficult polysemous cases or irrelevant associations. For example, the adjective *important* is polysemous. It is associated with the class "degree" when used with the noun *quantité* (*une quantité importante* (a large quantity)), while when applied to *problème*, it belongs to the "importance" class (*un problème important* (a crucial issue)).

4. Analysis of the results

4.1 Quantitative results

A first look at the results shows that Noun-Evadj associations are far more numerous—almost twice the number— in economics than in linguistics (see Table 3 below). These results may seem quite surprising at first sight since it could be assumed that academic writing in economics is closer to the

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[5] Swales and Burke (2003) use the following classification: acuity, aesthetic appeal, assessment, deviance, relevance, size, and strength.
[6] NooJ is freely downloadable and has lexical resources in a large number of languages: *www.nooj4nlp.net.*

"neutral" type of the "hard" sciences, where objectivity prevails. They are quite different from Fløttum et al.'s (2006) results on person manifestation, which showed that linguists tend to have a more prominent authorial voice and tend to argue more than economists. Fløttum et al. (2006) show that expressions like *we claim, argue, suggest* (which portray the author as an arguer) are more frequent in linguistics, while verbal expressions like *I investigate* (the author as a researcher) are more frequent in economics than in linguistics. However, my results are consistent with Stotesbury's study on research article abstracts, where explicit evaluative markers were slightly more numerous in the social sciences than in the field of humanities. They are also comparable with other close studies by our team of the same corpus on distance markers (Chavez 2008) and academic filiation markers (Garcia 2008). Chavez's study showed that collocations expressing distance vis-à-vis peer studies, *e.g. Notre travail se démarque de ...* (our work differs from) are far more prevalent in economics than in linguistics, while Garcia noticed that it seemed more essential to clearly indicate the scientific membership in economics (*e.g. our work is based on X's model; following X, I ...*). In other words, position taking towards peers seems more overt in economics than in linguistics.

	Economics	Linguistics
Number of occurrences	1,088	598

Table 3. Total number of Noun-Evadj associations in economics and linguistics.

If we now take a closer look at the different types of Evadj (Figure 2 below), we can observe interesting differences according to evaluative type and to discipline.
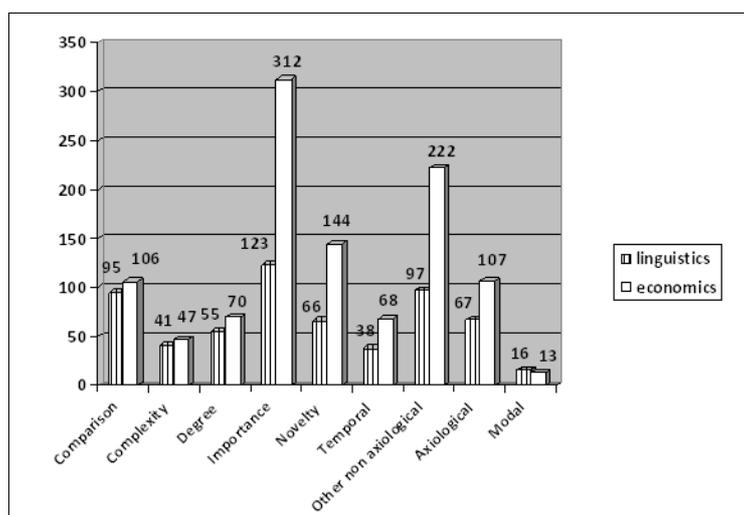

Figure 2. Evadj types in relation to the discipline.

First of all, for both disciplines, we can see that very subjective adjectives (i.e. axiological adjectives) are not very frequent as compared to non-axiological evaluative adjectives.[7] We will return to this below. Secondly, Noun-Evadj associations are more numerous in economics than in linguistics for all types, except modals, which are relatively rare (they are mainly used as sentence modifiers, and not as noun modifiers: *il est certain que ...* (it is certain that)).[8] The "importance" type is particularly common in economics, and this seems due to the high range of "metadiscursive pointers" according to Dahl's terminology (Dahl 2008, this volume), used on purpose to guide the reader to the salient points of the text. "Novelty" adjectives are also very frequent in economics (cf. Dahl, this volume), and they are mainly used to support the claim of new knowledge, as we will see below, and to promote the author's work.

The examination of the 15 most frequent EvAdj-Noun collocations (see Table 4 below) confirms that axiological adjectives are quite few in number (only one occurrence for both disciplines, *résultats*

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[7] However, it is difficult for some cases to make a clear-cut distinction between axiologicals and non-axiologicals. For example, we considered that the "importance" dimension (e.g. *un problème crucial* (a crucial problem)) or "complexity" (*a complex analysis*) were not truly axiological in so far as they did not really involve a positive or a negative judgement of the writer. Nevertheless, they appear to be more subjective than the temporal or the degree dimensions.

[8] See Vold (2006).

intéressants (interesting results). In this list, the most frequent semantic types ("importance", "time", "degree") are slightly different from the most frequent types of the whole corpus (Figure 2): for example, temporal evaluation is used in the list of the most frequent collocations (*travaux récents, études récentes*). This dimension is not, on the whole, so frequent, which probably means that stereotypical collocations are privileged for this dimension. Two frequent collocations are common to both disciplines (*rôle important* (important role)*, travaux récents* (recent work)), which shows that the lexicon of evaluation is partly cross-disciplinary. The difference between the two disciplines lies mainly in the noun type: in linguistics, quality nouns (*rôle* (role), *valeur* (value), *propriété* (property)) are more frequent than academic artifacts, while we observe the opposite in economics. The theoretical and meta-academic dimensions seem to be more important for authors in economics. This is probably due to the fact that authors in economics are required to establish the relevance, originality and importance of their work in relation to the existing literature.

Rank	BOTH DISCIPLINES	LINGUISTICS	ECONOMICS
1.	rôle important (26) (important role)	cas extrême (10) (extreme case)	rôle important (18) (important role)
2.	étude récente (24) (recent study)	rôle important (8) (important role)	étude récente (17) (recent study)
3.	travaux récents (18) (recent work)	propriétés fondamentales (8) (fundamental properties)	travaux récents (15) (recent work)
4.	principales caractéristiques (12) (main charasteristics)	valeurs différentes (8) (different values)	principales caractéristiques (11) (main charasteristics)
5.	cas extrême (16) (extreme case)	système actuel (7) (current system)	élément essentiel (11) (essential element)
6.	nombreux travaux (14) (numerous works)	travaux récents (6) (recent work)	nombreux travaux (10) (numerous works)
7.	élément essentiel (12) (essential element)	différences importantes (6) (important differences)	nouvelle conception (10) (new approach)
8.	nouvelle conception (12) (new approach)	caractéristiques différentes (6) (different characteristics)	principaux résultats (10) (main results)
9.	principaux résultats (11) (main results)	rôle central (5) (central role)	études antérieures (10) (previous studies)
10.	modèle simple (10) (simple model)	analyse traditionnelle (5) (traditional analysis)	modèle simple (10) (simple model)
11.	résultats intéressants (10) (interesting results)	grande diversité (5) (great diversity)	résultats intéressants (9) (interesting results)
12.	principe fondamental (10) (fundamental principle)	caractéristiques essentielles (5) (essential features)	effet significatif (9) (significant effect)
13.	nombreuses études (10) (numerous studies)	problèmes spécifiques (4) (specific problems)	nombreuses études (8) (numerous studies)
14.	études antérieures (10) (previous studies)	analyse fine (4) (accurate analysis)	élément important (8) (important element)
15.	différences importantes (10) (important differences)	principaux objectifs (4) (main objectives)	question centrale (8) (central issue)

Table 4. The 15 most frequent EvAdj-Noun associations.

4.2. EvAdj-noun associations

Evaluative adjectives are related to nouns, and the semantic type of the noun must be taken into account to understand the role of this evaluative lexicon.

As expected, "time" and "novelty" tend to appear together because in academic texts "the author's main task is to communicate new knowledge, but may also be to confirm and support already existing knowledge" (Fløttum et al. 2006, 19). The following examples (drawn from two different articles) are typical in this respect:

(1)
A la différence des **études précédentes**, notre étude considère de **nouvelles hypothèses** par rapport aux **travaux antérieurs** et prend en compte un nombre plus important de pays. [Economics, KIAP Corpus]
[Unlike **previous studies** our study considers new hypotheses as compared with **earlier studies** ...][9]

(2)
[…] nous ajoutons de **nouvelles hypothèses** et des modalités de mesure des hypothèses déjà testées par les **précédentes études**, c'est-à-dire en prenant en compte d'autres variables …
[[…] we introduce **new hypotheses** and evaluative modalities of hypotheses already tested in **previous studies** …] [Economics, KIAP Corpus]

The temporal dimension is mainly past and present. In linguistics and economics, it is mainly used to refer to the work and studies of peers (*études antérieures* (previous studies), *littérature récente* (recent literature), *travaux récents/études récentes* (recent work/studies) and may be used to exhibit a deep knowledge of the field. As regards novelty, adjectives (far more numerous in economics) are almost always associated with nouns of "scientific artifacts" like *méthode, modèle, analyse, description* or "scientific observables" (*exemple*, *résultats*). Putting forward the novelty of concepts and approaches seems a common rhetorical strategy in economics, as outlined by Dahl (2008, this volume). Demonstrating the originality of a piece of research (also see below with comparison) seems to be required in this discipline and some authors adopt a slightly self-promotional style, which seems less common in linguistics.

Like novelty, "importance" is over-represented in economics. It deals with various concepts: the nouns of quality (*différence essentielle* (main difference)), scientific artifacts like *principe fondamental* (fundamental principle), more rarely causal relations like *lien significatif* (effective relation). Some examples are given below:

(3)
La deuxième partie est consacrée à la résolution du modèle tandis que la troisième partie expose les **principaux résultats** de l'article.
[The second part is dedicated to the resolution of the model while the third part describes the **main results** of the article.] [Economics, KIAP Corpus, Introduction]

(4)
Au-delà de cette classification des adjectifs, la littérature fait apparaître deux **caractéristiques fondamentales** du sémantisme des adjectifs …
[Beyond this classification of adjectives, the literature reveals two **fundamental characteristics** of the meaning of adjectives.] [Linguistics, PhD Thesis]

This dimension deserves a detailed study. As highlighted by Dahl (2008, this volume), these associations are metadiscursive pointers, to signal salient points of the contents to the reader, as if the author wanted to facilitate the reading task. Another rhetorical function could be to demonstrate to the reader that the author is able to retrieve and select the core information of research without losing the reader in useless details: the reader is led to *the central issue, the main problems, the main results, the main conclusions*. This kind of evaluative markers is used to facilitate the reader's task, and confirms that in economics, more attention is paid to the reader, as shown by Fløttum et al. (2006) who noticed that there were more metatextual markers in economics than in linguistics. Very interestingly, Dahl (this issue) shows that authors in economics seem to be rather self-conscious about these rhetorical constructions. For example, informants say that they use them to save readers' time and to increase clarity and that they are a signal to referees/readers of the main points/contributions of the article (Dahl this volume).

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[9] Bold face is ours.

"Complexity" is mainly used to evaluate scientific artifacts and scientific observables. Here again, we notice interesting differences between the two disciplines. In economics, complexity is very often associated with *modèle* (model). In linguistics, "complexity" is mainly associated with scientific observables like *phénomènes* (phenomena) or *problèmes* (problems) (*question delicate/difficile* (a tricky question)*, problème complexe* (a complex issue)) and these associations seem to mean that, as the issue under examination is of interest (being complex or difficult), no simple or straightforward solution can be provided. The following example, where the difficult issue (*question délicate*) remains unresolved (*reste ouverte*) is typical in this respect.

(5)
Un premier inconvénient avec cette terminologie est qu'elle suppose résolue la question particulièrement délicate (et qui reste toujours largement ouverte) des critères permettant de distinguer [les termes nominaux] …qui sont dans une relation de rection forte avec le verbe.
[A first drawback to this terminology is that it assumes that the particularly difficult issue (which remains unresolved) of criteria for distinguishing [the NPs] which have a strong dependency relation with the verb is solved.] [Coursebook, Linguistics].

It seems here that the epistemological system of each discipline affects the way evaluative language is used: in economics, more attention is paid to the theoretical apparatus, and words related to models, approaches, theories are more likely to be evaluated with adjectives. On the other hand, linguists tend to focus more on terminological and defining issues. Another study on the same corpus on scientific membership and theoretical frames (Garcia 2008; Grossmann et al. 2009) showed that economists tend to use peers' models, theories or approaches while linguists tend to borrow more simple peers' concepts such as *ideas, definitions* and *notions*.

"Comparison" (mainly difference *vs.* similarity) has several functions: it is not only interpersonal (comparison with peers) (Ex. 6) but also intra-textual (comparison to other elements or ideas presented by the author) (Ex. 7). Therefore, it is difficult to interpret unambiguously the use of this dimension, without paying close attention to the context. We simply noticed that comparison adjectives are more frequent in economics with scientific artifacts and results, and they are mainly used to position the research vis-à-vis peers (distance or similarity). Here again, economists seem more likely to highlight the originality of their approach. In linguistics, in contrast, comparisons are mainly used intratextually with quality nouns and scientific observables (*phénomène différent* (different phenomenon)*, exemple identique* (identical example)). This could be due to the extensive use of metalinguistic elements (especially linguistic examples) in linguistic texts.

(6)
Nous avons pu constater que Arrivé, Gadet, Galmiche (1986: 561) proposent une conclusion identique sur la question sémantique: …
[We have been able to confirm that Arrivé, Gadet, Galmiche (1986: 561) propose a similar solution on the semantic issue …] [Linguistics, KIAP Corpus].

(7)
L'argument est identique à celui présenté dans le paragraphe 3.3.
[The argument is similar to the one presented in paragraph 3.3 …]. [Economics, KIAP Corpus]

"Degree" refers to nouns of relation (*corrélation forte* (strong correlation)) and qualities (*grande différence* (huge difference)) both in linguistics and in economics. This dimension does not seem central to rhetorical strategies in academic writing.

Modals, as said earlier, are very rare (only 29 occurrences in the whole corpus) when they refer to nouns both in economics and linguistics. The adjective *possible* is the most frequent in relation to scientific artifacts (*hypothèse* (hypothesis)*, approche* (approach)*, théorie* (theory)) or scientific observables (*cas* (case)).

Finally, as said previously, real axiological adjectives are not very numerous in either of the two disciplines. Most of them have a positive polarity (*significatif* (significant), *intéressant* (interesting) and refer to the results and solutions proposed by the author.

Table 5 below summarizes the most significant lexical associations and their rhetorical functions.

Type of evaluative adjective	Type of general academic noun associated	Examples	Main rhetorical functions and interpersonal implications

Time	Mostly used with scientific artifacts	*études récentes/travaux récents* (recent studies/work) *études antérieures* (previous studies)	To exhibit a good knowledge of the literature by citing peer work in order to demonstrate authority in the field.
Novelty	Scientific artifacts or scientific observables	*approche /nouvelle/ traditionnelle / classique* (new/classical/traditional approach) *nouveaux résultats* (new results)	To exhibit a good knowledge of peer work (with adjectives like *traditional* or *classical*) in order to demonstrate authority in the field. To put forward the quality of the research by showing the innovative results.
Importance	Nouns of quality, scientific artifacts, causal relations	*principales caractéristiques* (main characteristics) *principaux résultats* (main results)	"metadiscursive pointers" are used to guide the reader to the main points of the text (results, conclusion, issue) in order to facilitate the reader's task. Also used to demonstrate that the author is able to provide concise and summarized information.
Complexity	Nouns of artifacts and nouns of scientific observables	*problème complexe* (complex problem) *modèle complexe* (complex model)	To show to the reader that the issue under examination is of high interest. To justify (towards the reader) that it is hard to provide a simple and straightforward solution.
Axiological	Nouns of artifacts and scientific observables	*bons résultats* (good results) *modèle intéressant* (interesting model)	Often used to describe postiveley models and result and are often used to promote the author's work.

Table 5. Main lexical associations of evaluative adjectives and general academic nouns and their rhetorical functions.

4.3. Evaluative adjectives and rhetorical strategies in introductions and in conclusions[10]

In order to explore in greater detail the rhetorical strategies conveyed by the evaluative lexicon, I studied the distribution of evaluative lexicon in introductions and in conclusions in one subset of our corpus, the KIAP corpus, which includes 50 research articles in each discipline (the whole corpus used so far also included theses and textbooks). I assumed that the rhetoric of innovation would be prevalent in introductions with EvAdj of "novelty", time and comparison (Swales 1990; Dahl 2008), while the conclusion would contain more positive axiological adjectives about results.

As we can observe in Figure 3, in linguistics and economics EvAdj-Noun associations are clearly more numerous in introductions than in the remainder of the text. It is also the case of conclusions in economics. This shows that evaluation plays a key role in these parts of texts where the author situates himself in relation to peer research, to his own work and sometimes, to the social milieu. Persuasion strategies in introductions seem to make extensive use of this lexicon. In conclusions, this is less clear in linguistics. Conclusions tend to be very brief in linguistics and are less well structured than in economics.
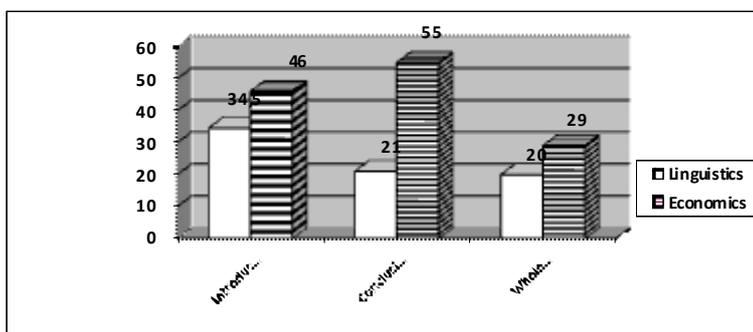

Figure 3. Proportion of evaluative adjectives in introductions and conclusions (per 10,000 words).

If we now look at the semantic types on EvAdj-Nouns associations, we notice, as expected, in introductions a large number of collocations pertaining to importance (*concept important* (important concept)*, notion essentielle* (essential notion)), novelty and time, especially in economics. In conclusions (economics), novelty, time and importance are also prevalent. In linguistics, evaluative adjectives are also overrepresented in introductions, especially for the novelty, time and comparison dimensions. As expected, axiological adjectives are more numerous in conclusions in economics than in introductions, where they are more frequent than in the remainder of the text. This is, however, not the case in linguistics, probably because there are fewer quantitative evaluations related to the results of the research than in economics.

5. Conclusion

This study of evaluative adjectives referring to scientific nouns in scientific writing in French on linguistics and economics shows that purely axiological adjectives are not very common in this type of academic writings. Argumentation in academic writing does not seem to use overtly positive or negative judgement. Authors prefer more subtle and less subjective evaluative devices like adjectives pertaining to time, novelty and importance. Secondly, it has been found that recurrent associations are often cross-disciplinary and exhibit strong selectional restrictions between nouns and evaluative adjectives: for example, temporal adjectives generally refer to scientific artifacts while axiologicals mainly refer to results. Some evaluative dimensions, like degree, do not seem to be central for the study of rhetorical strategies.

Contrary to my expectations, evaluative adjectives are far more numerous in economics than in linguistics for almost all types, and especially those expressing importance and novelty, which seems to highlight the importance of authorial self-promotion in this discipline. These results apparently contradict Fløttum et al. (2006), who observed more traces of personal manifestation in linguistics than in economics. However, other studies on evaluation in English (Stotesbury 2003) as well as studies on

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[10] This study has been performed in collaboration with Cristelle Cavalla.

distance markers (Chavez 2008) and academic filiation traces (Garcia 2008) on the same corpus show that authorial position is more prevalent in social sciences than in the humanities. A possible explanation is that person manifestation is more present at the enunciative level in the humanities because it is essential for authors in this field to develop original views and ideas ("authors as arguers", as outlined by the KIAP team), but linguists do not need to evaluate explicitly their ideas as economists do with econometric models, where quantitative evaluation is easy to perform. In economics, however, the authorial position seems more apparent and the rhetorical strategies are stronger. They adopt a more "marketised" style by emphasizing explicitly the novelty and the good quality of the results. Economists are also more adept at anticipating readers' expectations by signalling the most salient points in the text and, in short, they interact more with the reader than linguists do. These comments, however, need to be supported by a much more thorough study on other authorial position markers. Finally, as expected, the use of evaluative adjectives seems closely linked to rhetorical strategies and specific textual parts: they are especially numerous in introductions (and in conclusions in economics), where they are used mainly to justify and promote the author's work.

My study on evaluation remains limited to attributive and predicative evaluative adjectives modifying nouns. Future studies on evaluation should also include the investigation of adjectives modifying clauses (e.g. *it is uncontroversial that* ...), as well as other parts of speech. In addition, a larger corpus including various other disciplines would be necessary to throw light on the disciplinary differences of evaluative language.

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