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The 'iffiness' of medical research articles A comparison of English *if* and French *si*

Shirley Carter-Thomas

1. Introduction

This chapter will focus on the use of English *if* and French *si*, in the medical research article (RA) in oncology. Although it is always challenging to find connectives that correspond across languages, *if* and *si* are considered as the typical lexical exponents of conditionality in both languages with a wide degree of overlap in their prototypical functions. One of my main aims will therefore be to determine whether they are used in the same way in English and French medical research articles.

Studying the role of these two items in the research world would seem profitable for several reasons. Firstly, the 'iffiness' afforded by conditional clauses, with their characteristic non-assertiveness, provides a highly valuable resource in the attainment of various objectives of medical research communication, such as hedging, hypothesising and promoting research claims. In medical research, and particularly in clinical investigations of the type analysed here, where the reasoning is inductive rather than deductive (being observation based), the need to weigh evidence carefully in order to make space for claims is of paramount importance. The hypotheses proposed must often therefore be necessarily tentative, due to a great number of factors or variables and results are usually given in probabilistic form (Horsella & Sindermann 1992). At the same time results obtained in medical research are established under strictly controlled conditions (randomization and large-scale trials, for example). The researchers need to delimit the research space and specify the conditions under which the research was carried out; conditional clauses can also play an extremely important role here too, in specifying for example the eligibility criteria for patients involved in trials.

The importance of conditional constructions in RAs is also linked to their role as potential polyphonic operators, often enabling implicit (and sometimes explicit) polyphonic interaction. The RA is both a competitive and cooperative text (Fløttum 2005). Researchers need to be competitive, creating a new space for their own claims and promoting their research, whilst remaining at the same time cooperative towards peers: recognizing the contribution of others, in order to delimit the import of their specific research within the community research effort. By building, for example, on shared knowledge and on mutually acceptable assumptions (*If X is admitted*), or on reference to others' research (*If as these studies indicate*), medical researchers can summon different voices into the text – negotiating their own research claims whilst still respectfully acknowledging the sum of mutual research already accomplished. It has been suggested that medical researchers are rather remote writers who do not let themselves or others be heard directly in their texts (cf. the provocative title of Dahl 2004: “Absent doctors, shy economists, polemic linguists?”). Although the polyphonic potential of conditional constructions is perhaps more apparent in some of the other medical genres (cf. Rowley-Jolivet, this volume), it would seem that even in the RA, medical writers are more visible and polemic than originally thought – albeit with some slight language-related differences.

The article is organised as follows: after a presentation of the data, I will outline the general descriptive framework and methodology adopted for this study, focusing on certain quantitative and formal features of the constructions in order to build up a general picture of baseline usage of *if* and *si* in the medical RA. This will be followed by the cross-linguistic analysis which is divided into two main sections, the first focusing on the distribution of the various occurrences in the different RA sections and the second on a qualitative comparison of the functions fulfilled by the *si*- and *if*-constructions collected in the different author groups

2. Data sample

This study is based on an analysis of 90 RAs, taken from four different refereed journals (two English, two French¹), all dealing with clinical oncology. The articles were roughly of the same length, followed very strictly an IMRD (Introduction-Methods-Results-Discussion) structure and could be considered as

¹ The articles published in 2002-2003 are from the following journals: International Journal of Radiation Oncology (30), Journal of Clinical Oncology (30), Bulletin du Cancer (15) and Cancer-Radiothérapie (15).

standard data-based medical RAs². Three author groups were distinguished: French (Fr) authors of articles in French, English speaking authors of articles in English (En) and French speaking authors (Fse) of articles in English - the latter identified through their names and laboratory affiliations. This third subset was isolated in order to take into consideration the possible influence of national origin, arising from the French/English comparison. As many cross-cultural studies on academic communication have pointed out (for example, Mauranen 1993; Ventola & Mauranen 1996; Sionis 1997; Rowley-Jolivet & Carter-Thomas 2005), different national traditions can be expected to impact on the *lingua franca* of academic communication, English. By also comparing research articles in English by French speaking and native English-speaking authors, it should be possible to gauge whether the recurrent rhetorical functions attributed to *if* by the two speaker groups reflect underlying cross-linguistic differences between *if* and *si* in their respective native languages, leading to different argumentative implications.

3. Descriptive framework

3.1 Inclusions and exclusions

Isolating and comparing ‘conditional’ constructions cross-linguistically (and indeed interlinguistically) is in itself problematic, firstly because of the variety of forms that can be used to express conditional meaning, and secondly because of the general problem of identifying a core ‘conditional’ meaning and attributing a well-defined semantic value to the *si* and *if* operators. In order therefore to limit the variables, a narrow range of data has been chosen as described above. I will consider only one discipline, clinical oncology, and one genre, the academic research article. Differences in use amongst the three sub-groups will be limited to this specific epistemic community and text type. Rather than looking at the various ways conditionality is expressed, I will adopt a bottom-up approach focusing on the ways *si* and *if* as the prototypical lexical exponents of conditionality are exploited by the different author groups, within this very precise discourse context.

A formal definition of conditionality will therefore be employed whereby conditional constructions are typically considered as consisting of two

² The main difference, between the French and English journals, is essentially in terms of the likely audience reached – with the readership of the French journals restricted to oncology specialists in Francophone North Africa and France (see Burgess (2002) and Swales (2004) for a discussion of the restricted readership issue).

clauses; a subordinate clause introduced by *si* or *if* henceforth termed the P clause and an apodosis or Q clause:

- (1) *Si une telle analyse était réalisée de manière systématique, la valeur prédictive des embolies (...) augmenterait probablement de manière importante* (Fr)
 (If such an analysis was carried out systematically, the predictive value of emboli (...) would probably increase considerably).

Other subordinators in both languages, such as *on condition that*, *provided that*, *unless*, or various types of inversion (*Should you change your mind, let us know*) were discarded. (A preliminary investigation revealed however very few such occurrences in the data.) Uses involving the adverbial function of *si* in French: *des risques si bas* (*such low risks*) and occurrences with *as if* or *comme si* were also discounted, as were examples in both languages where the subordinate clause was a subject or object clause and the equivalent of whether: *nous avons voulu savoir si ces enzymes jouent un rôle* / *We wanted to know whether (if) these enzymes play a role*. It was however decided to include elliptical *si*- and *if*-clauses, such as *if possible* (*si possible*), – a frequent phenomenon in the dataset.

3.2 Global quantitative features

After the above adjustments, 320 occurrences of *if* and *si* were collected (an average of 0.94 occurrences per 1000 words), which indicates that they are not a marginal phenomenon in this specific type of written discourse. Although considerably less frequent than in speech (Ford & Thompson 1986), the figures tally with those of Ferguson (2001), who in a study focusing solely on English medical data found a ratio of 1.1 *if*-conditional constructions per 1000 words in medical journal articles. As table 1 below illustrates, these occurrences were moreover fairly equally distributed amongst the three sub-groups.

Table 1: Frequency of *si*- and *if*-constructions

Author group	Words total	Number of constructions	<i>si/if</i>	Ratio per 1000 words
All authors (90 RAs)	337,689	320		0.94
Fr authors (30 RAs)	111,391	103		0.92
En authors (30 RAs)	111,907	119		1.06
Fse authors (30 RAs)	114,391	98		0.85

Author group	Words total	Number of constructions	<i>si/if</i>	Ratio per 1000 words
RA(s)				

From a purely quantitative perspective therefore, the three author groups can be seen to employ the *si*- and *if*-conditional constructions with a similar frequency in their research articles.

A further similarity amongst the three author groups in this dataset is the preference for final positioning of P clauses. Three categories of position were distinguished, initial P clauses, final P clauses and medial P clauses as illustrated below:

- (2) *If we exclude perineal recurrences (...), this figure increases to 93%*
- (3) *Patients were eligible for participation if they were 18 years of age or older*
- (4) *The last evaluation, even if performed on D30 (day 30), was used as final data*

In the three author groups there were overall 41% of initial P clauses, 6% of medial P clauses and 53% of final P clauses. This is contrary to most findings in French and English, where initial positioning has been presented as the default ordering or even as a language universal (Comrie 1986), with any non-initial positioning being regarded as a very marked choice and frequently often even ignored in subsequent analyses. In one of the few data-driven studies focusing on conditional ordering in English by Ford & Thompson (1986), initial P clause represented 77% of written occurrences and 82% of spoken data. The tendency towards final positioning of P-clauses in all three author groups (Fr 52%, En 55% and Fse 52%) would therefore appear to be a pronounced specificity of the medical RA in both English and French.

Ford and Thompson (*op. cit*) have related the fairly rare post-positioning of *if*-clauses found in their written data (a mixed corpus consisting of a technical manual, a personal narrative account and essays) to a number of syntactic and information-structuring considerations: length and complexity of the P clause, its degree of 'newness' and degree of embedding. In this corpus, positioning also appears to be strongly linked to the precise rhetorical functions fulfilled by the various occurrences, as well as to the more general functions or aims of each section in the medical RA. In all three sub-sets there is, for example, a strong preference for final positioning of P-clauses in the Methods sections of the articles: 42 initial P clauses as opposed to 85 final P clauses in this section of the RA.

Another constant in relation to all the occurrences concerns the verbal forms in the P and Q clauses. In traditional and pedagogical grammars in both English and French, three types of conditional are usually identified in which the verb forms index different degrees of hypotheticality: 1) present + future; 2) past +

'conditional', 3) past perfect + 'conditional' perfect. In all three author subsets there were extremely marked deviations from this paradigm, with the three above combinations accounting together for fewer than 6% of occurrences. On the contrary a wide range of combinations are represented. Once again the location of the occurrences within a particular article section seems to be a decisive factor, with almost exclusively past tenses in the Methods section, and simple presents in the Discussion sections, in line with what is already known about tense usage in general in these sections of the RA (Heslot 1985; Swales 1990; Swales & Feak 1994). There was however a striking difference in the overall number of past tense forms in the French and English RAs. The combination of two past tenses in P & Q represented 48% and 42% of the total occurrences in the En and Fse subgroups, but only 15% of occurrences in the French RAs, where on the contrary the present + present combination was far more common (52%) – a difference linked to the distribution of the *si*- and *if*-constructions amongst the RA component parts (cf. *infra*).

4. Distribution of occurrences across article sections

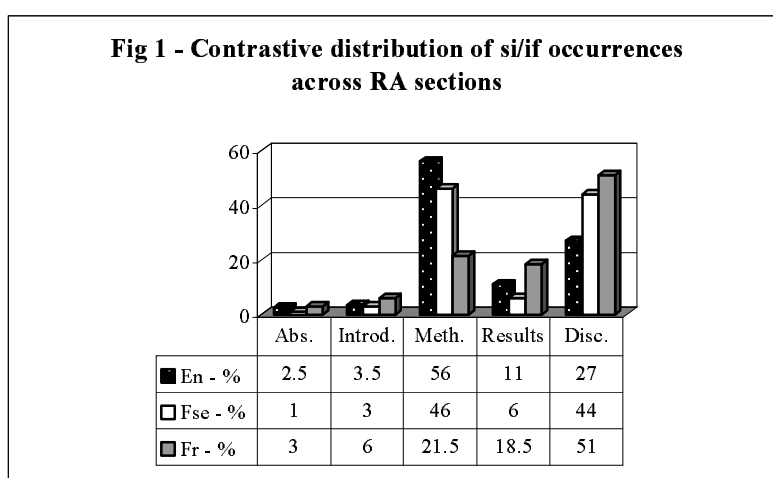
The medical research article adheres to a very standard format for the presentation of information and the 90 RAs examined all contained the following highly structured explicitly marked sections: Introduction, Methods, Results, Discussion/conclusion³, preceded by a short abstract reflecting the IMRD pattern of the RA itself.

As is well-known there are considerable differences in communicative function from one section to another (Swales 1990, Nwogu 1997, Salager-Meyer 1994). In particular a sharp distinction is maintained between the research data and its interpretation. The Methods and Results sections are essentially informative and descriptive, and are characterised by a lack of argumentation or matters of discussion: presenting the data in “orderly, dispassionate and logical manner” (Adams-Smith 1984). The Introduction and Discussion sections, on the other hand, are where the authors can be expected to adopt a more overt argumentative strategy, justifying the specific research undertaken within the general disciplinary context in the Introduction and promoting the individual research claims and their wider implications in the case of the Discussion section. With these broad distinctions in mind, it is thus

³ Three of the journals examined also had, in addition, a short Conclusion section. As this section was absent in the Journal of Clinical Oncology, for the purposes of comparison this section has been amalgamated with the previous Discussion section.

interesting to see how all the *si*- and *if*-constructions collected are distributed over these sections in the three author groups.

Quantitatively we have already observed that *if* and *si*-clauses occur with a similar frequency for all 3 groups in the medical RA. However, as Figure 1 illustrates, the occurrences are not distributed in at all the same way over the RA sections. In the En group's research articles the majority of occurrences are in the descriptive Methods and Results sections (67%). On the other hand, the majority of occurrences in the Fr articles occur within the more argumentative Introduction and Discussion parts of the article (59%), with proportionally far fewer occurrences in the Methods section. (This low percentage in the Methods section is undoubtedly linked to the smaller number of past tense forms observed earlier). The results of the third subset examined, those of the Fse writers, fall between these two extremes. Like those of the En group, their articles contain a substantial number of occurrences in the Methodology section (46%), but they show also an almost equally high percentage of occurrences in the Discussion sections (44%), and in this respect they are more in line with the tendency of the Fr authors.



These results would tend to suggest a greater recourse to *si*-constructions by the Fr authors in argumentative contexts, a tendency also observed to some extent in the Fse authors' use of *if* in English. In contrast, in the En author group, *if*-constructions are more frequent in descriptive and informative contexts. In order to explore further this potential difference in usage among the

three author groups, the following sections will discuss in detail the precise functions fulfilled by all the occurrences collected in the medical RA.

5. Functional classification of *si/if* constructions

Past research has often emphasised the very polysemous nature of the conditional operator. Numerous typologies and classifications have been proposed by philosophers, linguists and grammarians, based for example on logical or truth implications (Lewis 1976), on the conceptual domains or worlds to which the content of the conditional refers (Sweester 1990), on semantic distinctions (Comrie 1986) or simply based on verb forms, as is generally the case in pedagogical grammars. Most past studies, however, have been of an intuitive kind and not based on real data or corpora, with a few notable exceptions such as that of Ferguson (2001), Ford's (1997) study of conditionals in conversation and the panoramic overview of Declerk and Reed (2001) based on the Cobuild and LOB corpora.

In this article a corpus-based genre perspective has been adopted, focusing on the functions served by the English and French conditional clauses in relation to the overall rhetorical aims of the medical RA. No predefined analytical categories were used. Instead, the analytical categories proposed are based on regularities observed in the data within one discipline, that of clinical oncology and within one genre⁴, the RA.

As many authors point out (for example, Dancygier 1998; Charolles 2003; Achard-Bayle 2005; Adam 2005), the role of the *if* and *si* operators in a conditional construction can be essentially viewed as an instructional one. The presence of the *si/if* operator acts as a signal to the reader or hearer to consider a situation in which the associated Q clause "is not being asserted in the usual way" (Dancygier 1998: 18). The reader or hearer is invited to provisionally accept a set of circumstances signalled by the P clause against which the Q situation is presented for consideration. Between the P and Q clauses of natural language conditionals there is a particular kind of dependency relation, which the reader is instructed to recreate with the aid of the *si/if* operator. The precise nature of this relation can only be evaluated when considering the roles(s) played by the whole construction in context: No one invariant meaning can be

⁴ The functional genre-based classification proposed was developed in collaboration with Elizabeth Rowley-Jolivet. A dual-rating system was adopted throughout the classification process until agreement between the two analysts was reached. See Rowley-Jolivet's article in this same volume for an application of these functional categories to other medical genres.

attributed to the operators. It was therefore frequently necessary to examine long stretches of text, in order to determine the nature of the link signalled and its dominant function in relation to the overall rhetorical aims of medical research articles.

The principle functions of the constructions in the medical articles that emerged, following the classification process outlined above, were seen to fall under three main headings: a) Discourse management functions; b) Refocusing functions; c) Factual functions. These categories can then be further broken down into a number of sub-divisions as described below.

5.1 Discourse management functions

In the medical RA, the occurrences which have been classified in this category serve to instruct or guide the readers in following the development of the text. Rather than signalling a particular causal or predictive relationship between P and Q, the emphasis is on signalling to the reader the background against which it is pragmatically relevant to interpret the Q clause:

(5) *Si nous étudions plus précisément la nature des 39 discordances, nous notons qu'elles se répartissent en deux types : les sous-évaluations et les problèmes d'échantillonnage.* (Results-Fr)

(If we look more closely at the nature of the 39 false negatives, we note that they can be divided into two categories: under-evaluation and sampling problems)

In this particular example from the Fr sub-set, the *si*-clause allows the author to draw the readers' attention to two new specific sub-topics ('*sous-évaluations*' and '*problèmes d'échantillonnage*') which in turn provide the headings for the two subsequent paragraphs. The presence of the *si* operator, as opposed to another topic-introducing expression such as *Quant à* or *En ce qui concerne* (*En ce qui concerne la nature des 39 discordances*) or on the contrary a balder imperative formulation (*Étudions plus précisément la nature des 39 discordances*), introduces a certain dialogic quality into the text. The reader is politely invited to cooperate in following the subsequent development of the author's argument

5.2 Factual functions

The category covers many of the features that have been called course of event, generic or habitual conditionals in other approaches (cf. Athanasiadou & Dirven

1997; Ferguson 2001). In medical research it is particularly important to circumscribe the research carried out within a certain set of circumstances, operations or objectives. Over-generalisation needs therefore to be avoided. The *if/si* operator plays an important role here in establishing the boundaries of the research effort, and in thus informing the reader of the conditions under which concepts, facts or cases under observation can be considered valid:

(6) *Fine needle aspiration was performed **if** involvement of inguinal nodes was clinically suspected* (Meth.-Fse)

This definitional work is necessary in order for the methodology to be replicable and for the findings to be comparable to those of other studies (Ferguson 2001). At the same time, the very presence of the *if*-construction, with its characteristic non-asserted quality, enables the author to create a certain textual space, in which the reader participates in the discussion. The reader is invited provisionally (or conditionally) to accept the reality denoted by the fictive P clause, with which the situation in Q is linked. Although the P-Q relation is taking place in the real world, where the *if* or *si* is very close semantically to a *when* (or *quand*), the non-assertive value of the operator, *if* or *si*, leaves a space open for the reader to question or reject the decision made by the researchers.

Factual functions in the RA sample have been divided into three sub-categories: methodological decisions and definitions, treatment decisions and correlations (cf. section 6.2).

5.3 Refocusing functions

The category comprises those occurrences which have a marked argumentative function. To make claims without overstating, RA authors need constantly to renegotiate – expand or contract – the argumentative space. The *if/si* operator allows a redrawing of the argumentative boundaries and consequently provides more manoeuvring room. The expanding types of refocusing functions are represented by different types of hypothesising and advice-giving or recommendations. Amongst those that, on the contrary, enable the researcher to contract the argumentative space and home in on particular features, we find a number of concessive and contrastive conditionals, restrictions and authorial and metatextual comments. In all these cases, it is argued, the authors' recourse to a conditional construction contributes towards the promotion and negotiation of their research claims. Very often, too, these types of refocusing conditionals enable the expression of other voices: either that of other research teams, as in the hypothesis presented in (7) below, or that of the authors themselves, as the researchers responsible for the research presented, in the recommendation in (8):

(7) *If the results of Aoyama et al. [c] are confirmed, HFSR might be the most adequate technique to propose.* (Disc. - Fse)

(8) *If our Phase II study can demonstrate a 60% 1-year survival rate, the potential efficacy of this regimen is worthy of further study in a randomized clinical trial.* (Disc. - En)

Various sub-categories of refocusing functions were identified: recommendations, predictions and hypotheses, restrictions, comments and concessive and contrastive conditionals. Their distribution is contrasted below (section 6.3).

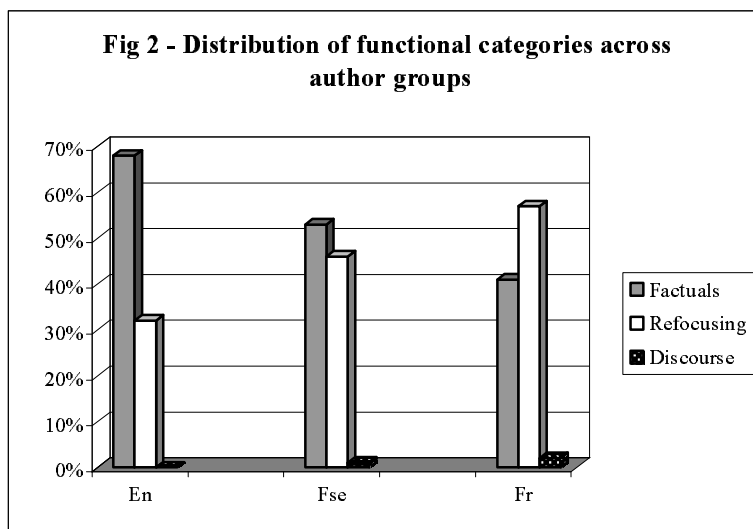
6. Functions in contrast

As already noted, there is a close relationship between the predominant rhetorical functions of the IMRD sections and certain formal features of the *si-* and *if-*clauses, such as the positioning of the P clause and the choice of verb forms used within these sections. The occurrences in each RA section are also highly restricted in terms of the individual functions fulfilled. In the Methods section of the oncology articles, where researchers need to define the eligibility criteria and set out the boundaries of the research presented, the factual functions of the *si/if* operator predominate. Likewise, in the Results sections, where the emphasis is on the presentation of the results observed, we find a number of factual correlations, with the validity of the correlation being circumscribed by the *si-* or *if-*clause. On the contrary, in the Introduction and Discussion sections, where one can expect a more explicit argumentative strategy, refocusing functions prevail. Recourse to the *si/if* operator enables the authors to refocus or reorient their argument by expanding the argumentative space through various predictions, hypotheses or recommendations or alternatively by contracting the space through different types of restrictive, contrastive and concessive conditionals.

There is of course some overspill – criteria-based factual conditionals can occasionally be found in the Discussion sections and the refocusing type conditionals in the Methods sections. Moreover, the categories proposed are not watertight: some occurrences can fulfil several functions. The objective, however, was to attribute a dominant function to all the occurrences collected in order to provide a basis for the contrastive analysis. An examination of the breakdown of these dominant functions in the three author-groups confirms the general tendency noted in relation to IMRD

distribution, where we see very different profiles of conditional use emerging depending on linguistic origin.

As Figure 2 shows, while discourse management functions are rare in the three author groups, there are significant differences in the refocusing and factual uses of the *si/if* operator. Factual functions are less represented within the French RAs. The English authors use *if*-clauses far more than their French counterparts for reporting factual correlations and for the various methodological and treatment decisions taken. The refocusing type of *si*-clauses are, however, considerably more prevalent in the French journals analysed, with the French researchers appearing to make greater use of the argumentative possibilities afforded by *si* constructions than their English counterparts do with *if*-clauses. The Fse author group again falls midway between the French articles and those by the native speaker English authors.



In the same way as the En authors they make considerable use of the factual functions of *if* when writing in English. Their greater exploitation of the refocusing functions of *if* in argumentative contexts, however, would appear to follow that of the Fr group, perhaps indicating a certain impact of the linguistic community here.

6.1 Discourse management functions: En/Fse/Fr

Differences in the recourse to discourse management functions are difficult to assess in this dataset, due to the very small number of these functions noted in all three author groups: En: 0, Fse: 1, Fr: 2. As discussed above (cf. 5.1) this type of construction can be used in the RA to direct the readers' attention from one type of research space to another, from one topic to another, or from one textual space to another (verbal to visual, text to diagram). As all the medical RAs follow a very standardised format (the IMRD structure is rigorously followed with numerous headings) there is little need for these extra meta-discursive signals to guide the reader through the organisation of the article⁵.

6.2 Factual functions: En/Fse/Fr

The first sub-category of factual functions identified, that of **methodological decisions and definitions**, is motivated by the medical researchers' need to define, for example, the eligibility criteria in relation to the patients included in trials, or for various methodological decisions made:

(9) *Patients were eligible **if** there was evidence of spread of tumor to regional lymph nodes (Dukes' C or tumor, lymph node, metastasis stage III tumor).* (Meth.- En)

(10) *Patients were defined as "downstaged" **if** the final pathologic stage was less than the preoperative ultrasound stage.* (Meth - En).

The validity of the P-Q relation is restricted, or circumscribed to a particular sub-set, as in (9). Similarly the need for precision in the use of terms (i.e what the term does or does not cover) also results in a certain number of defining conditionals, as in (10).

The functions represented in the second sub-category, **treatment decisions**, are motivated by the need to define the criteria for allocating patients to different treatment modalities and likewise need to be carefully defined:

(11) *A 7 h 30, elle bénéficiait d'une injection radio-isotopique (Nanocis, 30 MBq) en péritumoral **si** la tumeur était palpable ou en subaréolaire **si** la tumeur était très externe ou infraclinique.*(Meth. - Fr)

(At 7.30 am the patient was given a peritumoral radio-isotopic injection **if** the tumor was palpable or a subareolar one **if** the tumor was very superficial or infraclinal.

⁵ See however Rowley-Jolivet (this volume) for the important use made of these discourse management functions in the conference presentation genre.

The third category of factuais, **correlations**, includes both present and past tense habitual co-occurrences, although in this data they are mostly in the past tense:

(12) *An absolute 23% improvement in 5-year survival was achieved **if** more than 40 lymph nodes were identified.* (Results - En)

In medical research, conclusions are usually based on empirical observations rather than theorising. In order to enable valid conclusions to be drawn, this search for regularities and correlations between two or more factors leads to a number of iterative or course of event conditionals, particularly when reporting the results of experiments and studies.

As observed above, factual functions overall are considerably more frequent in both English subsets than in the French journal articles. A detailed examination of the breakdown of factual functions reveals this difference to be particularly striking in the case of the criteria-based methodology and treatment decisions sub-categories. Such functions account for 57% (68 occurrences) and 51% (50 occurrences) of the total occurrences in the En and Fse groups respectively, but for only 26% (27 occurrences) in the Fr group.

How can such differences be accounted for? We might wonder whether the corresponding use of *si* in French, where its value is closer to *quand* (when) or *chaque fois* (whenever) is less frequent overall in the French language. Such usage is however well-documented in French grammar manuals, and there are also a number of factual correlations in the French RAs (16 occurrences) in the Results section, when reporting the results of experiments or observed co-occurrences of two situations:

(13) *Un taux de contrôle tumoral local avec un bon score fonctionnel sphinctérien (grade 0 et 1) a été obtenu dans 56,5 % des cas pour l'ensemble des patients, 72 % des cas en cas de cancer classé T1, 64,5 % **si** T2, 53,5 % **si** T3 et 23,5 % **si** T4* (Results -Fr).

(A local tumor clinical response rate with a good anal function scoring (score 0 and 1) was obtained in 56.5% of cases for all patients, 72% in the case of cancers classified as T1, 64.5 % if T2, 53.5 % if T3 and 23.5 % if T4.)

In the medical RA data, however, the French researchers do not consistently use the *si*-construction for criteria-based decisions, preferring instead other syntactic means, such as, for example, in the following patient eligibility criteria description:

(14) *Les critères d'exclusion étaient ceux habituels pour la technique du GS : un stade TNM supérieur à T1 ou N1, un cancer multifocal, une chimiothérapie préalable, une allergie, obésité (...)*

(The exclusion criteria were those usually applied for sentinel node surgery: a TNM stage superior to T1 or N1, a multicentric breast cancer, neo-adjuvant chemotherapy, allergy, obesity)

The fact that the eligibility criteria are announced in this way without recourse to a *si*-clause gives a more affirmative feel. This contrasts with the criterial decisions involving the conditional operator *if*, where the non-assertive value of the subordinator leaves a certain space open for the reader to question or reject the decision made by the researchers as in (15):

(15) *Patients were excluded from the study **if** they had evidence of metastases, a documented history of cardiac disease or previous cancer (...)* (Meth. - Fse)

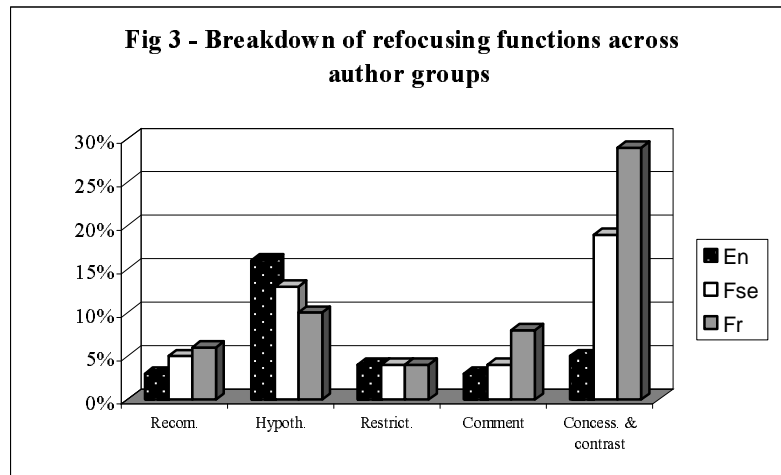
The content of the *if*-clause is provisional or less than certain, as the very presence of *if* implicitly acknowledges an alternative (*if P* or *if ~P*). Such features as Ford points out enable speakers or authors to retain a certain distance or to display less than total commitment:

“These characteristics of if-clauses make them fitting vehicles for encoding information in a hedged way; speakers can say what they want to say and at the same time, in some sense, remain uncommitted to what they are saying” (Ford 1997: 389)

In this respect, the greater recourse to *if* by the En and Fse authors for explaining their methodological and diagnostic decisions contributes to a more tentative and circumspect presentation of the data than that found in the French medical articles.

6.3 Refocusing functions: En/Fse/Fr

The refocusing potential of the *si* and *if* operators is also exploited very differently by the three author groups.



As Figure 3 illustrates, the only category that is equally distributed amongst the three author groups is that of the refocusing sub-function of restrictives. The category of hypothesising is more exploited by the En group. The other sub-functions of refocusing identified (recommendations, comments and concessive and contrastive conditionals) are all more frequent in the Fr author group – with the difference being particularly pronounced in the case of concessive and contrastive functions. The Fse authors’ use of the refocusing potential of *if* falls consistently midway between that of the En authors and the corresponding *si* usage by the Fr group; like the Fr authors, however, they have far greater recourse to the concessive and contrastive functions of the conditional operator. In the following sections this rather different exploitation of the various subcategories of the refocusing function will be discussed in more detail.

6.3.1 Restrictive functions

In order to make effective claims, the researcher may need to contract the argumentative space. There are several occurrences in the RAs in the sample where the researchers propose restricting results to a certain category in order to present their research findings in a more favourable light:

(16) ...and *if* only patients <80 years of age were taken into account, the 5- and 10-year overall survival rate was 78% and 52%, respectively, which compares well with surgical results. (Disc. - Fse)

The category of conditional restrictives, though small, is nevertheless equally represented, accounting for 4% of the total occurrences in the 3 author groups. The need to sometimes exclude certain categories of data in order to present one's results in a more favourable light could therefore be seen as a universal in the medical RA. Whatever the speaker origin, no notable difference was noted in this sample.

6.3.2 Predictions and hypotheses

An important way of expanding the argumentative space is through predictions and hypotheses. Such uses of *si* and *if* are indeed often considered as the prototypical conditionals in pedagogical grammars. The P clause presents a potential situation for consideration, and the Q clause outlines the possible consequences that arise from the situation. In the medical RA, the Q clause is invariably heavily modalised, with values ranging from that of the merely probable to doubt and speculation. There is only one occurrence in this dataset of a standard 'prediction' with a future tense Q clause. What is far more frequent in the RA are various degrees of hedged hypotheses, involving modal verbs or other modalising lexis in the Q clause as in:

(17) *Also, **if** preoperative therapy is administered at the time of diagnosis **it might** be more effective because the metastatic burden may be the smallest at this point.*
(Disc. - En)

Also common in the RA are examples involving tense backshifting, whereby the author distances himself further from the situation in the P clause as in examples (18) and (19):

(18) *Si une telle analyse **était réalisée** de manière systématique, la valeur prédictive des embolies pour déterminer l'envahissement ganglionnaire **augmenterait probablement** de manière importante* (Disc - Fr)
(If such an analysis was carried out systematically, the predictive value of emboli in determining lymph node invasion would probably increase considerably).

(19) *The pN1 designation can have a significant effect on choice of adjuvant chemotherapy. Most medical oncologists **would probably** be reluctant to simply observe patients with pN1 disease **if** the patients **were** good candidates for adjuvant chemotherapy.* (Dis - En)

The category of hypothesising accounts for 10% or more of occurrences in each subset (En: 16%; Fse: 13%; Fr: 10%). It seems to represent a function required by all authors when writing about their research and could therefore be considered as a universal category of the RA. The proportion of hypotheses is,

however, slightly higher amongst the En authors than amongst the Fr authors (with the figures for the Fse author group falling once again midway between the two). Although the difference is not statistically significant, we could perhaps speculate that this more frequent recourse to hedged hypothetical projections amongst the English authors is linked to the more circumspect nature of the English medical RAs already hinted at.

There is also some evidence that this difference is perhaps not only a quantitative but also a qualitative one. In example (19) above, the En authors invoke other researchers in support of the assertion made in the Q clause. In the French sample there are also some occurrences where the reference to other researchers' voices is not used to support the particular hypothesis, but serves rather as a stratagem enabling the authors to present a contrary opinion – this time that of the authors themselves – in the subsequent text. In the following example (20), the assertion in Q is attributed to another source. The French authors distance themselves from the assertion, in order to refute it and in fact to propose another approach in the following sentence:

(20) *À la lumière de nombreuses publications sur le sujet, il semblait qu'une approche de préservation laryngée était envisageable si certaines conditions étaient respectées (équipes entraînées, cas sélectionnés, essais randomisés). Toutefois, il apparaissait également souhaitable de savoir (...). Notre étude rétrospective a montré que ... (Disc. - Fr)*

(In the light of a number of publications on the subject, it seemed that larynx conservation was feasible if certain conditions were respected (well-trained teams, selected cases, random trials). However, it would also appear important to know (...). Our retrospective study has shown (...).

In example (21) the same tactic is used:

(21) *Si l'on en croit la Société de pneumologie de langue française, le Cyfra 21-1 est actuellement le seul marqueur tumoral dont la valeur pronostique est clairement démontrée dans le cancer broncho-pulmonaire primitif non à petites cellules [4]. Nous avons néanmoins pu constater... (Disc. - Fr)*

(If we are to believe the SPLF [the French association for pneumology], Cyfra 21-1 is currently the only tumour marker whose prognostic value has been clearly demonstrated (...). We have however noted (...).

In this case, the reference to another source occurs within the P clause. In both these cases, however, the authors' recourse to another's hypothesis is a purely argumentative ruse. The hypothesis is presented so as to be subsequently refuted with evidence from the authors' own research.

6.3.3 Recommendations

Making recommendations is another way of expanding the argumentative space and promoting research claims. In the research article, however, recommendations require some sort of qualification so as to avoid appearing too dogmatic or overbearing. The P clause does this work for the writer, by specifying the circumstances in which a course of action should or should not be taken:

(22) *Il est donc primordial, si l'on veut se dispenser de curage axillaire systématique comme cela est proposé par différentes équipes [23, 24, 37, 48], d'utiliser la technique la plus fiable possible* (Disc. - Fr)

(It is thus essential, if we want to dispense with systematic axillary resection as several different teams have proposed, to use the most reliable technique possible.)

The above extract also provides another striking example of the polyphonic interaction afforded by the *si* operator. The desirability of dispensing with 'systematic axillary resection' is attributed to the wide-ranging indefinite pronoun *on*, where the authors are not only including themselves (and perhaps the community at large) but also the four other research teams cited by superscript numbers. In this way the authors provide themselves with ample justification for their rather firm recommendation in the Q clause.

The use of conditional constructions for making recommendations is nevertheless fairly limited in the medical RAs: En 3.3%; Fse 5.1%; Fr 5.8%. Even if the P clause allows the researcher to slightly mitigate the recommendation, we can suppose that advice-giving to peers has a potential face-threatening facet, and for this reason is used sparingly in the medical RA context. There is, nonetheless, a higher proportion of occurrences of this type in the Fr and Fse author groups than in the En author group, perhaps indicating a slightly more forceful attitude on the part of the French researchers.

There are also some rather firm expressions of necessity within the Fr occurrences, such as in (22) above, or other forthright recommendations expressed with a deontic *doit* or *devra* ('must' or 'will have to'):

(23) *L'augmentation des infections du site opératoire après chimiothérapie, récemment mise en évidence, devra, si ces données sont confirmées, être intégrée dans les études coût-efficacité de telles stratégies.* (Abs. - Fr)

(The increase in postoperative infection (...) must, if these data are confirmed, be integrated into the cost effectiveness of such strategies).

Such examples contrast with the more diplomatic and hedged *should* and other more tentative modalised recommendations preferred by the En authors: as in (24) and (25):

(24) *Our results suggest that **if** postoperative diagnostic surveillance is undertaken with a goal of early detection of potentially curable disease relapse, CT for detection of nodal recurrence **should** be a component of the follow-up program.* (Disc. - En)

(25) *This pattern of failure **certainly supports** the use of adjuvant chemoradiation **if** APR is to be the primary local strategy in this population.* (Disc. - En)

Past research has often underlined the more prescriptive and categorical tone of French scientific writing (Régent 1994; Salager-Meyer et al 2003). Although the numbers involved in this sample are too small to enable a full endorsement of such claims, both the greater firmness and higher frequency noted with regard to the 'recommendations' sub-function would indeed tend to suggest that the Fr authors adopt a more authoritative stance than their En counterparts.

6.3.4 Comments

The fourth sub-category of the refocusing function includes the often elliptical inserts by the author to comment on the appropriacy of a textual element or of a particular action:

(26) *La réponse ganglionnaire à la chimiothérapie (**si** évaluable) a été répartie comme suit entre les groupes 1 et 2.* (Results - Fr)

(The breakdown of the lymph node response to chemotherapy (if it can be evaluated) was as follows in groups 1 and 2)

Through such passing remarks and comments the author can directly make his presence or evaluation apparent. Such comments generally occur in medial position, separated out either by brackets or commas. In the case of comments of a meta-textual type, it is less a question of contracting the augmentative space, than of contracting the textual space, homing in to make a particular comment on a constituent in the Q clause, or to refine its meaning, as in (27):

(27) *The prognosis is dramatically poor, with lesions exhibiting diffuse and multicentric local extension rendering surgical resection difficult, and the majority of patients, **if** not all, develop early distant metastases* (Disc.- Fse)

Unlike the other categories looked at so far, the scope of such meta-textual inserts usually only extends to a specific word or expression, rather than to the whole of the Q clause or beyond. The P clause often seems to imply some type

of scalar implication involving, for example, a downtoning or boosting effect (Declerck and Reed 2001: 342). In the example above, the effect is one of boosting: as the prognosis is dramatically poor it's likely **all** patients will develop metastases. The reader is invited to look higher up the scale than the term *few* indicates, and *all* is therefore deemed a more adequate qualifier than *majority*.

There is a higher proportion of passing insertions and meta-textual comments in the French articles than in the two English sets: En: 3%; Fse: 4%; Fr: 8%. This may suggest a higher degree of author involvement on the part of the Fr author group. Through these rather subtle interjections, the Fr authors are able to make their presence felt, contributing again to the more authoritative toner of their texts.

6.3.5 Concessive and contrastive conditional functions

It is however when we come to compare the frequency and use of the concessive and contrastive functions of *if* and *si* that the differences between the French and English author groups become the most apparent. The proportion of concessive and contrastive conditionals is considerably higher in the Fr authored articles, and also interestingly among the Fse author group: En 5% (6 occurrences); Fse 19% (19 occurrences); Fr 29% (30 occurrences).

A strict comparison between the two languages is however rendered problematic with regard to these particular functions due to the wide range of values that French *si* can assume. French *si* can notably be used instead of other concessive subordinators such as *bien que*, to signal a regular concessive (non conditional) relation:

(28). *La limitation de la dissection du curage axillaire au seul étage I, si elle diminue le taux de complications, n'apparaît pas être une alternative satisfaisante ; le taux de faux négatifs observé étant de 10% à 15%. (Disc. – Fr)*

(Limiting axillary node dissection to the T1 stage, (if ?) although decreasing the rate of complications, does not provide an satisfactory alternative: the rate of false negatives observed ranges from 10 to 15%.)

Such usage is extremely rare in English. The example above could not have been rendered with an *if*-clause in English. A pure concessive connector such as *although* is usually preferred, when the reality of the P clause is presupposed (Paillard 1989; Ranger 1998). Eight out of the 30 French occurrences in the sample indeed seem to signal a purely concessive relation of the type: *Si (Although?)P, Q*.

However, even discounting several pure concessive uses of this type in the French RAs, the number of real concessive and contrastive conditional clauses

remaining with *si* (22), is still three times higher than that of the corresponding use of *if* by the En authors. This would perhaps tend to suggest a more overt argumentative stance by the French authors, rather than just a language difference linked to the wider meaning range of the French *si*. This hypothesis seems to be confirmed when we look at the Fse occurrences. In the Fse sub-corpus, occurrences of concessive and contrastive conditionals (19 occurrences) are almost as frequent as those in the French articles. The great majority of these Fse occurrences would not raise any eyebrows in purist Anglocentric grammar circles. In other words, it is not usually a question of *wrongly* using *if* constructions in English. Rather it would seem to be a question of the linguistic community influencing the writing style in English. There would seem to be some evidence of a national academic style that is more overtly argumentative than that of Anglo-Saxon authors – or that at minimum makes more use of the argumentative potential of conditional constructions.

The greater recourse to contrastive and concessive conditionals provides the Fr and Fse groups with an important manoeuvring potential. **Concessive conditional** constructions with *if* and *si* (invariably preceded by *even* and *même* respectively) are particularly important in the RA context for forestalling objections. Using the form: *even if P, Q* (or *Q (,) even if P*) the researcher asserts Q whatever the status of P. In other words, whether P is the case or not, Q is asserted:

(29) *Notre pourcentage est plus élevé que dans l'étude multicentrique, même si une comparaison est difficile compte tenu que 13 patientes de notre étude ont été incluses dans cette étude multicentrique.* (Disc. - Fr)

(Our percentage is higher than in the multicentric study, even if comparison is difficult as 13 patients from our study were included in this multicentric study)

In this way the authors stave off possible criticism, conceding or appearing to concede in order to clear the way for their own claims:

(30) *Even if noncancer deaths did not differ, the presence of concurrent adverse health conditions, or comorbidity, has been shown to increase cancer mortality.* (Disc. - En)

The three language groups avail themselves of this possibility, although the Fr and Fse authors use it to a much greater extent than the En authors.

Contrastive or adversative uses of *if* and *si* are likewise frequently exploited by the Fr and Fse authors. Unlike concessive conditionals where some causal dependency relation is implied between two propositions (one could be a possible obstacle to another), in contrastive conditionals neither proposition runs counter to an expectation created by the other proposition. On the contrary, the

comparison created between the two clauses provides the authors with a very effective means for highlighting their research claims. The ideas presented in the initial P-clause are backgrounded, consequently lending more weight to information presented in the main clause (Lewis 2004). In this way the author is also provided with a springboard from which to develop this information in subsequent clauses:

(31) *If the results are encouraging for T2 lesions, the rate of local failure with RT (radiotherapy) ... for T3 lesions remains >20%. To improve these results in T3 tumors, various techniques need to be explored.* (Disc. - Fse)

In Declerk and Reed's (2001) chapter on "Comparing conditionals", this topic-introducing or transitional function of the construction is firmly underlined. In the comparison between two situations or two participants, the initial P clause containing some already familiar information is seen to function as a starting-point to which the information in the Q-clause is attached:

(32) *Si donc le retard à la première demande de soin tient à une sémiologie ordinaire particulière de la maladie cancéreuse chez nos malades, le retard à la consultation spécialisée dépendrait surtout d'une insuffisance dans la communication soignant-soigné et dans les prestations fournies.* (Disc. - Fr)

(If the delay in seeking an initial appointment is linked to a particular representation of cancer illnesses amongst our patients, the delay in consulting a specialist would seem to be linked above all to certain communication difficulties between practitioners and patients...)

Such examples as the above are attested in English: Declerk & Reed (*op. cit*) in their corpus-based study provide several examples very similar to the occurrences above, as for example: "If I've had a successful career, I've been a complete failure as far as my private life is concerned". There are, however, no such occurrences in the En-authored articles in this sample. Some contrastive conditionals in English have been found however in the more polemical medical editorial genre (cf. Rowley-Jolivet, this volume).

In this sample of medical RAs, the manoeuvring potential, provided by concessive and contrastive functions of *si* and *if* is thus consistently more exploited by the Fr and Fse authors, contributing to a more overt argumentative stance than that of the En authors.

7. Conclusion and perspectives

The comparison of *if*- and *si*-clauses in medical research articles has revealed some interesting cross-linguistic differences. Although the two conditional

operators largely overlap in their prototypical functions and occur with similar frequency, they are not put to the same use. Their distribution across the RA sections is firstly very different. There are a far greater number in the Methodology sections of the En⁶ authors' RAs, as opposed to a majority in the Discussion sections in the Fr authors' RAs. Despite some overspill between sections, this translates globally into a greater use of factual functions by the En author group. The criteria-based decisions of the En researchers concerning methodological and treatment options are presented in a diplomatic non-assertive manner, leaving space for possible discussion of the criteria adopted. In the Fr articles, on the other hand, there is greater recourse to the refocusing functions of *si*-clauses. The French authors exploit to a greater degree the argumentative and polyphonic potential of the *si* operator in order to negotiate a path through the body of existing research and to press forward their own research claims.

The broad picture being painted here would tie in with what Françoise Salager-Meyer and her co-authors in their study of academic criticism have called "the dagger and glove" (2003). The respectful and more consensual En authors are the ones wearing the gloves, as opposed to the more argumentative Fr researchers armed with a dagger, who fight more forcefully and directly to promote their research claims.

As regards the Fse author group, we have noticed throughout this study that the Fse uses of *if*-clauses consistently figure midway between those of the En and Fr groups. To some extent the Fse authors follow the En authors in exploiting the factual functions of *if*-clauses. However, in the same way as the Fr authors, they also make greater use of the refocusing and manoeuvring potential of the *if* operator, in particular with a much heavier use of concessive and contrastive *ifs* than amongst the En authors. This leads to a rather different profile of use indicating, as far as the Fse authors in this sample are concerned, that the dominance of English in scientific publications would not seem to have totally erased all traces of linguistic and rhetorical diversity in research writing.

The questions raised here concerning different possible writing styles can only of course remain tentative, due to both the narrow range of structures analysed and the restricted size of the corpus. It would, however, be interesting to examine a range of connectives and other markers cross-linguistically (cf. Vold, this volume) to see whether the French indeed exploit to a greater extent the argumentative potential of language in their academic writing. Despite the difficulties involved in using contrastive data – the problem of finding linguistic

⁶ NB : The three author-groups referred to throughout this article (see section 2) were as follows: En = English speaking authors of articles in English; Fse = French speaking authors of articles in English; Fr = French authors of articles in French.

correspondences across languages (Fløttum 2005) and of using comparable corpora (Swales 2004) – studies examining contrastive rhetorical practices make an essential contribution to our knowledge of the academic discourse world.

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