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A Comparative Genre Analysis of Medical Research Article Introductions Written in English: The Case of *La Tunisie Médicale (Tunis Med)* and *the Journal of the American Medical Association (JAMA)*

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Abstract:

To gain international recognition, reach a wider audience and compete with members of the international scientific community, Tunisian medical professionals must have the knowledge of how to write research articles (RAs) in English. This article, thus, ties with other contrastive rhetoric studies and attempts to detect and compare the macro/micro- rhetorical features employed in sixty RA introductions published in a local journal "La Tunisie Médiacle" (Tunis Med) and a foreign journal "the Journal of the American Medical Association" (JAMA). Create a Research Space (CARS) model, developed by John Swales in 1990 and revised in 2004, was used to determine the rhetorical patterns of the sample introductions. According to Swales' model, a RA introduction has to include three basic moves: "Move 1: Establishing a territory", "Move 2: Establishing a niche" and "Move 3: Presenting the present work". The findings revealed that, at the level of Moves 1 and 3, the introductions in both groups supported the general framework of writing RA introductions presented in Swales' model. The two moves were present in almost all the introductions in both groups. However, the RA introductions published in Tunis Med were found to be less consistent with the model at the level of Move 2. This move was absent from approximately half of the RA introductions published in Tunis Med. Therefore, Tunisian researchers in the medical field can use the model to ameliorate the quality of their RA introductions if they seek to publish their RAs in prestigious journals. The study findings have implications on the Tunisian medical researchers, RAs evaluation, and EFL/ESP teaching.

Keywords: Genre Analysis, Contrastive Rhetoric, ESP, CARS model, Discourse Moves, Medical Research Article Introductions.

1. Introduction

1.1. Background

Studies of academic discourse have long exhibited an interest in contrastive rhetoric (Casanave, 2004; Connor, 2004). They emphasised the role of culture on the rhetorical organisation of texts. In the RA genre, researchers focused on the degree to which different cultures were influenced by the norms of English research articles (RAs) writing traditions. Some cultures exhibited more influence on the norms of the English RA such as the Czech (Čmejrková, 1996) and Korean (Lee, 2001), and some other cultures were less influenced by English norms such as the Chinese culture (Taylor & Tingguang, 1991). The field of contrastive rhetoric has seen continued development and now includes text linguistics, the analysis of writing as a cultural and educational activity, classroom based studies of writing, and contrastive genre-specific studies (Connor, 2004).

Genre specific studies represent a whole area that is growing continuously. This field emerged due to the increasing need of researchers who are nonnative speakers of English to read, write and interact with research that is written in English (Čmejrková & Danes, 1997; Connor, 2004; Swales, 1990). Some researchers investigated English texts that were written by nonnative speakers of English (Arvay & Tanko, 2004; Shim, 2005). Others conducted studies to compare L1 texts from a given genre to their English counterparts (Jogthong, 2001; Lee, 2001).

A large number of studies on academic writing have been devoted to analyse research articles from a move analysis approach. Move analysis is the identification of move order, move construction, and linguistic features to determine the structure of certain genres. A move is defined as a segment of text that performs a communicative act (Swales, 1990). Moves and Steps are rhetorical constructs that can be realised by a word, phrase, a clause, a sentence or a paragraph or even more depending on the context (Swales, 1990). Move analysis was employed to analyse RAs as a whole (Mirahayuni, 2001) or different parts of RAs like the Introduction section (Jogthong, 2001), Results section (Bruce, 2009), and Discussion section (Fallahi & Erzi, 2003).

1.2. Rationale

This study complies with the field of genre analysis in academic settings. The choice of this field has been derived by two important reasons: First, Swales (1990, 2004) brings to our attention that, to write systematically and effectively, novice researches need toacquire generic knowledge. Second, genre analysis may have pedagogical implications for ESP/EAP teaching (Bhatia, 1993). A system for analysed authentic texts may help students differentiate between different types of texts and provide useful information about the nature of different genres.

The present study seeks to recognise the general structure of medical RAs published in two different cultural contexts. Since each culture has its own different norms, the findings of previous research cannot be generalized to other cultures (Casanave, 2004; Connor, 2002, 2004). Thus, each culture has to be studied in its own right.

Investigating into the domain of RA introductions is due to many reasons: First, when writing introductions, researchers face tremendous difficulties (Swales, 1990). Second, researchers need to ensure the effectiveness of their research article introductions since RA introductions are often used as a criterion for the rejection or the publication of a RA(Swales, 1981). Third, a RA introduction requires a statement about purpose, method, and results. It is, therefore, a conventional structure of organisation (Anthony, 1999).

1.3. Statement of the Problem

Local journals in the medical field do not like to lag behind the worldwide competition of contributing to the development of medical knowledge. They try hard to compete with international journals. A former editor-in-chief of *La Tunisie Médicale* -in the period between 2006, 2009- stated that journal editors strike to increase the number of RAs they publish in English to gain a high reputation in the medical community. He also declared that Tunisian medical professionals have positive attitudes towards publishing papers in English in both local and prestigious journals, with international journals having the highest priority.

This enthusiasm from the part of editors and Tunisian medical professionals is, however, at odds with a serious problem detected in the medical context in Tunisia. In fact, French and Arabic are the only languages utilized in the Tunisian medical context. As far as English is concerned, Tunisian medical students and doctors use English in their academic courses rather than professional careers. Sarsout (2002) carried out a study on the needs analysis of doctors and medical students in Tunisia. The findings of her research revealed that the Tunisian students' and doctors' writing abilities in English are relatively poor. This claim was also supported by the former editor-in -chief of *La Tunisie Médicale*. He stated that the RAs written in English and published in *La Tunisie Médicale* suffer from both linguistic and rhetorical deficiencies.

Another problem faced by Tunisian medical scholars is writing the Introduction and Discussion sections of RAs. The former editor-in-chief of *La Tunisie Médicale* asserted that, compared with the Methods and the Results sections, these two sections are the most problematic parts to write for Tunisian researchers. By the same token, Flowerdew (2001) affirmed that international journal editors consider introduction the most problematic part to write for non-native English writers. Writing the introduction requires innovations, creativity, and objectivity and, thus, tends to reveal the rhetorical strengths and / or weaknesses of the writer more than the Methods and the Results sections.

The above - mentioned problems have directly been dealt with in the present study. This research, thus, ties with other contrastive rhetoric studies and attempts to cover the previously mentioned gaps by detecting the macro/micro- structural rhetoric aspects of RAs published in a local journal "*Tunis Med"* and a foreign journal "*JAMA"*. This study will assist medical scholars and novice researchers to write RA introductions that conform to the requirements of the RA genre. Moreover, it will sensitize researchers and students in the medical field to different medical academic writing styles across cultures.

1.4. Research Questions and Hypotheses

This study attempts to answer the following research questions:
*Question1:*What is the rhetorical structure of the medical RA introductions written in English and published in *Tunis Med*?
*Question 2:*What is the rhetorical structure of the medical RA introductions written in English and published in *JAMA*?
*Question 3:*Are there significant differences/similarities between the rhetorical structure and the linguistic features employed in the introduction section of the RAs published in *Tunis Med and JAMA* respectively?

2. Theoretical Background

2.1. Move Analysis and Research Articles in English

A move is defined as a segment of text that performs a communicative act (Swales, 1990). A genre is based on moves with each move points to a basic coherent understanding of the text (Swales, 2004). Move-Steps are rhetorical constructs that can be achieved by a word, phrase, a clause, a sentence or a paragraph or even more depending on the context (Swales, 1990). Moves are common to all genres, although their type and frequency may vary across disciplines (Samraj, 2002). Move analysis is the identification of move order, move construction, and linguistic features to determine the structure of certain genres.

A large number of studies on academic writing have been devoted to the research article genre (Samraj, 2002). Researchers tried to determine the structure, social construction, and historical evolution of the genre of research articles over the last 20 years. Move analysis was employed to analyse RAs as a whole (Mirahayuni, 2001) or different parts of RAs like the Introduction section (Jogthong, 2001; Swales, 1981; 1990; Swales & Najjar, 1987), Results section (Bruce, 2009), and Discussion section (Fallahi & Erzi, 2003). Other researchers focused on particular features of research articles, such as the use of hedging, modality, and reporting verbs (Salager-Meyer, 1994).

2.2. The Create a Research Space (CARS) Model

Swales' works (1981, 1990, 2004) were of great influence on studies on RA introductions. Swales analysed the rhetorical structure of the introductions section of 48 English RAs. Every 16 articles were selected from three fields: "hard" sciences, "life and health" sciences, and "social" sciences. Swales discovered that it existed a pattern that was common to all RA introductions and consistent across the three selected disciplines. The pattern was then identified as the rhetorical moves of RA introductions.

According to the Create a Research Space (CARS) model, a RA introduction has to include three basic moves: Establishing a territory, establishing a niche, and occupying the niche. For the writer to establish the territory, he needs to indicate the importance of the research topic of the article. To establish a niche, one has to justify the present study. By occupying the niche, the author needs to describe what her/his study is about. Each of these moves is composed of a series of three steps or sub-moves.

Swales' model has succeeded to analyse introductions in different academic disciplines in English as well as other languages (Samraj, 2002; Swales & Najar, 1987). It was also utilised as a tool to carry out cross-cultural studies (Arvay and Tanko, 2004; Connor, 2004; Shim, 2005). Anthony (1999) considered the model as "the strongest descriptions of text structure to date" (p.39). Therefore, it can be applied to analyse the RAs sample of this study. Disciplinary variations have proved to be an important variable. This study will then take into account the importance of disciplinary variations and thus the researcher decided to work on a single discipline which is medicine. The factor of time was also taking into consideration. The RAs chosen are published within 3 years interval.

2.3. Research on Medical Writing in the Tunisian Context

English is taught in Tunisia as a foreign language. It is widely used in the business sectors, science, and technology. Due to the increasing demand for English in the private and public sectors (Daoud, 2007), ESP has become a required subject at various levels of education and vocational training. However; it is important to note that ESP in Tunisia is "largely ad-hoc" (Daoud, 2000, p.77). It lacks in-house materials, local methodologies, and resource and campus prestige (Labassi, 2010).

Many Tunisian scientists consider writing in English problematic. Although they may be proficient in the subject matter of their scientific disciplines, some of them certainly lack linguistic competence in English (Ben Elouidhnine, 2006). Interference from French makes Tunisian scientists opt for some inappropriate syntactic and lexical choices that can affect the quality of their texts (Ben Elouidhnine, 2006; Labassi, 1996). Martinez (2001) stated that French and English languages have different writing patterns. He emphasized that it is important for Francophone researchers to be able to recognize how both styles differ, and be able to deal with this difference when they write in English.

In the Tunisian medical context, Studies have been made to explore the textual sentence-level properties of the Medical RAs genre. Ben Dhia (2004) investigated the use of hedging in medical RAs written by Tunisian medical researchers in two types of journals: a local journal (*La Tunisie Médicale*) and foreign journals (American and British ones). The researcher aimed at determining whether the context of publication affect the use of hedging in RAs. She asserted that Tunisian medical doctors use more hedging devices in foreign journals than in local ones. She concluded that Tunisian doctors do not have a wide repertoire of hedging devices that they can resort to in the English language.

Another study was conducted on medical students' needs analysis. Sarsout (2002) carried out a study to examine the students' and doctors' attitudes towards the teaching of English, their perception of their language problems, needs, wants, and desires. Results showed that medical students have major problems in writing, which may result from the limited need for writing in English in the medical field in Tunisia.

Findings reveal that the Tunisian students' and doctors' writing abilities in English are relatively poor (Sarsout, 2002). Therefore, the knowledge of how to write RAs in English may increase the writing proficiency of Tunisian students and will assist researchers to gain

recognition on the international stage, reach a wider audience and compete within the international scientific community.

3. Methodology

3.1. Corpus Selection

The sample of the study consists of 60 research articles. They are categorised into two groups: the first set of articles is published in *JAMA*, the other group of articles is published in *Tunis Med*. Each group is composed of 30 research articles. The two conditions required for the selection of journals from which the articles were chosen were first, to have a professional reputation, and second, to have free online accessibility. The general criteria of selection of the RAs were that all RAs have to be data-based, in the field of general medicine and published during a short period of time, a three years interval.

3.2. Instruments

Swales' (2004) CARS model of analyzing RA introductions was used as a template for studying the rhetorical divisions of the introductions (see Table 1).According to him, an introduction has to include three basic moves: "Move 1: Establishing a territory", "Move 2: Establishing a niche" and "Move 3: Presenting the present work". For the writer to establish the territory, he needs to indicate the importance of the research topic of the study. To establish a niche, one has to justify the present study. By presenting the actual research, the author needs to describe what her/his study is about. Each of these moves is composed of a series of steps or sub-moves.

Swales' model has been applied with great success in many previous studies. Anthony (1999) considers the model as "the strongest descriptions of text structure to date" (p.39). To account for the significant changes made in the 2004 revision, the revised CARS model was applied in the present study to analyse RAs written in English and published in the journals of *JAMA* and *Tunis Med*.

Table 1
The Revised CARS Model (2004)

Move 1	Establishing a territory (citation required) *via* Topic generalization of increasing specificity
Move 2	Establishing a niche (citation possible) *via* Step 1A —Indicating a gap (or) Step 1B —Adding to what is known Step 2 (optional) —Presenting positive justification
Move 3	Presenting the present work (citation possible) *via* Step 1 (obligatory) —Announcing present research descriptively and/or purposively Step 2* (optional) —Presenting research questions or hypotheses.

Step 3* (optional) —Definitional clarifications
Step 4* (optional) —Summarizing methods
Step 5 (PISF**) —Announcing principal outcomes
Step 6 (PISF**) —Stating the value of the present research
Step7 (PISF**) —Outlining the structure of the paper

Notes: possible recycling of increasing specific topics from Move1 to Move 2 (1A or B)
*Steps 2-4 are not only optional but less fixed in their order of occurrence than the others
**PISF: Probable in some fields, but unlikely in others.

Language experts do not have enough knowledge to evaluate the appropriateness of a determined construction, especially in specialized texts (Labassi, 1996). In this case, the use of the Subject Specialist Informant (SSI) is highly required. Two SSIs were consulted during this study. The first SSI was a former editor-in-chief of *La Tunisie Médicale*, the second one was a physician-scientist. The SSIs' comments were meant to bring some validity to the findings of the study. The remarks and answers of the SSIs were used during the analysis of the data and the discussion of the results.

3.3. Procedures

The introductions were subjected to a genre analysis to identify their moves and steps. After that, the frequency of occurrence of the moves and steps identified was recorded. Then, a comparison between the type and the frequency of occurrence of the moves and steps present in each group of RA introductions was established. To identify the moves/ steps, the sentence was considered as the unit of analysis since each sentence can generally have an independent communicative purpose. The textual boundaries between the moves and steps were identified based on content and linguistic exponents. Moreover, due to the general pragmatic nature of move/step identification, each move/step was recognized with the help of other neighboring moves/steps.

The introductions were analyzed by the researcher twice with an interval of two weeks. The aim of the intra-rater reliability procedure was to check whether the same findings have been arrived at after practice. There were no significant discrepancies between the results of the first and final analysis which increases the reliability of the researcher's judgment and the research instrument used.

Before the actual research, and to obtain reliable and valid outcomes, the research instrument of this study was piloted. Swales' (2004) revised CARS model was used to identify the rhetorical organization of two research article introductions published in *JAMA* and *Tunis Med*. The main aims of this pilot study were to identify the rhetorical structure of the research article introductions published in the medical field, and to pre-determine the capability of the CARS model before the actual research has been conducted.

The two introductions used in the pilot study witnessed the presence of Move 1 three steps postulated originally in Swales (1990) initial CARS model. Thus, minor modifications were introduced to the 2004 revised CARS model, used in this study, before applying it on analysis of the RA introductions. Based on the pilot study findings, the researcher decided that Move 1

should keep its three original steps postulated in Swales (1990). The steps are "Step 1: Claiming centrality", "Step 2: Making Topic generalisation(s)" and "Step 3: Reviewing items of previous research".

4. Results and Discussion

4.1. Differences and Similarities between the two Groups at the Macro- Structure Level

The two groups were more or less similar in the employment of the three moves (see Table 2). Move 1 and Move 3 were employed in all RA introductions published in *JAMA* and were found each in 29 introductions in the *Tunis Med* corpus. The major difference between the two groups lies on Move 2 frequency of occurrence. Move 2 occurred in 25 introductions (83.3%) in *JAMA* corpus whilst it was present in only 15 introductions (50%) in *Tunis Med* group. Therefore, the *JAMA* group is found to be the closest group to the CARS model at the level of move occurrence.

The two groups were found to be different in their move length (see Table 2). Move 1 was the lengthiest move among the three, taking up about 2/3 of the total number of sentences in the introductions published in both groups. Move 2 and Move 3 have different lengths in both corpora. The *JAMA* group gave a more balanced weight between Move 2 and Move 3 (17.97% and 15.36% of the sentences in *JAMA* corpus respectively). However, the *Tunis Med* group gave more weight to Move 3 (15.98%) of the sentences in the entire corpus than Move 2 (9.42%). Niche establishment took more space in RA introductions published in *JAMA* than the RA introductions published in *Tunis Med*.

The SSIs also stated that Move1 takes the major part of the RA introductions in the medical field. Medical researchers seem to be obliged to do much rhetorical work to establish their research territory. This is in contrast with Anthony's (1999) study of software engineering RA introductions. He found that while software engineers also pay a lot of attention to the territorial establishment (36% of the total length), they seem to put more emphasis on Move 3 (46% of the total length). This contrast between Anthony's (1999) study and the findings of the actual research gives support to the disciplinary variations in the writing conventions of the same genre.

Table 2

Number of Moves in RA Introductions Published in JAMA and Tunis Med

		Move 1	Move 2	Move 3	NA*
JAMA	Total **(N=30)**	30	25	30	1
	Percentage %	100	83.3	100	3.3
	Total number of sentences **(N=345)**	229	62	53	1
	Percentage %	66.37	17.97	15.36	0.28
Tunis Med	Total **(N=30)**	29	15	29	0
	Percentage %	96.66	50	96.66	0
	Total number of sentences**(N=244)**	182	23	39	0

	Percentage %	74.59	9.42	15.98	0

*Note: NA refers to the sentences that are inapplicable to the CARS model

4.2.Differences and Similarities between the two Groups at the Micro- Structure Level

The comparison between the RA introductions published in *JAMA* and *Tunis Med* reveals several similarities and differences at the level of steps. In the following sections, examples of each step and move will be provided. The linguistic signals used to express the moves and the steps in the examples are highlighted in bold and are my emphasis. The references in the original text are replaced by [R].

4.2.1. Move1 Step1: "Claiming Centrality"

Step 1 expresses the importance of the object studied as a major obstacle to natural development or as an important factor that may affect society members. In both groups, Step1 was used in almost half of the introductions. Step1 was found to be used in 12 introductions in the RA introductions published in *JAMA* (40%) compared to 15 in the other group of articles (50%) (see Figure 1). The percentage of use of Step 1 was also similar in both groups. Step 1 took 6.55% of the sentences of the entire move in *JAMA* group compared to 9.89% in *Tunis Med* group. It was realised by several lexical components such as amplifiers *(well),* adjectives *(serious, leading),* adverbs *(profoundly)* and noun phrases like: *(problem, challenge, cause of death).* Step 1 is best expressed in the following examples.

1. Pneumonia is **the leading cause of** childhood **death** in Sub-Saharan Africa.
2. Neonatal mortality (NM) remains **a major public health problem** in developing...

Swales (1990) suggested that, in the medical field, it may be unnecessary to highlight the importance of the research topic especially if it is well-known among the professional readers of the field. The SSIs supported the previous claim. They argued that researchers do not need to claim the centrality of the research topic of their studies. They asserted that the readers of the medical RAs are students and researchers from the medical field who already have a particular interest in the RA topic.

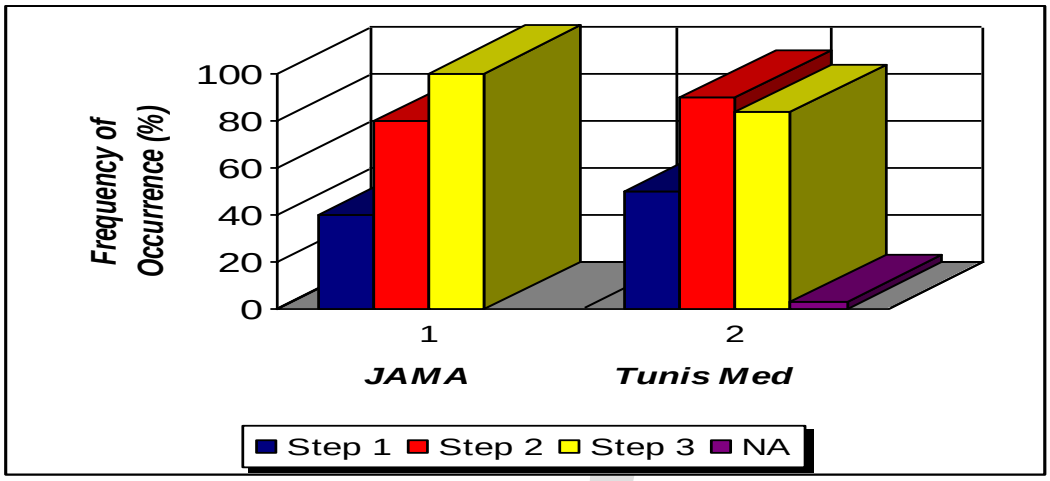

Figure 1. The rhetorical steps of Move 1 weighted by the frequency of occurrence in *JAMA* and *Tunis Med* groups

4.2.2. Move 1 Step 2: "Making topic generalisation (s)"

"Step 2: Making topic generalisation (s)" makes statements about knowledge or phenomena. It offers general knowledge without providing any source. Althoughthis step was not used in the entire corpus of this study, it was used more frequently than "Step 1: Claiming centrality" (see Figure 1). Step 2 took the initial position in many introductions. The SSIs confirmed this finding by stating that medical RA introductions can either begin by "Step 1: Claiming centrality" or "Step2: Making topic generalisation (s)". Step 2 was found in 27 (90%) RA introductions published in *Tunis Med* and 24 (80%) RA introductions published in *JAMA* (see Figure 1). Two examples of Step 2 are given below:

3. First, **the pattern** of KRAS mutations **is** tumour-type specific.
4. This cancer remains **the most common** non - skin epithelial malignancy in USA men.

In some introductions, it was difficult to determine whether some sentences function as "Step 2: Making topic generalisation (s)" or "Step 3: Reviewing items of previous research". The use of metadiscourse markers in the introductions is the most essential factor in facilitating the process of Move/ Step identification. However, metadiscourse signals can sometimes be misleading. This phenomenon is better highlighted in the following example

5. **Further investigation has shown that** TMR provides a rich source of motor control information.

This sentence was given different ratings during the two analyses. In the beginning, the researcher thought it functions as "Step 3: Reviewing items of previous research", because it contains the following reporting verb *"has shown"* and the common noun *"investigation"*. These linguistic markers are commonly used to realize Move 1- Step 3. However, the researcher decided that this sentence cannot function as Step 3 for mainly two reasons. First, the sentence does not contain references so it can not belong to Step 3. Second, in this

sentence, the author makes a statement about a fact generally known to the public and therefore, does not need a reference.

4.2.3. Move 1 Step 3: "Reviewing items of previous research"

By reviewing items of previous research, the authors of the RAs report the findings of other researchers. Step 3 was found in 25 (83.3%) RA introductions published in *Tunis Med* and in all the RA introductions published in *JAMA* (see Figure 1). Step 3 was cyclic in both groups, it was repeated more than once in many introductions. Though Step 3 was found in the two groups with similar rate, the weight given to this step was found to be different: the *Tunis Med* group employ this step in 87 out of 182 sentences in Move1 (47.56%) compared to 144 out of 229 sentences (62.88%) in *JAMA* group.A SSIstated that the reluctance of Tunisian researchers to review previous literature may be due to the lack of bibliographic sources in Tunisia.

The same types of citation were used in both groups. The two groups utilized the non-integral and non-reporting combination most of the time. This result conforms to Swales' (1990) observations about the frequent use of non-integral and non-reporting types in RAs in the medical field. Citations were characterised by the use of reporting verbs like *(argue, have found, report, show)*and common nouns like *(studies, trials, survey, research)*. Here are some instances of citations as an example.

6. **Mitchell et al** [R] **report** that more than one-third of nursing home ...
7. **Several studies**[R] **have found** that consumption of fish, the primary dietary source of omega-3 fatty acids, is associated with...

4.2.4. Move 2: "Establishing a niche"

Typically, the main goal of this move is to create a space for the present research. The basic premise is that the literature is incomplete concerning the present topic as attested by the identified niche. The majority of the introductions in the two corpora used "Step1A: indicating a gap" to realize Move 2.The authors of the RA introductions published in *JAMA* realised Move 2 through the following steps (Step 1A, Step 2) and strategies (Logical conclusion, Problem raising, Expressing needs) (see Figure 2). However, the *Tunis Med* corpus is much more homogenous featuring Move 2 in only Step 1A and two strategies (Expressing needs and Logical conclusion).

Move 2 was signalled by lexical words like contradiction connectors *(however)*, verb phrases *(limit, reduce)*, adjectives *(poor, limited, inconclusive)*, adverbs *(notoriously, too)*, negation components *(not, little)*, and quantifiers *(few)*. These linguistic signals belonged to different syntactic categories; but they nevertheless shared the same semantic category of negative evaluation. Examples of Move 2 are given below. The writer establishes his niche through the use of "Expressing needs" and "Logical conclusion" strategies (example 8 and 9 respectively).

8. Given the prevalence and morbidity of bronchiolitis, an effective therapy **is needed.**

9. We **reasoned then** that associations may be detected when analyzing a greater sample and considering the histoprognostical parameters (EE grade, Lymph node invasion) of cancer.

In the RA introductions, the gap in previous research is expressed differently in both groups. As mentioned previously, the literature was given the highest weight in *JAMA* corpus. Authors of *JAMA* group indicated their gap by criticising the research instruments and findings of previous studies (example 10). On the other hand, the *Tunis Med* group cited very little from previous literature. The gap is indicated by highlighting the limitations of the diagnosis and treatments of a given disease. The gap is also expressed in real-world rather than in previous research (example 11).

10. Standard non experimental studies of anemia management are subject to **strong confounding** by indication bias because ESA and iron doses are adjusted frequently in response to indications that are incompletely ascertained in available data [R].
11. The use of bronchodilators to treat children with bronchiolitis remains **controversial.**

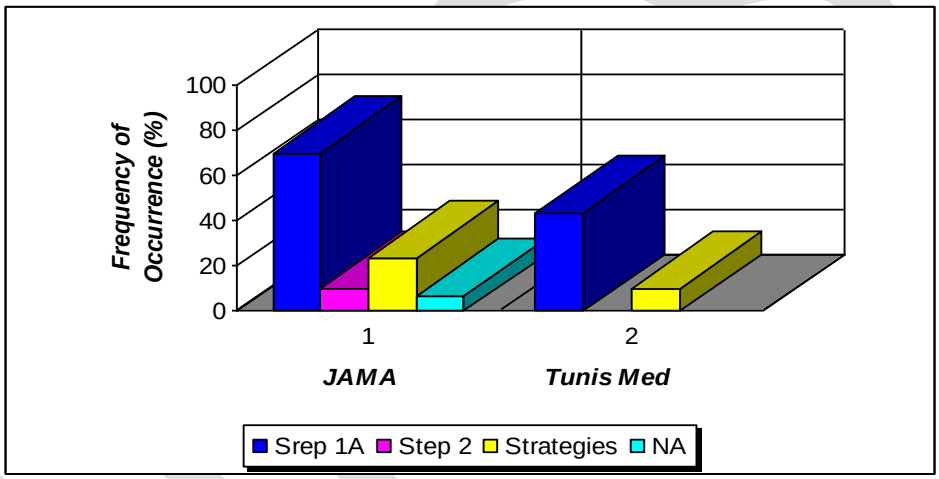

Figure 2. The rhetorical steps and strategies of Move 2 weighted by the frequency of occurrence in *JAMA* and *Tunis Med* groups

Previous research claimed that avoiding the criticism of other studies is justified by the influence of the "critique culture". Ahmad (1997) asserts that Malaysian authors do not criticise the work of previous researchers in order not to be too bold or aggressive in making a claim. In English-speaking scientific community, it is vital for an academic or a scientist to provide critical comments and evaluations for the work of other researchers. Therefore, being critical in one's study is a positive trait that enables scientists to acquire recognition of their achievements and thus forces the progress of the discipline they work in (Kanoksilapatham, 2007).

The former editor-in-chief of *la Tunisie Médicale* asserted that indicating a gap is the most problematic strategy for Tunisian medical researchers. He declared that Tunisian medical scholars do not identify the gap in previous research because they ignore the writing conventions of the RA genre, and if they identify the gap, they cannot express it appropriately

because of their poor writing abilities in English. He insisted that writing in a foreign language makes expressing the gap more difficult for non-native speakers of English.

4.2.5. Move 3: "Presenting the present work"

The only similarity exhibited between the two groups at the level of Move 3 is that only "Step 1: Announcing present research descriptively and/or purposively" and "Step 3: Definitional clarifications" were realized in both groups of RA introductions. Unlike the authors of RA introductions published in *Tunis Med*, writers of RA introductions published in *JAMA* present their work using several steps (see Figure 3).

"Step 6: Stating the value of the present research" and "Step 7: Outlining the structure of the paper" postulated in Swales (2004)'model are not present in either group. Therefore, they seem to be not applicable to the medical field.

The findings revealed that the only obligatory step to be found in all the RA introductions published in both groups is "Step 1: Announcing present research descriptively and/or purposively". Swales (1990, 2004) noted that Step 1 is an obligatory element in a RA

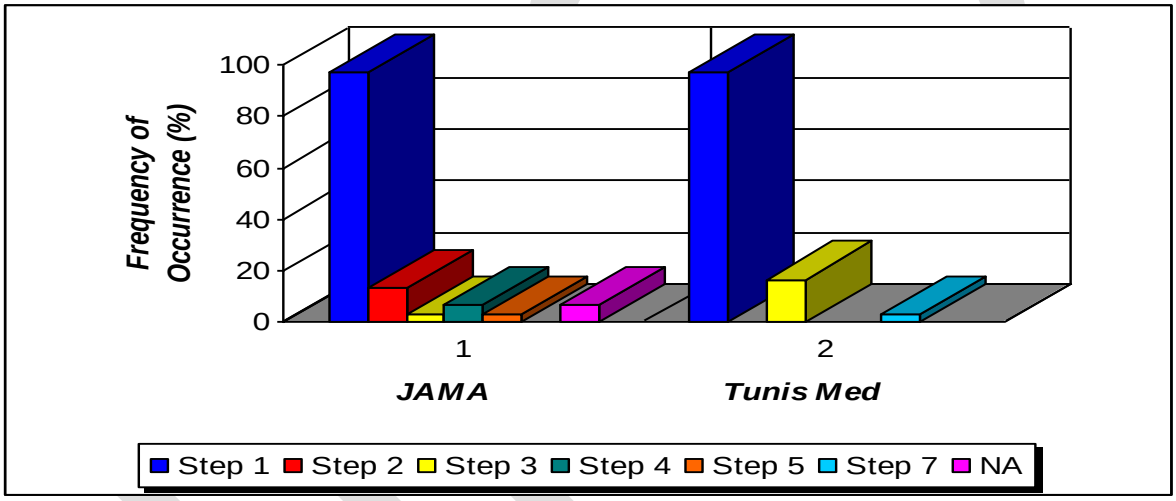

Figure 3. The rhetorical steps of Move 3 weighted by the frequency of occurrence in *JAMA* and *Tunis Med groups.*

This is also consistent with the SSIs observations. They declared that Step 1 is an obligatory step in any medical RA introduction. Though the *JAMA* group employed a degree of variations to present the objectives of their studies (examples 12 and 13), the authors in *Tunis Med* corpus employed a rather monotonous strategy in announcing the purposes of their research *"the (purpose /aim/ objective) of (our/ the/ this) (study) is /was"* (example 14). Three examples of Move 3 Step 1 are given below:

12. **Our objective was** to show the variation and identify characteristics of acute care hospitals...
13. **We studied** the association of this p.G13D mutation with outcome after cetuximab treatment in a pooled data set of 579 patients....
14. Thus, **the aim of the present study was** to precise the ....

Swales (2004) stated that "Step 3: Definitional clarifications" is not only optional but also less fixed in its order of occurrence than the other steps. "Step 3: Definitional clarifications" occurred in five RA introductions published in *Tunis Med* and was, surprisingly, placed at the very beginning of four introductions. The SSIs asserted that there is no need to provide definitions of technical terms, because the potential readers of medical RAs are normally medical students and researchers that are familiar with the specialized vocabulary of the medical field. They stated that this step, if it will ever occur, has to be placed at the beginning or in the middle of the introduction. An example of this step is given below:

15. Plummer-Vinson syndrome, also known as Paterson Kelly syndrome and sideropenic dysphagia, refers to the constellation of dysphgia, iron-deficiency anemia, and esophageal webs.

5. Conclusion

This study was carried out to compare RA introductions written in English and published in *JAMA* with those published in *Tunis Med*. The main objective of the study was to determine whether the cultural context of publication can affect the rhetorical structure of the medical RA introductions. The CARS (2004) model was utilised as a tool of analysis.

Although the two sets of RAs belong to two different contexts of publication, the rhetorical structure of both groups was more or less similar at the level of Move 1. The two groups featured the presence of the three steps of Move 1. Step1 was not present in all the introductions in both corpora. As such, this step seemed not to be frequently employed in the medical field. RA introductions published in *JAMA* provided more space to "Step 3: Reviewing items of previous research". The authors of *JAMA* mainly reported and criticised the findings of previous research. Tunisian doctors, however, utilized citations to emphasize the statements of facts they gave.

The rhetorical organisations of both groups were different at the level of Move 2. This move was not present in all the RA introductions in both groups, however, It was absent from half of the RA introductions published in *Tunis Med*. *JAMA* authors employed two of the steps postulated in CARS model to establish their niche. They also used some of the strategies proposed by Swales (1990). In some introductions, the authors realised Move 2 by simply highlighting the importance of their research topic. *Tunis Med* group was rather homogeneous, featuring the presence of only one step of the CARS model and few strategies. *JAMA* and *Tunis Med* authors realised their gaps differently. While *JAMA* authors criticised findings of previous research, *Tunis Med* authors tended to criticise the medical treatments and procedures used in real world.

Move 3 was not realised in both groups through all the steps postulated in the CARS (2004) model. Researchers in both groups occupied their niche by mainly announcing the objectives of their research work (Step1). In some cases, *JAMA* authors occupied their niche by presenting the research questions and/or hypotheses of their work (Step2). "Step 3: Definitional clarifications" occurred scarcely in *Tunis Med* group. "Step 4: Summarizing methods" was not frequently employed in JAMA sample. This step was sometimes followed by a justification of the methodology used.

6. Implications of the Study

The results of this study are compelling to make valuable suggestions to Tunisian doctors who might seek to publish their works in foreign prestigious journals. Tunisian researchers who are unfamiliar with the generic conventions of writing RA introductions in the medical field can use the CARS model to determine the rhetorical organisation of the RA introduction. The results of the study revealed that Tunisian researchers do not establish a niche for their studies. Using the CARS model when writing a RA introduction will, therefore, help Tunisian doctors determine the major components of a RA introduction.

Ameliorating the rhetorical as well as the linguistic aspects of the RAs published in *La Tunisie Médicale* can be achieved through including an applied linguist in the scientific committee. Applied linguists can play a vital role during the procedure of articles evaluation. At the linguistic and grammatical level, applied linguists can spot the errors that occur in the RAs at the surface level. At the rhetorical level, they can provide valuable advice on the rhetorical structure of a medical RA and, thus, help to ameliorate the quality of the RAs at the level of rhetorical organisation.

The analysis of the rhetorical structure of research articles published in the Tunisian and American scientific communities may reveal the differences between the writing styles of the two different cultural contexts. These differences may be useful in teaching English in Tunisia. Contrastive rhetoric in EFL situations can have an impact on the non-native teachers' understanding of writing and their professional development. A teacher, who knows of genre variations across cultures and/or disciplines, can successfully intervene in the language learning process of her/his students. She/he will raise their awareness about the cross-cultural differences in text characteristics and reader expectations.

The results of this study can be applied to teaching ESP in Tunisia. The study identified the rhetorical organisation of RAs written in the medical field which will offer medical students the basic knowledge on how to construct their medical article introductions. For the students to write appropriately, they need to be aware of the conventional style of a given genre. The comparison drawn from the analysis of the RA introductions published in two different cultural contexts is also of vital importance to medical students. It will enhance students' sensitiveness to the rhetorical variation of a specific genre from one culture to another.

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