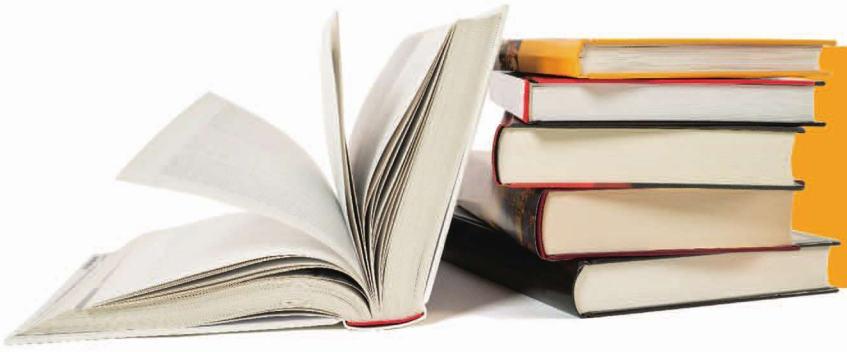
A Syntactic Study of
Medical Research Article Abstracts

医学论文英文摘要的句法研究

王 燕 ◎ 著



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PREFACE 前言

近年来，我国医学事业蓬勃发展，在很多方面都达到了国际先进水平。为了扩大医学研究成果的影响力，国内各个医学院校、科研院所以及医院都在鼓励并支持广大医务工作者及研究者发表医学论文。联合国教科文组织建议："全世界公开发表的论文，不管用何种文字写成，都必须附有用国际学术界使用最广泛的语言写成的摘要。"目前，英语是国际学术界的通用语。国际学术刊物的审稿人员一般先看论文的英文题目，再看英文摘要，其撰写水平直接决定所投稿件能否被录用。国内级别较高的学术期刊也要求附上英文摘要，以便国外读者阅读。此外，国内外大部分检索工具都是文摘型的，即：只收录论文题目和摘要等，不收录全文。因此，英文摘要也可以决定其文章的摘引率、影响力。

然而，由于多种原因，广大医务工作者及研究者的专业英语水平不高，难以撰写符合国际要求的英文摘要。一些语言研究者发现我国很多医学期刊的英文摘要存在各种问题，不同程度地影响了期刊的国际影响力。虽然有些书籍涉及或针对此类写作，遗憾的是，不少内容是基于作者个人经验，有些内容可能陈旧过时。这类文体的写作难点之一就是句法。本书作者按照统计学方法，从《新英格兰医学杂志》和《英国医学杂志》这两种世界著名的综合性医学期刊选取一定数量的研究性论文的摘要，从一般句型、特殊句型以及动词等角度对这些摘要进行质化和量化以及历时和共时相结合的研究，旨在全面深入地剖析该类写作文体的句法特征。

本书共分为五章。第一章阐述了英文摘要的定义、分类、用途以及国内外相关研究。第二章概述了国外不同语言学流派对句法的理解。第三章论述了对医

学论文英文摘要所进行的质化和量化以及历时和共时相结合的句法研究。在句法研究的基础上，第四章总结了医学论文英文摘要的句法特征，并借助大量真实语言素材详细讲解每一个特征。第五章指出了本书的理论和实践意义。

本书既可以作为医学英语方向的学生、教师及语言研究者的参考书目，也可以作为从事医疗、科研和编辑工作的医学工作者的案头资料。

由于笔者的水平有限，书中难免有不妥之处，恳请专家、同行以及广大读者批评指正。

王燕

2016 年 8 月

Preface

In recent years, China has contributed greatly to the rapid development of medicine and met the international advanced level qualifications in some medical fields. To maximize the medical achievements, Chinese medical schools, research centers and hospitals are encouraging and supporting medical staff and researchers to publish papers. UNESCO has recommended that, "Abstracts be published in at least one of the more widely used scientific languages, no matter what the original language of the paperis, in order to facilitate their international usefulness." English is the "lingua franca" in international academic arena. The editors of international academic journals will first read the English title of a submitted paper and then the English abstract, the quality of which can determine whether the submission will be accepted or not. An English abstract is also required by high-quality academic journals published in China to facilitate international readers. Besides, most retrieval tools only include the title and abstract of papers instead of the full text. Therefore, English abstracts can determine the citation and impact of a paper.

For various reasons, Chinese medical staff and researchers have limited proficiency in medical English and have difficulty in writing English abstracts that meet the international requirements. Some language researchers have found that the English abstracts in many Chinese medical journals are problematic, affecting the impact factor of the journal to different degrees. Pitifully, some relevant writing books or other publications are mainly based on the authors' experiences or out-dated. One of the most difficult parts of such writing is syntax. The author of this book chose a certain number of research article abstracts from *British Medical Journal* (*BMJ*) and *The New England Journal of Medicine* (*NEJM*) and conducted a qualitative and quantitative study in

terms of general types of sentences, specific types of sentences, and verbs to reveal the syntactic features of such special genre.

The book consists of five chapters. Chapter 1 introduces English abstracts by expounding the definitions, classification, functions and relevant studies. Chapter 2 summarizes major linguistic approaches to syntax. Chapter 3 presents a qualitative and quantitative syntactic study of medical research article abstracts from diachronic and synchronic perspectives. Based on the results, Chapter 4 summarizes and exemplifies the syntactic features of such genre. Chapter 5 highlights the theoretical and practical implications of the book.

The book will be of interest to medical English students, teachers and researchers as well as medical workers, researchers and editors.

The book may not be free from errors or mistakes, so the author expects readers to contribute suggestions and comments to make further improvement.

CONTENTS 目录

1

Abstracts

Abstracts, especially English abstracts, have drawn increasing attention from language researchers, teachers, learners and users. This chapter provides a glimpse of abstracts not defined to a particular field.

1.1 Definitions

Abstracts have been defined by many scholars. Some of the well accepted ones are listed.

An abstract is defined as an abbreviated, accurate representation of the content of a document, preferably prepared by its author(s) for the publication with it. Such abstracts are also useful in access publications and machine-readable data bases.

(The American National Standards Institute, 1979, p.3, in Cremmins, 1982)

An abstract should be viewed as a mini-version of the paper. An abstract should provide a brief summary of each of the main sections of the paper: Introduction, Materials and Methods, Results and Discussion. As Houghton (1975) puts it, "An abstract can be defined as a summary of the information in a document."

(Day, 1998)

An abstract is a complete but concise and informative account of your work, i.e. a condensation that makes sense without reference to the full document. It is not merely a descriptive guide to the content of the paper, but rather it is an abbreviated version of the paper (except for very long review-style papers or monographs, in which descriptive abstracts may be used.)

(Tippett, 2004)

The three definitions, given by different people in different years, delineate the very essence of abstracts by various means such as wording. To define the nature of abstracts, they employ different key words. One uses "summary", one "representation" and one "account". However, what they intend to convey is the same, i.e. abstracts are concise informative or descriptive "guides" to journal articles, research reports, dissertations, books, etc.

1.2 Classification

Abstracts are often classified in terms of content and structure. Structurally, abstracts can be grouped into two types: structured abstracts and non-structured (traditional) abstracts (He & Guo, 2002). Structured abstracts contain subheadings such as context (background), objective (aim), design and setting, main outcome measures (method), results, and conclusion. Such abstracts have become widely used in scientific and technological journals ever since they were introduced in the mid 1980s (Zhao, 1996; Hartley, 2004). Several researches (e.g. Hartley, 1997; Hartley, 2004) have shown that structured abstracts are more informative and accessible than traditional ones, which are often written as single paragraphs.

On the basis of content, abstracts can be categorized into four types: indicative (descriptive), informative, indicative-informative and critical (evaluative) abstracts (Cremmins, 1982; Day, 1998; He & Guo, 2002; Wang & Song, 2002). Indicative (descriptive) abstracts tell readers the general information of the following article, paper or report. They state such information as the purpose, method or scope of the following document in a qualitative way. Informative abstracts provide readers with more detailed information of the following article, paper or report. They present the

main information of the following document, including the purpose, method, results, conclusion etc. The results or findings are often stated in a quantitative way. Indicative-informative abstracts are a combination of the above two types of abstracts. Specific information about the results or findings and general information about the rest of the article, paper or report are both included in such combined abstracts. The last type of abstracts is used less frequently than the other three. Critical (evaluative) abstracts refer to abstracts that contain evaluative comments on the significance of the following document. Such abstracts are rarely found in research articles (RAs). Some people (Taylor & Rose, 2001) even disprove this type of abstracts by stating that no comments should be included in an abstract.

1.3 Values

Abstracts, particularly English abstracts, have played a crucial role in international academic exchanges. The primary value of abstracts is to enable readers to "identify the basic content of a document quickly and accurately, to determine its relevance to their interests, and thus to decide whether they need to read the document in its entirety" (American National Standards Institute, 1979b, in Day, 1998). Every year, millions of academic journals are published. With the information overload, many readers will first read an abstract and then decide whether to read or cite the corresponding article or not. Some of the journals, especially prestigious ones, are published in English while the rest are not, but the latter require English abstracts. For example, in non-English speaking countries such as China, France and Spain, most of the journal articles are required of English abstracts. This requirement is "to guarantee that the reported results of scientific work will circulate worldwide" (Ventola, 1994a, p.333, in Lores, 2004, p.281), which is one of the functions of English abstracts (Lores, 2004). In addition, scholars should submit an English abstract if they would like to attend international conferences; candidates of Ph.D. or Master degrees should write English abstracts before the completion of their dissertations.

Abstracts are not only important to readers, but also to all concerned, such as authors, editors etc. In most cases, editors will first read abstracts to assess the

corresponding works. If editors are attracted by abstracts, it will be more likely for the corresponding papers to be published, because "as with most things in life, first impressions are very, very important" (Tippett, 2004). In fact, editors often make an initial decision as to whether to accept submissions after reading the abstracts. Take *British Medical Journal* for instance. It has been explicitly stated in requirements for author submissions that "We may screen original research papers by reading only the abstract. Our estimate is that an initial decision is made on the abstract alone in 15 to 25% of papers. (http://bmj.bmjjournals.com/advice/sections.shtml)" As to authors of published works, a well written abstract increases the chances that their works be read or cited, because abstracts have been used widely in literature retrieval.

1.4 Writing Style

Since "an abstract should be viewed as a mini-version of the paper" (Day, 1998), the style of abstracts, to some extent, is similar to that of articles. Therefore, a brief review of both international and Chinese language experts' views on the style of English RAs may shed some light on the style of RA abstracts.

1.4.1 Foreign Language Experts' Views

It is necessary to consult *How to Write and Publish Papers in the Medical Sciences* (2nd edition) by Edward J. Huth, *Essentials of Writing Biomedical Research Articles* by Mimi Zeiger, and *How to Write and Publish a Scientific Paper* (5th edition) by Robert A. Day to get familiar with the style, required by international community, of RAs. The three writers are all distinguished editors or language experts on scientific writing, among which the first two are well informed of biomedical writing. Therefore, their views on the style of RAs should be held as internationally authoritative.

In *How to Write and Publish a Scientific Paper*, Robert A. Day proposes that "Hence we should demand absolute clarity in scientific writing." He compares a scientific paper to a signal and holds the view that a signal is "useless unless it is both received and understood by its intended audience." To be understood, "the words of the signal should be as clear and simple and well ordered as possible." Similarly, scientific writing "should be as clear and simple as possible", with figurative language or trope

(Thornborrow & Wareing, 2004) such as similes, and metaphor kept to minimum.

In *Essentials of Writing Biomedical Research Articles*, Mimi Zeiger devotes one chapter to detailed writing guides to abstracts, in which she discusses three types of abstracts: abstracts of results papers, abstracts of methods papers and abstracts for meetings. She provides some useful writing rules for each type. As for the first type, the most common, she suggests "Write short sentences. Avoid noun clusters", "Use active voice instead of passive voice" and so on.

In *How to Write and Publish in the Medical Sciences*, Huth puts forward five qualities of good scientific prose: Fluency, Clarity, Accuracy, Economy, and Grace, as shown in Table 1.

Table 1 Five Qualities of Good Scientific Prose

Fluency
Forward-moving sequence of thought Elements of critical argument in the right sequence Narrative sequence in the right order Paragraphs connected Forward-moving line of thought in each paragraph No slowing or interruptions from obvious devices of style; from unclear, sluggish, excessively long sentences; or from graceless terms
Clarity
Clear structure and movement of content Clear connections of paragraphs Intent of each paragraph clear at its outset; each paragraph limited to that intent; no paragraph unclear because it includes more than needed for that intent Clear use of modifiers Unambiguous antecedents for pronouns Right choice of verb tenses for the sequences of actions
Accuracy
Correct choice of words and terms No misspelled words Right verb tenses for discontinuity or continuity of action
Economy
No unneeded words or phrases Verbs rather than abstract nouns No unneeded clauses

(*to be continued*)

Grace
The qualities of fluency, clarity, accuracy, and economy Correct sex references Humane terms and phases Standard formal usage

1.4.2 Chinese Language Experts' Views

In terms of the style of English for science and technology, Chinese language experts hold similar and different or even contradictory views. In *Writing Guides to English Abstracts of Scientific and Technological Papers*, Zheng (2003) proposes three principles: A (accuracy), B (brevity), and C (clarity). As for the detailed style, he mainly suggests: (1) short sentences should be preferred to long sentences; (2) verb forms should be used rather than their noun forms; (3) active voice should be first considered rather than passive voice; (4) first person pronouns such as we and I should be avoided.

In *Scientific and Technological Writing in English*, Xiong & Teng (2001) agree with Zheng (2003) that short sentences should be used, because they are emphatic. They further suggest two ways to write short sentences. One is to limit sentence content. The other is to simplify sentence structure.

In *Writing in English for Science and Technology*, Zhou (2003) devotes one chapter to syntax. Three types of tenses (present tense, past tense, and present perfective tense), complex sentences and passive voice are discussed in detail. The three types of tenses are the most frequently used ones in papers for science and technology. Complex sentences are used to avoid monotony when all of the sentences are short, though short sentences are suggested, because they are clear, concise and forceful. Although passive voice is preferred, active voice should be used occasionally to add variety to the paper.

However, others hold somewhat different views. In *A Handbook of EST (English for Science and Technology) Writing*, Qin (2001) discusses the syntactic features of English abstracts and papers for science and technology. He concludes that the more academic the paper is, the longer its average sentence is. He mainly provides some common structures and expressions, which are valuable for those who would like to publish their papers in English and English teachers who teach English for science and

technology. He also assumes that passive voice is widely used. His views on sentence length and voice are shared by Huang (2003), who in his book, *A Practical Handbook of EST (English for Science and Technology) Translation*, clearly states his views.

From the above review of Chinese language experts' views on the style of English RAs and English abstracts for RAs, falling in the field of science and technology, it could be seen that some experts hold contradictory views, though some of them share the same views. The contradictory views may confuse the potential readers. So more work should be done to further clarify the extent to which these views are valid, for it is possible that the views are right under certain circumstances but not in other occasions.

Specifically, much fewer writing books focus on writing style of medical RAs in English or English abstracts for medical RAs. *In Medical English Writing and Translation,* He & Guo (2002) summarize some language features of English abstracts of medical RAs: (1) active voice should be used as much as possible; (2) third person pronouns should be preferred; (3) parallel structures should be adopted.

1.4.3 Related Studies

During the past three decades, language researchers have been trying to define the linguistic features of English abstracts. Graetz (1985), one of the pioneer researchers, has summarized the language of abstracts:

> *The abstract is characterized by the use of past tense, third person, passive, and the non-use of negatives. It avoids subordinate clauses, uses phrases instead of clauses, words instead of phrases. It avoids abbreviation, jargon, symbols, and other language short cuts which might lead to confusion. It is written in tightly worded sentences, which avoids repetition, meaningless expressions, superlatives, adjectives, illustrations, preliminaries, descriptive details, examples, footnotes. In short it eliminates the redundancy which the skilled reader counts on finding in written language which usually facilitates comprehension.*
>
> (Graetz, 1985, in Swales, 2003, p. 179)

Her generic definition of the linguistic features of abstracts has been criticized by many others, because her conclusions, just based on a corpus of 87 abstracts drawn from a variety of fields, could not be held as universal truth.

Since then, abstracts, especially English abstracts of RAs, have been studied from different perspectives. In most studies, abstracts written in two or even three languages are compared and/or contrasted. The majority of such studies are concerned with the similarities and differences between abstracts written in an Asian language and those written by English native speakers, because English has become a "lingua franca" in professional and academic communication in Asian countries, such as China, Japan and Korea (An & Anthony, 2014).

During the past decade, many Chinese scholars has conducted such cross-cultural studies in an attempt to improve the quality of English abstracts written by Chinese. Most of them (Hu, 2004; Zhang, 2004; Liu, 2005; Huang & Chen, 2012; Xiao & Cao, 2014; Hu, 2015) focus on abstracts of scientific works. Zhang's (2004) study is of great value because this is the first attempt made by Chinese to make a comparative genre analysis of medical RA abstracts written by Chinese and English native speakers respectively. The study has found some significant differences between abstracts written by Chinese and those by English native speakers. For instance, in Move 5 (Conclusion), Chinese often used the step "generalizing the results" while English native speakers often used the step "commenting the results".

Such cross-cultural studies have also been found in other countries where English is a foreign or second language. Busch-Lauer (1995) focuses on formal schemata and linguistic devices of German abstracts and their English equivalents and draws the conclusion that "German non-native speakers' abstracts were author translations and contained structural and linguistic inadequacies, which may hamper the general readability for the scientific community." Martin (2003) studies the rhetorical variation between the RA abstracts written in English for international journals and those written in Spanish and published in Spanish journals.

Besides cross-cultural studies, many scholars focus on abstracts written in one language, particularly English. Some (Hong, 2002; Teng, 2003) are concerned with journal article abstracts without distinction of fields or disciplines, while others are interested in abstracts in one field or discipline. For example, Cao & Mu (2011) study academic vocabulary in each move of English abstracts of scientific and technological articles; Salager-Meyer (1992) examines how the use of the different tenses and modal