# A Corpus-based Study and Proposals of CAB Abstracts

Taking the *Journal of Sichuan Agricultural University* as a Case*

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*Abstract*—**With 100 CAB abstracts and their originals in Journal of Sichuan Agricultural University, we try to make a detailed study of their differences in tense, voice, patterns to indicate research results and the readability in Chinese graduates. For these Chinese graduates, it was easier to understand the abstracts by editors of CAB, who used quite different tenses, vocabularies or sentence patterns from those of the original authors. Therefore, for a better quality of the abstracts, instructors or supervisors are advised to renew their ideas about the standard of abstract writing, abstract researchers to conduct more studies on the abstracts of the latest and most influential papers and future scholars to have more practice and communications on their writings to make the abstracts up-dated.**

*Keywords—English abstract; comparative study; Journal of Sichuan Agricultural University; proposals*

## I.    INTRODUCTION

English abstracts have become more and more important with the economic globalization and higher frequency of international communication. Now they are the key means not only for foreign scholars to search for and get to know achievements in science and technology of other countries, but also for internationally recognized journals or database to decide whether to have certain researches and publications included. That's why there have appeared quite a lot of theses about English abstracts in terms of their writing techniques, linguistic features, textual characteristics, empirical studies and etc. For example, by searching the titles with 'abstract writing' from the data base of SSCI, we can find 138 articles from the year 1950-2018, including 33 from the year 2014-2018(by April 27th). Of them, we are impressed by such articles published in 2018 as 'Getting to the Heart of the Matter: How to Write an Abstract', 'Phrasal complexity in academic writing: A comparison of abstracts written by graduate students and expert writers in applied linguistics', and those in 2016 like 'Twelve tips on writing abstracts and titles: How to get people to use and cite your work', 'Writing competitive research conference abstracts: AMEE Guide no. 108',  and 'Writing the title, abstract and introduction: Looks matter!'. In these articles the authors not only stress the importance of a concise and persuasive abstract but also put concrete suggestions as "wait until the end to write the abstract and ensure that the abstract aligns with the full text and conforms to the submission guidelines, etc."(Cook, 2016). In China, there are also many researches on English abstract writing and translation. These studies are mainly based on comparative analyses of abstracts of scientific papers, with chief focuses on linguistic features like stylistics, textual coherence (Yu, 2002; Ren & Ma, 2008; Guo, 2009), grammatical pattern, tense, voice (Zhang et al, 1999; Teng & voice (Zhang et al, 1999; Teng & Tan, 2004; He, 2004; Zhang, 2009), or on translation problems and pragmatic failure (Ge, 2002), main factors affecting the economy of scientific abstracts by Chinese scholars(Shi, 2008; Gong, 2010). As for studies from other aspects, Gao Huaiyong (2014) puts that material process, mental process and translational process help to achieve the descriptiveness, explanation, objectivity and conciseness of English abstracts of agricultural scientific papers. Li Weina (2016) focuses her study on the cultural ID in the modal system. From these studies, there come quite different research results mainly because of different research methods, different research focus, or choice of different research subjects and data. For these reasons, we think there will be further studies with the change of language and this promotes us to make a comparative study of the English abstracts of the same thesis written by a Chinese scholar and edited by an English editor.

Given that agricultural achievements in any country may arouse people's attention and that many of these achievements are presented in theses, we choose agricultural papers as the subjects of our research. As for the Journal of Sichuan Agricultural University, in which papers on agricultural studies and achievements are published, it is not well-known in the world, but is included in database VOID (CABI, AGRICOLA & AGRIS). When the editor of the database VOID decides to accept these theses, he/she has to reorganize and revise the authors' English abstract if necessary in order to attract more readers and spread what is written in the papers. Hence, in this study we will collect 100 English abstracts from VOID and compare them with the original versions by Chinese scholars, first, to see whether there is any difference in the way of expressions or in Chinese readers' response to these abstracts; second, to

analyze what causes the differences if there are any, and third, to offer some possible tips for the appreciation and guidance for English abstract writing.

## II. RESEARCH QUESTIONS & METHODOLOGY

### A. Research Questions

(1) Are there any differences in the number of sentences and their length?

(2) Are there any differences in the frequency of tense and voice of the main clauses?

(3) Are there any differences in the frequency of expressing experiment results and conclusion?

(4) Do Chinese readers have the same response to the two versions of an abstract?

### B. Research Methodology

We collected some abstracts of the theses from CAB Abstracts (2000-2017) in the data base VOID - CABI (http://ovidsp.tx.ovid.com), and found their original versions in the Journal of Sichuan Agricultural University. For convenient statistics, we selected 100 abstracts, coincidentally with 19 from the year 2001, 31 from 2002, 23 from 2005, 18 from 2006 and 9 from 2007. It should be mentioned that of the 100 first authors, 89 are from Sichuan Agricultural University, 9 from other universities in China and only 2 from English-speaking countries.

For convenience, we only focused on the tense and voice of the main clause; we categorized those sentences with verb predicates like "have, be, occur, appear, exist" into those neither passive nor active voice; we paid special attention to the expression of the experiment results, noting the frequency of vague words and fixed patterns indicating results (vague words refer to those words showing the author's vague attitude or expressing uncertain things). Finally, we selected 30 and their original versions, dividing them into 6 categories and asking students working for their master or doctor degree to read them, thus getting the readability. Statistical Product and Service Solutions (SPSS) version 22.0 was used for the analysis of the data in the form of the frequency, percentage and correlation between collected data and students' responses. (Note: For the convenience, we use some capital letters to stand for certain elements in "Table II" and "Table IV" and they are as follows: E: The number of sentences in past tense and their frequency; F: the number of abstracts with past tense used in all sentences and their frequency; G: The number of sentences in present tense and their frequency; H: The number of abstracts with present tense used in all sentences and their frequency; O: The number of sentences with active voice and their frequency; P: The number of sentences with passive voice and their frequency; Q: The number of sentences with neither active nor passive voice and their frequency. Besides, in "Table III" and "Table VI", R stands for the number of sentences using "The results show/ demonstrate/ indicate/ that…" S for the number of sentences using "It is concluded/ found/ suggested that …"

## III. RESEARCH RESULTS & DISCUSSION

### A. Research Results

*1) Results of the authors' version:* (See "Table I" "Table II" "Table III")

TABLE I.    THE LENGTH OF THE ABSTRACTS

| The number of abstracts | The number of sentences | The number of words (title included) | The number of subordinate clauses |
|---|---|---|---|
| 100 | 679 | 16087 | 165 |

TABLE II.    THE USE OF TENSE AND VOICE AND THEIR FREQUENCY

| Use of Tense | | | | Use of Voice | | |
|---|---|---|---|---|---|---|
| *Past tense* | | *Present tense* | | *Active* | *Passive* | *Neither* |
| E | F | G | H | O | P | Q |
| 254; 37.408% | 11; 11% | 425; 62.592% | 15; 15% | 206; 30.339% | 279; 41.090% | 194; 28.571% |

TABLE III.    USE OF EXPRESSIONS OF THE RESEARCH RESULTS

| Use of Vague Words | | | Use of Fixed Patterns | |
|---|---|---|---|---|
| *Modal verbs* | *Adj. or adv.* | *v.* | *R* | *S* |
| 27 in main clause; 10 in subordinate clause | 1 in main clause; 1 in subordinate clause | 7 in main clause; 2 in subordinate clause | 65 (making up 9.57% of the total sentences) | 20 (making up 2.95% of the total sentences) |

*2) Results of the editor's version:*

TABLE IV. THE LENGTH OF THE ABSTRACTS

| The number of abstracts | The number of sentences | The number of words (title included) | The number of subordinate clauses |
|---|---|---|---|
| 100 | 605 | 15484 | 103 |

TABLE V. THE USE OF TENSE AND VOICE AND THEIR FREQUENCY

| Use of Tense | | | | Use of Voice | | |
|---|---|---|---|---|---|---|
| *Past tense* | | *Present tense* | | *Active* | *Passive* | *Neither* |
| E | F | G | H | O | P | Q |
| 539; 89.09% | 57; 57% | 66; 10.91% | 0; 0% | 171; 28.265% | 291; 48.099% | 143; 23.636% |

TABLE VI. USE OF EXPRESSIONS OF THE RESEARCH RESULTS

| Use of Vague Words | | | Use of Fixed Patterns | |
|---|---|---|---|---|
| *Modal verbs* | *Adj. or adv.* | *v.* | *R* | *S* |
| 9 in main clause; 13 in subordinate clause | 6 in main clause; 1 in subordinate clause | 24 in main clause; 1 in subordinate clause | 7 (making up 1.16% of the total sentences) | 14 (making up 2.31% of the total sentences) |

*3) Readers' response to the two versions:* To test how our graduates respond to the two versions, we selected 30 from the 100 subjects, and classified them into 6 categories according to the branch of studies — forestry & horticulture(FH), animals(A), wheat(W), rice(R), corn & bean(CB), and others(O), with their short forms in the parenthesis. There were 5 abstracts and their edited versions in each category, of which the authors' version is marked with A and the editor's with B, and they were given to graduates working for their master or doctor degree. The graduates were required to read a group of abstracts according to their study branch or their interest, finish the reading within 2 weeks, make their choice for each abstract from the following 3 choices - A) A is easier to understand; B) B is easier to understand; C) It is easy to understand both A & B, and finally provide reasons for their easy or difficult reading. At the end of 2 weeks, we collected 151 effective answer sheets, of which 19 were from those working for doctor's degree and were specially marked. The results are indicated in "Table VII", "Table VIII" and "Table IX".

TABLE VII. FREQUENCY OF THE CHOICES

| | Frequency of A） | Frequency of B） | Frequency of C） |
|---|---|---|---|
| *FH (for doctor's degree)* | 24% | 60% | 16% |
| *A (for doctor's degree)* | 18.18% | 55.56% | 18.18% |
| *W* | 16.52% | 67.83% | 15.65% |
| *R* | 26.67% | 58.67% | 14.67% |
| *CB* | 27.69% | 51.54% | 20.77% |
| *A* | 22.27% | 64.54% | 13.18% |
| *FH* | 20% | 64% | 16% |
| *O* | 20% | 60% | 20% |

TABLE VIII. MEAN, STANDARD DEVIATION, AND INTER-CORRELATIONS AMONG ALL VARIABLES

| | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| *Choice A)* | 10 | 17.80000 | 14.38981 | 4.55046 |
| *Choice B)* | 10 | 46.2000 | 40.18236 | 12.70678 |
| *Choice C)* | 10 | 11.5000 | 10.03605 | 3.17368 |
| *FH (doctor's degree)* | 50 | 1.9200 | .63374 | .08963 |
| *A (doctor's degree)* | 50 | 2.1000 | .70711 | .10000 |
| *W* | 115 | 1.9913 | .56964 | .05312 |
| *R* | 75 | 1.8667 | .64375 | .07433 |
| *CB* | 131 | 1.9389 | .69896 | .06107 |
| *A* | 220 | 1.9091 | .58980 | .03976 |
| *FH* | 25 | 1.9600 | .61101 | .12220 |
| *O* | 15 | 2.0000 | .65465 | .16903 |

TABLE IX.    THE DIFFERENCE BETWEEN DIFFERENT CHOICES AND DIFFERENT READERS

| | N | Mean | Std. Deviation | Std. Error Mean | | |
|---|---|---|---|---|---|---|
| | *t* | *df* | *Sig. (2-tailed)* | *Mean Difference* | *95 Confidence Interval of the Difference* | |
| | | | | | *Lower* | *upper* |
| *Choice A)* | 3.912 | 9 | .004 | 17.80000 | 7.5061 | 28.0939 |
| *Choice B)* | 3.636 | 9 | .005 | 46.20000 | 17.4553 | 74.9447 |
| *Choice C)* | 3.624 | 9 | .006 | 11.50000 | 4.3206 | 18.6794 |
| *FH (for doctor's degree)* | 21.423 | 49 | .000 | 1.92000 | 1.7399 | 2.1001 |
| *A (for doctor's degree)* | 21.000 | 49 | .000 | 2.10000 | 1.8990 | 2.3010 |
| *W* | 37.488 | 114 | .000 | 1.99130 | 1.8861 | 2.0965 |
| *R* | 25.112 | 74 | .000 | 1.86667 | 1.7186 | 2.0148 |
| *CB* | 31.750 | 130 | .000 | 1.93893 | 1.8181 | 2.0597 |
| *A* | 48.010 | 219 | .000 | 1.90909 | 1.8307 | 1.9875 |
| *FH* | 16.039 | 24 | .000 | 1.96000 | 1.7078 | 2.2122 |
| *O* | 11.832 | 14 | .000 | 2.00000 | 1.6375 | 2.3625 |

### B. Discussions

*1) Discussion on the number of sentences and their length:* From "Table I" and "Table VI", we can see that the authors of the original abstracts used 679 sentences and 16087 words in their 100 abstracts, 74 more sentences and 603 more words than the editor, and that they used 165 subordinate clauses, 62 more than the editor. Obviously, the expressions by the authors are more complex and lengthy, with 24.3% of the sentences containing subordinate clauses and an average of 23.7 words in each sentence.

*2) Discussion on the use of tense and voice and their frequency:* According to "Table II" and "Table V", sentences with active voice, passive voice and neither active nor passive voice restrictively accounted for 30.339%, 41.09% and 28.571% in the authors' versions, while 28.265%, 48.099% and 23.636% in the editor's. This indicated that the authors didn't use passive voice as frequently as the editor, but tended to use more 'neither active nor passive voice'. Such a result from our study is different not only from Mr. He Ruiqing's(2004:16) — that 'Chinese scholars used more passive voice and had more head-weighted sentences', but also from Zhang Mei's(2009:35) - 'the dominance of active voice in scientific and technical writings by authors from Britain and America'.

As for the use of tense, the authors tended to use present tense more frequently, with 62.592% of the sentences and even all sentences in 15 abstracts in present tense, while the editor tended to use past tense more frequently, with only 10.909% of the sentences in present tense, but all sentences in 57 abstracts in past tense. The great differences in the use of tense between the authors and the editor suggested that the authors misused present tense, for they not only neglected the tense of their experiments, but also mistook the results of the experiments for the conclusion, in which the authors regarded these results as a general rule or the truth and used present tense. We must say that our results did not go with the notion of Teng Ruzhen & Tan Wancheng (2004:6) — Scholars in other countries used present tense more often than those in China and had the tendency of using present tense in all sentences.

*3) Discussion on the expressions for the research results:* "Table III" and "Table VI" showed that the authors in the *Journal of Sichuan Agricultural University* had the inclination of using such marked expressions as 'the results show/ indicate/ demonstrate that…' to express the experiment results and 9.573% of their sentences were expressed this way. By contrast, the editors hardly adopted these expressions; instead, they preferred to state the results of the experiments directly. Interestingly, there was no great difference in the use of sentence patterns for the conclusion like "it is concluded/ found/ suggested that…".

It is worth noting that in expressing the results or conclusions, both the authors and the editor used such vague words as 'can, could, may, might, possible, possibly, tend, appear and seem' though their abstracts were the reports about agricultural achievements, which should be expressed in a clear and scientific way. Besides, the editor used more and various types of vague words, with 6.45% in the main clauses and 14.56% in the subordinate sentences, compared with the authors' 5.15% and 7.88% respectively. These findings agreed not only with one of our studies – there is a correlation between our writing ability and the proper use of vague words(Zhu Kui & Xia Xinrong, 2011:33), but also with Clyne's conclusion that 'German students cannot use vague words as smoothly as English natives in English writing'(Luo Hui, 2009:196).

*4) Discussion on the readability and the reasons:* The differences shown from "Table I" to "Table VI" inevitably caused differences for the readers and this can be seen from "Table VII". Those in preference for the choice B) went mainly between 58-64%, with the lowest of 51.54%; for A) 20–25%, with the highest of 27.69%, and for C) 14–18%, with the highest of 20.77%. "Table VIII" and "Table IX" indicated that there was a great deviation between the choices of A), B) and C), and that the test value is meaningful.

From the analysis of the graduates' answer sheet, we found that those in preference for the choice B) thought that abstracts marked with A contained too complex structures, too many details about the experiments without the mention of the key information, or lacked the logic relationship between sentences, or had some grammatical problems, etc. And all these problems may have an influence on their readability. Here are some typical examples, which made the reading difficult:

Example 1: *Using Bromus tectorum L. as outgroup, phylogenetic relationships among 13 species or subspecies in Hordeum are estimated by neighbor-joining method. It indicates that the phylogenetic relationships in Hordeum are not closely related with its geographical distribution, while closely related with its genome constitution. [Cited from Vol. 23(1), 2005]*

In this sentence, there are errors in grammar, collocation and pron. For instance, 'using…' is used before the subject 'phylogenetic relationships or subspecies' but the act of 'using' cannot be performed by the subject. Moreover, nobody knows what 'it' refers to. And 'related with' is an incorrect collocation. Finally, the experiment result is expressed in present tense. The following is the editor's version:

*Estimated with the neighbour-joining method with Bromus tectorum as the outgroup, it was found that the phylogenetic relationships among the 13 species or subspecies were loosely related to their geographical distribution and closely associated with their genome constitution.*

Example 2: *The results show that there are abundant SNP sites distributed in intron 1. These SNP sites are located at 580 bp (T→G), 595 bp (A→C), 610 bp (C→-), 617 bp (A→G), 622 bp (A→T), 625 bp (A→-), 627 bp (A→C), 629 bp (A→C), 631 bp (A→C) and 677 bp (G→A). 586-587 bp (TG→CA) is also found; In extron 2, a non-SNP site is found which demonstrates that there was no variance in DNA sequence of extron 2 in different breeds (strains) tested in this study, but genetic mutation exists in the intron 2 area compared with the template sequence.[cited from Vol. 24(2), 2006]*

In this example, the author tried to introduce 'intron 1 and extron 2'. In the introduction of 'intron 1', 3 sentences were used but we may feel it is not easy to understand them and their relationship with intron 1 because of the frequent change of subjects; in the introduction of 'intron 2', the author had a quite clear description but used too many meaningless words. For instance, 'there are' and the second 'extron 2' were meaningless. Besides, the author also mistook the result for the conclusion of the experiment by using the present tense. The following is the editor's version, in which 2 sentences were respectively used for 'intron 1' and 'intron 2', with the findings in each of them clearly described.

*Abundant SNP sites were detected to distribute in introns 1, their locations being at 580 bp (T->G) 595 bp (A->C), 610 bp (C->-), 617 bp (A->G), 622 bp (A->T), 625 bp (A->-*), 627 bp (A->C), 629 bp (A->C), 631 bp (A->C) and 677 bp (G->A). A bi-base mutation was observed: 586-587 bp (A->-). In extron 2, a non-SNP site was noticed, suggesting that no variance existed in DNA sequence in extron 2 among the breeds/strains tested in this study. However, alignment with the template sequence AY648562 in Genbank revealed the presence of genetic mutation in the extron 2 area.*

Example 3: *Using the root-tips of Rubus niveus, R. ellipticus var. obcordatus and R. coreanus as materials, the key factors, such as the sampling times and environmental temperatures when sampling materials, pretreatment agents (8- hydroxyquinoline, 8- hydroxyquinoline plus colchicines and saturated p- dichlorobenzene), temperatures and times, dissociating agents (25 g/L cellulose plus 25 g/L pectic enzyme and hydrochloric acid), processes and times and staining agents (acetocarmine, carbol fuchsin, schiff' solution and ferriammonium sulfate-haematoxylin), and methods, which influences the preparation of chromosome, had been studied. [Cited from vol.25 (3), 2005]*

Obviously, the sentence is head-weighted, with 64 words working as the subject and many examples included in the abstract, and 'using…' was also improperly used. The editor simplified it in the following way:

*The root-tips of the rooted greenwood and hardwood cuttings of Rubus niveus, R. ellipticus var. obcordatus and R. coreanus were used as the experimental materials to study the key influencing factors for their chromosome preparation.*

## IV. CONCLUSION

The data collected in this research show that in the abstract writing, errors may exist of different types, but great achievements have been made. First, the majority of the authors could write complete sentences, with only 1 author mistaking 2 fragments for sentences. Second, the graduate readers could recognize good abstracts, which can be seen from the higher frequency of the choice B) in "Table VII". Third, some authors of the 100 abstracts really wrote good abstracts, for they may have studied abstract writing or may have turned to their friends of English majors for help, which can be shown from the percentage of the choice A) or C).

Despite these facts, it is still of great necessity to figure out ways to really help us Chinese scholars write more acceptable abstracts so that their researches can be not only understood by those from other countries, but also accepted by the influential journals. We think Chinese scholars can make their researches known to more people if instructors (including tutors and editors) update their ideas, or abstract researchers make a regular study of the abstracts of the latest influential researches, or future scholars like graduate readers in this research have more practices and communications with each other.

To be specific, editors of all journals, or English teachers, or tutors of the graduates, should, first, not follow the writing standard which seems quite familiar and static, but improve it by actually studying both the linguistic and structural features of English abstracts written by English native authors, and by comparing the traits of English abstracts in

different times or in different journals. As far as we know, editors have been confined to, and teachers or student authors misled by the requirement of complete correspondences in Data Norm for Retrieval & Evaluation of Chinese Academic Journal (CD). With such a norm, the Chinese authors have made their abstracts stiff and incoherent, only to receive such a response from the editors of English journals: 'There are a number of grammatical errors and instances of badly worded/constructed sentences. Please check the manuscript and refine the language carefully.' We think it is very difficult to revise such an abstract, especially the one with such a comment as the underlined words, for English sentences are constructed in quite different ways from Chinese ones. To revise such an abstract, we have to analyze the logical relationship between sentences and restructure them according to English ways of expressions without the restriction of the Chinese sentence order, and such efforts are more like a revision than a rewriting. Unfortunately, this has been ignored by most instructors like teachers or editors in China. It is worth to mention that Thomas Burgoine (2011) realized this and took his graduates to the publishing houses, where they could learn how editors judged an abstract, decided on the potential theses and got them published so that they could pick up what is needed in getting a thesis published and finally make themselves authors or researchers in the academic field. Instructors like Thomas Burgoine (2011) have given their graduates guidance with their direct experiences, so we Chinese tutors have no reason to simply follow the accepted but out-of-date data norm, or rather we should not provide guidance with misleading information about abstract writing.

Second, abstract researchers have to devote more time to the study of the most influential abstracts while enjoying the achievements of previous researchers. The results of this research are different from some of the previous ones in some aspects, and this proves such studies of abstract writing are meaningful and deserve continuous efforts. As is known, the data norm cannot remain the same, for language is developing with the times. We think if the studies of abstracts can bring some improvements to the data norm, and it would be helpful for their readers or those with the talent to become researchers.

Last, it is of great necessity for the authors of abstracts, especially the learners of abstract writing, to focus more on the practice of writing itself than the simple data norm. In practicing the abstract writing, it would be better to pay special attention to whether the abstract summarizes the main content of the thesis, whether there are unclear expressions, whether there is need to combine several short sentences into one or vice visa, whether a passive voice is used, whether it is necessary to change sentence orders, etc. And after the writing of an abstract, it is better not only to read and reread it themselves to see whether it is coherent, but also to ask their friends to read it so that they can revise it and make it smooth and acceptable. In this way, we think, the abstract will be improved and there will be more chance of being accepted by certain influential journals.

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