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科技论文汉译英的选词准则

包通法

(基础课部)

摘要 阐述了科技论文的科学语言的本质特点,讨论了英语的词源与学术语言选词的历史原因,探讨了科技论文汉译英时具有科技味的选词原则及其规律,以及与科学语言之间的相互关系。

主题词 选择;词法分析;规范/科技味选词;纯科技词汇;学术词汇

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科技论文的语言特点是表达准确简洁,文体朴实无华,即世人公认的"准确性,简明性,规范性"三性。然而,要达到上述"三性"的最基本的物质条件是词汇的选择当否以及由此按一定规律结合的表达形式。词汇是人类用以交际和思维的有形物质形式,是形,义,音的三者统一。因此,词汇以及与之相关的表达形式选择的正确与否,关系到论文作者或译者能否客观有效地表达其原始思想:精确还是偏颇,简洁还是累赘,朴实还是华丽,严肃还是随便。本文拟就科技论文汉译英的选词准则谈谈一管之见。

1 选词与文体

科技论文的语言必须是科学语言。因此,科技论文的语言特点是规范,准确,简明,具有国际性普遍意义。当代英语,按其体裁和功能可分为三种基本文体——寄情(Expressive)表事(Informatize)和鼓动(Vocative). 属寄情体裁的有诗歌,小说,戏剧,电影;属表事体裁有科学专著,科技论文等;属鼓动体裁的有广告,通知,标语,演讲等。科技论文是表事的,故属信息语体,其功能核心在外界情形(External Situation)——即客观事实,议论均需严格地依据事实实在、语言之外的客观事实。著名翻译学家许渊冲教授也曾说过:"科学研究的是'真',艺术研究的是'美'"[1]。换言之,科技论文的写作在于"真",其重点在于准确无误地传递信息,用明白,简洁的语言来表达作者原始的创造性思维或科技成果,而读者阅读科技论文、文献的目的也在于获取信息。由于科技论文的上述目的,任务所致,这就决定了科技论文的文体是 formal and informative,其论述是客观,精确简洁和朴实无华,而其文体的正式和

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朴实无华又决定了其遣词造句(反过来其理亦成立)。可以说选词的偏颇对能否正确表达论文撰写者的原始的创造性思想和研究成果关系甚大。纵观英语的发展史,现在的英语实际上是由盎格鲁-撒克逊语——古英语(OE)、拉丁语(L)、法语(Fr)以及希腊语(Gr)等诸语言的混合体,因而一个概念往往会有二个乃至数个词义相近的同义词或近义词:e.g. "获得"有get (OE),acquire(OFr.), obtain(L),gain(Fr); more examples:"关闭"shut(OE), close (Fr), conclude(L);"上升"rise(OE),mount(Fr),ascend(L);"提问"ask(OE),question (Fr),interrogate(L);"火"fire(OE),flame(Fr),conflagration(L).

在这些同义或近义词中,究竟选用哪个词才是符合科技文体的富有科技味的词汇?

由于历史和社会发展以及长期沿袭习惯等诸原因所致,OE 的词汇在口语体(casual style)中使用频率甚高,且运用灵活,词义面宽。让我们再以 get 为例:get by-products from coai 意为"acquire"; You must get some new shoes 意为"buy"; get a present/a letter 意为"receive"; What answer did you get? 意为"arrive at by calculation"; The bullet got him in the arm 意为"hit"; Have you get the thief? 意为"catch"; get a fever 意为"have"; get angry 意为"become"; get sth/sb together 意为"make"; get your breakfast 意为"prepare"; get to the point/questions 意为"understand"; get no reply 意为"obtain"; The painter has got her expression well 意为"catch the spirit of reproduce"; get him to keep quiet 意为"persuade" etc. 由此可见,OE 词汇意义宽,运用灵活之特点之一斑。这类词汇一旦运用于科技论文中,就易对文中的概念或所载信息产生歧义的理解。而源于法语,拉丁语的词汇由于长期以来的沿袭的使用则词义面窄、词义限定较严格,不易产生理解上的歧义,一直运用于正式的文体写作中。由此可见,在撰写论文或汉译英论文时应尽量避免选用词义面宽、运用灵活的源于古英语的词汇,而应选用源于法语、拉丁语和希腊语的带有科技味不会引起歧义的词汇和正式的语言表达形式。例如:

The development of smog-free cities and an abundant supply of electricity and fresh water would then release the creative engineer and designer to expend more energy in the exploration of space. It is conceded by all experts in the field that nuclear power for propulsion and on-board electrical power supplies is the only conceivable way by which man will be able to go beyond the present APOLLO moon project and explore our neighboring planet Mars. It is not inconceivable that he will do this before the end of the present century, which is just a little over 35 years from now and only 95 years since Einstein released his famous equation, $E = mc^2$. However, it will require an ever-increasing number of creative engineers to accomplish these tasks.

这里节选的是原原子国际组织的动力系统发展计划副主席拉尔夫·巴仑特先生在接受"为工程界和他的社团作出突出贡献"工程奖时向一个桑费多河谷工程师组织所作的报告,我们可以从中窥见科技论文选用、用词特点与文体规范因果之一斑。文中不仅运用了"pure scientific terms",而且在很多地方运用了含有科技味的,意义限定严格源于拉丁语、法语的词汇:e.g. 用 development(Fr) for growth(OE); concede (L. Fr.) for agreed; abundant (Fr.) for enough (OE); release(Fr.) for free(OE)/give off; conceivable(Fr.) for thinkable(OE); require(Fr.) for need(OE)/demand; accomplish(Fr.) for end(OE)/bring to an end/finish(口语化的法语词源),故文体显得十分的规范,正式,具有很浓的科技味。

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再如:

把这两种金属置放一起加到一定的高温,就会结合在一起,生成一种新的材料。

Heated together to a high temperature, these two metals will combine to form a new substance.

例(1)译文中用了两个规范而又具有科技味的词:用 combine(Fr.) for mix(OE)/mingle(OE)/blend(ON); form(Fr.) for get(OE). 且译文规范简洁。

After the deficiencies were reported, the vehicle was modified.

如果将该译文画线部分 deficiencies(L.)改译为 short-coming(OE); reported(Fr.)改译为 told(OE); modified(Fr.)改译为 made better/bettered, 整个译文欠规范,缺乏科技味,显得口语化(oral style).

归纳上述,科技论文写作中所选用的词汇基本上都是源于法语,拉丁语中带有科技味的,意义限定严格的词汇,而选词的正确与否对论文的表达规范(formal)和文体(style)影响颇大。

2 关于科技味的词汇的选择

所谓科技味的词汇(scientific aura words),即围绕科技源的特殊气象的那部分词汇。科技词汇按其所传递的信息和语言功能可分为三大类。

1) Purely (highly-technical) scientific words with precise, narrow-meaning(纯科技词汇)或称曰 academic terminology(专业术语). e.g. microscope(显微镜),laserirradiation radar(激光雷达), molecular electronics(分子电子学), moonshot(月球探测器), videomapping(电光法摄影)。

2) Semi-scientific/technical words(半科技词汇) 半科技词汇大多具有两重性的意义,它们既有一般的文学意义,但它们被用于表达某一具体的科学领域内对又具有科技意义。例如:

L. E.	EST
work 工作,劳动	做功,功
power 权力,权势	动力
energy 精力	能源,能
resistance 阻止,抵抗	(电)阻力,电阻装置
kick 踢	(力)反冲力,(石油产品的)初馏点[化]
knee 膝盖	(铣床的)升降台,弯头[管]
pig 猪	生铁,金属锭[冶金]
pillow 枕头	轴枕,垫床[机械]
bearing 忍受,忍耐	轴承
beam 高兴,欢娱	支梁

上述两类词汇都属 academic terminology,其词义比较狭窄,不会引起理解上的歧义,故本文不作探讨。

3) Words with scientific aura 带有科技味的词汇绝大多数都是源于拉丁语、法语

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(或通过法语流入英语的拉丁语)以及希腊语词汇。它们的词义限定严格,大都出现在正式规范的书面文体中。科技论文的文体在很大程度上是由这部份词汇所左右。因为只有选用正确的词汇或短语与各学科的专业词汇组成规范、简洁、富有科技味的不会引起歧义的表达形式,科技论文的特点和文体优势才能得以体现。所以,这部分词汇选择正确与否直接影响译者或论文作者能否准确有效地表达论文的原始思想和创造性的发明等。例如:

如表达"某一物质的重量不够"这一概念时可能有如下的译文:

1) It hardly felt as if it were heavy enough.

2) It scarcely felt as if it were heavy enough.

3) Its weight was inadequate.

1),2)二译文有二个不足之处:其一:feel(OE) 这词用在科技论文中带有主观臆断,口语味太浓;hardly(OE) 太口语化;scarcely(Fr.) 稍比 hardly 正式一些。其二:as if 这种不确定的,含糊的表达在科技论文中是最忌讳的。译文(C)表达概念确切,清晰,不含糊,没有主观臆断成分;行文简洁规范,只用四个词,选用了有科技味的词 inadequate(Fr. L.)。再请看下例:

"总之,在科学的调查研究的每一个阶段都存在着导致错误的各种可能性。必须时时警惕和尽可能地深思熟虑,以便最大限度地减少或根除这种可能性。当然,有些错误是与错误的推理相关的;但是由于这一根源所产生的错误,其后果流传甚为广泛,其程度甚为严重,以致有必要在下一章另行讨论。"

In short the multiple possibilities of error are present/exist at every stage of a scientific investigation, and therefore constant vigilance and the greatest foresight must be exercised in order to minimize/decrease or eliminate them. Some errors are, of course, connected with faulty reasoning; but the consequences that may arise from this source are so widespread and serious that they deserve separate treatment in the following chapter.

该译文中译者选用很多源于法语,拉丁语的具有科技味的词汇,因而译文显得规范,正式,是典型的科技论文文体。假如我们将上文中画线部分用如下的画线词汇或短语代替,请看:

In short many/a lot of/various possibilities of mistake remain at every stage of a scientific examination/look-in, and so attentions must be paid all the time, and we should brood over/think over and over/ponder deeply over/turn/run over in order to wipe out them. Some mistakes are, of coures, linked with mistaken reasoning; but the consequences that may come from/appear from this source are so widespread and hard that they need/require detailed discussion in the following chapter.

整个译文显得 casual,口语化:画线部分绝大多数都源于 OE,缺乏科技味,与科技论文所要求的表达准确简洁,文体规范相差甚远。类似这样的正式而又规范具有科技味的选词特点在科技论文中比比皆是:

adequate for enough; obtain/achieve for get;

apparent/obvious/lucid for clear;

classify for divide/sort; circulate for go round;

assess for value; combustion for burning;

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enlarge/amplify for make bigger/larger;
anticipate for expect; construct for build;
maintain for keep; investigate for look into;
consult for look up; thermal for heat;
solar for sun; proceed for march on;
place for put
insert for put in/push in;invert for turn upside down;
pollute for dirty; continue for go on/keep on;
indicate for express/show; ignite for set fire/light to;
consume for use up; convert for change;
absorb for take in; incesstant for endless;
eliminate for get rid of; mount for rise;
terror for fear; form for develop/be make up of;
require for ask; supply for provide;
deserve for need; present for today's etc.

3 具有科技味的短语和词组

科技论文中具有科技味的选词特点不仅仅只体现在单个的词汇上,这种特点还体现在选用的词组和短语上。倘若我们在翻译或写作时能够选用那些具有科技味的词组和短语,可以收到事半功倍的效果,行文显得简洁、流畅而又不失科技论文的特点。例如:

如热轧程序所示,轧制温度随合金成分变化而变化。

As the hot rolling schedual indicates, rolling temperatures varies with alloy content.

迫使气体从排气阀中排出。

The gases are forced out through the exhaust valve.

关于新水的问题,欧克里奇国家实验室以及其它基地的研究最近表明:大型两用的发电站和盐水脱盐工厂有可能在生产经济的电力的同时,生产经济的新水而作为副产品。

With regard to fresh water studies at Oak Ridge National Laboratory and other sites have recently shown that larg dual-purpose electrical plant and salt-water-desalinization plants have the potential for producing economic electricity along with economical fresh water as a by-product.

当该产品焊接好后,焊接点应抛光。

The weld should be smoothed away after it has been made.

选用此类简洁而又富有科技味的短语通常是在没有现成的等值 academic words 可选的情况下所采用的一种选用手段(no ready academic substitute).

以上所述乃是笔者一管之见。总之,科技论文写作或汉译过程中所具有的这些选词特点是英语自身的形成,发展,社会变迁以及长期沿袭的习惯所致。

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On Rules of Choice of Diction in Chinese-English Translation of Scientific Papers

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Abstract The nature and features of scientific language in scientific papers, and the historical causes of English origin which decide the diction of academic words were discussed. Subseguently the principles of the choice of diction of scientific aura words which then interact the scientific language of papers were studied.

Subject-words Selection; Lexical analysis; Criteria / Choice of diction of scientific aura word; Purely scientific word; Semi-scientific word; academic word

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