

# *Technical English Writing*

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## **General Issues**

2011/9/11

# Motto

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- **Write plain English.**
  - **Write to express not impress.**
    - **Robert Gunning**
  - **If you can't explain something simply, you don't understand it well.**
    - **Albert Einstein**
  - **As to the adjective, when in doubt, strike it out.**
    - **Mark Twain**
- **Keeping grammar rules is not enough.**
  - **One can no more write good English than one can compose good music merely by keeping the rules.**
    - **Sir Ernest Gowers**
- **Good writing is based on reading.**
  - **Michael Brady**



# Good writing is based on reading\*

- 为什么学了多年英文，还是写不好英文文章？
- 除了写作训练和实践以外，还需要什么？
  - 大量阅读。
  - 在阅读中留心观察、认真思考的良好习惯。
- 大量阅读和良好的阅读习惯对提高写作水平有关键性作用。
  - 留意英、美等国母语作者所写的文章，学习地道的写法、格式、用词、风格、惯例等。
  - 不拘泥于语法，不过分受教科书的影响。

\* M. Brady, IEEE Professional Communication Society Newsletter, 47(2), 2003



## 一般注意事项：关于人称

- 过去有人反对使用第一人称，现已发生变化。第一人称用得愈来愈多。第一人称的优点：
  - 直截了当，避免迂回曲折
  - 可缩短句子，使文章简练
- 用we，不用I。语气要客观、要令人信服。
  - **We propose to use a simple representation ...**
- 不要反复使用our results, our method之类，过度使用有使读者不悦的倾向。



## 一般注意事项：用词

- 尽量选用词义确切的**常用词**。
  - 用母语写作同样不宜用生僻词语，何况写外文。
  - 优先使用单词的首要含义，避免取罕用词义。
- 不用无把握的词。对一种语言尚不能熟练运用，刻意使用难字显得矫揉造作，使读者感到别扭甚至反感。
- 不可直接使用汉英词典中查到的单词。要用有详细用法解释和例句的英语词典或好的英汉词典。
- 使用标准专业用语，用书面语。避免口语化：
  - **let's ..., can't, nowadays, a lot of ...**



## 一般注意事项：简练

### ■ 避免繁琐：

- **this kind of method** ⇒ **this method**
- **very essential** ⇒ **essential**
- **at the present time** ⇒ **at present**
- **due to the fact that ...** ⇒ **because ...**

- **At the present time** we are behind in our anticipated production **due to the fact that** material have become very scarce. ⇒ **At present**, we are behind in production **because of** the shortage of materials.



## 一般注意事项：简练（续）

- 删除不必要的插入成分：
  - Obviously, then, the sharpness of the melting point ... 删去插入词 **then**
  - the final destination ⇒ the destination
- 删除冗词：
  - present (time), (future) prospects, red (in color), ...
- 用短语代替从句可使文字简练：
  - The results which were obtained ... ⇒ The results obtained ...



## 一般注意事项：简练（续）

- 当词语可长可短时，一定取短的，删除多余部分。
  - 例如 **in so far as** 中 **in** 是多余的。
  - 在 **all of the reactions** 中 **of** 是多余的。
  - **Reduction of resistance in many cases requires ...** ⇒  
**Reduction of resistance often requires ...**
  - **The results were inconclusive owing to the fact that ...**  
⇒ **The results were inconclusive because ...**
  - **If conditions are such that ...** ⇒ **If ...**
  - **for the purpose of examining ...** ⇒ **to examine ...**





## 避免用过多的无人称代词 it 作引词

- **It was concluded that a new method be devised. ⇒ A new method is needed.**
- **It is recommended that we adopt the new material. ⇒ We should use the new material.**
- **It was found that the chemical is dangerous. ⇒ The chemical is dangerous.**
- **It will be seen that ... (可完全删去)**
- **It can readily be seen that the work is done. ⇒ The work is done.**
- **It is evident that ... ⇒ Evidently ...**



## 长句和短句

- 避免不必要的长句。有时可以将长句分解成几个短句子。
- 注意长句和短句，简单句和复合句的配合使用。
  - 避免复杂的长句子，对新手尤为重要。
  - 但是一连串的简单句令人感到单调甚至局促紧张。
- 不要卖弄语法知识，对得意的用语要舍得割爱。

**Write to express not impress.\***
- 表达方式要有所变化，避免多次重复同一形式，特别是连续的重叠令人厌。

\*R. Gunning, *The Technique of Clear Writing*, McGraw-Hill, 1952



# Ten principles of clear statement

- **Keep sentences short.** – 提倡短句
- **Prefer the simple to the complex.** – 避繁从简
- **Prefer the familiar word.** – 用词朴实
- **Avoid unnecessary words.** – 避免冗词
- **Put action in your verbs.** – 动词优先
- **Write like you talk.** – 文如其言
- **Use terms your reader can picture.** – 形象具体
- **Tie in with your reader's experience.** – 有的放矢
- **Make full use of variety.** – 形式多变
- **Write to express not impress.** – 切忌炫耀

\*R. Gunning, *The Technique of Clear Writing*, McGraw-Hill, 1952



## 文章可读性

- 过多的长句和过多的“难字”使文章可读性下降。
- **Fog Index**:
  - (Average number of **words** in **sentences** + Percentage of words of three or more **syllables**)  $\times 0.4$
- **For example**:
  - Average word number = 20
  - Average number of complex words in 100 words = 10
  - Gunning Fog Index =  $(20+10)\times 0.4 = 12$



# Fog index: examples

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- ***Readers Digest*** has a Fog Index of between 8 and 9.
- ***Time*** magazine: 11
- ***New York Times***: 11-12
- **Typical technical documentation: between 10 and 15**
- **Professional prose almost never exceeds 18.**
- **Anything with fog index greater than 13 is usually hard to read.**

# Fog index = 35

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- **In order to eliminate the possibility of errors occurring in the time charges relating to engineering jobs through transposition of numbers or typing errors, each of the Division Planning Offices should set up a file of time cards showing all authorized project numbers and make a daily check of the charges on all time sheets forwarded to the Accounting Department to be sure that only authorized numbers are used.**

**1 sentence, 69 words, 13 polysyllables**

# Fog index = 11

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- **It is easy to transpose digits and make typing errors when entering project numbers for time charges. We suggest each Division Planning Office set up a file of time cards showing all authorized project numbers. Then all charges should be checked each day before sending timesheets to the Accounting Department.**

**3 sentences, 51 words, 5 polysyllables**

# Winston Churchill: fog index = 4.6



- **We shall go on to the end. We shall fight in France. We shall fight on the seas and oceans. We shall fight with growing **confidence** and growing strength in the air. We shall defend our island, **whatever** the cost may be. We shall fight on the beaches. We shall fight on the landing grounds. We shall fight in the fields and in the streets. We shall fight in the hills. We shall never **surrender**.**

**10 sentences, 75 words, 3 polysyllable**



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## **Grammar Issues**

2011/9/11



## 杜绝简单错误

- 基本语法错误：单复数，人称，时态，语态等。这些虽简单，但错误仍屡见不鲜。
  - 为什么不懂得语法的母语作者能写出正确的文字？
  - 语言习惯往往是下意识的，是在实践中养成的。
  - **English language  $\neq$  knowledge about English**
- 例如，初学者都知道应该说 **He does something.** 而不能说 **He do something.** 可是仍发生这样的错误：
  - **The result obtained in the tests show that the proposed algorithm gives improved solutions.**



## 关于大写

- 克服滥用大写的倾向。
- 多个单词组成的专业术语全称，其中普通名词不用大写：
  - **DFT, discrete Fourier transform**, 不用**Discrete Fourier Transform**。Fourier是人名，故大写。
  - **SNR: signal-to-noise ratio**, 不写**Signal-to-Noise Ratio**
- 普通词组成的专用名词，首字母大写：**National Bureau of Standards, the Motion Picture Expert Group (MPEG)**。
- 下文引用时，简称的首字母也大写：**the Bureau**。



## 关于大写

- 标题中除介词、冠词等小词外的主要单词首字母大写：
  - **Singularity Detection and Processing with Wavelets**
  - **Characterization of Signals from Multi-scale Edges**
  - **Guide for the Use of the International System of Units**
- 序号（数字或字母）前的名词一般不用大写： **page 32, method A**。常见例外：**Figure 3, Table 2, Equation 4.2**
- 物理量单位并非全用大写，要遵从惯例：**MHz, kHz, ms**等。**Hz**为人名缩写，故用大写。
- 某词要大写时，则其缩写也用大写：**Figure 2** ⇒ **Fig. 2**



## 正确使用冠词

- 普通名词单数不可遗漏不定冠词。
- 泛指某一事物有时可用复数来回避用冠词的困难。
- 不要滥用定冠词。滥用**the**的例子：
  - **The Equation 3.1 can be re-expressed as follows.**
  - **We can see the *b* is almost unchanged.**
  - **The similar situation may occur. ⇒ A similar situation...**
  - **... to attempt the synthesis of compounds ...**
- 标题中尽量省略定冠词：**The Elements of Physical Chemistry ... ⇒ Elements in Physical Chemistry ...**



# 时态

- 一般陈述和讨论用现在时。
- 过去的工作可用过去时或完成时。
- 实验可用过去时。
- 结论部分可根据情况用现在时或过去时。
- 许多人滥用过去时，整篇文章中的主要叙述部分均使用过去时，这是不对的。



# 标点符号

- 标点符号往往被忽视。看似简单，错误却很常见。
- 要注意英文标点符号与中文的不同。例如英文里没有顿号，分号的用法也不同。
- 逗号、句号、冒号、问号、惊叹号前面应紧接单词，不留空格，后面则必须留一个空格。
- 括号（引号类似）：根据 **common sense**.
  - 左括号前有一个空格，后面紧接被括起来的词，不应留空格。
  - 右括号的前面不能留空格，后面如是一个词，就应留一个空格。如果是标点符号则接排，不留空格。



## 标点符号（续）

- 逗号 — 除了句子过长需要用逗号外，有下列四种情况：
  - 列举：**I like apples, oranges, and peaches.**
  - 附带说明用语：
    - **However, it is bets ...**
    - **For example, we can see ...**
    - **Unfortunately, you should know ...**
  - 如不用逗号会发生混淆：
    - **I decided on an alteration of course.**（改变路径）
    - **I decided on an alteration, of course.**（当然）
  - 插入短语：
    - **Teddy, who is normally the best in the team, had a very poor match.**（去掉插入部分句子仍然完整）





## 标点符号（续）

- 列举的内容中又有子项需要用逗号分开时，可用分号：
  - **Government departments such as health; agriculture, food and fisheries; the foreign office and employment ...**
- 惊叹号极少使用。不可为了引起读者注意而使用惊叹号。
- 撇号（apostrophe）用于：
  - 省略：**isn't**，但科技文章中通常不用
  - 所有格：**the snake's eyes, the snakes' eyes, Jones's paper, the boss's office**
  - 不要混淆**its**和**it's**



## 标点符号（续）

- 用双引号，不要用单引号：
  - **The “optimal” value of  $x$  here is rather elusive because there are competing objectives.**
- 美国英语中，引语结束处的标点符号位于引号之内：
  - **When he said “stop,” he did not really mean it.**
  - **“Advice to Authors,” *IEEE Transactions on Information Theory*, vol. IT-15, p. 338, March 1969.**
- 尽量少用括号，不可使用嵌套括号。

# *End of the Unit*

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2011/9/11