



普通高等教育“十一五”国家级规划教材  
教育部推荐使用大学外语类教材

总主编 李荫华

# 全新版大学英语

New College English (Second Edition)

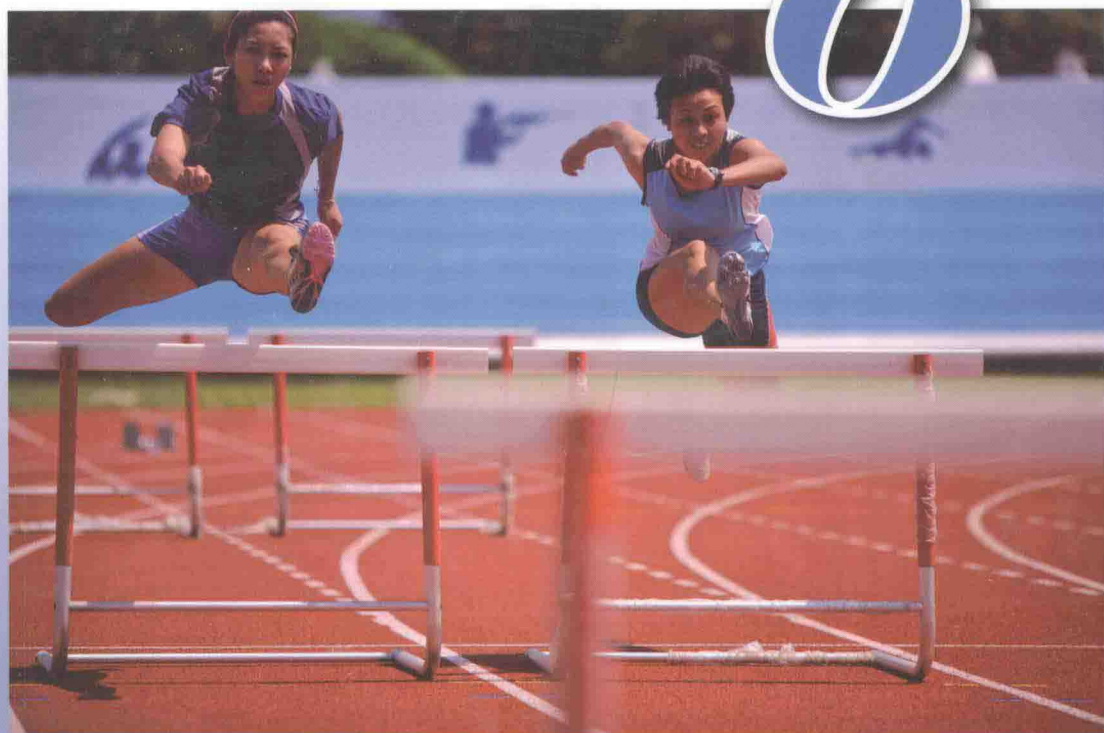
(第二版)

*Fast Reading 6*

快速阅读

主编 郭杰克

6



 上海外语教育出版社  
外教社 SHANGHAI FOREIGN LANGUAGE EDUCATION PRESS  
[www.sflep.com](http://www.sflep.com)





普通高等教育“十一五”国家级规划教材  
教育部推荐使用大学外语类教材

总主编 李荫华

# 全新版大学英语

New College English (Second Edition)

(第二版)

*Fast Reading 6*

快速阅读

6

主编 郭杰克

编者 金 艳 陈 宇

## 图书在版编目(CIP)数据

全新版大学英语快速阅读. 6/ 郭杰克主编; 金艳, 陈宇编. —2版.

—上海: 上海外语教育出版社, 2011

(全新版大学英语)

ISBN 978-7-5446-2150-2

I. ①全… II. ①郭… ②金… ③陈… III. ①英语—阅读教学—高等学校—教材

IV. ①H319.4

中国版本图书馆CIP数据核字(2011)第050099号

出版发行: **上海外语教育出版社**

(上海外国语大学内) 邮编: 200083

电 话: 021-65425300 (总机)

电子邮箱: bookinfo@sflep.com.cn

网 址: <http://www.sflep.com.cn> <http://www.sflep.com>

责任编辑: 吴文子

---

印 刷: 上海叶大印务发展有限公司

开 本: 787×1092 1/16 印张 8.25 字数 212千字

版 次: 2013年3月第1版 2013年3月第1次印刷

印 数: 1 200 册

---

书 号: ISBN 978-7-5446-2150-2/H·0960

定 价: 20.00 元(附光盘)

本版图书如有印装质量问题,可向本社调换

## 编委会名单

顾问：(按姓氏笔画顺序)

董亚芬 杨惠中 杨治中

编委：(按姓氏笔画顺序)

王一普	(南开大学)	杨瑞英	(西安交通大学)
王守仁	(南京大学)	汪火焰	(武汉大学)
王海啸	(南京大学)	邱东林	(复旦大学)
石 坚	(四川大学)	林大津	(福建师范大学)
刘世生	(清华大学)	俞洪亮	(扬州大学)
刘龙根	(上海交通大学)	战 菊	(吉林大学)
刘爱军	(北京邮电大学)	柯彦玢	(北京大学)
孙倚娜	(苏州大学)	夏纪梅	(中山大学)
庄智象	(上海外国语大学)	夏国佐	(复旦大学)
余渭深	(重庆大学)	殷企平	(杭州师范大学)
张勇先	(中国人民大学)	郭杰克	(华南理工大学)
张 森	(河北科技大学)	屠国元	(中南大学)
李萌涛	(中国科技大学)	樊葳葳	(华中科技大学)
李霄翔	(东南大学)		

# 前言

《全新版大学英语》系列教材酝酿于上世纪末，诞生于新世纪初。

《全新版大学英语》系列教材遵循现代外语教学理念，运用多媒体、网络等现代教育技术，立足本国，博采众长，完全自主编写而成，是一套集纸质教材（学生用书、教师手册、教学辅助用书等）、多媒体课件（助学光盘、电子教案、题库等）和网络学习系统之大成的立体化教材。

教材的编写宗旨是：符合外语教学的客观规律，满足我国当代大学生学习的实际需求，既适用于课堂教学又便于学生上机上网自主学习，既有利于巩固语言基础又能更好地培养学生较强的英语综合应用能力，尤其是听说能力，使他们在今后学习、工作和社会交往中能用英语有效地进行口头和书面的信息交流。

教材依据《大学英语课程教学要求》编写，供大学英语课程的一般要求和较高要求层次的教学使用。

教材编写的指导方针是：充分汲取我国在外语教学中长期积累起来的行之有效的经验和方法，详尽分析、研究中国学生在英语学习过程中以及在跨文化交际中经常产生的问题，学习、借鉴国外的教学理论和方法并根据我国的教学需要和现有条件加以消化、改造、吸收，自行规划、设计，自行选材、编写。为此，本教材采用了集中外多种教学法之长的折中主义（eclecticism）教学理念。

教材的编写原则是：

1. 倡导基于课堂教学 + 计算机 / 网络的新型教学模式。教学中多媒体和网络技术的引进，既可改善语言教学环境和教学手段，又便于学生个性化学习和语言操练，有助于师生之间的沟通。但这一模式不应一成不变，它应随着各校、各班级的具体情况而有所不同。此外，在利用现代信息技术的同时，应充分发挥传统课堂教学的优势，使之相辅相成。

2. 提倡学生自主学习，同时主张充分发挥教师的主导作用。教师能否组织好教学——包括课堂教学和计算机辅助学习——是教学成败的关键。除了课堂教学，教师更应加强课外辅导，应指导学生掌握正确的学习方法和学习策略。

3. 在加强听、说的同时，充分兼顾对学生读、写、译等应用能力的培养。使学生能较好地掌握英语的书面语，这不仅是大学英语课程本身的性质所使然，更是我国多数大学生今后学习、工作的需要。而学生的外语学习，特别是说、写方面的实践活动，必须以读、听一定量的语言素材输入为前提。因此，必须通过课堂内外、网上网下、大班小班、自学面授等一系列互动互补的教学环节，才能全面提高学生的听、说、读、写、译的应用能力。

4. 选用当代英语的常见语体或文体的典型样本作为素材。选文语言规范、富有文采、引人入胜、给人以启迪；题材广泛，以反映现实生活为主，科普内容亦占有一定比重；体裁多样；语体兼顾书面语和口语。



5. 充分考虑对学生的文化素质培养和国际文化知识的传授。大学英语课程不仅是一门语言基础课程,也是拓宽知识、了解世界文化的素质教育课程,兼有工具性和人文性。因此,教材在文化背景介绍和知识拓展方面也有相应的板块设计。

6. 主干教程——《综合教程》——采用每一单元设一主题的形式。主题选自当代生活中的重大题材,以便将语言学习贯穿在了解、思考、探讨现实生活中的各种问题的过程中,充分体现交际法的教学原则。其他教程的相应单元与该主题亦有一定的呼应。

7. 练习设计从有利于提高学生语言应用能力出发,针对我国学生的薄弱环节和实际需要,做到有的放矢;形式尽可能采用交互方式,如 pair work、group discussion、debate 等,或采用“任务”方式(task-based approach)。

8. 考虑到学生参加大学英语四、六级考试的实际需要,除了在各教程中均设有有一定数量的类似四、六级考题形式的练习外,还特地在《综合教程》中参照四、六级考卷设计了 Test Yourself,以帮助学生熟悉考试题型。

教材框架如下:

《全新版大学英语》系列教材由纸质教材(含多媒体教学课件)和网络学习系统(即新理念大学英语网络教学系统)两部分组成。网络学习系统又包括网络课件、教辅资源、网上测试和管理平台四大部分。

纸质教材由以下教程组成:

综合教程(1—6册)(每册由8个单元组成)

听说教程(1—6册)(每册由14个单元组成)

阅读教程(高级本)(1—6册)(每册由8个单元组成)

阅读教程(通用本)(1—6册)(每册由8个单元组成)

快速阅读(1—6册)(每册由8个单元组成)

上述各教程中,1—4册供修读一般要求的学生使用,5—6册供修读较高要求的学生使用。前三种教程编有供预各级使用的教材各一册。另编有语法手册一本,供学生课外参考使用。

综合、听说教程配有相应的 Mp3 录音光盘和网络课件。快速阅读各册也配有助学光盘。除快速阅读外,各教程均配有教师手册(综合和听说教程各册还配有电子教案)。

## 二

《全新版大学英语》系列教材问世十年以来,受到了全国高校师生的普遍欢迎,先后被列为教育部推荐使用大学外语类教材、普通高等教育“十五”国家级规划教材和普通高等教育“十一五”国家级规划教材,并获得2003年度上海市优秀教材一等奖。

然而,时代在进步,社会需求和人才培养在这十年间也发生了巨大的变化。我国的经济、政治、文化等各项建设事业,正在新的历史起点上全面向前推进;教育改革也在向纵深发展,作为大学基础课程的大学英语教学改革在过去的十年间亦在不断地深入。教育部此前特制订了《大学英语课程教学要求》,作为各高等学校组织非英语专业本科生英语教学的主要依据;目前又颁布了《国家中长期教育改革和发展规划纲要(2010—2020年)》。鉴于当前新形势,我们对《全新版大学英语》系列教材进行了一次认真、彻底、全面的修订,使之更好地满足我国大学英语教学和改革的进一步需要。

本次修订的总体目标是:根据《大学英语课程教学要求》,在坚持并发扬第一版原有特色

的基础上,通过全面修订,使新版教材更贴近教学的实际需要、更贴近广大使用者。

本次修订的重点是:梳理全书,改正讹错;适当降低原书难度;坚决删改掉教学效果差或不太符合当前教学实际的课文和练习;替换进一批更精彩的选文和更富有成效的新的练习形式;调整某些单元先后排序,使其更符合循序渐进原则;适当压缩、精简内容,做到便于教、便于学。

本次修订中,各教程编者本着认真、负责的态度,对教材进行了较大幅度的改动。《综合教程》1—4册共64篇课文,此次更新了21篇,更新量超过30%;编者还根据调研中同学们喜欢英语诗歌的反馈,尽可能多地选用了英诗中最脍炙人口的部分增补到各册中去。《听说教程》花大力气将听力材料的长度从原来的500字左右普遍缩短到250—380字,调整了材料的难易度,同时从第一册开始就帮助学生逐渐熟悉四、六级考试题型,口语部分的设计也大大方便了操作。《阅读教程》(高级本)60%以上的文章是重新选用的。《阅读教程》(通用本)也换上了许多更为精彩的文章。《快速阅读》教程考虑到学生参加大学英语四、六级考试的需要,适当增加了部分文章的长度,此外还新增了 information transfer 和 gap filling 等考核学生快速阅读能力的练习形式。《语法手册》删繁就简,提高质量,方便参考、使用。如今修订工作已接近完成,各教程第二版将陆续面世。我们希望通过我们的努力和辛勤劳动,给支持我们的广大使用者献上一套高质量的精品教材。

《全新版大学英语》(第二版)系列教材仍由复旦大学、北京大学、华东师范大学、中国科学技术大学、华南理工大学、南京大学、武汉大学、南开大学、中国人民大学、中山大学、西安交通大学、东南大学、华中科技大学和苏州大学的数十位长期从事大学英语教学的资深教授、英语教学专家分工协作、集体编写而成,董亚芬、杨惠中、杨治中三位教授任顾问。

第二版启动前,上海外语教育出版社曾在全国开展了大规模问卷调查和召开座谈会,收集到大量宝贵的意见和建议,为我们的修订、编写提供了可靠的依据。在此谨向各位参与问卷调查或座谈会的全国各地的读者,向历年通过邮件或口头形式对教材提出批评、建议的读者,向所有使用和关心教材的老师和同学,表示深深的敬意和感谢,欢迎你们今后一如既往地不吝指教。上海外语教育出版社庄智象社长、张宏副社长、严凯和孙玉副总编、高等教育事业部谢宇主任和责任编辑梁泉胜女士等,多年来为教材的策划、编写、出版、营销做了大量工作,英国专家、也是本人与之合作共事长达20多年的友人 Anthony J. Ward 博士更是在教材的编审过程中倾注了大量的心血,借此机会也一并向他们表示深切的谢忱。

总主编 李荫华

2010年3月

# 编者的话

## 1. 为什么要快速阅读?

在当今的信息时代,我们需要阅读的英语资料浩如烟海,而我们又没有时间去细心阅读每本书或每一篇文章。因此,要适应信息量日益膨胀的形势并从中获取我们需要的信息,提高我们的阅读速度是十分必要的。根据新颁布的《大学英语课程教学要求》,达到大学英语一般要求的快速阅读速度应为每分钟 100 个词。为了适应这一要求,本册书的篇章快速阅读速度即为每分钟 100 个词。为了使题型多样化,以增加考核读者阅读能力的形式,本教程除了多项选择题、是非选择题和补全句子题外,还增设了简答题。

## 2. 学习快速阅读应注意的事项

我们平时进行阅读时,阅读的速度会因所读的材料和阅读目的的不同而有所变化。例如,如果我们阅读的目的是要看懂一篇学术论文或一本教科书的某一章节,那么我们的阅读速度显然要比看一份报纸慢一些。也就是说,阅读速度取决于阅读目的。此外,阅读速度和阅读理解之间也存在一定的辩证关系,即阅读速度快了,阅读理解会相应地有所降低。因此,我们的阅读速度要根据阅读目的和阅读材料的内容来定。

人们平时阅读一般的书刊资料时,并不总是要求弄清每一个细节和看懂每一个词。较常见的要求是正确理解文章的中心大意和抓住主要事实和有关细节。在这一前提下,我们进行快速阅读时,阅读理解的准确率不应低于 70%。

要提高阅读速度,就要采取正确的方法,摒弃那些不利于提高阅读速度的不良习惯,如阅读时嘴巴随视线的移动而逐词默读或轻轻地将每个词读出声来,因为这样会大大影响阅读速度。同样,用手指指着单词逐一地往前移也是不可取的,因为这和逐词默读一样也会使我们的阅读速度减慢。

## 3. 要培养正确的阅读方法

阅读过程是由物理过程和心理过程这两部分组成的。所谓的物理过程指的是眼睛从左到右对印刷的字母进行扫描,并且一行一行地扫下去这一过程。但眼睛对文字进行扫描时并不是均衡不断地进行,而是跳跃式地不断把成组的信息传送到大脑进行处理。此时双眼并没有进行阅读,即理解,因为阅读或理解过程是由大脑完成的。但眼的移动能决定你的阅读速度和阅读效率。真正的阅读过程是在大脑里进行的。人的大脑对由眼睛传来的信息进行分类和识别,并将之组成连贯的句子思想,这便是我们所说的阅读。这两个过程是同时进行的。因



此,眼睛扫视的速度越快,你的阅读速度也就会跟着加快。

我们在前面已指出,我们的双眼在对成行成句的文字进行扫描时,是跳跃式而不是逐词进行的。因此,如果我们进行阅读时,能以意群或句子为单位进行阅读,我们的阅读速度就可大幅度地提高。所谓意群,指的是那些有意义的语法结构或词组。为了方便初学者,我们用斜线符号“/”将意群分隔开。例如:

Successful language learning / is active learning. / Therefore, / successful learners / do not wait / for a chance / to use the language; / they look for such a chance. / They find people / who speak the language / and they ask these people / to correct them /when they make a mistake. / They will try anything / to communicate. / They are not afraid / to repeat / what they hear / or say strange things; / they are willing / to make mistakes / and try again. / When communication is difficult, / they can accept information / that is inexact or incomplete. / It is more important / for them to learn / to think in the language / than to know the meaning / of every word.

如果我们用成组视读的方法去阅读上述段落,就很容易看出这一方法要比逐词阅读法快好几倍。

#### 4. 两种快速阅读的方法

##### 1) 略读

所谓略读即“全景式”地通览全文。进行一般的阅读时,读者通常不会忽略一些表达辅助性细节或次要内容的词句。但略读则不同。为了达到阅读目的,略读要求读者有选择性地忽略阅读材料中的部分内容。运用略读法的主要目的是了解一篇文章或一本书的某一章节的内容大意,把握作者的思想脉络,因此对一些枝节性的内容可以忽略不读,以提高阅读速度。略读速度的快慢会因人而异,但通常是一个人的普通阅读速度的一倍。

如上所述,阅读速度一快,阅读理解的准确率亦会有所降低。运用略读法进行阅读时,阅读理解的准确率不应低于60%。

如何利用略读法进行快速阅读?假如我们要略读的是一篇新闻报道,应首先浏览文章的开头几个段落以了解文章的题目和主题是什么,以及文章的大体内容。一旦对文章的概貌有了一个了解,即可加快阅读速度,重点寻找文章段落的主题句和一些主要的辅助细节。

主题句体现了每一个段落的主题思想。在一般情况下,主题句通常出现在段落的开头,开宗明义;有时主题句亦会放在段落的末尾,画龙点睛;有时主题句还会出现在段落中间,承上启下。有时有些段落则没有主题句,此时,读者还须通读好几个句子甚至整个段落才能最后总结出该段落的主题思想。还有一点要指出的是,文章的最后一段往往对全文进行归纳和总结,因此应加以通读。

综上所述,我们可以说略读有以下三个特点:(1)要有选择地忽略部分阅读内容;(2)适当地降低阅读理解的准确率;(3)阅读速度较一般方法更快。

##### 2) 寻读

所谓寻读,指的是快速地扫视所读的文章以寻找所需要的信息。使用寻读的目的是为了寻找某一具体信息或是某一问题的答案,而不是要了解文章的内容大意。使用寻读时,视线通常跳过与你所寻找的信息无关的内容去捕捉你需要的具体事实或信息。寻读和略读不同,

在进行略读前，我们对要阅读的材料一无所知，而在进行寻读时，我们对要查找的资料较熟悉。一般来说，寻读材料有以下几类：(1)工具书，如：词典、百科全书和各种手册等；(2)报刊、杂志；(3)飞机、火车、轮船等的时刻表；(4)广告、电视节目表等；(5)教科书、论文等；(6)备忘录、说明书等；(7)电话簿、索引等。

如何利用寻读法去快速查找信息？寻读的目的是尽快地查找我们所需要的信息，因此阅读速度要尽量地快。进行寻读时，我们对要查的资料一般会有所了解，而这些资料根据其类型亦会按一定的逻辑顺序或结构形式进行编排。例如，教科书后面的内容索引通常是按字母顺序排列的；一台传真机的使用说明书也会按照一般的使用说明书的篇章结构进行编排。因此，我们进行寻读时，要充分利用这些资料的特点和相关的关键词语去快速查阅我们所需的信息。如以上所述，寻读法用于查找某一具体事实或细节，因此阅读速度不仅要快，而且阅读的准确率要求为 100%。

## 5. 如何使用本书进行快速阅读？

1) 进行快速阅读时，应先预览篇章的标题以了解其题材。由于标题通常反映了文章的主旨，因此一旦明确了篇章的主旨，便可有目的地进行阅读。

2) 阅读篇章时不要查阅词典，如有生词，应根据上下文对词义进行猜测。

3) 培养边阅读、边理解的阅读习惯。读完篇章后即做练习；做练习时，不再翻阅已读过的篇章。

4) 严格按照规定时间读完篇章，时间一到，应立即停止阅读。

## 6. 本书结构及使用方法

本书共分八个单元，其中每个单元由 A-1、A-2 和 B-1、B-2 四篇短文组成。每个单元的 A-1 和 B-1 供课堂使用，A-2 和 B-2 供课外阅读。

# CONTENTS

## Unit 1..... 1

Text A-1	<i>The Hidden Secrets of the Creative Mind</i> .....	1
Text A-2	<i>Willis Haviland Carrier — the Father of Cool</i> .....	4
Text B-1	<i>Thomas Adams and the Invention of Chewing Gum</i> .....	8
Text B-2	<i>Einstein: Thinker and Inventor of the Modern World</i> .....	11

## Unit 2..... 17

Text A-1	<i>Metropolitan Life Insurance</i> .....	17
Text A-2	<i>What Do American Consumers Like?</i> .....	20
Text B-1	<i>How Postoptics Gets 58% of Its Online Sales through Google Advertising</i> .....	23
Text B-2	<i>Two Kinds of American Business Heroes</i> .....	26

## Unit 3..... 31

Text A-1	<i>Technology in Workplace Widens Generation Gap</i> .....	31
Text A-2	<i>Matchmaking in the 21st Century: Technology and Yesterday's Values Can Connect</i> .....	34
Text B-1	<i>Online Shopping</i> .....	37
Text B-2	<i>Some Benefits of Space Technology</i> .....	40

## Unit 4..... 45

Text A-1	<i>How to Find Meaning in Your Work and Your Life</i> .....	45
Text A-2	<i>Staying Happy</i> .....	48
Text B-1	<i>"Journalist ... Rewarding, but Very Political"</i> .....	52
Text B-2	<i>A University Diploma</i> .....	55

**Unit 5.....59**

<b>Text A-1</b>	<i>Online Database Pinpoints Plagiarism</i> .....	59
<b>Text A-2</b>	<i>The Brain Revolution and Ethics</i> .....	62
<b>Text B-1</b>	<i>Survey: Many Students Say Cheating's OK</i> .....	66
<b>Text B-2</b>	<i>The Commercialization of Higher Education</i> .....	69

**Unit 6.....73**

<b>Text A-1</b>	<i>Modern Life: It's One Step at a Time, Only Much Quicker</i> .....	73
<b>Text A-2</b>	<i>Welcome to "the New Busy"</i> .....	75
<b>Text B-1</b>	<i>Ready to Snap: Crazy, Busy and the Lure of Modern Life</i> .....	79
<b>Text B-2</b>	<i>Laughter in a Busy World</i> .....	82

**Unit 7.....85**

<b>Text A-1</b>	<i>The Bounty of the Sea</i> .....	85
<b>Text A-2</b>	<i>Man and Nature</i> .....	88
<b>Text B-1</b>	<i>Trash Troubles</i> .....	91
<b>Text B-2</b>	<i>Naturalist Has Whale of a Time in Alaska</i> .....	94

**Unit 8.....99**

<b>Text A-1</b>	<i>At Century's End, a Nostalgic Glance Back</i> .....	99
<b>Text A-2</b>	<i>Flight: An Invention That Shrank the World</i> .....	102
<b>Text B-1</b>	<i>The Digital Age</i> .....	107
<b>Text B-2</b>	<i>The Creation of the Automotive World</i> .....	110

**Appendix ..... 115**

Key to Comprehension Exercises .....	115
--------------------------------------	-----





## Text A-1

# The Hidden Secrets of the Creative Mind

Reading Time: 7 minutes



What is creativity? Where does it come from? The workings of the creative mind have been subjected to intense scrutiny (细看) over the past 25 years by an army of researchers in psychology, sociology, anthropology and neuroscience. But no one has a better overview of this mysterious mental process than Washington University psychologist R. Keith Sawyer, author of the new book *Explaining Creativity: The Science of Human Innovation*. In an interview with Francine Russo, Sawyer shares some of his findings and suggests ways in which we can enhance our creativity not just in art, science or business but in everyday life.

**Q:** Has the new wave of research upended (推翻) any of our popular notions about creativity?

**A:** Virtually all of them. Many people believe creativity comes in a sudden moment of insight and that this “magical” burst of an idea is a different mental process from our everyday thinking. But extensive research has shown that when you’re creative, your

brain is using the same mental building blocks you use every day — like when you figure out a way around a traffic jam.

**Q:** Then how do you explain the “aha!” moment we’ve all had in the shower or the gym — or anywhere but at work?

**A:** In creativity research, we refer to the three Bs — for the bathtub, the bed and the bus — places where ideas have famously and suddenly emerged. When we take time off from working on a problem, we change what we’re doing and our context, and that can activate different areas of our brain. If the answer wasn’t in the part of the brain we were using, it might be in another. If we’re lucky, in the next context we may hear or see something that relates — distantly — to the problem that we had temporarily put aside.

**Q:** Can you give us an example of that?

**A:** In 1990 a team of NASA scientists was trying to fix the distorted lenses in the Hubble telescope, which was already in orbit. An

expert in optics suggested that tiny mirrors could correct the images, but nobody could figure out how to fit them into the hard-to-reach space inside. Then engineer Jim Crocker, taking a shower in a German hotel, noticed the European-style showerhead (莲蓬头) mounted on adjustable rods. He realized the Hubble's little mirrors could be extended into the telescope by mounting them on similar folding arms. And this flash was the key to fixing the problem.

**Q:** What has been learned from historical research?

**A:** Studying notebooks, manuscripts and historical records, we've analysed the creative process of people like the Wright brothers, Charles Darwin, T.S. Eliot, Jackson Pollock, even business innovators like Citigroup's John Reed. We find that creativity happens not with one brilliant flash but in a chain reaction of many tiny sparks while executing an idea.

**Q:** Are there other generalizations you can make about creative people?

**A:** Yes. They have tons of ideas, many of them bad. The trick is to evaluate them and get rid of the bad ones. But even bad ideas can be useful. Darwin's notebooks, for example, show us that he went down many dead ends — like his theory of monads. These were tiny hypothetical life forms that sprang spontaneously from inanimate (无生命的) matter. If they died, they took with them all the species into which they had evolved. Darwin spent years refining this bizarre theory before ultimately rejecting it. But it was a critical link in the chain that led to his branching model of evolution. Sometimes you don't know which sparks are important until later, but the more ideas you have, the better.

**Q:** So how can the average person get more

ideas?

**A:** Ah, here's where we come up against another of our cultural myths about creativity — that of the lone genius. Ideas don't magically appear in a genius' head from nowhere. They always build on what came before. And collaboration is key. Look at what others in your field are doing. Brainstorm (集思广益地讨论) with people in different fields. Research and anecdotal (趣闻的) evidence suggest that distant analogies (类推) lead to new ideas — like when a heart surgeon bounces things off an architect or a graphic designer.

**Q:** Can we become more creative by studying more than one field?

**A:** No one can be creative at everything. You have to work hard in your area, let's say music, and learn everything that's already been done. But multitasking on several music projects at once might foster unexpected connections and new ideas.

**Q:** What advice can you give us nongeniuses to help us be more creative?

**A:** Take risks, and expect to make lots of mistakes, because creativity is a numbers game (彩票赌博). Work hard, and take frequent breaks, but stay with it over time. Do what you love, because creative breakthroughs take years of hard work. Develop a network of colleagues, and schedule time for relaxed, unstructured discussions. Most of all, forget those romantic myths that creativity is all about being gifted and not about hard work. They discourage us because we're waiting for that one full-blown moment of inspiration. And while we're waiting, we may never start working on what we might someday create.

857 words

**Your Reading Time:** \_\_\_\_\_



## Comprehension Exercise

Answer the questions below with information from the text.

1. What does extensive research on creativity show?
2. What was Jim Crocker's flash that was the key to fixing the problem of Hubble's distorted lenses?
3. How does creativity happen, according to Sawyer?
4. What was the critical link in the chain that led to Darwin's branching model of evolution?
5. What is helpful about multitasking on several related projects in enhancing creativity?

## Text A-2

# Willis Haviland Carrier — the Father of Cool

Reading Time: 5 minutes



**“I fish only for edible fish, and hunt only for edible game even in the laboratory.”**

**— Willis Haviland Carrier on being practical**

In 1902, only one year after Willis Haviland Carrier graduated from Cornell University with a Master’s in Engineering, the first air (temperature and humidity) conditioning was in operation, making one Brooklyn printing plant owner very happy. Fluctuations in heat and humidity in his plant had caused the dimensions of the printing paper to keep altering slightly, enough to ensure a misalignment of the colored inks. The new air conditioning machine created a stable environment and aligned four-color printing became possible. All thanks to the new employee at the Buffalo Forge Company, who started on a salary of only \$10.00 per week.

The “Apparatus for Treating Air” (U.S. Pat# 808897) granted in 1906, was the first of several patents awarded to Willis Haviland Carrier. The recognized “father of air conditioning” is Carrier, but the term “air conditioning” actually originated with textile engineer, Stuart H. Cramer. Cramer used the phrase “air conditioning” in a 1906 patent claim filed for a device that added water vapor to the air in textile plants — to condition the yarn.

In 1911, Willis Haviland Carrier disclosed his basic Rational Psy-



chrometric Formulae to the American Society of Mechanical Engineers. The formula still stands today as the basis in all fundamental calculations for the air conditioning industry. Carrier said he received his “flash of genius” while waiting for a train. It was a foggy night and he was going over in his mind the problem of temperature and humidity control. By the time the train arrived, Carrier had an understanding of the relationship between temperature, humidity and dew point.

Industries flourished with the new ability to control the temperature and humidity levels during and after production. Film, tobacco, processed meats, medical capsules, textiles and other products acquired significant improvements in quality with air conditioning. Willis and six other engineers formed the Carrier Engineering Corporation in 1915 with a starting capital of \$35,000 (1995 sales topped \$5 billion). The company was dedicated to improving air conditioning technology.

In 1921, Willis Haviland Carrier patented the centrifugal refrigeration machine. The “centrifugal chiller” was the first practical method of air conditioning large spaces. Previous refrigeration machines used reciprocating-compressors (piston-driven) to pump refrigerant (often toxic and flammable ammonia) throughout the system. Carrier designed a centrifugal-compressor similar to the centrifugal turning-blades of a water pump. The result was a safer and more efficient chiller.

Cooling for human comfort, rather than industrial need, began in 1924, marked by the three Carrier centrifugal chillers installed in the J.L. Hudson Department Store in Detroit, Michigan. Shoppers flocked to the “air conditioned” store. The boom in human cooling spread from the department stores to the movie theaters, most notably the Rivoli Theater in New York, whose summer film business skyrocketed when it heavily advertised the cool comfort. Demand increased for smaller units and the Carrier Company obliged.

In 1928, Willis Haviland Carrier developed the first residential “Weathermaker,” an air conditioner for private home use. The Great Depression and then World War Two slowed the non-industrial use of air conditioning. After the war, consumer sales started to grow again. The rest is history, cool and comfortable history.

Willis Haviland Carrier did not invent the very first system to cool an interior structure, however, his system was the first truly successful and safe one that started the science of modern air conditioning.

551 words

**Your Reading Time:** \_\_\_\_\_