*Delayed Cool*

Emissions **slashed（削减）** today will be **felt（感觉到）** only in the middle of the century.

Much of the international eﬀort **thus far（目前为止）** to **combat（与…作斗争）** climate change has focused on cutting emissions of greenhouse gases, **chief（主要的，首要的）** among them carbon dioxide.

That is, of course, a **rational（合理的）** approach.

Global average temperatures are roughly 1.1°C warmer today than in pre-industrial times and CO2 is the **main culprit（罪魁祸首）**.

It and other greenhouse gases are **produced（产生）** when fossil fuels are burned to **generate（生产）** energy or power（驱动） engines, in steel and cement-making, by **farming and deforestation（砍伐森林）**.

In the long term, eliminating these emissions is **the only sustainable（可持续的） solution** for **stopping the inexorable（不可阻挡的，无法改变的） warming** of the planet.

But greenhouse-gas emissions do not cause **an instantaneous（~~暂时的~~即时的） rise** in global temperatures, and neither does cutting them result in instantaneous cooling.

Instead, it will take decades for today’s policy eﬀorts to result in measurable impacts on global temperature—as **illustrated（说明）** in a study published this week in Nature Communications.

Using climate models, Bjorn Samset and his colleagues at Norway’s Centre for International Climate Research **probed（研究） hypothetical（假设的） futures** in which emissions of nine diﬀerent industrial pollutants, including carbon dioxide and methane, were either eliminated instantly or **phased out（分阶段地减少）** at a rate of 5% each year, starting in 2020.

In order to **isolate their respective eﬀects（分开他们各自的作用）**, each chemical **was knocked out（清除） individually** while the rest were allowed to **keep evolving（发展）** as they would broadly if governments stuck to current **climate pledges（承诺）**.

Thus, the experiment tested how quickly additional eﬀorts, as required by the Paris Agreement, would be seen in the rate of global warming.

**Running（运行） these simulations（模拟范式）** over and over again in order to get **statistically reliable results（统计意义上可信的数据结果）** suggests that cutting CO2 emissions could slow the rate of warming **as early as** 2033, but **only if** they are ended worldwide in 2020.

In eﬀect, that would mean eliminating 80% of the world’s energy sources, including shutting down all fossil-fuel **power stations（发电站）**, overnight—clearly not **a realistic or desirable scenario（符合实际的(切实可行的)或者可取的情景）**.

Reducing CO2 by 5% per year, starting this year, would produce **a statistically signiﬁcant（有意义的） deviation（偏差）** from what temperatures would have **otherwise（本来）** been only in 2044.

And yet, even that rate of CO2 reduction is ambitious, **on a par with（相当于）** the 4-7% drop estimated this year as a result of the covid-19 pandemic and **widespread economic shutdowns（广泛的经济停摆）**.

Before this, **annual emissions were creeping up（每年的碳排放仍在爬升）**.

Without **concerted eﬀorts（共同的努力）** from governments, they are likely to rise again as economies reopen.

**One reason for（一个…的原因是）** the delayed eﬀect of slashing emissions is **natural variability（自然产生的变化）** in the climate.

Whether one year is warmer or cooler than the previous **is not simply down to（归因于） greenhouse gases**.

Large-scale natural climate eﬀects also play a role, warming and cooling the planet **in a cyclical fashion（循环的模式） by fractions of a degree（零点几度）**.

**Depending on their phase（阶段）**, the warming of greenhouse gases is **either masked or compounded（要么被掩盖，要么被加剧）** by these kinds of natural effects.

As emissions begin to drop, natural variability will also **mask（掩盖） any slowdown（减缓） of global warming that results（出现的,happen）**.

Dr Samset’s modelling took this into account.

In addition, more than 90% of the energy **trapped（捕获） by** the greenhouse-gas emissions produced in the past half-century has been stored in the ocean and released to the atmosphere **as heat only slowly（所以气温升高仅仅是缓慢的）**.

Even if all emissions were cut tomorrow, that process would continue to warm the air above for many years to come.

The main reason for the delay, however, is that carbon dioxide emitted today will remain in the atmosphere for decades to centuries before it is reabsorbed by vegetation and the oceans.

That is **not true of（不适用于）** other industrial emissions.

Each molecule of methane warms the planet 84-87 times more, averaged over 20 years, than carbon dioxide, **but it stays aloft（仍然停留在高空大气） for merely years instead of decades or centuries**.

This has resulted in **calls（呼吁）** for immediate action to slash methane emissions, for instance by **plugging leaks（堵住漏洞）** in natural-gas infrastructure, and reducing emissions from farming.

But even then, Dr Samset’s work suggests that eliminating all sources of methane pollution in 2020 would not affect warming trends before 2039.

**Keep up the pressure**

Tragically, the pollutant that could have the most immediate impact is one that currently keeps the world cooler.

Sulphur oxides are a **by-product（副产品）** of burning some fossil fuels, including coal and **dirty bunker fuel（不清洁的船用燃油）**, and are **a target of policies** to clean up **maritime emissions（海洋污染排放）** and urban air pollution.

In the atmosphere, they **bounce a portion of（反射一部分） solar radiation** back out into space, producing a cooling eﬀect.

Because they are dragged back to Earth by rain within days of being emitted, cutting them out of industrial activities could **boost warming（加速气候变暖）** by the end of the decade.

In spite of all this, **mitigating emissions remains crucial（减少排放仍然是至关重要的）** to the stability of the global climate and the only way of meeting *the Paris Agreement* targets of limiting global warming to 1.5-2°C.

But Dr Samset argues that temperature may not be **the best yardstick（最好的标准）** to measure the eﬀectiveness of **climate mitigation（减缓气候变化）**, at least not until the 2040s.

Instead, **direct measurements（直接测量）** of the concentrations of greenhouse gases in the atmosphere may be better, as they will remove the **confounding eﬀect（多因子混淆效应）** of natural variability.

And without **clever messaging（很好地告诉大家这个信息）**, there could be **a public backlash（公众的强烈反对）** against seemingly ineﬀectual policies.

**More fundamental（更重要的是）**, however, results like these underline that even as economies begin to **decarbonise（去碳化）**, governments and societies need to **drastically step up(增加) efforts（更大程度地投入更多的努力）** to adapt to the **inevitable（不可避免的，必然发生的） warming** that lies ahead.

*Love is a Fallacy*

Charles Lamb, as **merry and enterprising a fellow（性格开朗且有进取心）** as you will meet in a month of Sundays, **unfettered（不受约束）** the informal essay with his memorable Old China and Dream's Children.

There follows an informal essay that **ventures（冒险尝试）** even beyond Lamb's **frontier**, indeed, "informal" may not be quite the right word to describe this essay; **"limp" or " flaccid" or possibly "spongy"（轻柔）** are perhaps more appropriate.

**Vague though its category（虽然它的分类很模糊）**, it is without doubt an essay.

It develops an **argument（论点）**; it **cites instances（引用了事例）**; it reaches a conclusion.

Could Carlyle do more? Could Ruskin?

Read, then, the following essay which **undertakes to demonstrate（示范） that logic（承担了示范逻辑学）, far from being a dry, pedantic discipline（学究式的条条框框）**, is a living, breathing thing, full of beauty, passion, and **trauma（创伤）**.

Cool was I and **logical（逻辑学）**.

**Keen（敏锐）, calculating（慎重，工于心计）, perspicacious（有洞察力）, acute（敏锐） and astute（精明）**--I was all of these.

My brain was as powerful as a **dynamo（发电机）**, as precise as a **chemist's scales（化学家的天平）**, as **penetrating as a scalpel（像手术刀一样锋利）**.

And--think of it! --I was only eighteen.

It is not often that one so young has such a **giant intellect（超凡的智力）**.

Take, for example, Petey Butch, my roommate at the University of Minnesota.

Same age, same background, but **dumb as an ox（蠢的像头牛）**.

A nice enough young fellow, you understand, but **nothing upstairs（头脑空空）**.

Emotional type. Unstable. Impressionable. Worst of all, a **faddist（赶时髦的人）**.

Fads, I submit, are the very **negation of reason（缺乏理智，*negation否定*）**.

To be swept up in every **new craze（对新鲜事物的狂热）** that comes along, to **surrender yourself to idiocy（冲进去傻干）** just because everybody else is doing it--this, to me, is **the acme(顶点) of mindlessness（愚蠢至极，the most stupid thing）**. Not, however, to Petey.

One afternoon I found Petey lying on his bed with an expression of such **distress（痛苦）** on his face that I immediately **diagnosed appendicitis（诊断出他得了阑尾炎）**.

"Don't move," I said. "Don't take a **laxative（泻药）**. I'll get a doctor."

"Raccoon," he **mumbled thickly（沙哑地咕哝着）**.

"Raccoon?" I said, pausing **in my flight（*夸张*）**.

"I want a raccoon coat," he **wailed（痛哭）**.

I **perceived（理解，明白，察觉）** that his trouble was not physical, but mental. "Why do you want a raccoon coat?” "I should have known it," he cried, **pounding his temples（击打他的太阳穴）**.

"I should have ... known they'd come back when the Charleston came back.

Like a fool I spent all my money for textbooks, and now I can't get a raccoon coat."

"Can you mean." I said **incredulously（不相信地）**, "that people are actually wearing raccoon coats again?"

"All the **Big Men on Campus（校园里有头有脸的人物）** are wearing them. Where've you been?"

"In the library," I said, **naming a place not frequented（提到了一个不怎么经常……的地方）** by Big Men on Campus.

He **leaped from（跳起）** the bed and **paced（踱步）** the room, "I've got to have a raccoon coat," he said passionately. "I've got to!"

"Petey, why? Look at it **rationally（理性地）**. Raccoon coats are **unsanitary（不卫生）**. They **shed（掉毛）**. They smell bad. They weight too much. They're **unsightly（不堪入目）**. They--"

" You don't understand," he interrupted impatiently. "It's **the thing to do（该做的事）**. Don't you want to be **in the swim（在时尚最前沿）**?"

"No," I said **truthfully（真诚地）**.

"Well, I do," he declared. "I'd give anything for a raccoon coat. Anything!"

My brain, that precision instrument, slipped into **high gear（高档位）**. "Anything?" I asked, looking at him **narrowly（仔细地）**.

"Anything," he **affirmed in ringing tones（大声地确认）**.

I **stroked（托）** my **chin（下巴）** thoughtfully.

It so **happened（碰巧）** that I knew where to set my hands on a raccoon coat.

My father had had one in his undergraduate days; it lay now in a **trunk（箱子）** in the **attic（阁楼）** back home.

It also happened that Petey had something I wanted.

He didn't have it exactly, but at least he had first rights on it. I refer to his girl, Polly Espy.

I had **long coveted（心仪已久）** Polly Espy.

Let me emphasize that my desire for this young woman was not emotional in nature.

She was, to be sure, a girl who excited the emotions but I was not one to **let my heart rule my head（让情感支配理智）**.

I wanted Polly for a **shrewdly calculated（精打细算过）**, entirely **cerebral（理智的）** reason.

I was a freshman in law school.

In a few years I would **be out in practice（出去当律师）**.

I was well aware of the importance of the right kind of wife in **furthering（促进…） a lawyer's career**.

The successful lawyers I had observed were, almost without exception, married to beautiful, **gracious（优雅的）**, intelligent women.

With one **omission（缺点）**, Polly fitted these **specifications（特征）** perfectly. Beautiful she was. She was not yet of **pin-up proportions（美女身材）** but I felt sure that time would supply the lack.

She already **had the makings（有这些物质条件了）**.

Gracious she was.

By gracious I mean full of graces.

She had an **erectness of carriage（站姿亭亭玉立）**, an **ease of bearing（从容）**, a **poise that clearly indicated the best of breeding（举止中透露出具有良好教养）**.

At table her manners were **exquisite**.

I had seen her at the Kozy Kampus Korner eating the **specialty of the house（招牌菜）**--a sandwich that contained **scraps of pot roast, gravy, chopped nuts（烤肉片，肉汁，碎坚果）**, and **a dipper of sauerkraut（一小碟泡菜）**--without even getting her fingers **moist（沾湿）**.

Intelligent she was not. In fact, she **veered（转向） in the opposite direction**.

But I believed that under my guidance she would **smarten up（变得聪明）**.

At any rate, it was worth a try.

It is, after all, easier to make a beautiful dumb girl smart than to make an ugly smart girl beautiful.

"Petey," I said, "are you in love with Polly Espy?"

"I think she's a keen kid," he replied, "but I don't know if you'd call it love. Why?"

"Do you," I asked, "have any kind of **formal arrangement（正式的安排）** with her? I mean are you **going steady（保持稳定关系）** or anything like that?"

"No. We see each other **quite a bit（很多）**, but we both **have other dates（有别的约会）**. Why?"

"Is there," I asked, "any other man for whom she has **a particular fondness（特别喜欢）**?"

"**Not that I know of（我知道的没有）**. Why?"

I nodded with satisfaction. "In other words, if you were **out of the picture（从这个故事中出去，*比喻*）**, the field would be open. Is that right?"

"I guess so. What are you **getting at（想说什么啊，目的是什么）**?"

"Nothing, nothing," I said innocently, and took my suitcase out of the **closet（衣橱）**.

"Where are you going?" asked Petey.

"Home for the weekend." I threw a few things into the bag.

"Listen," he said, **clutching my arm eagerly（期盼地抓住我的胳膊）**, "while you're home, you couldn't get some money from your old man, could you, and lend it to me so I can buy a raccoon coat?"

"I may do better than that," I said with a **mysterious wink（神秘地眨眨眼）** and closed my bag and left.

"Look," I said to Petey when I got back Monday morning.

I threw open the suitcase and **revealed the huge, hairy, gamy object（露出那巨大，多毛，发出怪味的东西）** that my father had worn in his Stutz Bearcat in 1925.

"Holy **Toledo（老天爷啊）**!" said Petey **reverently（恭敬地）**. He **plunged his hands into the raccoon coat（把手插进浣熊大衣中间）** and then his face. "Holy Toledo!" he repeated fifteen or twenty times.

"Would you like it?" I asked.

"Oh yes!" he cried, **clutching the greasy pelt（抱住那油腻的皮毛）** to him. Then a **canny look（谨慎的神色）** came into his eyes.

"What do you want for it?"

"Your girl," I said, **mincing（隐藏，直言不讳）** no words.

"Polly?" he said in a **horrified whisper（惊恐小声说）.** "You want Polly?"

"That's right."

He **flung the coat（扔掉衣服）** from him. "Never," he said **stoutly（坚定地）**.

I **shrugged（耸耸肩）**. "Okay. If you don't want to be in the swim, I guess it's your business."

I sat down in a chair and pretended to read a book, but out of the corner of my eye I kept watching Petey.

He was a **torn（左右为难的）** man.

First he looked at the coat with the expression of a **waif（乞丐，流浪儿）** at a bakery window.

Then he turned away and **set his jaw resolutely（坚决地闭上嘴巴）**.

Then he looked back at the coat, with even more longing in his face.

Then he turned away, but with not so much resolution this time.

Back and forth his head **swiveled（扭过头）**, desire **waxing（逐渐增加）**, resolution waning. Finally he didn't turn away at all; he just stood and stared with mad lust at the coat.

"It isn't as though I was in love with Polly," he said thickly. "Or going steady or anything like that."

"That's right," I murmured.

"What's Polly to me, or me to Polly?"

"**Not a thing（啥也不是）**," said I. "It's just been a **casual kick（一时高兴）**--just a few laughs, that's all."

"Try on the coat," said I.

He **complied（照做了）**. The coat **bunched high（蒙住）** over his ears and dropped all the way **down to his shoe tops（下面垂到了他鞋面上）**.

He looked like **a mound（尸体） of** dead raccoons. "Fits fine," he said happily.

I rose from my chair. "Is it a deal?" I asked, extending my hand.

He **swallowed（一口答应）**. "It's a deal," he said and shook my hand.

I had my first date with Polly the following evening.

This was in the nature of a survey; I wanted to find out just how much work I had to do to get her mind up to the standard I required.

I took her first to dinner. "Gee(Wow), that was a delish (delicious) dinner," she said as we left the restaurant.

Then I took her to a movie. "Gee, that was a marvy (=marvelous) movie," she said as we left the theater.

And then I took her home. "Gee, I had a sensaysh (=**sensational（极好的，很痛快）**) time," she said as she **bade me good night（向我道别说晚安）**.

I went back to my room with **a heavy heart（不太痛快的心情）**.

I had **gravely（严重地）** underestimated the size of my task.

This girl's lack of information was **terrifying（令人震惊害怕的）**.

**Nor would it be（也不）** enough merely to supply her with information.

First she had to be taught to think.

This **loomed（令人忧虑）** as a project of no small **dimensions（方面）**, and at first I was tempted to give her back to Petey.

But then I got to thinking about her abundant physical charms and about the way she entered a room and the way she handled a knife and fork, and I decided to make an effort.

I **went about it（开始干了起来）**, as in all things, **systematically（*系统地，*有计划地）**.

I gave her a course in logic.

It happened that I, as a law student, was taking a course in logic myself, so I had all the facts **at my finger tips（很熟悉）**.

"Polly," I said to her when I picked her up on our next date, "tonight we are going over to the **Knoll（圆丘） and talk.**"

"Oo, terrif (=**terrific（好极了）**)," she replied. One thing I will say for this girl: you would go far to find another so **agreeable（容易适应的）**.

We went to the Knoll, the campus **trysting（幽会）** place, and we sat down under an old oak, and she looked at me **expectantly（期盼地）**.

"What are we going to talk about?" she asked.

"Logic."

She thought this over for a minute and decided she liked it. "Magnif (=**magnificent（好极了）**)," she said.

"Logic," I said, clearing my throat, "is the science of thinking. Before we can think correctly, we must first learn to recognize the common fallacies of logic. These we will take up tonight."

"Wow-dow!" she cried, clapping her hands delightedly.

I **winced（寒噤）**, but went bravely on.

"First let us examine the fallacy called **Dicto Simpliciter(过分简化)**."

"By all means（好呀！）," she urged, **batting her lashes（~~拍着背~~眨了眨眼）** eagerly.

"Dicto Simpliciter means an argument based on an unqualified generalization.

For example: Exercise is good. Therefore everybody should exercise."

"I agree," said Polly earnestly. "1 mean exercise is wonderful. I mean it builds the body and everything."

"Polly," I said gently（温和地）, "the argument is a fallacy. Exercise is good is an **unqualified generalization（无条件的普遍原则）**. For instance, if you have heart disease, exercise is bad, not good. Many people are ordered by their doctors not to exercise. You must qualify the generalization. You must say exercise is usually good, or exercise is good for most people. Otherwise you have committed a Dicto Simplioiter. Do you see?”

"No, " she **confessed（承认）**. "But this is marvy. Do more! Do more!"

"It will be better if you stop **tugging at my sleeve（拉我的袖子）**," I told her, and when she **desisted（放开）**, I continued: "Next we take up a fallacy called **Hasty Generalization(以偏概全)**.

Listen carefully: You can't speak French. I can't speak French. Petey Burch can't speak French. I must therefore conclude that nobody at the University of Minnesota can speak French."

"Really?" said Polly, amazed（好奇地）. "Nobody?"

I hid my **exasperation（愤怒）**. "Polly, it's a fallacy. The generalization is reached too **hastily（草率地）**. There are too few instances to support such a conclusion."

"Know any more fallacies?" she asked breathlessly. "This is more fun than dancing even."

I **fought off a wave of despair（打败了一波绝望）**. I was **getting nowhere** with this girl. Absolutely nowhere.

Still, **I am nothing if not persistent（如果我不坚持下去，那就太没用了）**. I continued.

"Next comes **Post Hoc(后此，事后归因)**. Listen to this: Let's not take Bill on our picnic. Every time we take him out with us, it rains."

"I know somebody like that," she **exclaimed（呼喊）**. "A girl back home--Eula Becker, her name is, it never falls. Every single time we take her on a picnic--"

"Polly," I said sharply, "it's a fallacy. Eula Becker doesn't cause the rain. She has no connection with the rain. You are guilty of Post Hoc if you blame Eula Becker."

"I'll never do that again," she promised **contritely（懊悔地）**. "Are you mad at me?"

I sighed deeply. "No, Polly, I'm not mad."

"Then tell me some more fallacies."

"All right. Let's try **Contradictory Premises(前提矛盾)**."

"Yes, let's," she **chirped（鸟叫）**, blinking" her eyes happily.

I **frowned（皱眉）**, but **plunged ahead（接着讲下去）**. "Here's an example of Contradictory Premises: If God can do anything, can He make a stone so heavy that He won't be able to lift it?"

"Of course," she replied **promptly（毫不犹豫地）**.

"But if He can do anything, He can lift the stone," I pointed out.

"Yeah," she said thoughtfully. "Well, then I guess He can't make the stone."

"But He can do anything," I reminded her.She scratched her pretty, empty head. "I'm all confused," she admitted.

"Of course you are. Because when the **premises（前提）** of an argument contradict each other, there can be no argument.

If there is an **irresistible（不可阻挡的）** force, there can be no **immovable（不可移动的）** object. If there is an immovable object, there can be no irresistible force. Get it?"

"Tell me some more of this **keen stuff（好玩的东西）**," she said eagerly.

I consulted my watch. "I think we'd better **call it a night（结束今晚）**. I'll take you home now, and you go over all the things you've learned. We'll have another **session（课）** tomorrow night."

I **deposited（送）** her at the girls' dormitory, where she assured me that she had had a perfectly terrif evening, and I went **glumly（闷闷不乐地）** to my room.

Petey lay **snoring（打鼾）** in his bed, the raccoon coat **huddled（挤）** like a great hairy beast at his feet.

For a moment I considered waking him and telling him that he could have his girl back.

It seemed clear that my project was **doomed（使在劫难逃） to failure（注定要失败）**.

The girl simply had a **logic-proof head（根本不懂逻辑学的大脑）**.

But then I reconsidered. I had wasted one evening: I might as well waste another.

Who knew? Maybe somewhere in the **extinct crater（死火山）** of her mind, a few **embers（灰烬）** still **smoldered（燃烧，没有烟）**.

Maybe somehow I could fan them into flame.

Admittedly it was not a **prospect fraught with hope（很有希望的前景，filled with）**, but I decided to give it one more try.

Seated under the oak the next evening I said, "Our first fallacy tonight is called **Ad Misericordiam(文不对题)**."

She **quivered（发抖）** with delight.

"Listen closely," I said. "A man applies for a job. When the boss asks him what his qualifications are, he replies that he has a wife and six children at home, the wife is a helpless **cripple（残疾人）**, the children have nothing to eat, no clothes to wear, no shoes on their feet, there are no beds in the house, no coal in the **cellar（地窖）**, and winter is coming."

A tear rolled down each of Polly's pink cheeks. "Oh, this is awful, awful," she sobbed.

"Yes, it's awful," I agreed, "but it's no argument. The man never answered the boss's questions about his qualifications. Instead he **appealed to（寻求）** the boss's sympathy. He committed the fallacy of Ad Misericordiam. Do you understand?"

"Have you got a handkerchief?" she **blubbered（抽泣）**.

I handed her a handkerchief and tried to keep from **screaming（大叫）** while she wiped her eyes.

"Next," I said in a carefully controlled tone, "we will discuss **False Analogy(错误类比)**.

Here is an example：Students should be allowed to look at their textbooks during examinations. After all, surgeons have X-rays to guide them during an operation, lawyers have **briefs（案由）** to guide them during a **trial（审判）**, **carpenters（木匠）** have blueprints to guide them when they are building a house. Why, then, shouldn't students be allowed to look at their textbooks during an examination?"

"There now," she said enthusiastically, "is the most marvy idea I've heard in years."

"Polly," I said **testily（暴躁地）**, "the argument is all wrong. Doctors, lawyers, and carpenters aren't taking a test to see how much they have learned, but students are. The situations are altogether different, and you can't make an **analogy（类比）** between them."

"1 still think it's a good idea," said Polly.

"Nuts," I **muttered（咕哝）**. **Doggedly（顽强地）** I pressed on. "Next we'll try **Hypothesis Contrary to Fact(假设违反事实)**."

"Sounds yummy," was Polly's reaction.

"Listen: If Madame Curie had not happened to leave a **photographic plate（相机底片）** in a drawer with **a chunk of pitchblende（一小块沥青石）**, the world today would not know about radium."

"True, true," said Polly, nodding her head. "Did you see the movie? Oh, it just knocked me out. That Walter Pidgeon is so **dreamy（有魅力的）**. I mean he **fractures（俘获，让我着迷）** me."

"If you can forget Mr. Pidgeon for a moment," I said coldly, "I would like to point out that the statement is a fallacy. Maybe Madame Curie would have discovered radium at some later date.

Maybe somebody else would have discovered it. Maybe any number of things would have happened. You can't start with a **hypothesis（假设）** that is not true and then draw any supportable conclusions from it."

"They ought to put Walter Pidgeon in more pictures," said Polly. "I hardly ever see him any more.

One more chance, I decided. But just one more. There is a limit to what **flesh and blood can bear（人能承受的）**. "The next fallacy is called **Poisoning the Well(井里投毒)**."

"How cute!" she **gurgled（咯咯咯的笑）**.

"Two men are having a debate. The first one gets up and says, ‘My opponent is a **notorious liar（臭名昭著的骗子）**. You can't believe a word that he is going to say.' ... Now, Polly, think. Think hard. What's wrong?"

I watched her closely as she **knit her creamy brow（蹙cu4眉，皱眉）** in concentration.

Suddenly, a glimmer（光） of intelligence—the first I had seen--came into her eyes.

"It's not fair," she said with **indignation（气愤）**." It's not a bit fair. What chance has the second man got if the first man calls him a liar before he even begins talking?"

"Right!" I cried **exultantly（兴奋地）**. "One hundred percent right. It's not fair.

The first man has poisoned the well before anybody could drink from it.

He has **hamstrung his opponent（把对手的脚筋挑掉了）** before he could even start. … Polly, I’m proud of you."

"Pshaw" she murmured, **blushing（脸红，表示愉快）** with pleasure.

"You see, my dear, these things aren't so hard. All you have to do is concentrate.

Think--examine—evaluate. Come now, let's review everything we have learned.”

"Fire away," she said with an **airy wave（开心，活泼地挥手）** of her hand.

Heartened by the knowledge that Polly was not altogether a **cretin（傻逼，白痴）**, I began a long, patient review of all I had told her. Over and over and over again I cited instances, pointed out **flaws（错误）**, **kept hammering away without let-up（停止）**.

It was like digging a tunnel.

At first everything was work, sweat, and darkness.

I had no idea when I would reach the light, or even if I would.

But I persisted. I **pounded and clawed and scraped（凿 挖 刮）**, and finally I was rewarded. I saw **a chink of light（一道光）**.

And then the chink got bigger and the sun came pouring in and all was bright.

Five **grueling（累人的）** nights this took, but it was worth it.

I had made a logician out of Polly; I had taught her to think.

My job was done. She was worthy of me at last. She was a fit wife for me, a proper hostess for my many **mansions（公馆）**, a suitable mother for my **well-heeled（有教养的）** children.

It must not be thought that I was without love for this girl. Quite the contrary.

Just as Pygmalion loved the perfect woman he had fashioned, so I loved mine. I determined to **acquaint（使…了解）** her with my feeling at our very next meeting.

The time had come to change our relationship from academic to romantic.

"Polly," I said when next we sat beneath our oak, "tonight we will not discuss fallacies."

"Aw, gee," she said, disappointed.

"My dear," I said, favoring her with a smile, “we have now spent five evenings together.

We have gotten along splendidly. It is clear that we are well matched.”

“Hasty Generalization,” said Polly brightly.

“I beg your pardon,” said I.

“Hasty Generalization,” she repeated. “How can you say that we are well matched on the basis of only five dates?”

I **chuckled（咯咯笑）** with amusement. The dear child had learned her lessons well. "My dear," I said, patting her hand in a tolerant manner, "five dates is plenty. After all, you don't have to eat a whole cake to know it's good."

“False Analogy”, said Polly promptly. “I'm not a cake. I'm a girl.”

I chuckled with somewhat less amusement. The dear child had learned her lessons perhaps too well.

I decided to change **tactics（策略）**. Obviously, the best approach was a simple, strong, direct declaration of love.

I paused for a moment while my **massive（特别发达的）** brain chose the proper words. Then I began:

"Polly, I love you. You are the whole world to me, and the moon and the stars and the **constellations（星座）** of outer space.

Please, my darling, say that you will go steady with me, for if you will not, life will be meaningless. I will **languish（失去活力）**.

I will refuse my meals. I will wander the face of the earth, a **shambling**, **hollow-eyed hulk（步履蹒跚，眼球下凹的躯壳）**."

There, I thought, folding my arms, that ought to do it.

“Ad Misericordiam,” Said Polly.

I ground my teeth. I was not Pygmalion; I was Frankenstein, and my monster had me by the throat.

**Frantically（极力地，孤注一掷地）** I fought back **the tide(阵阵，潮水) of panic surging(涌动)（控制涌上心头的阵阵痛楚）** through me.

At all costs I had to keep cool.

"Well, Polly," I said, forcing a smile, "you certainly have learned your fallacies."

"You’re **darn(很)** right," she said with a **vigorous(有力的)** nod.

"And who taught them to you, Polly?"

"You did."

"That's right. So you do **owe（欠我的）** me something, don't you, my dear? If I hadn't come along you never would have learned about fallacies."

"Hypothesis Contrary to Fact," she said instantly.

I dashed **perspiration（汗）** from my **brow（额头）**. "Polly," I **croaked（沙哑地说）**," you mustn't take all these things so literally.

I mean this is just **classroom stuff（课堂上的东西）**.

You know that the things you learn in school don't have anything to do with life."

"Dicto Simpliciter," she said, wagging her finger at me **playfully（嬉戏地）**.

That did it. I leaped to my feet, bellowing like a bull. "Will you or will you not go steady with me?"

"I will not," she replied.

"Why not?" I **demanded（追问）**.

"Because this afternoon I promised Petey Burch that I would go steady with him."

I **reeled back（跌跌撞撞地后退）**, overcome with the **infamy（无耻行径）** of it. After he promised, after he made a deal, after he shook my hand!

"The rat! I **shrieked（尖叫）**, **kicking up great chunks（块） of turf（草皮）**. "You can't go with him, Polly.

He's a liar. He's a cheat. He's a rat."

"Poisoning the Well," said Polly, "and stop shouting. I think shouting must be a fallacy too."

With an **immense（巨大的）** effort of will（意志力）, I **modulated（调整）** my voice. "All right," I said. "You're a logician. Let's look at this thing logically.

How could you choose Petey Burch over me? Look at me--a brilliant student, a **tremendous（棒极了的）** intellectual, a man with an assured future.

Look at Petey--a **knot head（呆瓜）**, a **jitterbug（反复无常的人）**, a guy who'll never know where his next meal is coming from.

Can you give me one logical reason why you should go stead with Petey Burch?"

"I certainly can," declared Polly. "He's got a raccoon coat.”

*The Trouble With Online Education*

“AH, you’re a professor. You must learn so much from your students.”

This **line（一番话）**, which I’ve heard in various forms, always makes me **cringe（尴尬）**.

Do people think that lawyers learn a lot about the law from their clients?

That patients teach doctors much of what they know about medicine?

Yet **latent（可能的） in the sentiment（观点）** that our students are our teachers is an important truth.

We do in fact need to learn from them, but not about the history of the Roman Empire or the politics of “Paradise Lost.”

Understanding what it is that students have to teach teachers can help us to deal with one of the most **vexing issues（恼人的问题）** now facing colleges and universities: online education.

At my school, the [University of Virginia](http://topics.nytimes.com/top/reference/timestopics/organizations/u/university_of_virginia/index.html?inline=nyt-org), that issue did more than vex us; it came close to tearing the university apart.

A few weeks ago our president, Teresa Sullivan, was **summarily dismissed（草率地被解雇了）** and then **summarily reinstated（匆忙地被恢复原职）** by the university’s **board of visitors（监事会）**.

One reason for her **dismissal（解职事件）** was the **perception**（看法） that she was not moving forward fast enough on Internet learning.

Stanford was doing it, Harvard, Yale and M.I.T. too. But Virginia, it seemed, was **lagging（落后了）**.

Just this week, in fact, it was announced that Virginia, along with a number of other universities, [signed on with a company called Coursera](http://www.nytimes.com/2012/07/18/education/top-universities-test-the-online-appeal-of-free.html) to develop and offer online classes.

But can online education ever be education of the very best **sort（类，种）**?

It’s here that the **notion（观点）** of students teaching teachers is **illuminating（有启发意义的）**.

As a friend and **fellow professor（同为教授的同事）** said to me: “You don’t just teach students, you have to learn ’em too.”

It took a minute — it sounded like he was **channeling（教导）** Huck Finn— but I figured it out.

With every class we teach, we need to learn who the people in front of us are.

We need to know where they are **intellectually（理智地）**, who they are as people and what we can do to help them grow. Teaching, even when you have a group of a hundred students **on hand（在手上）**, is a matter of dialogue.

In the summer Shakespeare course I’m teaching now, I’m constantly working to figure out what my students are able to do and how they can develop.

Can they grasp the **contours（大概，梗概）** of Shakespeare’s **plots（故事情节）**? If not, it’s worth adding a well-made film version of the next play to the **syllabus（教学大纲）**.

Is the language hard for them, line to line? Then we have to spend more time going over individual speeches word by word.

Are they **adept at understanding（善于理解）** the plot and the language?

Time to introduce them to the **complexities（复杂性）** of Shakespeare’s **rendering（描述,description）** of character.

Every memorable class is a bit like a jazz **composition（作品）**.

There is the basic melody that you work with.

It is defined by the syllabus.

But there is also a considerable measure of **improvisation（即兴创作）** against that disciplining background.

Something similar applies even to larger courses.

We tend to think that the **spellbinding lecturers（吸引人的演讲者）** we had in college survey classes were gifted actors who could **strut** and **fret（指手画脚）** 50 amazing minutes on the stage.

But I think that the best of those lecturers are highly adept at reading their audiences.

They use practical means to do this — tests and quizzes, papers and evaluations.

But they also **deploy（有效利用）** something **tantamount to artistry（和艺术等同的）**.

They are superb at sensing the mood of a room.

They have a sort of **pedagogical（教育的）** sixth sense.

They feel it when the class is engaged and when it **slips off（得过且过了）**.

And they do something about it. Their every joke is a sounding.

It’s a way of **discerning（察觉出）** who is out there on a given day.

A large lecture class can also create **genuine（真正的） intellectual community**.

Students will always be running across others who are also enrolled, and they’ll **break the ice（破冰，打破尴尬）** with a chat about it and maybe they’ll go on from there.

When a teacher hears a student say, “My friends and I are always arguing about your class,” he knows he’s doing something right.

From there he folds what he has learned into his teaching, adjusting his course in a **fluid（变通的，变化的）** and immediate way that the Internet professor cannot easily match.

Online education is a one-size-fits-all **endeavor（尝试）**.

It tends to be a **monologue（独角戏）** and not a real dialogue.

The Internet teacher, even one who responds to students via e-mail, can never have the **immediacy（即时性，直观性）** of contact that the teacher on the scene can, with his **sensitivity（敏感）** to unspoken moods and enthusiasms.

This is particularly true of online courses for which the lectures are already filmed and **in the can（早已完成的）**.

It doesn’t matter who is sitting out there on the Internet watching; the course is what it is.

Not long ago I watched a pre-filmed online course from Yale about the New Testament.

It was a very good course.

The instructor was hyper-intelligent, learned and splendidly **articulate（能言善辩的，能说会道的）**.

But the course wasn’t great and could never have been.

There were Yale students on hand for the filming, but the class seemed addressed to no one in particular.

It had an **anonymous（不太了解学生）** quality.

In fact there was nothing you could get from that course that you couldn’t get from a good book on the subject.

A truly memorable college class, even a large one, is a **collaboration（合作）** between teacher and students.

It’s a one-time-only event.

Learning **at its best（处在最好状态，in its best condition）** is a **collective enterprise（共同完成的任务）**, something we’ve known since Socrates.

You can get knowledge from an Internet course if you’re highly motivated to learn. But in real courses the students and teachers come together and create an immediate and **vital（至关重要的）** community of learning.

A real course creates intellectual joy, at least in some.

I don’t think an Internet course ever will.

Internet learning promises to make intellectual life more **sterile（没有实际价值的）** and abstract than it already is — and also, for teachers and for students alike, far more lonely.

*Why Waiting Is* **Torture（折磨）**

Some years ago, **executives（高层）** at a Houston airport faced a troubling customer- relations issue.

Passengers were **lodging（发表） an inordinate（过多的）** number of complaints about the long waits at **baggage claim（行李领取处）**.

In response, the executives increased the number of baggage **handlers（挑夫）** working that **shift（轮班）**.

The plan worked: the average wait fell to eight minutes, well within industry **benchmarks（标准）**.

But the complaints persisted.

Puzzled, the airport executives undertook a more careful, on-site analysis.

They found that it took passengers a minute to walk from their arrival gates to baggage claim and seven more minutes to get their bags.

Roughly 88 percent of their time, in other words, was spent standing around waiting for their bags.

So the airport decided on a new approach: instead of reducing wait times, it moved the arrival gates away from the main **terminal（航站楼）** and routed bags to the **outermost carousel（最远的行李传送带）**.

Passengers now had to walk six times longer to get their bags.

Complaints dropped to near zero.

This story **hints at（暗示了）** a general principle: the experience of waiting, whether for luggage or groceries, is defined only partly by the objective length of the wait.

“Often the psychology of queuing is more important than the statistics of the wait itself,” notes the M.I.T. operations researcher [Richard Larson,](http://esd.mit.edu/faculty_pages/larson/larson.htm) widely considered to be the world’s **foremost（最重要，最出名的）** expert on lines.

Occupied time (walking to baggage claim) feels shorter than unoccupied time (standing at the carousel).

Research on queuing has shown that, on average, people **overestimate（高估了）** how long they’ve waited in a line by about 36 percent.

This is also why one finds mirrors next to elevators.

The idea was born during the post-World War II **boom（繁荣）**, when the spread of **high-rises（高楼）** led to complaints about elevator delays.

The **rationale（原理）** behind the mirrors was similar to the one used at the Houston airport: give people something to occupy their time, and the wait will feel shorter. With the mirrors, people could check their hair or **slyly ogle（暗中窥视）** other passengers.

And it worked: almost overnight, the complaints **ceased（几乎消失了）**.

The **drudgery（苦活，劳累）** of unoccupied time also accounts in large measure for the popularity of impulse-buy items, which earn supermarkets about $5.5 billion annually.

The **tabloids（小报）** and packs of **gum（口香糖）** offer relief from the **agony（痛苦）** of waiting.

Our expectations further affect how we feel about lines.

Uncertainty **magnifies（增加了，加剧了）** the stress of waiting, while feedback in the form of expected wait times and explanations for delays improves the **tenor（持续时间，路程）** of the experience.

And beating expectations **buoys（使振作）** our mood.

All else being equal, people who wait less than they anticipated leave happier than those who wait longer than expected.

This is why Disney, the universally acknowledged master of applied queuing psychology, overestimates wait times for rides, so that its guests — never customers, always guests — are pleasantly surprised when they **ascend（登上）** Space Mountain ahead of schedule.

This is a powerful **ploy（策略）** because our memories of a queuing experience, **to use an industry term**（用行业术语来说）, are strongly influenced by the **final moments（最后一刻）**, according to [research](http://faculty.insead.edu/carmon/pdffiles/The%20Experienced%20Utility%20of%20Queuing.pdf) conducted by Ziv Carmon, a professor of marketing at the business school INSEAD, and the behavioral economist Daniel Kahneman.

When a long wait ends **on a happy note（以令人愉快的方式）** — the line speeds up, say — we tend to look back on it positively, even if we were **miserable（痛苦的）** much of the time.

**Conversely（相反）**, if negative emotions **dominate（占据绝大部分，统治了）** in the final minutes, our **retrospective（回顾） audit（审视） of the process** will **skew（转向）** toward **cynicism（愤世嫉俗，非常愤怒）**, even if the experience as a whole was relatively painless.

Professors Carmon and Kahneman have also found that we are more concerned with how long a line is than how fast it’s moving.

Given a choice between a slow-moving short line and a fast-moving long one, we will often **opt for（选择）** the former, even if the waits are **identical（相等的）**. (This is why Disney hides the lengths of its lines by **wrapping（包、裹）** them around buildings and using **serpentine（像蛇一样弯弯曲曲的）** queues.)

Perhaps the biggest influence on our feelings about lines, though, has to do with our **perception（感觉）** of fairness.

When it comes to lines, the universally acknowledged standard is first come first served: any deviation is, to most, a mark of **iniquity（不公）** and can lead to violent queue **rage（愤怒）**.

Last month a man was **stabbed（捅）** at a Maryland post office by a fellow customer who mistakenly thought he’d **cut in line（插队）**.

Professor Larson calls these **unwelcome（不受欢迎的） intrusions（举动） “slips” and “skips.”**

The demand for fairness extends beyond mere self-interest. Like any social system, lines are governed by an **implicit（隐性的）** set of **norms（规范）** that transcend the individual.

A study of fans in line for U2 tickets found that people are just as upset by slips and skips that occur behind them, and thus don’t lengthen their wait, as they are by those in front of them.

Surveys show that many people will wait twice as long for fast food, **provided（假若）** the establishment uses a first-come-first-served, single-queue ordering system as opposed to a multi-queue **setup（ordering system）**.

Anyone who’s ever had to choose a line at a grocery store knows how unfair multiple queues can seem; invariably, you **wind up（最终会，end up）** kicking yourself for not choosing the line next to you moving twice as fast.

But there’s a curious（古怪的） **cognitive（认知的）** **asymmetry（不对称）** at work here.

While losing to the line at our left drives us to despair, winning the race against the one to our right does little to lift our spirits.

Indeed, in a system of multiple queues, customers almost always **fixate on（关注）** the line they’re losing to and rarely the one they’re beating.

Fairness also **dictates（决定）** that the length of a line should be **commensurate（相称的）** with the value of the product or service for which we’re waiting.

The more valuable it is, the longer one is willing to wait for it.

Hence the supermarket **express**（快速移动的） line, a rare, socially **sanctioned** violation（违纪行为） of first come first served, based on the assumption that no reasonable person thinks a child buying a candy bar should wait behind an old man **stocking up（存货）** on **provisions（预先准备）** for the **Mayan apocalypse（玛雅人的世界末日）**.

Americans spend roughly 37 billion hours each year waiting in line.

The **dominant（主要的）** cost of waiting is an emotional one: stress, boredom, that nagging sensation that one’s life is slipping away.

The last thing we want to do with our **dwindling（正在减少的）** **leisure（空闲的）** time is **squander（浪费） it in stasis（静态）**.

We’ll never eliminate lines altogether, but a better understanding of the psychology of waiting can help make those **inevitable（不可避免的）** delays that inject themselves into our daily lives **a touch more bearable（略微更让人能够忍受一些）**.

And when all else fails, bring a book.

*Why We Should Study Cancer Like We Study Ecosystems*

When pine beetles **invaded（入侵）** North American forests, they **threw（make）** a **delicate（不堪一击的，易被破坏的）** ecosystem out of balance.

Cancer cells, too, behave like damaging **invasive（入侵的）** species.

Sometimes, thinking about an old problem from a **refreshing new angle（令人耳目一新的新角度）** is just the thing needed to find that **eureka moment（尤里卡时刻，指灵感突然出现）**.

Cancer, one of the most **notorious（臭名昭著的）** medical **maladies（疾病）**, has been studied **intensely（深入地）** in the current **era（时代）** of modern medicine.

But a growing number of researchers think that bringing a fresh, **out-of-the-box（不同寻常的）** approach to understanding the disease may lead to some novel **insights（了解）** and, perhaps, solutions.

And the subject that they’re hoping can serve as a window into the study of cancer may surprise you: ecology.

**On face value（表面上看）**, **oncology（肿瘤学）** and ecology seem vastly different.

For example, one is **localized（局部的，位于）** to specific cells in the body, while the other **by definition（定义上） spans（涵盖）** the entire globe.

But rather than labeling cancer as a group of mutated cells, as the **thinking** goes, we should see cancer as a **disruption（破坏）** in the balance of a complex microenvironment in the human body.

Like a damaging invasive beetle eating its way through forests in Colorado, a novel disease breaking out in populations of wild birds, or **loggers** **mowing（伐木工;砍伐）** down parts of the Amazon rainforest, cancer throws a **monkey wrench** into**（destroy）** an **otherwise（本来应该是）** **placid（平静、安宁的）**, balanced system.

This way of thinking makes cancer seem even more complex than it already is, but it could provide insights that **ultimately（最终）** make cancer more treatable, propose researchers from the Moffet Cancer Center in a paper published in the journal *Interface Focus*.

“Einstein is known to have said that everything should be made as simple as possible, but not simpler,” they write. “It turns out that complexity has its place and, as convenient as it would be for cancer biologists to study **tumor（肿瘤）** cells in **isolation（隔离的，单独的）**, that makes as much sense as trying to understand frogs without considering that they tend to live near swamps and **feast on insects（昆虫的盛宴）**.”

We tend to think of cancer only in terms of mutated cells, the authors continue.

But adopting this **narrow（狭隘的）** approach is like trying to understand why a frog has a sticky（粘粘的） tongue without taking into account that frogs use their tongues to catch insects.

Cancer cells, likewise, need **context（环境）**.

A **voracious（贪婪的，贪吃的）** cancer cell, for example, may **situate（定位，位于）** itself next to a blood **vessel（血管）** not by chance, but by choice so it can obtain more nutrients and oxygen to support its unlimited division.

Cancer cells must compete within the body for nutrients and other resources, just like animals living in an environment must compete with one another in order to survive.

This means that cancer, like any organism, must adapt to its environment in order to **thrive（发展壮大）**.

The researchers explain: It is now beginning to be widely accepted that cancer is not just a genetic disease but the one in which evolution plays a **crucial（关键的）** role. This means that tumor cells evolve, adapt to and change the environment in which they live.

The ones that fail to do so will ultimately become **extinct（灭绝的）**.

The ones that do will have a chance to invade and **metastasize（癌细胞转移）**.

The **capacity（能力）** of a tumor cell to adapt to a new environment will thus be determined by environment and the **cellular（细胞的）** species from the original site, to which it has already **painstakingly（费尽心力地）** adapted.

So how can all of this theory be applied in real life?

The environmental approach to understanding cancer is so complex that it **rules out（排除）** normal experiments; they could easily go away with so many different components to consider.

Instead, the researchers suggest turning to mathematics and **computation（计算）** for understanding the greater environmental context that leads to cancer.

Ecologists use one such mathematical approach, **game theory（博弈论）**, as a way to study evolutionary biology and the way animals **interact（交流）**:

The force of natural selection keeps ecosystem **denizens（全体生物）** focused on **optimizing（优化）** the bottom line: long-term **reproduction（繁殖）**.

In the games studied by evolutionary game **theoreticians（理论家）**, individuals compete for available resources using a variety of strategies.

These features（特征） and behaviors, known as the **phenotypic（表现型）** strategy（策略）, determine the winners and losers of evolution.

Behavioral **strategies（策略）** may change depending upon both an animal’s nature and the situation’s context.

Here’s a **hypothetical（假设的）** example, based upon game theory thinking: If two **hyenas（鬣狗）** are digging into a large, tasty **wild beast carcass（野兽的尸体）**, they’ll happily share that resource.

But if two lions find that same carcass, they will fight for **exclusive（独占的）** rights to eating it, meaning one lion emerges **victorious（胜利的）** and takes all the **meaty spoils（肥美的佳肴/战利品）**, while the other gets no food or even gets injured.

Finally, if a lion meets a hyena at the carcass, the hyena will **bolt（逃走）**, surrendering its goods to the stronger lion.

In other words, game theory players can react one of the three ways depending upon who they are and what’s going on: they can share, fight or **forfeit（逃走，弃权）**.

Similar games may be played with tumor cells.

“A good example would be a tumor with cells that move away when **confronted（面对）** with **scarce（稀少的）** resources and cells that stay to use them,” the authors write.

To make things even more complicated, however, tumor cells are known to change their behavior as they **proliferate（数量猛增）** and **metastasize（癌细胞转移）** throughout the body, meaning they could switch from a hyena to a lion.

One crucial thing that game theory at an ecosystem level shows us, they continue, is that **indiscriminately（盲目的）** focusing on killing as many tumor cells as possible might not provide the best **outcome（结果）** for the patient.

According to game theory models, the eventual long-term result of the game depends upon specific interactions between the players, not on the number of players involved.

Lions will continue to fight one another for food, regardless of whether two lions or 2,000 lions meet.

“A treatment based **exclusively（仅仅）** on **indiscriminately（盲目地）** removing most (but not all) cancer cells may only have a temporary effect; as in most cases, the original number of tumor cells will eventually be **restored（重新恢复）** and **exceeded（超过原来的）**,” the authors write.

Instead, game theory indicates that a more effective alternative would be based on trying to change the ways that cells interact with one another and with their environment.

This may affect the cells’ behavior, strength and reproductive success, the authors explain, which could drive a tumor’s evolution towards less aggressive cell types, or to a more stable **coexistence（共存）** with non-cancerous cells.

“The ecosystem view is, ultimately, a **holistic（整体的）** one that sees cancer progression as a process that emerges from the interactions between multiple cellular species and interactions with the tumor microenvironment,” the authors write.

“An ecosystem perspective presents us with **intriguing implications（有趣的可能的结果）**,” they say, along with a host of questions about how far the analogy between ecosystem and cancer can be taken.

For example, if cancer cells spread like an invasive species through an ecosystem, what evolutionary gain is achieved when the closed off ecosystem (a body) is **irreparably（不可修复的）** damaged (through a person’s death) such that the **pestilence（瘟疫/指癌细胞）** also dies?

Unlike a virus, which may kill its host but spread to other hosts in the process, cancer cells themselves, for the most part, have no means of spreading from individual to individual.

And are cancer cells taking their **cues（提示）** from processes driven by competition or from cooperation?

Thinking more **proactively（积极主动地）**, can non-cancerous cells be **triggered（激发）** so that they behave like lions and **usurp（篡夺）** cancerous cells’ resources until the cancer is **manageable（可控的）**?

While ecology and mathematics likely will not defeat cancer on their own, viewing the disease from this **perspective（方面）** could allow doctors to better predict where in the body tumor cells have the best and worst chances of survival, and how to most effectively prevent them from **proliferating（激增）**.

“The heart of the matter is that an ecological view of tumors does not **invalidate（使…无效）** but **complements（补充）** and builds upon decades of cancer research and undoubtedly this will lead to a better understanding of the biology of cancer and to new and improved **therapies（疗法）**,” the researchers conclude.

“We need to properly understand the trees (e.g. every leaf, twig and branch) before we can understand the forest but we cannot afford to ignore the forest because the trees are so interesting on their own.”

*The Inaugural Address of John F. Kennedy*

Vice President Johnson, Mr. Speaker, Mr. **Chief Justice（首席大法官）**, President Eisenhower, Vice President Nixon, President Truman, **reverend clergy（尊敬的神父）**, fellow citizens, we **observe（庆祝）** today not a victory of party, but a celebration of freedom--symbolizing an end, as well as a beginning--**signifying renewal（象征着革新）**, as well as change.

For I have **sworn（宣誓）** before you and **Almighty（全能的）** God the same **solemn oath（誓言）** our **forebears（先辈） prescribed（规定）** nearly a century and three-quarters ago.

The world is very different now.

For man holds in his **mortal（终有一死的，有限生命的）** hands the power to abolish all forms of human poverty and all forms of human life.

And yet the same revolutionary beliefs for which our forebears fought are still **at issue（在争议中）** around the globe--the belief that the rights of man come not from the **generosity of the state**（国家的慷慨）, but from the hand of God.

We dare not forget today that we are the **heirs（继承者）** of that first revolution.

Let the word **go forth（先行，向前走）** from this time and place, to **friend and foe（朋友和敌人）** alike, that the torch has been passed to a new generation of Americans--born in this century, **tempered（淬火，洗礼）** by war, **disciplined（训练）** by a hard and bitter peace, proud of our ancient heritage, and unwilling to witness or permit the slow **undoing（解放）** of those human rights to which this nation has always been committed, and to which we are committed today at home and around the world.

Let every nation know, whether it wishes us well or ill, that we shall pay any price, bear any burden, meet any hardship, support any friend, oppose any foe, to **assure（确保）** the survival and the success of liberty.

This much we **pledge（承诺）**--and more.

To those old **allies（盟友）** whose cultural and spiritual origins we share, we pledge the loyalty of faithful friends.

United there is little we cannot do in a host of cooperative **ventures（带有风险的活动）**.

Divided there is little we can do--for we dare not meet a powerful challenge **at odds（意见不一致）** and **split asunder（四分五裂）**.

To those peoples in the **huts（茅屋）** and villages of half the globe struggling to break the bonds of mass **misery（痛苦）**, we pledge our best efforts to help them help themselves, for whatever period is required-- not because the Communists may be doing it, not because we seek their votes, but because it is right.

If a free society cannot help the many who are poor, it cannot save the few who are rich.

To our sister **republics（共和国）** south of our **border（边境）**, we offer a special pledge: to **convert（转变，变成）** our good words into good deeds, in a new alliance for progress, to assist free men and free governments in **casting off（消除）** the chains of poverty.

But this peaceful revolution of hope cannot become the **prey of hostile powers（敌对势力的猎物）**.

Let all our neighbors know that we shall join with them to oppose aggression（敌对情绪） or **subversion（颠覆，策反）** anywhere in the Americas.

And let every other power know that this **hemisphere（半球）** intends to remain the master of its own house.

To that world assembly of **sovereign（有主权的）** states, the United Nations, our last best hope in an age where the **instruments（手段）** of war have far **outpaced（超出）** the instruments of peace, we **renew（重申）** our pledge of support--to prevent it from becoming merely a **forum for invective（谩骂的场所）**, to strengthen its shield of the new and the weak--and to enlarge the area in which its **writ may run（法令可能生效的地方）**.

Finally, to those nations who would make themselves our **adversary（对手）**, we offer not a pledge but a request: that both sides begin anew the quest for peace, before the dark powers of destruction **unleashed（释放）** by science **engulf（毁灭）** all humanity in planned or accidental self-destruction.

We dare not tempt them with weakness.

For only when our **arms（军备）** are sufficient beyond doubt can we be certain beyond doubt that they will never be employed.

But neither can two great and powerful groups of nations take comfort from our present **course（道路）**--both sides overburdened by the cost of modern **weapons（武器）**, both rightly alarmed by the steady spread of the deadly **atom（原子弹）**, yet both racing to alter that uncertain balance of terror that **stays（抑制，束缚）** the hand of mankind's final war.

So let us begin anew--remembering on both sides that **civility（礼貌）** is not a sign of weakness, and **sincerity（诚意）** is always **subject to（有待于）** proof.

Let us never negotiate out of fear, but let us never fear to negotiate.

Let both sides explore what problems unite us instead of **belaboring（责骂）** those problems which divide us.

Let both sides, for the first time, **formulate（制定）** serious and **precise（明确的）** proposals for the inspection and control of arms, and bring the absolute power to destroy other nations under the absolute control of all nations.

Let both sides seek to **invoke（召唤）** the wonders of science instead of its terrors.

Together let us explore the stars, conquer the deserts, **eradicate（根除）** disease, **tap（触及）** the ocean depths, and encourage the arts and commerce（贸易）.

Let both sides unite to **heed（注意）**, in all corners of the earth, the command of Isaiah--to "undo the heavy burdens, and to let the oppressed（被欺压的人） go free."

And, if a **beachhead（滩头阵地）** of cooperation may push back the jungle of **suspicion（怀疑）**, let both sides join in creating a new **endeavor（尝试）**--not a new balance of power, but a new world of law--where the strong are just and the weak secure and the peace preserved.

All this will not be finished in the first one hundred days. Nor will it be finished in the first one thousand days, nor in the life of this administration, nor even perhaps in our lifetime on this planet. But let us begin.

In your hands, my fellow citizens, more than mine, will **rest（决定）** the final success or failure of our course.

Since this country was founded, each generation of Americans has been **summoned（召唤）** to give **testimony（见证，证明）** to its national loyalty.

The graves of young Americans who answered the call to service surround the globe.

Now the **trumpet（号角）** summons us again--not as a call to bear arms（拿起武器）, though arms we need--not as a call to battle, though embattled we are--but a call to bear the burden of a long **twilight（没有前途）** struggle, **year in and year out（年复一年）**, "**rejoicing（感到欣慰）** in hope; patient in **tribulation（苦难）**," a struggle against the common enemies of man: **tyranny（专制）**, poverty, disease, and war itself.

Can we **forge（组成，成立）** against these enemies a **grand（大的）** and global alliance, North and South, East and West, that can assure a more fruitful life for all mankind? Will you join in that **historic（有历史意义的）** effort?

In the long history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger.

I do not **shrink（回避）** from this responsibility--I welcome it.

I do not believe that any of us would exchange places with any other people or any other generation.

The energy, the faith, the devotion which we bring to this **endeavor（尝试）** will light our country and all who serve it.

And the **glow（光亮）** from that fire can truly light the world.

And so, my fellow Americans, ask not what your country can do for you--ask what you can do for your country.

My fellow citizens of the world, ask not what America will do for you, but what together we can do for the freedom of man.

Finally, whether you are citizens of America or citizens of the world, ask of us here the same high standards of strength and sacrifice which we ask of you.

With a good **conscience（问心无愧）** our only sure reward, with history the final judge of our deeds, let us go forth to lead the land we love, asking his blessing and his help, but knowing that here on earth God's work must truly be our own.

*Hiroshima–The “Liveliest” City in Japan*

*The article is written in 1970, 25 years after the explosion of the atomic bomb in the city of Hiroshima.*

*The story is mainly divided into three parts: the writer’s arrival at Hiroshima, the* ***reception（招待会）*** *by the city mayor, and his visit to the atomic* ***ward（病房）*** *in the hospital.*

*The writer uses the first-person* ***narrative voice（叙事视角）****.*

*The story begins with the writer’s arrival at the railway station.*

*The writer does not try to* ***conceal（遮掩）*** *his emotions about the city or his attitude toward the atomic bomb.*

*In the very first paragraph he says, “I had a* ***lump（肿块,metaphor）*** *in my throat and a lot of sad thoughts on my mind.” He asked, “Was I not at the scene of the crime?” On his way to his destination he observed the crowds of Japanese.*

*At the reception, the writer expected the mayor to talk about the atomic bomb and its tragic impact.*

*To his great surprise, the mayor referred to Hiroshima as the “liveliest city in Japan.” The puzzled writer was told by an elderly Japanese man that there were two schools of thoughts in Hiroshima about the bomb.*

*With many prepared questions, the writer visited the atomic ward in the hospital.*

*He interviewed atomic bomb victims and came to his conclusion about Hiroshima.*

“Hiroshima! Everybody off!” That must be what the man in the Japanese **stationmaster（站长）**’s uniform shouted, as the fastest train in the world slipped to a stop in Hiroshima Station.

I did not understand what he was saying.

First of all, because he was shouting in Japanese.

And secondly, because I had a lump in my throat and a lot of sad thoughts on my mind that had little to do with anything a Nippon railways official might say.

The very act of stepping on this soil, in breathing this air of Hiroshima, was for me a far greater adventure than any trip or any **reportorial assignment（采访任务）** I’d previously taken.

Was I not at the scene of the crime?

The Japanese crowd did not appear to have the same **preoccupations（心事重重）** that I had.

From the sidewalk outside the station, things seemed much the same as in other Japanese cities.

Little girls and elderly ladies **in kimonos（穿着和服的） rubbed shoulders（meet）** with teenagers and women in western dress.

Serious looking men spoke to one another as if they were **oblivious（没有意识到的，未察觉的）** of the crowds about them, and **bobbed up and down repeatedly（重复的鞠躬动作）** in little **bows**, as they exchanged the **ritual formula（礼节性的套话）** of gratitude and respect: “Tomo aligato gozayimas.”

Others were using little red telephones that hung on the **facades（建筑物正面）** of grocery stores and **tobacco（烟草）** shops.

“Hi! Hi!” said the cab driver, whose door popped open at the very sight of a traveler.

“Hi,” or something that sounds very much like it, means “yes.”

“Can you take me to City Hall?” He **grinned（龇牙笑）** at me in the **rear-view（后视）** mirror and repeated “Hi!”

“Hi!” We set off at top speed through the narrow streets of Hiroshima.

The tall buildings of the **martyred（殉难的）** city flashed by as we **lurched（突然倾斜）** from side to side in response to the driver’s sharp **twists（急转弯）** of the wheel.

Just as I was beginning to [find the **ride（旅程） long**], the taxi **screeched** to a **halt（停止）**, and the driver got out and went over to a policeman to ask the way.

As in Tokyo, taxi drivers in Hiroshima often know little of their city, but to avoid loss of face before foreigners, will not admit their ignorance, and will accept any destination without concern for how long it may take them to find it.

At last this **intermezzo（小插曲）** came to an end, and I found myself in front of the **gigantic（大的）** City Hall.

The **usher（引导员）** bowed deeply and **heaved（发出）** a long, almost musical sigh, when I showed him the invitation which the mayor had sent me in response to my request for an interview.

“That is not here, sir,” he said in English. “The mayor expects you tonight for dinner with other foreigners on the restaurant boat. See? This is where it is.” He **sketched（画草图）** a little map for me on the back of my invitation.

Thanks to his map, I was able to find a taxi driver who could take me straight to the **canal embankment（运河堤）**, where a sort of **barge（驳船）** with a roof like one on a Japanese house was **moored（停泊）**.

The Japanese build their traditional houses on boats when land becomes too expensive. The rather arresting（引人注意的） **spectacle（景观）** of little old Japan **adrift（飘动）** amid **beige（米色的）** concrete **skyscrapers（摩天大楼）** is the very symbol of the **incessant（持续不断的）** struggle between the **kimono（和服）** and the miniskirt.

At the door to the restaurant, a **stunning（令人惊奇的）**, **porcelain-faced（肤如凝脂/瓷器的）** woman in traditional costume asked me to remove my shoes.

This done, I entered one of the **low-ceilinged（天花板很低的）** rooms of the little floating house, **treading（踩）** cautiously on the soft matting and experiencing a **twinge（剧痛）** of embarrassment at the prospect of meeting the mayor of Hiroshima in my socks.

He was a tall, thin man, sad-eyed and serious.

Quite unexpectedly, the strange emotion which had **overwhelmed（使我难过）** me at the station returned, and I was again **crushed（*比喻*，压迫）** by the thought that I now stood on the site of the first atomic **bombardment（轰炸）**, where thousands upon thousands of people had been **slain（杀死）** in one second, where thousands upon thousands of others had **lingered（留存）** on to die in slow **agony（痛苦）**.

The introductions were made.

Most of the guests were Japanese, and it was difficult for me to ask them just why we were gathered here. The few Americans and Germans seemed just as **inhibited（拘谨的）** as I was.

“Gentlemen,” said the mayor, “I am happy to welcome you to Hiroshima.”

Everyone bowed, including the Westerners.

After three days in Japan, the **spinal** **column（脊柱）** becomes extraordinarily **flexible（灵活可变）**.

“Gentlemen, it is a very great honor to have you here in Hiroshima.”

There were fresh bows, and the faces grew more and more serious each time the name Hiroshima was repeated.

“Hiroshima, as you know, is a city familiar to everyone,” continued the mayor.

“Yes, yes, of course,” murmured the **company（同伴）**, more and more **agitated（不安，焦虑）**.

“Seldom has a city gained such world **renown（声望）**, and I am proud and happy to welcome you to Hiroshima, a town known throughout the world for its—**oysters（牡蛎）**.”

I was just about to make my little bow of **assent（同意）**, when the meaning of these last words **sank in（被完全理解）**, **jolting（唤醒）** me out of my sad **reverie（遐想）**.

“Hiroshima–oysters? What about the bomb and the misery and humanity’s most **heinous（十恶不赦的）** crime?”

While the mayor went on with his speech in praise of southern Japanese sea food, I cautiously backed away and headed toward the far side of the room, where a few men were talking among themselves and paying little attention to the mayor’s speech.

“You look puzzled,” said a small Japanese man with very large eye-glasses.

“Well, I must **confess（承认）** that I did not expect a speech about oysters here. I thought that Hiroshima still felt the impact of the atomic cataclysm.”

“No one talks about it anymore, and no one wants to, especially, the people who were born here or lived through it.”

“Do you feel the same way, too?”

“I was here, but I was not in the center of town. I tell you this because I am almost an old man. There are two different schools of thought in this city of oysters, one that would like to preserve **traces（遗迹？踪迹？）** of the bomb, and the other that would like to get rid of everything, even the monument that was **erected（建立）** at the point of impact.

They would also like to **demolish（拆除）** the atomic museum.”

“Why would they want to do that?”

“Because it hurts everybody, and because time **marches on（向前进）**. That is why.”

The small Japanese man smiled, his eyes nearly closed behind their thick **lenses（镜片）**.

“If you write about this city, do not forget to say that it is the gayestcity in Japan, even if many of the town’s people still bear hidden wounds, and **burns（烧伤）**.”

Like any other, the hospital **smelled of** **formaldehyde and ether（闻到甲醛和乙醚的味道）**.

**Stretchers（担架）** and wheelchairs lined the walls of endless **corridors（走廊）**, and nurses walked by carrying **nickel-plated（镀镍的）** instruments, the very sight of which would send **shivers（寒战）** down the **spine（脊柱）** of any healthy visitor. The so-called atomic section was located on the third floor. It consisted of 17 beds.

“I am a fisherman **by trade（职业是）**.

I have been here a very long time, more than twenty years,” said an old man in Japanese **pajamas（睡衣）**.

“What is wrong with you?”

“Something inside. I was in Hiroshima when it happened. I saw the fire ball. But I had no burns on my face or body. I ran all over the city looking for missing friends and relatives. I thought somehow I had been **spared（没人要的）**. But later my hair began to fall out, and my **belly（肚子）** turned to water. I felt sick, and ever since then they have been testing and treating me.”

The doctor at my side explained and **commented（评论）** upon the old man’s story, “We still have a handful of patients here who are being kept alive by **constant care（持续的关怀）**. The others died as a result of their injuries, or else committed suicide.”

“Why did they commit suicide?”

“It is **humiliating（耻辱的）** to survive in this city. If you bear any visible scars of atomic burns, your children will **encounter prejudice（遇到偏见）** on the part of those who do not. No one will marry the daughter or the niece of an atomic bomb victim. People are afraid of genetic damage from the radiation.”

The old fisherman **gazed（盯着）** at me politely and with interest.

Hanging over the patient was a big ball made of bits of brightly colored paper, folded into the shape of tiny birds.

“What’s that?” I asked.

“Those are my lucky birds. Each day that I escape death, each day of suffering that helps to free me from earthly cares, I make a new little paper bird, and add it to the others. This way I look at them and congratulate myself of the good fortune that my illness has brought me. Because, thanks to it, I have the opportunity to improve my character.”

Once again, outside in the open air, I tore into little pieces a small notebook with questions that I’d prepared in advance for interviews with the patients of the atomic ward.

Among them was the question: Do you really think that Hiroshima is the liveliest city in Japan? I never asked it. But I could read the answer in every eye.