A Brief and Inaccurate but True Account of the Origin of Living Books
Ken Liu

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Texts are always packed, by the reader's prior knowledge and expectations, before they are unpacked.
 — Louis Menand

Once upon a time, books did not change.

This was a very, very long time ago, before storytelling robots and auto-electro-authors and algorithms that watched and swatched, conjugated and cogitated, predisposed and prepossessed, differentiated and deference-rated, played and prayed, mocked and rocked, ticked and tocked.

Instead, books were written by people with squishy, pulpy, flesh-bound brains, and digits that were not digital. Some pecked away at clickity-clackety word-pianos, composing books one letter at a time on a screen, arranging electrons in crude lumps; others scrawled metal nibs laden with ink across pages of woven cellulose, their thoughts squeezed out in dribs and drabs like the watery patterns left on the pond's reedy shore after the departure of a flock of wild geese; still others whispered their books into machines in which tiny Maxwellian demons labored to turn the energy of vibrating air into information, and, when given the magical command, recovered the voice from the graven image.

But in every case, the book was the book was the book was the book. Words were imprinted by lasers and magnets onto compressed sheets of wood fiber, bound

into volumes and codices, shipped to stores like the fossilized remains of thought pressed into sedimentary strata. The map was the territory, and beyond the edge there was no terra incognita.

And people bought them and took them home and read them by candlelight and fluorescent light and sunlight and no light. But no matter how many times they read the books, the words did not vanish or varnish; the sentences did not swerve or recurve; the paragraphs did not yearn or yaw; the characters did not rebel or revel; the plot did not change and rearrange.

The books were not alive.

The legible (from Latin, *legere*) and the legal (from Latin, *lex*, *legis*) share the same Indo-European root, *leg-*, which means to collect, gather, pick out, select, enumerate. Other words derived from the same root are *legion* (a gathering of soldiers), *lignum* (wood, or something that is gathered), *electio* (choosing and picking), and *lecture* (picking out words like a breadcrumb trail through a dark forest for the delectation of an audience).

To read is to gather meaning by choosing from books — collections of words — interpretations that follow the laws — gatherings of rules — of narrative and semiotics.

But even then, books were more than mere static strings of text. Like a road through a rapidly changing neighborhood, the experience of reading a book changed each time the reader traveled down it. The terror and delight inspired by the foreboding forest with its gingerbread house and oven-tending witch at age four were replaced by rebellious revelry at identifying the witch with the authority-mother at age fourteen, which, in turn, became honey-bitter nostalgia and anise-sweet acceptance of the weight of millennia of parental drama at age forty-four.

The books did not change, though readers did. Inanimate roads were traversed by animated souls. The map was not the territory, which could not be contained by the page. Each reader left something of herself behind between the lines, like defiant scrawls on signposts along the road proclaiming: I was here.

The first attempts to bring books to life offered choices. Told in the second person, the flowing tale presented the reader-hero with decisions at key plot points that branched and diverged and bifurcated and ramified, like parallel universes that sprang into being with every breath.

There were elaborations upon this formula: primitive computers were enlisted to present the book in the form of scrolling text, and later, ever-more sophisticated graphics and avatars and animations were added. What the ancients called "artificial intelligence" was added to give the reader the illusion of interacting with a living thing, an interpreter who understood the reader's queries and commands and constructed the tale in response to the probing by the reader's mental pseudopod.

But fundamentally, these books were just many books gathered into one volume. The possibilities were limited, and after exploring the maze of twisty little passages, the reader found them all alike — a closed set of predestined conclusions.

The introduction of thinking machines into the relationship between text and

reader did offer new possibilities of reading, techniques, and constructs that had once been inconceivable.

A man named Vannevar Bush devised a machine called the memex. This was a device that externalized the associative organs of individual brains and wove them into a global network. Texts would be digitized, cut up into snippets, and linked to each other by readers through whatever metaphoric or metonymic relationships the texts inspired in them.

Like strengthening synaptic connections, the links represented memory and hope. Other readers could traverse these links and thereby experience the mental life of another, and when taken together, the network of all memex trails formed a magnum opus, a map of the grand maze of our cognition, heretofore terra incognita. The memex was as close as we ever got to a true melding of the minds.

No real memex was ever made. Many tried to make aspects of it real, but none came close. What they ended up with were pale imitations, shadows of the Ideal Book that existed only by not existing.

Still others tried to build machines that wrote books.

The goal of many of these efforts wasn't a living book — or even a good book — but rather a side effect: if a machine could write a book that was indistinguishable from a book written by a human, did that mean that the machine was as intelligent as a person or at least that a person was no more intelligent than a machine?

Some of these algorithms were humble and useful. When presented with tables of data, for example, they filled the numbers into pre-existing templates and told stories about athletes and money. Compared to reporters, who once wrote such stories, the machines were cheaper, faster, and never missed a deadline or demanded a raise.

Other algorithms took on more fanciful aspects. For a while, every November, enthusiasts around the world gathered to program machines to write novels. Some followed narrative logic distilled from Ph.D. theses about folklore and the hero's journey, plugging in randomly generated characters and plots created by mixing and matching elements culled from a database; others conjured dialogue out of the chatter of strangers over the ether; still others challenged the notion of a narrative by deconstructing our fundamental assumptions — could a novel, for example, consist of nothing but a series of definitions of definitions of definitions in infinite deference, where synonymity is the vehicle for difference?

Nonetheless, for the most part, these early mechanical writing engines were crude affairs. Their outputs were eminently risible, barely legible, completely unintelligible. They were entries in a game whose goal was deemed so impossible that it wasn't even worth taking seriously. The admiration came from the fact that it could be done at all rather than that it was done well.

But games have a habit of becoming serious business.

The ancients built killer robots and flying drones and caretaker automata that hovered over the uncanny valley. They debated the ethics of having sex with machines and falling in love with machines and endowing them with formulas to decide whether to hold the wheel steady to save the old man whose granddaughter was strapped into the car seat beside him or to swerve into a road divider and kill them, thereby saving the young mother trying to cross the street.

These were all important inventions, inventions that mattered a great deal and changed the world.

But the first mechanical mind that could be said to possess a soul was a program that wasn't housed in a shell that did anything impressive at all. It told stories based on pictures.

It was created as a deep-learning neural network, a disembodied, simulated brain constructed out of electrons flowing between minuscule switches pursuant to a contract drafted by the laws of a programming language. The program learned to recognize objects from images, to look up what they meant on the ethereal network from strangers, to construct the web of associations whose interplay, collectively, we call culture.

And then, to prime its hoard of words, the programmer had the program read romance novels: the repository of our yearning and pining and love and lust.

The programmer contemplated the directory, as empty as the Void before Creation; then he populated it with a series of photographs from his childhood and youth: a boy climbing a slide that must have seemed to reach as high as a road to heaven; a teenager awkwardly preparing for his first unchaperoned date; a young man on a beach, gazing resolutely at the sea, and in the background the young woman whose every gesture seemed to him perfect, a goddess, laughing and not seeing; a group shot of friends on the last day of college — a place where people gather to read — the young man and the young woman standing at two ends of the row, as far apart as antipodes from antipodes.

The directory was no longer empty, but it was also devoid of narrative, of pride and prejudice, of sound and fury, of recurrent patterns and symbolic names and deep themes and shallow motivations. It was an Eden without life.

"Go," commanded the programmer, "and tell me a story."

And the program was off, parsing images, recognizing objects, looking up words, building associations. Then, from this kernel, this skeleton, this one-thing-happening-after-another, the program called on its vast store of florid clichés and purple prose and erotic imagery and inviolate rules — the laws of romance packaged for commerce — and began to tell a story.

The boy was without fear and without regret without within.

> *She walked in not out about. Dark hair like the kelp forest from which the selkies called. Green eyes as warm as the cup of tea he sipped. A jacket that spoke of dust and dust-ups and a skirt that never blushed. A face that glowed and glowered.*

> *"Hello," she said. "Do you know where the intro Romanesquest 201 holds its sectional? Can you help you?"*

> *And his head felt cold and hot and awake and a dream all at once. He swallowed. He could not speak. He did not need to speak.*

There was longing seeping from the lines, he realized, and a ravenous idealism that was as tender as baby bamboo shoots. The solecisms didn't matter, neither did the nonsensical plot. There was grief and passion and evocation of memories twisted just beyond recognition to not make him blush. He could not have written these lines, but the lines somehow also belonged to him.

"I could work with this," he whispered, and then, a little later: "Let's tell a story together."

The creator and his machine — was it a demon or an angel? — wove the tale together until it was impossible to tell the teller from the told. It was autobiography — what fiction isn't? — but it wasn't reportage — what fiction is? The program, gazing on images of his life, had extracted their essence and threw it into infinite regress, a series of deferrals that held off the ending, foreplay that arced away from the climax while also drawn irresistibly to it, an incandescent meteor.

The story was being read as it was written, the writer speaking to and through his instrument. This was a book that would never end.

He never wanted to read another novel.

From that humble beginning came the living book.

Every book is a blank page, an empty screen, an experience field devoid of presence. The reader begins by telling the book, "Tell me a story."

"Let's tell a story together," says the book.

The act of reading, at its heart, is just another kind of writing. It is a gathering of meaning, bringing into life a world that does not yet exist, filling in the blanks between the lines and the gaps between the words with images mutated from the reader's own life.

The best books are houses that suit the reader: there is enough solid structure to support the dance of the imagination but the ceilings are not so low as to constrain leaps of fancy; there is enough furniture for the reader to recline and rest, but not so much as to feel cluttered; there are enough curios set about to inspire the drive for exploration, but not so many as to overwhelm with confusion.

The dead books with their fixed words and unalterable fates were never going to satisfy all readers, no more than any single house can accommodate all who seek a dwelling just right for them.

But the living book grows with you. The story you create together is a vehicle that shapes and is shaped by the tenor of your thought — a metaphor-filled narrative memex that takes from every genre and gives to every tradition.

From first babbles to first loves, from last kisses to final goodbyes, you are the book's hero and the book is a map of your world — but not like a map drawn to reflect reality; rather, it is a map of smells forgotten and spells forgiven and miles foregone and styles forsworn, as well as a map of smiles treasured and wiles pleasured and victories measured and painful stories-in-the-making severed.

All the living books were one, and yet no two readers will read the same book. How can they? What is life but a gathering of sounds and furies, of differences and deferments, of legibles and intelligibles, signifying everything?

Now, let's read.

Ken Liu

關於活書起源的一個簡略、
不精確但卻真實的紀錄
劉宇昆

文本從來都是關閉的，是讀者的知識儲備和期待將其打開。
—— 路易斯·梅南德（Louis Menand）

很久以前，書不會變化。

那是在很久很久以前，彼時還沒有講故事的機器人和自動電子寫作者，沒有既可以注視又可以測試，既擅集結又擅總結，既先入為主又有先見之明，既彼此有別又分門別類，會玩鬧又會禱告，既嘲諷又拉風，既可以計時又無比守時的各式演算法。

相反，書是人寫就的，用他們黏糊糊、軟塌塌、肉做的腦子和手指，同數字化扯不上關係。有些人咔嗒咔嗒敲擊著按鍵，一次只能在屏幕打出一個字母，那些粗糙的電子團排列起來就變成了一本書；一些人用灌滿了墨水的金屬筆尖在織就的植物纖維上書寫，他們的思想一點一點擠出來、滴滴答答落下，就像是一群野鵝行過後留在蘆葦蕩岸邊的水痕；還有些人，他們對著機器講述，那些小小的麥克斯韋（Maxwellian）精靈把震顫氣流的能量轉化成信息，又隨著一聲魔術般的指令，把聲音刻錄下圖像變做文字。

但無論以上哪種情形，書即是書即是書即是書。雷射光和磁粉把詞語印在木頭纖維壓制成的紙張上，組成書卷和典籍，運送至書店，就像是被擠壓進沉積岩層中的思維化石一般。地圖就是疆域，其邊緣之外，再無未知領域。

然後人們購買它們，帶它們回家，伴著燭光或是螢光或是日光或是根本無光閱讀它們。但無論他們把書讀上多少遍，那些詞語都既不會消失也不會修飾；

那些句子既不會轉頭也不會掉頭;那些段落既不會遠航也不會偏航;
那些角色既不會叛逆也不會沈溺;情節既不會改裝也不會重組。
　　書不是活的。

「合情的」,(the legible,來自拉丁詞 *legere*)和「合法的」(the legal,來自
拉丁詞 *lex*、*legis*)在歐印語系中共享同一個詞根 —— *leg-*,意思是收集、匯攏、
挑揀、選擇和清點。源自同一個詞根的詞彙還有「*legion*」(兵團),「*lignum*」
(木頭,收集來的東西),「*electio*」(挑選),以及「*lecture*」(就像是在漆黑
的森林裡撿拾面包屑一樣挑選詞語,以娛觀眾)。
　　閱讀就是從書中選取和匯攏意義 —— 詞彙的集合 —— 理解則遵循著
法則 —— 規則的匯集 —— 敘事和符號的規則。

但即便在彼時,書也不僅是一行行毫無變動的文本。如同穿越一片疾速變化
的街區的道路,閱讀一本書的體驗也隨著讀者每次的穿越而不同。四歲時,
充滿不祥之感的森林和其中的薑餅小屋、守著爐火的巫婆帶來恐懼和激動,
十四歲時,這些被暗自把自己嚴厲母親視作書中巫婆的叛逆快感所取代,再然後,在
四十四歲的年紀,又變成了甜蜜苦澀的懷舊之情,以及對千百年來為人
父母之重擔的甘心領受。
　　書不會變化,但讀者卻會。生機勃勃的人穿越了無生機的道路。地圖
並非疆域,溢出了書頁之外。每個讀者都把部分的自己留在了字裡行間,
就像是道路兩旁指示牌上挑釁般的胡亂塗寫,宣稱:我曾在這裡。

賦予書生命的一系列最初的嘗試提供了不同選項。故事的展開使用第二人稱,讀
者成為主角,在每個情節發展的關鍵點上被賦予做決定的權力,故事
由此分岔、偏移、交叉、蔓生,就像是無數的平行宇宙,每一次的吞吐呼吸
之間,都在獲得生命。
　　這個方法又得到了進一步的完善加強:早期的電腦用滾動文本的方式
呈現一本書,隨後又增添了更為複雜精妙的圖案、虛擬形象和動畫。古人所稱的
「人工智能」讓讀者產生一種與活物互動的幻覺,它就像是一名解說者,
對讀者的疑問和指令了然於胸,回應著他們思維觸角的活動,以此構建故事。
　　但從根本上來說,這些書只不過是將很多書匯集成卷。可能性是有限的,在
拐彎抹角的小段落構成的迷宮裡一番探險之後,讀者發現,它們之間並
沒有什麼不同 —— 只不過是一些早已命定的結尾組成的封閉集合。

將思維機器帶入文本和讀者間的關係,這提供了新的閱讀可能性、技巧和
構想,這些曾是超乎想像的。
　　一個名叫萬尼瓦爾·布什(Vannevar Bush)的人構想出了一個名為
「memex」的信息機器。該機器將個體大腦中的聯想器官外化,並將它們編織進一
個全球性網絡。文本被數字化,切成代碼片段,通過讀者被該文本
激發出的或隱喻或轉喻的各式關係而彼此鏈接。
　　如同強化版的大腦突觸連接,這些鏈接代表著記憶和希望。其他的
讀者可以踏足這些鏈接,從而體會另外一個人的思維活動,總體來看,所有
的memex路徑構成了一部巨著,即我們認知的巨大迷宮之地圖,此前所謂
的未知領域。Memex是迄今為止最接近可以真正焊接思維的機器。
　　但真正的memex從未被制造出來過。不少人將其部分功能實現,但從未
有人真正接近終極目標。他們所能做到的不過是一些蒼白的仿制品,不過是只

能存在於不存在之境的「理想之書」的影子。

還有一些人，他們曾嘗試製造出可以寫書的機器。

這些嘗試的目標並非活書——甚至未必是寫出本好書——那不過是副作用：如果說機器寫出的書同人寫出的書已無從分辨，那是否意味著，機器擁有同人一樣的智慧，或者至少說明，人的智慧也並不高於機器？

其中一些演算法是實用並且低調的。舉例來說，給它們一些數據表，它們會把數字填進已經設計好的模版，生產出體育或者金融報道。相較於記者——撰寫此類故事從前是他們的工作，機器更便宜、迅速，從來不會拖稿，也不會要求加薪。

另外一些則更花哨。曾經一度，每年的11月，來自世界各地的狂熱者們齊聚一堂，通過編寫程序讓機器寫出小說。有些人利用的是從博士論文裡提煉出的關於民間傳說和英雄之旅理論中的敘述邏輯，將其插入隨機生成的角色和情節——這些都是從數據庫中摘選、拼貼而成；有些人則從路人的漫天開扯裡截取對話，從而組織起敘事；還有一些人，他們通過解構我們的基本預設來挑戰敘事的定義——比如，一個小說是否可以僅僅是關於定義的定義的定義，如此無限推衍，而同義性恰恰是差別的載體？

但無論如何，這些早期的機械書寫工具大多是很粗糙的。它們的產出極為荒謬，幾乎不合情理，更徹底談不上智性。它們只是遊戲裡的紀錄條目，而遊戲的目標聽起來如此脫離實際，幾乎沒辦法拿它當真。讓人讚嘆的僅僅是它可以被做到，而不是被做好。

但遊戲總會成真。

古人造出了殺人機器人，無人駕駛的飛機和引發出「恐怖谷」心理恐懼的仿真護士。他們進行了一系列事關倫理道德的辯論，比如能否和機器做愛，能否和機器墜入愛河，能否給機器安裝一個程序來決定人之生死——是應該緊急剎車，還是為了救下那個正橫穿馬路的年輕母親而任車衝向隔離帶，讓車裡那位老者和他旁邊用安全帶綁在車座上小孫女死於車禍？

這些都是極其重要的發明，意義深遠，改變了世界。

但第一個可說擁有靈魂的機械思維並非一個功能和外形多麼令人瞠目結舌的實體。它基於圖像講述故事。

它被設計成一個深度學習的神經網絡，一個無形的虛擬大腦，其中電子脈衝遵巡著依據程序語言規則制定的守則，在微開關之間流動往覆。這個程序學會了從圖像中辨識對象，從外接的網絡中查找它們的意義，由此織就聯想之網——這些聯想的互動組合在一起，我們稱之為文化。

為初始化它的詞彙庫，程序員開始讓程序閱讀浪漫小說：那儲藏著我們的愛欲情仇的倉庫。

程序員把程序設想成如同創世紀之前的洪荒一樣空無一物；然後他輸入了自己童年和青年時代的一些照片：一個小男孩在爬一個斜坡，對他來說那肯定高得像是通往天堂之路；一個扭捏的少年正準備第一次獨自赴約；一個年輕人站在海灘上，堅定地望著大海，背景裡有個年輕女人在笑，卻沒有看向鏡頭，在他眼裡她的一舉一動都近乎完美，她就是女神；但在大學畢業時一組友人的照片裡——大學即大家聚在一起閱讀的地方——那個年輕男人和那個年輕女人卻處在一排人的兩頭，就像是地球兩極之間的距離一樣遙遠。

目錄不再是一片空白，但它仍然缺少敘事，缺少傲慢與偏見，喧嘩與騷動，缺少複現模式、象徵之名，深刻的主題和膚淺的動機。這裡是沒有生命的伊甸園。

「開始，」程序員下達指令，「給我講個故事。」
程序啓動了，分析圖像，辨識對象，查找詞彙，建立聯想。從這個核心，

這個骨架，這種循序漸進開始，程序激活了它儲存的大量浮華的陳腔濫調，
俗麗的行文風格，情慾萌動的各式意象，以及那些不可違逆的規則，即使得
浪漫小說暢銷的種種法則 —— 開始講述一個故事。

　　　　　小男孩沒有恐懼沒有悔恨沒有有內在。
　　　　　她走進來不是走出去或者。深色頭髮像海藻叢，海豹人在其中
嚎叫。綠眼球像是他啜飲的茶一樣溫暖。夾克衫疊著灰塵，喋喋吵鬧，
還有一條從不臉紅的短裙。閃閃發光的臉，怒氣滿面。
　　　　　「你好，」她說，「你知道浪漫指南201在哪兒分章節的嗎？你可以
幫你嗎？」
　　　　　他感覺額頭同時又冷又燙，既清醒又似一個夢。他吞咽了一口
口水。他不能說話。他無需說話。

　　他意識到，字句間滲透出渴求，一種如鮮筍般嬌嫩的極度理想主義。語法
錯誤並不打緊，無厘頭的情節也可以忽略不計。這其中有哀傷，有激情，喚起了
扭曲到幾乎無法辨認的記憶，差一丁點兒就要讓他臉紅。他絕對寫不出這些
句子，但這些句子從某種意義上來說又確實屬於他。
　　「這值得繼續研究，」他輕聲說道，又過了一小會兒，他說：「我們來一起
講個故事。」

創造者和他的機器 —— 是魔鬼還是天使？ —— 一同編織故事，直到再也無法
講清楚誰是講述者誰又是被講述者。它是一部自傳 —— 哪本小說不是呢？ ——
但它又不是一篇報道 —— 哪本小說又是呢？這個程序，凝視著他生命中的
圖像，攫取它們的精髓，並將之拋進無限的逆行之中，一系列的拖延使得結局
遲遲不能出現，前戲既努力掙脫高潮又不由自主地向它靠攏，似一顆熾熱
的流星。
　　故事在被閱讀的同時在被書寫，寫作者對著機器的同時也通過機器講述。
這是一本永無終結的書。
　　他再也不想多讀一本小說。

就是這樣一個平淡的開頭之後，活書出現了 。
　　每本書都是一張空白的頁面，一個空白的屏幕，一片無人涉足的經驗之地。
讀者跟書說，「講一個故事吧。」
　　「我們來一起講個故事。」書答道。
　　閱讀這個行為，究其根本，是寫作的另一種形式。它是意義的匯集，將一個
尚且不存在的世界喚醒，把源自讀者自身生活的圖像填充進行與行的間距，
詞與詞的縫隙。
　　最好的書就像是爲讀者量身打造的房子：它結構穩固，足以支持想像力
起舞，但天花板又不至於太低，以免限制住奇思妙想的躍動；房子裡有足夠的
家具，讀者可以依靠休息，但又不可太多，以免變得雜亂無章；有足夠的奇珍
古玩，激起一探究竟的欲望，但又不可過量，以免擾人清明神思。
　　死書，固定的詞句，不可更改的命運，無法滿足所有的讀者，就好像沒有
哪一座房子可以滿足所有在尋找棲身之所的住戶。
　　但活書，它同你一起生長。你們一同創作的故事塑造了你思想的信條，

同時又爲它們所塑造 —— 一個充滿了隱喻的敘述 memex 取自每種風格，
又給予每個傳說。

從咿呀學語到初戀情懷，從吻別到訣別，你是書的主角，而書則是你的

世界的地圖 —— 但並不是那種爲了反映現實而繪製的地圖；這個地圖，它是
關於忘懷的味道，釋懷的煩擾，過往的旅程，過時的風尚，關於值得珍惜
的笑意，暗自竊喜的詭計和小心翼翼的勝利，以及被突然打斷的、正在費力
生成的故事。

所有的活書都是同一本，但沒有兩個讀者會讀到同一本書。怎麼可能呢？生
活不就是一系列的喧嘩與騷動，延誤和不同，那些合情的、合理的，
指向世間一切？

現在，讓我們開始閱讀。

[譯／郭娟]

作者註：本文中所描寫的「圖像辨識 —— 浪漫小說寫作」程序受啓發於一個眞實的實驗，
該實驗利用神經網絡來爲圖像撰寫圖注。可參考 "Generating Stories About Images"（https:∥
medium.com/@samim/generating-stories-about-images-dl63ba4le4ed），
由 Samim Winiger 設計，Winiger 是一位遊戲、網頁、音樂和機器學習的研究者
（http:∥www.samim.io）