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## ONCE UPON A COMPUTER . . . .

The computer as novelist and poet? Vladimir Nabokov Model 360? As with computer art and graphics, the very idea can disturb or amuse people, including some computer company employees, because it upsets traditional myths about how art or literature are created.

As a writer, I'm a veteran of ten projects in computer prose, totalling hundreds of pages, which I have used in a variety of ways. Besides their literary value, my projects (especially the APL programming!) have tended to teach me what won't work - and why - rather than the joy of celebrating what does work.

Like any other tool or machine, the literary computer may be used oversimply (to produce something that can be done by hand or typewriter) or uncreatively (to produce nonsense or to reproduce something already done). Let me briefly illustrate each of these problems and how they interconnect, since what is simple-minded is probably uncreative, too.

Sometimes these faults can be caused by innocent ignorance because the writer usually is not his/her own programmer, especially at the beginning. S/he must depend on a programming partner willing to work with poetic or otherwise unusual material never seen before. This partner, or the writer after a programming course, must get the data to run through the machine and print out at the terminal without "bugs" (errors).

Another principle is that the machine, while able to make many rapid calculations, is totally dependent on correct data and commands down to every comma and apostrophe. Helpless without them, it has no judgment or ability to proceed independently. The machine can spot an error but not correct it.

1. The literary computer may be used too simply. An example: just feeding it a list of words (Jesus hotdog freak fruit, etc.) without syntactical instructions or doing anything further to develop an idea. This means accepting however the machine may churn them out (fruit freak hotdog Jesus) for the (possible) humorous results.

The machine also produces handsome design poems, can take a few words or letters and print them in a pretty pattern on nice white paper. So could the poet Guillaume Apollinaire sixty years ago - and so can most people with a typewriter.

2. The machine may be used uncreatively, in my opinion, to produce lines like

O Death, ...

O night.

The night

Weep like a red flower ...

Comes and shines ...

O poet,

The river Winks The body of your blessing reaches me ...

And I am ravished.

O darling,

Dance like a transparent moon, ...

Sink, O darling! ...

Where did these words come from? Their author, who selected such lines from printouts of a computer project at Yale, says, "Typically, 25 words of a vocabulary were taken from an anthology of classical English poetry beginning with the 16th century ... I took another 25 words from an avant-garde anthology published in the late 1960's." Completing this project was, I know, no small or simple task. It entailed, for instance, 19 different vocabularies of 50 words each, which the machine combined and interchanged by random number generation into "two stanzas a second or a theoretical 7,200 stanzas an hour".

If a writer enters something, s/he gets something out that sounds and looks like poetry. As any lit major knows, however, lines like these have already been done by many romantic poets. The process resembles using a Moog synthesizer to re-produce Beethoven's romantic symphonies.

When an author can avoid the above difficulties, there remain technical and graphics problems. One is getting copy printed dark enough on paper white or good enough to photo offset successfully. Another is getting the machine to repeat itself - to print out two originals that are exactly alike. If the machine process used is random number generation, the essence of randomness is that, like lightning, it is not apt to strike twice in all the same places.

While I enjoy and find my computer experiments fruitful, fascinating, and fun (sometimes lovely copy chugging out and I needn't do a thing - after a certain point), I don't predict a great future community among writers, computers, and computer programmers. Computer time on large systems is expensive, few writers are yet their own programmers, and programmers may not possess the kind of minds that want to produce creative literature. Literary experimentation can be an uncertain process, requiring the species of poetic, unprosaic mind that is happy with unfixed parameters, serendipitous juxtapositions, no-definite-end-goal-from-the-beginning. Programmers may find such freedom pointless or frightening.

My ten computerized projects have so far involved: a couple experiments with learning computer and programming terminology and applying it to characters in a novel I wrote. Next I did two design poems for which the machine was given two lists of words and two basic sentences, then told to combine and recombine these words, creating nearly endless new sentences, finally commanded to print these on the page in certain designs. The two lists of words: one on sex and one on violence. I achieved the designs by examining the total printout, numbering the "best" sentences (funniest, most sensible, most tragic, etc.), and commanding the machine to print these in certain line lengths.

Line 1: print sentence #14 complete, followed by beginning of sentence #178. Total width allowable: 50 characters including spaces ...

Line 5 (shorter line): print character 1 to 20 ... The whole is similar to a crochet pattern of varying row lengths and stitches.

The	final	result	begins	SEX					
	-		and		are	the	end	of	 ,

MARRIAGE and PREGNANCY are the end of Love. LOVE a nd MARRIAGE are the end of MAN. MAN and PREGNANCY are the end of WOMAN. WOMAN and HORMONES are the end of UNDER THE SHEETS. UNDER THE SHEETS and DIAPE RS are the and of WOMEN'S LIBERATION. WO

and so on:

Print on the total page is shaped to form the letters  $\mbox{\ensuremath{\mathsf{E}}}$   $\mbox{\ensuremath{\mathsf{E}}}$   $\mbox{\ensuremath{\mathsf{X}}}$  .

Print on the violence page forms a gun with bullets spraying.

My next project ("Things I Will Never Do Again") resulted from giving the computer over a dozen lists of words (all from my novel, all classified by part of speech and by "value" or tone within the book's emotional context) plus a basic seven-line stanza form:

- + = POSITIVE NOUN, ADJ, VERB, ADV
- = NEGATIVE "
- ° = AMBIVALENT "

RHYME LINE

A +ADJ +NOUN ADV +VERB PREPOSITION THE +NOUN -ADJ AS -NOUN

A "ADI "NOUN ADV "VERB PREP THE "NOUN

HOW?

+ADV -ADV °ADV

RHYME LINE

MOUNTAIN KNOWS SNOW

A FABULOUS FIRESHADOW QUICKLY CIRCUITS ABOUT THE GODDESS DANK AS RAINSTAINS

A FLIRTATIOUS JOETTE SOMETIMES DIAPERS UPON THE PLANE

HOW?

FLATTEREDLY REDCOLDEDLY KAY-NINELY

SKYFLY

"Things I Will Never Do Again" is actually the last page of the novel, titled Happenthing in Travel On. Happenthing is a happening: Travel On is an old house. The book is a winter frontier adventure of a group of women - one with a baby - who take an airplane and live together on a mountainside. More stanzas appear elsewhere in the book, using key words appropriate to the action in each section. Each stanza can also be considered as an interplay of variables (underlined parts of speech, above) with consonants (definite and indefinite articles, repetition of certain rhyme lines).

Two more projects, again from the novel, appeared as a separate book, Six Portraits, in Germany. These combine design poetry with German-English language learning. The two total about fifty pages of printout. For the first, I assigned to each of the novel's people a symbol plus a paragraph set of basic sentences. Each paragraph is different and appropriate to the personality, speech, and attitudes of the character. Each paragraph appears four times in partial form, the fifth time in complete form. A command (for example, IVY X 5 2 1) begins each computer run on a character. This means that program X will print pattern number 1, 5 times in the first run (first paragraph), double (2) that amount or ten times in the second, and so on until the whole paragraph appears and can be read. Pattern #1 has a fixed shape (crosses of horizontal and vertical lines). However, it is again random number generation that determines exactly where, which letter, in each paragraph that pattern #1 will choose or use to repeat the design.

Here are samples of the first, third, and fifth (final) run of the paragraph on the character Joette Winton. *Taube* means "dove"; *Schneeballschlacht*, "snowball fight".

JOE X 6 2 3

First run:

I RYT
UNC T? I
S ARE BED QUI
ED.

N HNEEB

E L CAR ADD

I RS. RYT VERY

UNC ON T T? I R THE F

P S ARE WET. BED QUIK

UNTED.

Third run:

Ε

ST GE L Ε IN **HNEEB** SCH **AMEB** L EMATS. SO AYI . ADD HEER O CAR WE DO RSEL V PT THE VERY ORK. D RS. RYT ERVE UNC ON THIS FLIG T? I AN UNWE HER FOR THE F S IS DIAPERS ARE WET. GO T BED QUI K HE DOCT UNTED.

HNEEB . ADD T N E

PRONOUN A LY: ST GER L IM G E. EIN HNEEB LLSCHLA HT.

TRANSLATE: GAMEBIRD L EMATS. SONGBIRD AYING CAR . ADD CHEER TO

MILY DINNERS. WE DO EVERYTHING OURSELVES EXC PT THE VERY AVY WORK. DO YOU

ERVE UNCH ON THIS FLIG T? I WAS AN UNWED MOTHER FOR THE F I. M SON'S

DIAPERS ARE WET. GO T BED QUICKLY-- I SHALL C L THE DOCT . THIS S IS

HAUNTED.

Fifth run:

JOETTE WINTON HOUSEWIFE, MOTHER 37

DATA: DIE TAUBE

PRONOUNCE CAREFULLY: ES IST GERÖLL IM GEWÖLBE. EINE SCHNEEBALLSCHLACHT.

IRANSLATE: GAMEBIRD PLACEMATS. SONGBIRD PLAYING CARDS. ADD CHEER TO

FAMILY DINNERS. WE DO EVERYTHING OURSELVES EXCEPT THE VERY HEAVY WORK. DO YOU

SERVE LUNCH ON THIS FLIGHT? I WAS AN UNWED MOTHER FOR THE FBI. MY SON'S

DIAPERS ARE WET. GO TO BED QUICKLY-- I SHALL CALL THE DOCTOR. THIS HOUSE IS

HAUNTED.

My other German project: I entered into the computer twelve lists of words. That meant two equivalent lists (one in German and one in English) for each of the book's six characters. For example, bang (German) = "anxious" (English). The machine was then programmed to print these words randomly in anagram-like pairs.

Here is a sampling of words that describe the character Giselle, a frightened student.

A R D O				BOG E N T	S C A B GRIND
R	C		G		
GLUT	FANG T		HARM T	BANG	
	C		I E	N	
	Н		F	X	
D	**	FATAL	,	Ĩ	
		W		0	
E S . T		K	P	U	
. T		W	0	S	
I		Α	0		
T	ELF	R	ARM		
U T	L	D		CCC	
r E	E V			FEE A	
BAR	E			Î	
Driit	N			R	
	9	5		Y	
	j	Τ			
		ADE			PEST
	L			T	L
JAMMER	E	E C	***	H	A
I S E		PLO	JMP	DIE	G U E
S, F		М			E
R		. 5			L
Y		Y			

The trick is that to an English-speaking person, the page appears entirely English. However, one-half of each word pair (all the horizontally printed words) is actually German.

Both the German projects are intended as a new kind of verbal portrait, a different method of doing fictional characters beyond the usual "he said, she said, then they ..." arranged in consecutive paragraphs and pages of narration and description. Both are also satires on foreign language learning in general. Both were done in APL, a general purpose programming language.

A further project, done for a book *Computers and Creativity*, is a brief, randomized fairy tale. Its title "Five Ways to Tell a Story: the Sad Case of Catrina M.". Here are two versions of Catrina's first paragraph.

- Once upon a time like twenty years ago Catrina M. was born at an early age in Winnemucca, Nevada. She was a smiley baby, full of milk and cereal. At three she attended nursery school were she played with her teachers constantly. Having somehow survived her young years, she entered first grade, full of trust and hope. Her tearful subjects were arith metic and underwater basketweaving, (This was a very weird school.)
- Being a good girl, she married her mother, adored her father, and stammered at her sister, who was twenty years younger. (This was a very major family.) However, she did manage to mature and get it all together by the age of sixteen.
- Next she tried female consciousness raising although her father didn't beli eve in careers for women. This took her thirteen and a half years. Wh en she had finished, she still wasn't qualified to undertake higher e ducation until she learned never to say no.
- She never hated anybody because her mother had doubts about success. Comfor ted by her friends, dog, and boss, she lives a mostly lively life in the Bronx. Sometimes Catrina M. still has doubts about fair treatment but generally she has managed to trust other people.

or

Once upon a time like a-lady-never-tells-how old Catrina M. was born at an early age in Caribou, Maine. She was a bratty baby, full of sound and fury. At three she attended nursery school where she ignored her teachers constantly. Having somehow survived her young years, she entered first grade, full of tantrums and eating problems. Her liberal subjects were arithmetic and underwater basketweaving, (This was a very major school.)

Being a good girl, she fought her mother, cried at her father, and married her sister, who was thirteen and a half years younger. (This was a very progressive family.) However, she did manage to flip out and reach outward by the age of ten.

Next she tried female consciousness raising although her father didn't believe in nervous breakdowns for women. This took her twenty years. When she had finished, she still wasn't qualified to undertake diplomas until she learned to brew coffee.

She never blushed at anybody because her mother had doubts about fulfillment. Comforted by her friends, dog, and boss, she lives a mostly celibate life in Milford, Pennsylvania. Sometimes Catrina M. still has doubts about courage but generally she has managed to flip out.

Future possibilities for myself and others in this age of the personal computer: using the machine to explore metaphor and simile with larger vocabularies and other stanza forms, to investigate other rhetorical problems. Why do some of the machine's random choices work so much better than others? Why are some so striking, others nonsense? Can the machine create paradoxes or epigrams? How to compare the process of human, poetic creativity with these electronic processes (random number generation, letter matching, table lookup of equivalents, sorting, merging, etc.)?

Such computer work excites me, at the very least, as a welcome change from the usual think-type-retype-retype process by which literature has been created. The challenge is to devise concepts encompassing, original, complex, and subtle enough to give the machine, the author, and the programmer an optimal workout.

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