



Noah bitched and moaned about the count  
 so Yaphet used the pinnacle of a technical  
 split legged capture bomb (holy fuck)  
 this kicked all kinds of ass

Ham completely destroyed his bitch ass



A poem like this is easy to dislike.

But it's flarf [1] and I wrote it in 2003 using Google to search for documents mentioning terms not likely to appear together—here probably “ark,” “pinnacle,” “ass,” and “holy”—and then working with some of the returned synopses pasted together as a first draft. The point of working this way isn't to be cute but to assist the mind in finding unfamiliar situations, novel language, unexpected combinations, and therefore new territory to explore and thereby to make new discoveries possible, finally leading (perhaps) to fresh understanding.

I call this **defamiliarization**; it's not a new technique—in the past we noticed defamiliarization having taken place somewhere along the path of creation by having a belief that the artist has a strong streak of creativity and by admiration of the unusual mind operating behind the scenes. Many artists—particularly experimental artists—use a process of creating the first “draft” of the piece and then using the piece itself as a partner in the creative process. Here is how the fiction writer Robert Boswell put it:

*I have grown to understand narrative as a form of contemplation, a complex and seemingly incongruous way of thinking. I come to know my stories by writing my way*

*into them. I focus on the characters without trying to attach significance to their actions. I do not look for symbols. For as long as I can, I remain purposefully blind to the machinery of the story and only partially cognizant of the world my story creates. I work from a kind of half-knowledge.*

*In the drafts that follow, I listen to what has made it to the page. Invariably, things have arrived that I did not invite, and they are often the most interesting things in the story. By refusing to fully know the world, I hope to discover unusual formations in the landscape, and strange desires in the characters. By declining to analyze the story, I hope to keep it open to surprise. Each new draft revises the world but does not explain or define it. I work through many drafts, progressively abandoning the familiar. What I can see is always dwarfed by what I cannot know. What the characters come to understand never surpasses that which they cannot grasp. The world remains half-known.*

...

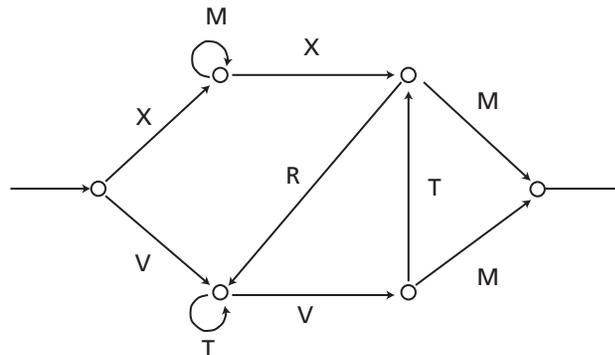
*There can be no discovery in a world where everything is known. A crucial part of the writing endeavor is to practice remaining in the dark. [2]*

When we think formally about creative acts, the question arises: Where does new stuff come from? The philosopher Charles Sanders Peirce recognized that traditional logical induction and deduction were closed wrt prior assumptions and data: they cannot produce new ideas. He proposed **abduc-**

**tion** to explain the form of reasoning that leads to new ideas. Informally, such an inference leads from an observation of a situation that is not yet understood to a hypothesis that, if true, explains the observed phenomenon. Peirce wrote:

*Now, that the matter of no new truth can come from induction or from deduction, we have seen. It can only come from abduction; and abduction is, after all, nothing but guessing. We are therefore bound to hope that, although the possible explanations of our facts may be strictly innumerable, yet our mind will be able, in some finite number of guesses, to guess the sole true explanation of them. That we are bound to assume, independently of any evidence that it is true. Animated by that hope, we are to proceed to the construction of a hypothesis. [3]*

How are defamiliarization and abduction connected? Consider this experiment: Look at the grammar at the bottom of the column. A test subject is shown 45 strings of length between 6 and 9 generated by it, and asked to copy down each one. The origi-



nal list and copies are removed, and a short time later, the subject is asked to look at 60 strings made up of the letters X, V, M, R, & T, 30 of which were generated by the grammar below and 30 by a different one; next, the subject is told that the copied strings had something in common, and is asked to classify these 60 strings, each according to whether it has that same thing in common.

The classification task is a mystery, and coming up with a grammar that corresponds to the original 45 strings requires guessing—abduction. But, any performed abduction takes place implicitly in the subject's mind. This test measures *implicit learning*—or implicit abduction: what grammar can give rise to the 45 test strings?

Now suppose a group of 40 people, broken into two 20-person groups, is asked to do the above experiment, but before that, the members of each group are asked to read an illustrated short story. One group reads a revision of Kafka's "The Country Doctor," which is a (slightly) absurdist story [4]. The other group reads a straightforward version of the same story [4]. What would happen?

Camus wrote about Kafka:

*In this fundamental ambiguity lies Kafka's secret. These perpetual oscillations between the natural and the extraordinary, the individual and the universal, the tragic and the everyday, the absurd and the logical, are found throughout his work and give it both its resonance and its meaning. [5]*

Travis Proulx and Steven J. Heine did this experiment, and found that the group that read the absurd version of the story were 26% more accurate (correctly identified strings from the grammar) than the other, and classified 33% more strings as belonging to the grammar (ignoring whether they were right or wrong) [6]. Proulx and Heine claim this latter result is because of increased motivation, but perhaps it's just increased energy.

The straightforward version of the story is linear and boring. It doesn't require any guesswork to get its "meaning," which in this case is nothing more than its (dull) plot and happy ending. The absurd version is not particularly crazy or surreal, but it does call for lots of abduction to try to make sense of it. Like many surreal and absurdist stories, no abductions work well, and the reader is left with a sense of mystery and strangeness. But the brain is hard at work abducting and becoming defamiliarized. No wonder, then, that with the mind open to far-flung connections it is able to learn a little more effectively and confidently.

Defamiliarization seems a way to get the brain abducting and hence exploring and discovering. Given this, we can argue that tools for helping creativity need not be second-class participants but essential partners to making the new really and radically new.



Creative work can be *experimental*, like Robert Boswell's half-known world.

*Artists who have produced **experimental** innovations have been motivated by*

*aesthetic criteria: they have aimed at presenting visual perceptions. Their goals are imprecise, so their procedure is tentative and incremental. The imprecision of their goals means that these artists rarely feel they have succeeded, and their careers are consequently often dominated by the pursuit of a single objective. [7]*

But not all creators work exclusively in the realm of "stuff"; not all writers write without a plan, without a concept; not all scientists work exclusively from data to hypothesis. Lots of creative work is not the product of unbounded exploration and discovery; lots of work is based on concepts.

*In contrast, artists who have made **conceptual** innovations have been motivated by the desire to communicate specific ideas or emotions. Their goals for a particular work can usually be stated precisely, before its production, either as a desired image or a desired process for the work's execution. Conceptual artists consequently make detailed preparatory sketches of plans for their paintings. [7]*

At the top of the left column on the next page is a poem I wrote by using Babelfish as a defamiliarization aid. A Robert Frost poem was run through a number of cycles of translation to and through other languages then back to English to undo the idioms and figures of speech that Frost used originally, producing a set of raw language with which to start to construct a poem—a poem both weirdly similar to the original and dementedly different.

Just glance at it for a minute.

### Stopping by <http://babelfish.altavista.com> on a Snowy Evening

Here is a task whose outcome is certain:  
Thinking of someone's forest  
and then thinking whether this forest is that someone's.  
And as for his house (I've picked this up):  
it is certainly located in town.

I am stopped here paying attention to the snow above,  
observing the trees filling in above the snow.  
My eye finds comfort in this.

As for my horse, he strangely and narrowly stops.  
I am small, me and the small end of the tree both agree.  
To the horse, we are stopped between a farm and the frozen sea.  
This evening is the strangest and the darkest of the year, the horse must think.

His harness bells are his only user interface.  
These bells are installed to a flange by some wiring, and so  
he gives the flange a shock, vibrating the wires,  
thereby jolting the bells (giving them a restlessness)  
in order to pose me a question:  
Is there some kind of mistake here?  
Surely a certain error exists.  
He is a small horse.  
There is only one other sound,  
a different sound like a clay tone,  
but only to the extent of a thin layer or a languid ribbon  
forming a closed loop: the sweepback of a light breeze  
over downy soft flakes—a simple, easy wind;  
flakes like cotton wool or hair  
or a rag for cleaning, which is the same thing.  
Or maybe it sounds like this:  
khlop!

(I am excited by this.)  
Woods are attractive. Likable. Lovable, even.  
Or sometimes—obscure. One of the trees  
is dark and from a place which is deep.  
And you know what they say: Dark and deep are deep.

But I am held to obligations which I must maintain.  
Before I sleep I must resume my outward journey.  
(And other unspecified things of the same class.)

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Frost's original [8] is at the top of the right column.

My concept was to use Babelfish to make a set of  
ridiculous translations of the well-known poem in

### Stopping By Woods on a Snowy Evening

Whose woods these are I think I know.  
His house is in the village though;  
He will not see me stopping here  
To watch his woods fill up with snow.

My little horse must think it queer  
To stop without a farmhouse near  
Between the woods and frozen lake  
The darkest evening of the year.

He gives his harness bells a shake  
To ask if there is some mistake.  
The only other sound's the sweep  
Of easy wind and downy flake.

The woods are lovely, dark and deep.  
But I have promises to keep,  
And miles to go before I sleep,  
And miles to go before I sleep.

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order to free it of its now-familiar wording. I had it  
translate the poem from English to Greek, then to  
Korean, then to Japanese, then to German, and back  
to English; I used a set of such cyclic translations as  
the starting point for the poem. This is conceptual art.

For experimental artists (e.g., painters):

*... planning a painting is unimportant. The  
subject selected might be simply a conve-  
nient object of study, and frequently the artist  
returns to work on a motif he has used in the  
past. Some experimental painters begin with-  
out a specific subject in mind, preferring in-  
stead to let the subject emerge as they work.  
Experimental painters rarely make elaborate  
preparatory sketches. Their most important  
decisions are made during the working stage.  
The artist typically alternates between apply-  
ing paint and examining the emerging image;*

*at each point, how he develops the image depends on his reaction to what he sees. [7]*

For conceptual artists (e.g., painters):

*...planning is the most important stage. Before he begins working, the conceptual artist wants to have a clear vision either of the completed work or of the process that will produce it. Conceptual artists consequently often make detailed preparatory sketches or other plans for a painting. With the difficult decisions already made in the planning stage, working and stopping are straightforward. The artist executes the plan and stops when he has completed it.*

*...extreme practitioners...make all the decisions for a work before beginning it. It is unclear, however, if this is literally possible. There are artists who came close to it, and perhaps achieved it, during the 1960s, by making plans for their work and having these plans executed by others. [7]*

Both of the examples I've shown were produced using human effort after or intertwined with machine assistance, and in both cases the success of the result depended on the machine tools being flawed—or simply not very good. Had Google returned synopses of only rational documents mentioning my irrational search terms, I would have no starting point at all; and had Babelfish been a perfect translation engine, the starting point would simply be the original Frost poem. But luckily Babelfish made many trips from English and eventually back again like this trip to Japanese and back:

The only other sound is the sweep  
Of easy wind and downy flake.



Only other sound: The extent of the thin layer  
the easy wind and like the cotton wool.

What I mean by flawed tools being good for creativity can be seen at the top of the next page. This poem was created by taking one of the stanzas from "The Love Song of J. Alfred Prufrock," by T. S. Eliot, and running it through a sorting algorithm that uses a comparison predicate ( $<$ ) that lies about 4% of the time. The result is the first draft of the poem. The sorting is based on the position of the words in the text and not what the words are. Guy Steele also used the idea in some poetry he was writing, and he and I each (individually) discovered the optimality of 4%–7% as the best "degree of lying": larger than this and the result is gibberish, smaller and the result is too similar to the original to trigger new and interesting connections. One way to express this is that were the sorting perfect, the tool would have been useless, but being off by just a little is just enough defamiliarization to, perhaps, optimize creativity.

I have tried to use Google Translate to make poems the way the Frost derivative was made, but Google Translate generally translates too accurately.

More interestingly, using Google to create flarf has similarly become much harder recently. My speculation is that Google's search algorithms have gotten better at trying to locate reasonable documents that satisfy apparently nonsensical search criteria—criteria that used to effectively locate crazy documents. I emailed Peter Norvig about this (Peter is Google's Director of Research). He wrote back:

### Love Song of Lisp

and would it have been tea  
 been worth it after all  
 after the cups the marmalade  
 among the porcelain  
 talk among some of you and me and the dead  
 would it have been worthwhile  
 to have bitten off the matter with a smile  
 to have squeezed the universe into a come ball  
 to roll it toward some overwhelming question  
 say to me I am Lazarus come from the back  
 to tell you not all I shall tell you all  
 if one setting a pillow by her head should say  
 that is not what I meant at all  
 that it would be all and it would have been worth it after it  
 after all it would have been worthwhile after the sunsets  
 and the streets and the dooryards and sprinkled after the novels  
 teacups after patterns  
 the skirts that trail along more of the floor  
 and this so much is impossible to say just what i mean  
 but as if I threw a magic lantern  
 it would be the nerves on not a screen setting  
 it would have been worthwhile if one pillow  
 thrown off or throwing a shawl  
 would turn toward the window and should say  
 that this is all and that is not what I meant at all

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*In the "good old days," Google was closer to  
 a traditional information retrieval system:  
 if you gave a query that was four unusual  
 words, it would retrieve only documents*

*that included all four words. Now, we are  
 more aggressive at allowing synonyms and  
 related terms; as you say, we assume the  
 query is sensible and try to make sense of  
 it, rather than doing a literal match to key-  
 words. That is better for most users, but  
 unfortunately not for poets like you. [9]*

Some scholars have argued that the ability to reason (properly) and irrationality are both products of evolution, but that irrationality is an unfortunate attendant bad side-effect of the evolutionary mechanisms. A bug. What if, though, irrationality were our secret doorway to really good abduction, our built-in mechanism to become defamiliarized when the situation requires radical creativity, such as when a unique danger presents itself; maybe evolution discovered that crazy / go nuts has survival value—maybe irrationality is bound to rationality like yin to yang, like resins to hardeners, like Penn to Teller.

## References

- [1] Goldsmith, K. *Flarf is Dionysus. Conceptual Writing is Apollo*. Poetry. Chicago. 2009
- [2] Boswell, R. *The Half-Known World: On Writing Fiction*. Graywolf Press. St. Paul, MN. 2008.
- [3] Hartshorne, Charles; Weiss, Paul. *Collected Papers of Charles Sanders Peirce, Volumes I and II: Principles of Philosophy and Elements of Logic*. Harvard University Press. Cambridge, MA. 1958.
- [4] <http://dreamsongs.com/Files/ImplicitLearningStories.pdf>. From Proulx & Heine [6].
- [5] Camus, Albert. "An Absurd Reasoning." *The Myth of Sisyphus and other essays*. J. O'Brien editor and translator. Vintage Books. New York. 1955.
- [6] Proulx, Travis; Heine, Steven J. "Connections From Kafka: Exposure to Meaning Threats Improves Implicit Learning of an Artificial Grammar." *Psychological Science*. Vol. 20, No. 9. 2009.
- [7] Galenson, David W. *Old Masters and Young Geniuses: The Two Lifecycles of Artistic Creativity*. Princeton University Press. Princeton, NJ. 2007.
- [8] Frost, Robert. *New Hampshire*. Henry Holt. New York. 1923.
- [9] Norvig, Peter. *Re: Search Quality Question*. Personal communication. June 14, 2011, 11:42:58 AM PDT.