Simian Shakespeare
(ALL images © Brian Evans 2004)*

Brian Evans

He telleth the number of the stars
He calleth them all by name.
Psalm 147

Abstract
The mixture of too little sleep, too much coffee and minimal programming skills can be a dangerous thing after a long day in a digital world. In a digital world all is number—a Pythagorean feast. Here follows table scraps from one such meal. Forgotten leftovers found in the back of the fridge, hiding in a styrofoam doggie-box, fermenting and fomenting and God knows what else. Certainly no longer edible or digestible, but perhaps there's a bit of nourishment still to be had...
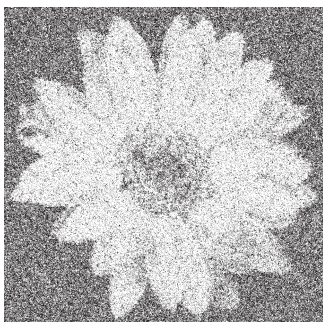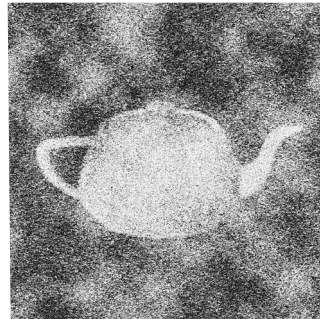
I have a program running on a old computer in my spare bedroom. It's a simple program I wrote. It goes something like this...


```
define x = 1000
define y = 1000
define pixels x*y

int pic[x*y], i, j, all_pics

all_pics = 2 ^ pixels
for (i = 0; i < all_pics; ++i){
    for (j=0; j < (x*y); ++j){
    pic[j]=random()%2
    }
display_picture(pic)
}
```

[1]A perhaps more accurate, methodical, but much less interesting and, sadly, unimplementable version (with a recursive approach), would go something like this...

```
define x, y, i, n, colordepth
int pix[x*y]

function calcpic(dim)
int dim
{
  int i
  for (i=0; i<colordepth; ++i){
      pix[dim] = i;
      calc_pic(dim-1);
  }
}

main
{
  int all_pics;

  all_pics = colordepth ^ (x*y)
  calc_pic(all_pics);
}
```


Once or twice, every second or so, this program displays a randomly created picture. Assuming the random number generator is truly random (we'll consider it so for the sake of argument), over time this program will generate the set of *all* possible images—every picture that does or will ever exist.[1] For simplicity the picture plane is a 1000 by1000 pixel grid (a hyper-megapixel), and I am allowing only one bit per pixel—on or off, black or white. This algorithm will generate the set of all pictures that are possible for this image space. The number of elements or pictures in this set is a somewhat large (Saganesque actually), but *finite* number. I have now defined a process that will draw the set of all pictures (easily scalable in color depth and pixel dimension). I have established that the set is finite. As I have established precedence and ownership of such in the notice in the title, I consider, as derivative works, all images made henceforth by anyone or anything. It's okay though, I'm not keeping track.

All sensory data is discrete. Through the separate rods and cones of the eyes or the millions of individual cilia in the cochlea of the inner ear, our experiences are

reduced to a finite collection of nerve impulses, registered by grids of organic sensors, essentially reduced to digital representations. My little program will create all the digital representations that are possible—all music, all sound, all utterance, all images (static or temporal), essentially all experience, past and potential, imagined or not. Human experience is finite, with all potentials constrained within the output set from a simple 10-line computer program.
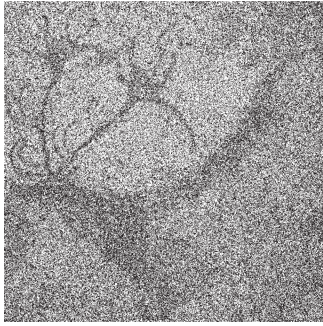
What is there within this procedurally defined and finite set? Mostly noise. A lot of noise. Incomprehensively huge amounts of noise.[2] Only a small scintilla, a Cantorianly minute percentage of the vast cosmos of noise will have information that would mean something to us. But what would we find in this trillionth of a trillionth of a trillionth of a percent? Sounds and images that define and describe the totality of all human experience and existence…

We'd find snapshots of the flicker of flame and spark of ember seen by the first fire starter, every fire maker, every Boy Scout on a weekend Jamboree, every medieval family in shivering damp looking with meditative and sullen gaze into the hearth. Every candle on every condo mantle, bathtub edge, birthday cake or granite cathedral altar. Every inch of every surface of every sun at every possible moment, from the flashy bellow of the big bang 'til the soft, dissipative, lonely, and unheard final whimper.
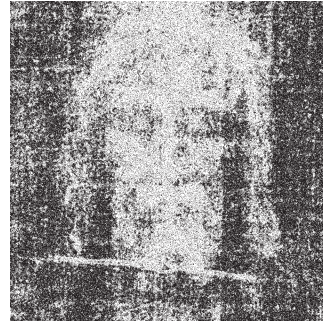
We'd find portraits of every descending snowflake, caught in every atomic moment, each frozen instant when six water molecules consider, discuss, agree on a direction and in unison, join the formation—millions of times for each icy flake. No two alike.
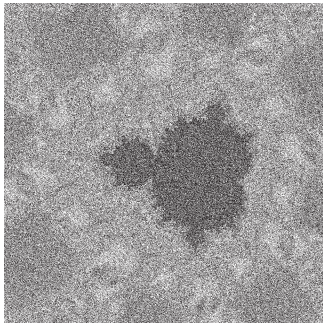
We'd find every page of every book ever written or to be written. Every attempted page of *Hamlet* by the infinite monkeys, typing away 24/7, working to complete the play whole or in part, in any language.

We'd find Da Vinci's *Last Supper*, again and again, signed by me, signed by you, signed by every name in the Manhattan phonebook, the Bejing phonebook, forwards and backwards, mixed up every which way. Signed by everyone who ever lived or will live or will be dreamed or never dreamed to live. Signed in hieroglyphics, cuneiform, kanji, serif, sans serif, pig-latin.

We'd find every utterance of "I love you."

The first cry of every baby born or to be born.

Every battle cry of anger or scream of agony.

The dying sigh of the Budda.

The last whispered words of Jesus.

We'd find renderings, at every angle in every light, of every rock, grain of sand, ocean wave, leaf, tree trunk, sea shell, oil smudge, coffee stain, wine spill, fingerprint, eyelash and freckle.

Within the output of my little program exists the computational beauty of it all.

Licensing opportunities still available.

[2] Of course, as the saying goes (more or less), "One person's noise is another person's mellifluous lullabye." Who hasn't been lulled to sleep by the pitter-patter of rain on the roof, the soft babble of a forest brook on a warm spring day, or the rhythmic 'shhhh… shhhh… shhhh…' of the ocean. (Of course all these sounds are in the output set as well. Every possible moment of each.)