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Dear Woody,

I am writing this letter to clarify my current work
directions and long term interests to help establish some
basis for our future discussions. As I was saying on the
telephone, working with Bill Etra substantially shaped my
notions of what kind of system might be powerful enough to
be interesting. I recall when he asked me what I thought
of your work you had shown us, I paused and said "It forces
you to re-evaluate". By this time I've developed enough
thoughts to create a software system that I think would be
fun, consistent and WEIRD!! Having a system that does
stuff like anyone else's is something I just couldn't stand
at this point.

My work at Western Front has been image based, with lots of
stuff to produce distortions and varieties of texture
artifacts. I also spent a great deal of time with 3 or 4
apprentices, one of whom, Kye Goodwin, has done some
exceptional work. Kye came to Western Front the same time
I did, to volunteer his services as a cabinet-maker. He
was interested in fractals, which I had already written
some stuff for, so we became friends. He built a cabinet
and desk for the computer in two days, as admission to a
class I was giving. We have worked closely, and I taught
him programming and many techniques. It has been a good
collaboration. While I was scheming and grand-designing, he
was learning the basics, in the new world of creating image
processing programs for artistic effect. You can see one
of his pieces in the Siggraph Art Show Slides, 1988. This
is a feedback piece, except the contours are what is being
reinforced, not merely the brightness of image regions.
There's a few more tricks in there, but not much. The
first show he sent work to was Ars Electronica '88 and the
second was Siggraph'88. He had pieces in both, though it
was like pulling teeth to get him to enter.

I enjoyed having someone take my work and use it in a
fashion that I couldn't really imagine while designing the
system, yet the system worked fine for this funny stuff.
This is the problem of saying you wish to make something
like no one else's. You haven't really seen what it looks
like yourself. Just brief glimpses and unspecific
feelings. Kye has been doing his own stuff for a while
now, so there was no need for me to run things. I feel I
have done what I started to do, which was create a program
for computer graphics at Western Front.

Through grant writing, I raised over $100,000 in 3 years,
which was enough for my salary, 27 months of trainees
salary, and 2 computers, one with Cubicomp 3D animation and
film recorder, and the other with very high-resolution
desktop publishing. The only major setback was my
arrangment to sell our Cubicomp for a Targa 32 to a local
company(ICON CG) that needed another Cubicomp and was the
local Targa sales office. We traded frame buffers for 6
months and then the Targa32 was reposessed because ICON
hadn't actually paid for it. What a drag... almost got a
Targa32 into our hot little hands. The worst part was that
I was also doing technical support for ICON, installing
several Targa16, Targa32 and Vista systems. They hadn't
told me the entire time that they never paid for it and
never intended to. Work is scarce enough here that I
continue to do odd jobs for them.

My new system is designed for making art robots. I use the
term "art robot" for any algorithmic embodiment of visual
art strategy. I use the term strategy to mean exactly
that. Already you can guess the direction of my
narrative. The beginnings of my search began at Vertigo,
when I imagined a system in which queries could be made
about the relationships between objects, like the distance
between them, their orientation, their color. This has
remained a cornerstone of my work.

In my research, I read about morphology of natural shapes,
thinking there might be some clues to organizatiion. This
did not really lead anywhere that couldn't be gotten to
with fractals and cellular automata, which we have
experimented with and found cellular automata to be much
richer than fractals. I would love to get one of those
MIT-designed cellular automata CAM-6 machines for the IBM
PC(about $2000). As a component in a larger system, this
would be a fun synthesis device.

The next thing I looked into was very formal composition
principles in visual art(mostly in "A Primer of Visual
Literacy by Donis A. Dondis, MIT Press). I found this to
be a good source for categories at a higher level of
abstraction than distance, angle, etc in my earlier plan.
These higher level abstractions are based on the lower
level ones, in addition to demanding new low level
queries.

Queries are another major feature. In my analysis of
object oriented programming techniques, I discovered the
major attribute is "politeness". Rather than have your
program demand certain behaviour of its objects, by
explicitly directing them, you have your program ask each
object to do something. This means you can think more
about how to direct things, and better than that, the
objects don't have to do your bidding precisely, they can
add their own little details. I admit this is a funny way
to talk about programs, since you write them all, but it is
a better mental model of the process. Consequently, the
kernel of the system that I am writing involves message
passing as its primary organization.

An interesting detour in my search for an overall plan for the system came from Glenn Lewis, then arts administrator for the Western Front. Glenn has a theory of formal gardens somewhat like Jung's notion of the "collective subconcious". He had some developed thoughts on the subject, though I recall his analysis was from thorough. It was a bit like having an eccentric, senile English gardener recount the first seven days of creation and the Garden of Eden as if they had done it, while waving their arms wildly about, pointing out things in their garden. His theory wasn't that crazy, but close. The best thing about it was this book he had called "The Visual and Spatial Structure of Landscapes", which is about Japanese terrain in particular, which disassembles certain famous views in terms of their actual angles and distances, and their subjective impression upon the viewer. This book does not read well, but has a few results I can use.

I was trying to find formal enough analyses that would lend themselves to computerizing. So far I hadn't discovered anything, though I have some references to morphologies of Russian folk-tales that I need to track down. The "syntagmatic" approach to folk-tale construction was espoused by Vladimir Propp in 1928, but was not translated into English until 1956, and was computerized in 1965. I have the translation, but can't quite figure out what constraints must have been placed on the computer version. I have a reference for the computer article but have not looked it up. The reason I thought this might be interesting, is because I thought that each of the kinds of dramatis personae of the folktale and their interactions might map onto images and image transforms conveniently.

Currently, I am examining, with the help of a friend, the design system for mandalas of the Tibetan Buddhists. This approach required me to build multitasking into my plan, so I could represent, at the very least, two processes. One process would be the organism, the other process would be the environment. Their system has lots of useful references to the four directions and seasons, which would be easy to introduce.

My intent for these art robots is not to make art themselves, but act as peculiar assistants, just to make the job easier. I have come to several conclusions about the way the computer software must be designed to support these ideas and have begun implementing this system. I have not mentioned analysis of real images which I also plan for this thing. There will be 2D and 3D stuff and basically tons of tiny programs to be mixed and matched. A common representation for 2D and 3D objects make this possible. I expect it will take a year to do and several years of playing around, to figure it out. I hope to sell various software modules as I go, to help me live.

As you can see, this sort of thing is not what commercial users think they need, but I think in the long run, it is. So I just have to think far enough ahead to cash in on this at some point, maybe 4 to 6 years from now. By that time I hope to have gone back to school and become a mathematician or anything where my livelihood does not depend on these machines! A person can only take so much of this bit-fiddling nonsense. In the meanwhile I hope to make a living off of doing technical work for PC's and Targa/Vista, basically anything to do with computer in the arts, music or visual, and maybe I'll get some more work teaching artists about computers, while I in turn, learn about art.

Sincerely,

Robert M Richmond

1/3/89