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For the edification of die-hard Creatures fans everywhere, these pages contain an assortment of never-before-published, design-related documents that I wrote whilst developing Creatures 1 (mostly in order to get people inside and outside the company to understand what I was trying to achieve). If you've ever wondered where Creatures came from, or why it has the strange mishmash of elements it does, then here are the reasons...

4th November 1992: A Mouse for Windows

This was my first pitch of the idea that eventually became *Creatures*. It was actually for a mouse that lived on your desktop. It wasn't what I really wanted to do, but it seemed like it would suit the publishing house we were pitching it to. In the event, they didn't like it, and so I tried a much better idea (next link).

Remember that this was 1992. Windows 3.1 was still a rarity and almost never used for games. The standard processor at the time was a 16MHz 80286, and few people could afford as much as 640K of memory. People didn't even have CD-ROM drives in those days.

16th November 1992: Little Computer Ewoks

This was my second attempt at a pitch. It was much closer to what I had really wanted to do for years, but I hadn't had a real opportunity to put it forward until now. I did actually first suggest it to my employers around 1986, in the context of educational software, and again as a game in 1988 (when Millennium was just starting up). Both times nobody showed the slightest bit of interest!

My primary inspiration for the idea was a book called *The Planiverse*, by A.K.Dewdney (now out of print). This was a novel about a group of computer science students who'd made a computer simulation of a 2-dimensional world, which somehow got locked into synchrony with a real 2D universe. The story described the journeying of a 2D creature called Yndred. It's a lovely book, exploring the implications of 2D and 3D existence (like you can't have a normal gut in 2D because you'd fall apart, so evolution would have to have invented the zip fastener!). I lent my copy to my boss when I first proposed a *Creatures*-like game in 1986 or 1987 and never got it back. Luckily, Amazon.com eventually managed to track down a copy.

23rd December 1992: Christmas? What Christmas?

This was the technical part of an early product proposal. It mentions my first thoughts about the neural network model, physiology and the importance of open-endedness (there's little point trying to define a precise plot for a bunch of critters with minds of their own!). The stuff about the video display shows how primitive the computer world was back then. The machine spec was raised to the dizzy heights of a 386/25MHz. Computers are over a hundred times more powerful today! Most of the limitations in *Creatures* stem from the demands of this low spec. Notice it was also a DOS program. I re-wrote it for Windows 3.1 later. Then I re-wrote it again for Win95, which was in Beta during the project. I could never quite keep up with the changes in computing! All in all, I think I re-wrote the whole program almost from scratch at least three times - one of which was when I decided to incorporate genetics.

8th March 1993: The Mythography

Taking a leaf out of Tolkein's book, I decided it was extremely important to generate a history for norns, so that the elements of the game environment would be self-consistent and make some kind of internal sense. I decided that since culture derives from history, history from geography, and geography from geology, I should begin with the geology of Albia and work up from there. This document was crucial in setting out a logic for other people involved in the project to use when considering their own aspect (art, sales pitch, etc.). At least, that was my plan.

The grendels are spider-like at this time. Notice that the Shee (Siše) and Ettins also come into the picture at this early stage, even though they didn't actually make an appearance until C2.

I stole the idea of a Journey from *The Planiverse*, and wish this had stayed more in the foreground in the final product (it got lost in all the arguments about plotline). I stole most of the mythology from the early English and Scandinavians.

1st June 1993: My programming diary

I have a lousy memory, so I like to keep a diary of events when I'm programming. This is the long and tedious history of the birth of a computer game. Sadly I don't have entries for before June (about 7 months into the project).

I've removed the personal and company names from the diary to avoid embarrassment!

18th July 1993: A silly story

This is a small scrap (I've lost the rest) from a novella I started to write to help me get my ideas clear. It's really silly and didn't have any bearing on the game, but I never showed it to anyone at the time, so you might as well see it, since so many of you have written norn stories too.

12th December 1993: Rationale revisited

People had started to get really hung up on the plotline by this stage and were trying to force the game into a traditional mould. A story writer was

brought in from outside, which simply made things worse. I never intended *Creatures* to be an adventure game or have a fixed plot at all - the idea was that you would create your own stories (this followed on from my previous decade's work in educational software, where I created various open-ended virtual worlds that allowed children to visit times and places they otherwise could not experience). But everyone had interpreted my mythography stuff far too literally, and people were trying to make *Creatures* into some kind of Norse adventure game. This was the memo I wrote to try and explain the real point behind the mythology.

3rd March 1994: The Vanimals pitch

As more and more people got in on the act (producers, artists, managers, publishers...) we started to get our knickers in a real twist. Everybody was pulling in different directions. I tried to be positive about everyone's ideas but the product started to turn into an uneasy compromise and I found the whole thing extremely frustrating. Some people wanted it to be a strategy game; some wanted it to be some kind of fancy platform game; others got far too hung up on the back story that I set out in my mythography paper and wanted it to be an adventure. Fundamentally, the project was getting in a mess. We had a big meeting about it, and I came away feeling that we'd never be able to hack it. But on the way home, I decided that things might go more smoothly if we dropped all the back story completely and just said "look, these are artificial lifeforms - do with them what you will". This was the memo I sent the next day (it's more polite and accommodating than I actually felt at the time, but I didn't want to disenfranchise anyone - sometimes it's better to let people believe it was all their idea in the first place...). This cleared things up a little and shaped the eventual product somewhat, but in practice we quickly went back to the old arguments about plotline. Again.

In April, the original publishers canned the project. My bosses started to look for a new publisher. Eventually Michael (our MD) decided to take the project out of the schedule and let me do it properly, no matter how long it took

4th November 1994: The Definitive Article

By this stage I was spending more time writing damned reports and memos than I was programming. This was my attempt to put all my ideas together in one place, so that people could hand it out to interested parties without me having to write something new each time.

Notice the screenshots - these show my original scratch norns (see below) [postscript: whoops - sorry - these were in fact produced by an artist, based on my scratch graphics - I'm not that good at drawing...] and the applets that I originally wrote in Visual Basic, but which later got rewritten (at considerable expense but not necessarily a huge benefit) in C++.

25th January 1995: Appearance

As well as all the issues about the virtual world graphics (below), we couldn't quite agree what the norns should look like. The ones I'd drawn in the first incarnation of the code looked like chickens, because I wanted something gawky and awkward. People love the underdog and I specifically didn't want norns to look too cute and well-balanced. But other people had different opinions. This was the memo I wrote in order to brief a set of artists we'd

hired to look at this problem. In the end, what we actually got was norms that were cute and well-balanced. Yuk!

30th January 1995: The clay model idea

Producing the graphics for *Creatures* was a real problem. There were so many sprites and so many animations. At the time, 3D design programs barely existed and the cost of producing all the graphics in 3D form would have been huge. After endless nightmares getting the right sprites drawn by hand with the right artistic feel (a source of huge irritation to Mark, our excellent Art Manager), I finally suggested we should set to and build a real, physical model of the world and its objects out of clay. In the end they didn't use clay, but we did commission a model - Albia was about ten feet from end to end and occupied three large glass cases. The strange graphics you see in C1 are photographs of that model. I've no idea what has happened to it since CL went bust, but I would have given it a good home. I still have the model of an airship, which I was very fond of but which got cut from the original program for some reason.

8th May 1995: I am Ron's Brain

This was a memo I wrote to explain (to the product manager of the period) how the norms' brains work. It's a little easier to follow than the mainstream scientific papers I wrote later, so I thought I'd include it for those interested in the AI behind *Creatures*. The brain design finally came to me (early in 1993, I suppose) after I'd sat on a hilltop above my home for three days on the trot, thinking *very* hard. This paper describes the logic I finally hit on that led to a real working (if not terribly intelligent) solution.

1st June 1995: Breeding Norms for Pleasure and Profit

Three years into the project and STILL we couldn't all agree on what kind of product it should be! By this time I was getting more and more confident about the quality of the Alife I'd managed to develop. When I started the project, I fully intended to cheat where necessary, and go for image rather than substance (or at least, be prepared to fall back to an imagey solution if the substance failed to materialise). By this stage, though, the norms had become complex emergent entities produced by *genes*, rather than directly by code. I'd done this largely because genetics is a good programming language for making living things (much better than C++), not because I intended norms to evolve. In fact I was quite confident that significant evolution was unlikely, during the paltry few weeks that I expected the product to continue on sale (little did I realise!). However, it gradually dawned on me that although significant evolution was unlikely, inherited variation was a real asset. So this was the memo I wrote to convince people that we should focus harder on the breeding aspects of the product. In the end, this turned out to be the most important feature to many of you!

19th July 1995: Design definition

Nobody ever *quite* managed to understand what I was trying to do. I lost count of the number of reports I wrote to try and explain the point of everything and stop people from retreating back into their comfort zones with traditional game genres, etc. By mid-1995 the basic structure was still fairly clear in my mind (though not necessarily everyone else's) and the

technology was coming together, so this is a lateish design spec to give you an idea of how things stood at the time. Notice the bit about using DDE to expose internal virtual world objects to the outside. This decision was absolutely key to *Creatures'* success, since it enabled you lot to create new objects and suchlike, extending the product. If I hadn't done this, you'd have got bored much more quickly!

So anyway, that's about it. There are many other documents but they're probably too sensitive to publish. I just put up these because a) CLabs is now defunct and I wanted to add to the general archiving that is going on in the Community, and b) I wanted to set the record straight about a few things. While I was at CL I tried to keep a low profile so that the whole company got the credit for the product, rather than me sounding like I was on some kind of an ego trip. Sometimes I think I kept too low a profile for my own good. Then, after I left CL, I wasn't even allowed to talk about any of this stuff for three years due to a restriction in my contract, so sometimes rumours and ulterior motives have filled the gaps where facts were missing.

After C1 was launched, they gave me a suit and told me to be a director. My programming days were therefore over (until now, anyway) and I had to try to develop my ideas through other people, instead of by myself. Unfortunately, this didn't work in the slightest. Somehow having a team of up to 80 people just made all the differences of opinion and communication breakdowns much, much worse. C2 was developed by Toby Simpson and the other programmers who'd joined me during the last few months of C1's development. It was based pretty much entirely on my original code from C1, but with better graphics and a changed storyline. (oddly, I never even got a credit in the documentation for the initial release of C2 - see what I mean about keeping a low profile? ;-). C3 involved a major rewrite of my Alife engine (basically the same technology as before, but updated to add a few new features and fit the newer programming methodologies that were still in their infancy at the time of C1), but apart from providing the underlying technology and concept, I had almost no involvement with the development of C3 - by this time the endless memos from my C1 days had been replaced by endless board meetings instead. Thus began the worst four years of my life. It was very nice to be paid a decent income for once (contrary to popular rumours, I never made a penny out of *Creatures* because I was on a salary not a royalty) but the stress was awful.

In 1999 I finally gave up the fight and left CL. Since then my blood pressure has dropped and I've been able to develop a whole bunch of new and exciting ideas about Alife and AI. However, this isn't the place to tell you about them.

- Steve