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“Breeding Norns for Pleasure and Profit” — some thoughts

Concentrating more heavily on the breeding and rearing elements

We should think less in terms of ‘pet *owners*’, who own dogs and cats for decoration and company, and more in terms of ‘pet *fanciers*’, where owning the animal is a *hobby*, not just ‘something you do’. Owning norns is more like keeping gerbils, mice or lizards than like having a pet dog or cat. This was the original concept in the Vanimals paper, but I’m not sure I’ve been clear enough about the distinction. Here are some random observations:

- Pet fancying is most common amongst *adolescents and men* (perhaps because it’s a hobby). Young boys keep scorpions; Mark and I keep tropical fish; Ian hankered after sea monkeys; old men breed pigeons. Recognising this will help restore a less ‘effeminate’ feel to the product.
- Norns are something you keep in a tank, and are therefore *only a few inches high*. I don’t think we’ve given proper consideration to the implications of that for how they look - all our models so far have proportions and curves that suggest they are dog- or deer-sized.
- We should think of norns as ‘in the public domain’ — only the tank to keep them in is a commercial item. Norns are precious living creatures, and should almost come on a separate disc, wrapped in cotton wool. We should encourage the sharing of norns between users as much as possible (genuine point in having an InterPet Lonely Hearts Club, etc.). We should lead people to believe (with justification) that second or third generation norns are not only different but potentially *better* than the first generation (Ron and Eve). One consequence of this line of thought is the feeling that we should *scrap the petshop*, and go back to giving people one or two norn eggs on a ‘like it or lump it’ basis — if you want a more varied selection of norns, either breed your own or obtain some nth generation norns from someone else.
- If we decide to give the users two eggs, we could ensure that those eggs were ‘unique’ (sort of) by actually providing *two* genomes for each egg, those being the genes of its *parents*, then we could use the crossing-over mechanism to generate the actual egg DNA. This way, users would get random but sensible phenotypes to start with. Every user would get a *sibling* — all of them sons and daughters of Ron & Eve.
- Of vital importance is the feeling that Ron and Eve are ‘the first generation of norns who are intelligent enough to be allowed out into the world and into the hands of ordinary people’, but that R & E are only the *beginning*: who knows what will *evolve* from them? The release of the Albia package is like *a giant experiment in Artificial Life* — people are not just buying a finished product, but buying into a hobby that will grow and develop.

- I've been resistant to your (TF's) pleadings that we should code for genuine evolution, on the principle that since evolution requires many generations and a large population to achieve significant change, nobody would be aware of it happening, and so all the programming effort would be wasted. I only intended to put enough genetic features in to allow us honestly to say that norms will inherit characteristics from their parents, and have the *potential* to develop over time. However, I now want to revise that opinion! Individually, people will only keep a few norms, for a few generations, but looked at globally, there will be thousands of norms in the population, and possibly many generations.
- We should consider the concept of the *Furries Gene Pool* as being a real, interesting and significant thing. The genetic code that determines a norm's markings, physiology, brain structure and resulting intelligence is the essence that, in the hands of worldwide norm breeders can grow and develop and lead to new, different and maybe improved lifeforms. The genome is the 'soul' of a norm, and is precious. As technology develops, we will be able to create better virtual worlds, capable of supporting more sophisticated creatures, but those creatures should be, in a real sense, Ron and Eve's progeny — we should even provide the facility for people to take DNA from their 'old-style' norms and transform them into 'new-style' norms, so that the *same* creatures live on in new, better bodies and the normir race remains continuous.
- As part of the 'experiment in Artificial Life' we could start the "Norm Genome Project" (q.v. the Human Genome Project) — people should be able to send us DNA samples from their norms, along with biographical information about them, so that we can study their evolution and determine which mutations have led to improvements, and why. This is part fun, part P.R. and part genuine research.
- What we are (potentially) saying to people is: ***"Here is a new form of artificial life. It is intelligent enough to provide you with interest and amusement. Here is a tank to keep it in. Here is a forum where you can communicate with experts and like-minded enthusiasts. Go forth and multiply them. Tell us what you find. Let's see how they develop. Where will it all lead?"*** If this is an *honest* thing to say, then we maybe have an 'angle' that we can use with scientists like Langton: not only is Furries 'educational' and valid propaganda for A-Life, but in a small way it is a genuine experiment — tens of thousands of norm owners, interbreeding many generations of norms, may well teach us things about practical A-Life development. At the very least, norms provide us (and others) with a large *user-base*, receptive to AL ideas, aware of the concepts and willing to play a role in future developments. Commercially, we might be able to place our norms in the perceived position of a 'generic brand' for future AL offerings, as in Hoover and Xerox?!
- A key point is that this open-endedness *must* be honest. We shouldn't just provide a genetic and morphogenetic structure that is capable of being 'tweaked and tuned' by evolution. Rather, we should try to provide a genuinely *creative* structure, one where the wiring of norm brains can actually change *functionally* over generations, leading to *new* brain models. This is not easy! However, if we can do it without jeopardising the project, then I think we should.
- One slightly more trivial consequence of this thinking is that we must provide as much *richness* of inherited variation as possible: for example TF's idea about computer-generated skin markings becomes a much more justifiable endeavor. If norm offspring can only 'mix-n-match' body parts from their parents, then we have *variability*, but *not creativity*, whereas a genuinely 'emergent' process (say a CA, whose state table can be varied genetically) can create new physical appearances that have never been seen before. (From a scientific point of view, of course, such marking variation has no survival significance, since Albion creatures are oblivious to the effects of camouflage, threatening markings, copycat

markings, etc. But it increases the overall impression of evolutionary flexibility). I think it would be worth assigning this task (with guidance) to another programmer.

- Not only should the brain model and the physical appearance be creatively determined by genetics, but the physiology (biochemistry) should also be capable of creative changes. Maybe we shall see viruses and epidemics emerge? Maybe not, but we ought to at least allow for such things to be possible. The mere possibility of such open-endedness will round-out the product and give it the 'cult' potential we need.

Things we should do:-

- Put more effort into developing creative evolutionary potential in the norm's structures.
- Be clear about the distinction between pet-owning and keeping animals as a hobby. Maybe we should look at the psychological makeup of pet-fanciers a little?
- Consider how we might present Furrries to scientists as a valid 'global experiment'.
- Consider the petshop, and how we present people with their 'starter' norms in such a way that they appreciate their individuality and 'preciousness'.
- Reconsider norms' appearance (again!) in relation to their size.
 - Get another programmer (or ten) on board ASAP.