

Steve Grand – alife researcher

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CS 591 – Robust Artificial Life

UNM Fall 2014

Basic Biography

- British, born 1958 (living)
- Little to no post-secondary education (earned no degrees other than honorary)
- Claims to be a completely self-taught programmer, saying “I’ve never taken a computer course”
- In 1999, awarded the OBE, “Officer of the Most Excellent Order of the British Empire”



Interesting personality traits

- *Works mostly alone*: “I don’t enjoy teamwork. I’m not influenced by other people’s ideas because I have a terrible memory and I forget what those ideas are.” (Source: NYT interview)

Interesting personality traits

- *Proudly uneducated*: “One of the best things that ever happened to me was that I managed to avoid being educated. Education is a sure way to make sure that everyone ends up thinking the same way . . . ” (Source: his blog)

Overview of notable projects

- *Creatures* (1996): a-life entertainment game
- Books - *Creation: Life and how to make it* (2001), *Growing up with Lucy* (2004)
- *Lucy the Android/Lucy the Orangutan* (2001-06): robot with neural net and vision
- *Grandroids* (funded 2011): kick-starter project, a-life simulation/game
- TEDx talk:
What is the Secret of Consciousness? (2014)

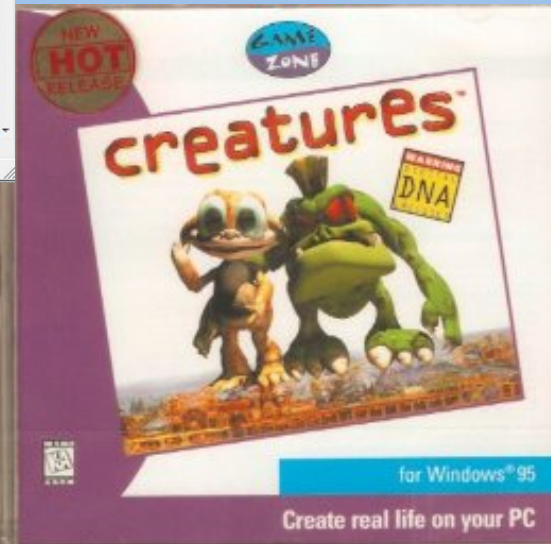
Creatures

- Players breed, care for, and teach Creatures
- Some traits of Creatures can be inherited by their parents, allowing evolution and breeding
- Creatures can teach each other independently
- Creatures can learn words from players – for example by entering the name of an object while a Creature is observing it

Creatures

- Creatures have a full life-cycle model: childhood, adolescence, adulthood, death
- In sequel *Creatures 2*, the environment has a working food chain, as well as weather
- Creatures are designed to learn (bottom-up), rather than be scripted and rule-based (top-down)

Creatures



Creatures success

- *Popular*: from 1996-1998, an estimated half a million copies were sold
- *Sequels*: *Creatures 2* (1998), *Creatures 3* (1999), *Creatures 4/Creatures online* (in dev)
- Richard Dawkins called *Creatures* a “quantum leap in the development of artificial life”
- Despite this, Grand made little money on the game (company making it bought out)

Creation: Life and how to make it

- Book topics:
 - Nature of life, the soul
 - Making artificially living things
 - Life is an emergent property of complex interactions
 - Life as “patterns that persist by metabolizing and reproducing” or “high-order persistent phenomena, which endure through intelligent interaction with their environment”

Lucy the Android/Orangutan

- An interesting project....
- ...With a CREEPY appearance



Lucy in action

- Video:
- http://www.youtube.com/watch?v=x1WfwD7r_rl

What (or who) is Lucy?

- A small robot resembling a baby orangutan
- Grand envisioned her becoming capable of being called “alive”, at least in a basic sense
- Her name was inspired by the famous 3.2M-year-old Australopithecus skeleton
- Virtual neural net of 50,000 nodes

Growing up with Lucy

- Book topics: describes
 - Grand's experiences in conceiving, building, and attempting to 'train' Lucy
 - "On a good day, Lucy can tell a banana apart from an apple".
 - The secondary title, *How to Build an Android in Twenty Easy Steps*, is sarcasm!
- Project seems to have died around 2006 ☹️

Grandroids (ongoing project)

- Alife simulation/game – consider it the next evolution of the *Creatures* series
- In contrast to *Creatures*, *Grandroids* has slow evolution (not a main theme)
- Purpose is similar to *Lucy* and *Creatures*; “true” artificial life simulation and exploration
- In development, mostly by Grand himself

Grandroids

- Implementation of *Grandroids* is supposed to closely resemble biological life, as opposed to a game that is “just pretending”
- Started out as a Kickstarter project, received around \$55k as of 2011 from 579 backers

Grandroids

- Not clear when it will be finished – Grand stated on his blog in March 2011 that he hoped to be done in “about another year”. Demo released April 2014.
- A lot of fluff, but little detail on how the mechanics will vary from *Creatures*

TEDx talk: *What is the Secret of Consciousness?*

- **The interesting:**
 - “There is no secret of consciousness”, it is reproducible and a natural result of complexity
 - *Feedback or circular causality* explains many properties of existence
 - Describes humans as “a society of little creatures”
- **The bad:** A bit dry, and bit boring

TEDx talk: *What is the Secret of Consciousness?*

- Video highlights:

<http://youtu.be/f1nrmwVZvus>