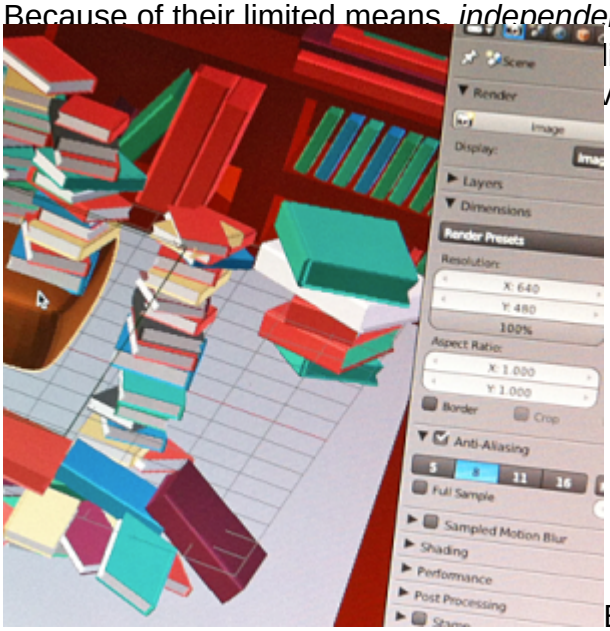
Maximum graphic

Description

Digital animators have to attend to a lot of detail. Unlike in live action film CGI detail does not come for free. Digital animators and their creative teams have to plan, model, texture, light and render every object, colour, texture and effect.

Because of their limited means, *independent* animation producers and students inevitably have to take


limbing out of a matchbox you produce a before and after vement in the background.

But with all the resources available to blockbuster animation producers (Pixar, Dreamworks, etc) everything seems to get designed, presented, and rendered to the max â?? resulting in those elaborate scenes full of acrobatic characters (*Madagascar*), burning castles (*Shrek*, *Beowulf*), and car and motorcycle chases through intricately detailed townscapes (*Tintin*, *Ratatouille*). Is the mainstream exempt from graphical economy and restraint?

We put this question to the Head of R&D at Dreamworks Lincoln Wallen when he visited Edinburgh recently.

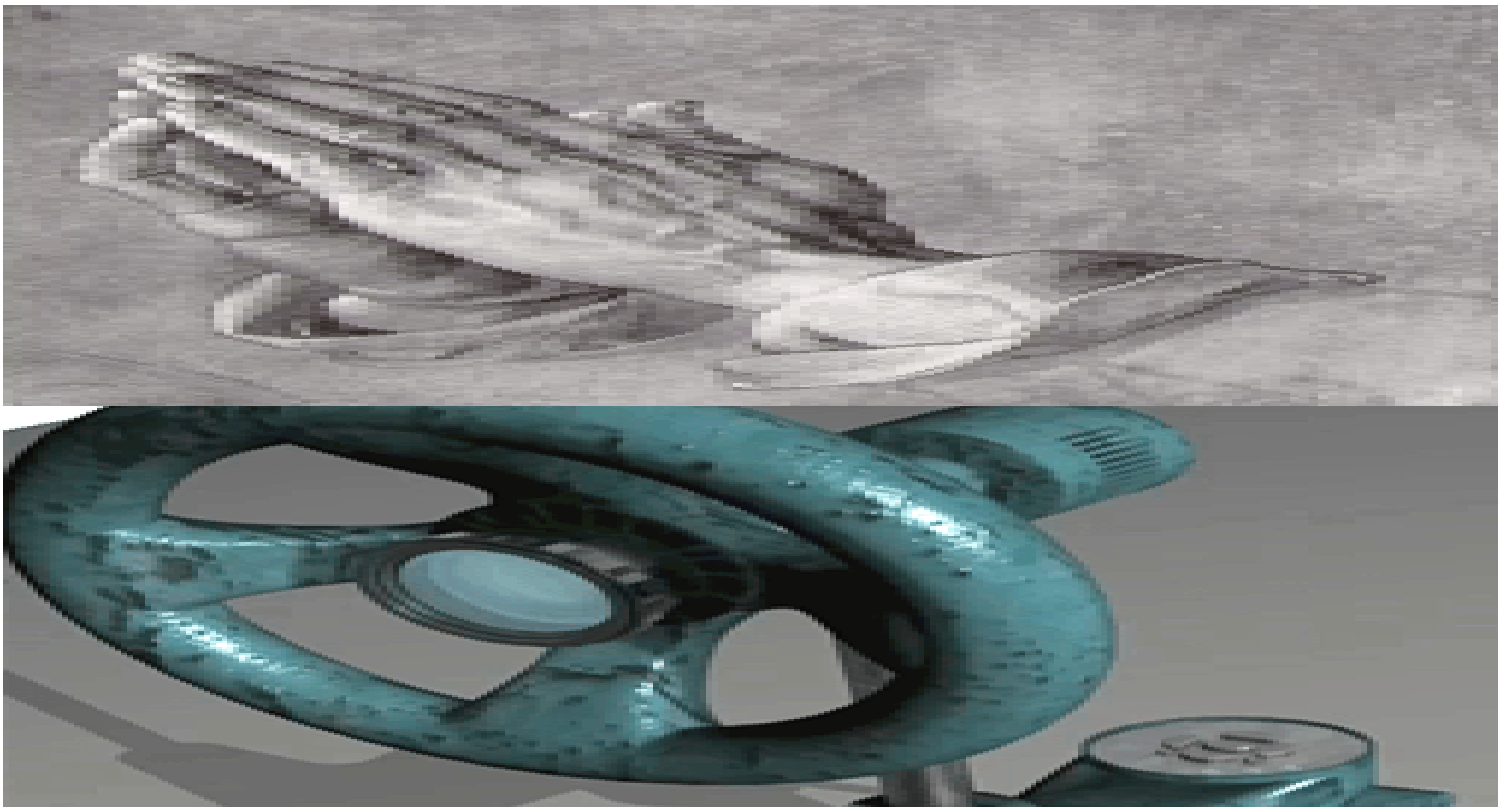
The answer was as we predicted. The issues are just the same. Dreamworks characters may have 4,000 manipulable control parameters and thousands of polygons (and nurbs) to be rendered. So the designers and animators always need to cut corners, and to assess whether the detail invested in any scene is worth the effort.

In any case, as in live action film thereâ??s an artistic payoff from not showing everything. Leave it to the imagination of the viewer. Add sound to provide further detail thatâ??s off screen, in combination with the language of camera angles, cuts, framing, and the whole *mise en scene*. I would add that the same applies to static computer renderings. Detail can be implied rather than shown.

Faking it

Years ago my drawing class teacher encouraged us to follow Albrecht Durer in implying detail by just concentrating on a little bit of detail where it counts, eg when drawing a rabbit show the hairs that appear along the profile of the animal; an intricate gnarled wooden surfaces need only show the texture where the light strikes the wood at a particular angle. It seems the eye is accustomed to filling in areas of a surface washed out by light, buried in shadow or obscured by visual noise.

Why do we want detail in CGI? Itâ??s not just about realism (or photorealism), but careful manipulation of the attention of the viewer. If the eye is drawn to areas where thereâ??s lots of contrast (the detail), then the artist as illusionist can distract the viewer from the rough bits, draw attention to whatâ??s important, and stage manage the viewer experience.



In Albrecht Durerâ??s famous drawing of praying hands detail is drawn where it counts, including the boundary between light and shadow. In digital animation some of the detail does come â??for free,â• thanks to algorithms for rendering â??bump maps.â• Here the specular reflections or highlights on the

computer-rendered metal wheel imply embossing across the whole surface. In any case, the designer has introduced *optimal detailing*: the concentric rings at the wheel hub, suggesting an illuminated projector lens, and the small panel of buttons on the stand implying an intricate mechanism.

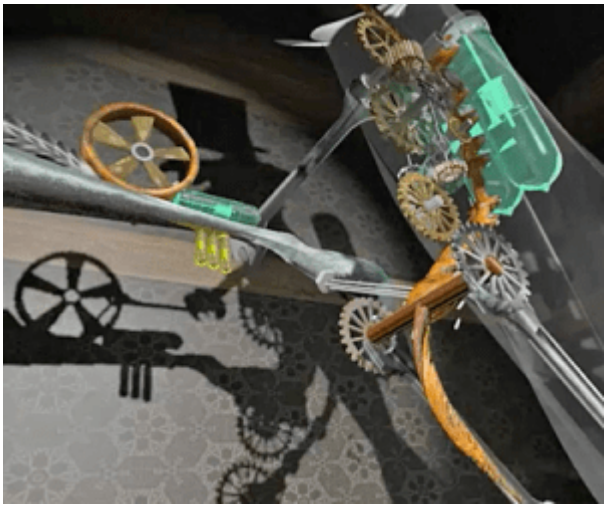
Infinite detail

Thereâ??s an argument here against questing after â??realismâ?• in computer rendering. Thereâ??s no end to the search for ever more intricate models, larger numbers of polygons, more accurate behaviours (movement, light, water, fire, rustling leaves, hair, fabrics), and more complex interactions (running a hand or paw through a furry mane â?¦ as the rain starts to fall).

Our perception of the world requires our imaginations, and a substantial amount of *projection* on the part of audiences.

Lincoln suggested as much. Our sensory apparatus is so tuned to human movement and facial expressions that we balk at every imperfection in computer renderings of human movement. Thereâ??s a mismatch between what we expect and what we see. But we are less familiar with the way animals move, cars skid, buildings explode and capes billow in the breeze. Here we make allowances â?? filling in our own detail, and sense of realism.

Any correspondence to reality is most likely a correspondence to what we see in film or other animations. In this sense CGI involves a self-referential mediatized looping, an increasingly *real* feature of our everyday lives.



Also see Hygienic reality, Reality restructured, Computer images and realism.

Category

1. Film and media

Tags

1. animation
2. detail
3. Dreamworks

4. realism
5. rendering

Date Created
July 14, 2012
Author
rcoyne99