**Digital animation Computer- generated animation**

 Computer- generated animation has changed the nature of animation as a form and become the dominant approach in TV and feature work. It has prompted a necessary shift in the definition of animation as a model of film-making made frame by frame or by more synthetic means. ‘Jurassic Park’(1993) consolidated CGI as a crucial cinematic tool in the creation of its highly realistic dinosaurs, just as ‘King Kong’ (1993) proved the importance of stop-motion animations more than just a special effect.

*Do you know what the abbreviation ’CGI’ stand for?*

Progression from an original sketch to a composited, animated character, from Shoebox Zoo — Andy McNamara

This is one of the original sketches for Wolfgang the Wolf, based on the richly decorative animal carvings of the Celtic period. While being ‘authentic’ in echoing the entwined forms of the relief carving ,this also posed potential problems for the animation of the ﬁgures, and the visual appeal of the animals to an audience made up of children. The animals’ ﬁgures had to work both as objects and as manipulatable ﬁgures in computer imagery. Consequently, the ﬁgures had to work as though they were made out of metal, stone and wood, yet also move in a way that enabled convincing animated action. The first CG maquette seeks to address this issue and provide’ frozen’ sleeping position of the character before it comes to life. Shoebox Zoo required that each animal figure become an actual prop, so that initial’ rig’ of the frozen Wolfgang was sent to a lithographic company specializing in creating resin maquettes. The texturing of the maquette was worked on. The maquette of the Wolfgang becomes both a functional prop for the live action sequences and a model for computer-generated extrapolation. As well, the character also had to appeal as a toy. This necessitated research in the now defunct Pollock`s toy museum in London. Wolfgang is shown as fully textured computer-generated form, now able to move from the ‘frozen’ initial rig to a range of ‘performance’ positions.

All of the CG work in Shoebox Zoo was conducted in Maya, but compositing – the mapping of Wolfgang into the desired physical environment – was achieved using Discreet`s Combustion package. The GC characters interacts with the live-action characters and environment; the lighting is a key aspect in creating the shadow that enhances the three-dimensional presence of an imaginary figure as a real character in an actual environment.

Rotoscope and Motion Capture

Rotoscoping and motion capture may be viewed as helpful tools in the development of animated movement , but it still remains the case that all ‘movement’ must be motivated, and that movement is still created by overlapping action, distortion, forced perspective, motion blur, and number of performative ‘takes’ and ‘gestures” to signal particular meanings.

The role of rotoscoping in animated film demonstrates the most evident place where live action and animation meet.

 Rotoscoping is an animation technique in which the animators trace over live-action film movement frame by frame, for use in animated films. The pre-recorded live-action film images are projected onto a frosted glass panel and are re-drawn by an animator. This project equipment is called rotoscope.

 **Motion capture**, **motion tracking**, or **mocap** are terms used to describe the process of recording [movement](http://en.wikipedia.org/wiki/Motion_%28physics%29) of one or more objects or persons.

In motion capture sessions, movements of one or more actors are sampled many times per second, early techniques used images from multiple cameras and calculate 3D positions , motion capture often records only the movements of the actor,(sometimes his or her visual appearance). This animation data is often mapped to a 3D model so that the model performs the same actions as the actor.

The stages of the motion capture process:

1. Real world objects/ animals are used to give the animated subjects/objects a realistic surface. Images of these realistic objects are scanned and texture-mapped on to the three –dimensionally rendered character using a computer. Layers of texture are carefully built up for a convincing appearance.
2. A professional actor or a dancer mimes the movements of an animated character. The motion capture process involves attaching sensors to human performers as they play out the physical sequence that make up the animation, i.e. walking, dancing, flying etc. are enacted.
3. Using a computer programme ( Maya5.0), the data captured from the actor`s performance is then transferred from the human form on to the fictional form.
4. Once the character has been animated using the motion data in Maya 5.0, the digitized model is then exported into Motion Builder software, in order to add characterization.
5. The final stage in this digital animation is compositing the character into the intended context of a scene. Lighting is added to the figure to correspond with the light source of the place.

Compositing - literally bringing together layers of pictorial elements to create an image, can seamlessly enable live-action characters and environments to co-exist with animated characters and objects in a visual space.

*Now watch the film and see how the motion capture works, then answer the questions:*

1. Do the animated characters have the life of their own – if yes, how is it done?
2. Is Davy Jones filmed on set?
3. What sort of reaction did the animator try to get from the audience when they saw Jack Sparrow?
4. What is the purpose of making animation?

<http://www.youtube.com/watch?v=51Ffh2nbHnE&feature=related>