

In The Eye of the Storm: An unexpected calm may be discovered in the crafting of virtual worlds

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Abstract

3D software provides for an animation industry in which computer-generated action and special effects are the order of the day. The end results may be cartoonish or they may be intended to replace actual footage of actors – they are seldom quiet or still. A curious effect becomes evident to the independent image-maker, however, when using the same technology, an effect that may be likened to being at the calm eye of the technological storm.

Typically, these software packages allow for modelling and surfacing (emulating a workshop), arranging and lighting (emulating a studio) and photorealistic rendering (emulating the shooting of the image). The combination of these functions makes for a very different psychological effect, however, to that of photography where the sense of ‘capturing’ – is the dominant feeling.

For the independent artist, the many different activities associated with creating the image in virtual 3D must be undertaken alone and with expert knowledge extending from materials science to anatomy, from optics to computer algorithms. The slow creation of the scene, and the infinite variety and number of decisions between conception and final render, ensures a level of intimacy with the creation that is usually not associated with digital production.

Using these tools the creative process is deliberate and considered. This paper considers whether there is a relationship between stillness and craftsmanship and argues that craftsmanship lies at the heart of using 3D imaging software.

Keywords

Digital, craft, virtual, photorealistic, stillness.

At the SIGGRAPH conference in New Orleans in 2000, the futurist, Ray Kurzweil made the following claim:

We will make 100 years of progress at today’s rate in 25 years. The next 10 years will be like 20, the following 10 like 40. The 21st Century will therefore be like 20,000 years, as far as the rate of progress based on the current rate. (Kurzweil, 2000)

If Kurzweil has his maths right then he says that in the course of this century mankind will make the same amount of technological progress that it has made, to date, since just this side of the Stone Age. Humankind has never experienced change at that rate and history suggests that we are not emotionally, physically or psychologically equipped to do so. Nor has Kurzweil allowed for human resistance to being replaced by “immortal software-based humans”. (Kurzweil, 2000) His enthusiasm and its material manifestations, however, may help to account for the reaction inherent in such movements as “slow food”, “slow reading” and indeed for the purpose of this conference. Whether such interests and movements turn out to be merely a brief respite, a moment for humanity to catch its collective breath, before the great push towards warp speed progress – remains to be seen. What is certainly the case is that the computer has responded very effectively to the “need for speed” that may be inherent in the human psyche. As a result, computer-generated or computer-mediated art has tended to suffer from the popular belief that great work may be accomplished in no time.

Leaving aside the issues of content, function, meaning – which are irrefutably important, the belief that the computer and adjunct hardware like the digital camera, scanner or video camera, can produce master works automatically or within minutes of commencing work militates powerfully against the discipline associated with craftsmanship. If craftsmanship can be described as the willingness to take pains, to provide for exactitude, to serve art, to prepare well, to polish, refine, redo and, ultimately, to produce work that looks well-crafted and unique – then a great deal that comes from the computer manifests high levels of craftsmanship.

In 3D modelling and rendering, the disjunction between the reality - that is, what is required to make good images using 3D modelling and rendering - and the public perception of those requirements is considerable. The gap between the two is made greater by virtue of the fact that so many tools of new media are readily available with the purchase of the latest computer or by piracy. As a consequence, well-crafted, if meaningless, results frequently do reward relatively minimal effort – whether the medium is Photoshop or iMovie.

Indeed, many schools of new media now implicitly rely upon incoming students having already mastered at least the basics of the more popular mediating software and increasingly concentrate their efforts in teaching theory and driving the issue of high-value content. This is appropriate enough when it comes to most media but not so appropriate with 3D modelling and imaging, the requirements for mastery of which are considerable – as noted already. Perhaps because of the technical demands, interest in craftsmanship in 3D modelling and imaging has mostly emanated from schools of computer science and often at the expense of content, which is frequently – though not by any means always – depressingly predictable.

In teaching students how to draw, paint or photograph, art schools have not assumed that students have an innate understanding of the “how to” issues. Poor drawing skills have been improved in the studio by practice, ditto paint management or lighting techniques. When a student of 3D modelling and imaging sits in class for the first time to be told that they cannot make a model successfully unless they can draw it – a ripple of outrage runs through the digital studio as palpable as if the students have discovered that they must master Mandarin before they commence work. The perception that drawing is tedious and hugely difficult and that the computer will eliminate the necessity for such tedium originates, perhaps, in the marketing of computers but is not overcome in secondary education either.

The apparent, current human need for speed may result from any number of modern ills and anxieties that are not the focus of this work. Immediacy, however, is very much a concern of new media theorists, academics and practitioners and immediacy is undoubtedly a close associate of speediness. And, while the blazing immediacy of such works as Velázquez’ *Las Meninas* clearly illustrate that our liking for it is far from new it also seems to be evident that we have drained whatever satisfaction there was from its speedy cousins, fast food, adrenaline-driven working lives, caffeine-fueled leisure and so on.

Immediacy – that “lack of an intervening or mediating agency” (the Free Dictionary) is well provided for, in audience terms, by those technologies associated with the computer. Meanwhile, producers of digital new media works enjoy turnaround times unimaginable to artists and designers of even the recent past. It seems that everything that comes from the computer – from production of works to the computer-based reception of them tends towards speediness.

Meanwhile, in *The Language of New Media*, Lev Manovich argues that “the achievement of photorealism is the main goal of research in the field of computer graphics” (Manovich 2000, p. 199) 3D modelling and imaging software results from that research and, by its very nature, appeals

to the most independent and determined auteurs – those who would control the entire creation process. To understand why computer graphics research has aimed so consistently at such a goal and to understand the appeal of the medium, we need to look closely at photography itself and the causes of its popularity.

The advent of the camera provided for a long-standing human desire to capture important moments of time, briefly to “stop” time by recording a recognizable slice of it. For the first time in history reality was recorded faithfully if imperfectly and, in particular, the human face was translated from its actuality to the mantelpiece so convincingly that the photograph came to be the benchmark for the concept of “likeness”. For painters the effect was especially dramatic in terms of calling into question the ultimate purpose of portraiture or landscape painting or recording generally.

Photorealism, the bastard child of photography, inherits some but not all of its characteristics and twists them into a new and unique shape of its own. “Evidence” is loaded with irony as photorealism challenges us to question our senses or our sense of humour. Photography’s intrinsic effect of memorializing is mocked by photorealism as photorealism’s own “intrinsic effects” (McLuhan et al 1964, p. 8) deliver its unique message, for nothing but the imagination of the artist is “captured” by image-making in virtual 3D even as the artist feigns “evidence” by virtue of the blood relationship with photography.

The “ability to fake visual reality” (Manovich 2000, p. 200) naturally endears the tools to games-makers although “what is faked is, of course, not reality but photographic reality, reality as seen by the camera lens” (Manovich 2000, p. 200) and in the hands of games-makers a games aesthetic has come to be expected of the tools. 3D modelling and animation software makes for greater immediacy because it emulates the faux-evidentiality of photography and what usually results is a variation on the Cottingly Fairies. Photorealism and 21st Century “fairies” have come to be seen as the aesthetic of the tools.



Figure 1. Lara Croft downloaded from: <http://www.tombraider.com/> Copyright: Crystal Dynamics.

Many new users find the allure of the software, in terms of directorial and creative control and photorealism, irresistible but the delight is quickly checked by the discovery of the level of knowledge necessary to use the tools successfully.

3D, modelling, imaging and animation software and its users are undoubtedly responsible for both aesthetic and content clichés in games design. For example, there are few games that do not rely on speed in one form or another to generate popularity in the largely young audience to which it is

appealing. Speed may manifest in many ways, reaction time being one such example but also the ability to port to different locations or the speed of service of the system in terms of having additional facilities assigned to a player and so on.

Many games hark back to a time (or propose future worlds) where acute senses and a good turn of speed make the difference between “life” and “death”. Speed provides an adrenaline rush in societies that are far safer, better designed and more durable than ever before.

It has been noted that adrenaline can be addictive (Hart. A. 1995) which may, in itself, help to explain why electronic games are so popular. (Some research also suggests that an addiction to adrenaline may cause aversion to exercise, since exercise burns off excess adrenaline. Conversely it may be argued, aversion to exercise may create the craving for adrenaline.) By observation the “need for speed” goes hand in hand with the desire for immediacy, which helps to explain why 3D imaging programs are popular tools for making games. It seems also that the software and those who use it to make games are stuck with protocols and algorithms that favour a particular aesthetic. So ubiquitous is the aesthetic that more adventurous games makers are turning away from virtual 3D in an effort to generate new concepts both in terms of aesthetics and content – form and function being as closely linked in this issue as in any other. Certainly games do not preclude aesthetic variety. And, while many artworks produced with 3D imaging tools do appropriate the games aesthetic (cf. Stephen Haley. *Datascape: Peak*, et al) such an outcome is not a foregone conclusion (cf. Callum Morton. *Tomorrowland*, et al)

Academic games courses or programs are largely, though not exclusively, populated by those who like to play and, by definition, those who enjoy the challenges posed by electronic games including, as noted above, those who are addicted to adrenaline. Imagine their distress when they discover, as they inevitably must, that there is no “make” key for the immediate creation of what they have in mind and that, in fact, in making 3D virtual worlds they have entered a creative environment that has far more in common with the craftsmanship of fabrication than the craft of war or Formula One.

Much has been written about the velocity and magnitude of change brought about by the Industrial Revolution. The effects may seem puny from this distance in time especially as we try to come to terms ourselves with the current Technology Revolution. But the effects, both good (steam power, cheap textiles, steel ships etc) and bad (the enslavement of many millions in inhumane working conditions from which some, even in this generation, have yet to escape) were great and long-lasting.

The Arts and Crafts movement was a reaction to and relief from the supremacy of the machine and an attempt to reverse human subjection to it and, simultaneously, a reaction to the meaningless revival of past decorative styles – revived for no better reason than that the technology made it possible to revive them cheaply. It may be argued that some products of new communication technology exist also merely because the technology makes it possible. The Arts and Crafts movement was not merely reactionary, however - many leading lights were prepared to create designs for machine manufacture providing such manufacture did not separate the craftsman from the satisfaction of his or her craft by means of the division of labour.

John Ruskin, the philosopher-champion of the movement equated national good health with the health of the nation’s craftsmanship and provided the intellectual arguments for the work of such designers, artists and craftsmen as William Morris, Charles Rennie Macintosh, C.R. Ashbee and The Pre-Raphaelites. The movement paved the way for Art Nouveau, De Stijl and Bauhaus and its effects can be seen in the work of Clarice Cliff, Frank Lloyd Wright, Walter Burley-Griffin and many other exponents of Art Deco. It was through the efforts of the Arts and Crafts movement that

the concept of satisfying design was extended from the public sphere to that of personal property and we see echoes of it in every iPod. It is difficult now to imagine a time when craftsmanship was so widely celebrated and intellectualized as an antidote to banality and the loss of meaningfulness in daily life. It is pertinent too to note the value that is still accorded to the artifacts that resulted directly or indirectly from the movement.

As Callum Morton, Stephen Haley and others testify, a few contemporary artists have embraced digital media just as some in Arts and Crafts embraced industrial production methods. In his book - *Painting The Digital River* (Walker, 2006), James Faure-Walker attempts to express the excitement and frustration of the traditional artist getting to grips with digital tools. Unlike most other traditionally-trained painters, Faure-Walker who is also a critic, academic and member of the London Group, has persisted with his research and, like Morton and Haley, always manages to honour Clement Greenberg's dictum to respect the essence of the medium. But Faure-Walker largely uses Photoshop and Painter, both 2D applications.

Respect for the medium is a more problematic issue using 3D software because so much is "ready made" and tantalisingly available courtesy of the software designers. The issue of what or how much pre-made material to use is compounded both by the huge amount of work involved in the creation of a single scene and by the increasing generosity associated with the Creative Commons which makes the models and surfaces of others available in the public domain. Through Creative Commons a kind of 21st Century division of labour is occurring which militates against complete authorial resonance and artistic veracity.

At the very heart of games-making activity is a slow, deliberate craft that needs support and encouragement at a moment when publishers await faster bandwidth to pour out more of the same but at lightning speed. Meanwhile, here in Australia, we have been determined to favour content above craftsmanship in our teaching practices in art, design and new media schools. Ironically we have allowed computer science and IT specialists the high ground of programme craft while leaving young artists and designers to the tender mercies of the Creative Commons and a diminution of visual art and craftsmanship as sure as that brought about by the division of labour in the 19th Century. The idiosyncrasies that mark the work of the individual artist will disappear if his or her own craftsmanship is not nurtured or valued and materials made available under the auspices of the Creative Commons are more readily accepted.

Traditionally, craftsmanship in any area has been the prerogative of technical rather than higher education because it has been regarded as a non-intellectual activity. To understand the functioning of high-end 3D applications, however, and the associated peripheral knowledge requirements, is an activity as intellectual as architecture, bridge design, painting or music composition and should be taken as seriously.

New users of 3D imaging software, whether artists or designers, often approach the business with a degree of "speediness" associated with games aesthetic. The same is true of fledgling new media artists and designers generally and certainly within the ranks of critics of digital art and design there is a sometimes justifiable view that the computer provides too easily for artistic slickness, for facile rendering or assembling that results in equally facile works. As commitment by individual artists to the medium of 3D modelling and imaging develops, however, as intellect, hand and eye are engaged and work commences, a reiterative rhythm of thought and activity is generated that demands concentration of a high order. In due course and under the right circumstances the concentration becomes contemplation as the true nature of the work is revealed. For in due course it becomes clear to those who devote their patience and energy to it that, at the very heart of a

medium apparently dedicated to emulating the speedy “click” of the camera shutter, is the still centre of a slowly realized creation.

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Biographical Notes

Gaye Swinn joined RMIT in 1995; she is a senior lecturer in the School of Creative Media and a practicing artist with a career background in Photography and Industrial Design. She led the team that designed RMIT's three games programs and the suite of programs that fall under the title of Master of Creative Media. Gaye completed her MA by research in 1998 for which she produced a 3D virtual reality game and she is currently completing her PhD in Multimedia/Fine Art at Monash University where she has taught Industrial Design and Design History.