

Simulation:
Motorsports and Baudrillard

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It is my intention here to present an alternative version of Baudrillard's definition of simulation and simulacra, as represented by the evolution of video games into what is called "motorsports simulation," where individuals can virtually drive and race simulated cars and tracks, online against other people in real time under an officially sanctioned governing body. It is also my intention to illustrate examples of contemporary art that reflect the concepts of Baudrillard's simulation and other post-structuralist theories. Among those researched and studied, in addition to Baudrillard, will be Derrida, Foucault and Saussure.

When addressing Baudrillard's notion of Simulation, one has to consider three main aspects of his theory. The first is the "hyperreal," which he defines as the state in which our conscious can't distinguish between simulation and actual reality. Because we rely on our perceptions to gather information from the world, and our perceptions offer us no direct connection to that world, they are essentially untrustworthy. What we gather as information and knowledge and define as "real" is simply a representation of our best efforts to come to terms with the structure of humanity into which we have all been thrust. The hyperreal evolved over time until the concepts we apply to our experiences in reality are no longer based on the original objects or experience.

The second aspect, *simulacra*, are the actual signs and symbols that make up our perceived experience. The study of semiotics involves the distinction between actual objects and the things they stand for and are represented by. The sign or signifier points to and stands for the signified or referent, just as the letters c, a, and t stand for the animal we all know to be a cat. This operation is a cultural and historical convention and is the only means we have of creating a connection between the things in the world, our perception of them, and the way we use our perception to understand these things. Baudrillard's *simulacra* was simply his way of classifying the signifiers into his model of simulation.

The third aspect of his model is now evident as pure simulation. Baudrillard is of the notion that our perceptions lead us to what we define as reality, but the simulation is actually what we experience in place of our reality. In building this model of simulation Baudrillard establishes four principle phases of image detachment from actual reality. The first is simply a reflection of basic reality where our perceptions are accurate in their depiction of the supposed objective nature of our existence. The second phase succeeds in masking basic reality and leaving only the impression of it for us to access. His third stage marks the absence of basic reality, where our connection between the sign and the original is replaced with an arbitrary idea or explanation. This leads to the fourth phase where the image bears no relation to reality. Even the arbitrary connection is lost, as without an original referent it has nothing to connect.

Having established the precedents for complete image detachment from reality, Baudrillard then proceeds to outline the five phenomena he believes are responsible for this loss of distinction between simulation and reality. The first, and perhaps most obvious in contemporary society, is mass media. His conception of the media was that of an agent of destruction. He identified our culture as one that is visually based and defines itself by approaching reality through the lens. The problem with relying on the lens is that it suffers from one of the same deficiencies as our own visual perception: it appears to offer an objective view of things when it actually propagates both the subject and object at the same time.

It can be argued that people, in general, accept the process of vision as a direct copying process, one that is completely accurate in its representation of detail from the real world. However, the process is much more complex than that. Our eye, specifically the iris and cornea, act as a lens and are able to transmit light onto the surface of our retina, which then converts that light into nerve impulses that are sent to the brain. At this point we encounter a gap in the process. The information sent from our retina to our brain is being interpreted and processed in

order to render a comprehensible image for us. That image however is only a creation of our own cognitive processes rather than a direct copy of the reality our eyes-as-lenses were witness to in the first place. This gap in our vision process presents the same deficiency as the arbitrary connection between the signs and signified that make up our structured visual and linguistic experience.

Contemporary mass media exploits this deficiency to the utmost of its ability, relying on the lens' ability to create a false reality to further an agenda by turning images into propaganda. The image is used in such a powerful way by mass media that even when the actual truth directly contradicts the image, the power of media is such that the truth can be ignored in lieu of the gratification one receives by consuming the image and accepting it as a more understandable or comfortable reality. The second phenomena was the development of an exchange value for goods and services. Baudrillard says capitalism has forced people to reassign worth based on monetary value rather than necessity or usefulness. This creates a consumer driven economy, which furthers the ability of an image to imply objective truth to its viewers. Multinational Capitalism can be considered the third phenomena, as it creates the distinction between those goods we consume as end products and their origins and production processes. This creates a gap in our understanding of those products and their means of production, which allows the connection between the object and the image of the object to be manipulated. Urbanization is the fourth phenomena and separates us from the natural world. Language, as the structure within which we must communicate, is the fifth phenomena when it is used in a manipulative manner to obscure reality. Politicians are often accused of using language to deceive citizens into supporting an agenda that is not in their own interests.

The combination of these five aspects of contemporary society, says Baudrillard, have created a structure for humanity that has effectively exploited the weakness in human perception

so that perception itself actually becomes a tool for the redistribution of meaning, and in some cases, mass manipulation. Artists having been targeting this device of perception for ages, and over time our perceptions evolve along with the culture that surrounds them. As the culture changes, the images and perception of those images changes as well. This presents a problem, known as the “hermeneutics” issue, where it becomes impossible to understand an image outside of its own cultural context. For example, Picasso's abstract collages may have been interpreted in a different manner than they are today, which can create discrepancy between the accepted meanings of an image or idea over time. A contemporary artist that I feel exemplifies this notion in his work is Vik Muniz.

Muniz was born in Brazil in 1961, becoming an artist only after moving to New York City in 1983. According to Muniz, he funded his travels to the US with compensation he received from being shot in the leg during an attempt to break up a fight. In a 2003 “TEDTalk”¹ he recalls the story and credits his entire career as an artist to that incident, which ultimately led to his existence today. His first show in the US was in 1990, and his first exhibition at the Museum of Modern Art in New York was in 1997. For that show, “New Photography 13,” he displayed a number of portraits and appropriated images that he had reconstructed out of new materials. For instance, one image is a formal portrait of Sigmund Freud made entirely of chocolate sauce. Muniz starts with a blank white canvas and spreads the chocolate around until it resembles the original image. In doing so, he is creating an icon of the original work out of materials that can help one reinterpret the original image in new ways. Depending on what material he uses to recreate the original, the viewer may interact differently with the piece.

¹ "Vik Muniz: Art with Wire, Thread, Sugar, Chocolate - YouTube." Web. 28 Nov. 2011.
http://www.youtube.com/watch?v=ik9x-eu49_c

Although he considers himself a photographer, and uses the medium as his end product for his artwork, much of what Muniz does involves sculpture which is where his artistic endeavors began. Some of his first notable works were titled “Equivalents,” after famous photographer and former MoMA curator of photography Alfred Stieglitz's early conceptual work. Stieglitz had photographed clouds and made the artistic statement that they were supposed to represent what he was thinking and feeling at the time he took the images. Muniz began exploring this idea by creating clouds out of cotton balls that deliberately and accurately resembled other figures. Some clouds looked like cats, some like a rowboat, etc. These images serve well to indicate Muniz' early artistic direction. Another series, “Pictures of Clouds”, which depict cartoon-like cloud formations over the Manhattan skyline, was similar in concept. At first glance the images appear to have been created in photoshop, but Muniz reveals that he hired a skywriting plane to make the formations in specific locations so he could photograph them. He makes the point that the clouds served as “perfect actors,” in that they were already clouds when they were used to represent other clouds. In this way, he is using signs and symbols to restructure the meaning derived from the original and allow the viewer to create their own interpretation and narrative. This is essentially the process which occurs to render our reality into Baudrillard's simulation; we take input from signs and symbols, interpret them in a subjective and arbitrary way in accordance with the culture with which we are accustomed, and create our own individual reality out of signs that no longer have a base in anything but that simulated reality.

The show Muniz exhibited at MoMA with works created from chocolate, wire, and salt also speak to Muniz' early artistic direction. With these pieces, he introduces the viewer to new forms of representation and in doing so speaks towards Jacques Derrida's anti-epistemological network of supposed knowledge: “The graphic signifier refers to the phoneme through a web of many dimensions which binds it, like all signifiers, to other written and oral signifiers, within a

'total' system open, let us say, to all possible investments of sense.”² Here Derrida emphasizes that within our structure of language and image, there is only a finite amount of signs and symbols and the study of one only leads to the study of another, not knowledge or meaning. The traditional “pyramid of epistemology” supports the idea that at the end of the investigation into a sign, symbol, icon, index, etc., there is comprehensible knowledge to be ascertained. Muniz is showing us, by using familiar signs to represent familiar images, that all signs and images offer an unlimited amount of meaning or knowledge depending on how they are interacted with. The original image no longer points to a specific meaning, but rather is composed of new material that represents the search for meaning by each individual viewer.

Having established Muniz' use of appropriation to symbolize the nature of meaning in signs and symbols and subsequently artwork, one must consider the emergence of semiotics as an underlying foundation for his work. In the photograph “Alice Liddell, after Lewis Carol,” Muniz recreates Carol's famous photograph of a young girl. The original photograph was controversial at the time because Carol was suspected to have had an inappropriate relationship, or at least the desire for one, with Alice, who went on to be the inspiration for his famous novel *Alice's Adventures in Wonderland*. In Muniz' image, he recreates Carol's famous using small colorful toys as the only medium. The toys are arranged as such so that the negative space between them creates the major formal elements of the figure and face of the young girl. The use of toys to make the construction offers a number of different interpretations, from that of engaging the viewer on the basis of the universal nature of the toy, to one that suggests the toys represent Lewis Carol's unusual fixation on someone of a much younger age, perhaps someone that still plays with toys. The representation of an image of a young girl out of items that she covets as a child exposes meaning that arguably was not present in the original image. This

²Derrida, Jacques. *Of Grammatology*. Baltimore: Johns Hopkins UP, 1998.

meaning will then lead the viewer on another quest to define the apparent knowledge bestowed by visual perception. Working in this method, Muniz is able to facilitate interaction with the viewer, allowing them create their own visual reality and find “new” ideas already present somewhere in our symbolic structure.

The creation of self-portraits seems to be an integral part of an artist's development, and the collection of works that Muniz has made in the image of himself are excellent examples of how Lacan's “mirror stage” can be manifested into art and aid in the formation of individual identity. Muniz constructs portraits of himself out of items that have some personal significance, so one portrait may be comprised of small circular clippings from a magazine, highlighting his admiration for media and photography. Another image is constructed out of what appear to be small, solid gold objects and is titled “Golden Boy.” A semiotic interpretation of the image reveals the artist's conflicting feelings about being labeled as an emerging talent in the art world by discussing the golden objects as symbols of the expectations he feels as though he must live up to. Integrating additional narrative into his self-portraits by using alternative mediums allows Muniz to better represent his personal identity more so than a straightforward image could.

The last Muniz photographs I'd like to address are those entitled “Pictures of Junk.” For these works Muniz uses large scale arrangements of what he considers garbage to form representations of famous works in the same way he created *Alice Lidell*. For one image, *Narcissus, after Caravaggio*, he fills an entire warehouse floor with both large items such as dishwashers and smaller items like screws and bolts and quite literally, trash. Specifically, all the items he uses in his constructions are the creation or former property of someone else. The idea of appropriation in this sense is comparable to Foucault's notion of the author function in society. Muniz is using other people's work (be it an artist or a factory worker making stove tops) to create the structure for his own work. This challenges the traditional idea of an author and the

possibility of originality. What Foucault defines as an author does not equate to the source of infinite meaning for him, at least in terms of the individual. Instead Foucault talks about the “author function,” which operates as a construction of society rather than a single person's ability to transcend culture and procure originality outside of its influence. As Muniz appropriates items and images for his own work, he propagates the idea that culture has a voice as an author, perhaps co-author, of his work.

It can be said that the connection between Baudrillard's simulated reality and Vik Muniz' carefully constructed images is best represented by a number of different aspects. The first is the way he reconstructs other images with new modes of representation, which effectively enables a new reality for the viewer which can be used as a base for understanding. The second is his ability to create powerful icons of the originals by retaining their formal qualities yet changing the overall impression of the image through the application of alternative signs and symbols as a medium. The third major factor of his work is that he emphasizes viewer interaction, acknowledging the importance that perception plays a large part in creating our own individual realities.

When it comes to simulating reality, perception is perhaps one of the most important aspects to consider. The way we perceive things is the only way we have of interacting with and understanding our place in this world. Relying on the nature of perception, software engineers and theoretical physicists have created something called “motorsports simulation,” which entails online racing with other people in realtime. The idea is to simulate the racing experience to a degree which accurately represents what it is like to drive a race car on track with other drivers.

iRacing.com is perhaps the industry leader when it comes to motorsports simulation, and they have adopted a unique approach to accurately recreating the reality of wheel to wheel racing for the average person. They have been so successful in doing so that a large group of

professional drivers have taken to the iRacing simulator for practice purposes. The iRacing simulation offers a number of features outside of the actual driving experience to enhance the experience as well, from different license levels and official rulebooks to actual cash prizes for winning major online events. There are even iRacing divisions that are officially sanctioned by real-world racing organizations, making the online racing experience an integral part of the development of young, real-world drivers.

When approaching the creation of a motorsports simulation there are four primary aspects one must consider. The first is the actual physics model that dictates how the cars interact with the road. This is perhaps the most important aspect as well. Unlike video games of the past, where there was no direct correlation between the user, the interface, and the game, the simulation offers what appears to be an accurate representation of the act itself, driving a vehicle. Traditional video games may offer a typical hand-held controller that simply turns the on-screen car left or right depending on a push of the joystick, whereas iRacing requires a user interface modeled after a real car. Typical racing setups include a steering wheel, pedal set, and shifter mechanism. The simulation of a racing cockpit is only the foundation for which the actual physics model in the software can take effect.

The iRacing physics model is the culmination of years worth of research into how one can accurately simulate the interaction of a rubber tire with a racing surface. It is mathematical and theoretical model that goes as far as simulating the transformation of rubber into thermal glass when certain temperatures and limits of the compound are reached. The model also include dynamic calculations and algorithms relating to vehicle performance, specifically suspension geometry, frequencies and rates. Each car represented in the simulation service is laser scanned to best preserve reality when interacting with the virtual version. The scanning teams even break down the vehicles to individual parts, weighing many pieces separately so as to properly

calculate mass and inertia. This physics model is the proprietary core of the simulation experience and the foundation for the other aspects of “simracing” in general.

The next aspect of simracing, and maybe the most pertinent to the discussion of Baudrillard's conception of simulation, is the visual model. When racing in real life one has a number of different sensory inputs that are all equally important in relating information from the car to the driver. The presence of g-forces and that “seat of the pants” feeling is the one missing factor in simracing, so the visual experience has to be as accurate as possible to overcome to inherent weakness of virtual driving.

To begin with, both the cars and tracks are laser scanned to within 2mm of accuracy. This means that every turn, every bump, and every aspect of the racing surface is virtually identical to the real-world counterpart. Cracks in the asphalt are captured, off-camber turns, elevations changes, bumps, everything. The tracks are accurate enough that real-world drivers use them as training, and minute details are easily comparable with real world results. Once the actual dimensions of the surface and track environment are captured, a team of digital artists go to work applying textures on top of the “point cloud” created by the laser scanners. These textures are derived directly from photographs made at the track, so a second-tier simulation develops by applying images taken in real life to a virtual surface modeled in simulation. Everything from the grass to the trees around the circuit are modeled to reflect the real world, and the images the end user receives are integral to the effect of the simulation.

The environments are equally as important to the overall effect, and as such they are recreated in explicit detail. If there are mountains or oceans beyond the sight line of the driver or spectator, they appear in the simulator. Grand stands and surrounding buildings are photo-realistic, and flocks of birds even fly by occasionally. Another crucial aspect of the experience is the replication of a driver's line of sight. When in a race car one of the most important parts of

driving quickly and safely is to have track side reference points for certain maneuvers. Braking zones generally have markers to give one reference points for when to brake every lap, and blind turns require a reference point on the horizon so one can aim the car at where they know the turn is, but can't see yet. It is crucial then that all those references match reality in the simulation. Certain trees have to be in certain places to correspond with real world driving tactics, and so on. The combination of a realistic environment with an accurate representation of activity within that environment is foundation of the software side of the simulation. Recreating the experience beyond that is entirely up to the participant, which brings us to the fourth aspect: the user interface.

It is not uncommon for people to spend as much or more than it would cost for a real racing experience on their at-home simulator cockpits, designed at a minimum to provide the user with realistic control methods for a given vehicle. In addition to the basic wheel and pedal set that is required for the use of the simulation, sim racers spend countless hours and dollars on making their virtual race car cockpits as authentic as possible. Outfitting a cockpit with over \$30,000 worth of motion simulator and video equipment is not unheard of.

To highlight the difference between Baudrillard's conception of simulation and iRacing we need to go back to his definition of the hyperreal. For Baudrillard that means the generation of models without origin or reality, or substituting *signs of the real* for the real itself, and there we see our first difference between simulations. iRacing's models actually have an origin, making the racing simulation a second-level sim, taking its signs and symbols directly from "reality." The simulation software is also successful at substituting signs for reality, using textures, photos and 3D models to recreate the reality and experience of driving.

One can also draw comparisons between Baudrillard's phases of image detachment and motorsports simulation. The first, a reflection of basic reality, is fulfilled entirely by the digital

artist's rendering of a visually accurate track and environment. The accuracy on this level is to such an extent that by only a level or two of mediation, the sim experience can be visually identical to the real experience. It is not uncommon for people to film their racing endeavors online, off their screen, with similar equipment to what would be used in a real car, and get convincing results. One would be surprised how realistic it can look to film a computer screen with a camcorder. The next phase is the masking of a basic reality, which is only partially fulfilled by the racing sim. Although the visuals are incredibly accurate, there is still an evident lack of certain essential traits to motor racing, specifically the g-forces felt when driving, present in the sim. One can't help but notice that the concentration once placed on how the car *felt*, must now be focused on to what is happening on the screen. Without the feedback of g-forces, more emphasis is placed on the accuracy of the visuals. The third stage, the marking of an absence of basic reality, is evident in the avoidance of the arbitrary relationship between sign and signified. In sim racing, the signs have direct and consequential relationships to their real-world counterparts. Professionals using the sim for training is a perfect example of how the sign in the simulation can have a direct effect on the interaction with the signified in reality. This brings us to the last stage of image detachment, where the image bears no relation to reality. This is Baudrillard's final conception of simulation, but in sim racing the image does bear relation to reality. Drivers save time and money by investing in simulation seat time rather than real world experience, and in doing so keep themselves out of harms way in the process.

The question ultimately remains; can simulation accurately recreate experiences from reality? In Baudrillard's eyes it seems that reality is of no importance at this point because all we experience is simulation anyway. The examination of sim racing in comparison to these theories has exposed the idea that simulation is potentially inaccurate to a certain degree, but in all accounts sufficient enough as a foundation for our perception and existence.

Bibliography

Saussure, Ferdinand De. *Writings in General Linguistics*. Oxford: Oxford UP, 2006.

Baudrillard, Jean. *Simulacra and Simulation*. Ann Arbor: University of Michigan, 1994.

Grenz, Stanley J. *A Primer on Postmodernism*. Grand Rapids, MI: William B. Eerdmans Pub., 1996.

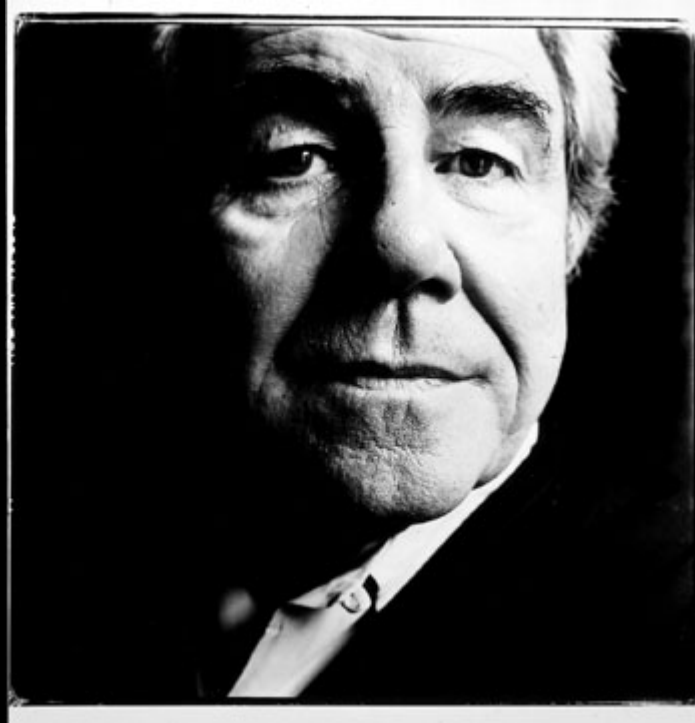
"BOMB Magazine: Vik Muniz by Mark Magill." *BOMB Magazine: Home Page*. Web. 16 Nov. 2011. <http://bombsite.com/articles/2333>

VIK MUNIZ. Web. 16 Nov. 2011. <http://www.vikmuniz.net/>

IRacing.com | *The Premier Online Sim Racing Game*. Web. 17 Nov. 2011. <http://www.iracing.com>

Simulation in Contemporary Arts/Science

Jean Baudrillard



Simulation and Hyperreality

VIK MUNIZ

- Born in 1961
- Lives and works in New York City
- First US shows early 1990s
- First MoMA show 1997

“They say art is supposed to be about something. I find that it's not enough of a mission to be about one thing or another because to be art, to begin with, it should be about everything at once.”

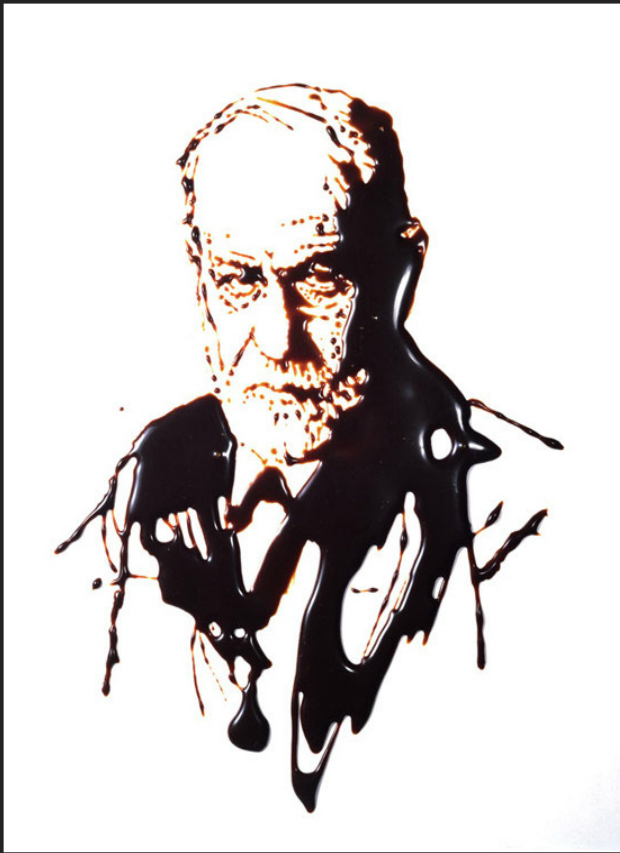


Self Portrait (Fall II)

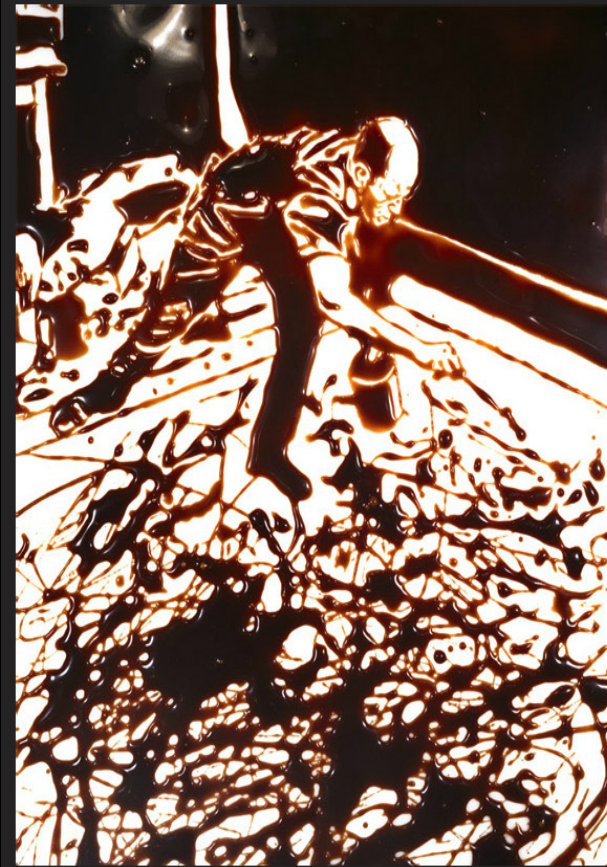




- Similar to Alfred Stieglitz's "Equivalents"
- Some of the first highly publicized conceptual photographs
- Hints at constructed reality, direction of artistic development



Sigmund



Action Photo, after Hans Namuth

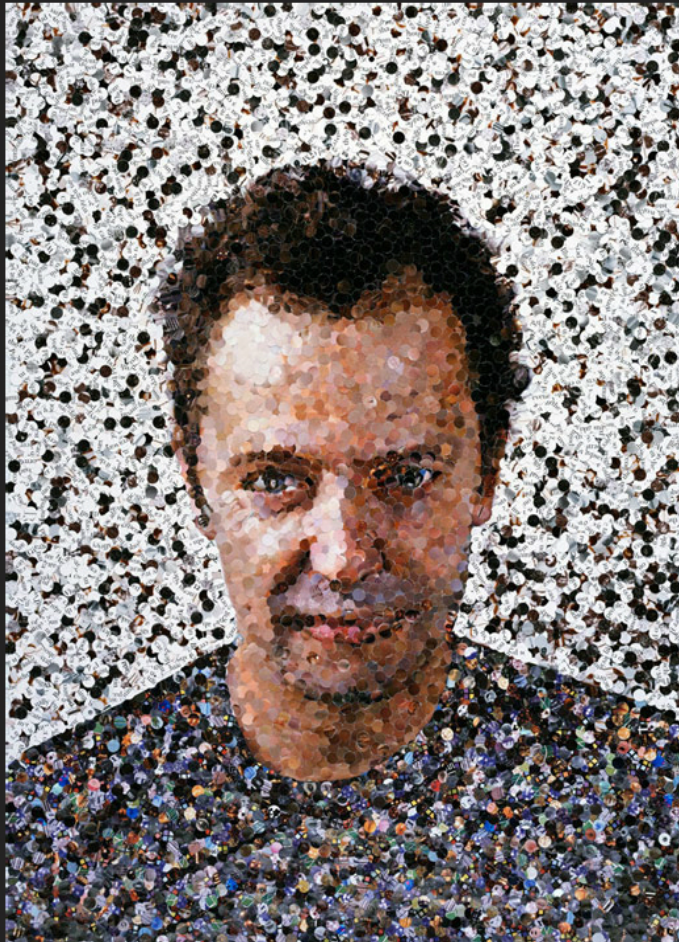
- Appropriation of “original content”
- New forms of representation

- Muniz's primary mode of representation begins to emerge.
- Semiotics clearly evident
- Viewer Interaction: Artist allows us to create our own visual reality by recreating the original image with familiar signs and symbols.
- Toys are not *universally* understood but are close enough to ensure any involved viewer will bring some nostalgia into the viewing process.
- Provides viewer access to “new” ideas already present somewhere in our symbolic structure.



Portrait of Alice Liddell, after Lewis Carroll

Self Portraits



Self Portrait (Front)



Self Portrait (Golden Boy)

- Images emphasize Lacan's "Mirror Stage" and the formation of individual identity. Muniz goes one step further and recreates his own image out of personalized symbols that represent more of his identity than a straightforward image could.



Narcissus, after Caravaggio

<http://www.youtube.com/watch?v=7TscXP1FuQA>



Saturn devouring one of his Sons, after Francisco de Goya Y Lucientes



Venus and Cupid, after Correggio





iRacing.com

MOTORSPORT SIMULATIONS



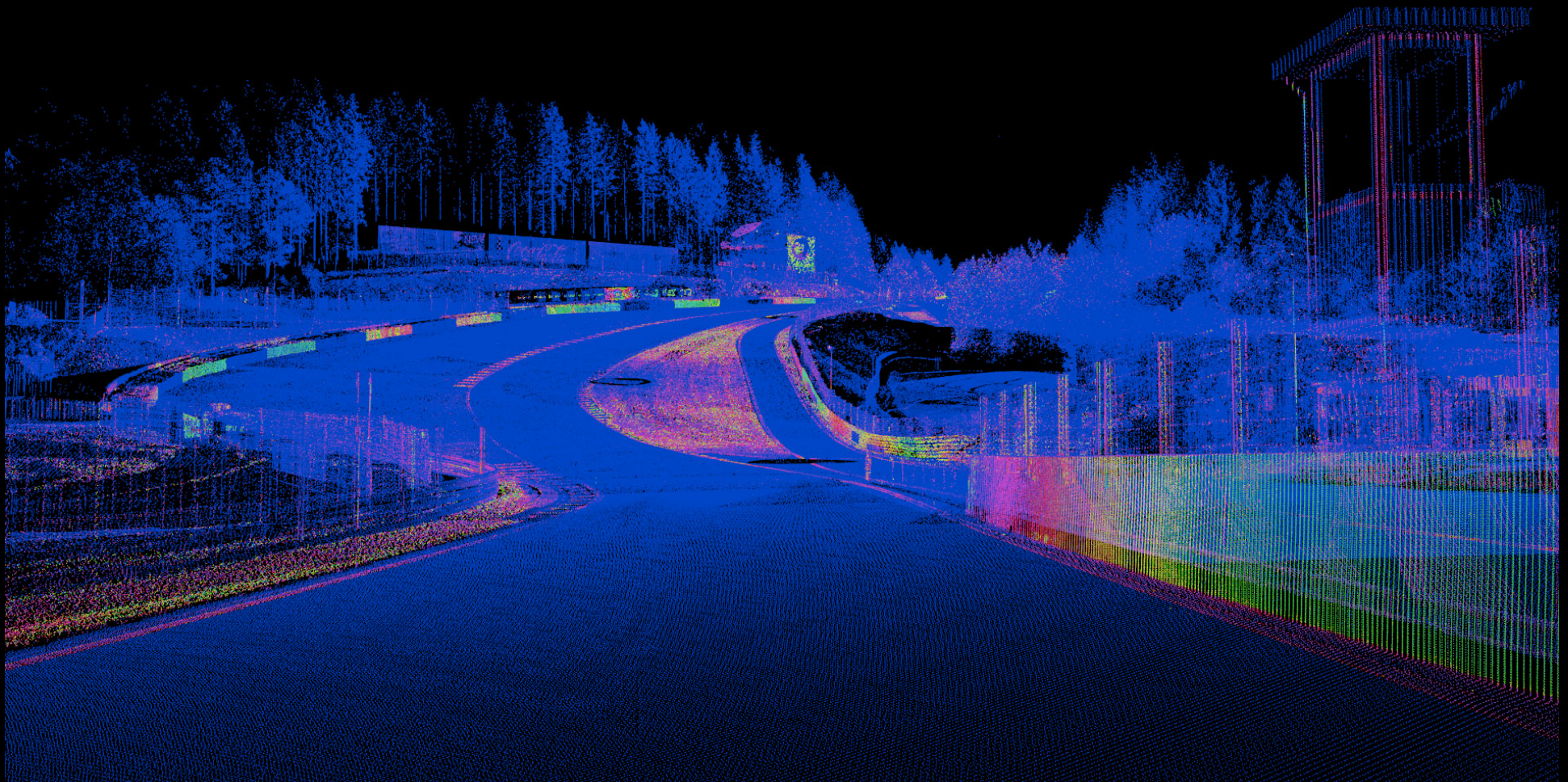
Motorsports Simulation

Physics Model

Visual Model

Accurate Environments

User Interface



- Laser scans gather information which is developed into a “point cloud”
- Point cloud becomes the foundation for applying real world textures

http://www.youtube.com/watch?feature=player_detailpage&v=lcqLEIE8MBk#t=273s



Simulation?

Reality?





Simulation?

Reality?



Most important - Line of sight



<http://www.youtube.com/watch?v=H-kkkzEbDB8&>



Sim Racing Cockpits

Home setup -

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

Motion Simulator -

http://www.youtube.com/watch?feature=player_detailpage&v=HJoi-1g0lzl#t=150s

Formula 1 Simulator -

http://www.youtube.com/watch?feature=player_detailpage&v=rE-Fge3gN9w#t=12s

- Can simulation accurately recreate the experience?

- Is simulation potentially inaccurate but still sufficient anyway?