

Las Meninas: The Articulation of Vision

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'Las Meninas' is a virtual reality artwork created for the CAVE. The painting of the same title, 'Las Meninas' or 'The Maids of Honor' (1656), by the great Spanish painter Diego Velazquez, challenges the viewer with its allegorical subject matter and enigmatic mise-en-scene. From the outset the viewer confronts the artist's canvas which is forever hidden from view. The viewer desires to see what is hidden from him and at the same time witnesses a mise-en-scene which carries within itself multiple allegorical meanings: the pictures decorating the walls of the room in Velazquez's composition which are subjects from Ovid's 'Metamorphoses' painted by Mazo after the originals by Rubens; the mirror in the black frame which reflects the half length figures of King Philip IV and Queen Mariana under a red curtain but nothing else in the room; the magical stillness of the room and the people in it, as if photographed, forcing the viewer to believe himself to be actively present at the scene; the painter himself whose "dark form and lit-up face represent the visible and the invisible" (Michel Foucault); the lame devil, Jose Neito, standing in the background holding an open door; the imaginary space outside the picture frame where the painter, the Infanta, one of her maids, the girl dwarf, the courtier in the rear doorway, are looking, each from a different point, at the sovereigns, who are in theory standing next to the viewer, and so forth. Thus, the allegorical subject matter and enigmatic mise-en-scene work together in Velazquez's painting to dramatize the 'inner focal point' of the realm of the painting and the *outer focal point* of the realm of reality. The viewer is at once *seeing* and *being seen*. He constantly oscillates between objective realism and subjective paradoxes arising from the emblematic interpretations which the overall mise-en-scene lends itself to. The vision, therefore, is no longer fixed on a vanishing point, but is now dispersed over multiple planes of form, function, and subjective meaning. The painting raises questions about the nature of representation and subjectivity in a unique way rarely ever matched in the history of visual art.

In the CAVE, when *Las Meninas* the painting becomes *Las Meninas* the virtual reality, the viewer is able not only to solve certain problems pertaining to the nature of representation and subjectivity, but also reflect on further questions. It is important to point out here that the painting's original size of 10-feet is the same as that of the CAVE. The very theoretical questions the painting raises become tangible and empirical once placed within the boundaries of VR. In other words, the painting's fixed and traditional problematic of representation and subjectivity take on a dynamic and physical aspects once the *center of vision is dispersed* in the medium of VR.

Brief summary

Las Meninas starts when a three-dimensional representation of an optically-generated actor or avatar, playing the role of the painter Velazquez enters an empty studio. The actor poses in front of a hidden canvas and then becomes a two-dimensional image. A narrator explains and contextualizes the narrative. The viewer is then able to paint with the wand the rest of the characters as positioned in the original painting. Suddenly, the two-dimensional characters existing in a three-dimensional world become themselves three-dimensional. The Infanta Margaritta guides the viewer in the large studio. The narrator temporarily suspends his narration as the viewer explores various historical spaces.

The Narrative Paradigm of *Las Meninas*

There are four elements which constitute the narrative paradigm of *Las Meninas* in VR:

1. Fusion of optical and virtual images

Las Meninas starts when the rear door of Velazquez's studio, a three-dimensional computer-generated image, opens to let an optically reproduced actor or avatar, playing the role of the painter himself, enter the empty space which is computer-generated. From the start the viewer experiences a narrative tension arising from an immediate oscillation between the world of the real, optics, and that of the imaginary, virtual environment. This narrative tension is characterized by the viewer's ability to see something as both real and imaginary simultaneously. He believes that what he sees belongs to the laws of optics, but at the same time existing within the laws of virtual environment.

Another instant in *Las Meninas* where the fusion of the optical and the virtual take place is towards the end of the narrative. After the viewer leaves the world of 17th. century Velazquez and the fugues of J. S. Bach, he enters the world of the 20th. century to witness studies by Picasso of *Las Meninas*, his *Guernica*, the serial music of Schnittke, but above all the viewer encounters television sets suspended in mid-air. The sets show archival film footage of Hitler, Franco, and Chaplin. Here again, the inclusion of optically-generated images with ontologically authentic virtual environment functions at a meta-thematic level to provoke reflections on the changing methods of representation and subjectivity.

2. Visual and aural guides

Las Meninas incorporates multiple visual and aural guides. The Infanta Margarita acts as a three-dimensional guide just after the entire painting is completed by the viewer (he paints the canvas with his wand). At first, the infanta seems to be an alibi of the invisible narrator who narrates the historical, political, and aesthetic cryptograms embodied in the painting. However, when the narrator temporarily suspends his narration, the guide or the Infanta disappears. Another guide steps into the narrative. This guide is a person standing next to the audience in the CAVE who will then take on the responsibility to narrate the rest of the narrative.

This method of using a guide familiar with the story is inspired from Japanese Kabuki theater, a highly stylized and somewhat overwrought dramatic form derived from the feudal Tokugawa period (1603-1867). In Kabuki theater, there is a benshi, or actor, who stands at the side of the stage and narrates the action for the audience (a method later used in early Japanese silent cinema).

3. A total environment and the double articulation of time

After the optical Velazquez takes his place in the empty virtual studio the viewer paints with the wand the rest of the painting: the Infanta Margarita and her entourage. It is in such interactivity that the viewer is able to create a balance between what is presented in front of him, the phenomenon, or his present reality, and his own manipulation of it in VR. This double articulation of time, that is, time that already exists in the phenomenon and its manipulation by the viewer, gives the viewer the feeling that the reality presented in the CAVE is not only representational but also ontological and subjective. The viewer is finally able to be part of the phenomenon. He is an extension of a virtual world in which he can shape and determine the outcome of events. The phenomenon passing in time can now be interrupted, accelerated, decelerated, moved both backwards and forwards, and completed or left as is. The virtual environment becomes a *total environment* in which the viewer is both an extension and a determining factor of the environment.

4. Dramatic shift from the formalistic to the psychological

Las Meninas is staged in such a way that there is a dramatic shift from the formalistic to the psychological. Not only does the work invent passageways, towers, three-dimensional triptychs, non-Euclidian spaces, telescopes, transparent surfaces, and television sets, but it also provides them with a history in order to connect them with the narrative and give them meaning. The sets are created in order to act. Whether baroque, modern, or abstract, the sets embody the ideals and emotions of their specific historical period. The shift from one period to another and yet another is an attempt to make connections between various periods and demonstrate how form and function act as one. The psychological factor here plays a major role. Not only does the viewer experience a specific sensation arising from the specific formalistic set and music, but also his mental act of perception becomes based purely on unconscious inferences he makes as he navigates and interacts with various sets in different periods.

What is learned from *Las Meninas*

Illusion in art is a complex topic and each era has its own limitations and paradigms when rendering reality. When we look at Egyptian art, for example, we read it as a brilliant signaling system of code and not as a literal representation of reality. But is this the way the Egyptians themselves saw their art? The Greeks went on from there and created the three-tone code for modeling in light and shade which remains fundamental to all later development of Western art. As inheritors of that tradition and inventors of VR artworks, it is important to invent a language which defines the way our new tools of production operate and shape the future of art.

In *Las Meninas* illusion in art manifests itself as we react, feel, and think in front of the cryptograms of its virtual worlds. In other words, the audience not only witnesses the faithful and convincing representation of a visual experience through convincing representation, but also the faithful construction and orchestration of a relational

model in which the interplay of image and sound trigger in the audience a stimulation to bring about a *second reality*. This second reality originates in the audiences' conscious and unconscious reaction to the virtual world and not in the world itself.



Media:

Las Meninas is primarily designed to run in the CAVE, a multi-person, room-sized virtual reality system developed at the Electronic Visualization Laboratory (EVL) of the University of Illinois at Chicago. The CAVE is a 10 x 10 x 10 ft. room constructed of three translucent walls [Cruz-Neira et al., 1993]. A rack Onyx with 2 Infinite Reality Engines drives the high resolution stereoscopic images which are rear-projected onto the walls and front-projected onto the floor. Light-weight LCD stereo glasses are worn to mediate the stereoscopic imagery. Attached to the glasses is a location sensor. As the viewer moves within the confines of the CAVE, the correct perspective and stereo projection of the environment are updated and the user may walk around or through virtual objects. Four speakers mounted at the top corners of the CAVE provide audio. The user interacts with the environment using "the wand", a simple tracked input device containing a joystick and 3 buttons. It is used to navigate around the virtual world, and to manipulate virtual objects within that world. *Las Meninas* also runs on the CAVE's smaller, more portable cousins, the Immersadesk and Immersadesk2.

The models were created using Softimage 3D and imported into the CAVE using SGI/Performer. The avatar was created using a blue screen technique and a library developed by Joseph Insely.

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