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«La réalité n'est
qu'un point de vue.»

Philip K. Dick



Ecocinema

Real Presences in Virtual Cinema

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In *The Invention of Morel*, published in 1940, Adolfo Bioy Casares anticipates Virtual Reality, envisioning a post-technological island inhabited by holographic presences.

In the novel, a fugitive escapes from police and swims to an island where he encounters strange characters who repeat, *ad infinitum*, the same dialogues and actions. He discovers that these entities are residual three-dimensional images of persons who had existed in the past and had been synthesized by the machine of Dr. Morel. Their avatars are eternally projected on the surface of the island via a holographic system that operates by harnessing the power of the

tides. The fugitive falls in love with Faustina, one of the virtual beings, and realizing that he can only join her by integrating the Simulation, he films himself with Dr. Morel's camera. As he is being dematerialized and turned into an avatar, the man leaves a last note in his diary, expressing his hope for a future technology that will enable "disintegrated presences" to become conscious of one another and thus permit him to enter Faustina's mind.

Bioy Casares dreamed of a machine that could penetrate consciousness and record 'the thoughts and feelings of the transmitter'. The artificial ecosystem he describes — a *collaborative narrative network characterized*

by the interconnection of machines, real and virtual agents and the natural environment — evokes the most recent developments in the domains of Interactive Cinema and Virtual Worlds where symbiotic relationships are being developed between human and artificial sensorialities.

Neural processing technologies detecting thoughts and emotions, along with the exponential growth of human and Artificial Intelligence (AI) interactions in Virtual Environments (VE), inspire new prospects for Cinema, virtual games and narrative arts.

Through the advancement of my concept '**Meso-narrativity**', and of an ecologically situated cinema that I will call '**Ecocinema**', I will discuss the emergence of Interactive Cinema and collaborative fictions that will profoundly redesign our embodied experience.

intersensorial corporeity

Inspired by the vision of introducing the immediacy of thought to the human-machine interaction, Emotiv Systems, a company founded in 2003, developed 'Project Epoch' - a wireless interface 'evolving the interaction between human beings and electronic devices beyond the limits of conscious interface.' (emotiv.com)

Focusing on human subjectivity, Emotiv Systems' artificial sensors permit real-time tracking of conscious thoughts and non-conscious emotions. Developed through applications of neuro-technology and brainwave recognition, 'Project Epoch' operates through the use of a headset, coupled with a processing unit able to tune in to three categories of signals : conscious thoughts, discreet emotional states and facial expressions.

The digital interfaces provided by Emotiv Systems presage a paradigm shift in the fields of virtual gaming and interactive Cinema, through redesigning narrative and immersive strategies around the idea of **emotional**

employment. By mirroring the complex relationship between emotional states and interpretative consciousness, these interfaces will dramatically heighten user's immersion and introduce more intuitive forms of agency.

Emotiv's *Expressiv'* suite synchronizes avatar's facial expressions with those of users and permits human-like communication between avatars and artificial agents. Their *Cognitiv'* suite goes a step further by reading and interpreting conscious thoughts and intentions, thus empowering users with telekinetic skills that enable them to manipulate virtual objects solely by mind-control. Through this recursive feedback 'the player is able to focus on a specific thought such as lifting an object up, and the Cognitiv' suite sends commands through the API to levitate the object in the virtual world' (emotiv.com).

The most challenging realization of Emotiv is the *Affectiv'* suite, which tracks the emotional states of the subject and then alters the atmosphere of the virtual world, recalibrates levels of interaction, tailors the chain of events, and stimulates emotional responses in virtual agents in response to the emotions of the user.

Emotional and imaginal interfaces enhance the *subjectification* of the virtual environment by providing organicity to the avatar and transforming it into a cognitive vehicle for the user's self. That process transcends the avatar's body by virtually expanding the user's perceptual and experiential corporeity and cognitive apparatus to the whole virtual environment. To a lesser extent, that dynamic is already observable in Shared Virtual Worlds such as **Second Life** in which the user can benefit from a highly disembodied vision, independent from the avatar, which allows him to travel freely through surfaces and textures, reaching what Gilles Deleuze would have called a 'machinic' or 'molecular vision' of which subject is both the human user and the program.

Thomas Sheridan and Marie-Laure Ryan underscored that peculiarity by addressing the synchronized relocation of the center of

consciousness into distant objects, or into other telepresent agents, as a key-condition of immersion in Virtual Environments (VE). By allowing multidimensional actions, sensorimotor stimulation, and deterritorialized perceptions, interfaces constitute what I will call an '**intersensorial corporeity**' in which all interacting agents converge. (Morignat, 2004)

By providing software agents with access to human intentionality and building the conditions of human-like emotional and symbolic interaction (the result of which will recursively shape the environment), neural interfaces will play a key role in the rise of an artificial cognition.

In such a process, shared and externalized human consciousness, displayed through various fictional canvases such as cyberdrama, interactive movies or MMORPGs, will be the symbolic interfaces from which virtual agents will gain awareness of the real world and of its fictional representations.

Consequently, in the context of Cinema and narrative arts, Brain Computer Interfaces (BCI) reveal an ongoing process of ontological fusions between persons and fictional characters, perceptions and actions, representation of a fictional world and **enactment of a shared virtual world.**

situated identity & meso-narrativity

"Cognition, [asserted Francisco Varela], is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs." (Varela, 1989)

Describing a structural coupling between the agent and its environment that brings forth a world, Varela's notion of enaction evokes the dynamic of a mutual defining process occurring between the VE and its agents. In the context of a narrative-based VE (interactive movie or AI directed scene for instance), or a VE promulgating agency (Role

Playing Games), narrativity integrates enactive features that lead to new creative modalities.

I refer to this ecologically situated narrativity as meso-narrativity. (Morignat, 2005)

Rising from the core of events and the relational sphere of the interfaces, the meso-narrative is inseparable from its experiential environment and deploys itself as an environment, commensurate with the complexity of the interaction.

Meso-narrative occurs within an interactive and immersive intermediate reality, where real and virtual agents, located in **situated identities**, share performative functions and enact an emplotment that will exhibit the evolutionary dynamic of a world.

Meso-narrativity also describes the relational complex developed by avatars and characters whose collaboration is responsible for, or affects, the ontogeny of a responsive fictional world.

Being immersed as a causal agent with fictional entities inside of a ecosystemic diegesis, the human subject is shaped in a situated identity that dramatically blurs the boundaries between real and fictional presences.

from i-cinema to ecocinema

Interactive Cinema and the involvement of AI in emplotment reveal the ongoing development of ecosystemic narratives and the progressive disappearance of the ontological and physical distance that separated the fictional world from its recipients.

The 'AVIE' project (2004), developed by Jeffrey Shaw within the Centre for Interactive Cinema Research (Sydney), enables audience direction of cinematic experiences and interacted performances between real people, avatars and fictional characters.

'AVIE consists of a 360 degree stereoscopic immersive interactive visualization environment with motion and shape tracking

systems and a multi-channel audio system' (icinema.edu.au).

Individuals within this three-dimensional visualization environment 'are tracked by a system of infra-red cameras and real time software able to generate models of their movements and body pose.' (icinema.edu.au).

Eavesdrop (2004), an interactive fiction conceived by David Pledger and Jeffrey Shaw for the AVIE system, plays with strong ontological shifts between real presences and fictional ones. Ten characters tell the story of their life in a temporal loop that can only be modified by the intrusion of the spectator who 'as the free radical user-director, reveals the secrets embedded in the interconnected stories' (icinema.edu.au).

In Eavesdrop, physical proximity stresses ontological proximity. 'Special to this space is the ability to enter into the private, interior landscapes of each of the characters. (...) Get too close to any of the characters and the spectator will be bumped into this interior life without warning' (icinema.edu.au).

By subjectively breaking into any character's mind and forcing his confession, the individual, once a spectator, becomes an agent of the fictional world.

Intensifying that process, Conversations (2006), a Distributed Multi-User Virtual Environment, also developed by the Centre for Interactive Cinema Research, challenges both the traditional cinematic single-layer narrative form and dramatization of History.

Conversations enables several distant spectators to evolve together, through their avatars, into a stereoscopic cinematic landscape. A gyroscopic tracking device, attached to the head mounted display worn by the users, generates images commensurate with their movements and view angles. With the use of the interfaces, the users can experience the impact of their real presence in the virtual environment by freely navigating in the cinematic landscape,

modifying their viewpoint, talking to each other in real-time or interacting with fictional characters.

The interactive experience immerses the spectators in the core of a historical event : the escape, recapture, trial and hanging of Ronald Ryan at Pentridge Prison, Melbourne in 1967.

Conversations allows multiple enactments of the drama : viewers can choose either to enact Ryan's experience during the daytime, as actually occurred, or they can choose to be immersed in a ghostly night, haunted by the contradictory tales of witnesses, judges and narrative agents able to detect users' presences and converse with them. As discussed by Paul Ricoeur, spectators as well as 'historical characters are thus elevated above their empirical role and become the constituent figures of the plot; they are turned into metaphors, they are configured commensurate with the configuration of the story to which they contribute' (Ricoeur, 1983).

Inhabiting the drama, directly confronted with the protagonists, users project over the historical landscape the history of their own actions and perceptions, intimately merging the inceptive narrativity of their own life with that of the represented events. In this existential and experiential intersection rises a meso-narrative that becomes a dynamic model, redeploying individual perception in an infinity of perceived and perceptual worlds.

Translocation of our perceptions, the emergence of sensorialization and behavior in virtual actors and media, and the autonomous generation of characters, signs and backstories, create real-time collaborative emplotments, intersecting the director's vision with that of the viewer.

With these developments, I can envisage the rise of **Ecocinema** — an *ecologically situated cinema* that will expand our creative existence.

Pr. Valérie Morignat,

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