

**Title: Evolution of digital cinema**

The cinema begins a new era of the advent of digital, creating works of fiction that use motion capture and virtual visualization devices that transform the process of making the image in motion. We want to take note of this transformation by looking closely at the technical evolution of digital cinema through some of the capture and virtual visualization devices used for motion capture and visualization of virtual scenes in real time. This is why we will choose, as the main object of study, fiction that emphasizes the boundaries between two dimensions, real as to that of humans and virtual as to that of computer-generated images: *Beowulf* by Robert Zemeckis (2007) and *Avatar* by James Cameron (2009). This way of creating scenes, in composite images in motion, leads to questions about the technical evolution of the concept of virtual. Indeed, in the era of the "all digital", the capture of movement and its transposition in a virtual (fictional) scene by means of these devices of virtual production raises an understanding of the technical evolution of the concept of virtual digital cinema to detect its influence and its effects on the aesthetics of the film.

During our communication, 1) we will first seek to understand how the evolution of the virtual cinema is linked to the devices of capture and virtual visualization examining our body of work to illustrate this. 2) We will then carry out a study to determine by what mechanisms and processes these devices affect the manufacturing process of the fictional work and redefine the notion of virtual cinema, so we want to grasp the limits of hybridization between image in movement in real shooting and moving image synthesis; we will put the following productions in phase - based on their Making of- to illustrate our point: *Beowulf* (Robert Zemeckis, 2007) and *Avatar* (James Cameron, 2009). From this corpus, we wonder about the technical evolution of the virtual and its influence on the aesthetics of the film. We try to distinguish between a "point of view of the camera" (Garcia, 2009: 163) (that of "physical" shooting), and a "point of view of things" (Garcia, 2009: 163) (the one from the mental point of view). The mental point of view is virtual, which is called a point of view of things, characterized by a complex passage towards a process of computer manipulation, and this, to obtain the desired staging.

We therefore try to study the production devices of the image virtualization in these two productions in order to understand how the two directors are free from the constraints of realization due to the materiality: the limits of the angles of viewpoints of a simple camera rather offering a point of view of things, but also a point of view of the camera. This calls for an understanding of the rules for transforming moving images into real-life images and moving images as a result of digital performance capture. Let us postulate that the virtual rendering of scenes gives rise to a temporal dephasing of the stages of shooting in this kind of production: it is not only the image that is composite in the so-called virtual universe. The director has to decompose his point of view and his creative process as well.

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My application Symbiotic Cinema: Confluences Between Film and the Other Media
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**Biography:**

PhD candidate in semiotic (specializing in media and film) at *Université du Québec à Montréal*, affiliated with the Research Center *Figura* and the Research Group (*GRISQ*) at the Media School (UQAM University). The title of my research project: "Neo-technologies in cinema: a multidisciplinary approach to the digital image revolution". I participated in several symposia, conferences, study days and round tables.

**Scientific publications:**

1- "*The movement-image in cinema from chronophotography to performance capture*". It will be published in V. 28, numbers 2-3 (Spring 2018), *Journal of Film Studies CiNÉMAS*.  
2- "*Virtual visualization devices: limits of hybridization of the image in contemporary cinema*", Dir. Fiant, Anthony, Hamery, Roxane and Massuet Jean-Baptiste, *Point de vue et point d'écoute au cinéma. Approches techniques*. Presses Universitaires de Rennes (PUR), p.39-50.

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