

## Panel H2

Sala delle Colonne 1

### Science and Animation I

Cátia Peres

#### Out of Gravity – The significance of physics in Animation



“Out of gravity” focuses on concept of physics, and relates it, with the universes created by Hayao Miyazaki, in the design practice for animation. We consider the terminology of physics, as a science that understands how the universe behaves, or the study of matter and its motion and behaviour through space and time. We consider, physics an important part of the animated language, as a reflection of the director’s approach to life, themes and universes. We consider this study very relevant to animation, as the major capability of animation to establish a relation, between director and the construction of meaning, form and movement, giving life to every possible world. The relevance is seen, as a matter by which a world is coded and made credible, which ultimately defines a coherence of the film under the director’s authorship and intentions.

We structured the analyses of physics, in relation with three levels: first, with the construction of meaning, secondly with the construction of graphic form and thirdly with the construction of movement as described below:

1. On a first level, we analyse the construction of meaning, looking at the films as a creative result of the author’s philosophy. By attributing visual signs and graphic images to concepts, the director establishes a semiotic relation between image and meaning. Escaping of the rules of reality, the director proposes a parallel world, grounded by the physics of a created universe. We consider at this level, principles of analysis of physics on the nature of story, the consequent universe constructed with symbolical meaning, the nature, physiology of the inhabitants of the universes, the character’s inner and external world, and the enchantment and credibility of the universes. The references cover studies on Japanese animation, realism-fantasy, cinematism- animetism, conscious-unconscious, objective-subjective with references to studies of Wells (1998), Lamarre (2002, 2009), Buchan (2013), and Raffaelli (1997).

2. On a second level we analysed the relation of physics with the graphic form, and formal aspects of shape, scale, mass, weight, depth, flying objects, floatable islands, walking castles, and the nature of two different physiologies in characters (humanized and realistic protagonists against extravagant “stranger” and out of this world antagonist or secondary creatures). The design of the scenery and the aspects of nature are analysed at this level, as we consider them crucial in Miyazaki’s worlds, such nature, skies, rain, wind, spirits and whispers. We analysed examples of early filmmaking, specifically the physicality and liberation of form, such as Eisenstein’s concepts of “freedom from ossification”, “plasmaticity” and “animism”. We also overview the principles referred by Johnston and Thomas (1981) in relation with physicality, mobility and credibility. Other references (Bukatman 2003, 2012; Bendazzi, 2016), contribute for the complementary information on how to consider the physics and physicality of characters in its worlds, in order to make clear the differentiated

proposal of the worlds from Japanese animation and the specific approach of Hayao Miyazaki and the way he builds his universes.

3. On a third level, we analyse the relation of physics with movement, in what concerns with the constant changeability of animation on its process, but also on the specific approach to movement, time, pace, velocity, mobility, floating, weightless, gravity, past and future time, behaviour and the physics on the development of action in the story. At this level, we analyse Miyazaki's universes in motion, time and pace, and how he builds credibility and enchantment in his films. The references in this section will be mostly from Miyazaki's writings (2009, 2014), Cavallaro (2006, 2014), Napier (2005, 2007), Raffaelli (1997), Lamarre (2002, 2009), Broderick (2007) and Clements (2013).

As a result of this methodology of analysis, we interpret Miyazaki's intentions and authorship of creating worlds credible in the animated form (with particular examples). We debate his profound development of the themes and character's emotions, with particular detail for its universes and physics, which emphasize the form of the animated film with credibility and enchantment. Similarly to an orchestra where all the instruments have its function but they are all playing the same music with a very specific emotion, the animated film is created by different elements, being its universe, its physics and how it behaves a very important part of it, a reflection and vision of the director.

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## Biography

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Cátia Peres graduated from the National Films & Television School and The Royal College of Arts (the MA is attributed by both colleges) in 2006 with a specialization in Animation Direction. There, she directed “Synchronoff”, a 2D, 10 minute film which received a few awards and gave her the maturity to understand on how to direct her own films. “Synchronoff”, was designed and animated in 2D and at one section of the film, elements and characters loose the gravity in their world and for long seconds we assist to a scene where things fly and float, coming back to order after a while. This out of gravity issues have always interested me, partially for the poetic lack of weight and lightness possible in drawing and animation, and partially as a language that deals with “the everything is possible” in animation, which I understand now, was a trigger back then, and it’s now part of a present research.

With a background in Design and Illustration as a first degree, she worked on the animation industry in Portugal and London as an animator, animation director and creative director. Recently she left the industry to embrace a PhD research programme, to continue to study her passion for learning more about her field, combining her research time with a tutor job at the university, which she loves to do. As a PhD candidate (now in her 2nd year), she is now an investigator and passes most of the time while not teaching or dancing, reading and investigating, animation studies and Design. Her focus goes to the analysis of form, design and its relation with movement as a semiotic process of designing values and emotions. Her present research focuses on the Japanese animation context and feature length films, with a particular interest for contemporary Japanese studios. She is also writing a book along her thesis in order to discover what are the big questions in animation that always trigger this passion since childhood but that prevailed as an adult.

As for life, she always expects great challenges, great discoveries, great work and great people to share her passions with. She also loves music, dance, architecture, art, nature and astronomy.

**Education:** PhD candidate (2015, 2nd year), Master of Arts in Animation Direction (NFTS & Royal College of Arts, UK, 2006) , Graphic Design Degree, (IADE, Portugal, 2000), Post-Graduation in Illustration and Comics (IADE, Portugal, 2001), and two very important courses, one year course in Animation and another one year course in Illustration (at Calouste Gulbenkian Foudation – CITEN; Portugal, 1997, 1998). These two first courses were the ones that trigger my passion for the animation film, in a time in Portugal where there was very little official courses in Animation.