

# Cinema as a Time Lab: Challenging Ordinary Time Perception through Cinematic Representations and Experience

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This doctoral project is part of a wider, collective research project on the subjective perception of time in the context of the audiovisual arts and media.<sup>2</sup> Specifically, the present project examines the medium-specific ability of cinema to expand the borders of the spectators' ordinary experience of time.

Cinema can deliberately manipulate time and thus challenge the concept of a regular and orderly temporal flow. On the one hand, it can *alter* the spectators' own experience, triggering desynchronizations between their subjectively perceived time and an objectively measurable one. On the other hand, it sometimes gives visible shape to *alternative* forms of experience, which are unfamiliar to spectators since they belong to highly unfamiliar subjectivities. By providing such experiences, cinema turns into a creative time lab that enables spectators to experiment with their own and alternative ways of living time.

The project takes advantage of this time lab to address, particularly, two questions.

Which aspects of cinematic language are responsible for *altering* spectators' own perception of time and making it highly subjective? How can spectators gain, through cinematic representations, at least partial access to *alternative* ways of perceiving time, and what can they learn from them?

## *Time Lab 1: Altering our own Temporal Experience*

As remarked above, cinema often *alters* our temporal experience. A frequent form of temporal distortion, in the cinematic experience as well as in everyday life, involves duration.

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<sup>2</sup> PRIN 2015: *Perception, Performativity, and Cognitive Sciences* – Milan Unit: 'Time Perception and Performativity in Audiovisual Experiences: Editing, Camera Movements, Action and Narrative Manipulations. A Neurofilmological Approach'. See <https://sites.google.com/view/perception-performativity/research-units/milano-unit>

The ability to estimate duration has been explained with reference to various models.<sup>3</sup>

One that the present research project adopts as a central premises connects the estimation of duration to the experience of movement. An intrinsic temporality would permeate our bodily movements and actions, allowing us to interact effectively with the environment and others.<sup>4</sup> This idea seems to resonate with and receive support from recent analyses of the brain's supplementary motor area (SMA): this area appears to regulate not only the planning and execution of movement, but also the estimation of their duration; this is true even in case of movements performed by others and merely observed, i.e. third-person movements.<sup>5</sup>

This last observation opens the possibility to export these mechanisms into the context of cinema. Cinematic representations indeed comprise not only diegetic movements, but also what my research group and I hypothesize to be medium-specific instances of third-person movement: editing, camera movements and all that pertains to the unfolding of the images. We call these formal transformations 'discourse movements' and we intend to investigate how they influence spectators' temporal experience.

In tackling this issue, we refer to the theoretical and methodological framework of Neurofilmology, which combines a traditional approach to film analysis with experimental procedures.<sup>6</sup>

We have designed an experiment to clarify how different kinds of represented action and different styles of editing can alter the perceived duration of a given audiovisual clip.

This relies on a 3x3 matrix. The matrix comprises three actions: A) pouring and drinking water; B) cutting bread; C) moving objects on a table. Each action is: 1) filmed with a static frontal camera; 2) edited according to a slow-paced rhythm; 3) edited according to a fast-paced rhythm. The experimental trial includes three separate phases: first, a pilot phase; second, a behavioural data collection phase; and third, a physiological data collection phase.

In the pilot phase (currently in progress) and the first data collection phase, participants are shown the nine clips and then asked to express duration judgements. The method is based on a retrospective paradigm and combines

<sup>3</sup> For a synthetic review, see Marc Wittmann, 'Embodied Time: the Experience of Time, the Body and the Self', in *Subjective Time: The Philosophy, Psychology and Neuroscience of Temporality*, ed. by Valter Arstila and Dan Lloyd (Cambridge, MA & London: MIT Press, 2014), pp. 507–23.

<sup>4</sup> Shaun Gallagher, 'Time in Action', in *The Oxford Handbook of Philosophy of Time*, ed. by Craig Callender, (Oxford & New York: Oxford University Press, 2011), pp. 493–515.

<sup>5</sup> Jennifer T. Coull, Frank Vidal and Boris Burle, 'When to Act, or Not to Act: That's the SMA Question', *Current Opinion in Behavioral Sciences*, 8 (special issue *Time in Perception and Action*, ed. by Warren H. Meck and Richard B. Ivry, April 2016), 14–21.

<sup>6</sup> For an exhaustive introduction to this approach, see Adriano D'Aloia and Ruggero Eugeni, 'Neurofilmology: An Introduction', *Cinéma & Cie*, 22–23 (special issue *Neurofilmology: Audiovisual Studies and the Challenge of Neuroscience*, ed. by Adriano D'Aloia and Ruggero Eugeni, Spring/Fall 2014), 9–26.

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different kinds of tasks, paying particular attention to the distinction between quantitative (e.g. numerical duration judgements) and qualitative (e.g. Likert scale) indicators. These indicators provide distinct information about the participants' temporal experience in relation to the experimental clips, shedding light respectively on the perceived *amount* of time passed and the perceived *speed* of the passing of time. Comparing this multifarious data across the whole 3x3 matrix will allow us to isolate the specific relevance of the two variables at stake, namely the kind of action and the style of editing.

Behavioural data collected in the pilot and second phases will orient the design of the final one, in which spectators' responses to the same clips will be studied with brain imaging and other physiological monitoring techniques.

### *Time Lab 2: Representing Alternative Experiences*

Cinema can also provide unfamiliar and normally unavailable forms of temporal experience.

The concept of *Umwelt*, developed by Jakob Von Uexküll, clarifies this point.<sup>7</sup> This concept stresses the generative role of living subjects in relation to the world: each organism, based on its perceptual and motor features, projects its own idiosyncratic environment (i.e. *Umwelt*). This also applies to the world's structural conditions, such that it is possible to speak of spatial and temporal *Umwelten*.

Many of the imaginable temporal *Umwelten* can be easily labelled as unfamiliar and inaccessible: that of animals, but also of human beings that we tend to perceive as drastically distant from us. All of these subjects *live* time in a highly specific way.

The concept of 'lived time' is pivotal to Eugène Minkowski's work, and laid the grounds for both his phenomenological and psychopathological research.<sup>8</sup>

Each subject's experience, Minkowski has claimed, is moulded by the way time-related vital phenomena intertwine harmoniously, defining the subject's attitude toward the future, present and past. When this mechanism starts wavering, psychopathological alterations may arise: the latter are grounded in perturbations of the subject's lived time. Although his overtly anti-organicist approach warns against any easy equation, Minkowski's insights often prove compatible with contemporary psychiatric research, confirming a relationship between psychiatric disorders and distortions in time perception and organization.<sup>9</sup> Thus it appears

<sup>7</sup> Jakob Von Uexküll, 'A Foray into the Worlds of Animals and Humans', in *A Foray into the Worlds of Animals and Humans, with A Theory of Meaning*, ed. by Joseph D. O'Neil (Minneapolis: University of Minnesota Press, 2010), pp. 40–135.

<sup>8</sup> See for his major work Eugène Minkowski, *Lived Time: Phenomenological and Psychopathological Studies*, ed. by Nancy Metzger (Evanston: Northwestern University Press, 1970).

<sup>9</sup> Shaun Gallagher acknowledges both this affinity and this difference in his 'Time, Emotion, and Depression', *Emotion Review*, 4.2 (2012), 127–32.

to be crucial, in order to understand the experiences of psychiatric patients, to gain access to their radically *alternative* ways of living time. In this part of my project, I intend to clarify whether cinema can contribute to this purpose. How can cinema ‘represent’ time as it is experienced by psychopathological subjects, and how can this affect spectators’ understanding of the latter?

The issue of representation traditionally pertains to analytical image theory and semiotics. Yet, other domains and intuitions should be surveyed too: notably, Hugo Münsterberg’s pioneering idea that cinema can objectify mental acts and states on the screen;<sup>10</sup> or contemporary phenomenologists’ observation that this medium expresses experience through modes of experience itself.<sup>11</sup> Thus, building and skilfully deploying a manifold conceptual toolbox is evidently a further essential precondition for this part of my project.

Both time labs are grounded in the hypothesis that marked, unruly strategies of cinematic representation might be especially relevant to phenomena of time ‘subjectivization’. Distortions in duration estimation are to be expected reasonably when editing does not match our perceptual habits (for instance by being too fast); and effective representations of psychopathological, i.e. non-normative, experiences seem to require non-normative technical solutions (slow motion or action fragmentation might serve the purpose). A more general scope of this project, therefore, could be that of investigating and systematizing the correlations between alterations of the temporal experience and alterations of traditional cinematic language, in a contemporary audiovisual scenario that increasingly seems to complicate and radically transform the latter.

<sup>10</sup> Hugo Münsterberg, *The Film: A Psychological Study*, ed. by Richard Griffith (Mineola: Dover Publications, 1970).

<sup>11</sup> See for instance Vivian Sobchack, *The Address of the Eye: a Phenomenology of Film Experience* (Princeton: Princeton University Press, 1992).