

Technophobia and Technophilia in the Media, Art and Visual Culture

edited by

Luca Malavasi

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ARTS IMAGE

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Aracne editrice

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ISBN 978-88-255-3985-1

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1st edition: December 2020

Table of Contents

- 9 Introduction
Luca Malavasi, Sara Tongiani
- 15 Out of Joint: Audiovisual Media as Technologies
of the Time
Ruggero Eugeni
- 29 Filtered Self. Few Notes Around Recent Self-Technologies
Federica Villa
- 41 The New Life of Images. The Case of Postmodern Cinema
Luca Malavasi
- 59 Notes on Technological Imagery, Between Love and Fear
Sara Tongiani
- 71 Digital Fear. Contemporary Horror and Visual Technologies
Giuseppe Previtali
- 85 Inside Sadako's Digital Panopticon: The Transition
from Analog to Digital Media in the *Ringu* Franchise
Stefano Locati
- 103 Take a DEEP Breath: Virtual Reality and Real Anxiety
Federica Cavaletti, Giancarlo Grossi
- 119 The Promise of a Binary Immortality.
Death and New Social Media
Mattia Cinquegrani

- 133 Video Games, Digital Authority, and the Aesthetic
of Bureaucracy
Riccardo Fassone
- 145 Giving Data a Face. Genetic Surveillance
and DNA Phenotyping
Lorenzo Donghi
- 161 The Power of the Mechanism. Cinema and the Machinery
of Desire
Barbara Grespi
- 179 Authors' Bio–Bibliographies

Out of Joint: Audiovisual Media as Technologies of the Time

RUGGERO EUGENI

The time is out of joint. O cursèd spite,
That ever I was born to set it right!
William Shakespeare, *Hamlet*, Act 1, Scene 5

«Something is wrong», Ragle said.
«I don't mean with you or with me or with any one person.
I mean in general».
«The time», Ragle said, «is out of joint».
Philip K. Dick, *Time out of Joint*

1. Introduction

In this paper I raise the question of whether audio–visual media, notably cinema, can be considered as technologies of time and if so, by what means and dynamics they operate on, in and with time¹. The first two sections adopt a top–down approach. In section 2 I examine what forms time takes on in modernity, while I dedicate section 3 to the role played by cinema in this context. The second part, in turn, takes a bottom–up approach: in section 4 I take into consideration the processes of constitution of subjective temporal experience as they emerge from contemporary cognitive neuroscience; section 5, in turn, focuses on a couple of theories on the transition from the subjective to social experience of time. Finally, in the last section, I propose a hypothesis about the specific role of cinema in the transition from the subjective to the social dimension of temporality.

¹ The research presented in this paper took place within a PRIN entitled *Perception, Performativity and Cognitive Sciences* funded by the Italian Government (P.I. Antonino Pennisi, University of Messina, years 2015–2019, Grant number: 2015TM24JS – SH4).

2. Time and Modernity

Giorgio Agamben argues that

The modern concept of time is a secularisation of rectilinear, irreversible Christian time, albeit sundered from any notion of end and emptied of any other meaning but that of a structured process in terms of before and after. This representation of time as homogeneous, rectilinear and empty derives from the experience of manufacturing work and is sanctioned by modern mechanics, which establishes the primacy of uniform rectilinear motion over circular motion².

This conception of *chronos*, however, marginalises a radically different conception of time: the *cairós*, “in which man, by his initiative, grasps favourable opportunity and chooses his own freedom in the moment”³.

Agamben’s argument sums up two cornerstones of contemporary reflection on time in modernity. First, technology (linked to scientific thought as it was defined at the end of the Seventeenth century) determined a conception of time as an objective, quantitative, linear, progressive, empty and utilitarian substance. The mechanical clock⁴ is the most visible emblem of such a conception of time, which was able to synchronise the different social activities as well as the rhythms and trends of nature, an issue that is treated in different tones and with different emphases (in the wake of Émile Durkheim and especially of Lewis Mumford) in authors such as E.P. Thompson, Norbert Elias, Alfred Gell, Eviatar Zerubavel, and Peter Galison⁵. Second, this technologi-

² G. AGAMBEN, *Infancy and History: Essays on the Destruction of Experience*, Verso, London 1993, p. 96. To frame Agamben’s position see J. DOUSSAN, *Time, Language, and Visuality in Agamben’s Philosophy*, Palgrave Macmillan, Houndmills–New York 2013.

³ G. AGAMBEN, *Infancy and History*, cit.

⁴ D.S. LANDES, *Revolution in Time: Clocks and the Making of the Modern World*, 2nd ed., Belknap Press of Harvard University Press, Cambridge 2000. For a broader perspective see J. MAZUR, *The Clock Mirage. Our Myth of Measured Time*, Yale University Press, New Haven–London 2020.

⁵ É. DURKHEIM, *The Elementary Forms of the religious life* (1912), George Allen & Unwin, London 1912; L. MUMFORD, *Technics and Civilization*, Routledge, London 1934; E.P. THOMPSON, *Time, Work–Discipline, and Industrial Capitalism*, «Past & Present», no. 38, 1967, pp. 56–97; N. ELIAS, *Time: an essay* (1984), Blackwell, Oxford 1992; A. GELL,

cal conception of time produced a tension between collective and individual temporalities, which in literature often assumed the form of an opposition between a quantitative, alienated time, and a qualitative, regained one. On the basis of this opposition, three major models of modern time have emerged in contemporary theoretical reflection.

Following the first model, modern time is characterised by *acceleration*. The process of time compression began at the very origins of modernity, thanks to new communication and transport technologies⁶. It particularly emerges, however, in the last phase of modernity: late capitalism accelerates time in order to obtain the maximum economic advantage⁷, and takes a final leap that corresponds to the transition from the modern to the postmodern condition⁸. Even in this phase communication technologies, in their alliance with the military industry, play a decisive role, as scholars such as Friedrich Kittler and Paul Virilio underline⁹. This collective, accelerated, and alienated time gives rise to forms of political “chronopower,” as Hartmund Rosa¹⁰ emphasizes.

The Anthropology of Time. Cultural Constructions of Temporal Maps and Images, Berg Publishers, Oxford 1992; E. ZERUBAVEL, *Time Maps. Collective Memory and Social Shape of the Past*, The University of Chicago Press, Chicago–London 2003; P. GALISON, *Einstein’s Clock, Poincaré’s maps. Empires of Time*, Norton, New York–London 2004. For a synthesis see B. ADAM, *Time: Key Concepts*, Polity Press, Cambridge–Malden 2004.

⁶ S. KERN, *The Culture of Time and Space, 1880–1918*, Harvard University Press, Cambridge 1983.

⁷ J. RIFKIN, *Time Wars: The Primary Conflict in Human History*, Henry Holt, New York 1987.

⁸ D. HARVEY, *The Condition of Postmodernity*, Basil Blackwell, London 1990, pp. 284 e ss.

⁹ P. VIRILIO, *Speed and Politics* (1977), Semiotext(e), Los Angeles 2006; F. KITTLER, *Optical Media*, Polity Press, Cambridge 2015.

¹⁰ H. ROSA, *Alienation and Acceleration. Towards a Critical Theory of Late-Modern Temporality*, NSU Press, Malmö–Aarhus 2010; ID., *Social Acceleration. A New Theory of Modernity* (2005), Columbia University Press, New York 2013. The accelerationist paradigm is taken up by numerous scholars: H. ROSA, W.E. SCHEUERMAN (eds.), *High-Speed Society*, Pennsylvania State University Press, Pennsylvania 2009; J. TOMLINSON, *The Culture of Speed: The Coming of Immediacy*, Sage, London–Thousand Oaks 2007; R. HASSAN, *Empires of Speed. Time and the Acceleration of Politics and Society*, Brill, Leiden–Boston 2009; H. NOWOTNY, *Time: The Modern and Postmodern Experience* (1989), Polity Press, Cambridge–Malden 1996; A. MACKENZIE, *Transductions. Bodies and Machines at Speed*, Continuum, London–New York 2006; J. WAJCMAN, *Pressed for Time. The Acceleration of Life in Digital Capitalism*, The University of Chicago Press, Chicago–London 2015.

The alienation of individual time can also take place in an opposite way, not through the *contraction* but rather through the indefinite *extension* of spatialized time. Accordingly, the second model of modern time identifies the affirmation of an enlarged present and the dissolution of a historical perspective. Fredric Jameson saw the primacy of synchrony over diachrony as one of the marks of postmodernism¹¹, and the idea of modern time as extended present returns in various authors, such as Hans Gumbrecht and, even earlier, Reinhart Koselleck¹². Recently, Jonathan Crary highlighted how the extension of waking time, resulting from a series of media technologies and expressions of neocapitalist globalisation, crystallises the empty time of modernity into an eternal present¹³.

Finally, the alienation of social time (implemented through either its contraction or its extension) finds at least partial compensation in a third model, which highlights the *multiplication* of modern temporalities. Historians from *Les Annales* had already pointed out the possibility of studying not “time” in the singular, but rather the multiple, qualitative and subjective temporalities that emerge through history¹⁴; more recently, social research has emphasized how the time of modernity and even more so, that of postmoder-

¹¹ F. JAMESON, *Postmodernism or, the Cultural Logic of Late Capitalism* (1984), Duke University Press, Durham 1991, pp. 25–32. This conception was influenced, among other things, by the success of the video as an artistic medium at the end of the seventies, since «in contrast to film as a medium, defined by the delay between the inscription of the past event and the time of viewing, video [was seen as] inherently marked by its engagement with the “present tense» (J. KIM, *Between Film, Video, and the Digital. Hybrid Moving Images in the Post-Media Age*, New York–London, Bloomsbury 2016, p. 29). See also, from an “workerist” point of view, M. Lazzarato, *Videophilosophy. The Perception of Time in Post-Fordism* (1997), Columbia University Press, New York 2019.

¹² H.U. GUMBRECHT, *Our Broad Present. Time and Contemporary Culture*, Columbia University Press, New York 2014; R. KOSELLECK, *Futures Past: On the Semantics of Historical Time* (1979), Columbia University Press, New York 2004.

¹³ J. CRARY, *24/7. Late Capitalism and the End of Sleep*, Verso, London–New York 2013. See also R. HASSAN, R.E. PURSER (eds.), *24/7: Time and Temporality in the Network Society*, Stanford University Press, Stanford 2007.

¹⁴ J. LE GOFF, *Time, Work & Culture in the Middle Ages* (1977), The University of Chicago Press, Chicago–London 1980. For a contextualization, see T. HIRSCH, *Le temps social: parcours d’une notion*, in J. ANDRÉ, S. DREYFUS–ASSÉO, F. HARTOG (dirs.), *Les récits du temps*, Puf, Paris 2010, pp. 70–86.

nity, is characterized by various forms of resistance to homogenization: temporalities linked to work, entertainment, and class and gender identities are multiplied through the everyday life of globalized subjects¹⁵. Once again, media technologies play a fundamental role, since they offer a diversified range of temporal affordances¹⁶.

In short, modern temporality is marked by temporal alienation, following the two models of *accelerationism* and *extensionism*; but it is also the site of a struggle for the re-appropriation of individual and qualitative times, following the model of *multiplicationism* (or *simultaneism*).

3. Cinema as a Technology of Time

Gilles Deleuze identifies a critical turning point in the history of cinema¹⁷: classical cinema reflected (on) time through movement, and more precisely through the activation of sensorimotor bonds (perception–action–emotion); modern cinema, on the contrary, starting from Neorealism, introduces pure optical and sound situations that suspend the link between perception and action, free time from movement, and allow a pure, direct, multiple experience of time:

¹⁵ See H. NOWOTNY, *Time: The Modern and Postmodern Experience* (1989), Polity Press, Cambridge–Malden 1996; R. LEVINE, *A Geography of Time. The Temporal Misadventures of a Social Psychologist, or How Every Culture Keeps Time Just a Little Bit Differently*, Basic Books, New York 1997, then Oneworld, Oxford 2006; G. CROW, S. HEATH (eds.), *Social Conceptions of Time. Structure and Process in Work and Everyday Life*, Palgrave Macmillan, Houndmills–New York 2002; B. DAVIES, J. FUNKE (eds.), *Sex, Gender and Time in Fiction and Culture*, Palgrave MacMillan, Houndmills–New York 2011; J. BURGESS, A.J. ELIAS (eds.), *Time. A Vocabulary of the Present*, New York University Press, New York 2016.

¹⁶ E. KEIGHTLEY (ed.), *Time, Media and Modernity*, Palgrave MacMillan, Houndmills–New York 2012; M. HARTMANN, E. PROMMER, K. DECKNER, S.O. GÖRLAND (eds.), *Mediated Time. Perspectives on Time in a Digital Age*, Palgrave Macmillan, Cham 2019.

¹⁷ G. DELEUZE, *Cinema 1: The Movement–Image* (1983), Athlone, London 1986; ID., *Cinema 2: The Time–Image* (1985), University of Minnesota Press, Minneapolis 1989. On Deleuze’s theory and time perception see C. SHORES, *Cinematic Signs and the Phenomenology of Time: Deleuze and the Visual Experience of Temporal Depth*, in C. FERENCZ–FLATZ, J. HANICH (eds.), *Film And Phenomenology*, special issue of *Studia Phaenomenologica. Romanian Journal for Phenomenology*, vol. XVI, 2016, pp. 343–372.

In what is called modern cinema: [...] “time is out of joint”: it is off the hinges assigned to it by behaviour in the world, but also by movements of world. It is no longer time that depends on movement; it is aberrant movement that depends on time. The relation, *sensory–motor situation* → indirect image of time is replaced by a non-localizable relation, *pure optical and sound situation* → direct image–time¹⁸.

As we previously did with Agamben, we can consider Deleuze’s approach as exemplary for a number of interventions by contemporary film theorists. In fact, several authors deal with the idea that cinema takes up and contributes to spreading the linear and consequential temporality of modernity; at the same time, however, it opens the door to different temporalities that alter the idea of a unique and linear time in a more or less radical way. This trend would also become increasingly accentuated in late or post modernity, marked by the end of analogue cinema and the advent of digital technologies.

For example, Mary Ann Doane¹⁹ emphasizes (with Stephen Kern: see above) that cinema is part of the new technologies that, around the turn of the twentieth century, redefine temporality as a homogeneous, directional, divisible, and administrable entity; however, at the same time, cinema pushes against such a conception, and enhances the sense of contingency, randomness, and unpredictability of events. Cinematographic temporality is therefore multiple, as the avant–gardes had well understood, and as the cinema of the end of the millennium rediscovered.

Along the same lines, Laura Mulvey proposes the idea of “delayed cinema”:

Delayed cinema [as expressed in works by Jean Luc Godard, Jeff Wall, Hollis Frampton, Douglas Gordon, and others] works on two levels: first of all, it refers to the actual act of slowing down the flow

¹⁸ G. DELEUZE, *Cinema 2*, cit., p. 41.

¹⁹ M.A. DOANE, *The Emergence of Cinematic Time*, Harvard University Press, Cambridge 2002. See also H. POWELL, *Stop the Clocks! Time and Narrative in Cinema*, Tauris, London–New York 2012.

of the film. Secondly, it refers to the delay in time during which some detail has lain dormant, as it were, waiting to be noticed²⁰.

The contemporary coexistence of different regimes of speed in moving images is linked for Mulvey to the advent of digital technologies that allow the ordinary viewer to interact at any moment with images. Along the same lines, Garrett Stewart emphasises that the new technological status of the “postfilmic” algorithmic image, in which the movement is constituted not on the basis of sequences of images, but from internal transformations of them, produces a series of new film plots

obsessed by the psychosomatic contours of human temporality and human memory, including the exponential means by which those grounding conditions of identity and desire can be evaded, falsified, erased, or remade²¹.

He is echoed by Todd McGowan, according to whom technologies of digital representation have changed the features of cinematographic temporality, not so much in the direction of greater temporal fluidity, but rather towards the affirmation of “scrambled temporalities”:

Since the explosion of the digital era in the middle of the 1990s, a new temporal aesthetic in cinema has grown in response, one that approximates the experience of the digital world. [...] Rather than providing

²⁰ L. MULVEY, *Death 24x a Second: Stillness and the Moving Image*, Reaktion Books, London 2006, pp. 3–4. See also J. REME, *Motion(less) Pictures. The Cinema of Stasis*, Columbia University Press, New York 2015; S.B. GIRGUS, *Time, Existential Presence and the Cinematic Image: Ethics and Emergence to Being in Film*, Edinburgh University Press, Edinburgh 2018; L. MCMAHON, *Animal Worlds. Film, Philosophy and Time*, Edinburgh University Press, Edinburgh 2019.

²¹ G. STEWART, *Framed Time. Toward a Postfilmic Cinema*, University of Chicago Press, Chicago 2007, pp. 2–3; see also M. MAK, *Keeping Watch of Time: The Temporal Impact of the Digital in Cinema*, «Convergence: The International Journal of Research into New Media Technologies», vol. 9 (4), 2003, pp. 38–47; T. TRIFONOVA, *Imaginary Time in Contemporary Cinema*, in ID., *The Image in French Philosophy*, Rodopi, Amsterdam–New York 2007, pp. 261–306; T.S. BARKER, *Time and the Digital. Connecting Technology, Aesthetics, and a Process Philosophy of Time*, Dartmouth College Press, Hannover 2012; S.B. GIRGUS, *Time, Existential Presence and the Cinematic Image: Ethics and Emergence to Being in Film*, Edinburgh University Press, Edinburgh 2019.

an experience of the forward movement of time, these films scramble temporality through the creation of a narrative structure that defies a forward moving chronology [...]. What unites the key films in the atemporal mode is the attempt to introduce spectators to an alternative way of experiencing existence in time — or, more precisely, a way of experiencing existence outside of our usual conception of time —²².

To sum up, cinema can be seen as a “technology of time” of modernity, in the sense that it has “a characteristic way of conditioning temporal experience for viewers, or what I will call its timeliness”²³. However, unlike other technologies such as clocks, cinema is the site for the production of experiences of time that are more or less radically alternative to the homogeneous, linear and consequential time–flow dominating both early and late modernity, a tendency inherent in its origins, and fully liberated by the advent of digital technologies²⁴.

4. Time, Body, Movement

In the second part of this paper I would like to return to the question of the relationship between temporal experience and film

²² T. MCGOWAN, *Out of Time: Desire in Atemporal Cinema*, University of Minnesota Press, Minneapolis–London 2011, pp. 9–13.

²³ L. CARRUTHERS, *Doing Time. Temporality, Hermeneutics, and Contemporary Cinema*, State University of New York Press, New York 2016, p. 15; see also M. MROZ, *Temporality and Film Analysis*, Edinburgh University Press, Edinburgh 2012.

²⁴ On multiple temporalities in post–cinematic media arts see K. MONDLOCH, *Screens. Viewing Media Installation Art*, University of Minnesota Press, Minneapolis–London 2010; C. ROSS, *The Past is the Present; It’s the Future Too. The Temporal Turn in Contemporary Art*, Continuum, New York–London 2012; L. TAN, *Real time, screen time*, in G. JENNINGS (ed.), *Abstract Video. The Moving Image in Contemporary Art*, University of California Press, Oakland 2015, pp. 163–175; A. BORDINA, V. ESTREMO, F. FEDERICI (eds.), *Extended Temporalities: Cinema and Contemporary Art*, Mimesis International, Milano 2016; F. FEDERICI, *The Experience of Duration and the manipulation of Time in Exposed Cinema*, in M. DE ROSA, V. HEDIGER (eds.), *Post–What? Post–When? Thinking Moving Images Beyond the Post–medium / Post–cinema Condition*, «Cinéma&Cie. International Film Studies Journal», vol. XVI, no. 26/27, Spring/Fall 2016, pp. 121–13; A. BUTLER, *Displacements. Reading Space and Time in Moving Image Installations*, Palgrave Macmillan, Cham 2019; A. SOMAINI, with É. GRIGNARD, M. REBECCHI (eds.), *Time machine. Cinematic temporalities*, Skira, Milano 2020.

viewing starting “from the bottom,” that is, from the dynamics of the constitution of temporal experience as they are currently understood by cognitive neuroscience. Indeed, “timing” — a general label encompassing qualitative and quantitative experience, perception, judgement, estimation of time speed, order and duration — has become a central issue for neurocognitive studies in the last few years, as well as an object of dialogue between psychologists, neuroscientists, philosophers, physicists, anthropologists and sociologists²⁵. In this context, scholars have underlined different aspects of the experience of time, in particular its subjective dimension, its different “windows,” and the multiplicity of psychological mechanisms and underlying neural dynamics responsible for its constitution, perception, and evaluation. With the limited space available here it is of course impossible to illustrate this field of studies in detail; instead, I will limit myself to highlighting a change of paradigm that has been produced over the last twenty years or so.

The “classical” psychological models explained the subjective measurement of time by postulating an “internal clock”, conceived either as an oscillating device or as a pulsed one (a kind of pace-maker), coupled in both cases with a counter: the perception of duration would therefore depend on a specialized and centralized mechanism producing direct and explicit representations of duration and speed. The advent of neural studies has challenged such a conception so as to open the way to two specific approaches aiming to undermine the internal clock model.

A first neurocognitive approach challenges the presence of a unique, central and circumscribed mechanism of time computa-

²⁵ V. ARSTILA, D. LLOYD (eds.) *Subjective Time. The Philosophy, Psychology, and Neuroscience of Temporality*, MIT Press, Cambridge–London 2014; D. BUONOMANO, *Your Brain is a Time Machine. The Neuroscience and Physics of Time*, Norton, New York 2017; W.H. MECK, R.B. IVRY (eds.), *Time in perception and action, special issue of Current Opinion in Behavioral Sciences*, 8, 2016; J.H. WEARDEN, *The Psychology of Time Perception*, Palgrave Macmillan, London 2016; M. WITTMANN, *Felt Time. The Psychology of How We Perceive Time* (2014), MIT Press, Cambridge–London 2017; V. ARSTILA, A. BARDON, S.E. POWER, A. VATAKIS (eds.), *The Illusions of Time. Philosophical and Psychological Essays on Timing and Time Perception*, Palgrave Mcmillan, Cham 2019.

tion, while still admitting the existence of neural circuits dedicated to managing the perception of speed and duration. For example, many scholars postulate the existence of a mechanism that uses neural wave frequencies to calculate the duration of time intervals: this apparatus, although mainly located in the basal ganglia, nonetheless involves a number of other neural areas (Striatal Beat–Frequency model)²⁶. Other neuroscientists think that time perception depends on a mechanism of progressive accumulation of interoceptive data and their emotional correlates within the insular cortex, but such stimuli come from many other brain areas²⁷.

A second approach is even more radical in undermining the internal clock model. According to scholars nourished by phenomenological spirits and close to the positions of enactivism, the perception of time would not only be distributed at the neural level, but it would also be indirect: the neural circuits responsible for temporal perception would not actually be aimed at this purpose but would produce temporal configurations as a by–product of other activities. More precisely, following many scholars, sensation, perception and computation of time would derive from the processes of planning, execution and proprioceptive control of movements, gestures and actions performed by the subject’s body²⁸.

Furthermore, *the experience of time is considered as deriving from both the personal performance of actions, and the observation of the other’s actions and movements*: indeed, perceived moving objects and/or subjects, as well as pictures of bodies in dynamic postures are subjectively evaluated as longer in duration than the same objects and subjects pictured as static, in standing postures, or moving away from the observer²⁹. These findings can be interpret-

²⁶ See for instance S.A. OPRISAN, C.V. BUHUSI, *What is all the noise about in interval timing?*, «Phil. Trans. R. Soc. B», 369/1367, 2014, no. 20120459.

²⁷ M. WITTMANN, *Felt Time*, cit.

²⁸ S. DROIT–VOLET, S. FAYOLLE, M. LAMOTTE, S. GIL, *Time, emotion and the embodiment of timing*, «Timing and Time Perception», no. 1, 2013, pp. 99–126; S. GALLAGHER, *Time in action*, in C. CALLENDER (ed.), *The Oxford Handbook of Philosophy of Time*, Oxford University Press, Oxford–New York 2011, pp. 493–515; S. GALLAGHER, *Action and Interaction*, Oxford University Press, Oxford–New York 2020.

²⁹ See for instance F.C. NATHER, P. ALARCON, M. FERNANDES, J.L. OLIVEIRA BUENO, *Subjective time perception is affected by different durations of exposure to abstract paint-*

ed as referring to a process of *embodied simulation* of the other's actions and movements³⁰ on the basis of mirroring brain circuits³¹ — a thesis that received empirical confirmation thanks to the identification of certain brain areas responsible for the computation of time in connection with both performed and observed movements³².

In short, our perception of time does not depend on an internal clock but derives (at least in part) from the neural and psychological mechanisms governing the management of our own movements; in turn, these same mechanisms would be involved in the observation of the movements of other subjects or objects.

5. Subjective Time, Collective Time

How do we move from the subjective constitution of time perception to the socially shared forms of temporal experience like the ones we examined in section 2? What kind of (unidirectional or reciprocal) relationship can we pose between subjective, intersubjective, collective, socialised and culturized experiences of time? In this regard, it is possible to find two distinct answers.

The first is directly based on the “embodied” conception of timing I have just referred to: indeed, this is not precisely *subjective*, but rather intersubjective and inter-embodied, so that subjective time would be a constitutively *shared* time. This aspect clearly emerges in the case of joint actions, when two or more different subjects act dependently on each other, as in the case of couples of dancers or musicians³³, but would also be at work in all cases of

ings that represent human movement, «Psychology & Neuroscience», no. 7/3, 2014, pp. 381–392; S. DROIT-VOLET, S. FAYOLLE, M. LAMOTTE, S. GIL, *Time, emotion*, cit.

³⁰ V. GALLESE, *Embodied simulation and its role in cognition*, «Reti, saperi, linguaggi. Italian Journal of Cognitive Sciences», no. 7/13, 2018, pp. 31–46.

³¹ G. RIZZOLATTI, C. SINIGAGLIA, *Mirrors in the Brain. How Our Minds Share Actions and Emotions*, Oxford University Press, Oxford–New York 2007.

³² J.T. COULL, F. VIDAL, B. BURLE, *When to act, or not to act: that's the SMA's question*, in W.H. MECK, R.B. IVRY (eds.), *Time in perception and action*, cit., pp. 14–21.

³³ See for instance S. VICARY ET ALS., *Joint action aesthetics*, «PLOS ONE» E, 12/7, 2017; T. WOLF, N. SEBANZ, G. KNOBLICH, *Joint action coordination in expert–novice pairs: Can experts predict novices' suboptimal timing?*, «Cognition», 178, 2018, pp. 103–108.

intersubjective interaction, even in the absence of shared goals³⁴. In other words, the transition from the subjective dimension of temporal experience to the collective one would be mediated by the intersubjective nature of this experience.

The second conception of the transition from personal to collective forms of temporal experience has not yet found (as far as I know) experimental verifications, but it is conveyed clearly in the first volume of Bernard Stiegler's work on *Technique and Time*. Stiegler adheres to the paradigm that I called above "accelerationism," but tries to find its deeper origins. For Stiegler, every culture is underpinned by a metastable equilibrium between social tradition (slower and backward) and technical evolution (faster and forward); however, within western modernity, the extraordinary speeding up of technique (and in particular of means of communication) has made it impossible to reach a balance, resulting in endless acceleration and widespread disorientation. A relevant premise of this reasoning is that *social temporality originates in the personal use of technical objects*:

[...] Organized inorganic beings [i.e. technical objects] are originally — and as marks of the default of origin out of which there is [es gibt] time — constitutive (in the strict phenomenological sense) of temporality as well as spatiality, in quest of a speed "older" than time and space, which are the derivative decompositions of speed. Life is the conquest of mobility. As a "process of exteriorization," technics is the pursuit of life by means other than life³⁵.

In other words, technology would imply an original and ordinary experience of time that would be at once subjective and collective. More precisely, this temporal experience derives from

³⁴ J. LAROCHE, A.M. BERARDI, E. BRANGIER, *Embodiment of intersubjective time: relational dynamics as attractors in the temporal coordination of interpersonal behaviors and experiences*, «Frontiers in Psychology», 5/1880, 2014; A. SCHIRMER, W.H. MECK, T.B. PENNEY, *The Socio-Temporal Brain: Connecting People in Time*, «Trends in Cognitive Sciences», 20/10, 2016, pp. 760–772; M. GALLOTTI, M.T. FAIRHURST, C.D. FRITH, *Alignment in Social Interactions*, «Consciousness and Cognition», no. 48, 2016, 253–261.

³⁵ B. STIEGLER, *Technics and Time 1. The Fault of Epimetheus* (1994), Stanford University Press, Stanford 1998, p. 17.

the infinite mutual adjustment and the enduring “transductive individuation”³⁶ between two different body schemata: the one deriving from social training (which for Stiegler is always too slow) and the one entailed by technological objects (always too fast). To recall Deleuze (recalling Shakespeare, in turn), time derives from its being always “out of joint.”

6. Cinema as a Technology of Time (continued)

In this paper, I first examined, from a top-down perspective, the forms assumed by time in modernity and the role of cinema in this context. From this perspective, cinema appeared as a device for re-enacting the spatialized, quantified, linearised time of modernity; at the same time, however, it emerged as the place of the constitution of “cairotic” (Agamben), anomalous, complex and multiple forms of time. In the second part I took a bottom-up perspective and connected the constitution of temporal experience to the embodied interactions of the subject with the world, and in particular to his performance and his observation of movements, gestures and actions. From this point of view, the socialisation of subjective temporal experiences can be explained in two ways: either on the basis of the relations between different subjects, or starting from the relations between subjects and technological objects. At this point, I would like to make a final hypothesis that will allow us to close the loop between these two approaches.

Without having the opportunity to analyse in depth the possible relations between the two explanations of socialisation of subjective temporal experience, I propose that *cinema is the apparatus of modernity that has been able to make them co-present, to joint them intimately, and to make them interact with each other*. In other words, cinema is at the same time both a *body* that, with its movements and its stasis, produces processes of embodied simulation, and a *technological object* that pushes the

³⁶ G. SIMONDON, *On the Mode of Existence of Technical Objects* (1958), University of Minnesota Press, Minneapolis 2017.

temporality of the spectator “out of joint”³⁷. It is precisely this unprecedented coexistence of “our own” and “other” temporalities that produces the ambiguous character of time in cinema: based on a technical, regular, linear, quantified and empty flow of its own signifiers, but ready to activate temporal suspensions, refractions, diffractions and crystallizations³⁸.

³⁷ On cinema as “body”, see V. SOBCHACK, *The Address of the Eye. A Phenomenology of Film Experience*, Princeton University Press, Princeton 1992; R. BELLOUR, *Le corps du cinéma. Hypnoses, émotions, animalités*, POL Traffic, Paris 2009; M. SMITH, *Film, Art and the Third Culture. A Naturalized Aesthetics of Film*, Oxford University Press, Oxford–New York 2017; J. FINGERHUT, K. HEIMANN, *Movies and the Mind: on Our Filmic Body*, in C. DURT, T. FUCHS, C. TEWES (eds.), *Embodiment, Enaction, and Culture. Investigating the Constitution of the Shared World*, MIT Press, Cambridge–London 2017, pp. 353–377. On cinema as a dispositive of “embodied simulation”, see V. GALLESE, M. GUERRA, *The Empathic Screen. Cinema and Neuroscience*, Oxford University Press, Oxford–New York 2020. On cinema as “gesture” see G. AGAMBEN, *Notes on Gesture* (1992) in Id., *Infancy*, cit., pp. 133–140, and B. GRESPI, *A History of Cinema as Gesture* in D. CAVALLOTTI, S. DOTTO, L. QUARESIMA (eds.), *A History of Cinema without Names, Vol. 3*, Mimesis, Milano 2018, pp. 81–88. On cinema as “technological object”, see B. BENNETT, M. FURSTENAU, A. MACKENZIE (eds.) *Cinema and technology. Cultures, Theories, Practices*, Palgrave Macmillan, Houndmills–New York 2008; A. VAN DEN OEVER (ed.), *Technè/Technology. Researching Cinema and Media Technologies – Their Development, Use, and Impact*, Amsterdam University Press, Amsterdam 2014; A. GAUDREAU, M. LEFEBVRE (dir s.), *Techniques et technologies de cinéma. Modalités, usages et pratiques des dispositifs cinématographiques à travers l’histoire*, Presses Universitaires de Rennes, Rennes 2015; S. HIDALGO (ed.), *Technology and Film Scholarship. Experience, Study, Theory*, Amsterdam University Press, Amsterdam 2018. On cinema as a crossing point between subjective and social temporalities, see E. ETHIS, *Les spectateurs du temps. Pour une sociologie de la réception du cinéma*, L’Harmattan, Paris 2006. On cinema as “negotiation apparatus” of modernity see F. CASETTI, *Eye of the century. Film, Experience, Modernity*, Columbia University Press, New York 2005.

³⁸ Within the framework of Prin research (see note 2) me and my workgroup joined a team of psychologists in a series of cognitive and neurocognitive experiments aimed at understanding how the different semiotic aspects of moving images give shape to spectator’s subjective time experiences in terms of speed of time passage judgment and estimation of durations; for some first results see R. EUGENI, *What time is in? Subjective experience and evaluation of moving image time*, «Reti, saperi, linguaggi. Italian Journal of Cognitive Sciences», no. 7/13, 2018, pp. 81–96; R. EUGENI, S. BALZAROTTI, F. CAVALETTI, A. D’ALOIA, *It doesn’t seem it, but it is. A neurofilmological approach to the subjective experience of moving–image time*, in A. PENNISI (ed.), *Dimensions of performativity. Interdisciplinary approaches to an extended theory of cognitive creativity*, Springer, Berlin Cham 2020, pp. 243–266.

ISBN 978-88-255-3985-1



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