Critical Hermeneutics, special 2 (2020)
Biannual International Journal of Philosophy
http://ojs.unica.it/index.php/ecch/index
ISSN 2533-1825 (on line); DOI 10.13125/CH/4491

Editor's Introduction

(Immutability of the Past)[*]

Not the gods can shake the Past.
Ralph Waldo Emerson, *The Past*

1.

I think that the title 'Immutability of the past' well represents the theoretical horizon where the articles of this volume containing inquiries from various disciplinary stances and different philosophical and scientific traditions converge. The issue is a result of the research programme about 'The problem of indeterminacy. Meaning, knowledge, action' ('Il problema dell'indeterminatezza. Significato, conoscenza, azione', PRIN 2015, national coordinator Luigi Perissinotto). The project was developed by a Cagliari research team that worked on the indeterminacy problem concerning the linguistic, conceptual and interpretative mechanisms actively involved in the construction of the images of the past. These concepts and other themes were the subject of a conference in May 2019. The outcomes are now mostly presented in this number. The great questions of representation, fancy, figurative languages, image (as a form shaping matter and not merely reproducing a given structure) and time (and the relationship amongst past, present and future) are preeminently but not exclusively linked to the past as it is investigated by historians (past human actions and resulting chains of events). The internal develop-

[*] Translated by Simonluca Pinna.

ment of such a line of research naturally concerns other methods, languages and ways to refer to the past. The link amongst 'professional' historical representations, the ordinary expressions of the recollecting memory, the forms of the sociocultural processing of the shared memory, namely, the forms of life and the ways a community uses to represent itself should be considered. In this sense, the problem of the relationship between history and memory promotes a convergence between the interpretation-focused disciplines and the human sciences based on explicative, empirical and statistical orientation.

The methodological and thematic evolution and the ramification of historical research generate a powerful enhancement in many other fields in the linguistic comparison of historiography and natural (and social) sciences. Specialistic and academic history today appears as an extremely varying patchwork of approaches, vocabularies and methodologies that is reducible neither to a unitary building nor to dichotomies variously characterising the 20th century debates in philosophy (spirit-nature, explaining-understanding, nomological-ideographic, causality-meaning, the 'two cultures' of humanities and sciences). If the great lesson of the Annales *made its mark above all on the integration of history with social sciences, the diffusion of comparative programmes of global history – according to which West and East, Asia, Europe, America, Africa and Oceania cannot be studied and understood separately – shifted the balance even further by elucidating the systematic connection with natural sciences (see Moore 1997; D. Sachsenmaier 2011). However, history is strongly intertwined with biology in relation to problems associated with the food, propagation and preservation of species, environment, domestication and decease; the impact depth of the human intervention in the biological traits of plants and animals cannot be underestimated. Biology and ecology provide indispensable survey information for his-*

torians. Naturally, each discipline keeps its conceptual and methodological autonomy, but interactions modify the general scheme of Global History inquiries[1]*.*

Based on this background, our theme, i.e. the immutability or definitiveness of the past, can be applied to compare the different images of time, revealing new approaches to the problem of the truth of historical descriptions and to the question of the sources, motivations and scopes of the reference to the past. Let us try to understand why.

Our common experience of time recalls a sensation of constant flow, which progressively detaches us from more or less distant but ended affairs that cannot be intuitively intervened. The aspect of completeness remains untouched by the bonds of the past with future consequences and developments, which conversely are at least in part subject to our decisions and actions. Time flows in one direction and does not come back. This simple and intuitive 'schema' appears to be embodied in the shared practices of remembering and managing information about the past as indispensable elements of the sense of ourselves and of our personal and collective stories. The various dimensions of memory, as the ability to store traces of the past, play a fundamental role in building such a perspective. To some extent, this image is the effect of a long process of cultural sedimentation, especially if it is connected with the linear and 'progressive' image of historical time (different from the cyclical one) that generally happens

[1] See Rossi (2012: 423-453). I have drawn the successive references from that chapter, which is entitled 'Verso una storia globale' ('Towards a global history'). For example, historically speaking, Rossi points out how population genetics (according to Cavalli-Sforza and others) modified the traditional scheme of physical anthropology and showed many relevant facts of distribution and migration. A host of indispensable phenomena for the understanding of historical changes (urbanisation, flight from the land, change in hygienic behaviours, decrease in the mortality rate, sources of energy and impact of the industrial revolution) highlighted the relevance of the relationship with the natural environment for historical studies on archaic and modern societies.

with modern Westerners. It has become an undisputed and spontaneously shared element of our life scenario and cultural landscape.

In addition to being well-established in daily practices, the representation of time, together with its own corollaries (determinacy of the past, openness and indeterminacy of the future, irreversible direction of becoming), has been supported by a wide consensus and strong justifications in various specialised fields and experts' circles, from historiography to thermodynamic models in physics or to the 'archivistic' theories of memory as a preservation-reproduction function of past experiences. According to the latter perspective, the past surrounds us as a web of external traces, which are examined by professional studies (the 'sciences of culture'); moreover, the past conditioned us internally in the form of persistent mental traces of the events and material (notably, cerebral) inscriptions, which are a prerogative of psychological and neurological research. As for historians, a kind of realism should be discussed, i.e. realism that is more or less spontaneously presupposed or 'certain' in the sense of Ludwig Wittgenstein's Gewissheit *or Husserl's* Lebenswelt. *It is part of a tacitly shared background of truisms. Without it, the past cannot be described to be accomplished and be 'apart' from the present, even if it is not completely known. It is associated with the grammar embodied in our ordinary speech, as suggested by Wittgenstein's incisive example of Earth before our birth*[2]*.*

The idea that we cannot act on the past causally seems to offer an archetypal model of objective reality that is meant and experienced as a set of states of affairs independent from us. Such a model is recognised even by authors of a strong hermeneutical sensibility such as Paul Ricoeur[3]*. Some things are done in certain ways that we*

[2] I am talking about the observations in Wittgenstein (1969) and in particular §§ 84, 85, 183 ff.

[3] In *Entre la mémoire et l'histoire* – a short but acute presentation of the topics of

cannot change and this concept applies to human history (with its social, institutional and symbolic dimensions) no less than to natural evolution. Obviously, in the Hermeneutic tradition, this recognition is inconsistent with Heidegger's legacy. His fundamental ontology introduces a turning point in the way the structures of time are seen. It also reshuffles the relationships amongst temporal dimensions, underscoring the aspects of continuity and organicity in the experience of time. Heidegger capitalised on the phenomenological analyses taken by Husserl in the early 20th century, resulting in the lessons about the phenomenology of the internal time consciousness *that Heidegger himself edited in 1928.* Being and Time *presented a very influential analysis of time from an ontological viewpoint independent of epistemological and methodological interests and destined with the anti-objectivist controversy to enhance the chasm between philosophical and scientific culture. It is a notable philosophical course, but it leads to a different direction from the specific interest discussed in here. Thus, we should not follow it.*

In the case of culture and historical thought, a realist's standard view almost naturally develops with the interest in rebuilding wide chains of events, which can be very distant in time and independent of individual memory but can be linked to it as part of a cultural memory belonging to particular communities; however, it also originates in a sort of species memory. We must be aware that this image of the past depends on a network of presuppositions that are much

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La mémoire, l'histoire, l'oubli, which was published in digital form in 2002 – Ricoeur points out three enigmatic aspects of memory: a) presence (of an image or trace in mind), b) absence (of the past thing the image refers to) and c) antecedence of what happened (temporal distance feeling expressed through verbs or adverbs; one remembers that something existed *aupavarant*). The latter aspect fosters historians' spontaneous realism. The reality of the past is the complement of memory practice, that is, the certainty that something actually happened is a tacit element of our ordinary way of remembering; we could consider it as a background aspect of ordinary knowledge. Ricoeur talks elsewhere of *croyance antéprédicative – et même prénarrative* on which the basic matrices of historical knowledge lie.

more complex than what appears at first glance and that it has to address questions and sometimes real challenges emerging from the development of specialised studies on various areas of the current scientific, academic and cultural scenario. In the following pages, the developments in the late 20th and in the very beginning of the 21st century, which are also the context of the studies collected in this number of Critical Hermeneutics*, are outlined.*

2.

A certain number of problems are raised by philosophers interested in the nature and limits of historical knowledge. Various questions simultaneously arise in the nonphilosophical areas of research and experimental studies on psychology and neurobiology about memory and subatomic physics about the structures of time. Signals and conflicting perspectives come from specialised areas that are characterised by tensions hard to be defused.

Before the point is presented, clarification is needed. On the one hand, the modifiability of the images of the past, interpretative plasticity, openness and incompleteness of our knowledge or even the conceptual indeterminacy of descriptions and flexibility of the 'representation system' of past events should be discussed and all of these aspects are associated with the forms of the knowledge of the past. On the other hand, the indeterminacy of the past, namely, as the ontological referent of our descriptions, as a reality endowed with a proper consistency, should be explained and our surveys try to expound it. Therefore, in different specialised worlds and research traditions, the intuitive distinction seems to blur and fade in importance; otherwise, it is openly seen as problematic, if not untenable. In another emerging idea, the past is nothing more than a shapeless matter, which is infinitely malleable for an interpreter (pure stuffism; see Sidelle 1998). As such, traces have no any objective past to be com-

pared with. Postulating the determinacy of the events and their objective independence of our practices would be an extremely strong abstraction and it is as useless and misleading as the Kantian idea of the thing in itself. The events as determined in their own objectivity are inaccessible or even nonexistent at certain levels of reality. All we can do is organise and analyse the pure matter of the traces in line with our cognitive and noncognitive interests through conceptual and linguistic conventions. According to these positions and successive debates, the border between ontic and epistemic indeterminacy tends to become thin and flexible. However, such an outcome seems to be attributed to the insufficient perception of the central position and theoretical importance of a conceptual distinction that we cannot easily eliminate. It is – if not indelible – deeply rooted in our intuitions.

We present some examples of the research areas where the main concerns about our topic originate. A certainly restless domain has been the philosophy of history. In general, antirealist accounts reject the determinacy of the past, assuming a dual line between epistemology and ontology. Good examples can be found in the works of Hayden White, Hans Kellner, Frank Ankersmit and Keith Jenkins[4].

In the field of 'philosophy of memory', the most radical constructionist positions have criticised the idea of 'memory fidelity'. Memory is basically selective and distorting, but it is in a certain way always false. Furthermore, the objectivity of the past is discussed at least in epistemic terms. Kourken Michaelian claimed that memory can expand the information about the past and go beyond what is experi-

[4] I mention some of the most representative cases of the now enormous body of writings in philosophy of history: White (1973) is certainly the prototype of the narrativist tendency of second generation (of literary matrix) that is generally labeled "postmodernism" in the debates; other important examples are White (2010), Kellner (1989), Jenkins (2008) or Ankersmit (2012), while a very relevant collection is Ankersmit and Kellner (1995).

enced as in the case of an episodic (noninferential) memory concerning particular, specific and singular experiences (one-off experiences, such as remembering the birth of a little bird or a visit to Rome). The case of 'boundary extensions' is typical. It is a series of visual memory experiments involving showing some photos to a subject that has to reproduce them (e.g. in form of sketches); in remembering a particular photo, missing details are added and predictions about what lies beyond the visual boundaries of the original image are provided[5]*.*

Two serious threats to the common experience of sequential time are likely observed in fundamental physics. On the one hand, influential interpretations of quantum mechanics validate the idea of the intrinsic ontic indeterminacy of reality. In other words, the indeterminacy of matter states is not derived from the lack of information or cognitive limitations. On the other hand, the thesis of the nonexistence or irrelevance of time is based on some developments of the relativistic paradigm. The theoretical possibility of influencing the past is also discussed in some philosophical research areas, such as time travel (*see Torrengo 2011).*

If we literally consider the abovementioned developments, we should believe that our stories, which are characterised by temporal evolution both in biological and cultural senses, are a sort of (potentially illusory) diachronic bubble floating on a neo-Parmenidean *platform; otherwise, we should accept the idea of a past becoming 'determinate' (taking on a well-structured form) only under the selection of our memories and* ex post *reconstructions. I do not think that this outcome is unavoidable; however, if we must reach it, the path is long and tricky. I will try to prove this concept in the following sections by recreating the points of departure of such theses with some*

[5] Consider fn. 21 below for the latter references. For the rest, see Michaelian (2011).

details. The points are also the background of the articles presented here. Indeed, the latter are limited surveys about historical knowledge, memory, linguistic representation of the past and physical time.

3.

Questions on the epistemology, ontology and philosophy of language are related to the philosophical discussion about the historical past. All of these aspects, which are implied in the analysis of the descriptive function of historiographical language, have unsettled the philosophy of history of literature for decades. For the past half century, new and lively controversies have emerged between realists and constructivists, epistemological monists and thinkers of hermeneutical orientation, idealists of Neokantian ancestry, postmoderns, narrativists and nihilists of truth. These debates are based on the remarkable impression of some case studies at ethical, civil or cultural levels (e.g. the Shoah with its uniqueness, speakability and memory duty or the historiography of genocides). A wide spectrum of research orientations highlights the complexity of the mechanisms governing the experiential, linguistic and conceptual construction of the historiographical images of the past and the plurality of cognitive criteria and interests directing the elaboration of the mere traces.

With the late outcomes and more radical forms of the 'linguistic turn', along with a strong narrativist and anti-positivist tradition, new discussions concerning the accessibility itself of past events and the referential function of historiographical descriptions have been presented. Many authors proposed to deflate or diminish the role of the concept of truth if it is not within the assertable causal chains at least in the understanding of the meaning *of wide sets of historical events. I would like to focuse on one of them, namely, William Henry Walsh, who has not yet obtained the place he deserves in the reconstructions*

of such studies. Without being driven by any antirealist perspectives, he initiated debates on the constructive role of colligatory concepts[6]*. Some examples of the latter are as follows:* cold war, Hungarian revolution, Early Middle Ages, democratic expansion, democratic revolution, Carolingian Renaissance, Florentine Enlightenment, imperialism, capitalism and Church*, which are similar to Max Weber's ideal types. However, such expressions raise numerous questions. For instance, their referential range is debatable because of the vagueness of the borders introduced to the continuity of the historical process; consequently, the identity conditions of their referent become undefined. In the linguistic perspective, the object of historiography has to be reconstructed from a scattered and fragmentary set of data, documents, memories, testimonies and material traces. It is a synthetic and connecting procedure that creates complex aggregates by establishing more or less strong nexuses amongst the parts and highlighting the relationship patterns between individuals and groups that are the actors of such aggregates. At the epistemological level, the discussion focuses on the validity (nonarbitrariness and conventionality grade) of the connections that the historical inquiry defines by dissecting constantly changing global processes derived by human actions. The question of setting boundaries, which are strictly connected to the debates around 'vagueness', casts a philosophical doubt about the degree of the dependence of these concepts on the 'representation system' and the level of the nature of the represented object. This question is hard to maintain in the epistemological field. It inevi-*

[6] Walsh, a philosopher formed at Merton College in Oxford, approached the issue for the first time in the essay *The Intelligibility of History* (Walsh 1942), which resumed and revised in *An Introduction to philosophy of History* (Walsh 1951) and in *Colligatory Concepts in History* (in Gardiner 1974: 127–144). The term 'colligation' derives from Whewell (1847)'s analyses of induction. This kind of concepts is generated by an act that, unlike Bacon's induction, unifies data under a connection rule, namely, establishes the limit of a conceptual unity holding together the phenomena. The colligation is in this sense a well-defined phase of the historical interpretation.

tably refers to the ontological dimension, above all if one thinks about the role of the colligatory concepts not in the sphere of origins and developments (causal sequences), but in the sphere of interpretation. An interpretative activity aims to grasp the sense characterising a historical path in terms of its interesting and global qualities by making it intelligible and rational according to the logic of the part–whole connection. The latter has to be distinguished from the cause–effect nexuses.

Considering only the speculative 'spasms' in these debates would be wrong. The point could only be clarified by the words of a historian. The following text incisively exposes the hidden dangers in the construction mechanisms of the image of an event. It shows the actual genesis of the image within the historical praxis, as characterised by a wide plurality and plasticity of the interpretations of the past. However, emphasis on the prospective limits of any historical reconstruction can be misunderstood. It can raise a doubt that the investigated phenomenon has a defined form and likely generates fading effects or analytical disintegration of an object (an old-fashioned decomposition strategy formerly practiced by Hume in the case of material objects and personal identity). The passage is from an influential monograph on fascism.

Introduction.
Has fascism ever existed?

Perhaps fascism has never existed.
Anonymous from the 21st century

The history of fascism is a strange and singular story.

After almost 90 years from its appearance in history and after more than half a century from its disappearance as a key player of the political actuality, fascism seems a rather mysterious object evading a clear and rational historical definition even though it has been discussed in tens of thousands books, articles and debates.

[…] The history of the interpretation of fascism is strange and singular. Indeed, interpretations vary amongst so opposite and irreconcilable views that one can sometimes judge the hope of defining the nature of fascism in largely shared terms as totally useless. […]

[F]or 80 years, the nature of fascism and its meaning in contemporary history have been continuously discussed: whether it was an autonomous movement or an instrument of different forces, whether it had an ideology and a culture, whether it was modern or antimodern, whether it was revolutionary or reactionary and authoritarian or totalitarian. However, no agreement about the position of fascism in time and space has been reached: the place and time of its origin are still a matter of debate; studies have yet to determine whether fascism was an exclusively Italian episode or a universal one, whether it is correct to talk of 'fascism' as a unique phenomenon with many variants or of 'fascisms' as different trees with some shared features;, whether an 'age of fascism' was chronologically definable or whether a sort of 'eternal fascism', whose traces could date back to Cain and which is now hanging over the human existence as a forthcoming and real danger, actually exists.

In other words, fascism has a 'Homeric question'. […] As for the Greek poet, opinions on fascism are conflicting not only about the place and date of birth but also about its very existence. The latter feature is actually challenged by those who claim that fascism is not an autonomous political movement with its own ideology, culture and political system, similar to liberalism or communism; instead, it has been only considered an epiphenomenon*, that is, the contingent and extreme secretion of other phenomena, such as the anti-proletarian reaction of the bourgeoisie, the moral disease of the European consciousness, the pathological degeneration of the mass society and the explosion of century-old shortcomings of people who were still immature for liberal democracy. According to this view, fascism would be a historical total negativity and had no proper autonomous and specific (and conceptually definable) reality. Some scholars proposed to banish the concept of 'fascism' from the scientific community because it would not have any precise meaning corresponding to a real historical phenomenon. With the same argument, other scholars asked for the adoption of an equal measure against the concept of 'totalitarianism' […]. [I]n light of successive theories about totalitarianism, which was established by some political scientists only on the basis of nazism and stalinism, fascist totalitarianism has been peremptorily described to be nonexistent. Even more drastically, other scholars affirmed that no form of totalitarianism has ever historically existed. If this trend becomes popular, one cannot exclude that some revisionist, postmodernist or*

> *deconstructionist historians or political scientists may state that fascism has never existed*[7]*.*

The passage ironically exposes the framework underlying an analytically decomposing and deconstructionist approach by refusing the result of the radical historiographical relativism that openly denies the determinacy and existence of the past. This approach tacitly presupposes that historiography works on a raw material by introducing, with its own conventional *criteria of linguistic identification, a network of objects and events that would remain otherwise nonexistent.* The traces of the past *appear under this light as a shapeless piece of information that can be taken in infinitely many ways without even establishing the correct way of dissecting the historical world or whether such a way is available*[8]*. Notably, the reasoning can be applied to material objects as well. A typical example of this kind of discussion is a dismantled clock on a clockmaker's table. Is it still an individual object that is 'dismantled' or a set of more simple objects that are the aggregated parts thereof?*[9] *Considering psychological or practical kinds (regarding advantages in sectioning the things in a particular way) cannot specify the ontological building blocks of the world; consequently, our distinctions are always arbitrary and conventional. Hence, distinguishing objects and events would be an arbitrary act, which is not supported by objective and intrinsic identification criteria.*

[7] The passage is from the *Introduction* to Gentile (2005).
[8] For the problems concerning the conventionalist paradigms in general, see Morena (2004).
[9] For the criteria of object partition or aggregation, Hillary Putnam's analyses against metaphysical realism are well known and always suggestive. See Putnam (1990: 96 ff; 1987: 18 ff).

A particularly insidious version of historiographic relativism was illustrated (and condemned) by Beham McCullogh in the essay Colligation and Classification in History *(McCullogh 1978). Different cultures describe the same thing in different ways. Viewpoints, rationality standards, and practical interests underlying descriptions change. A disease can be explained in terms of evil spirits or modern medicine. Even medical explanations may change the paradigm. If we are caged in our culture horizon, we cannot have the true knowledge of a world independent of our (or other) culture. The world is a construction that is entirely built with 'local' and untranscendable concepts and beliefs. Indeed, some authors who are totally certain of the nonexistence of past events can make true historical descriptions simply because events are mere constructions of historians, are made possible by the descriptions of the historians themselves and cannot be emancipated by a particular life world (see Roth 2012).*

The arguments McCullogh moved against such developments are worth mentioning. He took advantage of solid conceptual distinctions and had no fear of admitting the problems of realist theories that are too focused on perception as the basic level of knowledge. Assuming the untenability of any idea of correspondence, he proposed a weaker form of the correlation theory of truth. Certainly, studies on cultural, conceptual and cognition-based differences have shown that perceptions do not correspond to things as passive records, that is, one can see a leaf, a drug or a botanical specimen in the same thing. However, this definition is insufficient to claim that our representations do not include any information about the world that in part causes them. The subjective interest guiding attention steers but does not necessarily twist data. It can be used to distinguish a friend in a crowd. Acknowledging that our concepts do not perfectly

reflect things does not mean to exclude that something in the world is linkable to the objects of our descriptions. That we have no independent access way to that something does not let us deny any difference between the world and our experiences. Many scientific theories describe the extent to which culture affects perception and conceptual schemes. Nevertheless, we have reasons to hold that its influence is partial and always combined with the causal influence of the way the world is independent of our descriptions (McCullogh 1998: 17–19).

Important questions involve the epistemological nature of time scales, which are actually used by historians, in relation to causal nexuses and determination of the meaning of events. Time itself is a configuration template of past events and the innovative role of Annales historiography in this respect is well known. What counts is the difference in the time scales in terms of duration (long, middle and short term; cyclical or serial time) through which significant events are ordered or in terms of connections with individual actions and sudden changes, with superindividual, collective structures and natural rhythms (e.g. Fernand Braudel's Méditerranée*, production modes and civilisations). Simultaneously, unique and linear relationships or a more complex pattern of time dimensions may be present. Historical facts are identified on the basis of their meaning as crossroads of different time scales; they are reducible neither to particular cases of a law nor to unique individualities, but they acquire relevance and pertinence only in relation to the deep structures of a sociohistorical and cultural background[10].*

The discovery of a constitutive function for time that is upstream of the historiographical praxis can contribute to weaken the sense of completeness of the past as a corollary of a linear and progressive

[10] Consider on this point Borutti (2015)'s acute analyses.

*conception of historical time. Relevant evidence can be found in the results of Reiner Koselleck's refined concept of history (*Begriffsgeschichte*). It was centred on concepts' temporal structure and semantic shift, especially the categories of the sociopolitical sphere (democracy, liberty, crisis and history). The German philosopher anchored the sense of time to anthropological and ontological roots and argued that its structure depends on an irreducible tension between* Erfahrungsraum *(space of experience) and* Erwartungshorizont *(horizon of anticipation). The cultural changes in the way of seeing history hinge on the variation in the balance between these poles. For example, the projection to the future, which is a dominant trait of the modern culture (whose analysis is one of Koselleck's main interests), is explained through the detachment of the* anticipation horizon *from the* space of experience*, that is, from the repetition of the past. According to Koselleck, this concept is a profound change that is bound to the end of a rural culture with its image of a cyclical and slow time in harmony with natural rhythms. The point of interest here is the double value of historical concepts, both cognitive and pragmatical. They have an indicator (*Indikator) *and performative function, that of an active agent of historical changes (*Faktor*). They reflect past experiences but open future horizons. Concepts define a horizon and open possibilities and they have a transcendental dimension of construction in addition to the comprehension of the historical reality. In this pattern, distinguishing the specific position of historians with respect to agents is difficult. Intuitively, they do not coincide. Thus, Koselleck proposed a constructionist–hermeneutical model of historiographical work and insisted on the potentially infinite plasticity of the past and the limitless possibility of redescribing and reinterpreting past events. The past is every time reconstructed and expanded in relation to the demands of new contexts and cultural needs. It is also the object of*

an uninterrupted creative revision[11]*. Therefore, it is unstable and indeterminate at least epistemically.*

Other aspects should be added in terms of the tensions in philosophers' metahistoriographical studies. Although the contrasts between naturalistic and hermeneutical approaches cannot be proposed again in light of the methodological and thematic enlargement of the historiographical framework, the problem of the specificity of an interpretative and symbolic dimension of the past facts, as methodologically distinct from the forms of the causal explanation, is still open[12]*. As such, the necessity of modulating ideals of truth and objectivity should be further discussed by considering the difference in knowledge targets and procedures at stake.*

4.

Recently, in the philosophy of language, studies on the grammars of time have produced a great deal of analyses and new acquisitions about the informative and semantic role of verbal inflections, verb tenses, active verbs and sentences, duration adverbs and temporal particles. Other important lines of research have dealt with the relationship between location information and internal articulation in qualitatively distinct stages or on the accomplishment of the mentioned processes[13]*.*

[11] See Koselleck (1979).

[12] An exemplary presentation of the issue is in Cassirer (1944: 217–260). The text argues for the irreducibly symbolic dimension of history considered as a branch of semantics. This characterization is entirely carved out on limited questions and cases concerning history of culture, ideas, art, and, on the basis of that, I think it can propose again the epistemological dichotomy causality/meaning. I also think the privilege that is generally granted to this kind of historiography should be revised in the light of the above mentioned very complex scenario of the second half of the 20th century.

[13] For a rich overview of the direction of research and a critical analysis of the developments of these topics, see Bonomi and Zucchi (2001), as well as the relevant collection edited by Klein and Ping Li (2009).

Previously, the semantic reformulation of the conflict between realists and antirealists, particularly about the epistemic and nonepistemic conceptions of truth, dominates the scene because of the work of Michael Dummett. The conflict had a major impact on the great philosophical disputes around metaphysical, ontological and epistemological questions. The main discord was as follows: do sentences really exist whose truth transcends our possibility of verification/acknowledgement not contingently but in line of principle? According to the nonepistemic concept of truth as correspondence, the sentence 'the cat is on the carpet' is true if it corresponds to the extralinguistic fact that the cat is on the carpet. This fact makes the statement true. The realist stance is essentially motivated by the concern of not confusing the property of being true with that of being held to be true *in such sentences. A factor in (mathematical, physical or historical) reality may make a sentence true regardless of that it is under our cognitive grasp. A well-formed and nonvague sentence has determinate truth conditions: it is either true or false; if it is not true, it is false regardless of our possibility of verifying it. However, this intuition generates many problems; for instance, if one goes beyond simple and comfortable cases such as 'the snow is white' or 'the cat is on the carpet', they are clearly used in conditions falling into our control or acknowledgement possibilities. According to the epistemic perspective, the truth of a sentence must be somehow bound to the possibility of verifying or acknowledging the truth conditions thereof, namely, the rational acceptability or guaranteed allegeability of a sentence at least in principle. The truth* with a human face *must be able to be expressed in terms of actual or possible knowledge. The sentences about the past on which Dummett specifically worked are a family of expressions that make the application of the nonepistemic*

truth model of correspondence more controversial, similar to mathematical ones and those concerning infinite domains[14]. The past is a typical domain in which truth condition acknowledgement is problematic, if not impossible. The question always remains open in many ways and even from this area of research elements emerges in support of the most radical forms of constructivist and antirealist positions. They are avowedly interested in emancipating historical knowledge from the constraint of the concept of truth and the immutability of the past.

Leaving now the area of the philosophy of language and history, we may consider studies more directly connected to experimental research. Cognitive and neurobiological studies are of particular interest for our aims. A great and intense activity of classification and conceptual clarification concerning empirical investigations has been carried out in this field. The developments of this activity raise relevant theoretical questions. One of the most controversial themes about the privileged role of the notion of trace and the (causal or not) relationship with past events. According to causal theories, one cannot talk of memory without at least an indirect causal connection between an event and a trace. The distinction of memory forms on a (short or long) duration basis has great relevance in the literature. It is intersected with the clarification of the types of memories as distinct in implicit (e.g. the procedural one, which is the capacity of maintaining the ability) and explicit or declarative (the capacity of preserving information). The latter can be assembled in the subsets of episodic (particular and singular experiences) or semantic (general experiences) memories. The distinction amongst the description levels of memory is very much relevant. Person-focused descriptions are based on mental images and able to distinguish the memory type

[14] See Dummett (1978; 2004). About the problems and evolution of Dummett's anti-realist positions see Murphey (2009: 14–22) and Salis (2015).

from other types of experience traces (perception and imagination). Descriptions in terms of physicobiological processes and neural mechanisms regarding the subpersonal cognitive level are provided. Eventually, a solid body of studies have addressed representational or conversely the direct and immediate nature of memory.

Immediately, heated discussions are included in this analytical platform. On the one hand, the 'archive view' conceives memory as a device passively recording, preserving and reproducing past representations through possibly exact copies. For a long time, the encoding, storage and retrieval (ESR) model was considered a sort of inescapable pretheoretical framework for studying memory. On the other hand, constructivist perspectives reduce or eliminate memory reproductive functions. Memory rather would have the task of producing detailed representations consisting of coherent autobiographical narrations (irrespective of real past happenings) to deal with anticipations, future planning or social unity support. In other words, memory should merely shape and colour past experiences. Indeed, the validation of new memories would always be circular, hinging inevitably on precedent memories, whose reliability on the successive ones is automatically assumed as their own. From this point of view, the past is far from appearing as complete or (much less) determinate and immutable. On the contrary, it is something built, organised and handled by the selective and narrative procedures of memory[15]*.*

5.

Changes in the image of time emerging in the 'hard' sciences are particularly relevant and profound. At first glance, they present one

[15] My considerations drew from Bernecker (2008) and Bernecker and Michaelian (2017). From the latter rich collection I consider above all: S. Bernecker, *Memory and truth* (51–62); D. Debus, *Memory causation* (63–75); S. K. Robins, *Memory traces* (76–85).

of the hardest theoretical challenges. Indeed, they complicate the task of clarifying the relationships with the common-sense view on the flow of events and the objective determinacy of the past. Therefore, we need to dwell more on the introduction of these scenarios and make a simple discussion because of the technicalities of the literature.

The most astonishing results come from the advanced frontiers of physics and particularly from certain interpretations of relativity and quantum mechanics. Many scholars considered the 20th century physics in terms of a progressive disintegration of the notion of time up to its final eclipse in the analysis of the elementary matter processes. According to this vulgata*, the 19th century paradigms of thermodynamics laid a solid foundation to explain the common and historiographical intuition of the course of events as the psychological and cultural* côté *of an* arrow of time *bound to the irreversible growth of entropy. Successively, relativity theory would have dealt a severe blow to this view by eliminating any possible reference to a universal clock regulating the equivalences amongst local times, which are necessarily connected to specific reference frames and by referring to a deformable and curved spatiotemporal order within which gravitational waves gather.*

The most radical threat would come from quantum physics. It would push the interpreter into a direction that, on the one hand, let her argue for the irrelevance of the time variable in theory's descriptions; on the other hand, it opens to a re-shuffling of the relationships amongst past, present and future and reduces or eliminates the irreversibility of the 'arrow' of time. Suffice it to say that the phenomenon of entanglement violates the nonlocality principle of classical physics and raises the issue of reformulating or abandoning the notion of objectivity. According to Copenhagen interpretation, which was proposed by Niels Bohr, nothing is 'real' at

a microscopic level until it is observed. In quantum mechanics, before observation, particles are in an indeterminate superposition of possible states. Given an 'initial' interaction between the quantum states of two particles, they turn out to be linked to each other (precisely, 'entangled') even if great distances divide them. A state change in one of them instantaneously produces a measurable effect on the state of the other, developing a 'spooky' action at a distance.

This experimental situation is reflected at a theoretical level in the opposition between two ways of seeing time: a presentist view, that is, because it is focused on the ontological primacy of the present and an 'eternalist' view[16]*. According to the lexicon used for the first time in John E. McTaggart's famous essay, the rival views are of two kinds: the one is dynamical (*A-series theory*) and the other is static (*B-series theory*; see McTaggart 1908). Dynamical theory is very intuitive, because it corresponds to the common experience of time as a continuous passage of the things from one state to another one; the course of the events from the past towards the future implies the precise distinction of three temporal determinations. In an ontological sense, only present exists, given that the past 'is no longer' and the future 'is not yet'. Time has an unstable and hard-to-define character of an incessant becoming from the past to the present and from the present to the future. A fixed point in this view is the irretrievability of the past and its immutability opposite to the (at least partial) openness of the future with respect to our causal influence. Some processes are irreversible. It is the case of the thermodynamical phenomena or human actions with their causal effects. From these dimensions, it is natural to think the universe moves on towards ever new states, which are different from the present one and without the same state being able to come back.*

[16] In the following context, I use the analysis of the fine volume by Dorato (2013). See also Orilia (2012).

In the specialised literature, presentism is generally considered as at odds with special relativity according to which the present has no privilege. Arguably, it is not in harmony with Newtonian physics, whose laws are symmetrical and invariant with respect to temporal changes. The time variable is immaterial for their formulation. Moreover, a natural law is supposed to be valid always and everywhere and to have then an a-tensional sense. Thus, a discrepancy emerges in physics between the macroscopic events of our experience, which is oriented in time according to an irreversible direction and the microscopic world, which is governed by symmetrical laws with respect to the past and the future. No ontologically privileged present moment is found at the subatomic level. The simultaneity of two events is always relative to a particular inertial observer, but this discovery undermines a key notion of the experience regarding the position of events in time with respect to the present. Relativistic physics guarantees that the present is never directly experienced by virtue of the light signal travel time, from the event to the inertial observer's position (or to the particular reference frame thereof), which is negligible only for short distances. What the past or the future is according to us can be present according to different observers. The past and the future actually exist according to other reference frames and local backgrounds in some regions of complex and fragmentary spatiotemporal cosmos, which are the arena of physical events. Thus, eternalism seems to provide a more suitable metaphysical alternative that conforms to relativity theory. The future and the past have equal ontological dignity and have a relationship between one another that is different from what common experience affirms. According to the supporters of this view, the presentist paradigm is committed to anthropocentrism, which is an illusory result of the mix of the features of some physical phenomena with our physiological, cognitive and cultural constitution. If one

denies the ontological primacy of the present, the two depending corollaries, namely, the time direction and the immutability of the past, lose their (anthropocentric) footing[17]*.*

Various developments of the described situation are presented. The criticism of presentism, as fostered by quantum mechanics, could have extreme and paradoxical outcomes that are not yet delimited or pondered in their scope. Quantum experiments and quantum computers that process information taking advantage of the interactions between particles according to the laws of quantum physics open the door to the theoretical possibility of a retroaction of the future on the past. A classical trend of research about the 'quantum surrealism' revolves around a two-slit experiment. This concept has been proposed several times in different forms since the 19th century. It is variously explained on the basis of the classical interpretations of quantum mechanics (from the standard Copenhagen interpretation to those proposed by Louis De Broglie, David Bohm or, more recently, Aephraim Steinberg; see Wiseman 2016). The experiments carried out at the Washington University St. Louis of Toronto by the group of the physicist Kater Murch explicitly put into question the temporal asymmetry of the microphysical processes[18]*. The quantum reaction of a superconductor is monitored, reducing its temperature to near absolute zero and letting it act at two interacting energy levels. Monitoring is conducted by projecting photon beams at two different modalities (strong and weak).*

[17] Though not taken into consideration as it deserves, Nicolai Hartmann's work is particularly rich in deep and rigorous analyses, insights and innovative arguments on this subject. Certainly, his ontology of the past in particular should be examined. I will mention here only some sections of his system directly connected to our discussion. For the criticism of the anthropocentric conceptions of time focused on the primacy of the present one should consider ch. 29 in the sec. IV of *Möglichkeit und Wirklichkeit* (Hartmann 1938, 2018) or sec. I of *Aufbau der realen Welt* (Hartmann 1940) or sec. III-IV in the first part of *Philosophie der Natur* (Hartmann 1950).

[18] See the report of Murch's group (Tan et al. 2015).

Information units (qubits) travel simultaneously between two levels and detect states of entangled particles, which are able of instantaneous at distance interactions. Therefore, the behaviour of a particle seems to influence its precedent states, upsetting the classical temporal coordinates.

Steinberg reached a moderate conclusion by considering experimental outcomes as compatible (from a mathematical and practical viewpoint) with the standard indeterministic interpretation of the quantum phenomena and the deterministic interpretation proposed by De Broglie and Bohm, who depicted the possibility of drawing the real trajectories of particles. Murch's view seemed more radical and willing to admit the retroaction of the future on the past: microscopic material processes suggested that time in the quantum world flows in all directions and not uniquely in one way. He argued that the reasons why the macroscopic processes seem to follow a unidirectional flow in compliance with the arrow of time remain unclear.

The attempts of integrating fundamental physics and information theory are connected to this context. The precursor of this approach was the great physicist John Wheeler[19]*, as attested by his famous motto 'Everything is information'. The quantum world would be better describable as a flow of relations and processes than as a set of well-defined and stable objects. This relational mixture may be well represented in terms of information. Thus, the quantum of information becomes the building block of reality. Various research projects have worked systematically in line with this view and produced original results*[20]*.*

A rich and interesting theoretical approach is based on the

[19] See the notable tableau depicted by the physicist P. Harpern (2017).
[20] Amongst Italian scholars' studies, the study of D'Ariano et al. (2017) should be considered.

nonexistence of the time variable in fundamental physics without totally denying a form of reality for sequential and directional time. I think that this view is clearly expressed in the position of an influential expert such as Carlo Rovelli, who highlighted the crisis of the following image of time:

> *Something uniformly and equally flowing in the whole universe and in which everything happens. A single present exists in the whole cosmos, a single 'now' that is the reality. The past is fixed, happened, the same for everyone. The future is open and still indeterminate. Reality flows from the past through the present towards the future and the evolution of things is intrinsically asymmetrical between the past and the future. We thought that this concept is the basic world structure*[21]*.*

However, at the fundamental level, the concept is not that similar to the perceived time. Neither space nor time exists in the elementary grammar of the world. Nothing 'present is common to the whole universe' and 'no difference is observed between the past and the future in terms of the basic equations governing events in the world.' We must be aware that the gravitational field dynamic itself – 'a large moving jelly', Rovelli wrote – is a high-level approximation. In its microscopic structure, the world is made of flows and processes, not of things *similar to material objects. In particular, the quantum world can be characterised through three fundamental properties:* granularity*, namely, discontinuity; time position* indetermination *for 'particles', each of them being in an indeterminate state, in*

[21] The passage is from Rovelli (2007: 46). Consider also the entire third part of this work and Rovelli (2014). Both books introduce the theme of the trace and often return to the subject.

superposition of states, until it interacts with some other entities; and relationality *of physical variables, because any happening can be concurrently before or after another one.*

Rovelli directly addressed the basic questions to look for nonreductionist answers. How can our sensation of a continuous flow emerge from such a timeless world? Certainly, a role is played by some partiality and blurring given by our limits of interaction with the world. However, he argued that the direction of time can be considered a 'local' real element connected to the low entropy of the cosmic region where we belong. It is 'real but perspectival'. On the contrary, the time variable is only one of the possible forms of description of the world and we can reduce it to a rigid and uniform board only for the slow (with respect to the light speed) velocities and short distances we move in. It is a third-level approximation, which is conditioned by our perspective of beings that are constrained by the entropy growth horizon. Rovelli concluded that time is stratified as much as a complex set of independent layers, which are differently approximated in accordance with the physical scales being considered (velocity and magnitude). The notion of cause with its temporal asymmetry, which is important in our ordinary experience of a change, loses strength and meaning in the description of quantum phenomena. The laws of elementary physics describe smaller or larger regularities, not causes.

Furthermore, the landscape of theoretical physics (with all its speculative aspects) is not uniform. For instance, the American physicist Lee Smolin, a recognised authority in the field of quantum gravity, wrote an essay in 2013 that differed from our topic. He considered the background of the current physical research as favouring a real rebirth of time (Smolin 2013).

6.

The attention to the neurological bases of the sense of time represents another important aspect of our topic. Factors opposing the reduction or interpretation of time as a merely illusory phenomenon are related to biology. For example, Arnaldo Benini's 'neurobiology of time' takes advantage of the meeting of disciplines such as biology, physiology and neurosciences to propose an innatist interpretation in which time is firmly anchored to the functional possibilities of the nervous system (Benini 2017)[22]*.*

> *Given that the time sense mechanism is distributed in most of the brain and that they spontaneously work, we need to change the brain so that we can think of a timeless reality. A pointless enterprise, all the more so – here's Benini's final jab – since the brain should be the one that changes itself. […]*
>
> *The living matter follows the same principles as the lifeless one. […] Right, but, if psychology is biology and biology is based on physics, then physics cannot exclude the reality of time through mathematical calculations.*

In such a view, time and space are natural categories that are produced by a primitive mechanism without which animal survival would not be possible. Time is neither illusory nor merely perceived, but is in a certain sense doubly real because it is realised in nervous systems and biologically specialised devices that are real components of the evolving universe and because it is a mechanism governing the becoming and interpreted as a life essential dimension in agreement with neurosciences. With more ontologically committed terms, Benini

[22] I take into account in particular ch. 12 and 13 of Benini (2017), from which the following quotations are drawn.

wrote: 'The brain created unidirectional time because the reality to order is such […] nothing returns'. Even if it is not a structure of the empirical world and is not perceived as an external event, time is real; rather, it is 'one of the nearest realities to the heart of nature'. According to Benini, the scepticism about the reality of time, common amongst physicists, stems from the fact that they do not adequately consider studies on the biological and neuroscientific bases of time itself.

We have reached the end of our introductory journey. As seen above, different and conflicting signals originate from the research areas we have talked about. With the problem of time and its features, our cultural universe appears to be broken by two deep rifts. Undoubtedly, a line of strain is in the vertical *gap between common and specialised languages, which is a situation we can still describe with Wilfrid Sellars' word, i.e. a conflict between a 'manifest' image and a scientific image of things (see Sellars 1963). Regarding the progresses of physics, the astrophysicist Arthur Eddington exhibited the issue of an irreducible distance from the common-sense experience. This distance is illustrated by his often cited example of the 'everyday' table, whose features are unrelated to its microscopic properties as physics describes them*[23]*. The other controversial rift is* horizontal *in some sense and concerns the difficult reciprocal relationships between vocabularies and conceptual schemes elaborated in the shadow of different specialistic cultures and disciplinary matrices. The abovementioned divergences between the biology and physics of time certainly fall into this category.*

We face a complex situation that requires a certain caution and serious analysis to avoid hasty generalisations and precisely identify concepts and arguments at stake. We tried to work with this spirit in

[23] Consider the *Gifford Lectures* (Eddington 1928) that he gave in Edinburgh in 1927.

the organisation of the conference and the present number. I think that the methodological and conceptual outcomes emerging from the published articles follow the lines exposed above. One cannot say a priori *whether the conflicts in question here are always unsolvable. Firstly, one needs to understand how the* tensional *field of human actions in time emerges from its physical environment and whether the latter is a timeless world as some argue. Secondly, the specific relations of interaction and dependence existing between the different systems of description should be clarified. The landscape is quite animated and the conflicts are not only between viewpoints of different disciplines (physics vs biology or history) but also within the single disciplines. Interdisciplinary and* intradisciplinary *conflicts intersect, as in the mentioned cases of physical time and memory. An in-depth analysis may reveal that some controversies are unsolvable, whilst other can be illusory.*

From a patient work of conceptual clarification, new unifying keys could emerge and be useful to balance the fragmented information coming from specialistic studies. I will finally mention here a promising hypothesis that is oriented in this sense. The metaphor of the trace is often repeated in the interdisciplinary landscape we consider here. It is a heuristic working instrument, not a mere stylistic or rhetorical suggestion, to explore such research fields. We have seen that the image is quite important for historians, neuroscientists and cognitive psychologists in studies on memory. Notably, it can be relevant even in elementary physics. The notion of trace can be legitimately the common thread overpassing the barriers of specialisms and connecting somehow such different universes of discourse (e.g. natural, physical and biological universe; the psychological universe of memory and the neural bases thereof; historical and cultural universes). This concept can be also found in Rovelli's analyses (for what concerns the cited texts). Traces are

everywhere in the universe and they describe the past because entropy was low in previous phases. Rovelli highlighted that something should stop and energy should be degraded into heat so that a trace can be formed. The sensation of determinacy of the past in opposition to the openness of the future is derived precisely from the abundant presence of traces of past events. Cerebral traces bring about evolutionary advantageous maps, allowing the predictions about the future. The brain is a time machine that can continuously establish nexuses amongst past, present and future events, because it is a structure regulated by evolution in such a functional architecture. In this sense, Rovelli relied on Dean Buonomano's neurocognitive positions[24]*.*

Maybe, but it is not given for granted, future studies will confirm the fruitfulness of the notion of traces as a bridge concept and the actual possibility of interdisciplinary connection[25]*. As for now, we can only take notice of the theoretical challenges derived from a context that imposes to compare, rethink and improve methods and languages irrespective of the different argumentative consistencies of the existing forms of antirealism or alethic scepticism about the past. One should not draw suggestions or hasty generalisations from the plurality of time images. One should not also try to harmonise them in a unified system. On the contrary, understanding the precise differences and possible links in the multiplicity of languages is an important work, but it is long, complex and difficult if one only considers the extent and level of specialisation at stake. A powerful criticism stems from the current debates. It raises awareness on the complexity of the mechanism originating the images of the past in*

[24] See Rovelli (2007: ch. 12-13) and Buonomano (2017).

[25] An interesting text to understand the difficulties of any interdisciplinary project about the notion of trace is that by Changeaux and Ricoeur (1998). They clearly and critically show the distance between a neuroscientific and psychological perspective and a hermeneutical one, as well as the methodological, scientific and philosophical difficulties of a meeting among them.

different kinds of studies. In such a perspective, we decide to create a moment of interdisciplinary exchange by giving the floor to philosophers of various origins (epistemological, linguistic and ontological) and to authoritative representatives of the historical and experimental research about past events or memories.

The articles collected here provide a very interesting material from different points of view and exclude simplifying shortcuts or hypotheses such as the thesis of eliminating or reducing sequential time in macroscopic phenomena and human action to an illusion or the past to the more or less deformed (extra-cognitively conditioned) human representations. Every essay seems to sustain the search for an explanation of the emergence of the temporal determinations that considers all the passages of the process in a conceptual and empirical way. These passages include the layers of fundamental physics and the stratifications of biology, psychology and history. Every essay also acquires the articulate forms of increasingly complex systems of phenomena.

Cagliari, March 2020

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