

The threefold “invention” of time: transcendental, transcendent, trans-temporal

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Abstract

It was in the Upper Paleolithic, or late stone age (50,000 10,000 B.C.), that an articulate confrontation with time first became a reality. The general cultural context was that of art and language: they both show how humans could begin to relate to their own brain functions as reified items, through which perception acquired an existence of its own. But the most specific evidence of this wholly new mental process, and the one that is most directly linked to our topic, is found in documents from the same general period that offer explicit notations of time sequences on bone and stone.

Building on this documentary evidence, and on that of the more complex calendrical and astronomical texts of early Mesopotamia, I will argue for a fundamental transformation in human mental templates that occurred in those early periods, templates that have remained with us ever since, with profound epistemic implications: the institutionalization of a scalar dimension in perception; the growth of a far-reaching sense of control, based on the predictability of recurrent patterns; the “transcendentality” effect whereby the “invented” time frame came to be seen as ontological time; the definition of a homeostatic system based on a totally self-referential evolutionary scheme. The coherence of time came to be seen as the coherence of the mental frame, the coherence of being as the coherence of thought. Against this background there emerged a contrasting proposal, one aiming for transcendence as opposed to transcendentality.

It was the fragile biblical proposal, fragile in its inception because it was not nurtured by the same rich intellectual tradition of Mesopotamia, and fragile in its contextualization, because it remained obstinately consistent in adhering to an ontology that was intrinsically not derivative. The “view from Eden” proposes therefore an altogether different conceptualization of time in terms of its beginning and its becoming. In this perspective, the coherence of time came to be seen as posited from outside the sequence, the coherence of being as independent from the overlaid categorization system. A radical new dimension was ushered in by Christianity. The “Christian” notion of time is a true cultural novelty, that will come as a surprise that can best be appreciated against the background of the previous two “inventions”.

1. Introduction

Oceanici silenzi. . .

This is the memorable verse of the poem that opens Ungaretti's *Sentimento del tempo*. Both the verse and the title come to mind when we bend back over our common human trajectory

and reach back to the beginning of human or hominid time, some three million years ago. The making of our species does not seem to fall within a human measure. For what can be our perception of three million human years?

It goes without saying that they had no perception at all of the *“fuggitivo tremito”*, as Ungaretti defines “time” in another poem from the same collection. Nor did they and this is perhaps even more astounding need to have such a perception. They had, in fact, very little, if anything, that they could measure, in the way of the passing of time. Changes were so infinitesimally small, that these our ancestors had no scalar dimension at all within which to frame any possible temporal perception. For three million years, time was, indeed, but a “fugitive tremor”. There was no awareness of time, no *“sentimento del tempo”*.

It is against these “oceanic silences” that the clarion call of perceived time suddenly sounds. Within the scale of millions, sixty thousand years ago can indeed be qualified by the adverb “suddenly”. Such suddenness is marked, documented and explainable. It will be the starting point of my presentation.

2. Transcendentality: from prehistory to Mesopotamia

2.1 *Invention*

It is at around 60,000 years ago that we may place the introduction of truly articulate language.¹ It marked the beginning of a momentous transformation, a first axial epoch in human development, which led to the establishment of totally new associative bonds, culminating in the city and the state, in the fourth millennium B.C. It has been called the “tectonic” age, in the sense that, from this time on, the basic changes in human life derive from cultural “construction” (hence, tectonic) rather than from genetic mutation, see [6].

Here I wish to underline one particular dimension of this change, that is intimately linked to language, but reflects a deeper stance toward the external world. In my understanding, humans had developed, even before language, a peculiar attitude that I call “meta-perception”.² It is the faculty of bracketing two distinct perceptions, even without a formal rationalization of the process entailed. What has been termed “spatial competence”³ is indicative of this development: the manufacturing of complex lithic artifacts requires the linking of perceptions that develop into a regular *chane opératoire*, based on a type of planning that depends on the awareness of sequential stages. This is then also one of the earliest indicators of human

¹A much earlier date is also proposed, for instance up to 1.9 million years ago [1]: language is seen as constitutive of even the early hominids. But it is important to distinguish between an earlier a-syntactical type of linguistic communication (“beads-on-a-string” model) to a hierarchical, fully syntactical system: the former has been described as proto-language, akin to a pidgin language, see [2]. For the importance of syntax in defining a human person see, from two different points of view, see [3, 4, 5]. It is such a fully articulate and syntactical type of language that I am considering here.

²See on this my book *Alle origini della politica* [7].

³See the important monograph by Thomas G. Wynn, *The evolution of spatial competence* [8].

time awareness, dating back to earlier paleolithic times.

But it is in the upper, or late, paleolithic age, i.e., the tectonic age beginning around 60,000 years ago, that with the introduction of language the phenomenon of meta-perception makes a radical jump forward. I do not necessarily associate this with formal rational reflection, nor with the assignment of symbolic values.⁴ In a more rudimentary, but very powerful, manner, language made it possible to project perceptions onto an extra-somatic level, and thus to much more readily bracket them than it had been possible in a pre-linguistic stage. Homo loquens brought to its natural issue the mental processes of homo faber. That this affected the perception of time,⁵ and time intervals, is documented in the archaeological record through some of the most astonishing pieces of evidence.

By 40,000 year ago, there are notations on bone and stone from the Near East and Europe that have been interpreted as recording observations of lunar appearances, see [10, 11, 12]. An important clue in the interpretive process is the fact that, under the microscope, the individual incision appear to have been made with different tools: this indicates that they were the result of mere doodling or decorative intents. The great significance this has for our topic is that it shows a syntactical awareness that stretches over time: the observations are patterned in such a way that the pattern precedes the single observation, and this pattern brackets in a graphically explicit manner the linkages of the components, while highlighting at the same time the unity of the whole.⁶

2.2 Institutionalization

Time came thus to be imprinted with the human sense of pattern. These are remarkable documents, because of the insight they give us on mental development in these early humans. It was language that had made this possible. If language reflected the extra-somatic extension of perception through an audio channel, the graphic embodiment takes this one step forward: it gives it, in fact, an extra-somatic embodiment that is no longer dependent on audio contact between speaker and listener, but has an autonomous physical existence of its own. In this respect, these calendrical notations are the first true antecedents of writing not in the technical sense of serving as precursors of the individual graphs as they eventually emerged in cuneiform and hieroglyphics, but in the sense of the syntactical link among components.

⁴The etymology of the term “symbol” (from Greek *syn-ballein* “to throw together”) refers to the same process I have in mind when speaking of “meta-perception”. However, symbolism entails a more developed stage whereby it is not two concrete perceptions that are bracketed, but rather a perception and an abstraction. In this perspective I would not consider as specifically “symbolic” those signs that have been so interpreted for the earlier periods, since they cannot be correlated to abstraction as such.

⁵On this and on what follows, see my article [9].

⁶This may be seen as an anticipation of what I will argue below (section 4) about transcendentalism, with direct reference to Kant: one of the points he stresses is precisely the unity of the whole within which the individual categories fit.

This syntactical aspect is of great significance and leads us to the next moment in our analysis, the institutionalization of the time frame. The relevance of the syntactical dimension of the archaic calendars lies in this: the validity of the interpreted message was not confined to the specificity of the target, but had a more universal range. This is different from the largest portion of the earliest cuneiform texts, which are of administrative nature and relay information that was expected on an *ad hoc* basis by the receiver.⁷ Calendars do not exclude, of course, an *ad hoc* purpose and use (in the first place by the same person who progressively added notations to the same document), but in addition they retain a value that goes well beyond the immediacy of the occasion. In this respect, it does lead from meta-perception to full conceptual rationalization, and institutionalization.

By the latter I mean that the clustered observations of individual lunar appearances came to acquire a value that went well beyond the level of the individual, to a point where it became a fully inter-generational enterprise. This helps explaining the remarkable growth of astronomy in Mesopotamia, based as it was on records gathered over the centuries. On the one hand, this consolidated the calendar in ways that were received as canonical from the very earliest time of urban life.⁸ On the other, it linked in a very deliberate way to the analysis of astronomical phenomena that were seen especially in their patterned, hence time bound, recurrence, see [17, 18].

There is a Sumerian text of particular interest for our purposes. Dating to a little before 2000 B.C., it describes in great detail the sequence of steps one must take for an effective cultivation of the fields.⁹ Known as the Mesopotamian Georgica, it bears no similarity to Vergil’s poetry, because it is an exclusively practical text, describing the agricultural cycle month by month, beginning with preparatory irrigation in July and ending with winnowing in June. The question arises as to the audience for which it was intended. Not the farmers, who could not read but especially did not need to be told what they could already master in an intuitive and concrete manner. It reflects, therefore, the scribal concern for recording procedures that pertained to the organization of society in all its ramifications. The Georgica are particularly relevant for our topic because they represent the canonization of perceptions of time sequences that had been critical for the early developments of meta-perception: the link between the seed and the plant is at the basis of the agricultural revolution and may be seen as the classical example of the meta-perceptual phenomenon.

⁷Not all early cuneiform documents belong to this category. Lexical lists (much less numerous) are different and, in this respect, similar to Marshack’s calendar notations.

⁸The classical edition of the Mesopotamian calendar goes back to 1915 [13]. Two volumes that appeared some sixty years later follow very closely in its wake [14, 15]. See also [16].

⁹See Miguel Civil, *The Farmer’s Instructions. A Sumerian Agricultural Manual* [19]. For a lucid presentation of the text within the framework of an extensive cultural and archaeological overview see [20].

2.3 Control

Underlying this early “invention” of time and its institutionalization, from late prehistory to the early historic times in Mesopotamia, there is an all important dimension of human development in general, deriving from the aim at achieving a greater degree of control over reality. I have briefly referred to a temporal framing that shows how awareness of time had crystallized in firm descriptive modules. They afforded control in two major ways.

In the first place they served as predictability mechanisms, because they identified sequential patterns that were expected to be repetitive, hence, precisely predictable. The newly established temporal frame identified a regularity that was, indeed, given in nature, but was codified, “invented”, through human conceptual channels. The month of June, to give an example, was, in its temporal framing, an exquisitely human construct. The recognition that it should be the beginning of a given agricultural cycle was also due to human ingenuity, even if the convergence of facts that made the cycle possible was not of human making. Indeed, agriculture was not, as such, a given. It was produced through the human exploitation, hence control, of the natural environment. It was the understanding of the conditions that allowed humans to go beyond the conditions themselves, to achieve a very gratifying measure of control.

This rested on the basic assumption of a profound coherence of reality. Predictability worked because reality behaved accordingly. Hence and this is the second all important corollary the presumption of causality was justified. The seed sown in September was the cause of the barley being harvested in April. The Georgica tell us this in purely sequential terms, but the causal implication lies at the core. Patterned recurrence may have been a given of nature, but until it was integrated in a conceptual framework of awareness it was as if it did not exist. The pattern exists qua pattern because it is framed in terms and concepts that build on perception and meta-perception. Hence the supreme sense of control that emerges within the human psyche as it defines the temporal dimension of limits and conditions within which it operates.

2.4 From meta-perception to transcendentality

If with some trepidation, I would like to define the mental process I have been describing as “transcendental”, harking back to Kant,¹⁰ but giving the term an idiosyncratic valence. I would namely like to see scalarity¹¹ as the backbone of transcendentality. Let me state this briefly, and then indicate what I see to be the relevance for our topic.

¹⁰I will refer to the original text as published in the following editions: *Critica della ragion pura*, a cura di Costantino Esposito, (original cited as per the second edition of 1787; cited as KrV) [21]; *Critica della ragion pratica*, a cura di Vittorio Mathieu, (cited as KpV) [22]; *Critica del giudizio*, a cura di Massimo Marassi, (cited as KUK) [23].

¹¹“Scalarity” is a term current in linguistics, where it implies a value based sequential range. I take it here to have a value neutral meaning, referring, that is, to the bracketing of non-contiguous elements.

It seems to me that an underlying theme of the Critiques is the bracketing of discrete elements, discrete not only because distinct, but especially because hailing from different realms. It is a human power or faculty (*Kraft und Vermögen*) that brackets them, thereby infusing meaning. While structural analysis (*Analytik*) describes the components in their subdivision,¹² a syntactical analysis (*Dialektik*) describes the dynamic nature of their relationships. The proper, step-like or “scalar” nature of the interaction is described by Kant with the image of “stepping up” (*steigen*, KrV B119), whereas the improper bracketing is “curvilinear” (*krummlinig*) or “diagonal” (KrV B351), i.e., not directly step-like.

What is the bearing on our topic? We may put it in the form of a question: could we interpret meta-perception and language¹³ as being at the origin of the a priori dimension of human thought?¹⁴ In other words, is it possible to posit in this distant human prehistory the process of formation and growth of transcendentals? Does homo sapiens (and loquens) reflect the stage when the modernity of thought really sets in? If that was the case, then we can appreciate even more the momentous consequences of this first “invention” of time.¹⁵

Scalarity may be seen as the essential presupposition of causality. Bracketing two points in time underscores the fact that the very process of “categorization” is a human feat. Two moments in time may indeed be in a step-like (“scalar”) relationship of their own, but the calibration of the two moments within the larger scheme of things, within “time” as a whole, i.e., their “calendarization”, is the result of the human “power of judgment” (*Urteilkraft*). A “power” that justifies the notion of “invention” in the fullest sense of the term.

¹²*Zergliederung* (KrV B90), not in a rhapsodic fashion (KrV B106).

¹³Antonio Rosmini has some enlightening pages on the role language has in “entifying” reality, as he puts it. He speaks of it as a “second creation”, and says that “*coll’aggiungere l’essere a tali segni la mente sostantiva quello che non ha sostanza*”, producing “*una molteplicità formale che diciamo di sostantivazione*”: for references and for a full treatment of the subject see the important work by Roberto Roffi [24].

¹⁴A passage in the Critique of Pure Reason would seem to ask, if implicitly, the same question: “Nur so viel scheint zur Einleitung oder Vorerinnerung nötig zu sein, daß es zwei Stämme der menschlichen Erkenntnis gebe, die vielleicht aus einer gemeinschaftlichen, aber uns unbekanntem Wurzel entspringen, nämlich, Sinnlichkeit und Verstand, durch deren ersteren uns Gegenstände gegeben, durch den zweiten aber gedacht werden” (KrV B29). Indirectly this seems to appear also in this passage of the Critique of the Power of Judgment: “so ist andererseits die entdeckte Vereinbarkeit zweier oder mehrerer empirischen heterogenen Naturgesetze unter einem sie beide befassenden Prinzip der Grund einer sehr merklichen Lust, oft sogar einer Bewunderung, selbst einer solchen, die nicht aufhört, ob man schon mit dem Gegenstande derselben genug bekannt ist” (KUk p. XL). The question is about the common roots of sensibility and intellect, which, he says, remain unknown to us. If the concept of “roots” is meant temporally, and not only structurally, then the immense insights we have gained into prehistory since Kant’s times may be seen to have indeed a positive answer to contribute, along the lines I have suggested here.

¹⁵While arguing in favor of the possibility to popularize philosophical doctrine — “eine jede philosophische Lehre müsse, wenn der Lehrer nicht selbst in den Verdacht der Dunkelheit seiner Begriffe kommen soll – zur Popularität (einer zur allgemeinen Mittheilung hinreichenden Versinnlichung) gebracht werden können” — Kant maintains that this is not possible for critical philosophy — “mit Ausnahme des Systems einer Kritik des Vernunftvermögens selbst und alles dessen, was nur durch dieser ihre Bestimmung beurkundet werden kann“ —, while at the same time admitting that its results might be made evident to a healthy reasoning faculty — “obgleich ihre Resultate für die gesunde Vernunft (eines Metaphysikers, ohne es zu wissen) ganz einleuchtend gemacht werden können” [25].

3. Transcendence: the biblical perception

3.1 A recalibration

Ungaretti's “*silenzi oceanici*” brings to mind Leopardi's “*sovrumani silenzi*” (1818-19) but also Kant's earlier (1788) “*unansehnlich Große mit Welten über Welten*“ and “*grenzenlose Zeiten*“ in his famous conclusion of the second Critique.¹⁶ Leopardi writes:

*... interminati
Spazi di là da quella, e sovrumani
Silenzi, e profondissima quiete,
Io nel pensier mi fingo, ove per poco
Il cor non si spaura,
Io nel pensier mi fingo...*

The human construction of time, the “*fungere*” in the sense of “shaping” reflects admirably the long process of “invention” from prehistory down into Mesopotamian times. It is an awesome process, one that almost induces fear — “*ove per poco il cor non si spaura*”—, given the magnitude of the implications.

It is out of the same Syro-Mesopotamian matrix that an altogether different sense of awe emerges — one that derives not from the awareness of the human feat, but rather from the sense that there is a larger reality. Behind the framing of time there is, de facto, the reality of time. It is the biblical perception.

The Mesopotamian formulation, issued from the late prehistoric experience, was so powerful and self-contained that it would easily lead to a sort of conceptual solipsism. The human time-frame would thus rise to an ontological status: simplistically put, time is the calendar.¹⁷ The biblical recalibration is profound. As in every other respect, the biblical view asserts the priority of a beyond that conditions humans at the very moment that they seek to condition, and control, reality. There is no denying the fundamental importance of human intellectual constructs. But they are seen as only frames placed on a reality that is autonomous, that has a validity of its own. One must yield at the same time that one frames. The “invention” is in this case more the “discovery” than the “shaping”.

¹⁶Giacomo Leopardi, *L'infinito*, in which we may in turn see an echo of the famous first paragraph of the conclusion of Kant's Critique of Practical Reason: “*der bestirnte Himmel . . . fängt von dem Platze an, den ich in der äußeren Sinnenwelt einnehme, und erweitert die Verknüpfung, darin ich stehe, ins unansehnlich Große mit Welten über Welten und Systemen von Systemen, überdem noch in grenzenlose Zeiten ihrer periodischen Bewegung, deren Anfang und Fortdauer*” (KpV p. 288).

¹⁷This is the implication in Kant's conclusion: “*... und daß, wenn wir unser Subjekt oder auch nur die subjektive Beschaffenheit der Sinne überhaupt aufheben, alle die Beschaffenheit, alle Verhältnisse der Objekte im Raum und Zeit, ja selbst Raum und Zeit verschwinden würden, und als Erscheinungen nicht an sich selbst, sondern nur in uns existieren können*“ (KrV p. B59).

It is the creation ethos,¹⁸ that permeates the entire biblical tradition, with a multitude of different nuances. And it is especially as it concerns our topic, time, that this ethos emerges with the utmost clarity. The hallmark of the new vision is the emphasis on the week as a frame that is calendrical in a wholly different sense from what had prevailed in Mesopotamia. For it is the frame itself that has its origin beyond the human ken. It is not transcendently posited, it is a transcendent gift.

3.2 *The homeostatic box*

*When on high the heavens
remained unidentified
and down below firm ground
was yet without a name
when only the primeval water,
the progenitor,
and the goddess of the sea,
the universal mother,
did blend their waters
into one,
ungirdled as to meadows,
undefined by marsh reeds,
when no god at all
was manifest as yet
none identified by name,
determined as to personality,
out of within their midst
the gods were then created
the swamp gods first
came to be identified by name...*

The Mesopotamian beginning is not really a beginning, nor does the text mention the word. We are presented with a formless mass that takes shape. This is something the original language expresses in ways that cannot easily be translated. I have sought to do so in the translation by stressing the static dimension that in Babylonian is expressed by predicates of condition (“remained unidentified”, “without a name”, “ungirdled”, “undefined”, “not manifest”, “not determined”). This is the formless matter that has no beginning.

Just as there is no beginning, thus there is also no becoming in the proper sense of the word. There is differentiation out of undifferentiation. Significantly, in the original the verbal dimension changes to one of action: “were then created”, “came to be identified by name”. The rest of the long poem goes on to describe in full detail this progression of an ever greater differentiation, and the pinnacle of the process comes at the end, when the new supreme god, Marduk, is not just “determined by name”, but determined by fifty names. His apotheosis is the semantic, we may really say the semiotic, echo of the “beginning” we just saw.

¹⁸For this, too, I would like to refer to my book, *Quando in alto i cieli...* [26]

The point about there being many gods is much more subtle than it appears. It means that reality can be fragmented. The gods are icons of elements of the natural order (power, knowledge, justice, etc.) that reflect the human ability to dissect and analyze. Fragmentation is ultimately a means of intellectual control, to which the whole process of the urban revolution had lead, founded on the development of the meta-perceptual abilities.

Our viewing the multiplicity of gods with a sense of superiority is misguided. Multiplicity means control of the parts, and the real contrast with monotheism is not the many vs. the one, but the many, the enumerables vs. the innumerable. This numerability of the fragments is encased in a matrix out of which the differentiation emerges. It is fate or destiny. This is the absolute seen as the sum total of the parts, the genetic code of reality, so to speak. It is totally self-contained, hence homeostatic, a box impervious to any external interference. It is within it that differentiation unfolds, of its own inertia.

3.3 *Beginning and becoming*

How does this differ from the biblical narrative?

*At that starting point when God
created heaven and earth,
the earth was unshaped and deserted,
darkness covering the deep,
the spirit of God
hovering over the water
so God said: “Let there be light”
and the light came into being
and God saw that
the light was good. . .*

There is a stark beginning, outside the box. Differentiation is set in motion from outside its own domain, it is not homeostatically enclosed and predictable. The world might not have been created!¹⁹

The *leitmotif* is the creation, but, within it, it is the creation of time, time in its cultural particularity, the intra-monthly frame, the week, which, leading to the sabbath, proclaims the beginning (God said), the interval (it was good) and the end (he rested). The Mesopotamian outlook is so focused on the recognition of patterns²⁰ that it does not, in truth, develop a

¹⁹An important point developed by R. Sokolowski [27].

²⁰Recognition of patterns is central to modern historiography, and one can see it already proposed in Kant’s *Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht* (1984). In the introduction, for instance, he regrets that “die Menschen in ihren Bestrebungen nicht bloß instinctmäßig wie Thiere und doch auch nicht wie vernünftige Weltbürger nach einem verabredeten Plane im Ganzen verfahren, so scheint auch keine planmäßige Geschichte (wie etwa von den Bienen oder den Bibern) von ihnen möglich zu sein”. After the model of Kepler and Newton, the philosopher can only seek to find order where there is otherwise but a human

vision of history as a goal oriented process. Not that it ignores the weight and significance of memory, of history in the sense of an account. Not that it does not omit to blend ideology and process (the growth of imperial ideology is an eminent example of that). But it does not operate with the notion of a becoming that moves on to the next surprise, the only predictable element being the expectation of, precisely being surprise by radical innovation.

Conversely, the biblical outlook does not avoid the notion of evolution in the sense of progressive differentiation: there is a great stress on the coherence of the human group that is the carrier of its own perceived tradition. It does not eschew the conditioning inherent in the reality of patterns: the biblical notion of week is indeed a pattern, one that comes to mold more and more deeply the ethos of the people who of that tradition are the carriers (obsessively so, we might say, with the culmination of the week in the sabbath). But becoming, in the biblical perception, is always laced with transformative moments, where the continuity of evolution is jump started by the startling surprise of the unexpected.

The biblical recalibration of the notion of time is thus shaped by the recurrent ethos of creation, that pervades a century long experience and rests on what may be called the notion of an “absolute event”.²¹ It is the paradox (mystery) of an agency that is absolute (hence unconditioned and outside of time) and yet is event-bound (hence conditioned by the very flow of time with which it interacts).

3.4 *A view from Eden*

I cannot develop here the notion of time and history in the Bible,²² but I wish to refer to another portion of Genesis, which we can read as a parable: it is indirectly related to our subject, because it talks to the same epistemic presuppositions and it is enlightening in terms of the general import of the biblical perception.

It is, as I see it, a parable of the intellectual encounter between the two traditions, biblical and Mesopotamian. Which was, I must stress, unidirectional. The Mesopotamians had no inkling whatsoever of the profound spiritual travail that had taken place within their puny neighbor to the west. Israel and Judah were, in their eyes, no more than petty kingdoms, of no importance whatever, politically or culturally as it might be. But the biblical tradition did confront, openly, assiduously, even tormentedly, the powerful intellectual achievement of the great urban culture of the “Four River Banks”, as the Mesopotamians called themselves. I would like to read in this vein, namely as a critical assessment of Mesopotamia, or of

mess resulting from “Thorheit, kindischer Eitelkeit, oft auch aus kindischer Bosheit und Zerstörungssucht”. The philosophers goal, then is “daß, da er bei Menschen und ihrem Spiele im Großen gar keine vernünftige eigene Absicht voraussetzen kann, er versuche, ob er nicht eine Naturabsicht in diesem widersinnigen Gange menschlicher Dinge entdecken könne”.

²¹I have developed this concept in [26, 28].

²²For some additional remarks in this regard see below, 3.4.

polytheism in general, the narrative of the original sin.

In the garden of Eden, God enjoined man not to “eat from the tree of the knowledge of good and evil” otherwise he would “surely die” (Gen. 2:17). The tempter gives a different explanation: they would not die, rather, he says, “your eyes will be opened, and you will become like gods, knowers of good and evil” (Gen 3:5). So she does: “the woman saw that the tree was good to eat and pleasing to the eye, and that it was desirable for the knowledge it could give. So she took some of its fruit and ate it”. (Gen 3:6) And what happens? Nothing. She does not die. The fruit is not poisoned. No fire and brimstone. Rather, a warm and positive human gesture she shares it: “She gave some also to her husband who was with her, and he ate it” (Gen 3:6): a lovely picnic in the garden. . . As a result, the narrative says, their eyes are opened, and they take on the trappings of civilization, with a gesture that the Mesopotamians had long since associated with becoming civilized they clothe themselves.

It is the discovery of civilization: experimentation and control of natural phenomena (eating the fruit), the enrichment of human dimension (sharing), the sharpening of analytical powers (distinction between good and evil), the refinement of social living (clothing). The great loss, the death that had been announced, is the face to face relationship with the absolute, who cannot be so fragmented. The original sin is, we might say, the invention of polytheism: the pretense to extend fragmentation to the absolute.

This throws light on our topic. The calendrical fragmentation of time in and of itself is good and in fact the biblical calendar accepts the Mesopotamian months’ names. But it should not be clamped on the absolute. Hence the week is reserved to God’s initiative: time is of divine origin, and the powerful notion is introduced of an interval, the sabbath, that splits time down the line reserving the interval for God’s presence. God himself sets the intervals: “the first day, the second day, etc”. a beautiful stylistic trait through which the text of Genesis punctuates the sequence. After that, humans are to proceed with their own naming of time, as they are called to do with “the cattle, the birds, the fish” (Gen. 2:20).

4. Trans-temporality: the Christian horizon

4.1 *The Christian “invention”*

If the early civilizational invention of time had put a frame on time that asserted the human power of categorization and thus of control; and if the view from Eden had recalibrated perception by asserting the autonomous value of the reality behind the frame; a wholly new claim is lodged by Christianity: the claim that there is a trans-temporal dimension to time that pertains directly to history while not being within it. It is a perception that, it seems to me, has not been adequately assessed: this may emerge more clearly in the light of the two perspectives I have outlined so far. It is thus a most fitting conclusion to our trajectory.

The “invention” of time had been, we have seen, the transposition of a perceived reality onto a mental framework that could account for it through the spoken medium, one that was projecting an outward tangible dimension onto the flow. It was a very effective means of control. By breaking up the continuum into conceptual fragments, humans were encasing an external condition into a categorization system that made it possible to articulate its sinews and define its nodes.

What Christianity proposes is, we might say, an “apo-theosis”. While the initial invention had been the conceptualization of time, Christian thought announces its exact converse. Time, not as a concept, but as a perceived reality, is now seen as being wholly encased within a non-time dimension, the dimension called “eternity”.

The term used for this is “the fullness of time”. “Fullness” here is not contrasted to “emptiness”. It is rather opposed to “brokenness”, to the state of fragmentation that derives, necessarily, from the conceptualization history that I have traced from its very earliest beginnings, from its, and ours, prehistory.

4.2 *A reverse incarnation*

The Christian invention of time is proclaimed by the Ascension. Understood as an event, it speaks to a moment, in our time, when Jesus was not sitting at the right hand of God.

But the Ascension is also seen, more subtly, as a condition, a state of being. It is expressed by saying that Jesus “*is sitting* at the right hand of the Father”. Herein lies the “fullness of time”. Time is presented as having pierced eternity. It was the image offered by Jesus to the Sanhedrin. It was the cause for the stoning of Stephen.

The two condemnations are understandable, from a Jewish perspective, because they denounce what is perceived as a blasphemy. How could it be that the shekinah, eternal, be so soiled as to accept finitude and temporality within its core? But the condemnations are also understandable from the point of view of the original invention of time. In that perspective, humans could not surrender “their” time to non-time. They had labored hard, for some fifty millennia, to encase time within manageable, controllable, categories. How could it possibly be that we, humans, could now be deprived of this control?

It was, we may well say, an incarnation in reverse. The claim that God had become man is now compounded by the claim that humanness, in its full bodily reality, was now perceived to be within the absolute. It is an extraordinary claim, another dimension of the Christian scandal.

4.3 The historical dimension of the Ascension

The Ascension, then, proclaims the historicity of the eternal. This Christian scandal is, in effect, very much rooted within the larger biblical scandal of creation. Creation has already “soiled” the eternal, because it entails an interaction based on reciprocal freedom, and correlative risk. The incarnation of Jesus may perhaps be seen as more in line with the type of “contamination” that we associate with creation. Less so with the Ascension. Here the contamination goes to the very heart of the trinitarian absolute: the “returning” Logos is the son-of-man, he remains a very concrete, very temporal, Jesus. Herein the scandal.

In the Christian perception, our invented time is indeed ours, i.e., human, but so that it can be transferred to a higher realm. Far from robbing us of our culture, the Ascension claims to glorify it, to “apo-theosize” it. The Jesus who sits at the right hand of the father is seen as neither a-somatic (for he remains the son of Mary) nor a-cultural (for he remains the son of David). The human invention has not been lost. It has rather reached its fullness.

The crucial nexus, for Christians, lies in the “event” of the Ascension. It is historical in the specific sense that it has a historiographical dimension (one that cannot be claimed, for instance, for the Assumption of Mary). One may of course dispute the nature and validity of the record, as for any other historical fact; but the Christian conclusion is reached with a historiographical method that, in terms of the Christian self-perception, is emphatically not mythical.

A far-reaching consequence for the Christian experience lies in the sense of agency that the ascended son-of-man retains. In the Christian mindset, human perception of the agency of Jesus-the-Logos, now “sitting” within non-time, differs greatly from the perception of trinitarian agency. The “absolute event” (see above) is now a relative absolute event. It is so after the Ascension. Because Jesus was not sitting at the right hand of the Father before the Ascension.

When Christians speak of a relationship with Jesus, and really mean it, they are not intellectualizing. When really referring to the “presence” of Jesus, they do not mean it in a vague sentimental vein, the way one often has in mind when referring to the memory of someone who has died. The Christian claim is, to be sure, rooted in memory, the memory of events perceived as factual, as having happened once and having been consigned to the witness of active memory.

But the deeper Christian claim goes well beyond that. It is the claimed perception of a live relationship, firmly clamped onto the sacramental dimension, whereby the Ascension is understood as the celebration of the link between the eternal and the physical, and the Eucharist, in particular, emerges as the threshold to the parousia. The Christian invention of time must cope with the problem posed by the doctrine of the real presence: the “reverse

incarnation” proclaimed by the Ascension claims, at the same time, that the temporality of this consecrated host, *hic et nunc*, is anchored in the eternity of the Logos.

4.4 *The trans-temporal claim*

Thus it is that the “historical Jesus” question goes well beyond the notion of a mere Biblical querelle. It is the much more far-reaching claim for such a thing as the existence of a trans-temporal time. A “trans-temporal” history.

In the Christian perception, the Resurrection, which is the condition of the Ascension, is a historical event. It is, one might say, the only real miracle, in the sense that its effect goes properly against nature. The other miracles affect reality only inasmuch as they rearrange in time the configuration of reality’s elements. It is not against nature to be healed: the healed, even the resuscitated, person, is not different in nature from what he or she was before. Not so with the resurrection. Benedict XVI describes it as ²³

la più grande “mutazione”, il salto assolutamente più decisivo verso una dimensione totalmente nuova, che nella lunga storia della vita e dei suoi sviluppi mai si sia avuta: un salto in un ordine completamente nuovo, che riguarda noi e concerne tutta la storia; ... una nuova dimensione dell’essere, della vita; ... un salto di qualità nella storia dell’“evoluzione” e della vita in genere verso una nuova vita futura, verso un mondo nuovo.

In the enlightening final chapters of *Being and Time*, Heidegger stresses the relationship between historicity and temporality. Historicity is rooted in time: it is, he goes on to say, *innerzeitig*.²⁴ But one particular aspect of this is its orientation toward the future: destiny, Heidegger says, is the constitutive element of the original historicity of “being” taken concretely.²⁵ History is, in fact, so intrinsically rooted in the future²⁶ that death, as the terminal point of the tension of being, becomes the “hidden ground of historicity”.²⁷

This highlights, in a spectacular way, the dimension proposed by the Christian view of things. If taken seriously, it says that time exists beyond time. The notion of the ascension as a state proposes that the very temporal dimension of concrete human existence, of *Dasein*, is not abrogated by death. The claim is that being is not towards death (*Sein zum Tode*, §53 and passim). Rather, the Christian perspective interprets the word “end” as in “being toward the end”, (*Sein zum Ende*, p.373) as trans-temporal time. Not therefore as (we

²³Veglia pasquale nella notte santa, Omelia di Sua Santità Benedetto XVI, Basilica Vaticana, Sabato Santo, 15 aprile 2006; text cited after http://www.vatican.va/holy_father/benedict_xvi/homilies/2006/documents/hf_ben-xvi_hom_20060415_veglia-pasquale_it.html.

²⁴ibidem.

²⁵ “Wenn aber Schicksal die ursprüngliche Geschichtlichkeit des Dasein konstituiert...”. §74, p. 386.

²⁶ “Die Geschichte hat als Seinsweise des Daseins ihre Wurzel so wesentlich in der Zukunft.”..., ibidem.

²⁷ “Das eigentliche Sein zum Tode, das heißt die Endlichkeit der Zeitlichkeit, ist der verborgene Grund der Geschichtlichkeit des Daseins”. ibidem.

might say) *außerzeitig* as if in contrast with *innerzeitig*. Rather, again to mimic Heidegger’s terminology, *überzeitig*. Ascended existence is still within time, meaning that the human being who is sitting at the right hand of the Father remains tied to the temporal dimension. But a temporality that has reached its fullness, by being inserted, unequivocally, within the Trinity. To exist is therefore to be towards the fullness of time, not towards death (as Heidegger would have it). Ascension as a state proposes temporal existence within non-time (eternity), a non-time that is laced with time, a *Sein* that is laced with *Dasein*. It is a wholly different conclusion to the one proposed in Being and Time, except for its orientation towards the future: but it is a future of life, not of death. Heidegger urged us to bring out the full impact of Dilthey’s proposals.²⁸ Analogously, we should also bring out the full impact of the Christian proposal of the Ascension.

And yet, the clarity of Heidegger’s position brings us full circle. He articulates with extreme lucidity the transcendental position [29] adumbrated in the first fifty or so millennia of homo loquens. Like a diamond, it sheds a brilliant light on the alternative position, that of a transcendence that firmly embeds time within non-time. It was a transcendence so much at odds with the initial biblical notion that it cost Jesus his life on earth, as it did Stephen. One may or may not accept this perspective. But it should be faced, not disregarded or timidly eschewed.

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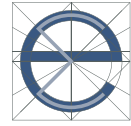
Bibliography

- 1 Facchini, F. (2002). *Origini dell’uomo ed evoluzione culturale. Profili scientifici, filosofici, religioni* (Milano: Jaca Book).
- 2 Bickerton, D. (2009). *Adam’s Tongue. How Humans Made Language, How Language Made Humans* (New York: Wnag and Hill).
- 3 Moro, A. (2008). *The Boundaries of Babel. The Brain and the Enigma of Impossible Languages* (Cambridge, Mass.: MIT Press).
- 4 Sokolowski, R. (2008). *Phenomenology of the Human Person* (Cambridge-New York: Cambridge University Press).
- 5 Moro, A. (2012). *The Equilibrium of Human Syntax. Symmetries in the Brain* (New York: Routledge).
- 6 Renfrew, C. (2007). *Prehistory: the Making of the Human Mind* (London: Weidenfeld & Nicolson).
- 7 Buccellati, G. (2013). *Alle origini della politica: La formazione e la crescita dello stato in Siro-Meopotamia* (Milano: Jaca Book).

²⁸ “...die der heutigen Generation erst noch bevorstehende *Aneignung* der Forschungen Diltheys” §72, p.377, emphasis mine.

- 8 Wynn, T. G. (1989). “The Evolution of Spatial Competence”, *Illinois Studies in Anthropology*, N. 17 (Urbana and Chicago: University of Illinois Press).
- 9 Buccellati, G. (2013). “Conquista del tempo ed evento assoluto: per una semiotica dei calendari mesopotamico e biblico”, S. Petrosino, ed.; in *La Festa. Raccogliersi, riconoscersi, smarrirsi* (Milano: Jaca Book), 23-33.
- 10 Marshack, A. (1972). *The Roots of Civilization* (New York: McGraw-Hill Book Company).
- 11 Marshack, A. (1999). “Space and Time in Preagricultural Europe and the Near East: The Evidence for Early Structural Complexity”, in M. Hudson and B. A. Levine, *Urbanization and Land Ownership in the Ancient Near East* (Cambridge, MA: Peabody Museum of Archaeology and Ethnology: Harvard University), 19-64.
- 12 Bahn, P.G., ed. (2009). “An Enquiring Mind: Studies in Honor of Alexander Marshack”, *American School of Prehistoric Research Monograph Series* (Oxford and Oakville: Oxbow Books).
- 13 Landsberger, B. (1915). “Der Kultische Kalender der Babylonier und Assyrer”, *Leipziger Semitische Studien* 6/1-2 (Leipzig: J. C. Hinrich).
- 14 Cohen, M. (1993). *The Cultic Calendars of the Ancient Near East* (Bethesda MD: CDL Press).
- 15 Sallaberger, W. (1993). “Der kultische Kalender der Ur III Zeit”, *Untersuchungen zur Assyriologie und Vorderasiatische Archäologie*, Vol. 7 (Berlin-New York: Walter de Gruyter).
- 16 Rochberg, F. (1995). “Astronomy and Calendars in Ancient Mesopotamia”, in *Civilizations of the Ancient Near East*, vol. 3, ed. Jack M. Sasson (New York: Charles Scribner’s Sons), 1925-940.
- 17 Rochberg, F. (2004). *The Heavenly Writing. Divination, Horoscopy, and Astronomy in Mesopotamian Culture* (Cambridge-New York: Cambridge University Press).
- 18 Hunger, H. (2012). “Die Wissenschaft der babylonischen Astronomen”, in *Wissenskultur im Alten Orient. Weltanschauung, Wissenschaften, Techniken, Technologie*, ed. Hans Neumann (Wiesbaden: Harrassowitz), 95-103.
- 19 Civil, M. (1994). “The Farmer’s Instructions. A Sumerian Agricultural Manual”, *Aula Orientalis Supplementa* 5, (Editorial Ausa: Sabadell), <http://etcsl.orinst.ox.ac.uk/section5/b563.htm>
- 20 Jacobsen, T. (1982). “Salinity and Irrigation: Agriculture in Antiquity. Diyala Basin Archaeological Projects: Report on Essential Results, 1957-58”, *Bibliotheca Mesopotamica* 14 (Malibu: Undena Publications).
- 21 Esposito, C., ed. (2012). *Critica della ragione pura* (Milano: Bompiani).
- 22 Mathieu, V., ed. (2013). *Critica della ragione pratica* (Milano: Bompiani).
- 23 Marassi, M., ed. (2004). *Critica del giudizio* (Milano: Bompiani).
- 24 Roffi, R. (2011). *Ontologia, metafisica e teologia in Rosmini. Il problema della fondazione ultima* (Roma: Aracne), 455 f.
- 25 Kant, I. (1997). *Vorarbeiten zur Vorrede und Einleitung in die Metaphysik der Sitten*, p. 206, <http://www.korpora.org/Kant/aa06/206.html>
- 26 Buccellati, G. (2012). “Quando in alto i cieli. . .” *La spiritualità mesopotamica a confronto con quella biblica*. (Milano: Jaca Book), 126-28.

- 27 Sokolowski, R. (2000). *Introduction to Phenomenology* (New York: Cambridge University Press).
- 28 Buccellati, G. and I. Carbajosa, (2012). “È veramente positiva la realtà? Dai popoli della Mesopotamia al popolo della Bibbia”, in E. Belloni and A. Savorana, *Fatti per l'infinito* (Milano: Rizzoli).
- 29 Hoy, D. (1978). “History, Historicity, and Historiography in Being and Time”, in M. Murray, *Heidegger and Modern Philosophy* (New Haven and London: Yale University Press).



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Letter from the Editors

Dear reader,

We could hardly have chosen a more challenging theme for last year's San Marino Symposium than the subject of time. After following three days of discussions among renowned scientists and scholars, and having gone through one year of preparation of these proceedings, we remain perplexed by a feeling that despite some progress, we are still far from achieving a profound understanding about the nature of time.

Time has always fascinated and eluded every great mind and deep spirit who applied itself to investigate the ultimate mysteries of the world, and every generation that followed seems to have done little more than revisiting the trails pursued by its forefathers. It is an attribute of all great landscapes — true for those of the natural world as much as for those of the mind— that no matter how familiar they may become, nothing is emptied of their mystery.

To say, nevertheless, that nothing has evolved in our view of time is untrue, even if we remain close to Saint Augustine in his answer to the fundamental question. *Quid est tempus?*: "What is time? If no one asks me, I know what it is. If I wish to explain it, I do not know." In the 2013 Symposium time was approached from its complementary dimensions or manifestations —the cosmological, or physical time; the psychological time; and the historical time— and it was clear that its nature cannot be approached if not by following the interlacing threads of this rich and complex tapestry.

The evolving theories of physics, as well as the advances in modern experimental psychology, have given important steps in encapsulating a certain sense of "time", within a framework that is well equipped to describe specific aspects of its manifestations. They do it from the indisputably inseparable but distinct perspectives of time as a cosmological quantity and time as a dimension within the mind's perception. By reflecting on those and their interrelations, already some picture emerges from that tapestry which can be contemplated, if not fully grasped in its entirety.

The great novelty which for us has emerged from the discussions, if not as an ultimate explanation, at least as the discovery of a golden thread to follow within the work, is the historical time. If the notion about the nature of time is built on the continuous dialogue and the foggy inter-connections between the temporality in the succession of natural events and our framing of those into a logical and meaningful unfolding, then it was over history that this has emerged and developed.

The idea of time and its perception has probably emerged along with man himself, as it cannot be dissociated from the notion of conscience. From its initial calendarisation (expression of a limited circumscriptions of time to the realm of measured successions) to the more advanced conceptualisations of a "reality of time", to the maximum intuition of the trans-temporal, that is, that which is beyond time, the "eternal", as the logical origin and sustainment of time —all this came through the natural and cultural history of man.

No serious attempt to an answer for the question "What is time?" can be given that neglects this supreme dimension, for time is both "natural" and "human", and history is the synthesis between both. Scholars would probably read this as concerning the history of ideas, whereas christian tradition would recognize here an echo of the Incarnation: as T.S. Eliot wrote, "a moment in time, but time was made through that moment: for without the meaning there is not time, and that moment of time gave the meaning."

But perhaps the most synthetic and immediate image we can make of time from this Symposium, came through the experience of "musical time", as presented to us by the composer Roberto Andreoni. In the words of Stravinsky, "music celebrates the friendship between humans and time." For in the end, time is exactly this for man, a companion, which carries along all that matters: the memory of our past, the freedom of our present and the hope for our future, filling with meaning the gap between our beginning and our end, slowly revealing and renewing the sense of everything up to its fullness, at the right hour when every man conquers, through the conclusion of this friendship, the prize of his existence.

Enjoy your time.

The Editors.

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