



Time in Language and Philosophy: temporal conceptualisations in Ukrainian

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Abstract

In this study, offering an investigation into the notion of time in Ukrainian language and philosophy, I depart from Vyvyan Evans' approach (Evans 2005) which recognizes a complex structure of time, and employ his Lexical Concepts and Cognitive Models theory (LCCM) to tackle the structure of time as denoted by two Ukrainian lexical items: Ukr. час and Ukr. вepeм'я. An important deviation from Evans' methodology is the diachronic dimension the LCCM is applied in, which is introduced by the concept of the inner form of the word. Defined as its closest etymological meaning, the inner form of the word implies that, in a form-meaning pairing, the form used to express the meaning is motivated rather than arbitrary. With regard to their inner forms, both Ukr. час and Ukr. вepeм'я exhibit interlingual diachronic polysemy that can be structured as a radial category, and interpreted as an array of lexical concepts integrated into a specific cognitive model for time. It turns out that the proposed analysis of Ukrainian temporal terms uncovers two different cognitive models relating to such opposing cultural visions of time as the linear and cyclic conceptions.

Key words: time, diachronic polysemy, lexical concepts and cognitive models, Ukrainian, time philosophies.

1. Introduction

Perhaps the one who was first to look most thoroughly into the language-specific nature of time was Benjamin Lee Whorf (1956) in his account of Hopi grammar which revealed no patterns of encoding temporal notions similar to those typical for what he called Standard Average European (SAE). Whorf also remarked on the linguistically conditioned features of those philosophical views most traditionally characteristic of the Western culture and appealing to our “hard, practical common sense” (Whorf 1956:152-153). Among those, he mentioned Newtonian notions of space, time and matter which are sometimes stated to be sensed intuitively by everyone.

In a similar fashion, certain pre-Galilean theories of motion can be seen as inspired by the so called folk physics embedded in a philosopher's mother tongue. Such is the medieval theory of impetus according to which an object in

motion is conceptualised as having an intrinsic force imported to it by the stationary *motor proximus* (see Kudriavtseva 2017:193-198, for discussion). In his account of force dynamics, Leonard Talmy also observed that these earlier theories, involving an object's impetus in motion or a tendency to come to rest, correlate with the concept of motion inherent in the cognitive structure of language, in terms of which an object in a given situation is conceptualised as having an intrinsic force tendency, either toward action or toward rest (Talmy 2000:456).

In his extensive research on time, Vyvyan Evans remarked that, despite the subjectivity of our temporal conceptualisations, both philosophers and scientists appear to have often taken the cognitive models relating to our naïve understanding of time as physical facts. Such is the case of the Moving Time model underlying Newton's mechanics and resulting in the inference that the normal state associated with the "passage" of time is steady-state motion (Evans 2007:752). This appears to be the very representation of time specifically attributed to SAE and absent from Hopi (Whorf 1956:57-64). In short, it suggests that rapid or slow motion of temporal events or moments, conceptualised as temporal compression and protracted duration, is taken as a kind of abnormality, while a steady pace of time is conceived to be its proper state. 17th century physics seems to have grasped this fundamentally subjective conception and positioned time as an absolute quantity. Since Galileo, time had been seen as a continuous parameter, and since Newton, all the equations of motion were equations for velocity where time was an independent variable. Few philosophers, including Leibniz (also seen as an early precursor of linguistic relativity), adhered to the relational view of time according to which there is no time existing objectively. Some of Leibniz's criticism was relevant, but it was not effective, so the Newtonian conception of "absolute" time flowing uniformly by itself came to be fundamental for the mechanistic worldview.

In a number of studies Evans (2004; 2005; 2007; 2013) advocates the claim that temporal experience, as it is represented at the conceptual level and encoded in language, exhibits at least two levels of organization, which reveals both complexity and diversity of our temporal conceptualizations. Taking evidence from neuroscience and psychology as his departure point, Evans develops his Lexical Concepts and Cognitive Models approach (LCCM) where he distinguishes between the level of lexical concepts conventionally represented by single words or fixed expressions and the level of cognitive models in which various lexical concepts are integrated together providing complex, yet coherent, representations of time.

In his examination of the English word *time* Evans (2007) identifies eight distinct, albeit related, lexical concepts or SENSES associated with it (Duration, Moment, Instance, Event, Matrix, Agent, Measurement-system and Commodity, the duration sense further classified into the sub-senses of temporal compression and protracted duration). The lexical concepts are identified by applying his methodology of "principled polysemy" and seen as composing such larger-scale and more complex knowledge structures as cognitive models. The cognitive models facilitate temporal reference and

provide a reference frame for assessing temporal experience, and the occurrence of events. Establishing the Moving Time, Moving Ego and Temporal Sequence models, Evans indicates that these constitute the level the primary metaphors for time might be better thought of as relating to, while conceptual representations, based on the linguistic evidence, are more correctly captured at a more specific and detailed level of lexical concepts. He further differentiates between the primary lexical concepts relating to common aspects of human cognitive processing, and secondary lexical concepts representing distinct cultural constructs.

Primary lexical concepts relate to experiences which can be traced to underlying perceptual mechanisms and processes that constitute a common ground for our conceptualisation of time. Such is the experience of duration, simultaneity, and a temporal moment, perception of events and their categorisation as making up instances of event-types. Consequently, lexical concepts relating to this kind of experiences are likely to be common in the languages of the world, and fall into the group of primary lexical concepts which are the senses of Duration, Moment, Instance and Event (Evans 2007:749). The primary lexical concepts are, thus, opposed to secondary lexical concepts, which, rather than relating to foundational mechanisms of human cognitive function, turn out to be culturally constructed and therefore are language/culture specific. As examples of these, Evans suggests his Matrix, Agent, Measurement-system and Commodity Senses. Hence, this account of time appears to be in line with Whorf's own conclusion, since, describing its language-specific nature, Whorf also admitted certain kind of experience to be independent of linguistic structures and cultural practices (Whorf 1952:21), and saw it as a ground for our pre-linguistic conceptualisations of time.

It is crucial for the present study, offering a linguistic investigation into the notion of time in Ukrainian, to establish those features of it which can be seen as language/culture specific. In this paper, the LCCM approach will be employed in order to tackle the concept of time denoted by the two lexical items Ukr. *час* (*chas*) and Ukr. *врем'я* (*veremja*). While I will be focusing on the "structure" of time at the conceptual level which relates to our naïve vision of time, I assume that this level of temporal representation underlies views of time as intellectual feats, achievements of speculation and philosophical reasoning. Accordingly, I will also look into the metaphysical conceptions of time formulated in Ukrainian philosophical tradition. The crux of my argument will be that the proposed analysis of Ukrainian temporal terms uncovers two different cognitive models relating to such opposing cultural visions of time as linear and cyclic conceptions.

2. Methodological Issues

An important assumption that I am making, following Evans' definition of lexical items as constituting form-meaning pairings (Evans 2007:737-748), is that the form used to express the meaning is motivated rather than arbitrary. Here, "motivated" means that linguistic forms are not invented arbitrary but

are, rather, already meaningful when they are introduced for some specific function. This idea is implied in the concept of the Inner Form of the word defined as its closest etymological meaning (motivator), which is a fragment of meaning immediately represented in the outer form (sounds making up the lexical item) (Potebnya 1993 [1862]:100). The inner form also points out the most salient feature of an object, which underlies its name, and arises as the factor that determines specificity of conceptual structures related to equivalent words in different languages. An important point to be observed in defining “motivation” here is that the form-meaning pairing turns out to be a two-stage process per se: first, the outer form (the sound segments) is paired with the inner form, and then the inner form connects to the meaning stored in the mind.

Cognitive lexical semantics takes the position that lexical items are conceptual categories exhibiting typicality effects. Accordingly, linguistic categories are structured by the same general cognitive mechanisms that structure non-linguistic conceptual categories. It was John Austin (Austin 1961) who extended the view that categories are structured by family resemblances, and good and bad examples, to the study of words themselves. In a word’s system of meanings, there are central senses and noncentral senses, corresponding to what contemporary linguists call prototypical and nonprototypical senses. Lexical items, thus, represent radial categories which are structured with respect to a composite prototype. It was Eleanor Rosch (Rosch 1973, 1977, 1978, 1981) who first provided a general perspective on centrality and family resemblance, and revolutionized the study of categorization, while George Lakoff (Lakoff 1987), who pioneered cognitive lexical semantics, argued that the various category members are related to the prototype by convention rather than being “produced” by definite rules. This means that the senses are conventionalised and most native speakers are simply aware of the range of senses associated with words.

Structured as a radial conceptual category at the synchronic level, Eng. *time* has Duration Sense as its central lexical concept called the SANCTIONING SENSE, which is established on the basis of a range of principles. These identify the sanctioning sense as historically earliest attested meaning predominant in the semantic network (type-frequency), possessing predictability regarding other senses, and relating to human experience of time at the phenomenological level (Evans 2005:44). Within Evans’s principled polysemy approach, the notion of predictability implies that a likely candidate for the Sanctioning Sense will be the one from which other senses would most naturally be derived. The derivation of senses results in systematic extension of lexical categories facilitated by general cognitive mechanisms, including conceptual metaphor and image schema transformation. Certain peripheral senses may not strictly be predictable with respect to the prototype, but they are nevertheless seen as motivated by the application of cognitive mechanisms (Evans, Green 2006:332). Hence, “motivation” as defined above by the concept of the inner form of the word relates primarily to the general cognitive mechanisms that structure linguistic categories and make possible the emergence of senses on the basis of etymological ties.

In the diachronic dimension introduced by the notion of the inner form, the historical perspective will be employed in order to identify the range of distinct senses organised in a cognitive model for time. In this respect, both Ukr. *час* and Ukr. *вeрeм'я* exhibit interlingual diachronic polysemy, i.e. their genetic equivalents found in a number of kin languages have different contiguous meanings which build up the network of polysemy and collectively represent the “content” of time in each language. This network of polysemy can be structured as a radial category where the sanctioning sense can be identified on the same principles of historical precedence, quantitative predominance, predictability regarding other senses, and reference to human experience of time at the phenomenological level. Accordingly, the network of diachronically related meanings can be interpreted as an array of lexical concepts representing common aspects of human cognitive processing as well as distinct cultural constructs.

3. Conceptual Structures for Time in Ukrainian

In this section, I will show that the terms for time in Ukrainian are etymologically paired with three distinct lexical concepts each. The range of distinct lexical concepts will be uncovered in the analysis of respective word families Ukr. *час* and Ukr. *вeрeм'я* belong to. These are seen as essential in cognitively oriented studies of the inner form of the word (Czernysz 2004). Reconstruction of the inner form on the word-family basis promotes substantial granularity of senses related to the inner form of respective terms and eventually reflected in their conceptual structures.

3.1 Temporal Conceptualisation for Ukr. *час*

The results of proposed methodology applied to the Ukrainian term for time *час* are summarized in Table 1 presenting its genetic equivalents and motivators extracted from a number of etymological dictionaries (Vasmer 1987:318; EDUL 2012:282; EDSL 1977:29; Pokorny 1959:586). The motivators are listed in accordance with the type-frequency principle with the most frequent indicated first and termed “prototypical motivator”.

Genetic equivalents of Ukr. <i>час</i> in the word family of IE *kes-/kos- “cut, chop, divide”		Motivators of Ukr. <i>час</i>	
Russ. <i>час</i>	LLus. <i>cas</i>	“moment” (6) – prototypical	“weather” (2)
Bulg. <i>час</i>	Slov. <i>čas</i>	motivator	“go” (1)
BRus. <i>час</i>	ON. <i>skeid</i>	“time” (6)	“move” (1)
BRus. <i>чeсaмь</i>	OI. <i>kasati</i>	“hour” (5)	“haste” (1)
SC. <i>чàc</i>	OI. <i>ksah</i>	“interval of time”	“period” (1)
SC. <i>кàсамu</i>	Prus. <i>kīsmān</i>	(2)	“epoch” (1)
Pol. <i>czas</i>	Alb. <i>kohe</i>	“short time” (2)	
Czech <i>čas</i>	Latv. <i>ķuôst, ķuošu</i>	“run (quickly)” (2)	
Slovak <i>čas</i>	Germ. <i>hasten</i>	“hurry” (2)	
HLus. <i>čas</i>	Germ. <i>Hast</i>		

Table 1. The inner form of Ukr. час.

The inner form of Ukr. *час* reveals a list of motivators, or its fragments of meaning, corresponding to a number of distinct lexical concepts for time in Ukrainian language. The word-family context exposes the prominence of the motivator “moment” referring to a particular event. Having analyzed the semantics of IE **kes-/kos-* continuants, Gunnar Jakobsson concluded that the source for the view of time termed by Ukr. *час* deriving from Slavic *časъ* was to be found in the concrete meaning “a notch” that, fixing certain discrete moments, had gradually led to the formation of the abstract notion of time. Besides Slavic *časъ*, Jakobsson proposed the same semantic model for Grk. *χρόνος* also used as the term for time in antique philosophy (Jakobsson 1958:287–307).

Together with the hypothetical meaning “a notch”, Olexandr Mel’nychuk suggested another understanding of the most concrete of the extant senses for Slavic *časъ* — “a temporal moment within a day” — as an occasionally given signal, i.e. “a stroke” signaling for a certain event (see Mel’nychuk 1968:237). It should be stressed that “notch”, as well as “signal”, do not stand for an abstract interval of time, but for a certain event that took place at a particular moment. This prompts for a notion relating to the Sense of Event which is a lexical concept in which Ukr. *час* references a specific boundary event signaling the beginning or ending of a more complex event structure.

Another range of motivators including “hour”, “interval of time”, “weather”, “period”, “epoch” suggest an idea of a temporal interval. This can be seen as approximating to the Sense of Moment whose key characteristic is that it encodes a discrete temporal “point”. In the Moment Sense, Ukr. *час* triggers a conceptualisation of a discrete or punctual point or moment without reference to its duration. The meaning associated with the lexical concept related to the notion of duration is evident in such motivators as “short time”, “run (quickly)”, “hurry”, “go”, “move” and “haste”. The Duration Sense can be elaborated in terms of length, as attested by the uses of adjectives *long* and *short*, as well as in terms of distinct kinds of motion events (Evans 2007:739–40). The “temporal compression” variant of the Duration Sense exhibited by these motivators is invariably elaborated in terms of motion events involving rapid motion.

With the senses identified, we arrive at a structure made up of three lexical concepts: Event, Moment and Duration in the “temporal compression” sub-sense. Of these, the Moment Sense stands out as the sanctioning sense for Ukr. *час*, since it directly derives from the meaning of IE **kes-/kos-* “cut, chop, divide” implying discreteness; it shows up as predominant in the respective word family being associated with eleven different motivators; it possesses predictability regarding the senses of Event and Duration and relates to our human experience of time at the phenomenological level, reflecting the perceptual moments produced by the neurological activity in the brain (see Pöppel 1994). The lexical concepts identified are primary lexical concepts since the experiences they relate to can be traced to underlying

perceptual mechanisms and processes. As such, they are potentially universal, and likely to be common in the languages of the world.

The integration of the Moment, Event and Duration senses in the semantic network for Ukr. *час* conforms with the Temporal Sequence model. Typical for this kind of conceptualisation is the absence of the Present, Past and Future concepts evidenced in the structure of the Ukrainian term. An obvious suggestion for the physical foundation of this model is a perceptual image of a pattern of marks for events and moments arranged in a linear sequence. The employed schema provides the basis for a metaphorical mapping giving rise to the conception of linear, discrete and finite time characteristic of the Western cultural tradition.

3.2 Temporal Conceptualisation for Ukr. *верем'я*

Besides Ukr. *час* “time”, there was Ukr. *верем'я* also meaning “weather”, “good weather” used in the Old Ukrainian literary language (see **верема* (DOUL 1977:164–165). Ukr. *верем'я* genetically relates to Russ. *время* “time” and Old Church Slavonic *врѣмѧ* “time” both stemming from Proto-Slavic **vermę* < **vertmę* “rotate, turn round” (EDUL 1982:353). The latter form, in its turn, derives from IE **uer(t)-* “rotate, turn round, swing”. Ukr. *верем'я* was initially used to denote rotation, alternation of day and night, while its identical to the Russian spelling form *время* was evidenced in the Old Ukrainian bookish tradition long before Ukraine joined Russia in 1654 (Hnatiuk 2015:89). Old Church Slavonic with Ukrainian accent had been the language of religious service in Ukraine up to 1784 (Ogiienko 1995:125), which gives another reason to treat Ukr. *верем'я* as a fully functioning word used by educated Ukrainian people at the time. As we see in Table 2, the inner form of Ukr. *верем'я* contains a range of senses quite different from those identified for Ukr. *час* (Vasmer 361–362; Preobrazhenskiĭ 1958:101; EDUL 1982:353, 358–360, 432–433; Walde 1930:274 Pokorny 1959:1152).

Genetic equivalents of Ukr. <i>верем'я</i> in the word family of IE * <i>uer(t)-</i> “rotate, turn round, swing”		Motivators of Ukr. <i>верем'я</i>
Russ. <i>верѣмѣ</i>	OI. <i>vartayati</i>	“rotate” (13) – prototypical motivator
Russ. <i>верѣмѧ</i>	Lat. <i>verto</i>	“turn round” (4)
Ukr. <i>верѣмѧ</i>	Lat. <i>Vertumnus</i>	“change/become” (3)
Bulg. <i>вѣрѣмѧ</i>	Grk. <i>δέμβειν</i>	“verst” (1)
SC. <i>вѣрѣмѧ</i>	OIr. <i>fórrach</i>	“spin” (1)
Slov. <i>vertéti</i>	OIr. <i>Vrotah</i>	“revolve” (1)
Czech <i>vertéti</i>	ON. <i>verpa</i>	“turn over” (1)
Slovak <i>vertiet'</i>	Lith. <i>verčiu</i>	“bend” (1)
Pol. <i>wiercić</i>	Lith. <i>virsti</i>	“measure of length” (1)
HLus. <i>wjerceć</i>	Latv. <i>vērst</i>	“goddess of nativity” (1)
LLus. <i>wjeršeś</i>	Prus. <i>wīrst</i>	“god of change” (1)
OI. <i>vartatē</i>	Prus. <i>wartint</i>	“turn into” (1)
OI. <i>vartman</i>	Goth. <i>wairpan</i>	“rut” (1)
		“road” (1)

Table 2. The inner form of Ukr. *верем'я*.

The prototypical motivator “rotate” is complemented by such motivators as “turn round”, “spin”, “revolve”, “turn over” and “bend”, which together suggest a generalization of “circular motion”. As it was indicated above, the lexical concept elaborated in terms of motion is that of Duration.

Apart from involving very slow or very fast motion, the Duration Sense relating to Ukr. *верем’я* is invariably elaborated in terms of circularity. An explanation can be given by the presence of another lexical concept relating to the notion of measurement, and evidenced in such motivators as “measure of length”, “verst”, “rut” and “road”. Temporal measurement arises due to the correlation between periodic behaviour in the external world and our subjective experience of duration. Consequently, this correlation can be employed to represent temporality. In other words, certain physical symbols or visual images are used to stand for the duration they are correlated with. One of the most ancient images exemplifying periodicity is that of the sun moving across the sky. The diurnal cycle embodies the external rhythm used for measuring the internal experience of duration.

The Measurement-system Sense differs profoundly from the Moment and Event Senses. All of the three can be elaborated in terms of motion, but the nature of the motion content is distinct for them. While the motion which serves to elaborate the Moment and Event Senses is oriented, at least implicitly, with the respect to an animate reference point or ego, in the Measurement-system Sense, the reference point constitutes an inanimate landmark (Evans 2007:746), e.g. a particular temporal moment such as the rise of the sun.

The rest of the motivators in the word family of Ukr. *верем’я*: “change/become”, “turn into”, “goddess of nativity” and “god of change” underlie a third lexical concept clearly distinct from the previous two. It elicits an entity seen as able to affect other entities and things. This will be the Agentive Sense since time here functions as an agent causing changes and transformations. The Agentive Sense is normally elaborated in terms of acts or agents which bring about a change of state (Evans 2007:744).

Another structure that arises for time in Ukrainian language is made up of such concepts as Duration, Measurement-system and Agent. Duration appears to be central, since it is suggested by the biggest number of motivators (21) and derives from the meaning of the root IE **uer(t)-* “rotate, turn round, swing”. It also relates to our experience of time at the phenomenological level and predicts other senses, being one of the primary lexical concepts likely to be common in the languages of the world. However, the two remaining senses are secondary and contrasted with the sanctioning sense in the way that they do not suggest themselves as basic cognitive abilities which enter into every aspect of perceptual processing, but are distinct cultural constructs, and thus are culture specific (cf. Evans 2007:749).

By contrast with Ukr. *час*, Ukr. *верем’я* shows up a different semantic structure integrating the lexical concepts of Duration, Measurement-system and Agent. The implication of an external reference point related to certain

periodic behaviour in nature entails a conceptualisation of duration as an encompassing temporal matrix. This cognitive model – the Matrix Relation – emerges from a reified version of duration thought of as being independent of events as well as capable of affecting other things and entities. The external reference point implied in the structure of Ukr. *вeрeм'я*, together with the indication of a circular motion captured in its inner form, allows the identification of what is referred to as cyclical time. Here, the senses of cyclicity and change underlie the notion of time enclosing uninterrupted series of changes, having no beginning and no end, and remind of the oriental type of temporal worldview.

3.3 Structures for Time in Ukrainian Philosophy

Aware of the conceptions for time suggested by European thinkers of the 17th century, professors of the first academic philosophy centre in Ukraine, Kyiv-Mohyla Academy (1632), developed an original theory of time quite at odds with the central axiom of Newton's mechanics. According to their views, time had a structure and was conceived as a hierarchy grounded in the opposition of two distinct times: the earthly and the heavenly. Speculating within the tradition of natural philosophy, the professors of Kyiv-Mohyla Academy concentrated on the two versions of the earthly time and gave most detailed accounts of its internal and external variants.

According to Georgii Szerbackii, the notion of internal time represents successive duration of each thing which had a beginning and can have an end. This duration was thought to be real and inseparable from things, being the thing itself, “since it is namely the thing that lasts” (Szerbackii 1751:165). Szerbackii identified time with things and understood it as duration made up of separate parts arising not only as preceding and following units of time, but also as its preceding and following moments viewed as discrete elements. Such a moment constitutes an indivisible boundary, as it is prompted for by the notion of the Event Sense.

Stephan Javorski considered time to be “something real”, “the motion, independent of the intellect, referring to the former and the latter” (Javorski 1691-1693:349). In this interpretation, the notion of internal time appears to be underpinned by the Temporal Sequence model integrating the lexical concepts of Moment and Event conceptualised as being discrete. Accordingly, the “units of time” are seen as undergoing motion and conceptualised in terms of a sequence, resulting in an assessment of an earlier/later relationship, as the inner form of Ukr. *час* was analysed to predict.

The notion of external time was thought to be a universal measurement system according to which various processes were gauged. Such a universal measure was established by the circular motion of the sun conceived of as maintaining the deliberate speed. Inokentii Gieselii was convinced that it was possible for the heavenly motion to be a universal measure “due to its uniformity, regularity and persistence” (Gieselii 1645-1647:439). As such,

external time prompts for a conceptualisation which represents a measurement system arising out of the correlation between the periodic motion of the sun and our subjective experience of duration. This cognitive model infers the Matrix Relation as suggested by the inner form of Ukr. *вeрeм'я*.

The 20th century Ukrainian philosopher and scientist Volodymyr Vernads'kyi formulated his own conception of time as one of the basic empirical generalizations of science (Vernadsky 1988:229, 235). Contemplating time in an inseparable connection with space, he indicated that our entire worldview could be analysed from the perspective of the time category, which would immediately raise the question of a possibility for a reverse development of phenomena in time. Vernads'kyi suggested that the irreversible process in space, accorded with the discreteness of time and illustrated by the polar vector ($A \rightarrow B$), should be complemented not only with the idea of reversible time ($A \leftrightarrow B$), but also with the so called enantiomorphous time vector ($A \rightleftharpoons B$), which by itself presupposes the perception of time as duration (Vernadsky 1988:224, 230, 249).

If Vernads'kyi's vector conceptions are considered within the framework of the cognitive models discussed above, the polar time vector will conform with the Temporal Sequence model – a unidirectional sequence of things and events, or phenomena, as he calls them, undergoing motion. It is important that Vernads'kyi does not speak of time as an on-going temporal landscape, which is one conventional means of elaborating the Matrix sense and constitutes the Moving Time model (Evans 2007:751). On the contrary, his idea is that time relates to various phenomena and processes, and “is one of the principal properties of matter, its inherent content” (Vernadsky 1988: 229). The inference of the Temporal Sequence model is the issue of reversible time captured in Vernads'kyi's comment on the possibility for “a phenomenon to move back and forth with the same easiness” (Vernadsky 1988: 223).

This temporal conceptualisation, called “the physicist's time”, is distinguished from our subjective experience of time in which it shows up as duration. The enantiomorphous time vector represents the notion of duration as it is perceived in the lived human experience of time. As noted by Evans, our subjective experience of time concerns an awareness of temporal magnitude (i.e. duration), which gives rise to our ability to distinguish the present activity and moment from a moment which has gone before, and our ability to gauge the elapse of events (Evans 2005:45). In this very sense the concept of time enters Vernads'kyi's own space-time conception, distinct from the one developed in physics, which involves a “symmetrical” understanding of time and refers primarily to living matter. As it is based on the idea of eternal alternation of generations in a dynamic space-time continuum (Vernadsky 1988: 285), Vernads'kyi's view can be seen as bordering on the periodicity-based reference strategy characterizing the Matrix Relation cognitive model.

Vernads'kyi's notion of time, thus, appears to be grounded on the cognitive models related to the Ukrainian temporal terms analysed in the previous section. The linear discreteness of the temporal sequence, typical for the

occidental culture and found in the science of physics (represented in the inner form of Ukr. *час*), is distinguished from the subjective experience the notion of time relates to in our mind, where it is associated with the finiteness of our existence. This is the notion pertaining to the oriental worldview (captured in the Ukr. *врем'я*), which, according to Vernads'kyi, should now be incorporated into our contemporary understanding of time as a scientific and philosophical problem (Vernadsky 1988: 355).

4. Discussion and Conclusion

In the context of Ukrainian philosophy, we can speak of two metaphysical conceptualizations of time underpinned by the Temporal Sequence and Matrix Relation cognitive models. Provided by distinct conceptualisations, these alternatives in speculating about time relate to distinct cultural worldviews and imply diametrically opposed answers to such questions as what time is, how it exists, whether it is something of material or ideal nature, and how it is related to space, if at all. A particular cognitive model defines not only a metaphysical conception of time, but also a system of philosophical worldview as a whole with reference to other basic ontological categories of space, motion and cause.

The conceptualisation suggested by Ukr. *час* is embodied in what is often called the “relational” conception of time developed by Aristotle. He does not contemplate Grk. *χρόνος* apart from events, and it is the measurability of events and things that he means by indicating the necessity for time to be counted (Aristotle 2008 [350 BC]: X-XI). This classical view of time, which relates to the sense of discreteness, gives rise to a vision of time as events and moments in a linear sequence. In his attempt to justify the illusiveness of motion, Zeno of Elea asserts that a flying arrow is still at rest. His reasoning comes to the discretization of time: at each moment the arrow is situated in a concrete place occupying an interval of space equal to its length (see Salmon 1982, for discussion). These discrete locations are not embedded within the temporal landscape but refer to separate events. The modern relational conception of time is grounded in the special theory of relativity where time is considered to be a system of relations between physical events and things. The space-time is thus defined as a multitude of all events in the world related by their mutual influence.

The representation of time as a temporal matrix, implied in Ukr. *врем'я*, prevails in the Buddhist East and particularly in the worlds of Indian and Chinese cultures dominated by the idea of cyclical time (cf. Rigveda 2014 [1500-1200BC]: V.2.11, I.64.4). Mythological theories of ancient India contain a view of time as a huge circle or wheel imagined as continuously turning round. The Old Indian term for time *kālāḥ* denotes a chariot or, under another interpretation, a horse. The image of a horse relates to the idea of motion, which is the keynote of the Vedic hymns in general, and posits time as an agent affecting all other things. These arise as a continuous series of changes similarly to the cyclic perception of life experiences inherent in the

archaic worldview. Such conceptualisation implies a view of time as an encompassing matrix within which all else occurs.

We use a number of cognitive models in conceptualising time, and each one comes with its own conceptual metaphysics. As they rest on universal experiences traced to underlying perceptual mechanisms, there is yet a cultural context to play its part. This is what makes time a complex concept as the linguistic evidence suggests – both Ukr. *час* and Ukr. *врем'я* each relate to a set of distinct lexical concepts. While it is quite possible for these terms to be associated with more than two conceptualisations at the synchronic level, their inner form analysis, involving diachronic perspective, brings to light the conceptualisation which presumably appeared first and came to be fundamental in structuring the naïve view of time in a particular culture. Diachronic polysemy, thus, pinpoints the cognitive model which dominated temporal representation when a naïve abstract concept of time began to evolve. This conceptualisation arises as a kind of historically first attested meaning, which grounds on a universal lexical concept and can also involve certain culture-specific senses.

In terms of time metaphysics, Ukrainian cultural tradition appears to combine the two distinct cognitive models, rather than ground on one specific temporal conceptualisation. Integrated into the Temporal Sequence and Matrix Relation models, the lexical concepts for Ukr. *час* and Ukr. *врем'я* are found to shape theoretically elaborated conceptions of time in Ukrainian philosophy. The remarkable feature of the respective time philosophies is the absence of the Moving Time model based on the culture-specific Matrix Sense, which underpins the view of time as a steady-state flow.

While philosophical worldview is obviously culturally embedded, there is also a hint at linguistic relativity in the notion of the inner form within the lexical concepts and cognitive models approach. As it was shown in previous sections, the inner form of a word implies a set of universal and culture-specific lexical concepts and points out a definite cognitive model of temporal conceptualisation. In line with the previous research on linguistic relativity (see Levinson 2003), this standpoint combines the elements of universalism and relativism and entails a distinction of two levels of conceptualisation in the form of lexical concepts and cognitive models. At the same time, it involves the influence of cultural factors on cognition and language, since it is impossible to isolate language as a causal factor in relation to cognition for it never functions separately from a more general cultural context. Language can be seen as defining speculative conceptions of time grounded in the naïve views of its speakers, although it hardly ever acts as a single factor to be presented outside its socio-cultural environment.

To conclude, I would like to suggest that the diachronic perspective on temporal terms within the lexical concepts and cognitive models approach uncovers the structure of time at the conceptual level, and can also be considered effective in revealing the language-specific nature of the abstract notion of time developed in a particular culture. A promising direction for future research might be an LCCM application at the synchronic level, which

could reveal if the identified cognitive models for Ukr. *верем'я* and Ukr. *час* still surface prominently in the Ukrainian language and reflect the naïve views of time held by Ukrainian speakers.

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