

## WHAT TIME DOES IN LANGUAGE: A CROSS-LINGUISTIC COGNITIVE STUDY OF SOURCE RELATED VARIATION IN VERBAL TIME METAPHORS IN AMERICAN ENGLISH, FINNISH AND HUNGARIAN

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**ABSTRACT.** *What Time Does in Language: a Cross-Linguistic Cognitive Study of Source Related Variation in Verbal Time Metaphors in American English, Finnish and Hungarian.* Such a universal yet abstract concept as time shows variation in metaphorical language. This research focuses on metaphorical language within the framework of the cognitive metaphor theory, investigating time through a contrastive cross-linguistic approach in three satellite-framed languages. By combining qualitative and quantitative methods, this study attempts to identify what time does in language in a metaphorical context, with a focus on verbs in causative constructions (e.g. *time heals*) as well as manner of motion verbs (e.g. *time rushes*), through an empirical corpus-based study complemented by the lexical approach. The two main conceptual metaphors that are investigated in this study are TIME IS A CHANGER and TIME IS A MOVING ENTITY. While these two conceptual metaphors are expected to be frequent in all three languages, differences such as negative/positive asymmetry or preference of a type of motion over another are expected to be found. The primary objective is to explore such differences and see how they manifest and why. The hypothesis is that variations among the three languages related to the source domain (CHANGER and MOVING ENTITY), are more likely to be internal and not external. The purpose is to investigate these variations and to determine what cognitive underpinnings they can be traced back to, with a focus on image schemas. The study reveals that source internal variation does prevail over source external variation. The results show that cross-linguistic differences of such a relevant concept as time do exist but more often through unique characteristics of the same source domain rather than new, distinctive domains.

**Keywords:** *cognitive linguistics, corpus linguistics, conceptual metaphor theory, metaphorical entailments, source domain*

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**REZUMAT.** *Ce face timpul: un studiu cognitiv al variațiilor conceptuale legate de domeniul sursă în metafora timpului în engleză americană, finlandeză și maghiară.* Un concept atât de universal, dar abstract, precum timpul, prezintă variații în limbajul metaforic. Această cercetare se concentrează pe limbajul metaforic în contextul teoriei metaforei conceptuale, investigând imaginea timpului printr-o analiză contrastivă în trei limbi satelitare. Prin combinarea metodelor calitative și cantitative, acest studiu identifică ce face timpul într-un context metaforic, cu accent pe verbe în construcții cauzale (*timpul vindecă*), precum și verbe de mișcare (*timpul fuge*), printr-un studiu empiric bazat pe corpus completat de abordarea lexicală. Cele două metafore conceptuale principale care sunt investigate în acest studiu sunt TIMPUL ESTE UN AGENT SCHIMBĂTOR și TIMPUL ESTE O ENTITATE ÎN MIȘCARE. Se anticipează că rezultatele studiului vor arăta faptul că, deși cele două metafore conceptuale sunt frecvente în toate cele trei limbi, există anumite diferențe, precum asimetria între imaginea negativă/pozitivă a timpului sau preferința pentru un tip de mișcare față de altul. Obiectivul principal este de a explora diferențele de acest fel și de a vedea cum se manifestă și de ce. Ipoteza este că variațiile dintre cele trei limbi legate de domeniul sursă (AGENT SCHIMBĂTOR și ENTITATE ÎN MIȘCARE) sunt mai degrabă interne și nu externe. Scopul este de a investiga aceste variații și de a determina pe ce principii cognitive sunt bazate, cu accent pe schemele imagistice. Studiul dezvăluie faptul că variațiile interne ale sursei domeniului prevalează asupra variațiilor externe. Rezultatele arată că există diferențe inter-lingvistice ale unui concept atât de relevant precum timpul, dar aceste diferențe se manifestă mai degrabă prin caracteristici unice ale aceleiași domeniului sursă decât prin domenii noi distincte.

**Cuvinte-cheie:** *lingvistică cognitivă, teoria metaforei conceptuale, corpus, implicații metaforice, domeniul sursă*

## 1. Introduction

As time is an abstract concept, it is often associated with more concrete domains through conceptual metaphors. Time has been linked with various concepts, such as money (Lakoff 210), a moving object (Lakoff and Johnson 42), a process or an object (Evans, *The Structure of Time* 253) etc. Time in language can appear as a personified entity that carries out actions. This corpus-based study attempts to give an answer to whether the metaphorical image of time as an agent could show variation in languages, how such differences manifest through metaphors, and what such differences can reveal. Although time has been studied extensively in cognitive linguistics, the specific objective of this paper differs from previous research, mainly in its combination of languages and its focus on a

particular type of difference related to the source domain, in the frame of manner of motion and causative verbs, as the examples show.

(1) *Time runs so fast.* (spoken; *CNN King*, 1990)

(2) *Tovább gördül az idő.* (web; forum)  
 on roll.3SG.PRS the time.NOM  
 'Time rolls on.'

(3) *Aika tuhoa-a muisto-t.* (web; *Ylilauta*, 2014)  
 time.NOM destroy-3SG.PRS memory-PL  
 'Time destroys memories.'

In this research source related differences are revealed between a sample of three languages. I have chosen American English, Hungarian and Finnish for the following reasons: first of all, they are all satellite-framed<sup>2</sup>, and this is essential from several points of view: they can be compared on a common ground, second, verbs carry relevant information in these languages, as they possess a "larger and more diverse lexicon of manner verbs" (Slobin, *Mind, code and text* 458). As all three languages in this study are satellite-framed, it is expected that there is a complex collection of motion verbs in all of them, and thus there is a good chance that there will be differences in the way these verbs manifest in time metaphors. Secondly, research in cognitive linguistics often focuses on American English, and it is spoken by a large number of people. It serves as a good ground for comparison contrasted with the other two languages, which are related. Hungarian and Finnish are less frequently researched than English in general, and exploring other languages besides English is relevant in order to avoid Anglo-centrism. Finnish metaphors have been researched to some extent for instance by Huumo (*Moving along Paths in Space and Time*), and Hungarian metaphors extensively by Kövecses as well as Benczes and Ságvári (*Life Is a Battlefield: Conceptualizations of Life among Hungarian Adults*).

This research is based on methods of identifying linguistic and conceptual metaphors by gathering empirical data through corpus research. This is complemented by the lexical approach, which relies on various types of dictionaries and thesauri (Kövecses et al. 151). The lexical method involves consulting dictionaries to find or check the meaning of idioms, proverbs etc.

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<sup>2</sup> Talmy distinguishes two main different attitudes in languages towards the motion event from a semantic point of view which are determined by linguistic typology: there are satellite-framed languages and verb-framed languages. In satellite-framed languages the path of motion is encoded in satellites (e.g. *go out* in contrast with *exit*, an exception in American English for being verb-framed, where the path is encoded by the verb), and the verb encodes the manner of motion (*Toward a Cognitive Semantics, Vol. I*).

These two methods complement each other very well and lead to better results (Kövecses et al. 173). Furthermore, native speakers are consulted to check the validity of the data.

The metaphors are collected from *The Corpus of Contemporary American English*, *The Hungarian National Corpus (Magyar Nemzeti Szövegtár)*, and *The Finnish Language Bank (Kielipankki)*. The following subsections are selected and used for the research: 1. formal texts, which consist of various types of media, as well as academic or scientific texts; this type of source makes up 42.5% of the American English, 55.9% of the Hungarian and 50,2% of the Finnish corpus; 2. informal texts, which are web based texts, e.g. blogs or social media, as well as spoken language; this makes up 43.8% of the English corpus, 36,2% of the Hungarian and 44.5% of the Finnish one; 3. literal texts, which constitute the smallest section, with 13,6% of the English, 7.7% of the Hungarian and 5.2% of the Finnish corpus. Since the size of the material varies, the quantitative analysis is based on normalized frequencies. Normalized frequency is a good way to compare frequencies across languages when the size of the corpora is different.

The metaphor identification method is based on the steps carried out by the Pragglejazz Group (2007). Time metaphors are extracted from the corpus using the node word 'time' and its collocates within the frame of finite verbs, which are then checked for metaphoricity taking into account the context as well. The corpus research is carried out independently first in each language, and the most relevant verbs are identified and selected before comparing them and rechecking the corpus for contrastive examples. Initially, approximately 200 metaphor-signaling verbs are selected from the corpus in each language, which are then contrasted in order to find differences.

The following criteria are met when selecting metaphors from the three corpora: first, the underlying conceptual metaphor has to be TIME IS A CHANGER or TIME IS A MOVING ENTITY; second, the role of time in the sentence has to be that of a metaphorical agent; third, the metaphor has to contain a finite verb; fourth, frequency must comply with the set minimum frequency<sup>3</sup>; fifth, the metaphor has to appear in a variety of contexts, not only one. This study presents an approximation<sup>4</sup> of specificity and sharedness, as well as the reasons why some of these metaphors can be considered unique. The process is backed up by

<sup>3</sup> In order to be considered relevant, metaphors must have a normalized frequency of a minimum of over 0.005 per million words. There are several reasons why this number is deemed to be suitable for the research. It is necessary to set a frequency, which allows the inclusion of rare, yet recurrent examples found in the corpus, yet which is high enough to exclude isolated occurrences that are not so important for the overall profile of time, as a conceptual metaphor.

<sup>4</sup> It is an approximation, because in most cases similarities are superficial, and we cannot talk about completely unique metaphors either.

examples from the corpus, which are either rare, yet recurrent metaphors, or frequent conventionalized expressions.

It is questionable how much of the lexicon can be considered unique or universal. The natural semantic metalanguage (Wierzbicka 22) contains universal elements, but a large part of language can be considered culturally unique to some extent, and not universal (Dobrovolskij and Piirainen, *Figurative Language: Cross-cultural and Cross-linguistic Perspectives* 137). Even similar linguistic metaphors and idioms in different languages are only superficially similar, and different at the core (*ibidem*). This suggests that there are time metaphors that show differences from one language to another at a lexical level, grounded in the variation of certain conceptual underpinnings.

Based on the Conventional Figurative Language Theory (Dobrovolskij and Piirainen, *Figurative Language: Cross-cultural and Cross-linguistic Perspectives*) there are two types of figurative language, conventional and non-conventional. *Time passes by* or *time stops*, for example, are conventional metaphors, while *time travels* or *time grinds to a halt* are innovative ones.

Based on this observation, an assumption is that the unique metaphors are more likely to be in the second group of metaphors. It is also possible that some of these rare metaphors are novel versions of more conventional, common expressions. According to Cruse in 1986, metaphors can be “revived” when a synonym is used instead of the dead metaphor, meaning that one word is substituted (42). This might be the case with the American English metaphor *time stops*, a conventional example, and *time grinds to a halt*, a creative version that carries a similar meaning. This can be observed not only within a language, but among languages as well. Such differences between metaphors can be seen on a lexical level, in linguistic metaphors. However, this is not enough to make them unique, the underlying conceptual information that they carry needs to be analyzed as well.

Shared conceptual metaphors come from a shared experience of time: as time passes, we notice changes around us and all events happen in time; motion and time become connected, movement is also a type of change in this sense. Even though at the beginning we are all exposed to similar experiences that potentially form the bases of mental metaphors, these initial correspondences are later influenced by the culture and the language that we belong to (Casasanto 49). We learn metaphors through life based on our language and culture, and once mappings are created based on a metaphor we hear, the other possible mappings become weaker (*ibidem*). New correspondences are established and strengthened, but the old ones are also present. The Hierarchical Mental Metaphors Theory gives a reason for universality and variation of metaphors based on such changes (*ibid.*) according to which the initial correspondence is not lost, only weakened, which makes the conception based on mental metaphors flexible (*ibidem*).

As Kövecses explains in 2015, embodiment of abstract concepts is a reason for universality in many cases, and context (the environment) is the reason for variation: “my main suggestion will be that it is not possible to account for the emergence and use of metaphor without taking seriously the close dependence of the metaphorical mind on the surrounding physical, social, and mental environment” (XI). Kövecses enumerates some of the most relevant cognitive or construal processes that could lead to the development of universal or culture specific metaphors: some of these are salience (salient concepts differ from culture to culture), framing, prototype categorization, metaphor vs. metonymy preference, elaboration (some languages might share the same metaphorical expressions but their frequency might vary), specificity (metaphorical expressions can be generic or specific) and degree of conventionalization (*Metaphor in Culture*, 26-29).

In order to call a conceptual metaphor unique for a specific language, both source and target domains need to be unique (68). In the present research we cannot talk about unique conceptual metaphors; linguistic metaphors are more likely to show distinctiveness, and conceptual metaphors a limited amount of specificity. However, while there are many universal or near-universal metaphors, there is also a lot of variation (88).

Based on the corpus results, time metaphors, in which time appears as an agent, show some variation in the three languages. Variation of conceptual metaphors can occur on many levels: the source domain, the target domain, metaphorical mappings and entailments, etc. (118-123, 127), and can be attributed to several conceptual processes. The most frequent type of variation identified among the metaphors has to do with the source domain. Different construals for the same source domain can cause variation, which means that even metaphors which look the same at first may turn out to be different (118). For example, the source domain *family* can vary a great deal because of two construals for the source domain, which can be either “strict” or “nurturing” (Kimmel 277). Similar patterns can be observed frequently in metaphorical language. The source domain productivity can also be a relevant reason for variation (285). In the present case the source domain productivity varies to some extent, but since the focus is on verbs, only a specific section of entailments of motion and causation are included in the analysis.

We can distinguish “source internal”, creativity, such as elaboration and extension (Kövecses, *Metaphorical Creativity*, 212), where the aspect is related to the source domain, e.g. *dream* as an elaboration of the conceptual metaphor DEATH IS SLEEP (ibidem). In this case a connection is created between going to sleep and dying, and thus dream gets linked to both concepts. Source internal variations “can be elaborated differently in different languages/varieties” (Kövecses, *Metaphor in Culture*, 151). Elaboration is a type of conceptual variation, and it

refers to the number of mappings a metaphor can have (Lakoff and Turner 85). *Time is a moving entity that makes a sound* could also be an example of elaboration or extension, e.g. *time whizzed by*. Sound emission during motion is related to the source domain, and even though it is not always present and not its most characteristic trait, it is an entailment that belongs to the conceptual metaphor TIME IS A MOVING ENTITY.

An example of “source external” variation, where there is a new source at hand (Kövecses, *Metaphorical Creativity*, 212), is the Finnish novel metaphor *aika soluu niin kuin joutsen* ‘time glides like a swan’ where the new source domain linked with time is SWAN. This is also motivated by conceptual integration or blending, where two seemingly different cognitive domains, that of time and of the swan, are integrated based on shared traits.

Target domains, more specifically the framing of the target domain, can vary as well (Kimmel 285). For instance, the Chagga in Tanzania only frames male lust within the metaphor SEXUAL DESIRE IS EATING, ANIMAL BEHAVIOR, AND HEAT while American English frames both female and male lust (ibidem). Creativity based on the target domain can entail a unique mapping between source and target, based on a less conventional or less obvious aspect of the target domain (Kövecses, *Metaphorical Creativity*, 212).

What the explanations drawn up by Kimmel and Kövecses suggest, is that there is a basic level conceptual structure that metaphors are grounded in, but which can vary when each culture makes the generic more specific. It is like a skeletal structure that can be built on and manipulated to a certain extent, but which is still bound as well (ibidem). This could give rise to metaphors which have a similar root but also show culture-specific traits.

In the case of the present study, the focus is on the source domain, and variation is measured based on metaphorical entailments. Entailments are also called “rich inferences” (Evans, *Cognitive Linguistics* 298). TIME IS A MOVING ENTITY entailments found in all three<sup>5</sup> languages identified for the purpose of this study are the following: 1. time has a velocity that varies (*time speeds, time crawls*), 2. time can stop (*time stands still*), 3. time moves through air (*time flies*), 4. time moves through water or is moving water (*time flows*), 5. the motion of time can be cyclical (*the wheel of time is turning*), 6. time moves with a rushing sound (*time whizzed by*). Entailments of TIME IS A CHANGER metaphor show less variation across languages. They are the following: 1. time can have positive causative

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<sup>5</sup> Other entailments of TIME IS A MOVING ENTITY shared by two languages, but not all three are *the sound of moving time is that of water* in Hungarian and English through *csorog*, ‘flow’ in Hungarian (raw frequency 7, normalized frequency 0.006) and *drip* in English (rf 6, nf 0.06) and *the sound of moving time is that of an engine* (Finnish and Hungarian) through *robog*, ‘rush’ in Hungarian (rf 7, nf 0.006) and *hurahtaa* ‘rush’ in Finnish (rf 26, nf 0.030).

powers (*time heals*), 2. time can have negative causative powers (*time destroys*), 3. time can have non-polar causative powers (*time will tell*).

Cognitive underpinnings of metaphors are also investigated. It has been established that the two main metaphors are TIME IS A CHANGER and TIME IS A MOVING ENTITY; while the first one is usually based on the image schema of force and causation (Johnson 43), the second one is based on schemas of spatial motion (114), such as the image schema of path. Pre-conceptual force gestalts, which later influence language, stem from the way we interact with our environment (42). Metaphors motivated by TIME IS A CHANGER conceptual metaphor show this type of interaction between two entities. In the case of these metaphors, where time gains an inferred agency, *time* is the agent of cause, either in a negative or positive manner. Image schemas tend to be pre-linguistic (48), as it is the case of the path schema: we perceive time as motion (although time does not actually “move”), because of the way our cognitive system works. If there is an object and a path, and the location of the object changes, we associate this event with movement (ibidem), as in the case of *time passed by*, and many other moving time metaphors that follow this pattern. Johnson calls this the “linear spatialization of time” (114). Time is also often based on the image schema of cycle, which represents a temporal circle (119), a change in state.

TIME IS A MOVING ENTITY metaphors are analyzed based on the motion event (Talmy, *Toward a Cognitive Semantics, Vol. I*). The motion event has several components. The two main components are *Figure* and *Ground* “the Figure, performed by the concept that needs anchoring, and that of the Ground, performed by the concept that does the anchoring. This pair of concepts can be of two objects relating to each other in space in an event of motion or location” (Talmy, *Toward a Cognitive Semantics, Vol. I* 311). Thus the *Figure* is the moving object/entity and the *Ground* is the stationary reference object (ibidem). Besides Figure and Ground, other components are Path and the manner of movement (312).

This study focuses on verbs used metaphorically with time and their entailments. As an example, a unique entailment in time metaphors can be that time flies using wings, which is encoded into the verb only in Hungarian, not in Finnish or American English, through the metaphor *szárnyal az idő*, ‘time flies with wings’ (‘fly.3SG.PRS the time.NOM’). It may be assumed that other words in a metaphor can carry this meaning. This is true in Finnish, where time can carry out motion on wings (e.g. *aika hurahtaa siivillä*, ‘time rushes on wings’). In American English however, collocations with *time* and *wing(s)* are quite rare. This, therefore, is an example of particularity, an entailment, which is unique to Hungarian in this group of three languages only at the level of manner of motion verbs, and not overall in time metaphors. This can be observed in some other cases as well, for example, the American English manner of motion verb *grind*

or *lurch*, which in time metaphors expresses a gradual stop (*time grinds to a halt*), is probably coded in other languages through adverbs, or other constructions, e.g. the Hungarian *az idő fokozatosan lelassul*, ‘time slows down gradually’, (time.NOM gradually down-slow.3SG.PRS). Despite these shortcomings, these variations capture subtleties of language at a very specific level, the level of verbs of motion and causation that stand out in one of the three languages.

The types of variation are presented considering the source domain involved in the formation of the metaphor. The list contains the following conceptual mechanisms, as presented by Kövecses: 1. elaboration, source internal variation, 2. new source domain, source external variation (*Metaphor in Culture*, 82). For the present study, in most cases, particularity means that the specific type of variation can only be found in one out of the three languages.

To sum up, the aims of the research are the following, within the frame of agentive time metaphors marked by verbs: 1. to find source internal and source external differences among the three languages, 2. to establish their raw and normalized frequencies, 3. to identify cognitive mechanisms that these metaphors are based on, 4. to interpret differences based on theories of cognitive linguistics.

## 2. Source related differences

### 2.1. Source internal variation (unique entailments)

#### 2.1.1. Hungarian

##### a. time has wings

The motion of time in Hungarian can be carried out with the help of wings, through the presence of the manner of motion verb *szárnyal*, a derivative of the noun *szárny*, ‘wing’. Besides motion through air, this verb also encodes fast motion. Such metaphors are rare. This verb used in time metaphors encodes the Medium of motion, which is air.

(4) *Csak úgy szárnyal-t az idő.* (press; *Promenáád*)  
 only so fly-3SG.PST the time.NOM  
 ‘Time just flew by.’

##### b. the motion of time sounds like the flapping of wings

The motion of time through air is also captured by verbal metaphors with *repül* (‘fly’) as well as *röppen* (‘flutter’), both sound imitative verbs. The latter expresses a sudden, momentary movement. This is another example of source internal variation, because this information is related to the source domain. These metaphors are marked by verbs of manner that also imply the

Medium of motion, in this case air. This verb also appears in an idiom (example 7), based on a rich image as well as marked by the presence of the Path ('above') and the Ground ('us') of motion.

- (5) *Gyorsan el-röppen-t*      *az idő.* (web; forum)  
 fast    PTCL-fly-3SG.PST    the time.NOM  
 'Time has flown by fast.'

- (6) *Hihetetlenül gyorsan repül-t*    *az idő.*  
 (press; sports article)  
 unbelievably fast                      fly- 3SG.PST the time.NOM  
 'Time flew unbelievably fast.'

- (7) *El-repül-t*      *felett-ünk*      *az idő*      *vas-fog-a.* (web; forum:  
*Törzsasztal*)  
 away-fly-3SG.PST above-1PL.POSS the time.UNGEN    iron-tooth-3SG.POSS  
 lit. 'The iron tooth of time flew away above us.'  
 'We became old.'

c. the motion of the clock is the motion of time

This entailment is based on a metonymy, where the action of a clock stands for the action of time. The literal meaning of the example below is 'time walks towards midnight'. This expression is used in contexts where the exact time is not known, there is approximate time instead, expressed using 'about' or 'around' in English. In such metaphors, a part of a cognitive domain (clock) is represented by the entire cognitive domain (time). Alternatively, a Hungarian expression, *idő-járás* ('weather-walk' meaning 'weather') could have a connection with this metaphor, and thus it could be based on the time-weather polysemous Hungarian terms. As this aspect is related to the source domain, we have a source internal variation at hand.

- (8) *Éjfél felé jár*      *az idő.* (press; *Origó*)  
 midnight towards walk.3SG.PRS the time.NOM  
 'Time approaches midnight.'

- (9) *Már hajnal-ra jár-t*      *az idő.* (spoken; radio)  
 already dawn-SUBL walk-3SG.PST the time.NOM  
 'Time was approaching dawn.'

d. the passing of time results in beauty

This is the only entailment that refers to an aesthetic change through the verb *megszépít* 'beautify', which can be either a physical or an abstract change.

It is based on the correlation of the passing of time resulting in favorable situations, more specifically the fact that with the passing of time everything becomes better, thus it is an example of metaphorical causation based on the image schema of force and causation.

- (10) *Az idő meg-szépíti az emlék-ek-et.* (online; forum)  
 the time.NOM PTCL-beautify.3SG.PRS the memory-PL-ACC  
 'Time beautifies memories.'

### 2.1.2. American English

#### a. time can stop abruptly

The motion of time can result in a sudden stop, marked by verbs such as *screech*, *lurch* and *grind*. Although *screech* is not a motion verb, it stands for a high-pitched, loud noise, a shrill, unpleasant sound that for instance, a machine makes when it stops suddenly. In time metaphors, its figurative meaning implies motion used with *halt*, where the sound presumably comes from the contact between Figure and Ground. The high-pitched sound suggested by front vowels is not present in *lurch*. *Lurch* is a motion verb, where the manner of motion is unsteady or sudden. They all imply contact of the Figure with the Ground (discussed by Talmy, *Toward a Cognitive Semantics, Vol. I*) as well as the fact that motion preceded the action. *Grind* additionally implies a harsh contact with the Ground, possibly accompanied by sound emission. *Time grinds to a halt* as well as *time screeches to a halt* are creative versions of the conventional metaphor *time stops*; they have a similar literal, figurative and conceptual information, but they encode additional information that is related to the source domain.

- (11) *The Figure stands, moves into the light as time screeches to a halt.*  
 (fiction; *Blade*, 1998)

- (12) *Time lurches to a stop.* (magazine; *Backpacker*, 2002)

- (13) *Time grinds to a total halt.* (magazine; *Astronomy*, 2013)

#### b. as time moves it changes position

This elaboration focuses on motion that is over a small distance and it also implies a type of change in position. Change through motion is related to the source domain, therefore this is an example of source internal variation. The type of motion implied in these metaphors differs from other types of motion that time is often associated with (e.g. *rush*, *march*, *slow down*, *speed*) because while the latter ones encode translational motion that happens from one point

in space to another, *shift* is a type of motion carried out by a Figure that does not necessarily carry out a movement between two set points in space. It can be an example of self-contained motion (Talmy, *Toward a cognitive semantics, Vol. II* 35).

(14) *Time shifts seamlessly.*  
(newspaper; *San Francisco Chronicle*, 1992).

(15) *Time had shifted under their feet.*  
(Fiction; Chang, Lan Samantha: *Hunger: A Novella and Stories.*)

c. the motion of time happens in small increments

The motion of time associated with water is usually a continuous flow, except in this American English metaphor, which focuses on the passing of time that happens little by little, through an intermittent slow motion associated with a smaller body of water with a thin flow. It also implies motion from up to down. This entailment emphasizes the fluid-like nature of time as well, and is motivated by the conceptual metaphor TIME IS A SUBSTANCE.

(16) *Time slowly drips by.*  
(newspaper; *Denver Post*, 2014)

(17) *Time drips like water.*  
(fiction; *The Massachusetts Review* vol.59, 2019)

d. the motion of time is organized

*Time marches (on)* is a frequent metaphor in English. *March* expresses a determined, quick movement, as well as a rhythmic pace. It is a specific type of forward motion, one associated with organized, steady movement. Additionally, *march* in time metaphors also encodes the Path, the manner as well as the Goal of motion, as it usually appears with the verbal particle *on*. *Time marches* is an example of source internal variation, because while this type of action is consistent with the source domain, it emphasizes a particular type of movement that the other metaphors do not capture in the same way.

(18) *Time marches on.* (spoken; *CBS*, 2015)

### 2.1.3. Finnish

a. time covers with gold

This conventionalized expression based on the verb *kultaa*, 'gild', entails that the passage of time is beneficial for memories. This Finnish verb marks a

frequent fixed expression. This is similar to the Hungarian metaphor with the verb *megszépít*, ‘beautify’, but the Hungarian entailment is not as specific as in the case of this Finnish idiom, which always encodes ‘memory’ into this metaphor, connecting the past with the present. They are both based on the correlation of the passing of time resulting in favorable situations, more specifically the fact that with the passing of time everything becomes better.

- (19) *Aika kulta-a muisto-t ja vain hyvä-t asia-t nii-stä on jälje-llä.* (online; *Suomi24*, 2014)  
 time.NOM gild-3SG.PRS memory-PL and only good-PL thing-PL they- ELA  
 be.3SG.PRS behind-ALLA  
 ‘Time gilds memories and only the good things are left behind.’

b. time causes aging

Even though this is a very clear effect of time, it is only encoded in verbal constructions in Finnish, where the verb carries this meaning on its own. In this sense it is only a partial case of source internal variety, however, it is relevant because it cannot be found in the other two languages. It captures a negative attitude towards the passing of time.

- (20) *Aika vanhenta-a rakennuksi-a.* (magazine; *Karhunkierros*, 1995)  
 time.NOM age-3SG.PRS building-PTV.PL  
 ‘Time ages the buildings.’

- (21) *Aika miehe-n vanhenta-a.* (newspaper; *Länsi-Savo* no. 161, 1992)  
 time.NOM man-ACC age-3SG.PRS  
 ‘Time ages man.’

c. time moves like a worm

In this metaphor the manner of motion associated with time is slow and slithering, one that a worm would make. The contact of the Figure with the Ground (Talmy, *Toward a Cognitive Semantics, Vol. I* 311) is also encoded into the verb, where usually the entire body of the Figure is touching the Ground. The manner of motion is difficult, heavy. The verb *madella*, ‘to creep’, is the derivative of the noun *mato*, ‘worm’.

- (22) *Aika matele-e tuska-n keske-llä.* (online; *Suomi24*, 2014)  
 time.NOM creep-3SG.PRS agony-GEN middle-ADE  
 ‘Time creeps in the midst of agony.’

- (23) *Joskus aika matele-e ja joskus kiitä-ä.* (newspaper; *Länsi-Savo* no. 205, 1999)  
 sometimes time.NOM creep-3SG.PRS and sometimes speed-3SG.PRS  
 ‘Sometimes time creeps and sometimes it speeds.’

## 2.2. Source External Variation

### 2.2.1. American English

#### a. TIME IS DARKNESS

Only American English has recurrent verbs in time metaphors that link time with the sensory perception of darkness. This probably is based on the metaphor FORGETTING IS DARKNESS, which refers to the passing of time that equals forgetting. These metaphors are context dependent and not necessarily negative, despite the lexical information that might suggest that. Verbs that express some type of fading caused by time can be found in Hungarian and Finnish, but they are not directly linked with darkness. These verbs appear in metaphors that could either show a positive or a negative attitude towards time, therefore they are context dependent.

(24) *Time obscures evidence.*  
(academic; *Latin American Research Review*, 1999)

(25) *Time hasn't dimmed our memory.*  
(spoken; *CNN event*, 2000)

#### b. TIME IS WEIGHT

Usually, time metaphors associated with weight are non-agentive time metaphors, and surface through expressions, such as *feel the pressure of time*. The metaphors here mean that time passes slowly. In the case of *hang heavy*, besides the slowness of time, tediousness, the metaphorical weight of time is also present. *Drag* implies a contact of a heavy Figure with the Ground. These are negative polarity metaphors. Weight is a new source domain, therefore this metaphor constitutes source external variation.

(26) *Time hangs heavy on your hands.*  
(spoken; *Fox Special Report*, 2013)

(27) *Time dragged on.*  
(magazine; *Smithsonian*, 1997)

### 2.2.2. Hungarian

#### a. TIME IS A JUDGE

This is a new source for time that is manifested through the verb *ítél*, which can be translated as 1. 'to pass judgment', 2. as well as the negative 'to

doom' or 'to sentence'. It creates a rare and novel metaphor with time, which usually appears in literature, but not only.

- (28) *A múltó idő feledés-re íté-l-né.* (spoken; radio)  
 the passing time.NOM oblivion-SUBL doom-COND  
 'Time would doom it for oblivion.'

b. TIME IS A MILL

This is a new source and an example of source external variation and not just an entailment because of the verb as well as the genitival component that is used metaphorically with time. *Az idő malma*, 'the mill of time', is unique to Hungarian, and it appears in this metaphor with the verb *őröl*, 'grind' or 'mill'. These can also appear without *malom*, 'mill' (noun). In some cases, the meaning refers to a harsh and aggressive action and not solely to pulverizing. This is evident through the presence of the 'tooth of time' in some of these metaphors. TIME IS A MILL is based on the image schema of cycle, except in example (31).

- (29) *Őröl rettenetesen az idő.* (spoken; radio)  
 grind.3SG.PRS terribly the time.NOM  
 'Time grinds terribly.'

- (30) *Az idő kerek-e, az idő malm-a lassan  
 őröl.* (spoken; radio)  
 the time.UNGEN wheel-3SG.POSS the time.UNGEN mill-3SG.POSS slowly  
 mill.3SG.PRS.  
 'The wheel of time, the mill of time mills slowly.'

- (31) *Más-t őrölje-nek helyett-em az idő vas-fog-  
 a-i.* (online; forum)  
 someone.else-ACC grind-3PL.PRS instead-1SG.POSS the time.UNGEN iron-tooth-  
 3SG.POSS-POSS.PL  
 'The iron teeth of time should grind someone else besides me.'

c. TIME IS A GUARDIAN

Metaphors with the verb *őríz*, *megőríz* 'guard, keep' appear often in literature, but in other contexts as well. They appear in positive polarity metaphors regarding the attitude towards the passing of time. The noun *őr*, 'guard' is a derivative of the verb *őríz*, therefore time metaphors with this verb show source external variation.

- (32) *A kincs-et az idő nem őrzi.* (web; Facebook)  
 the treasure-ACC the time.NOM NEG guard.3SG.PRS  
 'Time does not guard the treasure.'

- (33) *Eredmény-e-i-t pedig meg-őrzi az idő.*  
 (press; *Nép Szava*, column: *Vélemény*)  
 achievement-3SG.POSS-PL.POSS-ACC in turn PTCL-guard.3SG.PRS the time.NOM  
 ‘In turn, time keeps his/her achievements’.

### 2.2.3. Finnish

#### a. TIME IS A TRICKSTER

Finnish is the only language out of the three that has an idiom that links time with the source domain of JOKER, TRICKSTER. These are based on the verb *tekee*, ‘do’, as well as the noun *tepponen* or in some cases *kepponen*, ‘trick’. Similar metaphors seem to be isolated occurrences<sup>6</sup> in the other two languages in contrast with this recurrent expression.

- (34) *Ikävä kyllä aika on teh-nyt Kassila-n dokumenti-lle teppose-nsa.* (newspaper; *Länsi-Savo* 19, 1992)  
 sad yes time.NOM be.3SG do-PTCP.NOM Kassila-GEN document-ALL  
 trick-3SG.POSS  
 ‘Sadly, time has played its trick on the documents of Kassila.’

- (35) *Mutta ikävä kyllä aika teke-e teppose-nsa farku-i-lle-kin.*  
 (academic; *Behavioural sciences*, 2010)  
 but sad yes time.NOM do-3SG.PRS trick-3SG.POSS jean-PL-ALL-CLIT  
 ‘Sadly, time plays tricks on the jeans too.’

#### b. TIME IS AN EQUALIZER

Another example of source external variation is the case of the metaphor TIME IS AN EQUALIZER. This source domain used with time is captured by recurrent verbs only in Finnish. The Finnish *aika tasoittaa*, ‘time equalizes’ or ‘time evens out’ is an instantiation of the unique source domain connection, TIME IS AN EQUALIZER. This is a rare metaphor. It portrays time as an agent as a benevolent, rather than an evil entity.

- (36) *Aika tasoitt-i tunte-ita.* (newspaper; *Tukiviesti*, 2014)  
 time.NOM even.3SG.PST feeling-PTV\_PL  
 ‘Time however evened feelings out.’

<sup>6</sup> In American English, the linguistic metaphor *time plays tricks/jokes* exists, but it is limited to literary genres. In Hungarian, *játsz-ik az idő* (play-3SG the time.NOM), ‘time plays’, has a similar meaning and is also used almost exclusively in fiction. It also appears very rarely through the construction *tréfát t űz* (‘play a joke’), with the same meaning: (a) *Time plays tricks on everybody.* (fiction; Morressy, John: *Rimrunner’s Home*); (b) *Talán az idő játsz-ik vel-ük*, (maybe the time.NOM play-3SG with-3.PL ‘Maybe time plays with them’) (fiction; Kovács, András Ferenc: *Scintilla animae*).

### 3. Overview of results

#### 3.1. Source internal variation

Measuring the specificities in each language seems the most challenging, because these are more qualitative and to a lesser extent quantitative aspects of metaphorical language. Variation of metaphorical entailments can be observed in each language, to a certain extent. Some of them are not very productive, and have only a few linguistic instantiations, while others are highly productive.

As the examples above show, several instances of source internal variation can be identified in time metaphors in Hungarian, Finnish and American English. **Table 1** and **Table 2** categorize such entailments, including cognitive underpinnings, such as image schemas and other relevant conceptual characteristics of metaphors that show source internal variation.

**Table 1.** Source internal variation in American English, Finnish and Hungarian and their cognitive underpinnings

No.	Metaphorical entailment	Most characteristic of	Conceptual underpinnings
1.	time has wings	Hungarian	schema of spatial motion image schema of path Medium of motion
2.	the motion of time sounds like the flapping of wings	Hungarian	schema of spatial motion image schema of path Medium of motion
3.	the motion of the clock is the motion of time	Hungarian	part of a cognitive domain (clock) is represented by the entire cognitive domain schema of spatial motion image schema of path
4.	the passing of time results in beauty	Hungarian	image schema of force and causation
5.	time can stop abruptly	American English	schema of spatial motion image schema of path contact of the Figure and the Ground
6.	as time moves, it changes position	American English	schema of spatial motion self-contained motion
7.	the motion of time happens in small increments	American English	schema of spatial motion image schema of path
8.	the motion of time is organized	American English	schema of spatial motion image schema of path
9.	time covers with gold	Finnish	image schema of force and causation
10.	time causes aging	Finnish	image schema of force and causation
11.	time moves like a worm	Finnish	schema of spatial motion image schema of path contact of the Figure and the Ground

As we can see above, in Hungarian there are four metaphorical entailments that carry information that cannot be found in the other two languages; there are four in American English as well. In Finnish three of such entailments are found in the corpus. As we will see, the raw frequencies (rf) and normalized frequencies (nf) of these show significant differences. The results have been normalized to the common base of one million words, marked with *nf* (based on the method by Friginal and Hardy 38). If there is more than one verb, the number stands for their combined frequencies.

**Table 2.** Source internal variation in American English, Finnish and Hungarian and their raw and normalized frequencies

No.	Metaphorical entailment	Characteristic of	Marking verb(s)	Raw frequency/ normalized frequency
1.	time has wings	Hungarian	<i>szárnyal</i> , 'fly'	rf 5, nf 0.004
2.	the motion of time sounds like the flapping of wings	Hungarian	<i>röppen, repül</i> , 'fly'	rf 255, nf 0.245
3.	the motion of the clock is the motion of time	Hungarian	<i>jár</i> , 'walk'	rf 375, nf 0.360
4.	the passing of time results in beauty	Hungarian	<i>megszépít</i> , 'beautify'	rf 54, nf 0.051
5.	as time moves, it changes position	English	<i>shift</i>	rf 10, nf 0.11
6.	the motion of time happens in small increments	English	<i>drip</i>	rf 6, nf 0.06
7.	the motion of time is organized	English	<i>march</i>	rf 84, nf 0.096
8.	time can stop abruptly	English	<i>grind, lurch to a halt</i>	rf 6, nf 0.06
9.	time covers with gold	Finnish	<i>kultaa</i> , 'gild'	rf 211, nf 0.251
10.	time causes aging	Finnish	<i>vanhentaa</i> , 'age'	rf 5, nf 0.005
11.	time moves like a worm	Finnish	<i>matelee</i> , 'creep'	rf 20, nf 0.023

The overall normalized frequency of source internal variation is 0.660 in Hungarian, 0.326 in American English, and 0.279 in Finnish. The combined normalized frequency of this type of variation is the highest in Hungarian and the lowest in Finnish. They are organized into two groups: metaphorical entailments that have a higher normalized frequency than 0.015 are as follows: the motion of time sounds like the flapping of wings (Hungarian), the motion of the clock is the motion of time (Hungarian), the passing of time results in beauty (Hungarian), time covers with gold (Finnish), time moves like a worm (Finnish), the motion of time is organized (American English). The rest of the instances, which are time has wings (Hungarian), as time moves it changes position (American English), the motion of time happens in small increments (American English), time can stop abruptly (American English), and time causes aging (Finnish) have a frequency below 0.015.

This suggests that in each language there are rare as well as frequent instances of source internal variation. What the table also captures is that in most cases source internal variation is marked by a single verb (e.g. *march*), and only rarely two different verbs (*grind, lurch to a halt*). Although the Hungarian entailment *time has wings* and *the motion of time sounds like the flapping of wings* is marked by verbs that can all be translated as 'fly', their differences lie in their focus regarding the characteristics of the Figure (in the case of *szárnyal*, 'fly with wings') and the manner of motion (*röppen, repül*, 'fly'), therefore they can be considered as separate entailments.

Among the linguistic metaphors found in Table 1 and 2 that signal source internal variation, multi-word expressions are very rare; only two such metaphors can be identified among the groups: in Hungarian marked by the verb *megszépít*, 'beautify', which often appears as *minden-t/ az emlék-ek-et meg-szépíti az idő*, 'time beautifies everything/the memories' (everything-ACC/ the memory-PL-ACC PTCL-beautify the time.NOM) and the Finnish *kultaa*, 'gild', that appears in the expression *aika kulta-a muisto-t*, 'time guilds memories' (time.NOM guild-3SG memory-PL).

What the numbers also show is that in Hungarian spatial schemas, especially the path schema is much more heavily relied on in these variations than the image schema of force and causation, and that the Medium of motion is often included into the mapping, which is air (time has wings, the motion of time sounds like the flapping of wings). The source internal variation that is based on the causation schema shows a positive attitude towards time (the passing of time results in beauty).

In English a similar tendency can be noticed: the metaphors are often based on the schema of path (the motion of time happens in small increments, the motion of time is organized) and in some cases the contact between the Figure and Ground is present as well (time can stop abruptly). In Finnish, on the other hand, these source internal variations are based predominantly on the image schema of force and causation, with a focus on the positive aspect of time (time covers with gold), and rarely on the negative (time causes aging), as the raw as well as the normalized frequency shows. Similarly to American English, these Finnish metaphors that are based on the schema of path also encode the contact between the Figure and the Ground (time moves like a worm).

### 3.2. Source external variation

Source external variation tends to be rare, as expected, and source internal variation is much more frequent. However, as **Table 3** shows, new sources can be found in Hungarian, Finnish as well as American English. Instances of source external variation in the three languages are grouped based on their cognitive

aspect, such as relevant image schemas and other conceptual factors that the metaphor carries. In contrast with Table 1 that categorizes such cognitive factors in instances of source internal variation, here embodiment is identified as a base for some of the new sources as well.

**Table 3.** Source external variation in American English, Finnish and Hungarian and their cognitive underpinnings

No.	Metaphor with new source	Most characteristic of	Conceptual underpinnings
1.	TIME IS DARKNESS	American English	image schema of force and causation, embodiment
2.	TIME IS WEIGHT	American English	schema of spatial motion, embodiment Contact of Figure with the Ground
3.	TIME IS A JUDGE	Hungarian	image schema of force and causation
4.	TIME IS A GUARDIAN	Hungarian	image schema of force and causation
5.	TIME IS A MILL	Hungarian	image schema of force and causation, image schema of cycle
6.	TIME IS A TRICKSTER	Finnish	image schema of force and causation
7.	TIME IS AN EQUALIZER	Finnish	image schema of force and causation

The table above contains the new sources used with the target domain time in agentive time metaphors. Two of such new sources can be identified in each language, which are predominantly variations of the conceptual metaphor TIME IS A CHANGER, with a single exception found in American English, TIME IS WEIGHT. This new source in fact is connected with TIME IS A MOVING ENTITY, in metaphors marked by the verb *drag*, as well as TIME IS SPACE in metaphors with *hang heavy*.

**Table 4** shows the metaphor signaling verbs as well as quantitative differences in the data, the raw and normalized frequencies of the occurrences. In contrast with Table 2, which shows that source internal differences, i.e. unique metaphorical entailments are usually marked by only one verb, here a new source is in some cases signaled by more than one verb, e.g. *dim* as well as *obscure* or *hang heavy* and *drag*.

The frequency of source external variation is organized into two groups, based on normalized frequencies in the following way: TIME IS WEIGHT (American English) and TIME IS A GUARDIAN (Hungarian) are the only sources with a frequency that is higher than 0.015 per one million words. The rest of the sources, TIME IS DARKNESS (American English), TIME IS A JUDGE (Hungarian), TIME IS A MILL (Hungarian), TIME IS A TRICKSTER (Finnish) and TIME IS AN EQUALIZER (Finnish) are all rare, with a normalized frequency below 0.015. These numbers show that such new sources emerge in metaphors quite rarely, surfacing only once in

American English and Hungarian with a frequency that is over 0.015, and with an even lower nf in Finnish. We can conclude therefore that frequent, well-entrenched expressions among metaphors that show source external variation are difficult to find.

**Table 4.** Source external variation in American English, Finnish and Hungarian and their raw and normalized frequencies

No.	Metaphor with new source	Most characteristic of	Verb in metaphor	Raw frequency, normalized frequency
1.	TIME IS DARKNESS	American English	<i>dim, obscure</i>	rf 13, nf 0.014
2.	TIME IS WEIGHT	American English	<i>hang heavy, drag</i>	rf 40, nf 0.047
3.	TIME IS A JUDGE	Hungarian	<i>ítel, 'judge'</i>	rf 7, nf 0.006
4.	TIME IS A GUARDIAN	Hungarian	<i>őriz, 'guard'</i>	rf 16, nf 0.015
5.	TIME IS A MILL	Hungarian	<i>őröl, 'mill'</i>	rf 10, 0.009
6.	TIME IS A TRICKSTER	Finnish	<i>tehdä tepposensa, kepposet, 'play tricks'</i>	rf 9, nf 0.010
7.	TIME IS AN EQUALIZER	Finnish	<i>tasoittaa, 'equalize'</i>	rf 5, nf 0.005

The combined normalized frequency of this type of variation is the highest in American English with 0.061, 0.030 in Hungarian, and rarest in Finnish with 0.015 per one million words. Based on these numbers, the image schemas and other conceptual underpinnings that prevail in each language through source external variation are the following: the image schema of force and causation in English and embodiment by linking time to the sensory perception of darkness and weight (TIME IS DARKNESS, TIME IS WEIGHT); in the majority of the cases the image of time is negative; the image schema of force and causation in Hungarian, where the examples are equally distributed between the negative (TIME IS A JUDGE, TIME IS A MILL) and positive image of time (TIME IS A GUARDIAN), and in a similar manner the image schema of force and causation in Finnish (TIME IS AN EQUALIZER), where the examples show a predominantly negative attitude towards time (TIME IS A TRICKSTER).

#### 4. Conclusion

To sum up the specificities, there is source-related variation in each language, which is most frequently source internal (through unique entailments) and less frequently source external (as specified by Kövecses, *Metaphorical Creativity*, 212). Source internal variation is more frequently based on the schema of path, except in Finnish, while source external variation happens in all cases,

but one, based on the image schema of force and causation rather than on spatial schemas, such as path. Source internal variation is the most frequent in Hungarian and source external in American English.

These figures show that variation occurs in frequent conventional expressions, not only rare, innovative metaphors. Although all the metaphors presented here are recurrent ones, some of the frequencies are quite low. This is not true, however, for all the cases, in fact some of them have a high to medium normalized frequency, e.g. *aika kultaa*, 'time gilds'. What this shows is that there are a few metaphors in each language that show unique traits of source internal variation, through high frequency entrenched metaphorical expressions. New sources are rare both based on the number of new sources and their raw frequency: this means that in these three languages the sources are usually the same. The cross-linguistic differences thus show relevant frequency not through the uses of new source domains, but by bringing into evidence specific characteristics of these domains through unique entailments. This then also means that most of the metaphors are more similar than different in these three languages.

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