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Citation for the original published paper (version of record):

Johansson Falck, M. (2014)

Temporal prepositions explained: Cross-linguistic analysis of English and Swedish unit of time landmarks.

Cognitive Linguistic Studies, 1(2): 271-288

<http://dx.doi.org/10.1075/cogls.1.2.05fal>

Access to the published version may require subscription.

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Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-96861>

Temporal Prepositions Explained: Cross-Linguistic Analysis of English and Swedish Unit of TIME Landmarks*

Abstract

To what extent can factors such as the size of a unit of time landmark and zoomed in effects explain the patterns of temporal prepositions in English (Lindstromberg, 1998/2010)? How important are these factors cross-linguistically? This paper is a corpus linguistic analysis of unit of time landmarks in English, *in* and *on* instances, and in their Swedish equivalents, *i* and *på* instances. My aims are to investigate how temporal *in* and *on* relationships are construed in terms of spatial ones and to identify shared and differing patterns between these two closely related languages. Shared patterns may provide clues in regard to which factors are salient when TIME is construed in terms of SPACE. Differing patterns highlight the fact that a given way of construing TIME in terms of SPACE is not the only alternative. Systematicity at this level of abstraction is potentially useful for the second language (L2) learner.

Keywords: TIME, SPACE, cross-linguistic, prepositions, English, Swedish

Introduction

Closely related languages such as English and Swedish generally reflect the same spatiotemporal metaphors (e.g. the Time Orientation metaphor, the Moving Time metaphor and the Moving Ego metaphor (cf. Lakoff & Johnson, 1999)). Yet phrases such as *in the evening* and *på morgonen* (En. *on the morning*), show that these two languages display differences in regard to how temporal relationships are construed in terms of spatial ones.

In this paper, I investigate unit of time *landmarks* (i.e. the final position of a moving or located entity) (Langacker, 2002, p. 6) in English *in* and *on* instances, and in Swedish *i* and *på* instances. The study is based on corpus linguistic data from the *British National Corpus* (*the BNC*) and the Swedish corpus *Parole*. My main aims are to investigate a) how temporal *in/i* and *on/på* relationships are construed in terms of spatial ones and b) to what extent explanations in terms of the size of a unit of time landmark, and in terms of zoomed in perspectives (Lindstromberg, 1998/2010), might explain the usage patterns of English *in* and *on* and their Swedish equivalents *i* and *på*. Although English prepositions have been extensively studied (Baćzkowska, 2011; Brugman, 1981; Herskovits, 1986/2009; Lakoff, 1987; Lindstromberg, 1998/2010; Tyler & Evans, 2007;), there are no cross-linguistic corpus analyses of how these two languages construe fixed durations of TIME (henceforth small caps will be used for conceptual domains) in terms of bounded portions of SPACE. Comparisons between languages, however, may provide insights into spatiotemporal cognition. If spatiotemporal language ultimately derives from spatiotemporal cognition, then factors that are salient when we think about TIME in terms of SPACE should also influence spatiotemporal language. Moreover, the more cognitively salient a given factors is, the more likely it should be to influence the patterns of more than one language. The present focus on only two languages cannot fully answer questions such as these. The results, however, provide initial clues as to what factors are important across two closely related languages and are, in that

sense, a first step towards answering questions such as these. Patterns that are shared between English and Swedish may potentially be related to aspects of spatiotemporal thinking that are more generally salient to people when they construe TIME in terms of SPACE. Patterns that are language specific, on the other hand, highlight the fact that a given aspect of TIME may be construed in more than one way.

Moreover, a systematic comparison of the similarities and differences between the languages provide information that is potentially useful for the L2 learner of either one of the languages. As shown by a large body of research in the field of second language acquisition, learners of a second language (L2) tend to be influenced by transfer from their first language (L1). *Meaning transfer* (i.e. “any type of semantic or pragmatic influence from the first language, or from a second language in L3 acquisition” [Odlin, 2008, p. 310]), as well as *conceptual transfer* (i.e. “cross-linguistic influence involving relativistic effects” [Odlin, 2008, p. 306]) have been observed (Odlin, 2008). Accordingly, typological analyses (Talmy, 2000) of literal (Özçalışkan & Slobin, 2003) as well as metaphorical motion (Özçalışkan, 2005) and motion metaphor (Johansson Falck, 2012) show that language-specific factors have conceptual salience for the speakers of a language.

Given the focus of the present study on temporal *in*, *on*, *i*, and *på* instances, it primarily deals with highly conventionalized constructions whose spatial origins are not necessarily considered by contemporary L1 speakers of these two languages every time they talk. However, as argued by Lindstromberg (2010, p. 7), temporal instances of prepositions tend to develop from their basic spatial meanings, which then remain, or linger on, long after a given temporal usage has become entrenched. Moreover, Johansson Falck (2012) shows that differences at the level of lexical metaphor “provide a lens that directly influences how a speaker of an L2 conceives of, and talks about, ideas and events in this language” (p. 131). The ways in which a given language construes fixed durations of TIME in terms of bounded

portions of SPACE may thus still influence how its L1 speakers think about TIME in terms of SPACE. Moreover, the high degree of conventionality of temporal expressions means that their patterns are likely entrenched in L1 speakers' minds. Awareness of which patterns are shared, and which are different, may be one important step of L2 speakers towards using positive transfer (i.e. transfer that results from similarities and hence helps L2 speakers use the correct form in an L1), and avoiding negative transfer (i.e. transfer that results from differences and results in mistakes). Moreover, knowing which factors influence the ways in which speakers of different languages construe TIME in terms of SPACE may facilitate adopting foreign patterns and remembering constructions.

Understanding TIME through SPACE

The connection between SPACE and the essentially metaphoric domain of TIME has been attested by numerous studies of a broad range of languages all over the world (Evans, 2004; Filipović & Jaszczolt, 2012a, 2012b; Lakoff & Johnson, 1999; Núñez & Sweetser, 2006; Radden, 2003). Accordingly, a large body of experimental evidence has shown that the domains of SPACE and TIME are linked (Boroditsky & Ramscar, 2002; Casasanto & Boroditsky, 2008; Núñez & Sweetser, 2006).

Lakoff and Johnson (1999) propose an entire system of spatio-temporal metaphors that coherently structures our understanding of TIME through SPACE. On the metaphors that are part of this system, the present is here, the past behind us, and the future ahead of us (Lakoff & Johnson, 1999, p. 140). Moreover, fixed durations of time are seen as bounded regions of SPACE, which may in turn be conceptualized as containers (used with *in*), or as point locations along a line etc. (used with *at*) (Lakoff & Johnson, 1999, p. 153). Similarly, uses of the prepositions *in*, *on*, *i*, and *på* in talk about fixed durations of TIME, are unlikely to be related merely to the patterns of a language, but at least historically motivated by how speakers of a language think about TIME in terms of SPACE.

Given the relationship between spatial and temporal uses, temporal uses may be explained by means of the basic spatial meaning even if the latter is not necessarily activated every time we talk. Accordingly, Lindstromberg (1998/2010) explains temporal instances of *in* and *on* in terms of how their basic spatial meanings may be used to cast TIME in terms of SPACE. *In*, which in its basic spatial sense is used together with a landmark that has an interior and a boundary (Lindstromberg, 2010) tends to be used “when the [l]andmark represents a time which is long enough for us to be able to think of it as a frame or space that something can be in” (Lindstromberg, 2010, p. 77) (e.g. *in the Stone Age*, *in the last century*, *in 2015*, *in winter*, *in March* and *in the morning*) (Lindstromberg, 2010, p. 70). *On*, which in its basic spatial sense refers to something that is in contact with a supporting surface (Lindstromberg, 2010), is used together with medium sized unit of time landmarks (e.g. *on Friday*, *on the day that* and *on this occasion*) (Lindstromberg, 2010, p. 69). By way of contrast, these uses may be compared with those of *at*, which favor “(almost) invisibly small and point-like” unit of time landmarks (Lindstromberg, 2010, p. 70) (e.g. *at that moment*, *at 10.30*, and *at noon*). Some exceptions to this rule are due to zoomed-in perspectives on quite small spans of time, which are used with *in* (e.g. *What did the universe look like in the first second after the big bang?*) (Lindstromberg, 2010, p. 70). Others are considered set phrases “that just need to be learned” (Lindstromberg, 2010, p. 78) (e.g. *in a moment* in the sense of ‘very soon’, and *on the dot* in the sense of ‘precisely at an agreed time’ and *come on time*).

However, although temporal *in* and *on* instances are likely motivated by how their basic spatial meanings may be used to construe TIME in terms of SPACE, the size of the unit of time landmark may not be the only factor that influences these uses. Recent studies on spatial prepositions (Coventry, 2001; Coventry & Prat-Sala, 2001; Dewell, 2007) suggest that the semantic representations underlying these go back to a host of factors ranging from spatial components (Herskovits, 1986/2009), to those related to the role of the conceptualizer

(Dewell, 2007), and to the function of the objects involved (Coventry, 2001, Coventry & Prat-Sala, 2001; Vandeloise, 1990, 1994). It thus seems possible that several factors might also have influenced the temporal uses of the prepositions (Bączkowska, 2011, p. 352).

The present study thus compares the frequencies of the types of landmarks in temporal *in*, *on*, *i*, and *på* instances as well as how these might have been motivated by the basic spatial meanings of the prepositions involved. Learners of these two languages might benefit from knowing which types of landmarks are the most frequent and how all these uses might have been motivated by people's embodied experiences of physical space. As shown by Liamkina (2008) and Tyler (2012), meaning-based accounts of language are more efficient for L2 teaching and learning than traditional rule-based ones. Accordingly, patterns at the level of construing TIME by means of SPACE might be easier to remember than rules related to a number of prepositions.

Although Lindstrombergs' (2010) study is based on corpus data, he does not claim to have covered all the usages of the over 90 prepositions he explains, but focuses on those that are widely shared. Moreover, the frequencies of the explained uses are not discussed. From the point of view of the L2 learner, however, it might be relevant to know how widely applicable explanations in terms of size and zoomed in perspectives really are. Moreover, they may also find it useful to be familiar with less frequently used patterns.

General Method and Material

I extracted 1000 random *in*, *on*, *i*, and *på* instances from the *BNC* and *Parole* corpora together with a context of 1-2 lines of text. 134 *in* instances were followed by a unit of time landmark and hence further analyzed, as were 133 *on* instances, 110 *i* instances, and 55 *på* instances. As a second step, I analyzed the unit of time landmarks in these instances. More specifically, I wanted to find out what types of landmarks are construed as rooms/containers, and what types of landmarks are construed as supporting surfaces/objects. My aims were to find out a)

to what extent the proposed relationship between the size of a unit of time landmark and its being treated as a container (i.e. used with *in/i*), or a supporting surface/an object (i.e. used with *on/på*) (Lindstromberg, 2010) is substantiated by the usage patterns of the prepositions, and b) to what extent other ways of construing time in terms of space might have motivated the patterns.

Following Lindstromberg (2010), longer units of time are defined as those that are longer than a couple of days. He, however, does not provide a definition of medium sized units and small units, which seems necessary for the explanations to be straightforward to use. For the purpose of this study, medium sized units of time are those corresponding to the length of a day and small units of time those that are shorter than a day.

Unit of time landmarks in English *in* and *on* instances

Table 1 is an overview of the unit of time landmarks in the 132 *in* instances and the 134 *on* instances from the *BNC*. *In* instances are shown in column 2, and *on* instances in column 3. The landmarks in these instances fall into 11 types (see column 1), seven of which are used with *in*, and six of which are used with *on*. Only two of the different types are used with both prepositions. This is true of landmarks corresponding to parts of days (type 2), and parts of games (type 5))

Seventy-five out of 132 *in* instances, 56.8% (48.4-65.3)¹, are used in talk about longer units of time such as centuries, years, months and weeks (row 1) (Lindstromberg, 2010, p. 77), and 104 out of 143 *on* instances, 77.6% (70.6-84.7), are used with medium-sized units of time such as days and dates (row 2) (Lindstromberg, 2010, p. 69). Years are particularly frequent in *in* contexts. Instances used in talk about years (row 1) make up 39.4% (31.1-47.7) of *in* instances.

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¹ The numbers in parentheses are the 95% confidence interval (CI) for the true proportion of moving trajectors. The interpretation of this CI is that if the procedure of sampling sentences and computing a 95% CI would be repeated, the 95% CI would cover the true proportion in 95% of the repetitions. We cannot know, however, if this particular CI (48.4-65.3) includes the true proportion.

In addition to being used in talk about longer units of time, *in* (column 2) occurs with landmarks that make up a smaller part of some other unit of time (e.g. *in the morning*, *in early March*, and *in the quarter* (as a part of a game), (rows 3-5)), and with landmarks that refer to abstract temporal nouns that are not connected with clocks and calendars (e.g. *in the future*, *in advance* etc. [row 6]). This type of landmark occurs in 17.4 % (11.0-23.9) of *in* instances. Moreover, some *in* instances (3.8% [0.5-7.0]) are used with landmarks emphasizing that something happens within a given amount of time (e.g. *in a flash* and *in seconds* [row 7]) or with landmarks giving the approximate amount of time that will pass before the beginning of an event (e.g. *in two hours* [line 8]) (2.3% [0.0-4.8]).

On (column 3) may also be used together with certain parts of days (e.g. *on Saturday night* [row 3]), and with units of time corresponding to parts of a game (e.g. *on one period*, *on sixty nine minutes* [row 5]). These uses make up 10.4% (5.3-15.6) and 2.2% (0.0-4.7) of *on* landmarks, respectively.

Moreover, *on* is used with landmarks that involve precision (e.g. column 3, *on time* [row 9]) (1.5% [0.0-3.5]) in the sense that they refer to something that is supposed to take place by a specific point in time (i.e. *on time for someone's birthday*). In addition, some *on* instances are used with certain temporary units of time (e.g. *on an occasion* [row 10]) (6.0% [2.0-10.0]), and with abstract temporal nouns signifying a basis (e.g. *on a daily basis* [row 11]) (2.2% [0.0-4.7]).

[TABLE 1 NEAR HERE]

The usage patterns in my data thus substantiate the proposed relationship between the size of a unit of a time landmark and its being treated as a container (used with *in/i*), or a

supporting surface/an object (used with *on/på*) (Lindstromberg, 2010). They do indeed show that 56.8% (48.4-65.3) of *in* instances are consistent with the idea that longer units of time such as centuries, years, months, and weeks, which are “large enough for us to be in” (Lindstromberg, 2010, p. 70), are construed as rooms furnished with people, events, activities and processes. Moreover, 77.6% (70.6-84.7) of *on* instances show that native speakers of British English talk about days, which are somewhat shorter units of time, as if they were objects upon which processes, actions or events are located.

However, given the quality of the landmarks in the remaining 43.2% (51.6-34.7) of *in* instances and 22.4% (29.4-15.3) of *on* instances, these cannot be the result of construing large units as containers and medium sized units as objects/supporting surfaces. Unit of time landmarks such as *beginnings*, *hours*, and *seconds* do not appear to be large, and *Saturday nights* and *daily* bases are not necessarily of medium size. If uses such as these go back to spatiotemporal mappings, then other ways of thinking about TIME in terms of SPACE seem more relevant.

For instance, constructions in which *on* is used to refer to units of time combined with abstract temporal nouns that signify a basis (e.g. *on a daily*, *biennial*, or *2-3 year basis*) (row 11) (2.2% [0.0-4.7]) of *on* instances), seem more closely likely motivated by the fact that bases are typically located underneath the things they support. Given that these units of time are indeed cast as foundations, they are naturally located underneath the events, activities, and processes connected with them.

Moreover, the tendency to use *in* in phrases where the unit of time landmark is a part of another unit of time (e.g. *in the morning*, *in early March*, and *in the quarter*) (17.4 % [11.0-23.9] of *in* instances) seems more likely motivated by the part whole relationship between the temporal units involved than by the size of the landmarks. A phrase such as *in the morning*, for instance, does not match the claim that *in* is virtually always used when the landmark is

“longer than a couple of days” (Lindstromberg, 2010, p. 77). Considering that the smaller unit of time is a part of the larger unit (e.g. *morning* is a part of the day, *early March* is a part of *March*, and *quarter* is a part of the time taken for a game), however, it makes sense to mentally locate the smaller unit of TIME inside the bigger one.

However, not only *in* instances are used with temporal part whole constructions, so are *on* instances (12.7% [7.1-18.3] of *on* instances). According to Lindstromberg (2010), *in* “is normal [in the frame _the morning/afternoon/evening...] provided that the frame is not followed by a specifying phrase such as *of the 9th* or *that she arrived*” (p. 78). In the latter cases, which “reflect a more distant mental viewpoint” (p. 78) *on* is used 2.3% (0.0-4.8) of *in* instances in my data, and 10.4% (5.3-15.6) of *on* instances fit this frame. All these instances are in line with Lindstromberg’s explanations. As in sentence 1 and 2 below, *in* is used together with parts of the present or the following day, and *on* together with parts of more distant days.

- (1) He's stopping off on the road, he'll be *in in* the morning... (BNC)
- (2) The evening sessions before Christmas will be *on* Thursday evenings, and after Christmas on Wednesday evenings. (BNC)

Taken together, these patterns suggest that parts of days that are close to the here and now of the speaker are like rooms that people are located in together with the processes, activities, or events taking place there. The further away in time a part of a given is, the more likely it is to be cast as a distant landmark upon which we then locate a given event. These patterns then, appear motivated by speakers’ subjective experiences of TIME in relation to the experiences that they have in TIME, and together with TIME. Given that TIME is not just TIME, but experienced as we live and act, units of TIME might be hard, if not impossible, to so separate from the experiences connected with them (cf. Johansson Falck, under review). Just like our present actions, the TIME it takes to do these actions takes place in the here and now.

This complexity would explain why the parts of days that are part of the here and now of the speaker, are construed as rooms that s/he is in, and why those that are further away in TIME are like distant objects.

Lindstromberg's (2010) explanations in terms of zoomed-in perspectives on quite small spans of TIME appear less helpful than those relating to size, and those related to close verses distant mental viewpoints. They do not really explain why we should want to zoom in on these smaller units of time in particular. The instances in my data (e.g. *in a flash* and *in seconds*) (3.8% [0.5-7.0] of *in* instances) that belong in this category, however, all seem to make use of the fact that temporal units construed as rooms/containers have boundaries. Crucially, there is an emphasis on the fact that the activities, events, or processes that occur *in a flash* or *in seconds*, take place within, and not outside, the boundaries of the temporal unit. In this sense, the boundaries of these units of time are like the boundaries of a container. As in sentences 3 and 4 they all constrain actions that make up their content. In sentence 3, those referred to by they will be here *in seconds*, and in sentence 4 *Gordon set for action* in the bounded portion of time referred by *in a flash*.

(3) 'They will be here in seconds. (BNC)

(4) Gordon set for action in a flash. (BNC)

This type of usage, then, might be motivated by the fact that the boundaries of the temporal units communicate an important aspect of their meaning.

According to Lindstromberg (2010), instances such as *in a moment* in the sense of "very soon," *on the dot* in the sense of "precisely at an agreed time", and *come on time* belong in the category of unexpected patterns that "just need to be learned" (p.78). However, although several, sometimes even arbitrary, factors might influence the way in which we talk about TIME in terms of SPACE, these specific instances do not necessarily belong in the category of arbitrary patterns. All these uses appear explicable in terms of spatiotemporal

mappings if other aspects are considered than those related to size, mental distance and zoomed in perspectives (Lindstromberg, 2010). Phrases such as *on the dot* or *come on time* to say that something occurs precisely at an agreed time (1.5% [0.0-3.5] of *on* instances) might be the result of thinking of the units of time as objects/containers upon which we locate events, activities, and processes. If cast this way, activities that happen precisely at an agreed time, are like physical objects (e.g. arrows) hitting a target bull's-eye. Ideally, they all end up on the landmarks aimed for. The use of *in a moment* to refer to the time **after** a given moment makes perfect sense if *moment* is seen as a measure of the time that will pass **before** something else will be happen (2.3% [0.0-4.8] of *in* instances).

There are 8 *on an occasion* instances in my data (6.0% [2.0-10.0] of *on* instances). Considering the temporary quality of “occasions” (they do not tend to last), the uses seem unlikely to be motivated by the size of the unit of time landmark (Lindstromberg, 2010, p. 69). Its temporary quality, however, does seem to match this type of *on* constructions better than those including many other English prepositions (e.g. those construed with *in* and hence connected with boundaries and inclusion). It might simply have been one of the better alternatives available in English.

Finally, the use of *in* in talk about yet other abstract temporal nouns (19.7% [12.9-26.5] of *in* instances) is coherent with a tendency in both English and Swedish to construe a large number of abstract concepts as rooms or containers (see Johansson Falck, in preparation). By thinking of abstract concepts as rooms, these can then be furnished with people, events, activities, and processes. Moreover, if durations of time are conceived of as an important part of the situations which we are in, it naturally follows that our activities take place in specific durations of time. By doing so, we might imagine ourselves in the “future” and in “the break”.

Unit of time landmarks in the Swedish *i* and *på* instances

Table 2 gives an overview of the landmarks in the 102 *i* instances (column 2) and the 58 *på* instances (column 3) from *Parole*. These are fairly evenly distributed between several types of landmarks (described in column 1). The most commonly used landmark in the *i* instances are those that refer to a given unit of time that makes up a smaller part of some other unit of time (e.g. *imorgon bitti*, (En. *tomorrow morning* [row 8]) (34.3% [25.1-43.5] of *i* instances [rows 3-9] belong to this group). Abstract temporal nouns (e.g. *i pausen* [En. *in the break*], see row 10) are also common (25.5% [17.0-33.9] of *i* instances are abstract nouns), as are landmarks providing information about duration (e.g. something lasted *i timmar* [lit. *in hours*] for En. *for hours* [row 12]) (14% of *i* instances), and information about which day, month, or season something happened (e.g. *i juli* [lit. *in July*] for En. *last June*) or will happen [row 1] (13.7% [7.0-20.4] of *i* instances). Other *i* landmarks include those that only last for a short while (e.g. *i det ögonblicket* [lit. *in that moment*] for En. *that moment* [row 14]), and those referring to a given unit of time that must not be exceeded (e.g. *komma hem i tid* (lit. *in time* for En. *on time* [row 13]). These latter two groups make up 8.8% (3.3-14.3) and 2.0% (0.0-4.7) of *i* instances, respectively.

There are quite a few types of landmarks in the *på* instances, but only those that make up a smaller part of another unit of time (e.g. *tidigare på året*, lit. *earlier on the year* for En. *earlier in the year* [row 8]) have a large number of tokens. Landmarks that belong to this category make up 36.2% (23.8-48.6) of *på* instances. Somewhat fewer, that is, 13.8% (4.9-22.7) of *på* landmarks provide information about when something typically happens (e.g. *på eftermiddagarna* [lit. *on the afternoons*] for En. *in the afternoons* [row 17]), and 12.1% (3.7-20.5) about how much time has passed since a given activity took place (e.g. *har inte träffats på 5 minuter* [lit. *have not met/seen one another on*] for En. *for 5 minutes* [row 16]). Abstract temporal nouns (row 10) refer to 10.3% (2.5-18.2) of *på* landmarks, 6.9% (0.4-13.4) of *på*

landmarks are days (row 2), and 6.9% (0.4-13.4) of *på* instances are units of time that provide information on how long something lasts (row 12). Finally, 1.7% (0.0-5.1) of *på* landmarks indicate how much time there is until a given result will have been reached (row 15), and 1.7% (0.0-5.1) of *på* instances locate one unit of time on another unit of time (e.g. do something *gång på gång* (lit. *time on time* for En. *time after time*) [row 18].

[TABLE 2 NEAR HERE]

Some of the uses observed in the English *in/on* instances are thus seen in the Swedish *i/på* instances too. Here too, things are done *on* medium-sized units of time like days, and *in* larger units of time such as months and seasons. Moreover, a large number of temporal part-whole constructions and abstract concepts are construed with *in* (34.3% (25.1-43.5) of *in* instances, rows 3-9). However, the connection between the size of the unit of time landmark and construal appears even weaker in Swedish than in English. In Swedish, *on* is used in talk about a very large number of temporal aspects (rows 2, 4, 6, 7-8, 10, 12-13, 15-18). Similarly, *in* is used with several types of unit of time landmarks that are neither large nor part of a part-whole construction (rows 1, 12-14).

The versatility of Swedish *på* (En. *on*) displays itself not only in a large number of uses, but also in *på* being less restricted when it comes to talk about parts of days. In Swedish, parts of days may be cast as objects no matter if they are part of the present day (*på morgonen/kvällen* [lit. *on the morning/evening/night*]), or located further away in time (e.g. *på nyårsafton* [lit. *on New Year's Eve*]). Interestingly, the Swedish tendency to locate events on many different types of temporal units, is coherent with a tendency in Swedish to do things on things (e.g. in Swedish people *press on the doorbell*, and they *spill/look/listen/think/complain/get tired on* and *swear on* something [Johansson Falck, in

preparation]). There may be several reasons why events, activities, or processes are located *on* a large number of units of time in Swedish. One, however, might be that Swedes habitually do things on things. The use of events, activities, or processes on unit of time landmarks might thus be unmarked in Swedish, and preferred as long as the focus is on giving a given event, or activity a temporal location. When the focus is on the unit of time *per se* (i.e. within which boundaries these last) an *in* construal might be also be used. This type of use is coherent with the role played by the temporal boundaries in this type of construction (the discussion of *in a flash*, *and in a minute* in 4).

Discussion

Several tendencies were found in the English *in* and *on* instances and the Swedish *i* and *på* instances in my data. Some of the ways in which temporal relationships are construed by means of spatial ones are shared between the languages, and some are language specific. As is consistent with Lindstromberg's (2010) explanations in terms of the size of a unit of time landmark, my analysis shows that both languages cast large units of time such as months, and years as rooms in which events, activities or processes take place, and medium-sized units such as days as objects or supporting surfaces upon which events, activities or processes etc. are placed. As may be related to the quality of the landmarks, both languages thus reflect a match between large units of time and *in* constructions and medium sized units of time and *on* constructions. Accordingly, the quality of the landmarks might explain why temporal part-whole constructions and abstract concepts are typically cast as rooms in English, and why quite a few temporal part-whole constructions and abstract concepts are cast as rooms in Swedish too. Parts are naturally located in the entity that they are part of. Moreover, given the connection between the things that we do and the duration of time in which these take place, it appears easy to imagine ourselves and our actions as being located in the abstract temporal concepts that they are connected with.

However, not only large landmarks, parts of wholes, and abstract temporal nouns are construed with *in*, and not only medium sized units are construed with *on*. In both languages, units of time focusing on a period of time within which something happens might be construed with *in*. In English, these include quite small spans of time within which certain things happen (e.g. *in a flash* and *in seconds*), or spans of time indicating how much time is left until something happens (e.g. *in a moment*). In Swedish, these may also include temporary units of time within which something happens (e.g. *i det ögonblicket* En. *at* [lit. *in*] *that moment*), but also durations of time indicating how long something lasted (e.g. *varade i timmar*, En. *lasted for* [lit. *in*] *hours*), and durations of time within which something should happen (e.g. *komma hem i tid* En. *come home on* [lit.*in*] *time*).

One important difference between the languages is that Swedish is less restricted than English when it comes to casting units of time as objects or supporting surfaces (construed with *on*). In Swedish, where things are often done on things (Johansson Falck, in preparation) units of time may be organized vertically no matter if they are small or large. Here vertical organization may be connected with precision (e.g. do something *på en gång* En. *at once* [lit. on one time]), and to state how long an event lasts, how much time has passed while something has not happened, and when something typically happens. Events, processes, or activities might thus occur on unit of time landmarks even if these make up parts of other units of time (e.g. *hon städade på morgonen* [En. *she cleaned in the morning*, lit. *on the morning*]), or abstract temporal concept (e.g. *dem han helst umgicks med på fritiden* [En. *those that he rather spent time with in his spare time* lit. *on his sparetime*]).

My data suggests that the relationship between a given type of landmark and a given type of construction is stronger in English where certain types of landmarks are construed as rooms, and others as objects/supporting surfaces. Accordingly, the suggested relationship between the size of the unit of time landmark and type of construction appears to be stronger

in English than in Swedish where habits connected with the landmarks of people's actions appear to influence the system used.

Although certain types of spatial relationships may be more apt in talk about certain types of temporal relationships, there is no one to one relationship between TIME and SPACE. As shown by Nesset (2011) "temporal constructions are not mere images of spatial constructions" (p. 60), and several factors (e.g. the distance between observer and event, the relationship between trajector and landmark, and focus of attention) might influence how we construe temporal relationships in terms of spatial ones. However, despite the asymmetry between TIME and SPACE (Nesset, 2011), each language system displays a certain degree of systematicity with respect to how it construes TIME in terms of SPACE. A sound knowledge of what these systems are like might be useful scaffolding for the teaching and learning of temporal phrases in an L2. For the L2 teacher and learner of English, it might be useful to know that the size of the unit of time landmark really does influence how native speakers of English talk about large and medium-sized durations of time. L2 learners of Swedish might benefit from this information too, but also need to know how versatile object constructions can be in talk about time. Moreover, learners of both languages might benefit from knowing that units of time that are parts of other units of time, and units of time corresponding to abstract temporal concepts such as "future," "beginning," and "advance" are often construed as rooms.

Conclusion

This paper dealt with unit of time landmarks in English *in* and *on* instances, and in Swedish *i* and *på* instances. Taken together, the uses highlight the fact that there is not a one to one correspondence between TIME and SPACE. Several ways of construing a given temporal relationship in terms of SPACE may be used, and several factors involved. The usage patterns of the prepositions suggest that there indeed is a relationship between the size of a unit of a

time landmark and its being treated as a container (i.e. used with *in/i*), or a supporting surface/an object (i.e. used with *on/på*) (Lindstromberg, 2010). For speakers of both these languages the size of a temporal concept does indeed seem to influence how they think of this concept in terms of space. However, although the size of the temporal concept may be salient to the speakers of both languages, it far from explains all uses. Moreover, the relationship appears weaker in Swedish than in English.

Not only size related factors, but also part-whole related ones, and ones related to construing abstract concepts as rooms are shared between the languages. These too may possibly be important across languages. Factors related to the distance between speaker and unit of time landmark, emphasis on the boundaries of the unit of time landmark, or precision in the relationship between trajector and landmark, on the other hand, are languages specific. The identification of shared versus language-specific patterns provides some initial clues in regard to salience in spatiotemporal cognition. Moreover, the results are potentially useful for the L2 learner.

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Corpora

The *British National Corpus (BNC)*, XML Edition (2007)

Parole korpus. Available at <http://spraakbanken.gu.se/parole/>

Table 1. Overview of the LMs in 132 *in* instances and 134 *on* instances from the BNC.

Frequencies within brackets.

Type of LM	in (132)	on (134)
1) Longer units of time: centuries, years, months weeks	• in the 19th century (1) • in 1077, in the/that year, in the last two years (52) • in January (21) • in the weeks that followed (1)	

2) medium sized units of time: days		• on Thursday (26) • on 3 April (78)
3) parts of days	• in the morning (3)	• on Saturday night (9) • on a Saturday night/on that night (5)
4) part of month, year, decades, centuries	• in early March/ the middle of June (5) • in early 1990 (3) • in the early 1980s (5) • in the early sixteenth century (3)	
5) parts of game	• in the quarter, half (2) • in the ninth/the dying minutes (2)	• on one period (1) • on sixty nine minutes (2)
6) abstract temporal concepts	• in advance, in the beginning/future/the past/ the end (11) • in real time, peacetime, plenty of/your time (7) • in a/ period the modern period/the early stage/a round (8)	
7) within a small amount of time	• in a flash, in seconds, minutes, hours (5)	
8) Approximate amount of time before the beginning of event	• in two hours/a month (3)	
9) precision (cf. <i>on the dot</i>)		• on time (2)
10) temporary units of time		• on an occasion (8)
11) basis		• on a daily/biennial/3-2 year basis (3)

Table 2. Overview of the LMs in 102 Swedish *i* instances and the 58 *på* instances.

Type of LM	<i>i</i> (102)	<i>på</i> (58)
1) The season, month, day something happens	• longer units of time (seasons, months): i höst (future) (lit. in fall) (1) • i höstas (past) (4) • i juli (past) (lit. in Sunday/ fall/ winter (+ s/as case ending; gen.sg) (2)	

	• medium sized: i morgon (future) (imorgon) (3) • tills/senast i morgon (lit. until/since in) (2) • sedan i lördags (past) (lit. since in Saturday + s; gen. sg., från i mars (from in March) (2)	
2) Medium sized units: days		• på torsdag (3) • inte förrän på torsdag (lit. until on Thursday) (1)
3) N = part of 24 hours	• i natt (3) • i gryningen (lit. in dawn) (1)	
4) N = part of day,	• i morse/kväll/ (in the morning/evening/night) (4) • tills nu i morse (until now in the morning) (1) •	• på morgonen, på kvällen • (lit. on the morning, on the evening/night) (5)
5) part of day	• en stund i morgon (lit. a while in) (1) • i morgon bitti/kväll (3) • i går kväll (1)	
6) part of a (distant) day		• på nyårsafton (1)
7) part of (part of) day	• två minuter i nio (two minutes in nine) (4) • i den sena timmen (lit. in the late hour) (1)	• halv fem på morgonen (lit. half five on the morning) (11)
8) part of month, season	• nu i januari (lit. now in January) (1) • en morgon i juni (1) • de första dagarna i april (lit. the first days in April) (2), • plötsligt i höstas (lit. suddenly in fall + as; gen.sg.) (1)	• De första dagarna på höstterminen, tidigare på året (3) • Andra gången på en kort tid (1)
9) Beginning end, future etc.	• i början av veckan/februari (5) • i mitten av augusti/mitt i natten/terminen (4) • i slutet av april/månaden (2)	

10) abstract temporal concepts	• i pausen (lit. in the break) (2) • i sin ungdomstid (lit. in his/her youth) (1) • i dessa tider (lit. in these times) (1) • förr i tiden (1) • blicka framåt i tiden (1) • i samma ålder (7) • vad i all sin dar (1) • i längden, i följd (2) • i sin tur/ i tur och ordning (4) • i ett kör (2) • i taget (4)	• på hennes tid (1) flyttad hit från part of day ovan. • på fritiden (1) • på förhand (1) • en pojke på nitton år (2) • på en sommarsemester (1)
11) frequency (2)	• en gång i veckan/månaden (lit. one time in the week/month) (2) 2 2%	
12) duration	• varade i timmar, dagar, veckor, år (lasted in hours, days, weeks, years) (13) • varenda eftermiddag i en veckas tid (every afternoon in a week's time) (1)	• ett samtal på 5 minuter (4)
13) precision/punctuality (cf. <i>on the dot</i>)	• komma hem i tid (2)	• på en gång (lit.) (3)
14) temporary units of time	• i detsamma (7) • i det ögonblicket/i ett enda ögonblick (2)	
15) time until a given result has been reached		• hon är här på en kvart • (lit. she is here on a quarter) (4)
16) (time passed without something)		• har inte träffats på 5 minuter (lit. have not met/seen each other on 5 minutes) (7)
17) When something typically happens (lms of habitual action)		• på eftermiddagarna • (lit. on the afternoons) (8)
18) vertical organization of units of time ("event before + event after")		• gång på gång (lit.) (1)

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* Acknowledgement: This study was done while the author was funded by the Royal Swedish Academy of Letters, History and Antiquities, supported by a grant from the Knut and Alice Wallenberg Foundation (KAW 2009.0295).