1 Introduction

The issue of polysemy has been acknowledged as an endemic phenomenon in natural language semantics (Kudrnáčová 2013; Lakoff 1987; Linstromberg 1997; Taylor 2003; Tyler and Evans 2003). As a central pursuit in Cognitive Linguistics, especially in the field of cognitive semantics, a bulk of polysemy research has emerged since the 80s, with studies on prepositions as one of the mainstreams. These studies centered on semantic approaches to prepositional meaning, bypassing the importance of context. In view of this gap, this article attempts to deal with the issue of prepositional polysemy from a radical pragmatic stance, giving the so-called “context” due attention and will try to bridge the gap of a pragmatic model to the study of polysemy within the Cognitive Linguistics paradigm.

The present pragmatic approach assumes meaning as contextualization patterns (Taylor 2003), whereas context encompasses immediate linguistic context and shared world knowledge patterns. I argue that defining context as such is fundamental to the establishment of a pragmatic model of polysemy.

The preposition investigated is the English in, reflecting the container schema, which is essential in human perception and cognition (Johnson 1987; Lakoff and Johnson 1999). As previous studies on in are either from a semantic (Lindstromberg 1997; Tyler and Evans 2003; Evans and Tyler 2004) or a pedagogical
(Rudzka-Ostyn 2003) perspective, lacking in-depth contextual explanations to the interpretation of prepositions,¹ a context-oriented pragmatic approach to in is adopted for the present study.

2 Context-dependence of Meaning

The context-sensitivity of lexical meaning and the context-dependent fluid nature of utterance interpretation have been reported throughout literature, but analyses based on a clear and appropriate definition of context are still lacking. The next section briefly reviews the case of safe (Fauconnier and Turner 2002, 25–7) to illustrate the situated nature of interpretation so that an elaboration of the definition of context can be advanced.

2.1 The Interpretation of Form and Contextual Assumptions

Fauconnier and Turner argue that the form of safe prompts “an abstract frame of danger with roles like victims, location, and instrument” and guides us to form a counterfactual blend where participants fit into certain roles based on the situation at hand. The child is safe, for instance, is a typical instance where the child fills in the role of a possible victim, but The beach is safe, in contrast, represents a blending network where the beach is a possible location where harm may happen. Hence the form safe invokes not only the meaning of ‘not harmed’ or ‘not doing any harm’ but essentially an entire set of frame with related participant

---

¹. Although Tyler and Evans (2003) and Evans and Tyler (2004) emphasize the importance of context, their approach simply stresses certain part of context: "word meaning is context-sensitive drawing upon encyclopedic knowledge as well as inferencing strategies which relate to different aspects of conceptual structure, organization and packaging" (Evans and Tyler 2004:159). The present research moreover incorporates the immediate linguistic context and the physical context into the scope of study. Apart from that, the present pragmatic approach also results in the different role that context plays in sense establishment.
roles, and its interaction with its immediate linguistic context such as *child* or *beach* also involves human knowledge of a child as being vulnerable and that of a beach as a potentially dangerous place.

Following Fauconnier and Turner’s discussion, the present analysis considers the interpretation of a lexical item contingent upon certain contextual assumptions. However, the notion of “contextual assumptions” so far has been addressed largely under a covering umbrella without a delineation of its detailed components, thus before a discussion into how the semantics of *in* interacts with its context, a clearer definition of context is necessary.

### 2.2 The Definition of Context

In view of the vagueness of context, Croft and Cruse (2004:102-103) generalize a four-fold classification of the term, inclusive of linguistic context, physical context, social context, and stored knowledge. Accordingly, for the case of *safe*, the contextual assumptions will refer first to the linguistic elements that occur around the target lexeme such as *child* or *beach*, to the stored world knowledge of a beach, child, and possibly also to the situational context where the utterance is heard.

Among the four types of contexts proposed by Croft and Cruse, linguistic context, physical context, and stored knowledge concern the purpose of the present study the most, especially linguistic context and stored knowledge. Linguistic context,

---

2. The conception of context has also been extensively explored outside of the field of Cognitive Linguistics. The Firbasian approach to information structure (Chamonikolasová 2007; Drápela 2011; Firbas 1992), for instance, distinguishes between the immediately relevant verbal and situation context, and the experiential context (also referred to as the context of shared experience).

3. This is not to entirely exclude the social context from the understanding of
according to Croft and Cruse, includes “previous discourse,” “immediate linguistic environment,” and “types of discourse.” For the sake of a study on prepositions, the “immediate linguistic environment” calls for more emphasis because a preposition indicates the relationship between two noun phrases and it is the noun phrases that exert most influence on the interpretation of the preposition. Hence, for the purpose of the present paper, two major types of context will be specifically addressed. On the one hand, the type of linguistic context that pertains to a preposition study will be its immediate linguistic environment, viz. the lexical expressions that occur in the surroundings of the target preposition. On the other hand, the stored knowledge refers to “a vast store of remembered experiences and knowledge” against which utterances are processed (Croft and Cruse 2004, 103). The stored knowledge will thus involve related frames that structure human understanding of a concept, and experiences of human interaction with the environment.

3 Previous Studies on in

This section reviews three sets of studies on in, which all attempt to provide a comprehensive list of its meanings: Lindstromberg (1997), Rudzka-Ostyn (2003), and Tyler and Evans (2003) and Evans and Tyler (2004).

Lindstromberg (1997), following the Conceptual Metaphor Theory in Lakoff and Johnson (1980) and Johnson (1987), discusses the extension of prepositional meaning from its prototypical meaning to secondary and skirt meanings. The explanation is rather detailed but only focuses on the semantic development of prepositions per se, with 11 meanings listed for prepositions. The point here is simply that for the several meanings scrutinized in this study, the other three types of context are of higher significance.
Rudzka-Ostyn (2003), as an English textbook that aims to expand students’ vocabulary, provides abundant instances and exercises, but intended not as a textbook in cognitive linguistics, its explanation is quite schematic and does not focus on the role of context in language comprehension either.

The most relevant Tyler and Evans (2003) and Evans and Tyler (2004) adopt a highly schematic spatial representation termed the proto-scene from which all the other senses emerge. Two important elements constitute the proto-scene: an abstract spatial representation of a trajector (tr) and a landmark (lm), and the functional element, which “reflects the interactive relationship between the tr and lm, and... the meaningful consequences to us” (Tyler and Evans 2003, 230). Following them, the present analysis considers the proto-scene the primary sense from which the other meanings derive. However, a different theoretical concern orients the present study toward a radically context-based direction in that the semantics-based approach proposed by Tyler and Evans renders at least 12 senses, most of which are considered by us context-dependent interpretations rather than senses given clearly defined pragmatic criteria.

Specifically, the functional element in Tyler and Evans’ Principled Polysemy model will be put in a different theoretical position in the present analysis provided that context includes “linguistic context” and “stored knowledge.” Their functional element refers not only to the interaction between the tr and the lm, but also to human embodied experience related to the interaction between the tr and the lm. The functional element, in other words, represents the concept of containment in the present case of in, and how human beings conceptualize, and make use of

4. A tr and lm, according to Langacker (1987), stand for the primary and secondary figure in conceptualization respectively.
the idea of containment. The role of such embodied experiences, to the contrary, will not be integrated in the sense of preposition per se, but is instead put under the umbrella of context in that embodied experiences are cumulated patterns of human knowledge of their interaction with the world. Hence, for the context-oriented nature of the present study, a reassignment of the embodied experience as a type of context is necessary, and such reorganization will prove to bear a significant consequence to the model of polysemy and to the relative position of pragmatics within cognitive linguistics.

The above three semantics-based studies, with Rudzka-Ostyn also as a pedagogical textbook, treats the meaning of prepositions only in terms of their semantics, with the role of context receiving little attention. In contrast, the present pragmatic model of prepositional polysemy approaches the meaning of prepositions from a radically context-oriented perspective, with context defined as three elements including the physical context, and more importantly, the immediate surrounding linguistic expressions and shared world knowledge patterns.

4 Analytical Framework

Being cognitive-pragmatics-based, the study follows Sperber and Wilson (1986, 2002) and Carston (2002) in treating pragmatics as an information processing system. In this view, meaning is merely an inferential product of the integration of basic lexical properties and surrounding contextual information, processed via cognitive-pragmatic operations. Accordingly, not every interpretation may count as the semantics of the lexical item under study. Put differently, if a meaning of a preposition can be accounted for by the interaction between its basic property and
relevant contextual inputs, then it should be conservatively considered a context-dependent interpretation rather than a distinct sense. Hence Grice’s (1978) Modified Occam’s Razor is incorporated as the guideline for sense establishment: “Senses are not to be multiplied beyond necessity.” The criterion discriminates situated interpretations from senses with extreme caution and will thus bear a significant analytical result.

The *in* as in *China is in Asia* (from Evans and Tyler 2004), for example, represents ‘geographically located within’, but such a geographical reading is a result of the intervention of the world knowledge associated with the noun phrases *China* and *Asia*. Such reading of *in* is in other words to be attributed to the interaction of the basic property of the preposition and the textual cues *China* and *Asia*, and the knowledge triggered by the noun phrases, i.e. knowledge of the two noun phrases as geographical terms. Based on the criterion adopted in the present study, the meaning ‘geographically located within’ will not be sanctioned as a distinct sense but will be seen only as an interpretation that is dependent on its context.

It must in addition be noted that the present study is not intended as an all-inclusive model that covers every single occurrence of *in*. Only overlapping senses in the previous studies, i.e. senses that are mentioned by more than one study, are discussed for the limit of length. The reason why only overlapping meanings are addressed is that previous studies propose a diverse range of meanings and different labels for those meanings. However, without factoring context into sense establishment, these semantics-based studies tend to suffer the criticism of being overly fine-grained.5 It would hence take up

---

5. With the term “polysemy's fallacy,” Sandra (1998) points out the over-exaggeration of polysemy and the shortcoming of sense proliferation in
too much space for us to argue against the status of every single meaning as a distinct sense one by one, so only overlapping meanings are dealt with for the sake of limit of length.

For the current purpose of cognitive semantic analysis, opaque idiomatic expressions are also excluded if the basic word properties are hardly traceable. *To kick the bucket* ‘to die’, for instance, contains no identifiable meaning component from *kick* or from *bucket*, and nor can an explanation be offered for why the *music* as in *to face the music* ‘to receive the bad result’ means the unpleasant reality. By the same token, semantically murky idiomatic expressions with *in* such as *in advance* and *in order to* are not discussed for their semantic opacity.

5 Overlapping Meanings of *in* and Contextualization

In previous studies, four overlapping meanings of *in* have been identified and will be discussed: ‘physical containment’, ‘state/situation’, ‘temporal containment’, and ‘way/means’. These overlapping meanings, which reflect the effect of contextual modulation (Cruse 1986) of the immediate surrounding linguistic environments on *in*, will be discussed in order below from 5.1 to 5.4. Section 5.5 sums up the analysis.

5.1 Primary sense: physical containment

‘Physical containment’ is a meaning that is mentioned in all the three studies, and its status as the prototypical meaning is agreed upon here. Following Tyler and Evans’ idea of the proto-scene, such basic physical meaning as the primary sense is also

---
6. The present analysis follows Evans and Tylers’ (2004) terminology of “primary sense” here. However, it should be noted that the labels “primary sense”, “sanctioning sense” and “proto-scene” seem interchangeable in Evans and Tyler (2004).
adopted, from which all the other meanings derive in context. The
proto-scene is diagrammed as a tr located within a lm, represented
with the circle and the box in Figure 1 respectively:

![Figure 1: Proto-scene for in (after Tyler and Evans 2003:184)](image)

Tyler and Evans and Lindstromberg also place considerable
emphasis on the spatial-configurational relation between the tr
and the lm, discussing what counts as a physical containment
sense of in. But since the basic spatial-configurational relation is
not an issue for the present model to deal with, such is not
included in the present analysis. Consider the typical cases of
‘physical containment’ below:

(1) The cow munched grass in the field. (Tyler and Evans
2003, 184)
(2) We got in the car. (Lindstromberg 1997, 29)

In the above instances, the cow and we are tr of the
conceptualization, while the field and the car are regarded as the
lm. The tr is notionally thought of as being "contained" in the lm
via the linguistic use of in.

5.2 ‘State/Situation’
A major extension from the proto-scene is the meaning of
‘state/situation’. Rudzka-Ostyn and Lindstromberg both distinguish between the sense of emotion states and the sense of situations, but the meaning can be covered under the label of the State Sense proposed in Tyler and Evans (2003, 187–9). The following examples are representative of the meaning of ‘state/situation’:

(3) She is in prison. (Tyler and Evans 2003, 188)
(4) She’s in a deep depression. (Lindstromberg 1997, 75)

As has been mentioned by Tyler and Evans (2003, 188), the functional element of in is containment, which poses “difficulty in leaving.” The linguistic context in the first instance is prison. A prison, based on associated encyclopedic knowledge, is a place of no easy escape, and once getting in there, one usually stays for a long time. Therefore such context of stored knowledge reveals that being in a prison represents long confinement, which is triggered by the textual cue of prison. A deep depression is also something difficult to rid of based on human world knowledge. A state of deep depression thus corresponds to the functional element of containment given the use of in and its interaction with its linguistic context. Accordingly, the undergoer of the state/situation is viewed as the tr and the state/situation as the lm, with the interpretation of “tr being in the state of contained and thus having difficulty leaving” calculated by the information-processing system with concepts invoked by the textual cue a deep depression and the related stored knowledge. Therefore, the meaning of ‘state/situation’ in the above examples is derived from the interaction of the functional element of containment in the proto-scene, the immediate linguistic context, and the world knowledge associated with the linguistic context. With contextual
assistance, ‘state/situation’ can hence be considered a context-situated use by the principle of parsimony.7

5.3 ‘Temporal Containment’

The meaning of ‘time’ is listed as a separate sense by Lindstromberg and Rudzka-Ostyn. Typical examples include:

(5) I will go there in spring. (Rudzka-Ostyn 2003, 52)
(6) In the evening we sat around and drank beer.
    (Lindstromberg 1997, 77)

In the above examples, the linguistic contexts that occur with *in* are *spring* and *evening*. Related to the lexical items is the shared background knowledge of these temporal units as units long enough to be conceptualized as a container, as is argued by Lindstromberg (1997, 75). The surrounding linguistic expressions and the stored knowledge associated with them combine with the functional element of containment, which prompts the conceptual product of a metaphor TIME IS SPACE (Lakoff and Johnson 1980, 1999; Grady 1997). Such conceptual metaphor can be considered to belong to a type of shared knowledge under the category of context in that they are also an

---

7. Some may argue that metaphor alone suffices to deal with the semantic extension from the primary sense of 'physical containment' to 'state/situation'. Such claim considers the meaning instantiation to depend on conceptual metaphors such as STATES ARE CONTAINERS. Rudzka-Ostyn (2003) is typical of such approach. The critical role of conceptual metaphors in interpreting prepositions is certainly beyond doubt, yet it must be understood that conceptual metaphors do not come for free in language processing. The main point is, such conceptual level operations still require linguistic manifestations as triggers, such as a deep depression. A replacement of the textual cue, such as spring, activates a totally different conceptual metaphor TIME IS A CONTAINER. Therefore conceptual metaphors cannot take care of everything and the effectuation of conceptual mappings is a result of linguistic prompts so is heavily dependent on linguistic context.
notional pattern by which human beings grasp temporal concepts, and such idea has been mentioned elsewhere in Lu (2011) on preposition and contextualization. Via such collaboration of linguistic cues, encyclopedic knowledge and proto-scene, the events at issue are viewed as the tr and the temporal units as the lm, with an interpretation of “the temporally more compact tr being included in the longer lm.” Hence ‘temporal containment’ is also regarded as a context-dependent use extended from the functional element of containment, with the event at issue being the tr and the temporal frame the lm that metaphorically ‘contains’ the event, as a result of the interaction between the proto-scene, the surrounding linguistic context, and the shared world knowledge invoked by the linguistic context.

5.4 ‘Way/Means’

The meaning of ‘way/means’ is proposed by Tyler and Evans, and it covers Lindstromberg’s (1997) ‘linguistic expressions are containers’ in that linguistic expressions can also be viewed as a means of communication. The instances below are typical cases:

(7) In other words, … (Lindstromberg 1997, 75)
(8) She wrote in ink. (Tyler and Evans 2003, 190)

The derivation of the meaning is rather opaque, but Tyler and Evans proposes a possible explanation of the meaning as an extension from ‘activity’ due to the tight correlation between the means of accomplishing an activity and the activity itself. However, considering this set of examples in a way/in this way/in many ways gives another likely account for its derivation.

8. This seems to correspond to Reddy’s (1979) conduit metaphor.
A common characteristic in this set of instances is the collocation of *way* with *in* in the constructions. The textual cue can trigger an event-structure metaphor MEANS ARE PATHS (Lakoff and Johnson 1999, 179), which serves as the knowledge base on which the utterance is understood. The use of *in* is to create a construal of the path as a conduit-like container that limits and directs the means by which the event at issue takes place. Thus a brief look at this set of examples explains the possible origin of ‘way/means’ of *in* as basing itself on the coordination of textual cues and the functional element of containment, and may lead to a conclusion of ‘way/means’ as a mere derived use in context. However, it should be noted that such meaning also occurs in constructions without a collocation of *way* with *in*, such as examples (7) and (8), where the above textual cues are no longer available for prompt of the conceptual level operation. Thus according to the methodology of the present analysis, ‘way/means’ can already be considered a discrete sense in that this sense may occur without contextual contribution in most cases. In other words, the original context-situated use has become a well-entrenched (Langacker 1987) sense of the preposition *in* and may occur in various contexts.

5.5 Interim Summary

Up to this point, four overlapping meanings addressed in previous studies have been covered: ‘physical containment’, ‘state/situation’, ‘temporal containment’, and ‘way/means’, with ‘physical containment’ as the prototypical sense from which the other meanings derive. ‘State/situation’ and ‘temporal containment’ are analyzed as context-dependent uses only, since the meanings are pragmatic products of the interaction of the functional element of containment and immediate textual cues rather than intrinsic semantics of the preposition itself.
present analysis on the other hand considers ‘way/means’ to be a distinct sense, given no contextual cue is available in most of its occurrences albeit its path of meaning extension is accountable.

6 Contextualization of Language: A Blending Perspective

So far in the previous discussions, three overlapping meanings apart from the prototypical ‘physical containment’ have been covered: ‘state/situation’, ‘temporal containment’, and ‘way/means’, with the first two analyzed as context-dependent interpretations and the other as a distinct sense. By defining the idea of “context” as a composite of immediate linguistic environments and knowledge patterns and by emphasizing the inferential ability of human beings, the present model is capable of distinguishing context-situated uses from context-independent senses with the assumption of the principle of parsimony, which is not addressed in the previous studies of *in*.

However, all this has led up to an essential question: what can the fundamental of language contextualization contribute to cognitive linguistics? How is the proposed model cognitive in nature? The question, as I will argue below, can be best answered with a comparison between the present pragmatic model of meaning processing with the specifics of the Conceptual Blending Theory (Fauconnier and Turner 2002).

6.1 Pragmatic Meaning and Emergent Structure

This section scrutinizes the possible parallel relationships between the pragmatic model of preposition meaning processing and Conceptual Blending Theory. Discussed here are the three important aspects of the present model: the linguistic context that occurs with the target preposition, stored knowledge patterns, and human inferential ability to reason and to calculate meaning.
I argue that the theory of Conceptual Blending subsumes the present context-based model of meaning processing, with specifics laid out below. The co-text of the preposition, viz. its surrounding words, are combined with the target preposition first by composition. That is, relevant pieces of linguistic contexts are projected into the blend for further processing. Specifically, the first input space contains the skeleton provided by the preposition \textit{in}, which triggers two roles: a tr and a lm. Input 2 reflects the base space with real linguistic forms, namely the surrounding linguistic items are brought into the blend to “fuse” (Fauconnnier and Turner 2002, 48) with the values of the tr and the lm triggered by the \textit{in} schema. Aside from composition, pattern completion brings in the stored knowledge frame associated with the co-text of \textit{in} and by thus doing structures the blend. The blend, as a consequence of composition and completion with inputs from the schema trigger by \textit{in} and relevant contextual information, is elaborated by human cognitive ability to draw inferences, and a resultative holistic interpretation that one can get from running the blend. Thus, the way linguistic context combines with the preposition, the related shared knowledge, and human inferential capacity echo the three elements that generates the emergent structure in Blending Theory: composition, completion, and elaboration. Figure 2 below presents the conceptual configuration that illustrates the backstage cognition in operation behind example (3): \textit{in} provides the skeleton involving a tr and a lm in Input 1, and its surrounding linguistic forms are projected from the base space into the blend to fuse with the schema. The background assumption related to the prison, which introduces the lengthy state of confinement in the prison, is brought in by pattern completion for further elaboration of the Blended Space.
As the above discussion has shown, the three important elements of the pragmatic model of prepositional meaning processing, viz. linguistic context, stored knowledge patterns, and human inferential ability, can be integrated with the three crucial aspects of emergent structure in the Blending model, i.e. composition, completion, and elaboration. This is an important issue that is not addressed in the previous studies of prepositional polysemy.

7 Concluding remarks

The proposed model of prepositional polysemy is a context-based approach that attempts to bridge the gap between pragmatics and cognitive linguistics by partitioning context into linguistic context and stored knowledge patterns and by matching the specifics of the present model to the Conceptual Blending...
Theory. With a definition of context as such and the principle of parsimony as the criterion for sense establishment, the present analysis has posited a methodology that distinguishes context-independent meanings as senses from situated meanings as interpretations. The situated uses are considered nothing more than an inferential consequence of human cognitive ability emerging from the combination of the proto-scene and the contextual factors. Such argument renders the model of polysemy highly economical and offloads the effort of storage of the semantic module to the pragmatic module as an information processing system (Sperber and Wilson 1986, 2002; Carston 2002). The nature of language contextualization has also proven cognitive with its basic elements echoing the three aspects of emergent structure (Fauconnier and Turner 2002) in the Conceptual Blending Theory. In sum, it is hoped that the proposed cognitive pragmatic approach to polysemy can provide a new perspective on the establishment of polysemy models by carving out the convergence of pragmatics and cognitive linguistics.

**BIBLIOGRAPHY**


ABSTRACT
This paper adopts a cognitive pragmatic and a Conceptual Blending approach to the semantics of in. It is argued that pragmatics, with context defined as a composite of surrounding linguistic items and shared world knowledge, can serve as an information processing system that derives the diverse interpretations of in from its proto-scene. The criterion for sense establishment is based on Grice’s Modified Occam’s Razor, according to which the meanings in use that can be considered an inferential product of the proto-scene and contextual factors will not be entitled a status of a distinct sense. The analyses have established two senses, ‘physical containment’ and ‘means’, and the other overlapping meanings discussed in previous studies are regarded context-sensitive uses by the above criterion. Furthermore, it is argued that this pragmatic model of meaning processing can position itself as cognitive in that it corresponds to Conceptual Blending Theory (Fauconnier and Turner 2002), with the details of the present model matches specifically three elements of emergent structure: composition, completion, and elaboration. The implication of the present study is at least two-fold: A context-based pragmatic approach to polysemy, assuming Modified Occam’s Razor as the criterion of sense establishment, is highly parsimonious so can greatly alleviate the problem of sense proliferation. On the other hand, the preposition study can delineate how the context-oriented model of polysemy integrates into Conceptual Blending Theory by carving out the correspondences between details of contextualization and elements of emergent structure, and is hoped to make contribution to cognitive linguistics from a pragmatic point of view.

AUTHOR
Wei-lun Lu is currently a Research Fellow in the Department of English and American Studies, Masaryk University, with a Ph.D. in Linguistics from National Taiwan University. Prior to his appointment at MU, he was a Fulbrighter to Rice University (2009-10), U.S.A., Guest Researcher at Leiden University (2011-12), The Netherlands, and an Assistant Professor at National Taipei University of Nursing and Health Sciences (Fall 2012). His research interest is cognitive linguistics and rhetoric, with a strictly corpus-based methodology.

ACKNOWLEDGEMENT
The completion of this work is partially supported both by the project “Employment of Best Young Scientists for International Cooperation Empowerment” (CZ.1.07/2.3.00/30.0037), co-financed by European Social Fund and the state budget of the Czech Republic.