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A cognitive approach to the polysemy of 'through'

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ABSTRACT

This paper is part of extensive research into the study of spatial prepositions in English and Spanish from the perspective of Space Grammar, as stated by R. Langacker (1987; 1991). What I present here is a semantic analysis of through, as an application of cognitive theory to the lexical field of prepositions. The paper attempts an explanation of prepositional polysemy in terms of basic conceptual structure such as image schemas, prototypes, and radial networks, as well as other perceptual properties that are central to cognitive linguistics. It also seeks to establish the validity of the descriptive model for this type of analysis, with the further hope that the notions of cognitive properties, experiential image schemas, and polysemic networks will suggest to future investigators different lines of application to other linguistic constructions.

1. INTRODUCTION

1.1. Goals and scope of the paper

This paper is the result of extensive research into the polysemy of a number of spatial prepositions in English, only one of which, *through*, is presented here. It is basically an **empirical** study, which should be inscribed within the context of applied linguistics. My aim is to present a concrete application of the linguistic model known as Space Grammar to the lexical field of prepositions. It is not intended as an exhaustive presentation of the basic concepts of Space Grammar, nor does it pretend to carry out a discussion of these concepts. In order to ensure a better understanding of the data presented, some mention will be made of the

main concepts which the model deals with, and which I have attempted to apply within the course of my research. The applied nature of the paper will impede an in-depth discussion of the many questions that may arise in regard to the concepts here presented. My aim is to provide a general overview of the concepts that are relevant **to the analysis of prepositions,** and this will not allow a discussion of theoretical issues. I will attempt to present an outline of the research process, with a description of the parameters to be considered for the analysis. An important part of the paper will be concerned with the presentation of the results that were obtained, in the hope that the usefulness of the application of the model may be more clearly appreciated by the reader. Finally, I will comment on the role of mental imagery in relation to lexical radial networks of the type I am presenting.

1.2. Methodological approach: antecedents

As mentioned above, the theoretical framework applied is the corpus of theories known as Space Grammar (Langacker, 1987; 1991). The methodological approach is similar to Brugman (1981) in her excellent study of *over*, with the additional contributions of Lakoff (1987). Brugman's pioneering work on the meanings of *over* did not make full use of the terms and notions to be found more precisely in the work of Langacker and Lakoff. However, the basic concepts and empirical methodological proceedures of the model are already present in her work. This linguist carried out a semantic analysis of the meanings of *over*, according to the spatial characteristics that each prepositional usage describes; i.e. according to the perceptual variables that are present in each configuration. Her description also took into account examples of figurative language. Brugman correctly pointed out that prepositions cannot be analysed regardless of syntactic considerations, a fact which my own research confirms. She made use of diagrams in order to illustrate the meanings of prepositions, but did not incorporate into her work a structuring of prepositional categories into radial networks of meanings. She showed how prepositional meanings differ in accordance with the minor shifts that occur in the semantic specifications of each configuration, pointing out how a semantic configuration, or gestalt, is in turn constrained by the characteristics of the verb and the nominal expression that follow the preposition. In spite of the importance of syntactic considerations in order to account satisfactorily for the analysis, Brugman's description is basically a **semantic** one. A similar proceedure has been adopted in the present work.

1.3. Use of the corpus

The examples used in my research have been taken from a computerized corpus of spoken English (J. Svartvik and R. Quirk (eds.), 1980.) For the

preposition *through*, the methodological proceedure was to take **all the occurrences of the preposition** that appeared in the corpus; each occurrence was then analysed in context, in order to identify the set of perceptual features that it presents. No examples were excluded unless they were found to be extremely repetitive, the objective being to obtain the highest number of examples in order to confirm and sufficiently illustrate the existence of an identified meaning or subcategory for the preposition. I would like to point out that not all the identified meanings presented examples with the same frequency of occurrence; those indicating Passage, or Completion, for example, were higher in number, while others, such as the reflexive uses, were much less frequent.

The use of a corpus in empirical linguistic research is, in my view, a fundamental tool for the analysis, which guarantees the objective study of the data. On the other hand, it requires a long and painstaking process of analysis, where nothing is pre-determined and nothing can be established 'a priori' in relation to the results. The investigator must rely on the validity of the theoretical model he is applying, however, in order to give a coherent interpretation of the data. Each new prepositional meaning should be accepted, and further supplemented, if necessary, with examples from other reliable sources. In this paper, only a handful of examples have been used that are not from the corpus; when this is the case, the source is explicitly mentioned.

1.4. The research process

The set of features identified for each subcategory constitutes the different senses of the preposition. The absence or presence of a given feature gives rise to the different configurations, not entirely in a discrete fashion, of the type to be found in componential analysis models, but rather on a scale of gradience. Further explanation of these specific semantic features or factors is presented in section 2.7. Of the examples that are included in the analysis, some are clear cases of a given category, while others constitute unclear or borderline cases. This is no surprise if we consider that polysemy is a semantic phenomenon that typically occurs on a gradience scale, and this fact is subsequently reflected in linguistic use. Such a claim is basic within a prototypical or cognitive model of categorization: in linguistic categories, and certainly in the case of prepositional categories, a great deal of semantic and functional overlap is to be found, and categories of prepositional meaning display fuzzy borders.

Each occurrence of the preposition was analysed regardless of its grammatical status, that is, regardless of whether the grammatical function of the prepositional particle is that of a preposition, an adverb, or the particle of a phrasal verb. The analysis applied being a semantic one, the procedure is found to override grammatical function, as the perceptual properties that conform

each meaning are unaffected by grammatical status. I suggest that this may be taken as a measure of the intrinsic validity of the model applied. However, syntactic considerations **must** be taken into account, as prepositions are basically **relational** elements, and as such, should be studied within the context of the syntactic elements that accompany them in each occurrence. The characteristics of these lexical elements constitute a decisive influence on the configuration that arises for each use.

To establish the different senses of *through* as a spatial preposition, the procedure is to start by analysing and identifying the cognitive properties of each individual sense, in order to classify them into distinct prepositional subcategories. The first semantic variable to consider is if there is Trajectory or not. Next, we will consider the way in which a given semantic factor, i.e. its presence, absence, or gradation, affects each category. These basic semantic variables ultimately account for the kinds of internal relationships that can be established among the subcategories of the entire prepositional category (see section 4). The schemas that arise are constituted and interrelated by the combination of the different semantic variables that, together, are found to be possible for a given category. Finally, we will note the cases of metaphorical extension for each category. The corpus should supply sufficient examples to illustrate the nature of each subcategory. These are defined in terms of the most salient cognitive feature that is present in the configuration: Passage, Destination, Medium, etc. A further step is to analyse the different variants that can be found within subcategories, as a result of: 1) non-specification of the landmark (LM), or 2) a change in the specifications that arise from the canonical characteristics of the LM, namely, its dimensionality. A description of how this can be done may be found in section 3.

Perceptual properties, then, can be seen as conforming the semantic 'body' or meaning of prepositions, and occur as **mental images** or gestalts in the minds of speakers. As such, we can attempt to represent them diagrammatically; this I have done wherever possible. Furthermore, these image schemas conform categories that can be organized into a coherent and well-structured radial network of meanings, derivable either from a basic schema (although for some prepositions a basic schema may fail to arise, as is the case with prepositions such as *by* and *past),* or from a prototypical schema if there is no basic schema (although with some prepositions more than one prototype can be identified, as is the case with *By*). In the case of *through*, which presents a rather homogeneous network of meanings, I have identified one basic and one prototypical schema (see section 4).

In conclusion, my objective is to present a concrete application of the cognitive descriptive model to the lexical field of prepositions, operating at the deepest level of linguistic analysis that is possible: i.e. the semantic level. The results themselves, i.e. the different senses of *through*, may find their utility in relation to the lexicon, second language acquisition, etc.

2. PARAMETERS OF THE ANALYSIS

I would like to address some of the main concepts that bear upon the analysis, noting that some oversimplification will be inevitable, as this is not a discussion nor a presentation of theoretical cognitive linguistics. My aim here is to present a view of the main points that have to be taken into account in the course of the analysis.

2.1. The linguistic categorization of space

The linguistic structuring of space is equal to the speakers' capacity to categorize space. It follows that the categorization of space is significantly different in different languages, not only linguistically, but also in its basic conceptualization. In space, all objects have dimensions. These dimensions can be real (canonical), or they can be conceptual, involving some kind of abstraction in the minds of speakers. The subsequent cognitive processes are mapped onto language by means of a transposition of the canonical dimensions of space, in such a way that the domain is conceptualized as having zero, one, two, or three dimensions.

It is not the aim of this paper to present a detailed treatment of the conceptualization of space, which indeed is one of the most important fields in cognitive studies. It will suffice to point out the relevance of the concepts 'domain' and 'dimensionality', the latter being one of the most basic parameters or specifications for the spatial domain in which the analysis of prepositions is carried out.

2.2. The spatial domain and dimensionality

Any kind of conceptualization, regardless of its degree of complexity, can function as a domain or context in the characterization of semantic structure. By this we are not referring to a textual, syntagmatic or pragmatic context, but rather to a field of experience or human knowledge, whether it be naturally or culturally established. Each domain has its particular specifications or parameters. There are very basic domains, such as time, space, smell, color, etc., and very complex ones, related to marginal or more elaborated fields of experience.

The domain in which prepositions are conceptualized is three-dimensional space: its specifications and parameters will completely determine the semantic analysis that is appropriate. The three canonical dimensions of space (height, length and width) are conceptualized in language, and more specifically, in prepositional usage, as zero dimensional, when the LM entity is conceived of as

a point with irrelevant internal structure, as in 'the train at the station'; one-dimensional, when the LM entity is conceptualized as having a vertical or horizontal axis, as in 'the child by the flagpole' and 'a cruise down the river', two dimensional, when the LM entity is conceptualized as an extended entity, as in 'the cows in the field', and three-dimensional, when the area is conceptualized as having volume, as in 'the marble in the box'. Not only the landmark entity but also the trajector is conceptualized accordingly in relation to its canonical dimensions: however, in prepositional usage it is the LM entity that bears directly upon the choice of preposition which is appropriate in each case.

The concept of dimensionality derives directly from the intrinsic characteristics of the spatial domain that prepositions describe. I have already pointed out how canonical spatial dimensions are categorized linguistically, via a process of cognitive abstraction. We can conceive of three dimensions: vertical, horizontal, and extension. In practice, this means that objects can be conceptualized as a dot, irrelevant as regards dimensionality (0 dimensions), as a line (dimension 1), as an extended area (dimension 2), or as an area with volume (dimension 3). In the course of my analysis, it has not always been an easy matter to determine exactly how physical objects are conceptualized in language in relation to their canonical dimensions. What is involved is a process of abstraction in close association with the speaker's capacity to construe the mental images that are involved in prepositional usage. As such, some degree of flexibility is necessary in relation to this type of mental imagery. Speakers categorize subjectively, in the sense that other factors, such as the speaker's knowledge of the world, cultural constraints, etc. will necessarily come into play. Further discussion of this point would by far exceed the scope of this paper.

2.3. The relational nature of prepositions

Although prepositional usage must be explained within the parameters of space, it should be noted that prepositions are basically **relational** elements, and as such, have to be analysed in relation to the elements that appear in each occurrence. Brugman (1981) pointed out that it is the nature of the lexical elements of the prepositional construction (TR + V + LM) that finally determine the appropriateness of each prepositional meaning. This implies that it is almost impossible to characterize prepositions regardless of syntactic considerations.

One of the most important constraints to the semantic analysis of prepositions is the nature of the verb: whether it is stative or dynamic, its aspect, semantic roles, etc. Prepositions, as relational elements, should be studied within the syntagmatic context established by the verb plus the nominal expression that

follows the preposition (unless the LM entity is left unspecified). Other than this, prepositional meaning also goes beyond the scope of the internal properties of the predication, including information that refers to the context, such as deixis and other pragmatic and extralinguistic factors, even of an encyclopedic nature. This does not imply, however, that prepositions, in themselves, have no semantic content.

2.4. Spatial characteristics of Trajectors and Landmarks

A detailed discussion of these concepts is not relevant for the purposes of this paper; however, some mention should be made of them to point out **how** they affect the analysis in terms of dimensionality and motion, with an indication of the general features that these entities present. The terms TR and LM are used in their conventional meanings (Langacker 1987). As regards prepositional usage, the TR entity carries out the relation described by the preposition, whereas the LM is the entity in relation to which the the relation is carried out.

(1) He put a finger through the crack.

In this example, 'finger' is the TR and 'crack' is the LM or reference point which permits the location of the TR. The term TR typically suggests motion; this is the case in predicates that involve processes. However, the definition of TR does not necessarily entail either physical or abstract motion: the term can be applied to both dynamic and stative relations. Consider the following example from Talmy (forthcoming), denoting a stative relation:

(2) Those rods go through the ceiling.

All relational predicates involve an LM as part of their profile, regardless of whether the LM is syntactically specified or not. (Langacker 1987, 1991). Linguistic convention allows for non-specification of the LM in cases like the following: when it is unique in its class; when the context, either pragmatic or textual, permits a clear identification, or in the case of reflexivity. In section 3 we will see how this works out in prepositional usage.

For the analysis, the following characteristics were borne in mind when describing the TR and LM entities: dimensions of TR and LM, shape of TR and LM, if it displays a vertical, horizontal or extended form, whether the TR is singular or multiplex, whether it is a stative or dynamic TR, if there is contact or not between TR and LM, if there is reflexivity, deixis, covering, type of trajectory, if there is real or implied motion, if there is end-point focus, etc.

Other more specific semantic factors for the analysis of *through* are mentioned in section 2.7.

2.5. Motion: objective, abstract, and implied trajectories

The movement of objects in space is fundamental to human experience. Consequently, the explicit analysis of how motion is conceptualized is a priority for an analysis of the type I am presenting.

A trajectory is the path described by the TR. The description will specify if it is an objective, abstract or implied trajectory, stating its direction and form, if there is point-to-point covering of the LM, etc. We will note if the trajectory is carried out by a dynamic verb with a singular TR, or by a multiplex, static TR, with no real trajectory.

In order to illustrate the concept of real and abstract motion, which is relevant in the case of prepositions, let us consider the following example:

(3) The train went through the tunnel.

This example indicates motion of a physical object in space that describes a real trajectory. However, *go + through* has other conventional meanings where the idea of motion is conceptualized in a non-spatial context. For example:

(4) They went through the alphabet.

Phrasal verbs indicate one of the ways in which motion can be abstract. The following examples, taken from Langacker (1987), are further illustration of the notions of objective and subjective motion.

(5) A black dog walked across the field, through the woods, and over the hill.
(6) The Linguistics Hall of Fame is across the plaza, through the alley, and over the bridge.
(7) There was a fire last night across the river, through the canyon, and over the mountain.

Example (5) is a case of real physical motion; the nominal subject is the entity that moves, and the trajectory is specified by the prepositional phrases that follow. (6) and (7) have no mobile TR; however, both examples exhibit prepositional phrases that describe such a trajectory. In these examples, the speaker may be intending to give a geographical orientation to the listener, or he may simply be specifying the position of the LM entity in relation to his own viewpoint, and he does this by **mentally describing** the path or trajectory that the listener would have to follow in order to get there, or to locate the static TR.

Subjective motion, which usually occurs in stative situations, contrasts with physical motion objectively conceived, in that it implies mental motion on the part of the conceptualizer. These 'unreal' trajectories are called 'implied trajectories', and are frequently encountered in the analysis of prepositions, particularly in the case of phrasal verbs, and in metaphorical usage.

2.6. Categorization and semantic structure

A category is a group of referents that are related to one another by perceptual and propositional similarity. To categorize is to conceptualize and to classify (in that order). It affects all cognitive processes and perceptions and, consequently, language and speech. Cognitive linguistics assumes as a fundamental premise the innate validity of the prototypical conception of categorization, viewing it as natural and deriving from the neurological constitution of human beings.

In the linguistic field, and more specifically in the domain of prepositions, we can distinguish several types of basic conceptual structure: 1) image schemas; 2) prototypes; 3) radial networks, and 4) semantic factors. A discussion of the first three types of conceptual structure is presented in section 4, as arising from the empirical results of the research. The next section presents a brief account of the specific semantic factors or perceptual properties that have been considered in the analysis.

2.7. The relevance of semantic factors

Semantic factors or properties are like building blocks that conform the conceptual substance of words. We can also view them as tools which allow the semantic analysis and classification of words.

Current cognitive theory, as opposed to the structuralist tendency, does not conceive of discrete 'features', or 'feature bundles'. Instead, categorization is carried out in terms of semantic properties, that are perceived in terms of degree or gradability, rather than in terms of 'yes' or 'no'. These perceptual factors are the most primitive semantic entities as regards the linguistic characterization of the spatial domain.

Lakoff (1987) claims that it is not necessary to give up entirely the notion of semantic compositionality, even though mental images are gestalts. Gestalts are directly meaningful, and decomposable, for methodological reasons, into factors, but these factors have no entity if we consider them in isolation. The conceptualizer's attention is not centered separately on the different specifications of the configuration; instead, the 'cluster' of properties is

perceived as psychologically simpler than the parts. Mental images are cognitive processes which the speaker is able to use because they occur repeatedly in our experience.

Other than the characteristics that arise from the configuration of the TR and LM entities, type of trajectory, etc., for the analysis of *through* we will consider the following perceptual properties or variables: Deixis, Viewpoint of speaker, End-point Focus, Reflexivity, Completion or Resultativity, Position, Passage, Contact/lack of contact, Medium, Destination and Goal, Direction and Covering. Clearly, the set of semantic properties that are relevant for the analysis of prepositions is not unlimited. On the other hand, the properties that are relevant will vary from one preposition to another. Not being pre-determined in any way, they are to be identified during the course of the analysis.

3. THE MEANINGS OF *THROUGH* AS IMAGE SCHEMAS

The following is a survey of the senses of *through.* I have identified ten general meanings for this preposition (see radial network structure in section 4). Each of these meanings constitutes a category, **in accordance with the basic perceptual factor involved**. The first example/s presented within each category is considered to be the most basic one, followed by minimal variants that arise chiefly when the LM entity presents some minor change of configuration, such as its dimensions, or some other secondary semantic factor or parameter. It should be noted that these variations do not change the general meaning of the preposition suggested for each subcategory, but the change in specifications does give rise to a different image schema. I have attempted to present a graphic illustration of these wherever possible; the reader will understand that an illustration of **all** the examples adduced would be tiresome as well as unnecessary.

As regards the examples presented, some are clear cases of the category while others are borderline cases; the inclusion in one category or another is a matter of degree. I hope, however, that the material presented will suffice to give the reader an idea of the tremendous complexity and subtlety of these categories.

3.1. Image schemas for through

A) Meanings with Trajectory that express Passage (motion into a point and then out of it)

I have identified this meaning as **prototypical** for the entire category *through*. The TR is irrelevant as regards dimensionality, and the LM is conceptualized as a zero-dimensional dot. Consider the following examples:

(8) I saw Bob hurrying through this door at one mile an hour just now.
(9) The Royal Carriage passed through the archway of Horse Guards.
(10) He drove straight through the middle of Cambridge.
(11) The bullet bit his flank and ripped through his stomach.
(12) He went straight ahead through numerous villages.
(13) The river makes a slow majestic curve right through the heart of London.

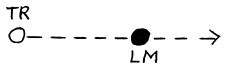

Fig. 1. (8-11)

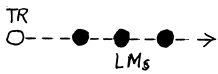

Fig. 2. (12)

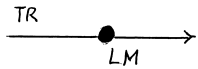

Fig. 3. (13)

(12) presents the peculiarity of a multiple LM. (13) presents a one-dimensional TR, constituting a clear case of what Talmy (forthcoming) calls 'fictive motion'.

Variant 1.

(14) He took the ship down through the Walney Channel towards the fitting-out yard.
(15) The carriage went clattering gaily through the streets to Buckingham Palace.

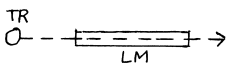

Fig. 4. (14)

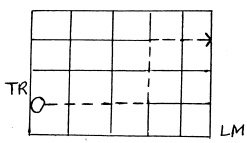

Fig. 5. (15)

These examples present a shift in the configuration of the LM entity. (14) presents a one-dimensional LM. (15) requires the conceptualization of a two-dimensional area in which to situate the entities (streets) covered by the TR. These, in turn, are conceptualized as being one-dimensional.

Variant 2.

The following group of examples all present two-dimensional LMs.

(16) I suggest you go through the park to get to the shop.
(17) A lane was opened through the crowd of spectators.
(18) They were sending me right down through the south of Russia into Crimea.
(19) I don't really relish the thought of going through northern Spain to get to Portugal.

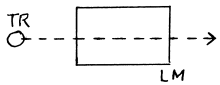

Fig. 6. (16-19)

Variant 3.

(20) The car went off through the swale of high grass.

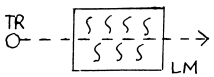

Fig. 7. (20)

Example (20) suggests a three-dimensional LM, as the expression 'swale of high grass' implies an extended area with volume (the high grass).

Variant 4.

(21) He drove a nail through the board.
(22) The down-turned fork went through the piece of meat.

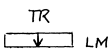

Fig. 8. (21)

Fig. 9. (22)

In the preceding examples the TR is regarded as one-dimensional. In the case of (21), the TR describes a Trajectory whose path and extension is equivalent to the TR itself, which is inserted into the LM and fitted entirely within its limits. This fit is only partial in the case of (22).

Metaphoric uses:

(23) I'd rather pay my eighty pence than go through that.
(24) He went through agonies.
(25) They had to put the project through all the appropriate boards of the University.

(23-24) present abstract LMs which designate some kind of difficult situation which the TR traverses, albeit metaphorically. In (25) the LM is the University, viewed as an institution, and 'put through' acquires the meaning

of traversal with the approval of that institution. These examples, expressing a metaphorical Trajectory with an achieved purpose, are borderline cases which could well fit in with the resultative/completive examples in group I. (I would like to point out that metaphorical motion, ocurring in the case of phrasal verb constructions like the ones presented here, is not representable diagrammatically).

B) Meanings with Trajectory that express only Trajectory (Path)

This is the meaning I have identified as being the most **basic** schema for the entire category *through*. Let us consider some examples.

(26) The ball came through a bit quickish.
(27) The ball screamed through away on a very high orbit through into the crowd.
(28) The weather held off. It sprinkled and the sun came through.
(29) If she came in at night and I was in bed, she couldn't come through and make a cup of coffee.

What these examples have in common is the non-specification of the LM entity. The conceptualizer, however, should have no difficulty in construing the nature of the omitted LMs. In all cases there is objective motion and a Trajectory with a specific directional axis. The following are tentative representations of these image schemas.

Fig. 10. (26-27)

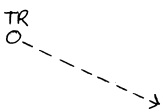

Fig. 11. (28)

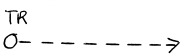

Fig. 12. (29)

Variant 1.

(30) The bullet hit his lower ribs and ripped on through.
(31) Contact lenses still allow the light to come through and hurt your eyes.
(32) There's an archway on the right. You go through. Then you turn right.

In the examples above, the LM is left unspecified, but is mentioned elsewhere in the context of the sentence. The spatial relation described is mere Trajectory, emphasizing the process or action denoted by the verb. Examples (30-31) are irrelevant as regards dimensions, whereas (32) is an unclear case in which the LM can also be conceptualized as three-dimensional. Formally, this

last example expresses Trajectory, but semantically it may be classified in group A, indicating Passage. The pictorial representation is similar to Fig. 12 above.

C) Meanings with Trajectory that indicate motion from one end of the LM to the other, without crossing its boundaries

All the examples in this subcategory present a transposition of the LM entity from the strictly spatial to a metaphorical domain. Consider the following examples.

(33) In our own journey through life, we have travelled so far and so fast that we've left our souls behind.
(34) They have fought their way up through the hierarchy and this is now declared policy.

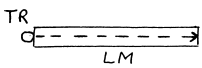

Fig. 13. (33)

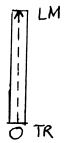

Fig. 14. (34)

In (33), the LM is conceptualized metaphorically as a one-dimensional entity that is traversed by the TR describing a metaphorical horizontal Trajectory. In (34), the one-dimensional LM has a vertical orientation and an upward Trajectory; this fact is further emphasized by the accompanying preposition *up*.

Variant 1.

(35) He wanted to hear the recording through beforehand.
(36) She read the book through carefully.
(37) He slept the whole night through.

These examples display a metaphorical conceptualization of the LM as an entity with physical extension (36), physical and temporal extension (35), and temporal extension (37). In each case, the preposition has the syntactic characteristics of a prepositional adverb, admitting a change in its position in the sentence. i.e. 'She read through the book carefully'. The particle can also be substituted by an adverbial phrase, i.e. 'from beginning to end.'

D) Meanings with Trajectory that express Destination

(38) The ball ran through to their goalkeeper.
(39) Send the papers through to me in Loughton.

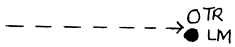

Fig. 15. (38-39)

In these examples, the LM, preceded by the preposition of destination *to*, may be conceptualized as a dot lacking any relevant dimensions. The dynamic verbs indicate objective trajectories with end-point-focus, i.e. the attention is centered on the end-point of the Trajectory.

Variant 1.

(40) We've got to head through France at some stage.

In (40) the LM is a two-dimensional extension. The meaning of *through* in this case is semantically equivalent to *into*. The subsequent relation described is Destination; the Trajectory has end-point focus, as in (38-39). However, this is an unclear case which could also be interpreted as indicating physical medium. i. e 'traversing France, via France', in order to reach a further point of destination not mentioned in the sentence.

Variant 2.

(41) The little boy put gelignite through the letter box.
(42) The burglar spent hours burning his way through the safe.
(43) I used to only see her when she came through the kitchen, to the kitchen.

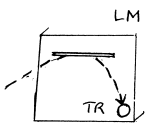

Fig. 16. (41)

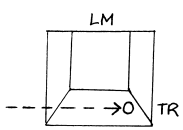

Fig. 17. (42-43)

These examples present three-dimensional LMs, that is, the LM is conceptualized as having volume. *Through* is equivalent to *into*, thus indicating destination. The Trajectory has end-point focus, as is the case with all the examples in this subcategory. It should be noted that the equivalence

through/into suggested for these examples has the semantic constraint of requiring a two or three-dimensional LM.

Metaphoric uses:

(44) Another call came through inmediately.
(45) Could you put me through to Mr. J. Runcible, please?

(44) has no specified LM, but we know from our knowledge of telephones that it is the place where the recipient of the phone call is situated. In this case, the viewpoint of the speaker must be taken into account, i.e. 'here/there', probably the former due to the use of the verb *come*, specifically marked for deixis.

(45) is a similar case. The LM is irrelevant as regards dimensions and requires the use of the preposition *to*, due to the specification of the LM.

E) Meanings with Trajectory that indicate motion within the limits of a multiplex LM

(46) They wound in and out through big trees as they drove.
(47) The wind blew through the trees.

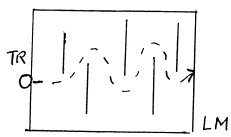

Fig. 18. (46-47)

In these examples, the LM is conceptualized as a two-dimensional surface or area dotted with vertical entities (trees) that do not permit a straight Trajectory of the TR, which has to go around them in order to continue its Trajectory.

(48) Monkeys swing through the trees.

In (48), the plural one-dimensional LM presents the peculiarity of offering support to the multiplex TR, with contact of the TR and LM.

(49) They cruised through the Dardanelles.

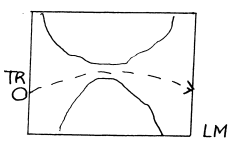

Fig. 19. (49)

This sentence is problematic to construe as an image schema. The speaker/listener will need to have some extralinguistic knowledge of Geography in order to know that the Dardanelles is a strait, thus avoiding being misled by the connotations of the verb 'cruised' and the plural LM 'Dardanelles', which would seem to imply 'islands' as the meaning of the nominal expression. The diagram I present above is a tentative one, and makes no claim at geographic accuracy.

Cases such as this bring to the fore one of the ways in which categorization and imagistic processes may be subjective, as mentioned earlier, due to the fact that they are dependent on the speaker's knowledge of the world, in basic as well as more specific domains. On the other hand, some degree of flexibility is necessary to account for the individual conceptualizations that speakers may have of a given configuration, as image schemas admit of perspective, with top, side, and front views, etc.

Metaphoric uses:

(50) The chorus talks about the love that goes on through animals and everything.

In this example, the TR is an abstract entity, as is the action described by the verb. *Through* is equivalent to *among;* this can be established for all the examples, both literal and metaphorical, that I have found in group E. The appropriate use of *through* in each case is constrained by the necessity of a two-dimensional, multiplex LM. All the examples present an irregular Trajectory. In this group, the semantic equivalence of *through/among* is a close one, even more so than in the previously mentioned equivalence of *through/into* expressing Destination. It would seem that only a matter of linguistic convention determines the appropriate use of the preposition in order to convey this meaning of motion within the limits of a multiplex LM. If the LM is a dual one, the appropriate preposition is *between* instead of *among.* For this reason, example (49), which presents such a dual LM, could also be classified in group A indicating Passage.

Group E can be distinguished from group F indicating Covering in the following way: in E, the TR indicates motion within the limits of a multiplex LM conceptualized on a **double plane**, whereas in F, the TR, either singular or multiplex, describes a Trajectory which covers, to some extent, the **whole extension** of the LM.

F) Meanings with Trajectory that express Covering

(51) I've been bumbling through the West Country and talking to old friends and things.

(52) While he was walking through the countryside, he saw some black grouse feeding.

(53) We were just walking through this museun having a sort of political discussion.
(54) He's on a tour in Yugoslavia, going through three countries, and in one of them he's giving fourteen lectures.

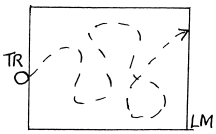

Fig. 20. (51-53)

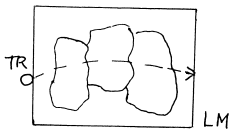

Fig. 21. (54)

In these examples, the LM is an extension or two-dimensional surface. The TR describes an irregular Trajectory, partially covering the area. *Through* is semantically equivalent to *around.*

Metaphoric uses:

(55) The message was transmitted throughout the organization.
(56) He's popular throughout the country.
(57) We've got twelve manufacturing divisions throughout the country.
(58) The organization operates throughout the United Kingdom.
(59) The new kitchen is painted throughout.

Throughout in these examples is a mass quantifier denoting pervasiveness or Covering. i.e. 'all over'. The Trajectory is an abstract one in (55) and (58); the rest of the examples present stative verbs. In (56) what is expressed is an attribute of the grammatical subject. In (59), the kitchen is the only participant as regards semantic roles, and the copulative verb, followed by a past participle and lacking a nominal complement, takes on a passive meaning.

G) Reflexive uses

(60) The film runs through at a terrific speed.
(61) The reel went through slowly.

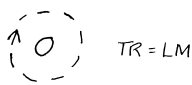

Fig. 22. (60-61)

These examples present reflexive TRs, i.e. the TR is grammatically and semantically equivalent to the LM. Both entities are irrelevant regarding

dimensions. The Trajectory is described by the gyratory motion of the film and the reel, respectively.

Variant 1.

(62) The town rises steeply through cobbled ways up into the hills.

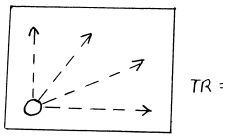

Fig. 23. (62)

In this case, the TR (town) constitutes a case of fictive motion, where it is the TR itself that extends into the hills by means of the streets. The TR/LM is conceptualized as an extended, two-dimensional area. The preposition and its complement (cobbled ways) also indicate the medium by means of which the process of rising takes place, presenting a borderline case in relation to the next subcategory that expresses Medium. This group presents no constraints regarding the dimensions of the LM.

H) Meanings with Trajectory that indicate medium

(63) We'll go to the South of France for a week and then we'll come up through Belgium and Luxembourg.

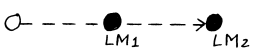

Fig. 24. (63)

Both the TR and LM are zero-dimensional. The preposition and its complement describe Medium: the TR reaches 'via' the LM a further point of destination which is not specified in the context.

Variant 1.

(64) I saw a wallaby through the binoculars.

In this case, both TR and LM are irrelevant as regards dimensions, as in (63) above, but in (64) the LM is the instrument that permits the achievement of the action expressed by the verb.

Variant 2.

(65) A pipe ran from the well through a pump.

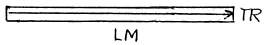

Fig. 25. (65)

In this example, both TR and LM are one-dimensional. The LM (pump) indicates Medium or Instrumentality, and the Trajectory again describes fictive rather than objective motion.

Variant 3.

The following are examples in which the LM is a two-dimensional area.

(66) I can see them through their French windows.
(67) The sun was shining and streaming through their French windows.

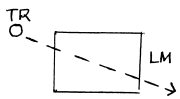

Fig. 26. (66-67)

Metaphoric uses:

(68) Changes in politics don't emerge through the Right.
(69) He didn't come through the British Council. He came on a Goodman Fellowship.

Here the meaning of *through* is Agency, permitting the fulfillment of the action described by the verb; the LM designates the agent that makes it possible, i.e. the Right, and the British Council.

I) Meanings without Trajectory that indicate Position

(70) He was sick with the wound through his full belly.
(71) He was weakening with the wound through his lungs.

In these examples, *through* is commutable with *in*. The copulative verb, which is implicit in the meaning of the expression, is omitted: the wound **that**

is through his full belly/lungs. It is debatable whether an implied mental trajectory of the type mentioned in 2. 5. earlier may be posited for these two examples, (the context does not imply that the speaker is giving instructions as to the location of the wound). Both TR and LM are irrelevant as regards dimensions.

The following example, taken from Quirk et al. (1985), is a clear case of implied or subjective motion, with added End-point Focus.

(72) The village is through the wood.

Here, an extra factor to be considered is the Viewpoint of the speaker. The village is situated at the other end of the wood with respect to the location of the speaker, i.e. 'from here'. The sentence can be interpreted as indicating how one can get to a certain point in space: 'going through the wood'. In this way, an implied mental Trajectory could be posited for the schema.

Fig. 27. (70-71)

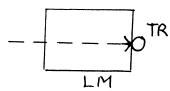

Fig. 28. (72)

J) Meanings that indicate Completion and Result

There is a completive or resultative meaning when the action described by the verb reaches a culmination or conclusion, within the boundaries of the LM.

All the examples in this subcategory present abstract Trajectories, constituting examples of metaphorical motion that is not representable diagrammatically. All are cases of phrasal verb constructions in which the preposition still retains its spatial meaning, although it is a metaphorical one. The particle, in these cases, has a clear **syntactic** nature, carrying out a number of semantic functions that are intrinsic to the meaning of the verb (see Talmy, 1991). *Go* and *Get* are the verbs that come up most frequently for the category.

I have classified them into three groups, according to the minor differences in meaning that they present.

I) Uses that indicate Fulfilment and Completion.

(73) He went through his desk.
(74) He went through a fortune in a year.
(75) I finally got through the text.
(76) She looked madly through all the magazines she hadn't yet thrown out.

(77) The teacher went through all the vowel sounds.
(78) As our program develops, more people go through it.

II) Uses that indicate Completion and favourable Result.

(79) At the moment, the readership has gone through council.
(80) Can you get through without doing the set books?
(81) There's a poor little fellow who's trying to get through finals for the third time.
(82) They railroaded the bill through Parliament.
(83) He lost four pints of blood and he bloody well shouldn't have pulled through.
(84) They carried through the policies on which they were elected.

III) Uses that express Termination.

(85) He is through with the job.
(86) He did not know how his wife felt except that she was through with him.
(87) You're through; that was your last chance.

We find the added syntactic element *with* when there is a nominal expression after the preposition, as in examples (85) and (86).

4. *THROUGH* AS A RADIAL NETWORK

The following is the graphic representation corresponding to the radial network for *through.* The general meaning of each category is summarized below, in order to facilitate an overview of the category as a whole, along with an indication of the cognitive status of each schema.

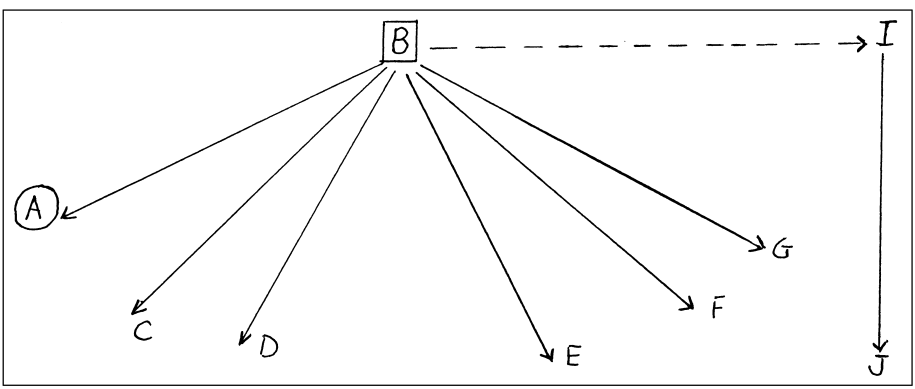

Fig. 29. Radial network for *through*

The meanings of *Through* may be summarized in the following way:

A: Trajectory + Passage.
B: Trajectory (Path).
C: Trajectory + Motion from one end of the LM to the other, without crossing its boundaries.
D: Trajectory + Destination.
E: Trajectory + Motion within the limits of a multiplex LM.
F: Trajectory + Covering.
G: Reflexivity.
H: Trajectory + Medium.
I: Position.
J: Completion and Result.

The cognitive status of the category may be outlined as follows:

A = prototype
B = basic schema
A, C, D, E, F, G, H, I = instantiations of B
I = instantiation of B. The semantic factor that links B and I is the existence of an implied mental Trajectory in I.
J = instantiation of I presenting a transposition into a metaphorical domain.

4.1. Internal relations of schemas

The structure of *through* as a radial network is composed of ten subcategories: eight with Trajectory + diverse semantic factors; one without a Trajectory + the semantic factor Position, and one composed entirely of metaphorical uses + the added factor of Completion and Result.

In order to structure the category, two types of categorizing relationships between nodes should be distinguished: relations of 1) **elaboration,** and 2) **extension**. Elaboration occurs with reference to the basic schema, describing compatibility among the schemas, and offering a more detailed specification of the elaborated schemas. In this way, schemas A, C, D, E, F, G, and H can be viewed as elaborations or instantiations of the basic schema B, which expresses mere Trajectory or Path, and presents no specification of the LM entity. This relationship occurs on the **vertical** dimension of the network. Extension, on the other hand, implies an inconsistency or contrast with respect to the basic schema. It implies that some important specification of the referent schema has to be **modified or suspended** in the second configuration in order to make it derivable from the referent schema. In the case of *through*, I is an extension of B in the sense that it lacks an objective Trajectory. The required cognitive relation of derivation from B is provided through the existence of an

implied mental Trajectory that links both schemas. In turn, J is an elaboration of I. Extension implies categorizing relationships on the **horizontal** dimension of the network. In this way, the instantiations of the basic schema all enter into relationships of extension with each other, on a horizontal dimension. The semantic differences among extensions are **the different perceptual properties** that have been identified as possible for the preposition, constituting its different senses. Both elaboration and extension involve schematic categorizing relationships. If we view elaboration as a vertical relationship, and extension as a horizontal one, it is possible to trace the evolution of the lexical category in all its complexity, growing via both types of processes, as manifestations of a single unified expansive mechanism that permits the necessary scope for semantic variation.

It is difficult to establish a theory that will account for the relations of the different schemas. Other than identifying and describing the semantic variables present in the network, and pointing out the basic schema and the prototype, the relationships among schemas seem to be neither predictable nor arbitrary (Lakoff 1987). Schemas do not relate to one another in terms of fixed rules. Instantiations and extensions are motivated by perceptual considerations as well as by linguistic convention. The **motivation** for the more specific uses should be viewed as arising from the perceptual and cognitive complexity of the human mind in relation to the objective, external phenomena of the spatial domain.

4.2. Basic schemas and prototypes as cognitive processes

Basic schemas, prototypes and peripheral schemas coexist in a given prepositional category; my research into prepositional usage shows that they are usually independent entities, and do not coincide in the same image schema. Not all prepositional categories present a well-defined basic schema, though all present prototypical schemas. Only in the case of categories **that lack a basic schema** would I suggest that the basis for elaborations and extensions within the category would seem to be the prototype. This occurs in the case of prepositions such as *by* and *past*. The distinction could be adduced as further evidence to suggest the unpredictability of the internal structure of polysemic categories, while maintaining strong claims for the notion of coherent internal motivation.

Radial networks such as the one presented here have a cognitive foundation in the human capacity for extension. Neither the concept of schematicity nor the concept of prototypicality can be viewed as absolute; both notions arise naturally and simultaneously from the innate nature of the human capacity to categorize. However, the distinction between schemas is a useful one, and should be maintained for methodological purposes, and

because it provides a logical explanation for the ways in which the different senses of the preposition may be structured into a complex and coherent network of meanings.

On the other hand, the distinction among schemas makes no irrefutable claim at establishing the **genesis** of the polysemy of prepositions. To claim that the generator is either the basic schema or the prototype, is, to my mind, a risky affair. The prototype is generally viewed as the gravitational centre for the category simply because it is the member which displays the highest degree of cognitive salience. It is a debatable issue whether these are sufficient grounds to attribute the prototype the status of generator for the category. I have found no evidence to suggest that there are any aprioristic linguistic rules that apply in that respect.

In contrast to natural categories (Rosch 1978), prepositional categories show that the prototype complies with the requirement of maximum internal representativity for the category, but does not comply with the requirement of maximum external representativity. In my analysis of a number of English spatial prepositions (*along, by, past*, and *through*), I have found that the prototypical nodes for the last three prepositions display identical semantic properties, i.e. Trajectory + Passage, although with sufficient semantic differences to exclude an overlap in meaning, and consequently, in usage (Martín 1999). Clearly, the notion of prototype in linguistic categories is defined by considerations such as **the nature and specific parameters** of the category at issue, that is to say, it is always defined by **empirical** considerations. Linguistic categories, in contrast to natural ones, are hardly ever universal, and are language-dependent to a high degree. Notwithstanding, the notion of prototype is a useful semantic concept, and undoubtedly real from a cognitive point of view.

As to the cognitive prominence of the different nodes, the basic schema is usually of negligible importance as to its cognitive salience, in contrast to the clear cognitive salience of the prototype. The scope and limitations of this paper do not allow a detailed discussion of this topic, which would involve going into theories of mental representation and processing that are beyond my explanatory possibilities. It should suffice to say that, as Langacker points out, the conventional knowledge of the speaker in relation to a given construction is not provided by just **one** structure, such as a prototype or high-level abstract schema. The cognitive representation of a polysemous construction is best captured by means of a complete schematic network, in which each node is a cognitive routine carried out by the speaker/conceptualizer.

Although radial networks of image schemas are particularly well suited to the description of lexical categories, the radial network model is applicable to any category of linguistic relevance. Further research should be carried out along these lines, in order to explore the possibilities of the model.

4.3. Metaphorical use of prepositions

The study of metaphorical processes is basic to cognitive studies. Cognitive linguistics makes no clear distinction between literal and figurative language, and it is maintained that the latter should be accommodated as an integral part of linguistic organization. Metaphorical conceptualization is regarded as a factor that may interact with grammatical processes, and is viewed as an important semantic phenomenon. In this paper, I have presented sufficient examples of abstract usage to suggest the correctness of this view in the field of prepositions. Abstract extensions of prepositional usage may be regarded as a special type of extension motivated by perceptual similarity. The association is brought about by the existence of a common domain that provides the speaker with the perception, at least partial, of the association between the original meaning of the expression, and its extended meaning. On the other hand, the existence of cultural and experiential metaphors conventionally sanctions and allows for the regular metaphorization of spatial uses of prepositions (Lakoff and Johnson 1980).

Through is particularly rich in its application to the formation of phrasal verbs and in its possibilities for metaphorization. I would like to point out that, even as a constituent of a phrasal verb, the analysis of prepositions in relation to their spatial characteristics is possible and relevant. In the cases that I have encountered, prepositions display similar semantic characteristics, whether they are literally or metaphorically used. This is true to the extent that the fuzzy borders to be found among the literal uses are also present in metaphorical usage. Consider the following example:

(88) She's gone very thoroughly through the Dickens and Wilson set texts with us.

In this example, it is difficult to establish whether the meaning of the preposition is either Passage or Completion.

Although Langacker treats abstract language as a phenomenon of semantic extension, it can also be viewed, as does Lakoff, as a specific type of categorization. These views do not rule each other out, and it may prove fruitful to consider the phenomenon from both points of view, in a complementary way.

5. CONCLUSION

It is my belief that the application of a semantic description to the analysis of prepositions provides the linguist with a sound methodological foundation, yielding clear and satisfactory results. These are more than sufficient grounds

to validate the cognitive descriptive model, from a theoretical as well as from a practical point of view.

The meanings of *through* can be grouped into categories that conform a coherent radial network structure, in which we can identify a basic schema and a protypical schema, along with other less specific schemas. The schemas are related internally by transformations that are ultimately attributable to cognitive factors. Image schemas, as mental constructs of a holistic nature, based on experiential considerations, can successfully capture the meanings of prepositions. Finally, the structuring of lexical items into radial networks proves to be a convenient means of representing and accounting for the semantic phenomenon of polysemy.

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