OVER Again:
Image-Schema Transformations in Semantic Analysis

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INTRODUCTION

When Lakoff (1987) adapted Brugman's (1981) pioneering study of OVER, one of his main purposes was to demonstrate the use of image schemas and "natural image-schema transformations" as an alternative to bundles of distinctive features. In Lakoff's (1987:444) words: "The naturalness of these [image-schema] transformations relative to our visual experience suggests that image-schema transformations and the schemas they relate are not propositional in character ... Rather, they are truly imagistic in character."

In practice, however, Lakoff does not rely exclusively on image-schema transformations to relate the various senses of OVER. He also uses "instance links" and "similarity links", and these links are not so clearly imagistic in character. They are based on specifications of the landmark such as 'vertical' or 'extended', or on other "elements" of the schemas such as 'contact', and these "shared properties" tend to function much like distinctive features, to the point that — as Vandeloise (1990:428-9) has correctly observed — Lakoff's similarity links implicitly respect the "minimal distinction principle" of feature analyses (Lakoff 1987:167 notwithstanding). His image schemas can even undergo "decomposition" into "subschemas" such as those

for ABOVE and ACROSS, so that all mention of a single schematic gestalt for OVER can disappear in a formula like ABV.NC.X.P (Lakoff 1987:426), which looks and acts suspiciously like a bundle of distinctive features. As Vandeloise (1990:435) puts it, Lakoff's analysis "wants to be analogue" but ultimately falls back on propositional features to a considerable extent.

This halfhearted use of distinctive features brings weaknesses to the analysis of OVER which have been justly criticized, so that Vandeloise (1990) for one has called for a more rigorous and thorough use of propositional representations.[1] The description of OVER which will be presented here, however, takes a very different approach to improving the Brugman/Lakoff analysis: eliminating propositional features altogether and taking the role of image schemas and their transformations more seriously even than Brugman and Lakoff do. Given the right central schema for OVER, all of its spatial variants can be derived either directly or indirectly using nothing but natural, independently-motivated image-schema transformations.

THE CENTRAL SCHEMA

Brugman and Lakoff presume that the central schema for OVER is a combination of the stative location ABOVE and the boundary-traversing path of ACROSS, resulting in a flat trajectory that traverses the extreme boundaries of the landmark (LM), neutral with respect to 'contact'. They take as best examples instances such as:

(1) The plane flew over the hill.

(2) The bird flew over the yard.

Contact with the LM may cause the trajector (TR) to follow an arc-shaped path:

(3) Sam drove over the bridge.

(4) Sam walked over the hill.

(5) Sam climbed over the wall.

Then, much later in his analysis, Lakoff (1987:433-34) mentions "one of the most common instances" of the central schema (in order to account for reflexive senses such as *roll over* and 'excess' senses based on 'overflow'):

(6) The dog jumped over the fence.

In this sense, he points out, the trajector begins and ends on the ground and the result is a "semicircular path", resulting in a sense he characterizes as 1.V.NC.G.

Yet if we forget ACROSS for a moment and simply imagine best examples of OVER, it seems that the 'semicircular path' sense of OVER is *the* typical sense, reflected in most of the Brugman/Lakoff examples (including (3)-(5) above). As a recurring basic-level image schema grounded in experience, what is normal is to *step over*, *jump over*, *throw over*, *climb over* — all of which involve an arc-shaped path. The only good flat-trajectory examples are those like (1) and (2), birds and planes *flying over*, and even they presume a taking off and a landing, however backgrounded these events may be. (See 'profiled segments' below for further discussion.)

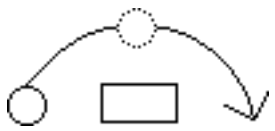

Figure 1: The Central Schema

It seems intuitively more accurate to posit a central schema that looks like Figure 1.[2] The schema presupposes a canonical side-view oriented with a horizontal ground (and kinetic base) and a vertical gravity axis — i.e., the orientation of an upright

observer looking straight ahead. This perspective reveals the intermediate point as the vertical peak of the path and thus its most salient single point, making the schema maximally distinctive. The path semi-encloses the LM, i.e., it describes a semicircle which, if continued full circle, would enclose the LM. ACROSS can be contrasted with OVER as the flat-trajectory alternative focusing on boundary traversal, without any vertical orientation and without any suggestion of enclosing.

When a curved path is taken to be central to the meaning of OVER, several improvements follow immediately.

1. The suggestion that OVER contains ACROSS and ABOVE as subschemas disappears along with the flat trajectory (which was presumed in order to incorporate ACROSS). The only real reason to assume that ABOVE and ACROSS are subschemas of OVER is to keep it minimally distinct from them; but if we forget discrete meaning components and take the notion of image schemas seriously, then basic-level image schemas should be maximally distinct from each other! The similarities between OVER and ACROSS (and ABOVE) remain apparent. Moreover, a central schema with a curved path reveals the many similarities between OVER and AROUND, which are obscured by a flat-trajectory schema.

2. As Vandeloise (1990) has already suggested, the distracting role of the shape of the LM disappears as irrelevant. The main reason Brugman and Lakoff need to introduce features such as 'vertical' and 'extended' is that they need them to derive a curved trajectory from the flat one they presume to be central![3] The only other purpose served by LM features in their analysis is to introduce LM boundaries to be traversed by the TR, but if we do not presume that ACROSS is a subschema of OVER there is no longer any need for those boundaries either. The LM is simply a holistic

object which is semi-enclosed by the trajectory. If we eliminate LM features from the analysis, our attention is properly redirected to the moving TR and its path.

3. The confusing role of 'contact' also disappears as largely irrelevant, apart from its incidental role in the kinetic interaction of 'covering path' variants. The only real purpose of 'contact' in the Brugman/Lakoff analysis, aside from its role in forcing the TR to conform to the LM shape (thus explaining the curved trajectory), is to contrast with ABOVE (or with ON).[4] But the contrasts between OVER and ABOVE (and ON) will be adequately explained below without recourse to 'contact' as a component of OVER.

4. Most significantly, if we take the arced path to be central we can take the image schema seriously enough to account for all of the variants of OVER using natural, independently-motivated image-schema transformations (or metaphorical applications of spatial senses to other domains). Distinctive features in the traditional sense simply become irrelevant for a basic-level category like OVER.

MULTIPLE TRAJECTORS

Two highly general operations will be presumed in the analysis. One, the multiplex-mass transformation, is well known and requires no further comment here (see e.g. Lakoff 1987:428,441-42). The other, the ability of a construction with a single predicate to describe multiple events with multiple TRs, is obvious though rarely noted explicitly. As it applies specifically to OVER, a series of TRs may move along the same path in sequence, for example sheep jumping single file over a fence, giving the observer the effect of a recurring loop.[5] Or two or more TRs may move in separate

OVER-arcs simultaneously relative to the same LM, whether in uniform parallel motion as in (7), or in complementary paths as in (8):

(7) The runners were still together as they went over the hurdle.

(8) She raised her hands over her head.

We can also imagine two boys jumping over the same fence in opposite directions at the same time, or even a swarm of fleas jumping over a LM in myriad directions simultaneously. And if the LM has a circular shape, a group of TRs can go over it in any imaginable horizontal direction away from or toward the center, for example a herd of horses escaping simultaneously over a circular corral fence.

PROFILED SEGMENTS

The most obvious transformation operating specifically on OVER's central schema is a synecdochic (whole-for-part) focus that profiles characteristic segments of the path.[6] In order to be a recognizable transformation of the OVER-schema, the profiled segment must include the characteristic peak point of the arc. Similar transformations are evident with other curved-path prepositions: walking around a house, for example, can mean a complete circular path or a semicircular path past an obstacle.

Central region. One obvious instance is the one illustrated in (1) and (2) above, taken by Brugman and Lakoff to be the central schema. This variant simply profiles the central region of the arc near the salient defining peak (Figure 2). The rest of the path (upward from the starting point and downward from the peak) is implicit pragmatically. Moreover, we do not normally perceive such 'flying over' events as truly straight paths;

the oval nature of our visual field tends to make the path appear slightly curved in conformity with an arced sky from horizon to horizon.

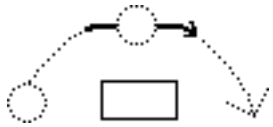

Figure 2: Profiled Central Region

Downward trajectory. Another variant profiles the downward trajectory of the second half of the arc from the intermediate peak to the endpoint:

(9) Sam fell over the cliff.

Again, the peak point is enough to characterize OVER, so that the rest of the path (reaching the cliff from some starting point) can be pragmatically implicit (Figure 3). Compare the non-prepositional extensions which profile the last portion of the path as the TR clears the LM rather than landing 'on' it or falling short of it (*overshooting a target*, *overstepping bounds*, *overlooking something*).

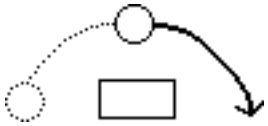

Figure 3: Profiled Downward Trajectory

Upward trajectory. The third obvious profiling possibility, focusing on the upward path from a starting point to the peak (Figure 4), is reflected in sentences like:

(10) The plane climbed high over the city.

(11) The sun came up over the mountains.

This variant is relatively rare because such situations do not usually imply a continuation of the path toward semi-enclosing the LM. Cf. ABOVE or ON. OVER is more commonly used to describe the arced upward motion of extending TRs that *lean over*, as we will see below.

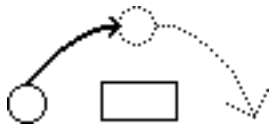

Figure 4: Profiled Upward Trajectory

Freeze-frame at the peak. Profiling the central region of the OVER-arc reaches an extreme when the TR seems to pause in "freeze-frame" suspension at the peak of the arc (Figure 5):

(12) The plane should be over Baltimore by now.

Now OVER is nearly synonymous with ABOVE, except that OVER retains the backgrounded sense of continued motion on a journey that will eventually lead to a landing.[7]

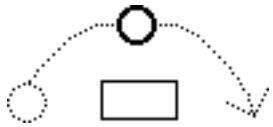

Figure 5: Freeze-Frame at the Peak

RESULTING STATE

After any perfective description of a path there is a pragmatic default assumption that the TR remains wherever the speaker last put it, and that endpoint location may be foregrounded in resultative constructions:

(13) Where is Sam? — He went over the bridge.

This focus becomes a separate sense when the OVER-phrase occurs with a stative verb:

(14) Sam is over the bridge now.

In resulting-state variants, as opposed to profiled path segments, the entire trajectory is intact; it is simply less salient than the endpoint location (Figure 6).[8]

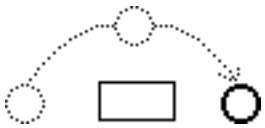

Figure 6: Resulting State: Endpoint Location

Subjective path. The resulting-state instances involve a normal OVER-path, in which a TR moves in the prescribed arc to an endpoint and that endpoint location is then profiled. That sense should not be confused with closely related instances like the following (Lakoff's "end-point focus"):

(15) Sam lives over the bridge.

Now Sam is being located at the endpoint of an OVER-arc as in (14), but there is no suggestion that this is the path that he took to get there. We are dealing here with "subjective motion" (Langacker 1990), a mental traversing of the OVER-path by the speaker/interpreter (Figure 7). Now the implicit starting point of the path is not a

known prior location of the TR Sam; it is a reference point established separately (e.g. 'from San Francisco'), frequently deictically (e.g. 'from here').[9]

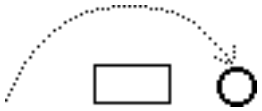

Figure 7: Subjective Path to Endpoint

This sense, directing an interpreter's imagined movement along a path from a reference point to a location, reflects a highly general operation applicable to any path schema.[10] Compare: 'Sam lives around the corner/ across the street/ through the woods/ down the road/ past the post office/ off the beaten track/ far away/ out of town/ two miles from here/ further south/ toward town'. As Deane (1993:99) points out, these subjective paths are in kinetic space rather than visual space, a fact which explains the correlation that Lakoff (1987:423-24) observes between this sense and 'extended' LMs and 'contact'. As Brugman (1981:24-26) realized, the only restriction on OVER's use is simply the pragmatic one that a subject would actually take the route to get to the location. *Sam lives over the wall* is perfectly acceptable for a context such as the Berlin Wall or a prison, in which that might actually be the path to take.[11]

EXTENDING PATHS: LINEAR-EXTENDING TRAJECTORS

In one reading of (16), the rope is not a holistic TR maintaining a constant shape as it moves entirely over the LM; it is an extending TR part of which stays at the starting location:

(16) She threw the rope over the limb.

In this case, the focus is on the leading point of the TR. The resulting shape of the whole extended TR corresponds (more or less) to the summarily-scanned path taken by the leading point (Figure 8). The type is commonly used for the act of reaching over something to get something further away (with metaphorical extensions like *pick Ingrid over Alice*).

Figure 8: Linear-Extending Trajector

Segment profiling applies as with point-like TRs (Figure 9):

(17) We dropped the rope down over the edge.

(18) We stretched the rope over the yard.

(19) He leaned over the rail.

The use of OVER in (18), as opposed to ACROSS, still implies a backgrounded curving motion, for example a lifting and dropping action (or possibly a vertical connection with the ground, for example by clothesline poles at each end). See also 'linear-extended trajectors' (Figure 16).

Profiled upward arcs are especially common in situations like (19), when the TR is a person who leans over something so that the head (and eyes) are at the peak position. The type consistently implies an abstract completion of the arc, often by visual projection downward. There is also frequently a projected diffuse 'covering' force directed toward the LM — see (23), as well as metaphorical extensions like *watch over*, *oversee*, *influence over*, *power over*, *hours over a hot stove*, *grieve over*, *cry over*.

There are well-established extensions with dual TRs juxtaposed over a common object of interest (e.g. *spend hours over cards*, *talk over lunch*, *fight over a toy*).

Figure 9: Profiled Linear-Extending Trajectors

Resulting state: linear-extended trajectors. When the leading point of an extending TR traces an OVER-arc, the natural result is a TR which is now extended in the shape of the arc (Figure 10). Compare (16)-(19) with (20)-(23):

(20) The rope is hanging over the limb.

(21) The rope is hanging over the edge.

(22) The clothesline is suspended over the yard.

(23) The police found him leaning over the body.

Now, however, there is no actual movement on the part of the TR; the OVER-arc is being scanned visually in the imagination of the interpreter. Compare the stative 'covering' senses below.[12]

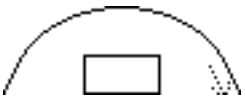

Figure 10: Resulting State: Linear-Extended Trajector

Path-trajectors. Examples (20)-(23) involve visually tracing the shape of a linear-extended TR. In a special kind of resulting linear TR, the extended TR is a path in kinetic space such that the subject can imagine actually moving with it as well as just

scanning it visually, so that there is true "subjective motion" (as in the subjective paths to an endpoint above):

(24) a bridge over troubled waters

(25) That road leads over the mountains.

The notion of subjective movement is evident in the frequent use of verbs like *lead*, *go*, or *run* (compare *hang*, *lean*, or *extend*).[13]

Compare Lakoff's (1987:442) discussion of the transformational relationship between a "0DMTR" (zero-dimensional moving TR) and a "1DTR" (one-dimensional TR).[14] Like the subjective paths to an endpoint, this usage is quite systematic with path expressions and involves kinetic space as well as visual ('The road goes around the mountain/ across the desert/ through the woods/ along the river/ past the post office/ off the beaten track/ far away/ out of town/ further south/ toward town').

SHIFTING PERSPECTIVES: ADDED DIMENSION

All of the variants considered so far presume the scene is conceived from the side, oriented with the earth's surface and the gravity-axis vertical as secondary LMs. We are not limited to that perspective, however; we can and do also imagine the scenes from other perspectives. For example, we may well imagine sentences (3)-(5) from the point of view of the TR Sam as well as from the canonical side-view linked to the central schema, so that we interpret the scene as a complex cluster of images from more than one perspective. The central schema (or a straightforward transform of it) is still included in the interpretation as one of the relevant images, the one most directly and distinctly associated with OVER; but it is not the only one.

When we do add another perspective on the conceptual scene, we become aware of some of its aspects which are obscured from the canonical side-view:

(a) In particular, we become aware of a **third dimension**, and especially of the planar surfaces of the LM and/or the TR.

(b) A shifted perspective also tends to increase our **subjective involvement** in the scene. Even if we do not really identify with the TR or the LM, we are now included in the same three-dimensional space as they are, rather than in a separate plane as a detached outside observer. Our involvement as conceiving subjects is further increased in so far as the TR's upward or downward movement is now to some extent either toward us or away from us. Also, a typical line of sight by a mobile subject situated above the scene means that a TR moving 'over' a LM is perceived as moving 'in front of' it and **obscuring** it from the subject's view.

(c) Finally, a more involved, three-dimensional perspective heightens our awareness of the **nonvisual** aspects of a spatial situation, particularly of the interaction between the TR and the surface of the LM. We become especially aware of the obvious correspondences between OVER-arcs and kinetic forces, and of the LM-surface's role as a part of the kinetic base. A LM-surface can also function as a part of the ground in maneuver space (Deane 1993:43), so that it restricts the TR's potential movement or rotation.

This addition of other views to an imagined scene naturally reduces the relative prominence of certain aspects which are tied specifically to the canonical side-view, particularly the distinctive linear shape of the OVER-arc. To the extent that we imagine walking over a bridge from the vantage point of the TR, for example, we will tend to be primarily aware of the surface of the bridge and our kinetic interaction with it; there is little in that perspective to suggest the OVER-arc with its characteristic intermediate

peak. The link to the central schema comes from a shift to the idealized side view that traces the TR's arced linear path over the bridge. Moreover, as we will learn from the 'covering' variants below, a mobile deictic line of sight has the effect of weakening the ties to a fixed vertical orientation.

TRAJECTORS WITH LEADING EDGES

As a simple example of a variant with an added dimension, consider (26) from a typical perspective like that of Figure 11:

(26) A line of soldiers marched over the ridge.

A vantage point above the TR reveals its linear shape as an edge extending horizontally and perpendicular to the OVER-path. In effect, each point in the TR may be seen as tracing its own OVER-arc — imagine parallel multiple TRs (e.g. runners simultaneously going over a hurdle), converged into a solid line according to the multiplex-mass transformation. We can still consider the image in Figure 11 to be a direct transform of the central schema, i.e., to contain it as the defining one of the complementary images involved in the interpretation; but an added perspective is required to account for the TR's laterally extended shape.

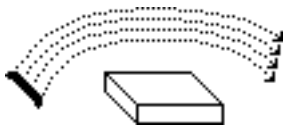

Figure 11: Edge-Trajector

Note that several new geometric possibilities are available in a three-dimensional conception, since the edge-TR can also be curved in its newly revealed

lateral dimension. The line of soldiers in (26) could be bent downward at the ends, for example to conform to the topography of a dome-shaped hill. Or the TR could be bent backward like birds flying in a wedge formation. In this **curved-edge** configuration, the soldiers could be fanning out so that they are not each moving in exactly the same direction.

Extending paths: Planar-extending TRs. Just as the central schema can be transformed to describe a linear-extending TR via the extending-path transformation, the edge-TR image of Figure 11 can be transformed naturally into an image like that of Figure 12. (27), for example, can be read as a planar TR extending so that its leading edge moves uniformly over the LM:

(27) He draped the sheet over the clothesline.

The resulting-state transformation can operate as usual, yielding a planar-extended TR (*a sheet draped over the line*). Compare similar uses of AROUND (e.g., wrapping a ribbon around a tree).

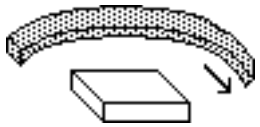

Figure 12: Planar-Extending TR

MULTI-DIRECTIONAL PATHS

Flowing substances can be channeled so that their leading edge extends in a uniform direction as in Figure 12, but sentence (28) describes a more common situation in

which a fluid moves outward in several directions at once. (29) is essentially the same image, although most probably read with the TR already partially extended:

(28) She poured the syrup out over the pancakes.

(29) He spread the cloth out over the table.

Figure 13 represents a planar TR with an edge which extends outward in multiple directions at once, ultimately semi-enclosing the LM in at least one of those directions. This schema is essentially a curved-edge variant of the schema for planar-extending TRs (Figure 12), profiling the downward arc — imagine the line of soldiers in (26) curved all the way around so that each soldier fans out in a different direction. Alternatively, we can consider Figure 13 to be a three-dimensional, mass transform of the central schema with multiplex simultaneous TRs. Imagine a swarm of fleas jumping over the LM simultaneously in various directions, so that they give the appearance of a continuous mass via the mutiplex-mass transformation; or a group of observers all standing over a body so that they collectively obscure it from view.

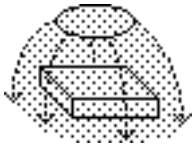

Figure 13: Multi-Directional Planar TR

Compare similar transformations for AROUND, which can describe multiple-TR paths in various directions suggesting a spherical enclosure (*moths around the light bulb*), a spherically extended mass enclosure (*handkerchief wrapped around the rock*), or a formless substance enclosing spherically (*air around us*). There are also

interesting parallels between OVER and UNDER on the one hand, and between AROUND and IN on the other.

Overflowing. An important special case of the multi-directional schema arises when a fluid originates in a container and then flows over the top of its sides, as in (30) or, most typically, (31):

(30) The river flowed over the levees.

(31) The beer ran over the sides of the glass.

Now the extending edge satisfies the central schema completely, even including the upward portion of the arc, in an indefinite number of directions at once. The image (Figure 14) can be regarded as a mass transform of a multiplex TR such as a herd of horses all jumping simultaneously outward over a circular enclosure. Alternatively, one could consider the beer to be a planar-extending TR basically like Figure 12, with a radically curved leading edge. This image is of course common in non-prepositional uses of OVER (*overflow* etc.), frequently with overtones of 'excess' (*The soup boiled over*).

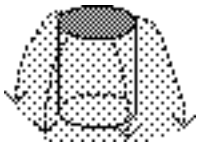

Figure 14: Overflowing

EXTENDING PATHS WITH EXTENDED TRAJECTORS

Reflexive trajectors. In a common non-prepositional use, a salient part of an object is the TR moving in an OVER-arc relative to the rest of the object as LM, as in *roll over* (Figure 15). Such "reflexive" TRs can profile the whole arc or the downward half (*fall over*). The upward half can also be profiled as long as there is a clear curve to distinguish OVER from UP (*She rolled over on her side*.). Extending TRs can also be reflexive: *bend over*. Finally, the reflexive-TR path can continue on "around" so that the arc is repeated cyclically: *keep rolling over*, *roll over and over*.[15]

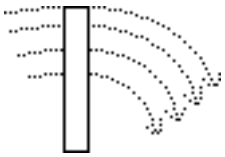

Figure 15: Reflexive Trajector

What is most relevant about this image in the current context is that the TR is already extended in the same plane as the OVER-arc, so that the focus is on a leading extended portion rather than a leading point as with the linear-extending TRs. Imagined in slow motion, there is in effect a sequence of arcs corresponding to each point in the TR's extension, producing a kind of rolling or progressive "laying down" image. This image, which is shared by the other moving extended TRs to be discussed next, will contribute crucially to the development of OVER's 'covering path' sense.

Moving linear-extended trajectors. A rope thrown over a limb, as in (16), usually does not really move in a path as simple as that implied by Figure 8, in which the path coincides simply with the trajectory of the leading point. In the more common actual situation, the rope extends before it begins its descent, so that in effect all of the points

along its extension are moving simultaneously in different — albeit essentially parallel — paths (Figure 16). This image of multiple paths moving in unison in the same plane, corresponding to each theoretical point of a TR with an already extended shape, is actually very similar to the one for reflexive TRs. Compare similar uses of AROUND (e.g. a noose tightening around a neck).

Figure 16: Linear-Extended Trajector

The situation is in some respects clearer when the TR has a stable rigid linear shape as in (32). Unlike a rope, this TR cannot bend into a curved shape and its leading part might not even descend below the top of the LM:

(32) She hit him over the head with a pool cue.

The construction might be illustrated as in Figure 17. Interestingly, only the leading points complete a full OVER-arc — the other points either land on the LM or fall short of it (compare an arrow going 'through' a target when only the leading part completes the path). One might think, in fact, that the most salient part of the TR is frequently not the leading part but the part that lands 'on' the LM. It seems that OVER (as opposed to ON, which focuses on a single local point or area of contact) invites a construal that focuses on the oblique overall descent of the TR and particularly on the extension of its leading part to the other side of the LM (and downward). The choice of OVER rather than ACROSS seems based on the overall arced shape of the motion, together with the clear kinetic sense of downward force (such that even a rigid TR is felt to bend

downward at least to some extent). Compare the extreme case in which the TR breaks, making OVER a more natural choice in comparison with ON:

(33) She broke a pool cue over his head.

The resulting state is indistinguishable from the results of simple one-dimensional extension — e.g. (20).

Figure 17: Flat Linear-Extended Trajector

Moving planar-extended trajectors. Just as (16) can describe a moving linear-extended rope as well as a linear-extending rope, (27) can also be interpreted as an already-extended TR moving in a uniform direction (Figure 18).

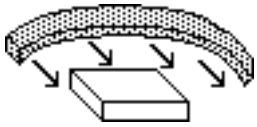

Figure 18: Planar-Extended Trajector

Predictably, there are also extended-TR counterparts to the multi-directional image of Figure 13 — this is the most natural reading for (29), for example, as well as for (41) below. There are also three-dimensional counterparts to the flattened image of Figure 17:

(34) They laid a board down over the hole.

The resulting state is again indistinguishable from that of an extending path.

SPLITTING FROM THE CENTRAL SCHEMA: PLANAR COVERING

As we have seen, the complex images associated with shifted perspectives inevitably reduce the canonical OVER-arc to the status of merely one in a cluster of relevant images. This tendency toward diminished importance for the central schema can be carried even further in sentences such as (29) or (34), which naturally suggest additional accompanying images associated with the term "covering". Covering occurs when a planar TR extends over a LM's surface so that it typically obscures it from view and shields it from access by other outside forces. The interpretation of sentences like (29) or (34) frequently focuses primarily on such covering, to the point that the central schema becomes an even more marginal member of the cluster of related images.

Sentences like (35)-(37) go one step further and crowd the central schema out of the cluster altogether:

(35) She put the coat on over her dress.

(36) He held his hands over his eyes.

(37) They hung a curtain over the picture.

Now the canonical arc, with its distinctive vertical peak and fixed-vertical orientation, is not even consistent with the scene as conceived, and so it cannot be a direct functioning part of the interpretation. In effect, the cluster of images associated with covering has joined with established shifted-perspective variants on the central schema to split off into an independent sense oriented only in relation to the LM's surface, free from the vertical axis implied by the canonical side-view.

Planar covering naturally fosters awareness of both the TR's and the LM's surfaces, so that a flat TR commonly covers a flat LM surface in layers. Planar-

extended TRs such as those in (35)-(37) are typical 'covering' TRs, but (38) demonstrates that planar-extending TRs can also 'cover' a LM:

(38) I pulled the shade down over the window.

In either event, the resulting state is a planar-extended TR:

(39) She is wearing a sweater over her blouse.

(40) There is a picture over the stain.

Such stative variants necessarily involve scanning the extended TR (visual subjective motion), as well as a sense that the TR tends obliquely toward semi-enclosing the LM as a whole. The interesting differences between OVER and ON (TOP OF) will be discussed below.

Contact between the TR and the LM is possible, as in (39), but it is not essential:

(41) She put a lid over the cake.

Since the TR typically obscures the LM from view, in sentences like (36)-(38) it is impossible to tell whether or not there is contact (Hawkins 1984:213). Even when there is no contact, however, planar covering does imply a "close" relation between the TR and the LM — see the contrast between stative OVER and ABOVE, discussed below.

'COVERING' PATHS

When a TR 'covers' a LM, there is typically one other image involved besides the restriction of visual and other access to the LM's surface — an image which focuses on the kinetic interaction between the TR and the LM surface. To understand this image, we need to return to the schema for moving extended TRs (Figures 16-18).

Perhaps the most striking thing about examples like (32) — hitting someone over the head with a pool cue — is that salient portions of the TR land 'on' the LM's surface (even though the leading portions do ultimately move to semi-enclose it). There is accordingly a natural profile of the correspondence between visually-defined paths and the kinetic impetus of the TR as it interacts with the LM's surface. If we imagine the central portion of the pool cue in slow motion as it moves obliquely over the surface of the head, the resulting image is a progressive *sequence* of arcs corresponding to each point of the TR's extended shape. This progressive, cumulative 'covering' path might be represented as in Figure 19, profiling the downward portion of each of the arcs and imagining them scanned summarily from left to right as they unfold in time (much like the summary scanning of a path "left behind" by a moving path).[16]

Figure 19: 'Covering' Path

What makes this image especially useful and important is that it corresponds nicely to common features of motion such as the cyclic rotation of a wheel, or the progressive "laying down" motion of unrolling something, or the sequence of stepping motions involved in walking, or the sequence of arm motions characteristic of climbing or crawling. As a result, the image frequently accompanies all kinds of variants on the central schema, including such typical examples as (3)-(5).

In sentences like (42)-(44), the notion of laying down an extended linear path, with salient rolling wheels or stepping motions has arguably split off from the central schema to form an independent alternative:

(42) He rode his bike over the border.

(43) She walked over a field to get to the road.

(44) We had to drive over a bad stretch of road.

A non-planar TR seems to be following a trajectory which has no clear arced shape even when viewed from a canonical side-view, so that all that remains of the central schema is a flattened version of semi-enclosure. Such two-dimensional examples are not well established in English, however — presumably because ACROSS is available to express simply crossing boundaries. Even in examples (42)-(44) there are other contributing influences suggesting OVER rather than ACROSS.[17]

Additional evidence that the schema of Figure 19 has at least borderline existence as an independent OVER-schema comes from a sentence like (45):

(45) He ran his finger over the scratch in the wall.

Here, as with the independent planar-covering uses, the whole fixed-vertical orientation can become irrelevant. The distinctive arc of the central schema is still indirectly recoverable, via the moving extended-path schema, in the TR's oblique laying-down motion and its ultimate path toward semi-enclosure, but it is no longer directly involved in the interpretation of the OVER-phrase. The covering-path schema plays a crucial role in OVER's uses in the temporal domain (e.g. *over Christmas* or *do it over*).

Covering paths in three-dimensional space. 'Covering paths' do not typically occur in two-dimensional contexts, though. They almost inevitably invite awareness of the LM's surface as seen from above, so that the three-dimensional image of Figure 20 can be considered a more characteristic representation.

Figure 20: Covering Path in 3-Dimensional Space

(46) is an example of an edge-TR engaged in a covering path, while (47) and (48) illustrate a covering path with a planar-extending TR and a planar-extended TR, respectively:

(46) The custodian dragged the broom over the gym floor.

(47) The crew rolled the tarp over the infield.

(48) There is a cold air mass moving over the lake.

As examples (28) and (29) suggest, the multi-directional planar extensions are also typically accompanied by a covering path.

Predictably the resulting state, whether from a planar-extending TR or a planar-extended one, is stative covering:

(49) The tarp is spread out over the infield.

Stative covering always involves scanning the TR's extension (visual subjective motion), a conception which is encouraged by verbs like *hang*, *drape*, or *spread*. When such verbs are present, OVER may contrast with ACROSS, which does not imply any downward motion toward semi-enclosing the LM or covering it as a whole.

Although covering paths and planar covering can occur separately, they are fully complementary and they frequently occur together in a single complex 'covering' image. Examples (50) and (51) are representative, combining a "laying down" path with the "layering" effects of planar covering:

(50) He put a band-aid over the cut.

(51) Let's put a new coat of paint over the old one.

In place of the clear arced shape of the central schema there is a sense of interaction in both kinetic space and maneuver space, as a planar TR tends obliquely toward the LM's

surface on an ultimate course toward semi-enclosure. That interaction then combines naturally with the resulting images of visual occlusion and restricted access. All 'covering' is free from necessary orientation in terms of a standard vertical. To the extent that gravity plays a role, it is merely the fact that objects tend naturally to move downward and the earth's surface is a default kinetic base.

SURROUNDING COVERING

Circular edge-trajectors. (52) illustrates a sleeve-motion variant of OVER which can be imagined as Figure 11 with the TR curved all the way around in the plane orthogonal to its path, so that it forms a circular shape as viewed from directly in front or behind:

(52) He slid the ring over her finger.

This use is most naturally interpreted in terms of the 'covering path' schema. The scene is oriented solely relative to the LM's surface without any given vertical axis, so that the canonical visual orientation of the central schema is completely irrelevant. Otherwise, the path might also be considered a transform of the multi-directional schema (Figure 13) in which the TR in effect has an open center (cf. Geeraerts 1992:219-20). Cf. AROUND and ON(TO).

Circular extending-edge trajectors. More common than (52) are instances like (53) and (54), which are like transforms of Figure 12 in which a TR with a circular leading edge extends, typically in a covering path, to surround and cover a LM:

(53) He pulled his pants up over his navel.

(54) He pulled his hat down over his ears.

Planar covering, with its typical visual obscuring and protective implications, is always involved in this variant. If the surrounding TR recedes to uncover the LM, OVER is inappropriate: *He pulled his pants back down below (*over) his navel.* As (53) and (54) illustrate, the TR's path is typically either up or down in relation to the gravity axis, but that is simply because a horizontal version would not be pragmatically useful — i.e., ?*He pulled his sleeve out over his elbow* is unusual for pragmatic reasons. Compare ABOVE (and BELOW).

Trajectors with extending planar edges. As a special case of circular extending-edge TRs, it is common for a fluid to extend vertically to surround and cover a LM:

(55) The water came up over her knees.

(The situation is so common that it is frequently the LM which moves: *He jumped in over his head*). Such constructions frequently serve to measure the highest level of a substance relative to the LM (and an implied scale). To the extent that it is pragmatically possible, a substance can also extend downward:

(56) The fog descended slowly over his head.

As with other circular extending-edge TRs, the TR must cover the LM (OVER is inappropriate when the substance recedes). This type is obviously related to metaphorical uses of OVER that measure extent on a scale, e.g. *over 100 degrees.*

MULTIPLEX COVERING TRAJECTORS

The schema for covering by a continuous mass as in (28) applies to covering by a multiplex TR as in (58). (57) is transitional.

(57) She sprinkled water over the plants.

(58) She scattered seeds over the field.

(59) She has freckles all over her face.

(60) There are bushes scattered all over the field.

(61) There is paint all over the wall.

Resulting stative two-dimensional TRs are associated with "movement" verbs (e.g. *scattered*), and especially with quantifiers such as *all*. Note that (61) would be considered a continuous covering layer without *all*, which suggests scattered splotches. *All* basically serves to induce summary scanning of the TR, to link the various parts of the multiplex into a virtual mass, and to emphasize that the LM is to be considered as a whole. Cf. ON.

Multiplex paths. In a similar transformational relation, a single TR can trace a random multiplex of paths which may converge to 'cover' a LM like an extending mass:

(62) They searched all over town for the body.

(63) He walked all over the field.

The quantifier *all* functions just as it did in (59)-(61). Compare ON (e.g. 'walk around on'). There are parallel uses of THROUGH ('all through the house') and AROUND ('The flies are buzzing all around us'). This variant is metaphorically extended to visual reading paths in constructions like *go over notes*, *look over*, *read over*.[18]

OVER VS. ON

Whenever there is implicit contact between the TR and the LM's surface, there can be a subtle contrast between OVER and ON (TOP OF); compare the natural use of ON in many stative situations resulting from acts involving covering paths, e.g. 'too much syrup on the pancakes'. Stative OVER is distinct from ON in two essential ways: (a) consistent with its central meaning describing a path, it always involves scanning — if not of the TR's motion as a whole, then of its extended shape with respect to the LM; (b) consistent with the central schema in which the TR semi-encloses the LM, OVER's 'covering' uses imply that the TR covers the LM as a whole.[19]

For example, a 'tablecloth on a table' is simply an object, construed as a gestalt without salient scanning of its extension, which is located in contact with the (top) surface of the table. A 'tablecloth over a table' clearly implies scanning of the cloth's extension, and that extension must semi-enclose the table as a whole (some edges of the tablecloth must reach the edge of the table). With OVER, the tablecloth significantly obscures the (whole) table from view, while the ON-TR simply touches part of its top surface. As a consequence of its sense of active movement by the TR in relation to a LM considered as a whole, OVER frequently implies that its TR "does something to" the LM. A 'band-aid over a cut' implies shielding it and obscuring it from view; a 'band-aid on a cut' is simply located there.

OVER VS. ABOVE

When there is no contact between the TR and the LM, and the gravity-axis framework is in effect, OVER can be very similar to ABOVE:

(64) They live in the apartment over ours.

(65) a lamp hanging over the table

(66) a picture hanging over the fireplace

(67) a sign over the door

(68) The helicopter hovered over the city.

Here again, OVER implies scanning of the TR's extension, a sense of visual subjective motion. In (65) and (66) this extension is clearly suggested by the verb *hang*, and in (67) the sign is probably also felt to hang (and horizontal scanning is promoted by the normal reading motion). In (68), the "hovering" action of the helicopter suggests a jerky motion that can be construed as two-dimensional extension (cf. 'multiplex paths'). In (64), OVER implies the planar-extended ceiling of our apartment covered by the floor of theirs; ABOVE would simply report the location of a holistic TR.

OVER also suggests that the extended TR bends or moves obliquely toward semi-enclosing the LM, as opposed to ABOVE, which simply places its TR in a separate, higher plane than the LM. While ABOVE entails separation or clearance in maneuver space (*keep your head above (*over) water*), OVER tends to place its TR within the LM's maneuver space (or kinetic sphere of influence). Compare this example (from Brugman 1981:27), where ABOVE would not be appropriate:

(69) We roasted marshmallows over the campfire.

Even with a permanently located TR like a sign over a door, there seems to be an abstract predicative relation from the sign to the door that transcends simple location, a

relation Brugman (1981:26-28,31,63-64) intuitively describes as "closeness". Taylor (1989:112-13) calls it "influence" and notes: "I am much more likely to be disturbed by noise from people living over me, than by people merely living above me."

Taylor's comment suggests one other frequent factor in the vague perception of the TR's "closeness" to, or "influence" on, the LM in a sentence like (64) or (68): namely subjective identification (more or less) with the LM's perspective.

(70) the sky over us

(71) a roof over our heads

Such expressions invite construal from below the TR, so that it appears as an arch spanning the top of the oval visual field in two dimensions and conveying a feeling (and not merely a visual image) of covering.

SUMMARY OF IMAGE-SCHEMA TRANSFORMATIONS USED

Much work remains, particularly on other spatial expressions in the language, before the image-schema transformations necessary for the analysis of OVER can be specified adequately in the most general form possible. The following is simply a preliminary list of image-schema transformations suggested by the evidence considered in this study.

1. MULTIPLE TRAJECTOR: Multiple objects can fill the role of a TR when each of them separately can fill the role. This is an extremely general principle in the language.

2. MULTIPLEX-MASS: A multiplex collection of objects can be construed as a continuous mass. This is also a highly general principle.

2a. MULTIPLEX PATH: A single point-like TR moving in a variety of directions can be construed to trace a multiplex collection of paths, which in turn can be construed as a mass.

3. SEGMENT PROFILING: A path expression can be used to describe a characteristic segment of that path. There is probably a more general principle underlying this transformation and the TR-part profiles. Cf. Langacker's (1984) "active zones", and Lakoff's (1987:417-18) discussion of "correspondences within an ICM" such as the use of *window* to refer to the pane or to the opening or to the frame or to the whole.

4. TRAJECTOR-PART PROFILING: If any theoretical point of a continuous object can fill the role of a path-TR, then the object as a whole can be construed to fill the role.

4a. EXTENDING-PATH TRAJECTOR: The leading part (either point or edge) of an extending object can be construed as a path-TR, and the expression for the whole object can be used even when only its leading part actually completes the path.

4b. EXTENDING PATH WITH EXTENDED TRAJECTOR: The leading part (either point or edge) of an object which is already extended in the same plane as the path can be construed as a path-TR, and the expression for the whole object can be used even when only its leading part actually completes the path.

4c. REFLEXIVE TRAJECTOR: A salient part of an object can be construed as a path-TR if it moves in the path relative to the rest of the LM object. (Non-prepositional.)

5. RESULTING STATE: A path expression can be used to describe the resulting location of the TR after completion of the path.

5a. EXTENDED-PATH TRAJECTOR: As a special case of Resulting State, an 'Extended-Path TR' results from an 'Extending-Path TR'.

5b. SUBJECTIVE PATH TO ENDPOINT: A path expression can be used to describe the location of a TR at the endpoint of a path followed in the imagination by the speaker or some other interpreter.

6. SHIFTED PERSPECTIVE: A path relation oriented visually in a two-dimensional frame can be viewed from shifted perspectives and construed as a complex cluster of images in a three-dimensional frame. Edges and surfaces extending in the added dimension are revealed for both TR and LM, and they may be curved in any of the three dimensions. The three-dimensional image invites an increased awareness of nonvisual spatial relations, a potentially greater sense of involvement by the conceiving subject in the scene being described, and — in the case of OVER — potential freedom from the canonical vertical-axis framework.

Finally, this analysis has suggested a cumulative process of shifting the relative prominence of parts of a complex image cluster, which may result in the SPLITTING off of an independent new semantic variant that has lost its direct link to the schema from which it ultimately descends. When a cluster of images repeatedly accompanies an established schema (such as OVER's central schema), the accompanying images may eventually become conceptually prominent to the point that the original core schema becomes irrelevant to that usage, or even inconsistent with it. At this point a new functioning schema has arisen which is independent of the core (e.g., planar covering and covering paths split from OVER's central schema and become independent of its distinctive arc visually oriented to a fixed vertical axis). Splitting is not an image-

schema transformation in the same sense as the others; it is a chaining process in the organization of meaning.[20]

IMPLICATIONS FOR LEXICAL NETWORK THEORY

Lexical network theory, as exemplified in the Brugman/Lakoff study of OVER, has been said to lack systematic principles for deciding exactly how one semantic variant can be linked to another within a lexical category. In Deane's (1993:8) words: "If all that binds the various meanings [of OVER] together is loose similarity or weak overlap, what is to be gained by saying that they form a single category?" This study suggests that image-schema transformations, if used systematically, do provide a principled means of relating semantic variants within a category.

Even though only a few image-schema transformations are well known at this point (e.g., multiplex-mass, subjective path to endpoint), there are many others waiting to be studied. The ones suggested here are all natural (grounded in human experience) and systematic (operating generally over a range of lexical categories in the language). They will not, of course, predict in every case which potential variants will actually become conventionally established. It was not inevitable, for example, that OVER would develop 'covering' variants — that is a relatively idiosyncratic development that reflects several complex factors, including the pragmatic need to express a particular concept and the availability of alternative lexical items. Image-schema transformations can, however, explain in a principled manner why certain semantic developments are favored over others.

NOTES

1. Vandeloise (1990) demonstrates that Lakoff needlessly introduces some features (e.g. 'vertical') and uses others unsystematically (e.g. 'contact'), and that the resulting analysis multiplies senses needlessly and obscures important general regularities. He attributes these weaknesses to an insufficiently thorough use of propositional representations and embeds his critique in a more general critique of analogue representations. In practice, though, when he criticizes Lakoff's use of graphic representations he refers to the overall map of senses, not to individual schemas. His most telling blows land not on Lakoff's use of image schemas, but on Lakoff's careless use of propositional features and on the resulting distortions in the overall image of the category.

2. I am using the term "central schema" in the sense described by Taylor (1989:119): "that member from which all others can be most plausibly and most economically related". Taylor (pp. 117-18) provides psychological evidence from a small survey of native speakers that the central sense of OVER is a "curved, arc-like path" like (6). Despite this insight, he retains the received notions of OVER's central sense in the main body of his treatment (pp. 109-16) — even treating the stative 'above' sense as prior to the 'above-across' path. With typical thoroughness, Brugman (1981:14-15) also implicitly recognizes the central importance of a curved path.

3. Other arguments, for example the role of 'extended' LMs in accounting for restrictions on end-point focus (Lakoff 1987:423-24), are not convincing. See the 'subjective path' discussion below.

4. Vandeloise (1990:424-7), who also concludes that the features 'vertical' and 'extended' are unnecessary, nevertheless retains 'contact', arguing that it is necessary to distinguish OVER from ON. Given the schema proposed here, however, the contrast between OVER and ON can be accounted for without 'contact' (i.e., by invoking the observations that OVER involves semi-enclosing the landmark as a whole and that its stative use involves scanning of an extended TR). See the section on OVER vs. ON below, as well as notes 12 and 18.

5. The image of a recurring loop, combined with the metaphorical notion of activities extending on a path in time, motivates the "repetition schema" (e.g. *do it over*) which Lakoff (1987:435) cannot tie naturally to the other senses. Cf. *go back and start over*. Compare also the image of cyclic sequences inherent in the 'covering path' schema below.

6. Compare Geeraerts (1992:221).

7. Neither this use nor the upward-trajectory profile occurs when the TR is in contact with the LM at its peak, because that situation would match a canonical use of ON (and, presumably, because it does not imply ultimate descent the way that suspension in the air does). Moreover, OVER can be used in a sentence like (12) because the resulting-state reading would be inappropriate (cf. 'The plane should be *past* Baltimore by now'). Presumably the resulting-state reading would imply that the LM is relevant to the TR's arc (that it begins its descent after reaching a peak above the LM).

8. To the extent that Sam might realistically be suspended at the peak point above the bridge, (14) could have a "freeze-frame" interpretation as well — cf. (12). This kind of ambiguity is a problematic feature of any preposition which describes a path to an endpoint in terms of a more salient intermediate point relative to the LM. The potential

for confusion is greater with UNDER, which can normally imply location 'below' rather than 'on the other side of' the LM (cf. 'Where is Fido? — 'He ran under the table').

9. It is interesting to compare these subjective path-to-endpoint constructions with normal uses of stative prepositions like *above* or *on*. They too in effect direct the interpreter's attention so that it "moves" to the location of the TR, but their path leads from the LM and the motion is purely visual. 'Above', for example, might be glossed procedurally as 'find the LM, then move your attention upward on the gravity axis and search for the TR'.

(15) might also mean he lives above the bridge if that were a reasonable interpretation. At first glance, this ambiguity seems parallel to that between the two "objective" senses of (12) and (14), i.e., as either a subjective path-to-endpoint or a freeze-frame at the intermediate peak of a subjective path. (15), however, does not suggest a "freeze-frame" sense derived from a path. Any stative 'above' reading it may have is best considered in relation to the variants with extended TRs (see the discussion of OVER vs. ABOVE).

10. Compare Lakoff (1987:440-41). He cites *by* and *to* as exceptions, but I would claim that neither is a true path preposition. *By* has a stative locational sense which takes precedence, and *to* designates the end of a path rather than the path itself (cf. *toward*).

11. There is apparently a principle whereby the slot for a kinetic TR must be filled, if not by an actual object then by the conceiving subject. Compare the linear-extended 'path-TRs' below.

12. Despite common instances like (20) or (25), Vandeloise (1990:425-7) maintains that no 'contact' is allowed with linear TRs. The unacceptability of OVER (as opposed to ON) in examples like **The pencil stretches over the sheet* has little to do with contact,

however; it reflects the oddness of a scanned construal of the TR. (And if there were conscious scanning with this example, the natural preposition would be ACROSS rather than OVER, since there is no suggestion of an arc or of a 'covering' path.) Generally speaking, path prepositions are construed with scanning in contrast with the gestalt construal of locational prepositions such as ON ('The clothes are hanging on/over the line') and ABOVE ('He was standing above/over the body'). OVER more naturally occurs with verbs, such as *hang*, *lean*, or *extend*, that suggest summary scanning.

13. Geeraerts (1992:209) distinguishes "real motion" from the "fictive motion" of a sentence like (25) or the "zero motion" option of sentences like (22) or (24).

14. It is instructive to compare the nice general discussion of this natural image-schema transformation in Lakoff (1987:442) with the badly flawed feature-based analysis of essentially the same phenomenon on pp. 425-26 of the same work.

15. If we focus on the recurring downward arc motion implicit in this cyclic rotation, we have a sequential image like that represented below for 'covering' paths. The term "reflexive TR" comes from Lindner (1983) — compare corresponding uses with other path expressions (e.g., *turn around*, *reach out*, *stand up*).

16. Compare the "laying down a path" image implicit in the German expression *die Strecke zurücklegen* ('put the stretch behind us', 'be over it'). Note also the well-established use of German *über* in metaphorical 'covering path' expressions such as *sprechen über* ('talk *about*').

17. For example, driving means that the rider is raised such that there is an arc from back wheel to rider to front wheel such that there is virtually a moving linear-extended TR — Brugman (1981:76) notes that *drive* occurs more frequently than other verbs in this sense. Also, sentences (42)-(44) all involve boundaries or barriers, which are commonly conceived as metaphorical divides or obstacles which people must get 'over'

to reach the other side. Compare non-prepositional extensions such as *hand it over*, *go over to the enemy*, *put one over on*, or uses such as *Move over!* or *Come over here!*, which reflect the fact that much human movement involves a getting-up motion followed by a settling-down motion at the end of the path. Similar cases such as *step over the line*, which involve a clear arc motion in which the foot moves in complete accord with the central schema, also contribute to the appropriate use of OVER. Finally, the perspective is frequently that of the TR, suggesting visual projection over an intervening LM (e.g. the field in (43)) to a destination which appears relatively higher in the visual field (cf. *over there*).

When the LM is conceived as a surface without salient defining bounds, then ON also competes with OVER. Geeraerts (1992) gives the impression that a corresponding usage of Dutch *over*, the sense found in a sentence like *Olfert rijdt over de lijn* which he characterizes as 'on and along', is more clearly established as a separate sense than its English counterpart.

18. Lakoff (1987:429-30) contrasts *Superman flew all over downtown Metropolis* with * *Superman flew all over the canyon walls*, concluding that "rotated" variants of multiplex covering TRs and multiplex paths require 'contact' while those with a fixed vertical do not. His canyon walls, however, are not clearly bounded surfaces which can be semi-enclosed as a whole. In the pragmatically unlikely event that a TR would engage in a covering path with a holistic, planar, vertical LM without touching it, then there is nothing in the meaning of OVER to stop it — cf. ?*Superman flew all over the side of the building looking for the cracked window.*

19. More precisely, the "whole" LM means all portions which are potentially covered by the TR's path. A ribbon draped over a table will not cover the table's entire surface in all directions, but it will extend to cover all portions which lie in the direction of its path

(i.e., it will complete its path by reaching the table's edge). In terms of maneuver space or kinetic space, OVER's LM surface must be defined in relation to a larger ground or base, so that the TR can semi-enclose it holistically. ON implies no ground other than the LM surface, whose defining edges do not come into play.

This analysis of the differences between OVER and ON owes much to the one offered by Bouillon (1978) to account for the differences between German *über* and *auf*. He emphasizes the "holistisch" nature of the *über*-relation, both in the covering-path uses he characterizes as "sukzessiv" and in the "Bedeckung" uses.

20. Splitting is essentially the crucial metonymic process underlying metaphorical associations generally (Taylor 1989: 138-39). Just as OVER's covering variants split off from the central schema with its fixed-vertical framework, nonspatial metaphorical images may split off from recurring clusters that combine spatial and nonspatial images. To take a simple example, the recurring image of a taller victor standing over a weaker opponent becomes established to the point that OVER can describe abstract superiority without implying actual spatial superiority.

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