The concept of natural image-schema transformations has been well known since *Women, Fire, and Dangerous Things* (Lakoff 1987: esp. 440-4); yet our inventory of natural image-schema transformations is still far from complete. This paper will seek to expand that inventory by introducing a new and different type, called *construal transformations*, which pertain to a largely neglected area of linguistic semantics: the role of individual "subjective" variations within the bounds of "objective" description.

The first half of the paper will introduce the construal transformations in a general way, focusing on their grounding in practical experience. Some of this discussion will strike many readers as belaboring obvious points, but I hope that there is virtue in making some trivial points explicit, since I am concerned to avoid what I take to be common misconceptions about image schemas as static "objects".

Then the second half of the paper will illustrate the operation of construal transformations in one simple situation, the interpretation of *through*-phrases such as the one in sentence (1).

(1) *Lucy ran through the house.*
Focusing on the interplay between construal transformations and the objective representation of a scene, the discussion is intended to give a rough indication of the active role that imagination plays in normal semantic interpretation. I hope it succeeds in spurring readers to see a wide range of further applications.

1. **Image schemas, viewpoints and transformations**

To establish an intuitive frame of reference for the discussion, imagine a "house" — not any particular house, just a generic house. Clearly, your idealized image is going to differ from mine in many respects, but I suspect all of our images will have some things in common.

1.1. **Viewpoints**

First, the fact that you are imagining a house entails that you are imagining it from a viewpoint. You may imagine your house from a vantage above it, or from the street in front, or from the threshold of the front door, or from inside; but you have to assume some vantage (and orientation, presumably upright).

This point is clearly acknowledged by scholars such as Langacker (e.g. 1987: 123) and Talmy (1983: 255-6), and it may seem too obvious to mention, but much work in semantics demonstrates that it is easy to forget. We are not normally conscious of ourselves as conceptualizers with a vantage, because our construal is usually "maximally subjective" (Langacker 1990).

1.2. **Canonical viewpoints**

A second reasonable assumption about your image of a generic house is that the viewpoint is not entirely random. Your canonical perspective is probably
cognitively efficient, in the sense that it reveals as much useful information about the house's appearance as you are likely to need — at least as the starting point for a more specific interpretation. That means that certain views of the house will tend to be privileged.

For example, I would guess that you did not imagine your house from directly overhead. That vantage would not be very useful in recognizing a house, because it would only show the roof and a two-dimensional shape that is probably not very distinctive. Besides, unless you are a helicopter pilot you probably don't have much experience looking at houses from directly above. For similar reasons, the optimal typical view would not be from underneath the house, or from most other possible perspectives.

All other things being equal (which of course they never are in real life), the optimal view of a generic house will show its front, which is the most distinctive and important external side in normal daily experience. Ideally, though, it will also reveal as much of the rest of the house as possible. My personal image tends to have a kind of idealized God's-eye vantage above and angled to the side, including the front, one side, and part of the roof.

Whatever angle you choose for your vantage, you will presumably imagine the house from an optimal distance, which means that the house appears as large as possible within its relevant context. You won't be so far away that your house is only a small dot in the conceptual field, and you will probably imagine a whole object rather than, say, a close-up of the front door.

Finally, I have been assuming that your initial, canonical viewpoint of a house, independent of any contextual priming to the contrary, was from the outside rather than the inside. All other things being equal, an external vantage would be privileged as the canonical starting point because we experience some houses only from the outside but presumably none solely from the inside, and also because the house can be better imagined as a whole object from an external viewpoint. Still, we have at least as much experience perceiving houses from the inside, and the differences between an internal viewpoint and an external one will play a prominent role in the following discussion.
1.3. Transforming image schemas

My last prediction about your image of a house is that you are uncomfortable with the way I have been talking about it so far. Your image does not seem nearly as stable and clear and picture-like as I have been implying, and it does not seem to be the same on each occasion. It is not a constant thing that can be held and described like a photograph.

I think this reaction reflects the basic way that image schemas work in semantic practice; namely, they are only highly abstract starting points for further interpretation. Image schemas are ephemeral mental processes which are altered immediately and incessantly, so quickly that we can't really catch them or freeze them and inspect them. When we do try to introspect on them, as I have been asking you to do, we are capturing an image that has already been transformed to fit a context. Our closest conscious approximation of the starting image schema comes from imagining a maximally abstract context that does not exist in real life. In real life, a schematic image has no sooner begun to be formed than we are already transforming it to fit a rich set of contextual factors, both linguistic and pragmatic.

Again, as was the case with the role of viewpoint in image schemas, this notion is not new. Geeraerts (1993: esp. 260-2), for example, suggests a similarly dynamic conception of "the shifting nature of meaning": "If we abandon the vestiges of objectivism in our methodological self-conception, the presupposition that there is a unique meaning itself can be rejected. Rather than a single unique meaning, there would only be the interpretations that we impose on the material — and our interpretative activities need not yield a unique result. ... Could it not be the case that we choose that meaning as prototypical that gives us the best starting-point for interpreting the various applications in which we encounter that item?" In a sense, the purpose of this paper is to take a very modest step toward investigating what Geeraerts calls "the ultimately non-objectivist, perspective-
bound, hermeneutically interpretative nature of linguistic semantics” in terms of image-schema transformations.
2. Vantage-shifting transformations

Specifically, one of the most pervasive kinds of image-schema transformation is to shift away from the canonical viewpoint as soon as we begin to form an interpreted image. Even if my canonical, starting vantage point for a house is angled up and to the side, I will easily and immediately imagine the "same" house from whatever other vantage points are useful to fit the needs of a particular interpretation. In other words, I will constantly carry out construal transformations.

The most typical construal transformations correspond to the experience of moving to perceive objects from a different vantage. For example, as we walk around a house, the way it appears to us is constantly changing, even though the house itself does not change, "objectively", in any way. Its relations to other objects in the environment — apart from ourselves — do not change either. All that changes is our relationship to the house.

Thus construal transformations can be contrasted with "objective transformations" which do alter the objective scene being described. Objective transformations correspond to the naturally occurring experiences of manipulating an object, e.g. moving it, rotating it, bending it, adding parts to it, wrapping it, breaking parts off of it or removing layers, etc. Such operations are generally expressed in language by syntactic modifiers that direct us to perform an objective transformation on their head (e.g., "my neighbor's old, broken down, two-story, white house").

This paper, though, will be concerned solely with construal transformations, and especially with the two basic kinds of vantage-shifting transformation — proximity transformations and perspective transformations.²
2.1. Proximity transformations

Proximity transformations correspond to the experience of moving to perceive the house from closer up or from relatively far away. They affect the detail resolution or grain of an image and the size of central objects relative to the rest of the conceptual field, and they determine which objects (and parts of objects) will be peripheral in the scene and which will fall outside the conceptual field altogether.

2.1.1. Bounded shapes and object-setting congruence. Assume that we start from what Talmy (1983: 255) calls "a steady-state long-range perspective point with synoptic scope of attention" on a scene including a house. If we then move closer to focus on the house, there is a critical point at which its visible surface begins to fill our visual field completely; its limits converge with the limits of our awareness. At that point — call it the point of object-setting congruence — the house ceases to appear as a whole shaped object within a larger setting, contrasted with other parts of the spatial world such as trees, grass, sidewalks and other houses. It is now the setting, the contextual space within which we discern more detailed parts, such as doors and windows. If we move closer still, even its characteristic surface parts may disappear from view. If the close-up is extreme enough — say, close enough to touch one of its walls — there may not be enough information remaining in the image to allow recognition of the house as a "house".

Generally speaking, there is a constant interplay between proximity and the appearance of bounded shapes in a scene. For example, an extreme close-up can reveal a multiplex set of individually defined "grains of sand" filling the entire conceptual field. If we pull back, the grains eventually blur into an unbounded mass of "sand" with no visible shapes (the well-known multiplex-mass alternation). If we continue to pan back, we eventually pass a point of object-setting congruence and a new bounded shape appears in the scene, namely the contrast between the sand and surrounding elements such as water and grass, revealing a "beach" (or a "pile of sand").
2.2. Perspective transformations

Perspective transformations correspond to the experience of walking around an object to inspect it from various angles. For example, I am performing a perspective transformation if I conceptually move from my God's-eye vantage on the house to a perspective from the street in front, or from the back yard, or from the side, or from directly overhead.

2.2.1. Three-dimensionality. Perspective transformations are a primary source of three-dimensional imagery. If we look at a stationary object from a fixed, single perspective we do not get a true three-dimensional image, at best only a $2 \frac{1}{2}$-D perception of shape with depth cues. Really three-dimensional perception of the object requires lateral or vertical motion by the perceiver, either walking around it to view it from another angle, or reaching out to touch more than one point on its surface. Similarly in conceptual imagery, awareness of three-dimensionality depends on perspective transformations.

2.3. "Subjective" meaning: shared space, nonvisual space

If we maintain a single static canonical viewpoint on a house, without any vantage-shifting transformations, we get the impression that the house is in a separate plane, detached from the space we are in. Even if something is going on in the house scene — say, a woman named Lucy getting out of a car and running toward the front door — we normally watch the event as if we were watching a movie screen. As long as Lucy's motion does not happen to be aimed directly at our vantage, it cannot affect us in any substantial (kinetic) way. We do not feel as though she could ever really touch us.

As soon as we begin to move, though, the transformation breaks down that conceptual detachment. Rather than looking at one two-dimensional space from a
vantage in another, we begin to share a three-dimensional space with the objective scene. Its participants become more like actors on a stage than figures on a screen. We can begin to get the "feeling" that Lucy is moving either toward us or away from us, that we are potentially involved in the scene and could interact with it. Moving closer adds the feeling that we could touch the objects in the scene or smell them.

In other words, a mobile conceptualizer becomes aware of several kinds of "subjective" meaning that are not available to a static canonical viewpoint. And that means becoming more aware of the nonvisual aspects of a scene. Vantage-shifting transformations add a sense of potential touch, of kinetic force, of maneuver space and all the nonvisual spatial images that Deane (1993) has emphasized.3

2.4. Internal-viewpoint transformations

An interesting special case arises with an object, such as a house, which can be construed as a container — namely the possibility of shifting to a vantage inside it.4 Such an internal-viewpoint transformation is essentially a natural vantage-shifting transformation like any other. Because it also involves conceptually crossing the boundaries of a container, however, it has peculiarities all its own. In effect, it is a proximity transformation which radically transforms the perspective.

2.4.1. The discrete nature of the transformation. With a typical container such as a house, the shift from an external viewpoint to an internal one is an abrupt, radical change in construal. Shifts from one external viewpoint to another are gradual, and apart from the point of object-setting congruence it is difficult to locate any point on the vantage continua at which a discrete change in construal occurs; but conceptual entry into an object alters its appearance suddenly and completely.

2.4.2. Eliminating external bounds. From a canonical external viewpoint, a house is a bounded whole "object" in the full sense of the word, with a characteristic
shape defined as distinct from a larger outside context (lawn, sky, street, neighboring houses, etc.). From an internal viewpoint, the house is none of those things.

As we have seen, moving closer to a house's external surface can push its shape-defining bounds to the periphery and eventually off of the mental screen altogether, breaking down our image of the house as a whole object. If we keep going and pass all the way through the object's surface, we take that tendency to a new level. Now we lose sight of the object's external surface altogether. The most we can see in a single view is a portion of its inner walls. We have not only lost any clear image of the house's overall shape (that went when we crossed the point of object-setting congruence); we have lost any sense of its location relative to the outside world.

2.4.3. Internal bounds as limits of conception. In fact, adopting an internal viewpoint on a closed container means that the world outside ceases to be a part of the conception at all; it becomes irrelevant even to the construal relationship. From inside, the house's walls form the limits of our immediate environment and define the scope of our conceptual awareness. We do not see beyond them, so everything outside them is simply not there in the scene.

2.4.4. Rotating-construal transformations. Since we can only see (or touch) a portion of the container's inner walls at a time, the only way we can become vaguely aware of the house's whole circumference is to move in a full circle ourselves. Imagine standing in the middle of a room and inspecting it by rotating. The corresponding conceptual operation is a rotating-construal transformation, which is a special kind of perspective transformation peculiar to an internal vantage and particularly associated with around.

2.4.5. Definition by internal structure. Although an internal vantage does not allow us to recognize a house in terms of its shape and surface appearance, it is still possible to recognize a "house" from an exclusively internal viewpoint. We
can do it by recognizing a characteristic internal structure — the spatial arrangement and appearance of its individual rooms, doors and hallways, and of the furniture and other objects contained in them. (This point would become particularly significant if we extended our discussion to second-order objects.)

2.4.6. Feeling enclosed. With respect to their semantic effects, internal-viewpoint transformations are in a way the ultimate vantage-shifting transformations. They break down the image of a shaped whole object located relative to other, separate objects in space, and replace that "objective", visual construal with a more "subjective" awareness of shared three-dimensional space that includes the interpreter's other, nonvisual senses as well — especially a sense of feeling surrounded, with restricted movement.

Think of a phrase like "in the water". From an external vantage we are aware of the water's external bounds to some extent, at least its top surface and usually the shape of that surface (a "body of water" like a pool or a lake). But all those bounds disappear when we adopt an internal viewpoint with our eyes under water. Now we no longer have a sense of the water as an "objective" space with clear visual limits. It has become an unbounded mass coinciding with the whole space of our conceptual awareness, and the internal vantage encourages a vaguer subjective sense of being surrounded, restricted, touched by the water on the surface of our skins — none of which would be possible from a completely external viewpoint.
2.5. Unrestricted operation

Our choice of vantage points can be influenced in a variety of ways. Deictic expressions such as "over there", for example, may specify or presume a viewpoint. A canonical viewpoint is often implicitly specified as part of the canonical image-schematic starting point defining an expression; examples include defined shapes ("triangle") or images oriented for verticality ("above") or expressions linked to multiplex-mass contrasts ("a herd of cattle"). There are also obvious practical constraints on construal — a relationship such as containment tends to elicit a viewpoint that makes the interior of the container conceptually accessible. Perhaps most importantly, textual factors play a crucial role in guiding the conceptualizer to a particular vantage in the process of building a coherent scene.

But once an objective scene has been initially established, we are conceptually free to roam. Construal transformations do not change the scene "objectively" in any way, which is what Talmy (1983: 255) is referring to when he says that the geometric imaging system is "largely independent of the perspectival indications". Every object under description remains exactly the "same", as do its relationships to other objects in the scene. All that changes is our construal relationship, and we are not part of the objective scene. As a result, there are no general conventional constraints on using construal transformations. Once a scene has been objectively established, we can alter our construal any way we find useful to form a coherent overall image. (Think of the vantage shifting involved in interpreting a sentence such as "We look like a bunch of idiots sitting here".)

Put another way, construal transformations are normally a purely "pragmatic" aspect of language — which no doubt explains why they are ignored in linguistic discussions. Nevertheless, construal transformations play an important role in some clearly "linguistic" phenomena. The rest of this paper will illustrate how a viewpoint freely chosen to interpret one expression (e.g. "house") can influence objectively variant readings of a syntactically related expression (e.g. "through").
3. Tracing polysemy to internal-viewpoint transformations

3.1. Polysemy of through-phrases

As an illustration of the complex interaction between construal transformations and the objective scene, consider the various legitimate ways to interpret the event described in sentence (1).

(1) Lucy ran through the house.

3.1.1. Out-in-out path. The simplest option is to adopt a fairly stable external vantage similar to my canonical God's-eye view of the house, and imagine Lucy entering the front door and disappearing from view for a while, then reappearing as she emerges out of the back door. In this interpretation, the house is like a black box that hides Lucy from view while it contains her. We may shift our perspective somewhat during the path, first toward the front in order to get a better view of her entry, and then toward the rear to gain a better view of her exit and final location; but while she is in the house she is hidden from us.

A black-box image of containment is not normally sufficient, though. If we want to keep our eye on Lucy during the whole course of her path, one obvious way is to follow her inside, conceptually speaking. We could imagine her outside from an external vantage, then shift to an internal viewpoint to watch her go through the interior of the house, then pop back out to an external perspective to see her final location outside again.

3.1.2. Interior paths and internal viewpoints. In a third construal option, we could interpret sentence (1) from an exclusively internal viewpoint on the house for the whole duration of Lucy's path. Now our view of Lucy begins with her appearance inside the house and ends with her disappearance at the limits of our field of vision, i.e. at the back door. Although we may vaguely realize that Lucy begins and ends her path outside the house, we cannot clearly visualize those positions
from a purely internal viewpoint. The world "outside" the house is simply not relevant to our conception.

This last construal leads naturally to a reading of sentence (1) which is objectively distinct from the out-in-out interpretations. We do not have to presume that Lucy began and ended her path outside the house; the sentence can just as well mean that she was inside the house the whole time.

The interesting point here is that an exclusively internal viewpoint on the house automatically channels the interpretation into the exclusively interior-path reading for the *through* path; from inside the house, a beginning or end point outside is beyond the scope of the scene anyway. And what's more, the interior-path variant of the *through*-phrase is inconsistent with an external viewpoint on a closed container. If you imagine a house from a normal vantage outside, any exclusively interior path which may be going on inside simply is not relevant in your conception.

In effect then, a freely occurring internal-viewpoint transformation on its landmark (LM) has contributed to an objectively distinct variant reading of the path-schema for *through*. Even though the construal transformation applies directly only to the LM and does not change it in any objective way, it indirectly motivates polysemy in the prepositional phrase. *Through* is simply vague as to the location of its path's endpoints, but our construal of the LM imposes a more detailed interpretation. The polysemy is not exactly "located" in either the preposition or the LM, but it arises from their syntactic combination under a particular pragmatic construal of the LM.

3.1.3. Subjective effects. The semantic details of *through*'s interior-path variants reflect the relatively reduced status of the path's beginning and end points, and the correspondingly increased salience of its continuous interior portion. An out-in-out path has beginning and end points defined relative to the LM's external bounds, namely as publicly observable locations "outside" the LM, and the result is a perfective conception with three distinct stages (out, in, out). From an internal viewpoint, though, the beginning and end locations of the path are not so precisely
defined. Their only inherent specification is roughly "the locations at which the trajector (TR) appears and disappears from view". If the endpoints of the path are to be read with more than this purely subjective spatial definition, then the locations must be specified in terms of the LM's internal structure — e.g. as "from the front door to the back door". Normally though, the endpoints remain vague and the focus is on the nature of the TR's motion through the LM "medium" (Talmy 1983: 238, Hawkins 1984: 94-101), which is a space with the subjective semantic properties associated with internal viewpoints.

The purest case is an internally homogeneous mass (or a multiplex construed as such a mass), which does not have distinctly construed internal components. Since an internal viewpoint on a homogeneous mass reveals no visually distinct separate locations, the semantic focus is naturally on the continual interaction between the TR and the LM. The imperfective interpretation typically highlights the subjective feelings of texture, temperature, and especially restricted movement and vision in the medium. Not surprisingly, the type is common with LMs that make progress continually difficult.

(2) *Lucy felt her way tentatively through the darkness.*

(3) *Lucy hacked her way through the jungle.*

(4) *Lucy worked her way through the room.*

A LM such as a house contains a heterogeneous collection of distinct objects or parts, including structurally inherent rooms and hallways and doors, a variety of pieces of furniture, inhabitants, etc. A path through such a space, e.g. Lucy's path in sentence (1), is naturally defined as a continuous progression from one such visible component to another, for example from a door through a hallway past another door and disappearing at another door. In effect the notion of a connected sequence of locations replaces the more continuous image of a homogeneous resisting medium. Thus a sentence like (4) could have either kind of interior-path reading — a connect-the-dots path from one contained object, e.g.
a person, to another, or a steady progression through a resisting medium such as people crowded together into a mass. 7

3.1.4. Covering. Another important interior-path variant illustrating the importance of construal transformations is the exhaustive "covering" of a LM's interior, illustrated in sentences (5) and (6).

(5) Lucy looked all through the house for her red hat.
(6) There are pieces of clothing scattered all through Lucy's house.

Such variants are unique in that they require an interior-path reading. Search verbs like look for, multiplex-distribution verbs like scatter, and — most interestingly and generally — the quantifier all cannot occur with out-in-out paths. These variants deserve a much more extensive treatment than this paper allows, especially given the parallel variants with other prepositions (most notably over). For present purposes, though, it will suffice to say that they specify a viewpoint that does not include the world outside the LM as part of the relevant setting, and they invite an exhaustive connect-the-dots reading that includes a whole set of contained objects or locations. Any adequate treatment of covering will have to account for the role of internal viewpoints.

3.1.5. Verb particles. When a LM is truly gapped (and not a specific recoverable deleted object), it can scarcely be a clearly bounded closed object construed from an external viewpoint. It makes sense, then, that a sentence such as (7) is naturally read with an internal viewpoint on whatever space is pragmatically given as the setting.

(7) Lucy ran through.
3.2. Polysemy of around-phrases

Sentence (8) reflects a similar polysemy with around-phrases.

(8) Lucy ran around the house wearing combat boots.
(9) Lucy ran around wearing combat boots.

One reading describes a path on the outside of the house; it requires an external viewpoint that reveals the outer boundaries of the house. The other reading describes a path which takes place entirely within the house, paraphrasable as "Lucy ran around wearing combat boots in the house". Again, the interior-path reading of around is fully compatible with an internal viewpoint, in fact it naturally suggests a rotating-construal transformation — but it is inconsistent with an external viewpoint on a closed LM. Also as with through, a verb particle use such as sentence (9) invites an internal viewpoint on a vague given space.

4. Opened containers and weakly internal viewpoints

4.1. Open-sided containers and conceptual-access transformations

Up to now we have made the simplifying assumption that the house's interior is closed to view from an external vantage; but that does not have to be the case, either perceptually or conceptually. To begin with, containers may have openings such as windows or doors, and even whole sides may be transparent (e.g. wire cages or elevators with glass walls). The most common case of all is the set of open-top containers, which includes anything from boxing rings to pots and pans (without lids) to topological regions such as yards or cities (construed to have some vertical depth above their base surfaces).

In conception there is also the "Superman" option for seeing the inside of a container from the outside. By using a kind of conceptual x-ray vision, we can
imagine the house in sentence (1) with a transparent (or removed) side even if it does not "actually" have one. In other words, we can conceptually open a container purely for construal purposes, allowing us to see inside without shifting to a truly internal vantage. This is yet another kind of construal transformation, which can be called a *conceptual-access transformation*.

4.2. Weakly internal viewpoints

Open-sided containers thus provide us with the possibility, from an appropriate viewpoint, of seeing both the interior of the container and its enclosing shape in a single coherent image. It turns out, though, that the distinction between external and internal viewpoints remains in effect in a slightly altered form, as illustrated by *through*-phrases like these.

(10) *Lucy walked through the garden admiring the daisies.*
(11) *Lucy traveled through France in a red Yugo.*

Sentences such as (10) and (11) can have either of the two usual readings — out-in-out or interior-path. In the out-in-out reading of (11), Lucy could be going through France on her way from Germany to Spain. That reading requires a vantage point far enough away to reveal the borders separating France from the other two countries, and focusing attention on those borders naturally reduces awareness of France's internal structure to some extent. In the interior-path reading, France would be the sole location of Lucy's tour. She could be traveling through various parts of the country, with no part of the tour crossing its borders, and the world outside those borders would be irrelevant to the scene. In this interpretation we have moved conceptually closer to focus on France's interior, and we recognize the country by its internal structure — its characteristic landmarks, cities, houses, language, customs, etc. In other words, we have an interpretation with all the main characteristics of an internal viewpoint, even
though our vantage is still hovering somewhere above France. This vantage can be called a weakly internal viewpoint.

In effect, then, the transition from a (weakly) external viewpoint to a weakly internal viewpoint occurs at the point of object-setting congruence. As we move toward the open side of a container, its bounding shape eventually disappears at the periphery of our conceptual field and there is nothing left in the scene but the interior of the container. We can continue to move closer, but there is no other significant point on the proximity continuum at which we are suddenly "in" the container so that our conception of it changes radically. There is only a completely gradual change of perspective all the way to its base surface.10

5. Further topics

This paper has provided only a cursory introduction to construal transformations, one that has omitted a whole range of important applications of the concept. In particular it needs to be noted that everything has pertained solely to static spatial descriptions. Even when we were discussing paths with through and around, the construal transformations themselves applied only to the stable LM (the house), not to the paths themselves.

The next obvious step, and the one that looks most promising, would be to extend the discussion to second-order LMs that have an inherent sequential (temporal) dimension as well as the spatial ones, making poor Lucy go through things like obstacle courses, divorces, life, and boring linguistics articles. At that point we could apply the concept of construal transformations to topics such as scanning (both sequential and summary), subjective motion (the path equivalent of an internal viewpoint), the aspectual mapping that defines the internal structure of a sequence, the relation of viewpoint to perfectivity, and the role of construal in locating events in time as well as in space.11

For now, though, we can conclude this much: construal transformations are important phenomena that pervade semantic interpretation, that are the primary
sources of subjective interpretation, and that can trigger objectively variant readings in several kinds of construction. Like all image-schema transformations, they deserve much more attention than they have received so far.

Notes

1 I expect that visual imagery generally is privileged for similar reasons. Incidentally, some concepts will constrain the canonical viewpoint much more than "house" does. A concept such as a "triangle", for example, will require a canonical side view that maximally reveals its characteristic shape. I have argued elsewhere (Dewell 1994) that the central image schema for "over" specifies an oriented canonical side view that reveals a characteristic arced shape. See the discussion below (2.5) on the unrestricted operation of construal transformations.

2 Vantage-shifting transformations are contrasted with visual-motion transformations, which include scanning operations and conceptual-access transformations. Scanning operations play no direct role in the phenomena discussed in this paper, although they would become crucial if we extended the discussion to construing path schemas as such. Conceptual-access transformations are introduced in section 4.1 below.

3 See Dewell (1994) for a more detailed discussion of the semantic effects of shifting away from the canonical vantage point associated with over.

4 Shifting from an internal viewpoint to an external one is of course also possible, though not as pragmatically important given the tendency for canonical viewpoints to be external.

5 Terminology involving "subjective" and "objective" can become confusing. Construal transformations are obviously intimately related to "subjectification" in the sense that the conceptualizer may become part of the objective scene (Langacker 1990), but the phenomena are in principle distinct. During a construal transformation the conceptualizer maintains what Langacker calls "maximal subjectivity" throughout.

6 It is easy to see why construal transformations need to operate freely.

(1) They are essential to our normal conception of object constancy. We have learned that a particular house is exactly the same house whether we view it from near or far, from the front or the side or above or behind, and even when it is hidden from our view. (It is also the "same"
house when it has been repainted or remodeled, but not exactly the same. There are limits on the
objective transformations — at some point the object stops being recognizably the same house
and starts being something new, like a grocery store or a pile of wood.)

(2) Construal transformations are also essential to communication, which depends on the
principle that you and I can talk about the "same" house no matter what particular vantage point
we happen to perceive it from. Construal transformations insure the objectivity necessary for
intersubjective communication.

There is also a "plowing" variant of through in which part of the TR is above the top surface
of a LM such as grass or shallow water or snow lying on the ground.

(i) Lucy ran relentlessly through the soft snow.

*Through* is natural in such paths, since this kind of TR-LM relation is normally described in
terms of containment (compare "standing in a foot of water" or "long-stem roses in a vase"); so
sentence (i) is essentially like (2)-(4). The construal relation is more complicated, however,
since there is not a pure internal viewpoint; the conceptualizer's visual vantage point is above
the external surface of the LM. (Compare the image associated with open-sided containers,
discussed below.) On the other hand, there can be a simultaneous, purely internal nonvisual
image of the LM as a restricting medium — we can imagine the feel of the snow on the lower
portion of the body even though our eyes are above it. The situation with such hybrid
viewpoints becomes even more complex in sentence (ii).

(ii) Lucy sawed through the board with some difficulty.

A saw cutting through wood combines two potential "through" paths: an interior one, like
running through snow, in which the saw plows horizontally across the surface at a relatively
constant depth, and one in which the saw moves vertically from top surface to bottom (probably
out-in-out).

Conceptual-access transformations are basically different from vantage-shifting transformations
in that the conceptualizer does not necessarily alter either proximity or perspective; his or her
vision is in effect sent out like a metaphorical probe. Thus conceptual-access transformations
can be classed together with visual scanning transformations into a category of *visual-motion transformations* (an association that makes it difficult to resist referring to them as "CAT-scans").

Conceptual-access transformations are not peculiar to containers. We can also imagine things which are "behind" or "under" occluding surfaces. "There is a car behind curtain number three" is naturally interpreted by imagining the closed curtain as given and then hypothetically opening it to expose the car — but remembering that the curtain is not "really" open. (A perspective transformation is of course also an option, conceptually moving to a vantage behind the curtain.)

9 The sense of an internal LM structure cannot disappear entirely, however, or else *across* would be appropriate and not *through*; the containment implicit in the *through* image requires that the LM's interior be construed at least as a "medium" with some depth. I doubt that purely two-dimensional enclosure ever counts as "containment"; even a phrase like "in a circle" tends to mean either a component part of the shape or an internal viewpoint suggesting nonvisual three-dimensional subjective images, rather than a simple geometric location within the perimeter. Purely two-dimensional spatial inclusion would be specially marked as "inside the circle" or "within its boundaries". And if there is a concrete surface rather than an abstract geometric plane, then *on* is called for rather than *in*. (Compare "on the field", which requires a bounded region like a football field, with "in the field", which is an unbounded medium inviting an internal viewpoint and a feeling of being surrounded.)

10 Although there may be conceptual closure of the open side roughly delimiting the extent of the container's interior, no clear line can be drawn. Normally, being in an open-topped container means being supported by its base ("standing in the bathtub", "flowers in a vase"); but that is not a necessary condition. Bees can swarm "in a garden" as long as they are not above its trees and bushes.

When the LM is a transparent medium, as in (iii), the reading can be either strongly or weakly internal.

(iii) Lucy ran joyfully through the wind and the rain.
In the strongly internal interpretation, we imagine sharing the LM space with the TR — with all the subjective feelings that implies. A weakly internal viewpoint, on the other hand, might correspond to a vantage inside of a house looking at the scene through a window.

11As a rough approximation, second-order objects have an internal script-like structure that actually defines them, as well as external bounds that "contain" them in a purely temporal context. If Lucy is in the audience, sentence (iv) invites an internal-viewpoint construal similar to that of (4), from the start through the intermediate stages to the finish (and nothing outside those temporal bounds is relevant).

(iv) Lucy slept through the performance.

If she is home in bed, however, the performance tends to remain "closed" to us and we assume an external perspective focusing on its purely temporal bounds. (Note that a phrase such as "her brother's dreadful performance" invites a conceptual-access transformation that "opens" the interior of the performance to view from an external perspective.)

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I expect that visual imagery generally is privileged for similar reasons. Incidentally, some concepts will constrain the canonical viewpoint much more than "house" does. A concept such as a "triangle", for example, will require a canonical side view that maximally reveals its characteristic shape. I have argued elsewhere (Dewell 1994) that the central image schema for "over" specifies an oriented canonical side view that reveals a characteristic arced shape. See the discussion below (2.5) on the unrestricted operation of construal transformations.

Vantage-shifting transformations are contrasted with visual-motion transformations, which include scanning operations and conceptual-access transformations. Scanning operations play no direct role in the phenomena discussed in this paper, although they would become crucial if we extended the discussion to construing path schemas as such. Conceptual-access transformations are introduced in section 4.2 below.

See Dewell (1994) for a more detailed discussion of the semantic effects of shifting away from the canonical vantage point associated with over.

Shifting from an internal viewpoint to an external one is of course also possible, though not as pragmatically important given the tendency for canonical viewpoints to be external.

Terminology involving "subjective" and "objective" can become confusing. Construal transformations are obviously intimately related to "subjectification" in the sense that the conceptualizer may become part of the objective scene (Langacker 1990), but the phenomena are in principle distinct. During a construal transformation the conceptualizer maintains what Langacker calls "maximal subjectivity" throughout.

It is easy to see why construal transformations need to operate freely.

(1) They are essential to our normal conception of object constancy. We have learned that a particular house is exactly the same house whether we view it from near or far, from the front or the side or above or behind, and even when it is hidden from our view. (It is also the "same" house when it has been repainted or remodeled, but not exactly the same. There are limits on the objective transformations — at some point the object stops being recognizably the same house and starts being something new, like a grocery store or a pile of wood.)

(2) Construal transformations are also essential to communication, which depends on the principle that you and I can talk about the "same" house no matter what particular vantage point we happen to perceive it from. Construal transformations insure the objectivity necessary for intersubjective communication.

There is also a "plowing" variant of through in which part of the TR is above the top surface of a LM such as grass or shallow water or snow lying on the ground.

(i) Lucy ran relentlessly through the soft snow.

Through is natural in such paths, since this kind of TR-LM relation is normally described in terms of containment (compare "standing in a foot of water" or
"long-stem roses in a vase"; so sentence (i) is essentially like (2)-(4). The construal relation is more complicated, however, since there is not a pure internal viewpoint; the conceptualizer's visual vantage point is above the external surface of the LM. (Compare the image associated with open-sided containers, which will be discussed below.) On the other hand, there can be a simultaneous, purely internal nonvisual image of the LM as a restricting medium — we can imagine the feel of the snow on the lower portion of the body even though our eyes are above it. The situation with such hybrid viewpoints becomes even more complex in sentence (ii).

(ii) Lucy sawed through the board with some difficulty.

A saw cutting through wood combines two potential "through" paths: an interior one, like running through snow, in which the saw plows horizontally across the surface at a relatively constant depth, and one in which the saw moves vertically from top surface to bottom (probably out-in-out).

Incidentally, for obvious reasons a path through a house needs to be extensive enough to require a "house" frame of reference rather than a smaller one, such as a "room" or the vague deictic space associated with verb particles.

Conceptual-access transformations are basically different from vantage-shifting transformations in that the conceptualizer does not necessarily altering either proximity or perspective; his or her vision is in effect sent out like a metaphorical probe. Thus conceptual-access transformations can be classed together with visual scanning transformations into a category of "visual-motion transformations" (an association that makes it difficult to resist referring to them as "CAT-scans").

Conceptual-access transformations are not peculiar to containers. We can also imagine things which are "behind" or "under" occluding surfaces. "There is a car behind curtain number three" is naturally interpreted by imagining the closed curtain as given and then hypothetically opening it to expose the car — but remembering that the curtain is not "really" open. (A perspective transformation is of course also an option, conceptually moving to a vantage behind the curtain.)

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When the LM is a transparent medium, as in (iii), the reading can be either strongly or weakly internal.

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As a rough approximation, second-order LMs have an internal script-like structure that actually defines them, as well as external bounds which are purely temporal and derivative. Lucy slept through the performance invites an internal-viewpoint construal similar to the connect-the-dots reading of ( ), from the start through the intermediate stages to the finish. Compare the external viewpoint of after the performance, which wraps the event into a closed whole object with temporal bounds, or after Lucy's dreadful performance, which still focuses primarily on the external temporal bounds although it requires conceptual access to the "interior" of the event.