Semantic Constraints on the English Locative Constructions

Seon Kim
(Seoul National University)

Kim, Seon. 2002. Semantic Constraints on the English Locative Construction. SNU Working Papers in English Language and Linguistics 1, 45-61. English locative verbs which have a theme and a location argument show three different patterns in selecting their internal arguments: some allow either of them to be realized as the direct object, while others only one of them. This paper investigates what semantic factor is relevant to the selection of the direct object in the locative construction. I propose the notion of "specification," which is defined as the "description of a specific manner of a motion or a change denoted by a verb." I argue that only the entity which is directly involved in the specification of a verb can be realized as the direct object. In other words, a verb selects as its direct object the entity on which a manner of its motion or change is specified. Some verbs can specify their manner either on the theme or on the location argument, which leads to the locative alternation. (Seoul National University)

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1. Introduction

This paper gives a semantic account of English locative constructions, where the meaning of the verbs relates to putting substances on a surface or things in a container. Among these constructions, the locative verbs such as spray/load verbs involve a direct object with either choice of the direct object in the locative construction cannot be easily explained, but can be theme or location and an object of an appropriate preposition. This kind of locative verb is a so-called 'locative alternation'. Though many of such verbs show the grammatical

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1 This paper is shorten from the thesis, Seon Kim (2000)
2 Levin (1995) classifies the locative constructions into five forms: spray/load alternation, clear alternation, wipe alternation, swarm alternation and clear
 alternation of theme and location in a direct object, there are also a lot of verbs that cannot permit the use of locative alternation. Some verbs such as cover and fill permit only a location-object. Other verbs such as pour and dribble, on the contrary, allow only a theme-object. Such different uses of the locative verbs have been noted by many linguists, in that the choice of the direct object in the locative construction cannot be easily explained, but can give an explanation of case alternations.

This paper proposes that the constraint on locative alternation depends on the property of manner denoted by the verb, which is predicated to be acted on material or location. This paper is organised as follows: In section 2, the previous accounts on locative constructions are simply reviewed. In section 3, on the basis of the discussion of the previous chapter, the Constraint of Specification of Entities will be proposed as a semantic characterization relevant to the locative construction. In section 4, it will be shown how this constraint applies to each verb class, SPRAY VERBS, POUR VERBS and FILL VERBS. It will also be shown that the notions of specification predict how the clear alternation appears in the syntactic construction. Section 5 will summarize and conclude the discussion.

2. Previous Analyses

Locative constructions have not been explained enough under traditional theories in which syntactically relevant information about semantic arguments consists of a list of thematic roles like ’agent’ ’theme’ and ’location’, which are linked onto a hierarchy of grammatical positions like subject, object, and oblique object. Under such accounts, only theme could appear in the position of direct object. The locative construction, though, permits either theme or location as the direct object and assigns the remaining argument as the oblique object, as shown in the following examples.

(1) a. Jack sprayed paint on the wall
    b. Jack sprayed the wall with paint
(2) a. Jack loaded the hay into the truck.

 alternation. This paper will treat the spray/load alternation because the concern is a semantic factor which is relevant to a direct object.
b. Jack loaded the truck with the hay.

(3) a. *June covered the blanket over the baby.
   b. June covered the baby with a blanket.

(4) a. *June filled water into the bowl.
   b. June filled the bowl with water.

(5) a. Tamara poured water into the bowl.
   b. *Tamara poured the bowl with water.

(6) a. Tamara dribbled water into the floor
   b. *Tamara dribbled the floor with water

Such verbs as spray/load can have either theme or location as its object as shown in (1) and (2). Some verbs such as cover and fill permit only a location-object as shown in (3) and (4). Other verbs such as pour and dribble, on the contrary, allow only a theme-object as shown in (5) and (6).

In order to predict what makes these locative constructions different, a number of explanation have been suggested. First, there are accounts in the view of the entities involved in the event denoted by the verb. For example, Foley & Van Valin (1984) explain the locative alternation by the affected meaning of undergoer. The totally affected undergoer can be the direct object and the partly affected undergoer argument appear with a preposition. However, there are non-alternating locative constructions with the verbs such as cover and pour. Though the totally affected undergoer may explain a part of meaning of locative constructions, it doesn’t show what makes the locative alternation possible.

Different from Forley and Van Valin, Dowty (1991) considers the spray/load class and fill class under the proto-roles hypothesis. Following the hypothesis, Noun Phrase(NP) of material and NP of location indicated by locative verb have the Proto-Patient properties and NP with more Proto-Patient properties can be lexicalized as the direct object. According to Dowty’s explanation, the spray/load cases can allow either NP of material or NP of location to be incremental theme, in that the NPs undergo a change of state. On an account of non-alternating verbs such as fill and cover, Dowty states that, intuitively, such verbs might have the meaning of occupancy of the space, which is restricted to a locative incremental theme. There are, however, a number of verbs such as adorn, bind, etc., which don’t show any occupancy of the space but
allow a locative incremental theme.

(7) a. *They adorned ribbons onto the gift
    b. They adorned the gift with ribbons.
(8) a. *He bound rope around her
    b. He bound her with rope.

The examples above show that the inherent semantics of occupancy cannot explain why this kind of verbs cannot alternate though they make either material or location the incremental theme. Thus the incremental theme cannot give sufficient explanations to the locative alternation and all locative constructions.

Forley and Van Valin's and Dowty's accounts are in the view of the entities involved in the event denoted by the verb but they explain the locative construction by way of aspeotical meanings such as totally affected or incremental theme. Nevertheless, such aspeotical accounts cannot be effective in explanation of the locative constructions.

There is also an account based on aspeotical meaning; the aspeotical property of the verb influences the decision of a direct object. Tenny (1992, 1994) suggests that aspeotical properties of verbs play a crucial role in the locative alternation. According to Tenny, an argument can be the direct argument only when the argument can 'measure out' the event. Tenny's aspeotical account is different from Dowty's incremental theme, in that the former does not associate aspeotical delimitedness with thematic roles. Locative alternation is possible when the verb is lexically specified in order to take a measuring object, even if it is lexically unspecified as to whether this object must be a path or an incremental theme.

As Tenny notes, however, not all verbs fitting her description undergo the locative alternations. The non-alternating locative verbs, *fill and *pour, could take either material or container as a measuring-out argument, but do not permit the locative alternations. In addition, there is a case that the container or flat surface cannot be measured out in the event, as shown in (9)

(9) a. The vandal sprayed paint onto the statue.
    b. The vandal sprayed the statue with paint.

    (Dowty, 1991; Rappaport & Levin 1993)
Because only a splotch of paint can ruin the statue, the consumption of paint does not happen. If so, paint could not be the direct object according to Tenny’s claim. On the contrary, the paint can appear in the position of the direct object in (9a). Thus, Tenny suggests an inclusive classification by treating the different verb classes such as spray/float, fill, and cover as one class which takes either material or location as the measuring-out argument. This inclusive classification cannot predict properly which meaning makes the verbs appear in syntactically different patterns.

And, there are the accounts which explain the locative constructions in terms of semantic structure where the meaning components of verbs constrain the locative constructions. Pinker (1989) and Levin (1993) suggest that Affectedness operates on the semantic representations of locative verbs. The notion of Affectedness is that the affected entity can be caused to undergo either change of location or change of state and can be the grammatical object. This affectedness is different from the preceding holistic effect in Foley & Van Valin, in that the former is not dependent upon the extent of change but upon the change of state, whereas the latter is related to the part or total affectedness.

In addition, the former relates to how different verb classes link to certain argument structure patterns whereas the latter relates to the thematic roles. Pinker and Levin propose three semantic classes of locative verbs: Verb of movement (e.g. put, push, pour, drip, slosh), Verb of change of state (e.g. fill, coat, cover), and Verbs of movement with an effect of manner of motion on location (e.g. spray, paint, brush) (Saed, 1997; pp 242-243). These classes of verbs reflect different patterns of locative construction. The verb of movement such as pour and the verb of movement such as spray are different, in that the former has only the theme-object. However, it is vague to identify what makes these two kinds of verbs of movement different. The sentences below show that the verb dribble in (10) and the verb brush in (11) are motion verbs but they behave differently with regard to the locative alternation.

(10) a. She dribbled paint onto the floor.
    b. *She dribbled the floor with paint.

(11) a. Jane brushed paint onto the fence.
    b. Jane brushed the fence with paint.
The verb *dribble* might have the semantic structure in the third type of the locative verbs, in that it could effect the floor by dribbling paint. Pinker and Levin cannot present an obvious meaning which classifies the verb *dribble* and the verb *brush* differently and they refer to 'a kind of meaning', instead.

In addition, this vagueness of meaning component cannot hold good in many locative verbs unexplained by Pinker and Levin. For example, the verbs such as *cultivate, plant, settle, hang, swab, swab* etc are apt to identify(be classified as the) motion verbs which could not permit the locative alternation. In fact, these verbs permit the locative alternation as shown below.

(12) a. Jack planted wheat on the field.
   b. Jack planted the field with wheat.

(13) a. Caroll hung the pictures on the wall.
   b. Caroll hung the wall with the pictures

From these facts, we need to reconsider an underlying semantic factor which makes the locative verbs classified differently. Such a semantic factor has to be proposed to have the predictability about the locative construction and to explain the locative constructions more correctly.

3. Specification Constraint on the English Locative Constructions

3.1 Definition of Specification Constraint

The semantic property relevant to the locative constructions is the notion of specification, which was first proposed in Voors (1995). Voors uses the notion of specification as one semantic factor to propose a semantic analysis of causative constructions. Voors proposes that the

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3 Voors (1995: 499) proposes that an adequate semantic analysis of causative transitive constructions has to take into account two phenomena: semantic specification and change of state. Voors roughly discusses the specification patterns.
notion of specification is one of the meanings associated with the verbs which specify how the entity moves or changes.

Voorst, however, uses the notion of specification so roughly that we need to reconsider the notion. On closer look, Voorst's notion of specification consists of two notions: a specific manner of a verb and an specified entity. In other words, the meaning that a verb can specify how the entity moves or changes can imply that a verb can specify the manner of motion. it can also imply that an entity can be directly involved in the specific manner denoted by the verb.

First, the notion of a specific manner of a verb is that a verb describes a specific manner of motion or change. For example, the verb *spray* describes an specific manner, spraying. On the contrary, the verb *put* does not describe a specific manner only to denote putting regardless of the manner of motion.

Secondly, the notion of specification of an entity means that the entity is directly involved in the notion of specification when a verb has the notion of a specific manner of a verb. Considering the verbs having two arguments, verb *eat* specifies the motion, eating and the changes, being eaten. Entities in the event denoted by the verb *eat*, an eater and an eaten object can be directly involved in the notion of specification of the verb. On the other hand, verb *break* can describe the change, being broken, not the motion, breaking. Among entities in the event denoted by the verb *break*, a causer and a broken object. a broken object can be directly involved in a specific manner denoted by the verb but a causer cannot be directly involved in a specific manner denoted by the verb. If one ate an apple, the verb *eat* shows the eating action of the eater and the eaten state of the verb *eat*. On the other hand, if one broke the window, the verb *break* does not show how he or she broke the window but what happened to the window.

The notion of specification is different that of the affectedness, in that the former is related to the manner of motion denoted by a verb while the latter is related to the manner of action which leads to the

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4 According to Pinker (1989, 174), Manner refers to how an actor acts or a theme changes, or to something the actor or theme is doing concurrently with the change. For example, it is the difference between *punch* and *slap* (manner of action) or between *bounce* and *roll* (manner of motion). The notion of specification relate to manner of motion.
change of state in the object. For instance, the verb lose cannot have the meaning of specification but meaning of affectedness. The verb lose does not describe a specific manner of motion or change, and it cannot have the meaning of specification. On the other hand, the verb lose has the meaning that the action, losing, denoted by the verb affects the object being lost, and it does have the meaning of affectedness. Though the two notions are different in indicating the 'manner', i.e. a specific manner vs. a manner of being affected, they may share the meaning of effect. The verb lose indicates being lost, in other words, affected, but it is unknown of the specific manner of being lost. What is noted is that specification and affectedness may share in the meaning of effect, but specification is not necessarily the component of the meaning of effect.

And, the notion of specification differs from Incremental Theme, in that the former is non-aspectual meaning, i.e. manner, while the latter is aspectual meaning. For example, the verb eat in ate apples describes a specific change, but being eaten does not indicate whether the action of eating apples finished. The notion of specification is a meaning completely different from that of Incremental Theme. The former relates to the notion of manner and the latter does to the notion of time. The notion of specification indicates a specific manner of motion or change denoted by the verb. Incremental Theme indicates the part of an entity corresponding to the part of the event denoted by a verb. In locative constructions, material and location can be incremental theme, but they appear different with regard to the notion of specification. For locative verbs vary according to the specification of their participants, not the delimiteness of their participants. For example, the verb fill can have both material and location as incremental theme but it cannot have specification of material but specification of location because only location is directly involved in the specific manner, filling, denoted by the verb. Thus, the notion of specification has the different meaning from Incremental Theme.

Thus, Specification means that a verb describes a specific manner\(^5\) of motion or change. The entities involved in the event denoted by a verb can or cannot entail this notion of specification. In this paper,

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\(^5\) Strictly speaking, a specific manner is insufficient in expressing the notion of specification, which denotes how a entity changes. The entity can change in a specific manner or in a specific extent. However, according to theinker, we adopt the term of manner, which probably indicate a manner or a degree.
Specification of an Entity will be chosen, not specification of verb to explain locative constructors. Specification of an Entity means that an entity is directly involved in the notion of specification of a verb. If a verb does not denote a specific manner of the motion of an entity, the entity has the property of unspecification of an entity. For example, we can say the lost object is unspecified entity in case of the verb, lose.

3.2. Specification Patterns of Entities in the Locative Constructions

With this notion of specification, the locative constructions can be interpreted to have three specifications of entities: the specification of agent, the specification of material and the specification of location.

The specification of agent in locative construction can be left out in the present approach, because intuitively the action of an agent is not specified by the locative verb and it has the meaning of unspecification. Then, the specification of material can be entailed in the material caused to move if it moves in a specific manner denoted by the verb, in other words, if it has the notion of specification. Next, the specification of location can be entailed in the location where the moving material can be directly involved in the notion of specification by undergoing change in a specific manner denoted by the verb.

From the notion of specification of material and location, we can classify the locative verbs into three patterns: verbs only with specification of material (e.g. pour), verbs only with specification of location (e.g. fill) and verbs with specification of both material and location (e.g. spray/load). The three specification patterns of entities

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6 The entities involved in the locative constructions are expressed in various terms. We will use a theme as material.

7 Intuitively, the unspecification of both material and location is ruled out because it is impossible to think of the event where an agent acts on neither the material nor the location in locative constructions. However, the problematic verbs remain. In case of pure motion verbs such as put, they have no specification but they take materials as their object. This problem can be solved by dividing locative verbs into locative cause-relation verbs and locative motion-relation verbs according to the causation. The problematic verbs can be included in locative motion-relation verbs, while other locative verbs are cause-relation verbs.
correlate to the three locative constructions. The constraint on the locative constructions can be formulated: For a verb that has theme and locative arguments an internal argument can be a Direct Object only if it entails specification.

4. An Account Based on the Notion of Specification
4.1. SPRAY/LOAD VERBS

SPRAY/LOAD VERBS entail the specification of material and the specification of location. These verbs entail the meaning that the material moves and contacts a location in a specific manner and the location undergoes a change in the same specific manner. These verbs involve both material and location in a specific manner so that they can permit locative alternations, that is, theme-object and location-object. This kind of verbs are shown below.

(14) Alternating both -with and -into/onto SPRAY/LOAD VERBS:

smear, brush, plaster, rub, smudge, spread, streak
heap, pile, stack, mound, stock
inject, splutter, splatter, spray, sprinkle, squirt, dust, shower, splash
bestrew, scatter, sow, strew, seed
string, wrap
cultivate, plant, settle, stick
pack, cram, crowd, jam, stuff, wad, load, pack

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8 The verb fill, in strict sense, specifies the extent of location.
9 In case of the verb load, it is vague how the entities move or change in a specific manner. But, we can consider the notion of specification in respect of a pragmatic factor of the verb load. If we suppose the event where the hay is loaded onto the truck, we can imagine many specific way the hay is moved onto the truck. A specific way may be that the hay on the ground moved to the vehicle which can carry it. We can say that the verb load has a specific path to portable vehicle. Another specific way may be that the hay is located in full. We can say that the verb load has a specific manner the material is located. In addition, the notion of specification of the verb load is obvious when the verb has the meaning that the bullet is loaded onto the gun. For, loading the bullet is done in the specific manner that the bullet is put in a gun. Thus, we can say the verb load has the meaning of specification.
The notion of specification can be also demonstrated by the following example, which shows that a direct object is not necessarily the totally affected entity.

(9)’ a. A vandal sprayed paint onto the sculpture
    b. A vandal sprayed the sculpture with paint

Because the notion of specification is not the meaning based on the extent of affectedness, the paint in (9)’ entails specific manner, spraying, irrespective of whether it is totally or partially affected. The same explanation applies to the sculpture.

Furthermore, the notion of specification can explain the following examples suggested by Tenny.

(15) a. spray the floor with a hose
    b. *spray a hose on the wall
(16) a. spray the bucket with a hose
    b. *spray a hose on the bucket (Tenny, 1994:52)

In (15) and (16), the verb spray takes an instrument instead of material, and does not participate in the alternation. These examples can be explained by the notion of specification, which is not entailed in an instrument, a hose, because the verb cannot indicate how the hose moves. So, the hose cannot be the direct object. On the contrary, the verb indicates how the floor undergoes change, i.e. sprayed, and has the specification of location, so that the floor can be the direct object. The verb spray in (15) and (16) has only specification of location, and does not allow the locative alternation. These examples prove that the notion of specification correlates with syntactic construction.

Such correlation between specification and syntactic construction can also explains the following examples, in which the verbs can indicate only the specification of material and permit only theme-object. On the contrary, if the location can be specified by the adverb full, the verb permits location-object.

(17) a. *John poured the bowl with water
    b. John poured the bowl full with water.
(18) a. *Jane dumped the floor with wastes.
    b. Jane dumped the floor full with wastes.
In the examples in (17a) and (18a), the verbs pour and dump cannot indicate how the bowl undergoes change and they cannot take location-objects. In the examples in (17b) and (18b), the adverb full makes it possible to indicate how the location is changed and the verbs can take the location-object.

4.2. POUR VERBS

Different from SPRAY/LOAD VERBS, which have specified material and specified location, POUR VERBS entail only that a substance moves onto a surface, not how the surface is changed. For example, the verb pour does not specify to what extent the material is poured onto location, in that the motion of material onto location is vague and imperceptible because we cannot know the interim motion of poured material but we know the initial motion of the material. These verbs indicate only specification of material so that they can have theme-object. This kind of verbs are shown below.

(19) Non-Alternating into/onto Only: POUR VERBS:
dribble, drip, dump, ladle, pour, shake, slop, slosh, spill
emit, excrete, expelorate, exude, secrete, spew, vomit
coil, spin, twirl, twist, whirl, wind
attach, fasten, glue, nail, paste, pin, staple, stick, tape
hoist, lift, raise

This kind of verbs can be distinguished from either SPRAY/LOAD VERBS or FILL VERBS, in that the former have only specification of material but the latter have both the specification of material and the specification of location. In addition, the verbs such as coil, and attach differ from the verbs such as bind, and adorn, in that the former specify only material while the latter does only location. That is, the former cannot specify how the location changes but how the material move; the latter vice versa. For example, the meaning of the verbs, coil and bind share in the meaning that material moves around location but they can specify the manner of different entity. The verb coil specifies that the material is repeatedly put on location without knotting whereas the
verb *bind* specifies that the location is bound by knotting irrespective of how many times the material is wound.

Moreover, the notion of specification can explain non-locative construction similar to the locative constructions.

(20) a. push the car to the garage
    b. *push the garage with the car
(21) a. walk the bridge to the other side
    b. *walk the other side of, with the bridge
(22) a. send a letter to your sister
    b. *send your sister with a letter

(Tenny, 1994)

In the examples (20-22), the verbs indicate the specification of material by being pushed or walked or sent but do not indicate the specification of location. These facts evidence that the notion of specification correlates with syntactic construction. The fact that verbs of specified material permit the theme-object correlates to the fact that the construction taking theme-object can be interpreted as motion verbs.

4.3. **FILL VERBS**

On the contrary to POUR VERBS having specified material and unspecified location, there are FILL VERBS, which entail only how the surface is changed, not how material moves into location. For example the verb *fill* specifies the manner of the caused movement to location, i.e. to the extent of being full. These verbs indicate only specification of location so that they can have location-object. This kind of verbs are shown below.

(23) Non-Alternating with Only: FILL VERBS:
    deluge, gush, flood, inundate, budulate, blanket, coat, cover, encrust, fuse,
    adorn, burden, endow, pollute,
    drench, impregnate, infuse, saturate, soak
    block, choke, clog, plug, bind, chain, entangle, lash, rope
    bombard, blot, dapple, riddle, speckle, splotch, spot, stud

With regard to this kind of verbs, there are proposals which show
that, in location-object construction, location is totally affected by material. However, a closer look makes the fact obvious that there are many cases that do not show total coverage, as seen in the verbs such as adorn, clog, and stud. From this fact, it is possible to say that not all the location-object can have holistic interpretation and this holistic interpretation is a contingent phenomenon to verbs such as spray, fill. In case of FILL VERBS, the notion of specification holds effective in predicting location-object and non-alternating locative construction.

4.4 clear alternation

In this section, we will observe another locative construction, so called, clear alternation of from-location and of-theme, which have been studied with spray/load alternation. This clear alternation has the different semantic structure from spray/load alternation. That is, the semantic structure denoted by the verb is that the location contains material that is to be removed from it. The following examples show how clear alternations look.

(24) a. Henry cleared dishes from the table.
    b. Henry cleared the table of dishes.
(25) a. The thief stole the painting from the museum.
    b. *The thief stole the museum of the painting.
(26) a. *The doctor cured pneumonia from Pat.
    b. The doctor cured Pat of pneumonia. (Levin, 1995, p152)

Like spray/load alternation, there are three types of clear alternation verbs: the alternating verbs having both theme-into/onto-location and location-with-theme, the verbs having only location-with-theme, and the verbs having only location-into/onto-theme.

The classification of clear alternation verbs is as follows.

(27) a. CLEAR VERBS: Alternating both -from and -of
    clean cleanse strip empty clear drain
    b. REMOVE VERBS: Non-Alternating from Only
        dislodge extract pry remove
        steal uproot wrench etc.
c. WIPE VERBS: Non-Alternating of Only
rub cheat cleanse strip cure ease

According to the account of affectedness, each semantic verb class can be described like the following: REMOVE VERBS are the verbs of removal with the semantic structure 'one causes material to go away from location'. WIPE VERBS share the same structure 'one causes material to go away from location' but include specification of means of removal, too. CLEAR VERBS have the semantic structure 'one causes location to change by removing material'. However, affectedness account cannot give us an obvious explanation about which meaning of such verbs determines the entity as an affected entity while material and location undergo change.

On this point, we can think of the notion of specification, which has the capability to explain the clear alternation, too. As we saw that certain specification was mentioned in the affectedness account, the distinctive meaning in clear alternation is relevant to the notion of specification. The previous examples in (24-26) can demonstrate that the specification constraint predicts each syntactic argument correctly.

The verb clear in (24) can denote both how the dish moves and how the table changes. The dish moves in the 'clearing' manner and the table becomes cleared. The verb clear which entails the specification of material and location, can have either theme-object or location-object, and thus can permit clear alternation. The verb steal in (25) can denote how the picture moves, not how the museum changes. The picture moves in the 'stealing' manner but we don't know how the museum changes. The verb steal entails only specification of material, and can have theme-object, but does not permit clear alternation.

The verb cure in (26) can denote not how the pneumonia moves but how Pat changes. The pneumonia gives away in an unspecific or vague manner but the motion to Pat is curing. The verb cure entails only specification of location, can have location-object, but cannot permit clear alternation. From the examples, we find out that REMOVE VERBS entail only specification of material and have theme-object and that WIPE VERBS entail only specification of location and have location-object whereas CLEAR VERBS entail both the specification of material and the specification of location and permit clear alternation.

Thus, the notion of specification helps to predict how the clear
alternation appears in syntactic construction. In that respect, the notion of specification can explain wide wider range of locative alternations.

5. Conclusion

This paper has sought to find the semantic factor relevant to the locative construction in English, which gives a motivated explanation of the linkage among the locative verbs, their argument structures and the alternation they undergo. The Specification Constraint has been proposed as a semantic characterization relevant to the locative construction: An Entity directly involved in the notion of specification of a verb can be a direct object in the English locative constructions. It has been shown how this constraint applies to each verb class, SPRAY VERBS, POUR VERBS, FILL VERBS, and CLEAR alternation. However, there leave many work to make this notion more obvious and to consider if it is available to other kinds of verbs

References


Seon Kim
kimseonn@hanmail.net