Two Ways of Production of English Double Object Construction

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0 . Introduction

The double object construction in English constitutes a Grammatical Construction and therefore involves a productive process, by which "new" verbs come to be used or licensed in this construction. So it is important to characterise the nature of the "productive capacity" of double object construction. This paper will consider two ways of the production of double object construction and conclude that these two ways can be attributed to the "constructional property" of double object forms and the grammatical extension in terms of locative alternation.

1.1   Facts A: verbs of food-preparation

Some verbs of food-preparation usages, as Pinker (1989) observes, are quite productive in this sense, and comparable to the fairly productive usage of verbs of creation, as in *The artist is drawing Edie a picture* or *The tailor made Simon a new suit*:

(1) . John poured her some coffee.

   She boiled me a lobster.

   Mary tossed me a salad.

On first inspection, the verbs in (1) do not appear to be verbs of creation,

because nothing is created (cf. *draw a picture* or *make a suit*) and only a benefactive relation between the direct object and the indirect object is brought about by the subject. However careful analysis reveals that this is not quite correct; each verb in (1) entails creation (or cooking) of the edible product prior to the act of serving. Thus this indicates that the direct object must refer only to the edible product or unit created, not the source material that remains in its raw or original state. In other words, verbs in (1) fall into the class of verbs of creation. Let us consider these verbs in detail.

First, consider the case where someone pours coffee from a teapot. It may be better to say (2), in which the referent of the direct object is created by the action, than to say (3), unless the entire teapot is to be consumed.

（2）.She pours me a cup of coffee/a cup of that coffee/some of that coffee.

（3）.? She pours me that coffee/a pot of coffee/that pot of coffee.

(Pinker, 1989)

Second, when original materials are made into edible products, the former are much less natural in the double object construction. Compare (4) with (5) , for example:

（4）a . She cooked a pig/some pork for me.

　　b . She cooked me some pork/*a pig.

（5）a . She tossed a salad/some lettuce, tomatoes, and carrots for me.

　　b . She tossed me a salad/*some lettuce, tomatoes, and carrots.

(Pinker, 1989)

Third, if one of the verbs is used with an object that only changes

state, rather than being made into a new kind of object, the double object construction is blocked, as in (6) :

(6) a . Dave baked the Plexiglas panel for me.

 b . ?*Dave baked me the Plexiglas panel.

(Prinker, 1989)

Green (1974) also suggests that when *bake* is used with food objects, it means "create," not "prepare" or "change the state of"; for example, *a baked cake* is somewhat redundant and *an unbaked cake* is somewhat contradictory (Levin & Lappaport (1991) moreover suggests it). Strictly speaking, cookery verbs do not primarily carry the meaning of change of possession, but when they are required to assume this meaning, they may be given it by virtue of the capacity of the construction [V NP NP],[1] functioning as a member of verbs of creation. In other words, since we assume that grammatical devices in English incorporate the construction [V NP NP], the construction can act as a semi-autonomous grammatical device whereby cookery verbs are associated with the semantics and syntactic configurations of the construction[V NP NP]. So cookery verbs fall within the subclass of verbs of creation, which is licensed by the construction acting as a semi-autonomous grammatical device.

1.2 Facts B: polysyllabic dativizable verbs

The "morphophonological" constrains on a double object construction have been so far adopted a number of generalizations in the literature (Green, 1974; Oehrle, 1978; Stowell, 1981; Mazurkewich & White, 1984; White, 1986; Gropen et al., 1989; Pinker, 1989, and so on).

Before we proceed, let us consider Green's (1974) morphophonological constraints on these verbs more closely.

(7) a . one-syllable verbs ... *offer, bring,* etc.

    b . initially-stressed verbs ... *lend, send*, etc.

    c . [+Anglo-Saxon] verbs ... *give, pass*, etc.

    d . initially-stressed verbs of two syllables or fewer ... *promise, forward*, etc.

The constraints, however, seem to be untenable as they stand, as Green himself admits some cases. There are exceptions such as *allow, advance, deliver* contrary to (7a); *permit, promise, offer* contrary to (7b); *telephone, guarantee, satellite* contrary to (7c). The "exceptional" verbs can appear in well-formed sentences as Randall (1992) suggested. He proposes that a whole class of double object forms can be systematically derived from the very class of Latinate, polysyllabic verbs that are assumed to block dativization. Let us take *transmitter*. The derivation proceeds from two steps; frist, take a nondativizable verb, *transmit* in (8a), and add the instrumental *-er* noun suffix to form *transmitter* in (8b), correspondingly shifting stress onto the first syllable; second, apply the English noun-to-verb rule (Clark & Clark, 1979) to form a new verb, with the same stress as the noun, *transmitter* in (8c). This form is compatible with [V NP NP] form, as illustrated in (8d):

(8) a . *We transmitted John the news.

    b . a transmitter

    c . to transmitter

    d . We transmittered John the news.

<div align="right">(Randall, 1992)</div>

The noun-to-verb rule as in (8) applies quite generally to instrumental nouns regardless of their etymology and regardless of whether they are

instruments for transferring information (to-dative forms) or for creating a product (for-datives). They all allow the double object construction. For example, shown in (9);

(9) a. to-datives

John frisbeed/e-mailed Mary a love letter.

That transmitter satellites/radioes us the news.

Joho is helicoptering/dogsledding the climbers some supplies.

Mary is hydroplaning the divers lunch.

b. for-datives

I think I'll Shake & Bake/cornflake the kids some chicken.

Mom is going to skillet/microwave John a pork chop.

Fred promised to wok/convection-oven Mary some

moo-shi-pork.

(Randall, 1992)

We can moreover find out many others as in (10):

(10) to-datives

a. Chris xeroxed/thermofaxed/n'roff him a copy.

b. Fax him this document

Chris arpanetted him a message.

She bitnetted me the latest version.

c. I telegraphed/netmailed her the news.

d. Jack wired Mary the news.

((10a) from Goldberg, 1992; (10b) Wasow, 1981; (10c), Pinker, 1989)

Thus such constraints as in (7) are mostly true, but when these exceptional verbs carry a kind of transfer of possession (a legal means of transfer of possession), they could be allowed to take the double object

form, even if they are non-initially-stressed, polysyllabic, or [-Anglo-Saxon]. Thus it is crucial that they are capable of entering into semantic subclasses of the double object construction. The verb meaning induces a sensitivity to morphophonology; most semantic subclasses of the double object construction, for example, verbs of creation, respect native/Latinate or mono-/polysyllabic distinction, but the semantic subclass of verbs specifying *instruments of creation* is not the case. Instrumental verbs, which are derived from a familiar brand names through the noun-to-verb rule of word formation, are isolated and immune from such morphophonological constraints, because they form a separate dativ-izable semantic subclass of verbs specifying instruments of creation that is licensed by the English grammar.

To sum up, the instrumental nouns do not primarily carry the meaning of change of possession, but when they are required to assume the meaning and then derivatively turned into the corresponding verbs by virtue of the licensing of the construction [V NP NP], (or lexicalized as verbs in the double object form by dint of the construction [V NP NP]), they may function as a member of dativizable verbs. Given the nouns can be supposed to be canditates for the meaning of change of possession, because the nouns are supposed to have the conceptual structure of transferring a message and change of possession of it. Then the nouns receive the licensing of syntactic form of double object by the endorse-ment of the construction [V NP NP], functioning as dativizable verbs even though they don't have monosyllabic, initially-stressed or [+Anglo-Saxon] stems.[2]

Thus, as we discussed at the end of the previous section, grammatical devices in English incorporate the construction [V NP NP], and therefore the construction can act as a semi-autonomous grammatical device whereby instrumental verbs are licensed as forming a dativizable subclass with the meaning of chage of possession.

1.3 Facts C: hypothetical verbs

The productivity is also clear from evidence that the syntactic pattern can be extended to new and hypothetical verb forms. The following examples are used ditransitively with hypothetical lexical items:

(11) a . Elmer shinned the ball to his teammate during soccer practice.

(Goldberg, 1989)

b . Joe shinned his teammate the ball.

(Marantz, 1984)

The new verb, *shin*, "to kick with the shin," seems to be quite natural for native speakers in a way that allows this new verb to be used in the double object construction. This suggests that when the verb is required to mean transfer of possession in a certain context, the construction could give the meaning of transfer of possession to the verb, rather than the verb having inherent meaning of its own.

Though (11) are admittedly unattested hypothetical examples, the similar process can be observed quite extensively in the early stages of language acquisition (See Pinker, 1989).

1.4 Idiosyncrasy of Construction: a brief summary

We have observed above how the specific examples of productivity can be used in the double object construction. These facts can be naturally accounted for by the assumption that attributes the verbs' semantics directly to the construction or their argument structure, [V NP NP], instead of the inherent meaning of specific verbs involved.

These lines of solution have also been suggested by Fillmore (1988),

Fillmore, Kay, and O'Connor (1988) and others. Adopting Fillmore's insight, as well as traditional approaches to grammatical constructions, we can view the construction as imposing a certain semantic construal on the act described by the verb. That is, the thematic core (Pinker, 1989) of "X causes Y to have Z" can be attributed directly to the syntactic skeleton of [SUBJ. [VERB OBJ.1 OBJ.2]], or conventionally associated with the double object construction.[3] Since this construction or syntactic skeleton [V NP NP], which includes the meaning of change of possession, is incorporated into grammatical devices in English, cookery verbs and verbs of communication with instrument can be associated with the meaning of possession change by dint of the construction acting as a kind of autonomous grammar. In this sense we may postulate that the two kinds of verbs described above can be interpreted as narrowly defined classes of verbs whose thematic cores are attributed directly to the construction or skeleton of [SUBJ. [VERB OBJ.1 OBJ.2]], and that such a mapping of the construction [SUBJ. [VERB OBJ.1 OBJ.2]] onto the thematic core, "X causes Y to have Z" can be idiosyncratic or unique to the production of the double object construction.[4]

2. Extension of Grammar

Let us consider extension of grammatical process, especially the extension of the double object construction embracing verbs of fulfilling. In the course of our discussion, we will explore the extension of the construction in terms of the locative alternation, such as *Nicholas loaded hay into the wagon/Nicholas loaded the wagon with hay*, adopting the view of Dynamic Grammar.

2.1 Facts

When we observe verbs of fulfilling in more detail, we notice that the verbs in this class can be further classified into three subcategorized types. The first type, related to the following examples, (12), (13), (14), (15), and (16), displays well-formed sentences with the double object, the preposition *with*, and the preposition *to* (, although one might characterise (a)-sentence in each example as not completely acceptable).

(12) a . (?) She presented the students certificates.

　　b .　　She presented the students with certificates.

　　c .　　She presented the certificates to students

(13) a . (?) Cows provide us milk.

　　b .　　Cows provide with milk.

　　c .　　Cows provide milk to us.

(14) a . (?) He furnished me an address for George Augusta.

　　b .　　He furnished me with an address for George Augusta.

　　c .　　He furnished an address for George Augusta to me.

(15) a . (?) They bestowed him a fortune.

　　b .　　They bestowed him with a fortune.

　　c .　　They bestowed a fortune to him.

(16) a . (?) I supplied them a bag of groceries.

　　b .　　I supplied them with a bag of groceries.

　　c .　　I supplied a bag of groceries to them.

The second is shown as in (17) and (18), and in none of them is the usual double object form without *with* permissible:

(17) a . *I credited him the amount of the check.

b . I credited him with the amount of the check.

   c . I credited the amount of the check to him.

(18) a . * Bill entrusted him a task.

   b . Bill entrusted him with a task.

   c . Bill entrusted a task to him.

The last, (19) and (20), allows neither double object forms nor to-prepositional forms:

(19) a . * They rewarded him a promotion.

   b . They rewarded him with a promotion.

   c . * They rewarded a promotion to him.

(20) a . * The commissioner honored them the award.

   b . The commissioner honored them with the award.

   c . * The commissioner honored the award to them.

> (12), (14), (15), (16), (18), (19), (20),
>
> cited from Pinker (1989): (18), from
>
> Green (1974).

   Now we will in turn consider each type in more detail, relating these verbs to locative sentences. Before we proceed, let us briefly observe the locative alternation.

2.2 Locative Alternation

   Let us first look at the following examples of locative alternation:

(21) a . Clark filled a glass with water.

   b . Clark filled water into a glass.

(22) a . Clark loaded hay onto the truck.

  b . Clark loaded the truck with hay.

(23) a . Clark sprayed paint onto the wall.

  b . Clark sprayed the wall with paint.

Each (a) sentence shows transfer of theme-entity from one place to another. Each (b) sentence, on the other hand, shows the entity whose transfer effects the change of state, in which the goal-entity is filled or covered with the theme-entity. That is, a change of state is specified as the result of putting something into or onto a container or place. The argument structure including an object and a *with*-object has the thematic core, "X causes Y to change its state by means of moving Z to Y." In this case, the entity corresponding to the goal of the physical transfer is treated as an entity undergoing a change of state; it is in particular the goal, say, a surface, or container which undergoes a specific change resulting from the addition of something to it. For example, in (21), the glass must have its entire interior occupied by water; this specifies a particular state of an object (a glass) subsequent to the addition of something (water) to it. Thus the cognitive view that change of location can be connected to change of state leads to "Gestalt Shift" (cf. Pinker, 1989).

2.3 Extension

  Let us turn back to the sentences in (12) to (22) listed in 2. 1. Considering the semantic property of the verbs of fulfilling listed in them, we can then notice that they share the property of locative verbs listed in 2. 2. We will investigate the similarity between two kinds of verbs by means of "what-do test" below, which is inspired by Jackendoff (1990):

A: Locatives : affectedness on GOAL-object

(24) a . ? What Clark did to the glass was fill water into it.

    b . What Clark did to the glass was fill it with water.

(25) a . ? What Clark did to the truck was load hay into it.

    b . What Clark did to the truck was load it with hay.

(26) a . ? What Clark did to the wall was spray paint onto it.

    b . What Clark did to the wall was spray it with paint.

B: Verbs of fulfilling : affectedness on GOAL-object

(27) a . ? What she did to the students was present certificates to them.

    b . What she did to the students was present them with certificates.

    c . What she did to the students was present them certificates.

(28) a . ? What the Japanese government did to the Cambodian was provide foods to them.

    b . What the Japanese government did to the Cambodian was provide them with foods.

    c . What the Japanese government did to the Cambodian was provide them foods.

(29) a . ? What he did to Clara was furnish an address for George Augusta to her.

    b . What he did to Clara was furnish her with an address for George Augusta.

    c . What he did to Clara was furnish her an address for George Augusta.

(30) a . ? What Clark did to Clara was bestow a fortune on her.

    b . What Clark did to Clara was bestow her with a fortune.

    c . (?) What Clark did to Clara was bestow her a fortune.

(31) a . ? What I did to the refugees was supply a bag of groceries to them.

    b . What I did to the refugees was supply them with a bag of groceries.

c . What I did to the refugees was supply them a bag of groceries.

(32) a . ? What I did to Tim was credit the amount of the check to him.

b . What I did to Tim was credit him with the amount of the check.

c . What I did to Tim was credit him amount of the check.

(33) a . ? What Bill did to Jane was entrust a task to her.

b . What Bill did to Jane was entrust her with a task.

c . What Bill did to Jane was entrust her a task.

(34) a . * What Chris did to Tim was reward a promotion to him.

b . What Chris did to Tim was reward him with a promotion.

c . * What Chris did to Tim was reward him a promotion.

(35) a . * What the commissioner did to the members of the baseball team was honor the award to them.

b . What the commissioner did to the members of the baseball team was honor them with the award.

c . * What the commissioner did to the members of the baseball team was honor them the award.

C: Locatives : affectedness on THEME-object

(36) a . What Clark did to the water was fill it into a glass.

b . * What Clark did to the water was fill a glass with it.

(37) a . What Clark did to the hay was load it onto the truck.

b . * What Clark did to the hay was load the truck with it.

(38) a . What Clark did to the paint was spray it on/onto the wall.

b . * What Clark did to the paint was spray the wall with it.

D: Verbs of fulfilling : affectedness on THEME-object

(39) a . What she did with the certificates was present every one of them to the students.

b . ??What she did with the certificates was present the students with every one of them.

c . ??What she did with the certificates was present the students every one of them.

(40) a . What the Japanese government did with the foods was provide all of them to the Cambodian.

   b . ? What the Japanese government did with the foods was provide the Cambodian with all of them.

   c . ? What the Japanese government did with the foods was provide the Cambodian all of them.

(41) a . What he did with most of the foods was furnish it to me.

   b . ? What he did with most of the foods was furnish me with it.

   c . ? What he did with most of the foods was furnish me it.

(42) a . What Clark did with the fortune was bestow much of it on Clara.

   b . ? What Clark did with the fortune was bestow Clara with much of it.

   c . ? What Clark did with the fortune was bestow Clara much of it.

(43) a . What I did with the bag of groceries was supply all of it to the refugees.

   b . ? What I did with the bag of groceries was supply the refugees with all of it.

   C . ? What I did with the bag of groceries was supply the refugees all of it.

(44) a . What I did with the amount of the check was credit all of it to Tim.

   b . ? What I did with the amount of the check was credit Tim with all of it.

   c . ? What I did with the amount of the check was credit Tim all of it.

(45) a . What Bill did with the tasks was entrust many of them to Clara.

   b . ? What Bill did with the tasks was entrust Clara with many of them.

c . ? What Bill did with the tasks was entrust Clara many of them.

(46) a . *What Chris did with the money was reward much of it to Jeff.

b . ? What Chris did with the money was reward Jeff with much of it.

c . *What Chris did with the money was reward Jeff much of it.

(47) a . *What the commissioner did with the award was honor all of it to them.

b . ? What the commissioner did with the award was honor them with all of it.

c . *What the commissioner did with the award was honor them all of it.

The similarity between the verbs of fulfilling and the locative verbs considered, we notice that the verbs of fulfilling share features both ordinary dative alternation verbs likes *give* and the locative verbs listed above.

Now let us see the similarity in detail.

1. The first type verbs (*present*, *provide*, *furnish*, *bestow*, *supply*) share features of both the change of location and the change of state that the locative verbs inherently possess; as for the verbs of fulfilling, the first type verbs are concerned with the use of the preposition *to* rather than *into/onto*, and the locative verbs are concerned with the preposition of *with*, linked to the entity whose transfer effects the state change.This suggests that the verbs with the *with*-form take the meaning of change of state, not the meaning of change of possession.

Suppose that the verbs of fulfilling are included in a subclass of locative verbs. In the locative alternation, change of location induces change of state by virtue of gestalt shift, in that the locative verbs characterise the goal-entity, such as *the truck*, *the wall*, *the glass*, and so on. However, note that verbs of fulfilling are likely to take a recipient as

the goal-object. Then the change of state that verbs of fulfilling take in [V NP₂ with NP₁] can be moreover extended to the change of possession, forming the construction [V NP₂ NP₁]. Note that the notion of possession can be compatible with that of state. Thus one could dativize these verbs (use the double object form) when one does acknowledge that they may indicate change of possession, and, on the other hand, one could not dativize them when one admits that they indicate change of state, forming the construction in which the preposition *with* is inserted between two objecs.[5]

2. The result of the "what-do test "shows that the second type verbs (*credit* and *entrust*) and the third type verbs (*reward* and *honor*) are similar to the locative verbs but different from that of the first type verbs. Now let us discuss the second and the third type verbs in more detail. Examples are shown in (48) and (49):

(48) a . He rewarded her (with a kiss).

　　 b . He didn't credit her properly.

　　 c . He entrusted her completely.

　　 d . They honored the John last night (by naming a scholarship after him).

<div align="right">(Pinker, 1989)</div>

(49) a . We buttered the bread (with cheap margarine).

　　 b . The windshield iced up (with tiny crystals).

　　 c . The bathroom steamed up (with clouds of steam).

　　　　 ((a), cited from Pinker, 1989 and (b) · (c) from Jackendoff, 1990)
It is often observed that these verbs have properties specified by the corresponding derived nominals; *a reward, a credit, a trust, an honor/ some butter, some ice, some steam*. This suggests that the theme-objects are incorporated into the verbs. For example, in (49a) cheap margarine, the theme-object, in the *with*-phrase seems to be incorporated into and

merged with the verb, *butter*, and the sentence can be paraphrased as "to cause butter (margarine) to go on X (something like bread)." This observation holds between *ice up* and *steam up*. The verbs in (48) also seem to involve the incorporated themes; to *reward/credit/honor* X as "to cause a reward/a credit/a honor to go to X."[6]

As we previously demonstrated, *entrust* and *credit* seem to preclude dativization, as follows:

(51) a .　I entrusted my ray gun to your son.

　　 b .　I entrusted your son with my ray gun.

　　 c .　*I entrusted your son my ray gun.

(Green, 1974)

(52) a .　John credited $10 to a customer.

　　 b .　John credited a customer with $10.

　　 c .　*John credited a customer $10.

However we can find examples that seem to allow the double object forms:

(53) a . A. Eden is well aware of the enormous responsibilities just *entrusted* him in the domestic as well as the international sense.[7]

　　 b . ...before people had given me any of these titles which the chairman so lavishly *credited* me, I was working in a cannery...[8].

[underlines mine]　*(Amerika Goho Jiten)*

The verbs exemplify the productivity of these, just as the first type verbs (*present, provide, furnish, bestow, supply*), though the former are not so productive as the latter.

Finally, *reward* and *honor* are not grammatical even with the *to*-prepositional forms:

(54). ＊They rewarded/honored five million dollars to the man.

This suggests that the person bestowing the reward or honor is not necessarily transferring something that the person currently owns. Thus the verbs are not compatible with the thematic core "X causes Y to go to Z" as a necessary condition for the dative alternation,[9] so that the cognitive perception that change of location implies change of possession, i. e., the gestalt shift, may not be triggered. This is why the double object form with the meaning of change of possession is unlikely to occur with these verbs, but they can be compatible with change of state, forming the constructions with the preposition, *with*.[10]

2.4. Mechanism of Extension

Now in order to characterise the relationship between the locative verbs and the verbs of fulfilling, which has been discussed in the previous section, let us suppose the following hypothesis based on the Dynamic Model of Grammar (Kajita, 1977, Inada, 1987, 1992, Miyakoshi, 1992, etc.).

(55) Principle of Basic Form-Meaning Correspondence:
 a . Compositionality: form - meaning correspondence is compositional iff the meaning made up by combining the meaning of the syntactic items of a sentence in a principled way is equivalent to that of the whole sentence.
 b . Form-meaning correspondence is one-to-one.

(56) Principle of Discrepancy-Adjustment Extension:
 a . A semantic representation (or thematic relation) corresponds to

its syntactic form (or argument structure).

b . When one syntactic from is linked to more than one meaning, adjustment extension, which is cumulatively motivated, works and cancels the linking, changing the basic argument structure, although the basic thematic relation holds, and producing more suitable one-to-one correspondence.

(57) Base rule; R_1 > Derived rule (Rule extension);

R' Model rule; R_2'

The first issue to be considered concerns locative alternation. The basic argument structure, $[(V) NP_1 \text{ onto } NP_2]$ corresponds to the basic thematic relation, [(Source), Theme, Goal], characterising change of location, on the other hand, the basic argument structure, $[(V) NP_2 \text{ with } NP_1]$ corresponds to the basic thematic relation [(Agent), Goal, Theme], characterising change of state, illustrated in (58):

(58) Locative alternation

	Change of location	Change of state
Basic argument structure	$[(V) NP_1 \text{ onto } NP_2]$	$[(V) NP_2 \text{ with } NP_1]$
Basic thematic relation	[(Source), Theme, Goal]	[(Agent), Goal, Theme]

If the Goal argument, NP_2 in the $[(V) NP_2 \text{ with } NP_1]$ takes on [+human] it can be interpreted as the recipient, as in (12) to (16). That is, when the Goal is turned into the Recipient, change of location must be mapped onto change of possession by virtue of gestalt shift. Then the one-to-one correspondence between $[(V) NP_2 \text{ with } NP_1]$ and [(Agent), Goal, Theme] no longer appropriately holds; the argument structure corresponds to both [(Agent), Goal, Theme] and [(Agent), Recipient, Theme], holding both meanings of change of state and change of possession. However this leads to the violation of (55); one syntactic form is linked to two meanings. Thus

syntactico-semantic discrepancy occurs between the meaning of change of possession ([(Agent), Recipient, Theme]) and the argument structure [(V) NP$_2$ with NP$_1$] that basically means change of state. This can be shown in (59):

(59) Locative alternation

	Change of location	Change of possession
Basic argument structure	[(V) NP$_1$ onto NP$_2$]	[(V) NP$_2$ with NP$_1$]
		↑ ↓
Basic thematic relation	[(Source), Theme, Goal]	[(Agent), Recip., Theme]

Then, following (56b), "Discrepancy-Adjustment Extension" is triggered and motivates the more preferable syntactic form, [(V) NP$_2$ NP$_1$], compatible with the new thematic relation of change of possession, as illustrated with (60):
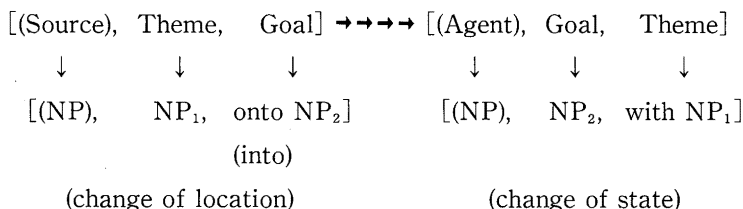
(60) Extension

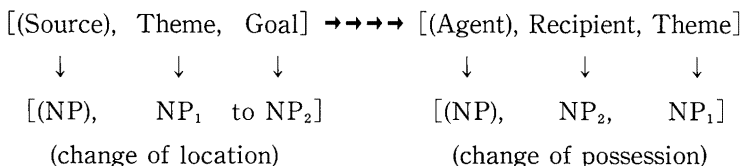|	Change of possession	Change of possession
Basic argument structure	[(V) NP$_2$ with NP$_1$] →→→→	[(V) NP$_2$ NP$_1$]
	↑ ↓	
Basic thematic relation	[(Agent), Recip., Theme]	[(Agent), Recip., Theme]

Thus the "Principle of Basic Form-Meaning Correspondence" holds under the newly created one-to-one correspondence between [(Agent), Theme, Recipient] and [(V) NP$_2$ NP$_1$]. The extension process discussed above involves the following rule extension that characterises (57) in more detail:
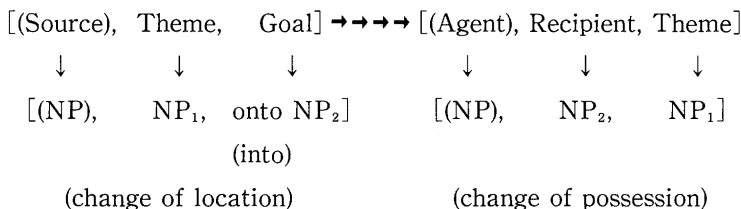
(61) Rule Extension

    a . R$_1$: Base rule (Locative alternation rule)

[(Source),   Theme,   Goal] →→→→ [(Agent), Goal,   Theme]

↓　　　　　↓　　　　↓　　　　　　↓　　　　↓　　　　↓

[(NP),　　　NP$_1$,　onto NP$_2$]　　　　[(NP),　　NP$_2$,　with NP$_1$]

(into)

(change of location)　　　　　　　　(change of state)

b . R$_2$: Model rule (Dative alternation rule)

[(Source),   Theme, Goal] →→→→ [(Agent), Recipient, Theme]

↓　　　　　↓　　　　↓　　　　　　↓　　　　↓　　　　↓

[(NP),　　　NP$_1$　to NP$_2$]　　　　[(NP),　　NP$_2$,　　NP$_1$]

(change of location)　　　　　　(change of possession)

c . R': Derived rule (Extended dative alternation rule)

[(Source),   Theme,   Goal] →→→→ [(Agent), Recipient, Theme]

↓　　　　　↓　　　　↓　　　　　　↓　　　　↓　　　　↓

[(NP),　　　NP$_1$,　onto NP$_2$]　　　　[(NP),　　NP$_2$,　　NP$_1$]

(into)

(change of location)　　　　　　(change of possession)

The Grammatical Dynamism especially applies to the case of the first type verbs (*present, provide, furnish, bestow, supply*); when change of possession is clearly denoted, the basic rule, R$_1$ can be extended to the derived rule, R' via the model rule, R$_2$; or rather, the extended dative alternation ([(V) NP$_1$ (on-) to NP$_2$] to [(V) NP$_2$ NP$_1$]) is derived, bypassing the intermediary construction, [(V) NP$_2$ with NP$_1$]. On the contrary, if change of state holds, the basic rule could not be extended to the newly produced rule, not affecting the extended dative alternation. We can thus conclude that extension is motivated by a discrepancy between form and meaning under the Grammatical Dynamism, and especially in the case of locative/dative alternation the gestalt shift can facilitate the extension.

How can we discuss the second type verbs? The second type (*credit* and *entrust*), as I mentioned it, cannot usually allow the double object construction without the preposition *with*. However we can in fact observe the example in (53), that is pure double object constructions, which don't accompany the preposition, *with*. Following the approach of Dynamic Model of Grammar, the verbs might be characterised as proceeding from the rule, R_1 to R'; if the verbs carry clearly change of possession rather than change of state, as in (53), then we can predict that the form-meaning discrepancy occurs between the argument structure, [NP_2 with NP_1] and the thematic relation, [(Agent), Theme, Recipient]. The conflict then triggers the extensions, where the from-meaning correspondence suitably holds. Thus crucially notice that the Dynamic Model approach can predict possible extension of grammar, as in (53).

Finally, the third type (*reward* and *honor*) is likely to possess an abstract noun as its them-object, and therefore the transference of the theme-objects does not seem to be apparently carried, (of *honor him with a doctor's degree/reward him with an intelligence* or the sentence (19) and (20), respectively). So the verbs cannot take the form with the preposition *onto* of the locative alternation, and then the alternation doesn't obtain between the argument structure, [NP_1 onto NP_2] and [NP_2 with NP_1]. Naturally the extended alternation connot appear because of the lack of the base rule, not inducing the Grammatical Dynamism. Thus *reward* and *honor* cannot basically take the locative alternation, let alone the dative alternation.

3. Conclusion

Our discussion developed in this paper involves the general remark that an explanatory grammar will include principles whereby a language can associate semantic interpretation with a syntactic configuration. In

particular, we have considered two ways in which the double object construction is produced. One involves "Construction Grammar," which proposes that construction should act as an autonomous grammatical device in English and hence should include a great deal that is productive and highly structured. Construction, in other words, may specify, not only syntactic but lexical semantic properties. Another process involves Dynamic Model of Grammar. Specifically I propose that grammatical extension be motivated by a discrepancy between form and meaning. Furthermore we have suggested that so-called "gestalt shift" is partly concerned with the process of the grammatical extension of double object construction.

NOTES

(1). Such an appraoch can be seen in Sohguchi (1992: 155) which tries to analyze "fake resultative" constructions (Yamada, 1987: Tsuzuki, 1989a). Sohguchi shows the following examples;

　　　　(i) a . His friends laughed John out of town.
　　　　　　　 b . Mary cried her eyes red.
　　　　　　　 c . John ran himself tired.

Since all the verbs in (i) are intransitive, they should not take the objects, and hence could not be allowed to carry the resultative meanings. According to Sohguchi, however, the objects in these constructions are suggested to be licensed

(or case-assigned) by the construction [V NP XP], and the resultative meanings are also licensed by the constructon.

(2) . Pinker (1989) and Gropen et al. (1989) carefully experiment with mono-/polysyllabic nonsense verbs of giving in terms of language acquisition. Their experiments indicate that subjects rated double object forms such as *Fred tonked Mary the house/The bear pilked the giraffe the pig,* as sounding much better if the verb signified a transfer of possession than if it did not. In addition, the double object forms that were monosyllabic were rated as significantly better sounding than those which were polysyllabic. As expected, the semantic and the morphophonological constraints on dativization are not mere accidental but are active in the mind of the children as well as the adults.

(3) . Marantz (1984) makes an analysis of the mapping between theta role and double object argument structure. English double object form lacks a preposition to assign the theme role to the direct object, the structural position (however the indirect object will be in the construction assigned the recipient role by the adjoined verb). Marantz supposes that the "structural position" [NP VP] could assign the theme role to the direct object. His view could be regarded as a kind of "Reanalysis" (Stowell, 1981) of theta role assignment. Maranz shows the reason why [NP VP] can be a likely assigner of the theme role in double object form; children's language acquisition in an early stage maps semantic roles canonically and directly to a sentence of their expressions. Note that Marantz's proposal is based on "one role/role assigner principle" that English verbs are allowed to assign only one theta role in the unmarked case.

(4) . The linking rule which maps the theme object of "X causes Y to have Z" onto the indirect object position might be unique to this construction, but not universal, as suggested in Goldberg (1992). Pinker (1989) or Gropen et al. (1989), on the contrary, postulates that two kinds of thematic cores per verb come to separate verb meanings, and set a special linking device, by which the theme object of "X causes Y to have Z" is mapped onto the indirect object position. However, as Goldberg indicates, there seems to be a benefit that the view of attributing the verb's semantics directly to the construction, [SUBJ. [VERB OBJ. 1 OBJ. 2]] may be linguistically more parsimonious, or lower costly.

(5) . Following OED, it is suggested that *flower* has involved this type of alternation:
　　(i) a . I'll away to Carterhaugh, And flower myself the gawn.

　　　　b. Ann flowered me a most lovely collar. (OED: *flower*, 5a)

　（ⅱ）a. I'll away to Carterhaugh, And flower myself with the gawn.

　　　　b. Ann flowered me with a most lovely collar.

　（ⅲ）a. I'll away to Carterhaugh, And flower the gawn to myself.

　　　　b. Ann flowered a most lovely collar to me.

（6）.Following Jackendoff (1983), *butter*, *reward*, *credit*, and *honor* can be roughly
　　represented as follows, respectively:

　　（ⅰ）a. [$_{EVENT}$ CAUSE ([$_{THING}$]$_i$, [$_{EVENT}$ GO ([$_{THING}$ BUTTER], [$_{PATH}$ TO ([$_{PLACE}$
　　　　ON ([$_{THING}$]$_j$)])])])].

　　　　b. [$_{EVENT}$ CAUSE ([$_{THING}$]$_i$, [$_{EVENT}$ GO ([$_{THING}$ REWARD/CREDIT/HONOR],
　　　　[$_{PATH}$ TO ([$_{PLACE}$ ON ([$_{THING}$]$_j$)])])])] .

　　Note that the themes are unindexed; this means the themes completely incorpo-
　　rated into the readings of the corresponding verbs. This may be evidenced by the
　　followings:

　　（ⅲ）a. ?? He buttered the bread with butter.

　　　　b. He rewarded her with·a promotion/??a reward.

　　　　c. He credited her with the amount of the check/??a credit.

　　　　d. He honored her with the award/??a honor.

　　If the *with*-objects are incorporated themes, the sentences are odd.

（7）.The example primarily depends on J. London, *Little Blue Book*, p. 183 1. 10.

（8）.The example primarily depends on *New York Herald Tribune* 2. 6. 1955: 4.

（9）.Some verbs such as *deny*, *cost*, *envy*, *forgive*, etc., are also imcompatible with the
　　thematic core "X causes Y to go to Z," because they cannot describe physical
　　transfer of something that one currently owns. Especially, with *deny* and *cost*, the
　　transfer that they describe is countertransfer, in which the direct object as an
　　entity is transferred from the indirect object as a possessor to another one or
　　another place, as in *John denied me the offer/This sweater cost me 50 dollars*.
　　Note that the indirect objects are not mapped onto the thematic role, recipient.
　　Thus though they are not consistent with the thematic core "cause to go," they
　　can appear in the double object form. The verbs, *reward* and *honor*, on the other
　　hand, are also inconsistent with the thematic core, and, as expected, they cannot
　　appear in the double object from. The reason why verbs such as *deny*, *cost*, etc.
　　can appear in the form must wait more time to be discussed.

（10）.As far as this goes, the following examples are parallel to the non-dativizable

verbs, *reward* and *honor*:

(i) a . *Jack gave a bath to his daughater.

    b . Jack gave his daughter a bath.

(ii) a . *Jenny's behavior gave an idea to John.

    b . Jenny's behavior gave John an idea.

The verb doesn't also mean the change of location, but does imply the change of state of the entity expressed as the indirect object; from non-possession to possession. So the indirect object is likely to be regarded as the recipient of the entity referred to by the direct object, and as a result, the verb can take the double object construction with the meaning of the change of possession.

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