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Blending as a Central Process of Grammar

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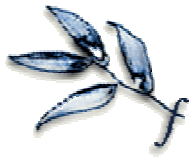
Blending As A Central Process of Grammar



This is an expanded web version of Fauconnier and Turner. 1996. "Blending as a Central Process of Grammar" in *Conceptual Structure, Discourse, and Language*. Edited by Adele Goldberg. Stanford: Center for the Study of Language and Information (CSLI) [distributed by Cambridge University Press]. Pages 113-129.

This expanded version consists of the original article, additional diagrams for the caused motion construction that were edited from the original article to save space, and an additional section on the ditransitive construction, which is excerpted from Turner and Fauconnier, in press, "A Mechanism of Creativity," *Poetics Today*.

Blending as a Central Process of Grammar

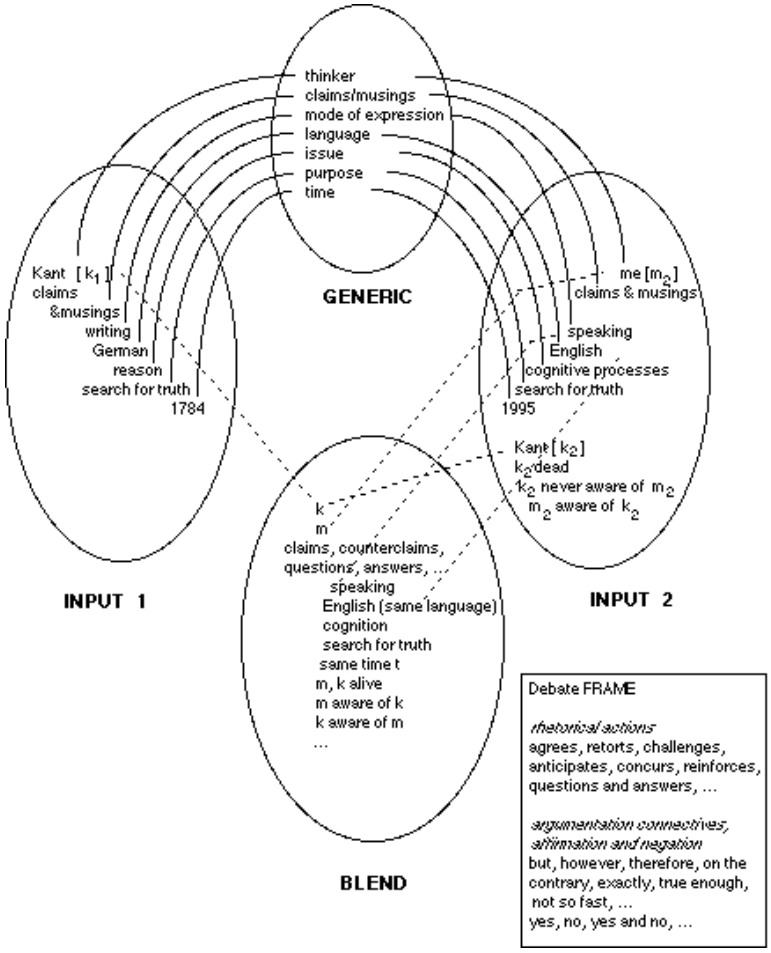
Mental spaces are small conceptual packets constructed as we think and talk, for purposes of local understanding and action. They are interconnected, and can be modified as thought and discourse unfold. Fauconnier and Turner have recently proposed the existence of a general cognitive process--conceptual blending--that operates over mental spaces as inputs. In blending, structure from two input spaces is projected to a separate space, the "blend." The blend inherits partial structure from the input spaces, and has emergent structure of its own.

As an example of blending, consider a contemporary philosopher who says, while leading a seminar,

> I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says it's innate, but I

> answer that that's begging the question, to which he counters, in *Critique of Pure Reason,* that only innate ideas have power. But I say to that, what about neuronal group selection? And he gives no answer.

In one input mental space, we have the modern philosopher, making claims. In a separate but related input mental space, we have Kant, thinking and writing. In neither input space is there a debate. These two input spaces share frame structure: there is a thinker, who has claims and musings, a mode of expression, a particular language, and so on. This shared frame structure constitutes a third space, a generic space, connected to both input spaces. There is a fourth space, the blend, which has both the modern philosopher (from the first input space) and Kant (from the second input space). The blend additionally recruits the frame of *debate*, framing Kant and the modern philosopher as engaged in simultaneous debate, mutually aware, using a single language to treat a recognized topic. The debate frame comes up easily in the blend, through pattern completion, since so much of its structure is already in place in the two inputs. Once the blend is established, we can operate cognitively within that space, which allows us to manipulate the various events as an integrated unit. The debate frame brings with it conventional expressions, available for our use. We know the connection of the blend to the input spaces, and the way that structure or inferences developed in the blend translates back to the input spaces. We work over all four spaces simultaneously, but the blend gives us structure, integration, and efficiency not available in the other spaces.



The "debate with Kant" has characteristic features of blending:

--Blending exploits and develops counterpart connections between inputs. Any two counterparts may or may not be fused in the blend. For example, in the debate with Kant some frame counterparts are fused (issues, languages used, modes of expression) while some are not (the two philosophers). Fused elements need not be counterparts as indexed by the generic space: Kant [k1] in input 1 and Kant [k2] in input2 are very different (k2, for example, has an international fame over two centuries and is the paragon of rational philosophers); but k1 and k2 are fused in the blend.

--Blending has many effects. They include the conceptual integration of related events into one complex event (for example, a debate), the use and evolution in the blend of frames not obligatory (or in many cases, not even conventional) for its inputs (the debate frame is not required for the inputs); and the development of novel conceptual structure (for example, in the debate blend, the time of the debate is a very unusual kind of time, neither the time of the inputs nor some fusion of them, but rather a special

transcendent time--it would be odd to say, "Two years ago, Kant disagreed with me, when I thought reason was a self-developing capacity."

--Blended spaces are sites for central cognitive work: reasoning (the philosopher's intellectual inquiry into cognition takes place in the blend), drawing inferences (only in the blend can Kant beg the question put by the philosopher, and blamed for it), and developing emotions (the modern philosopher can feel excited and flattered to be debating Kant).

--Blending is usually not consciously perceived, but it can be highlighted, as in jokes, cartoons, puzzles, and poetry. As long as we are not pressed to engage the blend vividly (as when the modern philosopher dons a white wig to speak with Kant) or give it reference in ways we think to be false (as when we are asked to think that the modern philosopher has a time machine), then this particular blend is a normal and automatic way to conceive of doing philosophy in response to work by previous philosophers.

--Dynamically, input spaces and blends under construction recruit structure from more stable, elaborate, and conventional conceptual structures that may have conventional connections of various sorts: shared frame roles, connections of identity or transformation or representation, metaphoric connections. These conventional connections are fully available to the work of blending. Blending may exploit, simultaneously, more than one kind of counterpart connection (e.g., frame-role connection and identity connection). Through entrenchment, blending can influence conventional structures and their conventional connections. Blends can themselves become conventional.

--During blending, conceptual work may be required at any site in the conceptual array. Spaces, domains, and frames can proliferate and be modified. Blending can be applied successively during that proliferation. For local purposes, we seek to achieve useful counterpart structure and useful integration. Those goals can be fulfilled in various ways: by activating different input mental spaces, by changing the recruitment of structure to them, by seeking to establish different generic connections between them, by projecting different structure from the inputs to the blend, by recruiting different frames to the blend, by projecting different structure from the blend back to the inputs, by multiplying the blends, and so on.

The debate frame can structure less obvious blends, as in: "The bean burrito is California's answer to France's Croque Monsieur." In the Blend, regions of the world are debating. In reality, there need not even be any gastronomic competition between them. It is important in all of these cases

to observe that although the blend may be centrally useful for cognitive work, that does not mean that we reify it, or are concerned with how the world would have to be different in order for it to be reified. The utility of the blend lies principally in its relation to input spaces; by itself the blend would do no effective work for us. The relation of the blend to possible existence is a different matter. We need not think that the debate with Kant or the culinary competition between France and California are real in order to find them extremely useful.

Many phenomena give rise to blends: inventive actions, analogy, dramatic performance, counterfactuals, integrated meanings, grammatical constructions. All of these have partial projection, emergent structure, counterpart mappings, and so on. Metaphor is one of the phenomena that give rise to blends. It has the appropriate features: partial projection from input spaces; emergent structure in the blend; counterpart structure between input spaces; projection of integration of events from the source, the unconscious status of the blend until it is highlighted; cognitive work specific to the blend, and so on.

In Turner and Fauconnier (1995), we showed how elaborate conceptual blending can be reflected by simple two word or one word expressions. We discussed the formation, meaning, and sometimes multiple potential meanings, of expressions like dolphin-safe, jail-bait, Mcjobs, boathouse vs. houseboat, Chunnel. More generally, we wish to say that grammatical patterns often reflect conceptual blends and integration of events. Language users feel that some grammatical forms present events as integrated, while others do not. For example, consider "Jack threw the napkin off the table." This integrates the physical motion by Jack, the manner in which he acted, the object he moved, the motion of that object, the manner in which the object moved, the original location of the object, and the direction of its motion. Now consider another sequence: "Jack sneezed. The napkin moved. It was on the table. Now it is off the table." This grammatical form signals an action by Jack, the manner in which he acted, the object he moved, the motion of that object, the original location of the object, and the direction of its motion. Speakers of the language feel that it presents the scene as a sequence of events rather than as an integrated event. But English can express the same content with a form that conveys event integration: "Jack sneezed the napkin off the table." This form is structurally similar to the form "Jack threw the napkin off the table" and conveys the same impression of the event as integrated rather than decomposed.

There is pressure to integrate conceptual structure. Sometimes, we like to think of events as integrated, and one way of doing this is by blending them with an already integrated event structure. Inversely, when we

encounter a grammatical form typically used to express a certain kind of integration, we understand it as a prompt to perform blending.

The grammatical form

Noun-Phrase Verb Noun-Phrase Prepositional-Phrase

expresses event integration of caused motion. It is the syntactic component of the caused-motion construction studied by Goldberg (1995). Some verbs, like *throw*, already specify caused-motion, and occur prototypically with the syntactic form NP V NP PP: *Jack threw the ball into the basket.* [Jack acts on the ball. The ball moves. The ball is in the basket.]

The verb *throw* in this case specifies Jack's action, the ball's motion, and the fact that they are causally integrated. But some verbs that do not themselves specify caused motion can be used in the caused-motion construction. Such verbs highlight different elements that play roles in caused motion:

--causal agent's action:

Gogol sneezed the napkin off the table. [Gogol sneezes. The napkin moves off the table.] The syntactic form is the same as before, but the verb corresponds only to the agent's action. Its frame semantics contains no object, and a fortiori no motion of such an object.

--object's motion:

Junior sped the toy car around the Christmas tree. [Junior presses remote control. Car speeds around tree.] Junior is not moving. The verb *speed* corresponds to the car's motion, specifically to the manner of that motion.

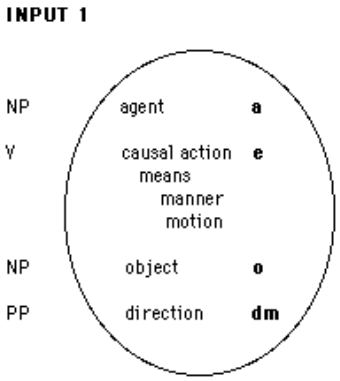
--causality:

Sarge let the tank into the compound. [Sarge signs a form or waves his hand or opens the door. The tank moves into the compound.] The verb *let* does not specify Sarge's action or the tank's motion. It focuses on the removal of restraint and enablement.

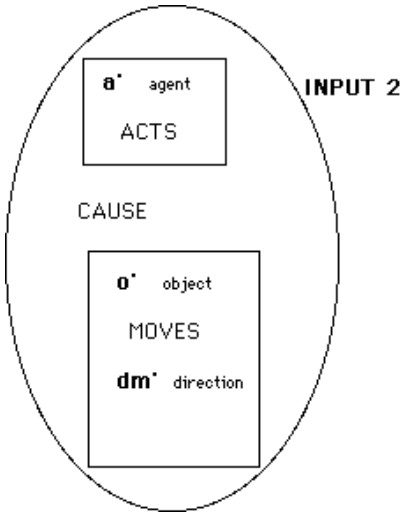
Many languages have a form analogous to NP V NP PP for verbs of caused motion like "throw", but only some of those languages, like English, have developed a caused-motion construction to express the more general integration of a causal sequence of action and motion. It is not a coincidence that the syntactic form used to express the general integration is the same as the one for prototypical caused-motion verbs like *throw*.

The point we wish to make is that Conceptual Blending motivates the emergence and main properties of such constructions. Specifically, we view the grammatical construction as a conventional blend of Input 1, a typical basic form for a fully integrated event (as for *throw*) with Input 2, an unintegrated causal sequence.[1]

Input 1 is the frame which structures typical cases (like *throw*). It includes an agent role **a**, an object role **o,** a role **e** that subsumes causal action, means, manner of the action, motion of the object, manner of that motion, and a direction role **dm**. In English, it is associated with the basic syntactic form NP V NP PP.



Input 2 is the unintegrated sequence containing an agent **a'** performing some action, an object **o'** undergoing motion and a direction **dm'** for that motion.



A blend of these two conceptual schematic spaces requires a partial mapping of counterparts. Agents of the causal action, **a** and **a'**, objects **o** and **o'**, directions **dm** and **dm'**, are natural conceptual counterparts. The

general principle for the mapping between the integrated frame (**a, o, e, dm**) and the unintegrated sequence is to maximize the correspondence between the integrated complex of roles and subroles in one space and the unintegrated complex in the other space. Role **e** in the integrated input can be mapped in more than one way: to **a**'s action, to **o**'s motion, to the causal link between the events. This is because **e** shares relevant features with each of these roles in the causal sequence.

The purpose of the blend is to integrate the causal sequence. This is done by importing the conceptual roles, and the corresponding syntax, from Input 1. The Blend will have roles **a"**, **o"**, **e"**, **dm"**, mapped from Input 1. Content for those roles will be provided by Input 2. Agent, object, and direction map straightforwardly. But for **e"**, there is more than one possibility, because there is more than one way to map **e**.

If **e** is mapped onto the agent's action, the blend will inherit that action, and a verb expressing it will show up in the V position of the syntactic form NP V NP PP:

Gogol sneezed the napkin off the table.

The audience laughed the poor guy off the stage. [Goldberg 94]

If **e** is mapped onto the object's motion, a verb expressing that motion will show up in the V position:

Andy rolled the drum into the warehouse.

Junior sped the car around the Xmas tree.

If **e** is mapped primarily onto the causal link, an appropriate causal verb will be used:

Sarge let the tank into the compound.

Blending allows other combinations from Input 2 to map onto **e"**, and to be reflected by a single verb form:

He forced the tank into the compound. [*force* expresses causality, but also points to an unspecified action by the agent, and some resistance on the part of the object]

The mapping may also highlight different aspects of the counterpart relation chosen for **e**:

He carted the drums into the warehouse. [vehicle used for motion of object]

He muscled the boxes over the fence. [part of the body used for action]

He ordered the tanks into the compound. [social action of giving orders]

It is worth noting at this point that there is no uniform way of obtaining the sentence forms shown here by means of a syntactic derivation from simpler clause types. For example,

NP_1 V + NP_2 (move) PP -> NP_1 V NP_2 PP

would work for

He sneezed + the napkin (move) off the table -> He sneezed the napkin off the table

but not for the examples with *let*, *force, order, muscle*, because the input clauses are not independently well-formed: **He let. *He forced. *He ordered. *He muscled.*

A transitive simple clause is not the right source either for such cases, because either it is not well-formed, or it yields the wrong semantics:

**He let the tanks. *He forced the tanks. %He ordered the tanks.*

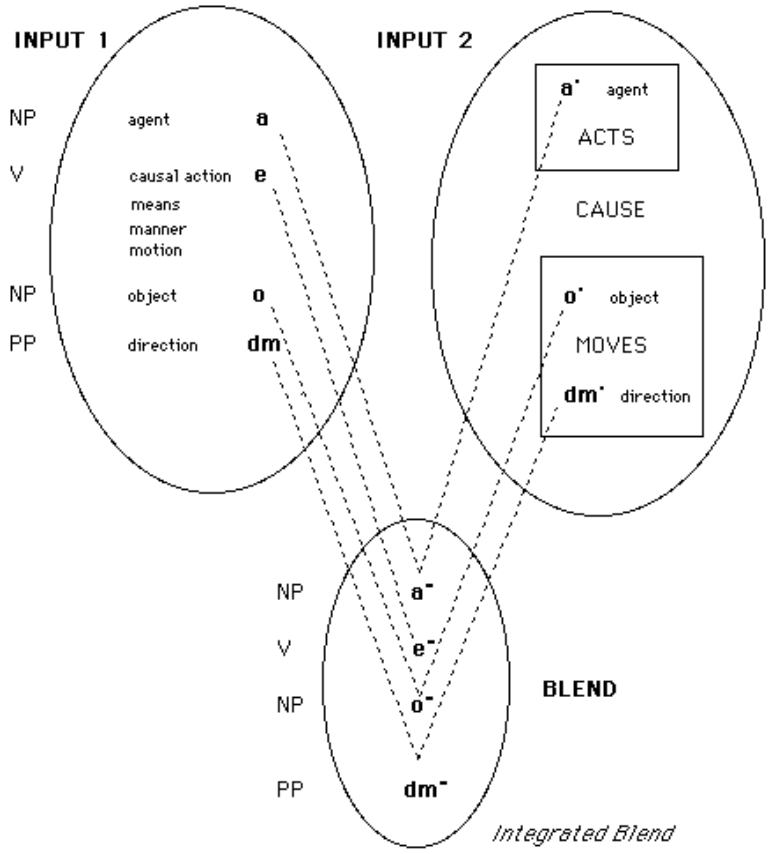
For *rolling the drums*, a plausible source might be the simple transitive clause *He rolled the drums*, plus a direction, but this will not work in general for cases where the object's motion is highlighted, because of the ill-formedness of **Junior sped the car* or %*He turned the tomatoes* [for *He turned the tomatoes into spaghetti sauce*]

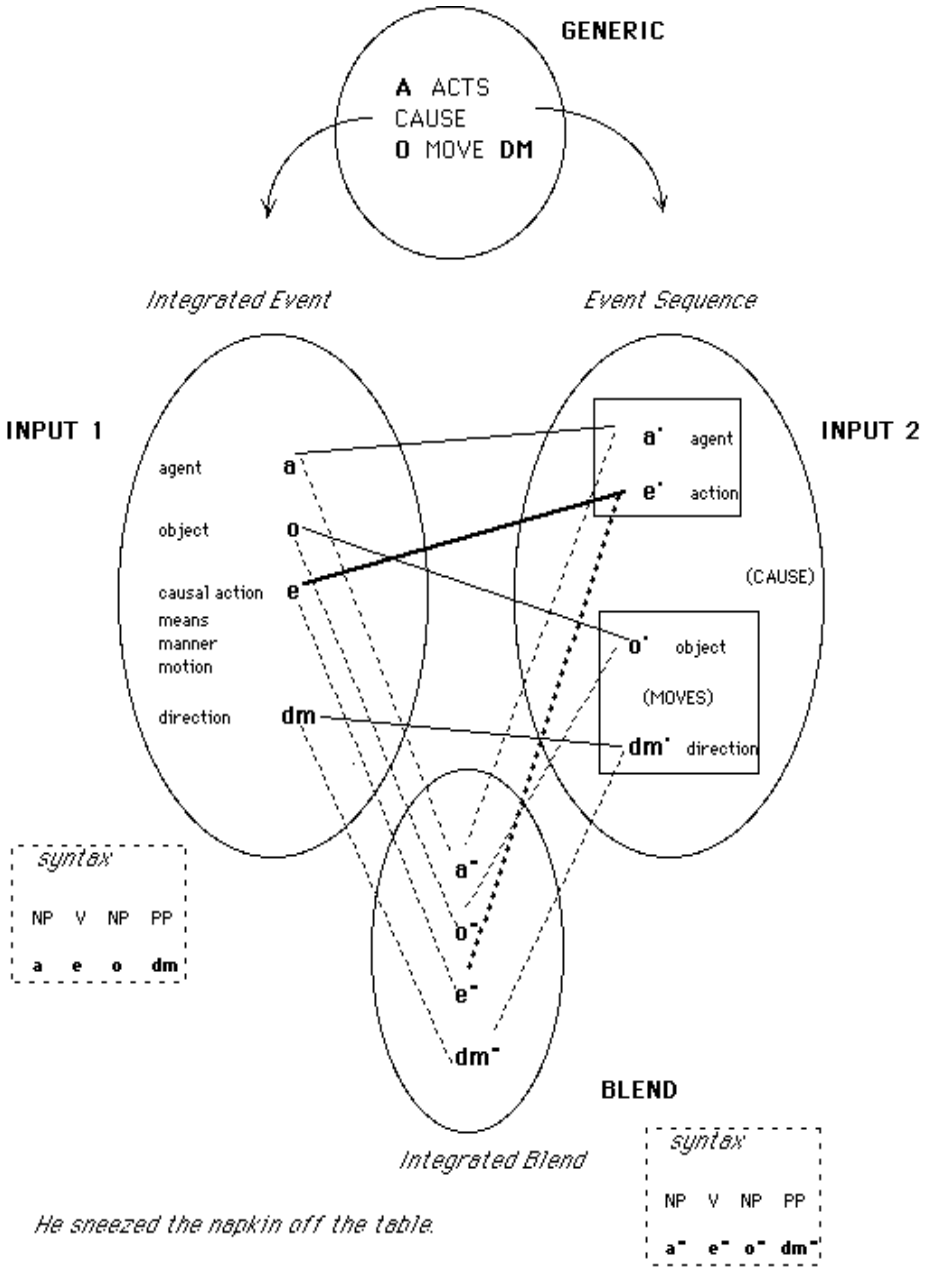
Consider also *Hunk choked the life out of him*, but not *%Hunk choked*, or **Hunk choked the life.* It is especially interesting in this example to see that conceptually the agent's action is indeed choking, and that the resulting motion, expressed through a conventional metaphor, is 'the life go out of him'. This fits the unintegrated causal sequence of Input 2, with 'choke' mapped to **e**, and 'the life' mapped to **o**. The syntactic form of the Blend is thus correctly predicted, even though what ends up in object position (*the life*) is not what gets choked in the unintegrated sequence of Input 2.

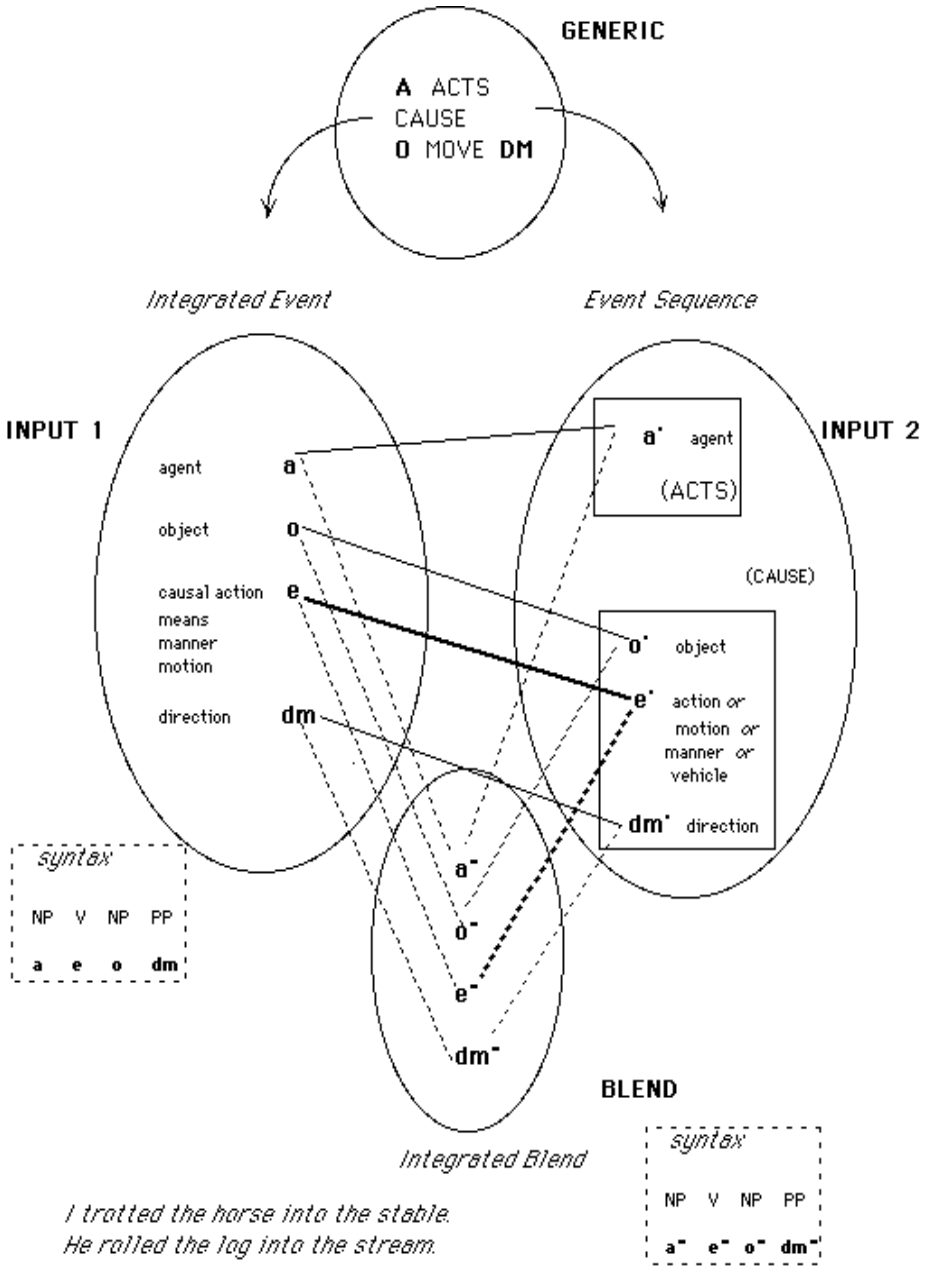
The same verb may be used to indicate the agent's action, or the object's motion. In *He trotted the stroller around the park*, it is the causal agent who is doing the trotting, and thereby making the stroller move around the

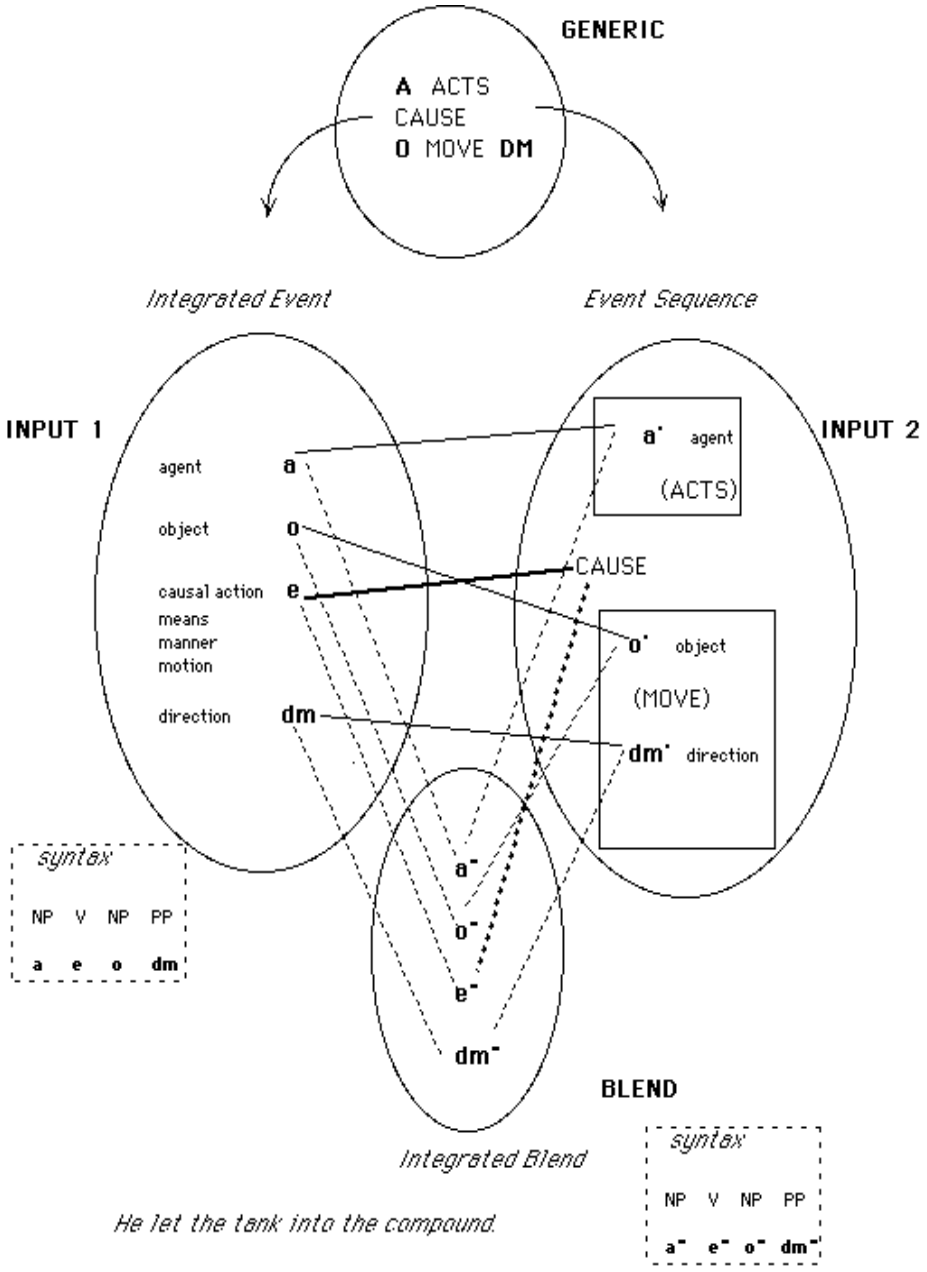
park. In *The trainer trotted the horse into the stable*, the trainer could be walking, holding the horse's bridle, and the horse would then be trotting, but not the trainer. Or the trainer might be riding the horse, in which case technically only the horse is trotting, but one can also attribute the motion metonymically to the rider.[2]

The grammatical form that signals integration can now be used to express the blend, and therefore to express the (previously unintegrated) events. A speaker needs to achieve a conceptual blend in order to use the grammatical form associated with verbs like "throwing" to express more general causal sequences of events. A hearer takes the use of the grammatical form as a prompt to construct that conceptual blend. As shown by M. Israel (this volume), the conditions on such blends change through time. But they are part of the language. At the most schematic level, the blend is conventional, and the conceptual work is, so to speak, prepackaged. But there is room for innovation and creativity, in using a counterpart mapping between the inputs, and in building causal sequences in Input 2. Consider (i) *Max kicked the ball over the fence;* (ii) *The spy Houdinied the drums out of the compound;* and (iii) *So far, the people of this small textile town in northwestern Carolina have been unable to pray Mrs. Smith's two little boys home again.* [NY Times]. All three of these examples use the same caused-motion blend, but (ii) and (iii) stand out as more unusual integrations than (i).[3] All of these cases are instances of the general blending process, diagrammed below.


INPUT 1
NP
V
NP
PP
agent
causal action
means
manner
motion
object
direction
a
e
o
dm
INPUT 2
a' agent
ACTS
CAUSE
o' object
MOVES
dm' direction
NP
V
NP
PP
a"
e"
o"
dm"
BLEND
Integrated Blend


GENERIC
A ACTS
CAUSE
O MOVE DM
Integrated Event
Event Sequence
INPUT 1
INPUT 2
agent
a
object
o
causal action
means
manner
motion
e
direction
dm
a' agent
e' action
(CAUSE)
o' object
(MOVES)
dm' direction
a"
o"
e"
dm"
BLEND
Integrated Blend
syntax
NP V NP PP
a e o dm
syntax
NP V NP PP
a" e" o" dm"
He sneezed the napkin off the table.


GENERIC
A ACTS
CAUSE
O MOVE DM
Integrated Event
Event Sequence
INPUT 1
INPUT 2
agent
a
object
o
causal action
means
manner
motion
e
direction
dm
a' agent
(ACTS)
(CAUSE)
o' object
e' action or
motion or
manner or
vehicle
dm' direction
syntax
NP V NP PP
a e o dm
a-
o-
e-
dm-
BLEND
Integrated Blend
syntax
NP V NP PP
a- e- o- dm-
I trotted the horse into the stable.
He rolled the log into the stream.



In the caused-motion construction, the syntactic component comes entirely from the input space of integrated caused motion, while lexical items come from the space of the events associated with the causal sequence. But there are other constructions in which the syntactic form used for the blend does not come entirely from one space, part of it comes from the other space, and part of it develops specifically for the blend. Consider causatives in French, which are formed using the verb *faire* ('do'):

Pierre nourrit Paul.
NP V NP

Pierre fait manger Paul.
NP V V NP
(Pierre feeds Paul.) [Paul is the agent of 'manger']

Pierre expedie le paquet.
NP V NP

Pierre fait envoyer le paquet.
NP V V NP
(Pierre sends the package.) ['le paquet' is the object of 'envoyer']

Pierre donne la soupe à Paul.
NP V NP à

Pierre fait manger la soupe à Paul.
NP NP V V NP à NP
(Pierre feeds Paul the soup.) [Paul is the agent of 'manger', 'la soupe' is the object]

It is apparent that the causative forms are superficially similar to basic transitive and ditransitive forms in the language. As Kemmer and Verhagen (1994) have pointed out, this is no accident: "Analytic causative constructions can best be described as extensions of simpler kinds of expressions, rather than as reductions from more complex underlying structures."

Kemmer and Verhagen argue that there are cognitive models of causation based on force dynamics and interactions between participants, and that these models relate to basic models, including transitive and ditransitive event structures. We think this view is exactly right, and that Blending is the cognitive operation which allows the basic models to serve as inputs to the conceptual integration of more elaborate causal sequences.[4]

Extension and conceptual mechanisms are not available to generative and relational theories of grammar, and the vast majority of analyses of causative constructions, in French and other languages, has attempted explanations based on reduction of underlying structure.[5]

Such analyses prove to be extremely complex. The French data is rich in apparent exceptions, odd distributions and constraints. Here are some well known examples:

(The semantics is roughly: CA (causal agent) CAUSE [EA (event agent) ACT (upon patient) (to recipient)])

Clitic pronouns show up in front of the '*faire V*' complex, except if the pronoun is a reflexive, anaphoric to EA:

(1) *Marie fait courir Paul. Marie le fait courir.* (pronoun = EA)

(2) *Marie fait envoyer le paquet. Marie le fait envoyer.* (pronoun = patient)

(3) *Marie fait envoyer le paquet à Paul. Marie lui fait envoyer le paquet.* (pro = recipient) "Marie has the parcel sent to Paul."

(4) *Marie fait manger la soupe à Paul. Marie lui fait manger la soupe.* (pro = EA)

(5) *Marie se fait envoyer le paquet.* (reflexive pronoun = recipient)

(6) *Marie fait se transformer Paul.* (reflexive pronoun = patient (= EA))

The event agent EA can be expressed by the form "par NP" or the form "à NP."

In the first case, the recipient can be cliticized, but not in the second:

(7) *Marie lui fait envoyer le paquet par Paul.* (lui = recipient)

(8) **Marie lui fait envoyer le paquet à Paul.* (with Paul sender of parcel)

(9) *Marie fait envoyer le paquet à Suzanne à Paul*. (Suzanne = recipient, Paul = EA)

The event agent EA can also be expressed by a bare NP, if there is no caused-action object O, but in that case too, the indirect object of the caused action cannot be cliticized:

(10) *Marie fait téléphoner Paul à Suzanne.* (Suzanne = recipient)

(11) **Marie lui fait téléphoner Paul.*

(12) *Marie fait téléphoner à Suzanne.* (Suzanne is recipient of phone call). "Marie has (someone) call Suzanne."

(13) *Marie lui fait téléphoner.* (lui = recipient). "Marie has (someone) call her."

Trying to account for this, and more, with a reduction of underlying forms leads to many ad hoc mechanisms. But there is a different way to conceive

the entire problem. French, like English, has three basic constructions corresponding to integrated events involving causation:

Transitive: Syntax: NP V NP
Roles: CA E O

[notation: O for "object," IO for "indirect object," E for an event or state.]
[example: *Marie nourrit Paul.* Does not admit an IO: **Marie nourrit Paul à Pierre.* E includes causal action and resulting event (Pierre eats)]

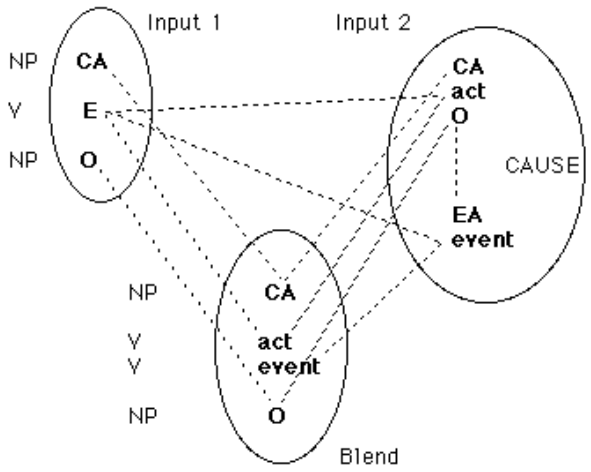
Transfer: Syntax: NP V NP à NP
Roles: CA E O IO
[example: *Marie donne la soupe à Paul.*]

Optional Transfer: Syntax: NP V NP (à NP) (par NP)
Roles: CA E O (IO) (EA, means)
[example: *Marie vend des livres (à Paul) (par un intermédiaire)*]
[a middle construction is also possible here, that doesn't express the CA: *Ces livres se vendent par un intermédiaire.*]

The causative (with *faire*) is a means for French of expressing integrated causal sequences that go beyond the basic types. This is achieved through a Blend of the extended causal sequences with the basic constructions. Because there are three Basic types, we find not just one, but three blends.

Transitive Blend: the conceptual causal sequence
[CA acts upon O] CAUSE [EA event] O = EA
blends with the Transitive Input [CA E O]

The counterpart mapping is straightforward: CA onto CA, O onto O, except for E which is mapped onto two counterparts, 'act' and 'event.' The blend inherits CA and O from integrated Input 1, and 'act' and 'event' from Input 2:



The double mapping from E to 'act' and to 'event' triggers double verb syntax specific to the blend because French has no morphological way of assigning a single verb form to the conceptual blend of the causal action and the resulting event.

Notice that if there happens to be an indirect object of the event in the causal sequence (e.g. *téléphoner à Suzanne*), there will be no IO for it to map onto in Input 1. Because the integrated role structure is projected to the Blend from Input 1, the Blend has no IO. This explains the impossibility of a clitic lui (always an IO) in example (11), without precluding the prepositional phrase *à NP* in (12), because prepositional phrases are not restricted to IO's. In other words, the Blend has no IO (and hence no clitic IO's), because it inherits its role structure from the Basic Transitive, which has no IO.

Now consider a second Blend: causal sequence with the Basic Transfer construction:

> Transfer Blend: the causal sequence
> [CA act] CAUSE [EA event O]
> blends with the Transfer construction [CA E O IO]

CA and O have unproblematical counterparts CA and O. The counterpart of EA is the indirect object IO, simply because in the prototypical case, the IO is the agent of the caused event, e.g. *Bill feeds the soup to Mary* = [Bill acts] CAUSE [Mary eats]. And, as in the Transitive Blend, E maps both to 'act' and 'event.' The Blend therefore acquires the role structure [CA act event O IO] (ex. 4). 'Paul' this time is a true IO in the blend, and so the clitic 'lui' is possible. However, since the Blend, like the Basic Construction, has only one IO (this is independently a general constraint on role structures in French[6]), if the caused event in the causal sequence

happens to have an indirect object of its own, it will have no position to map onto (IO is already taken), and a corresponding IO clitic pronoun will be excluded, as in the ungrammatical (8).[7]

Finally, the Optional Transfer Basic Construction allows a third Blend:

> Optional Transfer Blend: the causal sequence
> [CA act] CAUSE [event O (IO) (EA = means)][8]
> blends with the Basic: [CA E O (IO) (means)]

The counterpart relations are straightforward, and the syntax for the Blend is *NP faire V NP (à NP) (par NP)*. This time, there is an IO position in the Blend, and furthermore it is mapped onto the IO position of the resulting event in the causal sequence. This predicts that corresponding clitic pronouns will be acceptable, as confirmed by examples like (7) and (13).

The preverbal position of the clitics and reflexives is inherited from the integrated Basic input. But the event in the causal sequence may already itself be reflexive conceptually, in which case it is mirrored by a reflexivized verb *se-V*. It then fits into the Blend according to its remaining number of roles. For example *transformer* has an object O, but *se transformer* does not. Hence the reflexive verb will fit the Transitive Blend, yielding example (6), with the reflexive superficially in between the two verbs (syntax specific to the Blend), and with NP (rather than "à NP") for the agent of the caused event.

It is important to see that the Blends are motivated by the existing Basic Constructions. Adele Goldberg (p.c.) asks the pertinent question: why not get the ungrammatical example (11) by blending the causal sequence [Marie act] CAUSE [EA event IO] with the Basic transfer construction? The interesting answer is that the language does not have this formally possible conventional blend because it has no basic transfer verb for which the IO is conceptually the IO of resultant event, and the O is conceptually its EA.[9] There is no verb "blurb" (in English or French) such that *Marie blurbs Suzanne to Paul* means something like "Marie makes Suzanne speak to Paul."

A nice contrast to French is provided by Nili Mandelblit's study of Hebrew causatives (Mandelblit (to appear)). Hebrew forms causatives by conceptual blending just like French, but in addition has a morphological process of formal blending, which allows a verb root to blend with a causative pattern into a single word. This allows Hebrew to transfer the integrated event syntax to the blend, just like English does with caused motion.[10]

In sum, the theory of blending provides a simple account of the superficially complex and counter-intuitive surface syntax of causatives: *faire* syntax is the result of three natural blends with the three basic causal grammatical constructions.[11]

The rest of this expanded version of our article did not appear in the original publication. It is an excerpt from Mark Turner and Gilles Fauconnier, "A Mechanism of Creativity," in press at *Poetics Today*.

Many expressions prompt for blending. To make this point, we have often cited the example of a modern philosopher saying in seminar, "I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says it's innate, but I answer that that's begging the question, to which he counters, in *Critique of Pure Reason,* that only innate ideas have power." In the blend, Kant and the philosopher are holding a debate. Words like "agree," "disagree," "retort," "answer," "respond," "counter," "yes," "no," "yes and no," and so on can be used to pick out elements in the blend, and we know the relation of that "debate" blend to the input story of Kant and to the input story of the modern philosopher.

"McJobs" asks us to think of a blend that constitutes an extended category of entry-level, low-paying, stultifying, impersonal, insecure jobs that offer little opportunity for advancement. Adjective-noun compounds like "artificial life" and "military democracy" have the same purpose. Noun-noun compounds like "house boat," "computer virus," "bond ghoul," and "same-sex marriage" also suggest obvious blends.

The Ditransitive Construction

It may be less obvious that clausal constructions can also prompt for blending. Consider the Ditransitive Construction in English, analyzed by Adele Goldberg (1995). A prototypical example is "Bill gave Mary a gift," with prototypical syntax

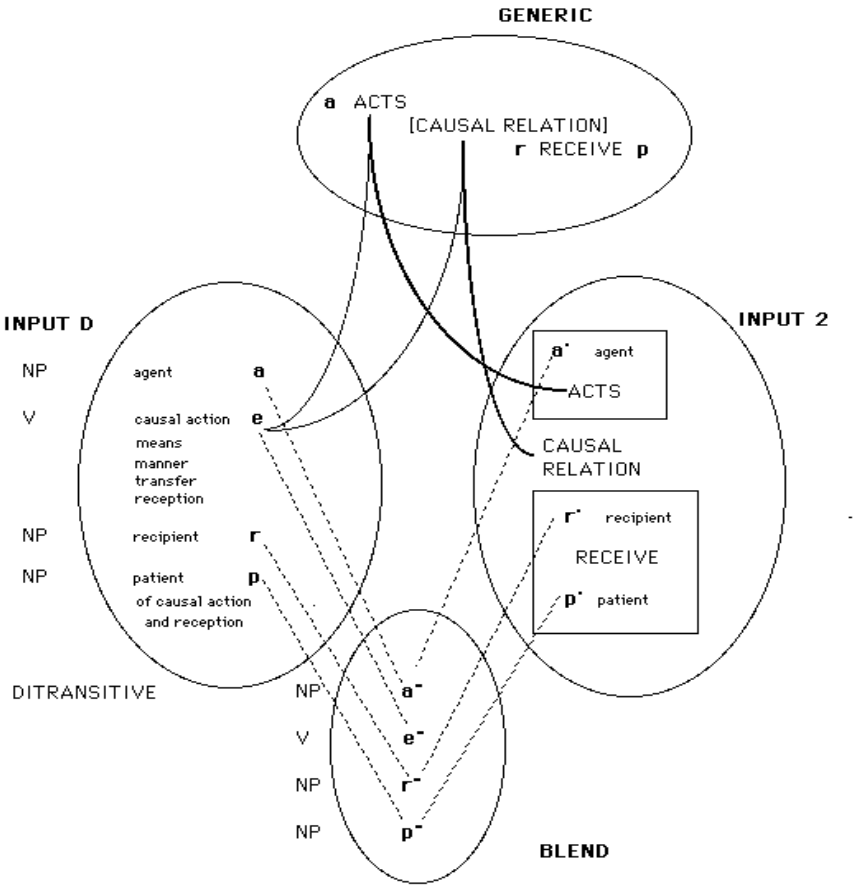
NounPhrase1 - Verb - NounPhrase2 - NounPhrase3.

By itself, the verb "give" evokes an abstract conceptual schema in which a causal agent, by some means, successfully causes the transfer of an object to a recipient. Call this schema "D" for "ditransitive schema." By itself, the verb "pour" does not evoke D ("The water poured out of the drain pipe"), yet when "pour" is used in the ditransitive syntax ("Bill poured Mary some wine"), the construction evokes schema D: Bill causes the transfer of a glass of wine to Mary.

For the complexities of the ditransitive construction and its relation to

other constructions (e.g., "I baked Joe a cake" versus "I baked a cake for Joe"), we refer the reader to Goldberg. Our purpose here is to use the English ditransitive construction as an illustration of the way in which a clausal construction can prompt for blending, especially including two-sided blending.

The ditransitive construction prompts for a blend B that has two inputs, D and I. D is the abstract but highly-integrated ditransitive schema. I is a set of unintegrated elements to which the words refer. The blend B is *two-sided*, by which we mean that B takes some of its organizing schema-level structure from each of its inputs, D and I. Although Goldberg does not use the model of conceptual integration, various two-sided blends are implicit in her analysis. The following is a restatement of her claims in the vocabulary of the network model, with some slight changes.



If D and I have organizing schemas that match closely, their blend takes its organizing schema from both D and I. This is the case for verbs that inherently signify acts of giving an object ("give," "pass," "hand," "serve," "feed," . . .), verbs of instantaneous causation of ballistic motion ("throw," "toss," "slap," "kick," "poke," "fling," "shoot," . . .), and verbs of continuous causation in a deictically specified direction ("bring," "take," . . .).

But if the verb is a verb of refusal ("refuse," "deny") as in "The boss denied Bill a raise," then the blend B takes the potential recipient and the potential patient from D but the causing of the not receiving from I, with the result that D is counterfactual with respect to B.

If the verb is a verb of giving with associated satisfaction conditions ("guarantee," "promise," "owe," . . .), then the blend takes from I kinds of causal structure for reception that are not in D.

If the verb involves a scene of creation ("bake," "make," "build," "cook," "sew," "knit," . . .) or of obtaining ("get," "grab," "win," "earn," . . .), then B takes from D intention to cause the recipient to receive the patient, and invites us to take success as well, but does not require it. If you "feed Joe a cake," he almost certainly receives it, but not so if you merely "bake Joe a cake" (and even less so if you "bake a cake for Joe").

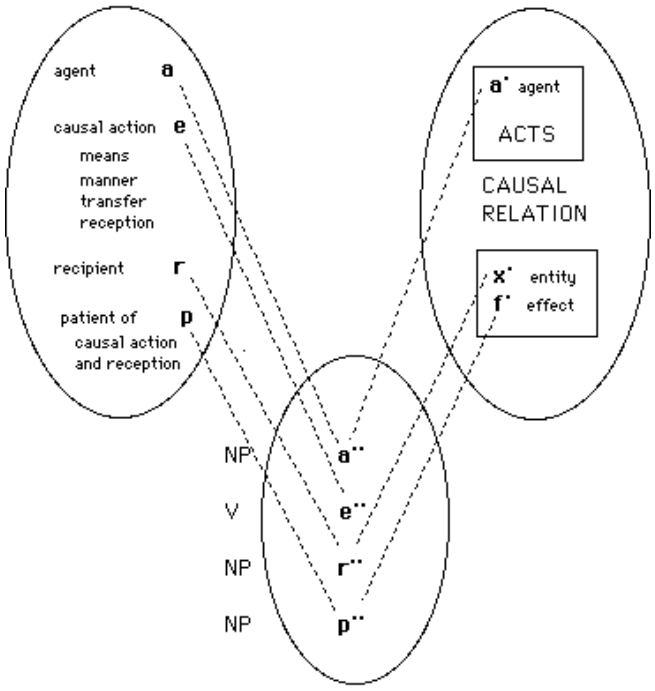
If the verb is a verb of permission ("permit," "allow," . . .), then B takes enablement from I rather than successful causation from D.

If the verb is a verb of future transfer ("leave," "bequeath," "allocate," "reserve," "grant," . . .), then the blend takes future transfer from I rather than successful causation of present reception from D.

These blends fall into conceptual classes, each class with its own two-sided organizing schema, and each with its associated classes of verbs. These two-sided conceptual blends, and the use of the ditransitive construction to evoke them, can become conventional, so that the ditransitive can be associated not only with the prototypical schema D but also with these various abstract two-sided blends.

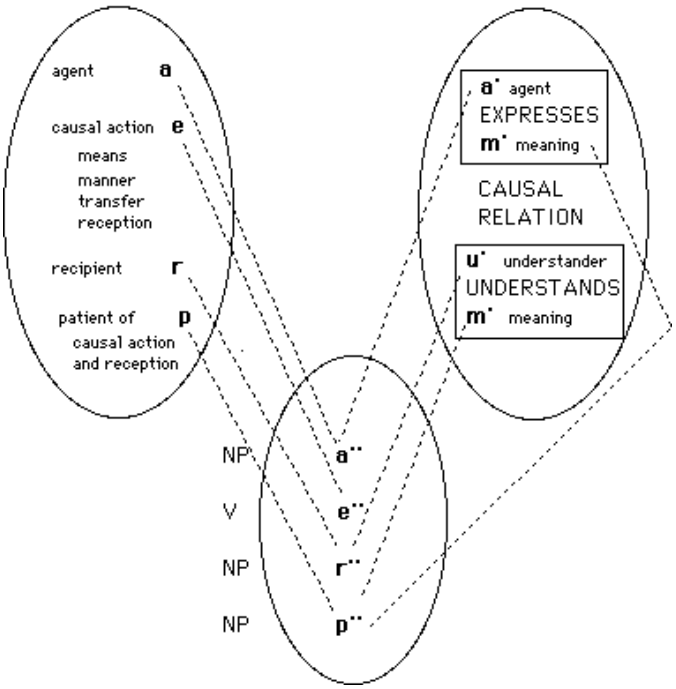
In fact, this only scratches the surface of the conventional conceptual integration that can be prompted by the English ditransitive construction. There are various metaphoric blends that have D as one input. Although Goldberg does not use the model of conceptual integration, there is a taxonomy of metaphoric blends implicit in her analysis, as follows:

(1) D is conventionally blended with an abstract schema for *causing an effect for an entity.* This produces a metaphoric blend in which the effect is an object and causing the effect for the entity is causing the object to come to the entity. This conventional blend inherits the ditransitive syntax from D, so one can say "The medicine brought him relief" and "She gave me a headache."



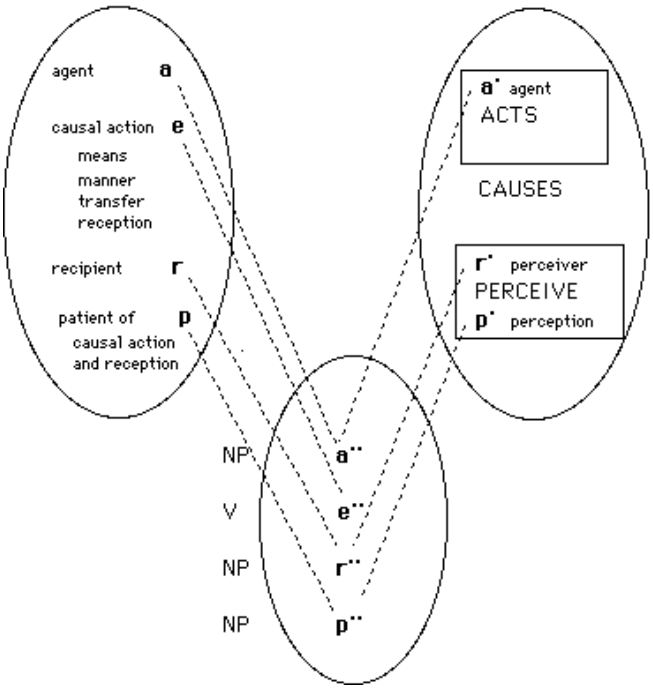
"The medicine brought him relief."
"She gave me a headache."

(2) D is conventionally blended with a schema for *communication.* This produces a metaphoric blend, analyzed by Reddy (1979), in which meaning is an object and communicating it to someone is giving it to a recipient. This conventional blend inherits the ditransitive syntax from D, so one can say "She told Jo a fairy tale."



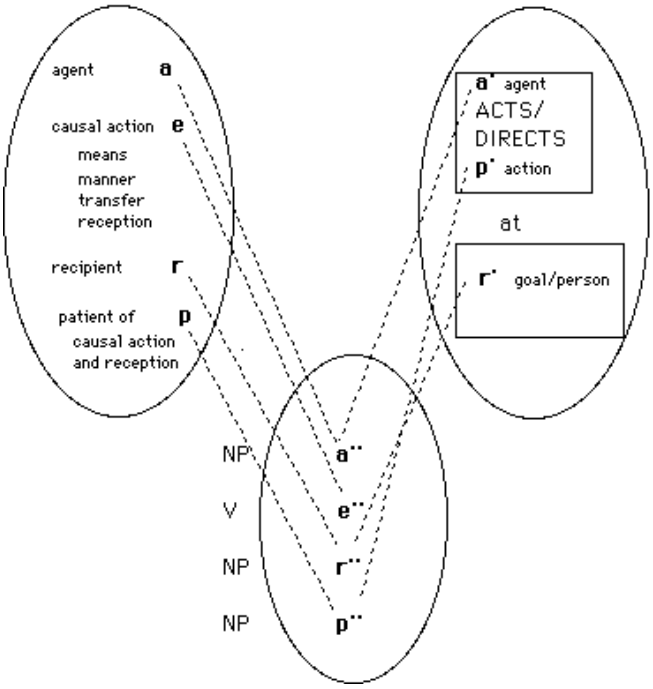
"She told Jo a fairy tale"

(3) There is a conventional blend of *motion of an object toward a recipient* with *perceiving*. In the blend, perceiving is reception of the "perception" by the recipient. This metaphoric blend is exploited as a basis for producing a more detailed metaphoric blend, with D as one input and *causing someone to perceive* as the other. In this more detailed blend, a perception is an object and causing someone to perceive it is transferring it to him. This blend inherits the ditransitive syntax from D, so one can say, "He showed Bob the view."



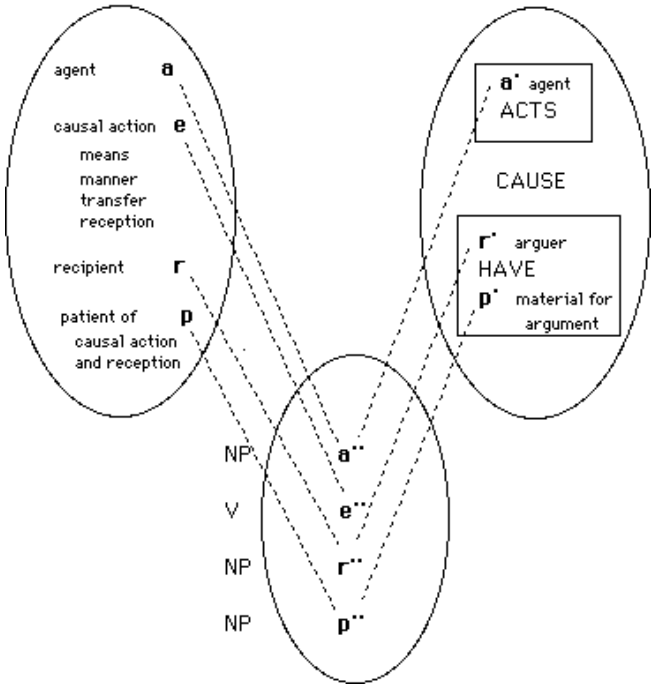
"She showed Bob the view"

(4) D is conventionally blended with *directing an action at another person*. In this metaphoric blend, the action is an object and directing it at another person is transferring it to her as recipient. This blend inherits the ditransitive syntax from D, so one can say "She threw him a parting glance."



"She threw him a parting glance"

(5) There is a conventional metaphoric blend of *constructing an object out of parts* and *developing an argument*. In this blend, facts and assumptions used in arguing are parts used in constructing. This blend is exploited as a basis for a more detailed blend, of D and *granting facts and assumptions to an arguer*. In this more detailed blend, granting a fact or assumption to the arguer is transferring it to her as recipient. This blend inherits the ditransitive syntax from D, so one can say, "I'll give you that assumption."



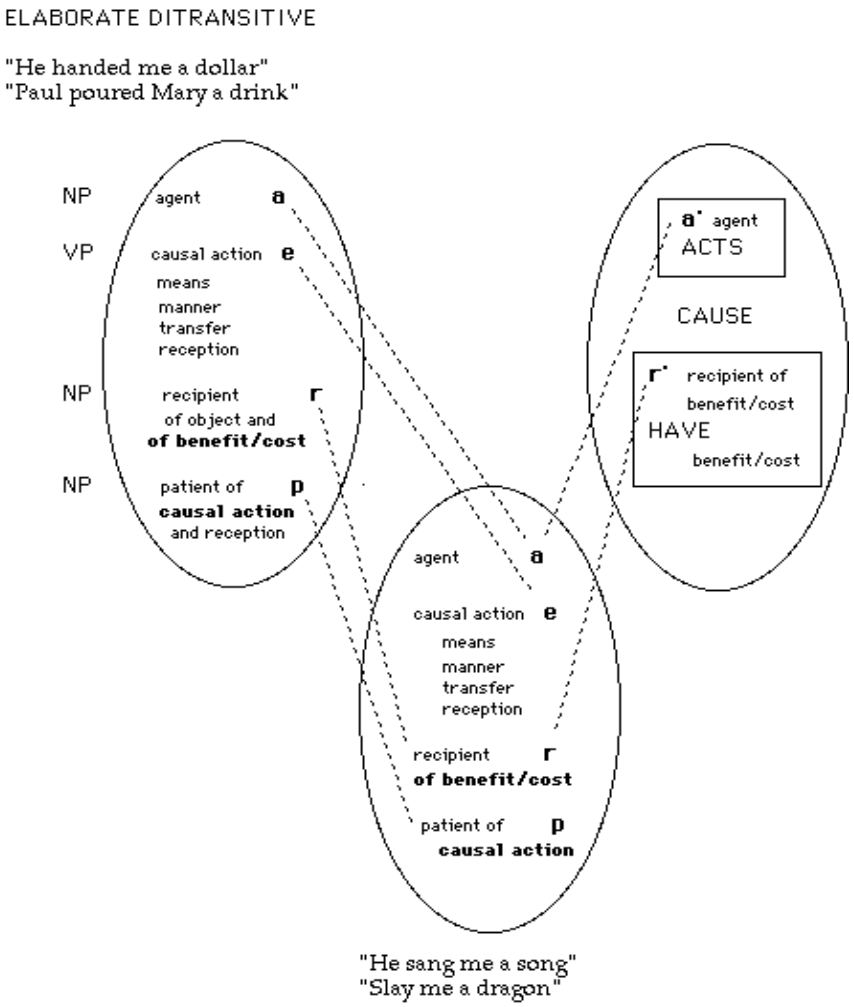
"I'll give you that assumption"

There is an interesting final case. Goldberg observes correctly that in expressions like "Slay me a dragon," one of the input spaces has an agent performing an action for the benefit of someone else, and the first postverbal noun refers to the beneficiary while the second postverbal noun refers not to what the recipient receives but rather to what the causal agent acts upon. We offer the following explanation, which we think follows the spirit of Goldberg's analysis closely even though we use the model of blending and an array of input schemas that differs mildly from Goldberg's.

D inheres in a more detailed but highly conventional schema D'. In D', someone brings a benefit to someone by transferring an object to him. For example, "Bill gave me a dollar" is typically understood as meaning not only that a dollar was transferred but that a benefit (e.g., the ability to purchase) was conferred by means of the transfer. "Mary poured Bob a glass of wine" is typically understood as meaning not only that a glass of wine was poured with the intention of transfer but also that a benefit (e.g., wherewithal for pleasure or nourishment) was intended to be conferred by means of pouring and (intended) giving. Of course D is not always an instance of D': "My child handed me his banana peel" is probably D but not D', because there is no intended conferral of benefit. Nonetheless, the ditransitive syntax is attached not only to D but also to D', and, depending on vocabulary and context, it is usually a good strategy to try to interpret

ditransitive syntax as evoking D'. In the ditransitive construction, the second postverbal noun always refers to the patient (metaphoric or not) of the causal agent's action, whether or not that patient is also the transferred object (metaphoric or not).

What happens in "Slay me a dragon," "Carry me two messages" (said by the Queen to her messenger), and "Slide me a bass trombone" (sung by James Taylor to the band) is a two-sided, selective projection to the blend, with D' as one input, as follows. From D', the blend takes a causal agent performing an action on an object (metaphoric or not) and the intended consequent conferral of a benefit on someone, but the blend does *not* take the reception of an object. The blend inherits the ditransitive syntax associated with D', and, as always in the ditransitive, the patient of the causal action (*a dragon, two messages, a bass trombone*) is assigned to the second postverbal noun.



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Endnotes

[1] We adopt here Goldberg's general idea that constructions and specific verbs come together through a fusion process. Fusion is explored in Goldberg (1995). The account we propose below, however, is substantially different, as to what exactly gets blended, both from Goldberg (1995), and Fauconnier and Turner (1994).

[2] As suggested by A. Goldberg (p.c.).

[3] In order to be integrated, events have to be linked in certain ways. Researchers in construction grammar and cognitive grammar have pointed out a number of interesting defaults, regularities, and constraints that govern the conceptual integration of events as represented in various grammatical constructions. Adele Goldberg (1995) summarizes work by Talmy, Matsumoto, Deane, Croft, and herself as follows :

Let e_c be the event type designated by the construction, and e_v be the event type designated by the verb.

I. e_v must be related to e_c in one of the following ways:

(a) e_v may be a subtype of e_c

(b) e_v may designate the means of e_c

(c) e_v may designate the result of e_c

(d) e_v may designate a precondition of e_c

(e) to a very limited extent, e_v may designate the manner of e_c, the means of identifying e_c, the intended result of e_c.

So, in "They laughed the guy out of the room," e_c is the caused-motion and e_v is the event of laughing, and it is laughing that is the means of causing the motion out of the room. In another example cited by Goldberg, "I knitted my way across the Atlantic," e_c is the caused-motion, e_v is knitting, and knitting is a manner attached to that motion.

[4] In the same general spirit, Shibatani (to appear) offers an insightful integrational account of possessor raising and ethical datives.

[5] See Kayne (1975), Comrie (1976), Fauconnier (1983), Gibson and Raposo (1986).

[6] And perhaps more generally (stratal uniqueness in RG).

[7] (8) of course is grammatical, if Paul is the recipient, and 'lui' is the sender of the parcel, because then lui corresponds to the IO position in the Blend.

[8] The resulting event is construed as an 'unaccusative' structure, focusing on the effect of the causal action on object O. In this construal, the agent of the event is a conceived as a non-obligatory oblique argument (means).

[9] If the event is unaccusative, however, it will fit the Optional Transfer Blend, and there will be a slot for IO: *Je lui ai fait venir des idees.* (Fauconnier 1983).

[10] Mandelblit (to appear) argues persuasively however that the causative double accusative construction constitutes Blend-specific syntax.

[11] Many other interesting properties follow, which space limitations prevent us from discussing here. Notice that the Blends motivate the use of *faire* (meaning "do"), and justify the absence of passive morphology in examples like (7) that "feel" like passives.