CAUSE AND MAKE IN SEMANTIC REPRESENTATION

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This paper deals with the structural difference between *cause* and *make* in terms of semantic representation. It is argued that the semantic structure of *cause* with a to-infinitive is more complex than that of *make* with a bare infinitive, in that the former includes the function GO as the second argument of CAUSE, whereas the latter does not. It is shown through discussion that the to-infinitive occurring with some causative verbs like *cause* can be interpreted as GOAL, as in the case of the preposition to. Furthermore, it is also argued that the passive of *make* with the to-infinitive complement does not constitute a counterexample to the present analysis.*

0. Introduction

This paper is an attempt to substantiate the assumption¹ that the basic structural difference between (1a) and (2a) in semantic representation corresponds to that shown below between (1b) and (2b):

(1)  a. John caused Bill to work.
    b. CAUSE(⟦Thing JOHN⟧, ⟦Event GO(⟦Thing BILL⟧, ⟦Path TO(⟦Event BILL work⟧))⟧)

(2)  a. John made Bill work.
    b. CAUSE(⟦Thing JOHN⟧, ⟦Event BILL WORK⟧)

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¹ This assumption was first suggested in Jackendoff (1976), but was given no justification there except the difference in the permissibility of state-of-affairs complements, such as in (7) and (8). The way the semantic structures are stated here follows the notation employed in Jackendoff (1983).

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That is, *cause* is more complex than *make* in that the former includes the semantic functions GO TO with the embedded structure [BILL WORK], whereas the latter does not.

Before we go on to the main discussion, there are two points to be noted. The first one concerns the theoretical framework within which this study will be made. The theoretical apparatus adopted here is based upon a 'localistic' hypothesis of language. The main thesis of 'localism' is that spatial expressions are more basic, grammatically and/or semantically, than non-spatial expressions and that other, if not all, expressions can be interpreted in terms of them. The hypothesis has long been explored with respect to case; many attempts have been undertaken since the 19th century to show that all the roles played by nouns involve location or direction. The present study differs from such attempts in that the 'localistic' view advocated here has to do not with case but with the semantic representation of the verb. The gist of this 'localistic' hypothesis is that the semantic representation of virtually all the verbs in a language can plausibly be described in terms of location and that there is a set of common patterns for representing the verb. The ideas underlying this hypothesis may not be completely novel; Gruber (1965) and Ikegami (1970) explored the possibilities of extending the notion of motion to the semantic description of non-motional verbs. However, the set of common patterns given below and the assumptions thereupon originate from Inoue (1975), which is a revised and shortened version of Inoue (1973); they were independently obtained by the author's attempt to account for why the relationships of paraphrase hold between *the company gave the people employment* and *the company employed the people* and between *the people got employment* and *the people were (got) employed*. It should be noted nevertheless that the author has been influenced by Jackendoff (1976, 1983) in translating the patterns into predicate and argument structures and in categorizing them.

The set of patterns assumed here is as follows:

(3) a. **STATIC**: BE([X], [Y])
    b. **CHANGE OF STATE**: GO([X], [Y])
    c. **CAUSATIVE**: CAUSE([Z], [E])
      (where X=Theme, Y=Location or Goal, Z=Cause, E=Event)

BE, GO, and CAUSE here are functions and X, Y, Z, and E, variables of their arguments. The variable X represents 'Theme' in the sense of Gruber.
(1965) and Jackendoff (1972); Y, ‘Location’ or ‘Goal’; Z, a ‘Cause’; and E, an ‘Event’. The patterns (a)–(c) lay the groundwork for representing the semantic structures of stative verbs, change of state verbs, and causative verbs, respectively. Each pattern enables us to define the semantic structures of a wide variety of sentence constructions, ranging from those involving spatial ‘location’ or ‘goal’ to those involving abstract conditions, by substituting for X, Y and Z, arguments with various types of semantic categories. The category [EVENT] includes [CHANGE OF STATE], [ACTION] and [CAUSATIVE] expressions. What the present paper intends to claim with respect to the CAUSATIVE pattern is that there is a further distinction between a structure like (1b) and one like (2b). The nearest surface realization of the function GO in (1b) is, I assume, ‘come to (work)’ in the sense of ‘get to the point of’.

The second point is that what distinguishes between cause and make is not just the structural difference between (1b) and (2b) but the presence of agentivity with regard to the subject NP. That is, animate NPs occurring as the subject of make are sometimes understood as Agents, but those occurring with cause are not. This contrast is illustrated by (4)–(6) below:

(4) a. *With a hand-made whip, John caused the prisoners to march in the hot sunshine.
   b. With a hand-made whip, John made the prisoners march in the hot sunshine.

(5) a. *John deliberately caused the prisoners to march in the hot sunshine.
   b. John deliberately made the prisoners march in the hot sunshine.

(6) a. *Causing the prisoners to march in the hot sunshine was impossible to do.

2 With respect to ‘Cause’, it has sometimes been claimed that the first argument of CAUSE must always be an event as in the case of the second argument and, thus, that causation is a function over two events. Arguments against this claim are presented in the paper, “A Consideration on the Semantic Representation of the Causative Verb” read at the Sixth National Conference of the English Linguistic Society of Japan, which was printed under the title “Is Causation a Function over Two Events?” (Inoue (1989)).

3 I will leave open the question of how to represent Agent on the semantic level, since a full discussion of it is beyond the scope of this paper.

4 The asterisk (*) used throughout the present article indicates semantic anomaly or semantic irrelevance, not necessarily ungrammaticality.
b. Making the prisoners march in the hot sunshine was impossible to do.

Throughout the discussion to follow, I take this point for granted.

What follows is made up of four sections. Section 1 presents arguments for *cause* as incorporating the function GO. Section 2 provides evidence which indicates that the to-infinitive occurring with causative verbs can be interpreted as Goal, as shown in (1b). Section 3 discusses whether the passive of *make* with the to-infinitive complement would constitute a counterexample to the present analysis. Finally, section 4 is devoted to a summary of the preceding sections and some implications of the present analysis.

1. Arguments for *Cause* as Incorporating the Function GO

Now let us begin with the question of whether or not the semantic function GO should be included in (1b).

A first piece of evidence for this assumption is provided by the fact that state-of-affairs complements are permissible with *cause*, whereas they are not with *make*. Observe the following:

(7) a. John caused Bill to know the truth.
   b. John caused Mary to be happy.
   c. John caused Bill to be standing on the platform when the train came in.5

(8) a. *John made Bill know the truth.
   b. *John made Mary be happy.
   c. *John made Bill be standing on the platform when the train came in.

Assuming that the semantic structure of (7a), for example, is (9) and that of (8a) is (10), we could account for the above contrast in an adequate way.

(9) \[ \text{CAUSE}(\text{Thing JOHN}, \text{Event GO(Thing BILLi, Path TO(State BILLi KNOW THE TRUTH)))} \]

(10) \[ \text{CAUSE}(\text{Thing JOHN}, \text{State BILL KNOW THE TRUTH}) \]

The unacceptability of (8a) results from the fact that since causation necessarily entails change of state, the second argument of \text{CAUSE} must

5 The progressive can be considered to belong to pattern (3a). On a 'localistic' analysis of the progressive, see Inoue (1982).
be an event, not a state.\(^6\) In other words, the acceptability of (7a) clearly suggests the presence of the function GO in the semantic representation of cause.

It should be noted in passing that, as opposed to (8b), which has a structure identical to (10), sentences like (11a) below are assumed to be represented as something like (11b):

\begin{align*}
(11) \quad & a. \text{ John made Mary happy.} \\
& b. \text{ CAUSE([\text{Thing JOHN}], [\text{Event GO([\text{Thing MARY}, \text{Path TO([\text{State HAPPINESS}])}])}])}
\end{align*}

That is, we must admit two senses for make, one corresponding to the semantic structure (2b) and the other corresponding to the semantic structure (11b).\(^7\) Although the full explanation for the above structure is beyond the scope of this paper, we can note that the two senses cannot be conjoined with each other, as shown below:

\begin{align*}
(12) \quad & *\text{John made one patient quiet and (Bill) another get out of the room.} \\
(13) \quad & ?*\text{Mary made the room warm and (John) the water boil.}
\end{align*}

Moreover, bare infinitive expressions like 'be happy' after make can occur only in limited contexts such as imperatives and conditionals. They take on the meaning of 'pretend to be happy' or 'act in a happy way' in those contexts; thus, they denote events, not states, and therefore they have the same semantic structure as (2b). As pointed out by Gee (1975), there is a clear contrast in meaning between those complements and the complements without be, as in:

\begin{align*}
(14) \quad & \text{Go over there and make Mary be happy.}
\end{align*}

\(^6\) Strictly speaking, the acceptability of sentences like (8) will be improved when the subject NP's are non-Agentive, as seen in the following:

\begin{align*}
(i) \quad & \text{The circumstances made John know the truth.} \\
(ii) \quad & \text{That picture made John prefer Rembrandt.}
\end{align*}

It must be noted, however, that since (i) and (ii) imply 'John came to know the truth' and 'John came to prefer Rembrandt', the complements of (i) and (ii) should not be interpreted as states but as changes of state.

\(^7\) A native speaker of English informed me that there are in the Revised Standard Version of the Bible make-sentences with the to-infinitive as in (i) below:

\begin{align*}
(i) \quad & \text{For our sake he made him to be sin who knew no sin, so that in him we might become the righteousness of God. (2 Corinthians 5:21)}
\end{align*}

(This type of sentence also occurs in the Authorized Version.) Sentences like the above, though hardly acceptable in modern ordinary usage, would fit the structure (11b) with the STATE element being a sentential NP.
(15) Go over there and make Mary happy. (Gee (1975:372))

A second piece of evidence for the function GO comes from consideration of the fact that cause can take passive in its to-infinitive complement, whereas make cannot in its bare infinitive counterpart. Consider the following:

(16) a. John caused Bill to be examined by the doctor.
    b. *John made Bill (be) examined by the doctor.8

The difference in acceptability between these sentences can be accounted for by assigning (16a) and (16b) the semantic representations (17a) and (17b), respectively.

(17) a. \text{CAUSE}([\text{Thing JOHN}, [\text{Event GO([\text{Thing BILL}], \text{Path TO([\text{Event BILL, BE EXAMINED BY THE DOCTOR])}])}])]
    b. *\text{CAUSE}([\text{Thing JOHN}, [\text{Event BILL BE EXAMINED BY THE DOCTOR}])]

The unacceptability of (17b) is due to the violation of a hitherto unformulated semantic constraint such as the following:

(18) The second argument of CAUSE must be the kind of event that the first argument can be an immediate cause for.

Not only does this constraint account for causative sentences with simple NP's as the second argument, such as (19), but also those with sentential NP's in that position, as in (20).

(19) a. The eruption of the volcano \{caused, brought about\} an earthquake.
    b. *Strong wind \{caused, brought about\} an earthquake.

(20) a. John brought it about that Bill met Mary.
    b. *John brought it about that Bill fell in love with Mary.

Clearly, the second arguments in the (b) sentences of (19)–(20) do not meet the condition required by (18), whereas those in the (a) sentences of (19)–(20) do. Strong wind, for example, cannot be an immediate cause for an earthquake, but the eruption of a volcano can. Hence this constraint is independent of whether the first argument is Agent or not. To return to the main argument, ‘Bill’s being examined’ is not the kind of event in which

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8 According to the judgment of an American speaker but not that of a British one, (16b) with be in the sense of ‘force’ is not completely unacceptable.
John in (17b) can play the role of an immediate cause but one in which only the doctor can. On the other hand, since the event John is an immediate cause for in (17a) is ‘Bill’s going to the situation of being examined by the doctor’, not ‘Bill’s being examined’, John was indirectly involved in the latter event; thus, (16a) does not violate the above constraint. Again, the acceptability of (16a) is an index of the function GO. In addition, the present analysis precisely accords to the intuition that cause is more indirect in causation than make.

Now consider sentences with reflexives, such as (21):

(21) John made himself heard.

Is this a counterexample to the above analysis? No, on the contrary, it confirms the correctness of the analysis. Since the subject NP and the object NP are coreferential, the second argument of CAUSE here fulfills the condition required by (18), for he could bring about the event that he himself was involved in. Almost the same can be said of sentences such as (22), where the object NP refers to a part of the subject NP:

(22) The candidate made his power felt.

Moreover, it should also be noted that the same reasoning can be applied to other kinds of semantic “passives”, as exemplified in (23)–(25) below:

(23) a. The bad condition of the road caused John to have his car break down.
    b. *The bad condition of the road made John have his car break down.

(24) a. His mischief caused John to get spanked by his mother.
    b. *His mischief made John get spanked by his mother.

(25) a. His mischief caused John to get a spanking from his mother.
    b. *His mischief made John get a spanking from his mother.

In these examples, make-sentences, if not totally rejected, are less acceptable than their cause counterparts.

Thirdly, it is noteworthy that the same argumentation with regard to “passives” can hold for non-agentive expressions like get a cold and fall in love with, as well. Observe the following:

(26) a. Lack of sleep caused Mary to get a cold.
    b. *Lack of sleep made Mary get a cold.

(27) a. John caused Bill to fall in love with Mary.
    b. *John made Bill fall in love with Mary.

In (26b), for example, lack of sleep cannot serve as an immediate cause
for the event of Mary’s getting a cold, while in (26a) it can serve as an immediate cause for the event of Mary’s going to that situation.

A fourth piece of evidence is also provided by non-agentive expressions along with phrases denoting a cause like ‘from ...’ and ‘of ...’. Observe the following pairs:

(28) a. His bad habit of eating while watching the TV caused John to get a stomachache from eating too many peanuts.
   b. *His bad habit of eating while watching the TV made John to get a stomachache from eating too many peanuts.

(29) a. His heavy smoking caused him to die of lung cancer.
   b. *His heavy smoking made him die of lung cancer.

As in the case of (16), the (a) sentences in (28)–(29) permit a more direct cause, i.e. adverbial prepositional phrases denoting a cause, than their subject, whereas the (b) sentences do not. This contrast again supports the claim that the semantic structure of the verb cause is more complex than that of make, as shown in (1b) and (2b).

The next piece of evidence is concerned with such adverbs as finally and eventually occurring just before the infinitive. Contrast (a) with (b) in these pairs.

(30) a. They caused John finally to discover a new comet.
   b. *They made John finally discover a new comet.

(31) a. What she did caused John eventually to be happy.
   b. *What she did made John eventually be happy.

Since finally and eventually modify a process and neither discover nor be happy implies any process, (30a) and (31a) suggest that, in the case of cause, the function GO must be present as the second argument of CAUSE.9

9 One might question if, as in the case of the verb force (e.g. *John forced Bill to know the truth/fall from the tree), the (b) sentences in (23)–(31) would be excluded by a semantic constraint such that the causee of make must be a volitional agent. That constraint, however, will also exclude perfectly acceptable sentences such as:

   (i) John made it happen.
   (ii) John made Bill fall from the tree.

Thus, make is unmarked as to the agency of the causee, while force is marked.

There remains unsolved, however, another question as to how to differentiate on the semantic level the complement structure of force from that of cause on the one hand, and that of make when the causee is Agent from that of make when the causee is not Agent on the other. Though the justification must be considered elsewhere, a possible way to solve this question might be to posit, as suggested by Miller & Johnson-Laird (1976) and others, a function indicating ACTION as follows:
To conclude this section, a brief note should be added on the relation between the foregoing arguments for GO in (1b) and its above-mentioned nearest surface realization, 'come to'. Notice the following:

(32)  
   a. John came to like Mary.  
   b. John came to be happy.  
   c. John came to be working diligently whenever the boss looked in.  
   d. Bill came to be examined by the doctor.  
   e. John eventually came to know the truth.  
   f. John came to have his savings wiped out.

Interestingly enough, what has been said so far of the complement of cause also holds for 'come to'.

2. Evidence Indicating the To-Infinitive as Goal

In what follows, I will proceed with the argument that as in (1b), the to-infinitive appearing after causative verbs can be interpreted as Goal and, thus, that the to-infinitive plays the same role as the preposition to on the semantic level. Hence, what this analysis suggests is that the syntactic difference between the to-infinitive and the bare infinitive is directly related to and explained by the semantic difference between the two.

Should there be a clear test that identifies a to-infinitive of this kind along with the preposition to as the semantic role of Goal, this matter would be quite simple and clear. No such test, however, can exist, since the to-infinitive is recognized as totally different from the preposition to on the syntactic level. Nevertheless, when we focus our attention on the group of causative verbs that describe abstract change of state as well as spatial transfer, we can find some evidence to support the correctness of the above claim.

The first piece of evidence for the to-infinitive being Goal is related to the semantic contrast of TO vs. TOWARD, noted in Inoue (1984). According to the claim, the semantic difference as exemplified between (33a) and (33b) is that between spatial 'go to' and 'go toward' as in (34a)

(iii) \([\text{Event DO([\text{Actor } x], [\text{Action } y])}]\)

The animate element filling x in (iii) is generally interpreted as Agent. Thus, the structure (iii) would be embedded as the second argument of CAUSE in (2a) when the causee of make is Agent, and in the case of force it would be embedded as the argument of TO in the structure like (1b).
and (34b):

(33) a. Sue pressured Jim into singing.
    b. Sue pressured Jim to sing.  

    (Jackendoff (1983: 200))

(34) a. Sue went to New York.
    b. Sue went toward New York.

That is, the semantic difference as to whether the reference event indicated by the complement is achieved or not precisely corresponds to the one in spatial expressions as to whether the goal is reached or not. Thus, the two contrasts are reduced to the same contrast, i.e. TO vs. TOWARD. The following examples support this claim:

(35) a. I sent a letter to Bill, but he didn’t receive it. (TOWARD)
    b. I sent Bill to die, but he didn’t die. (TOWARD)

(36) a. John directed Mary to the station, but she didn’t reach there.  
    (TOWARD)
    b. John directed Mary to leave, but she didn’t leave.  
    (TOWARD)

(37) a. *He led Mary to the station, but she didn’t reach there. (TO)
    b. *He led Mary to believe that he was a millionaire, but she didn’t believe it. (TO)

(38) a. *He drove Mary to the station, but she didn’t reach there.  
    (TO)
    b. *He drove Mary to confess what she did to Bill, but she didn’t confess that. (TO)

(39) a. *John gave the book to Mary, but she didn’t receive it. (TO)
    b. *John gave them to understand that she was coming, but they didn’t know it. (TO)

(40) a. *John put his signature to the document, but that wasn’t on the document at all. (TO)
    b. *The drug put only one half of the patient’s brain to sleep at a time, but that half of the brain didn’t sleep at all. (TO)

As is clear from the above, where the spatial (or possessional) use of the sentence (a) implies the reference object’s reaching the goal, the causative use of the corresponding verb in the sentence (b) implies the achievement of the reference event. On the other hand, where the sentence (a) does not imply the reference object’s reaching the goal, the sentence (b) does not imply the achievement of the reference event. It is important to note here that this contrast can be observed among causative verbs with to-infinitive
complements, but not among those with bare infinitive complements.\(^{10}\) Therefore, the contrast of TO vs. TOWARD in the former complements constitutes evidence, albeit indirect, for the to-infinitive being Goal.

As further evidence, notice that (41)–(44), in which a to-infinitive complement can be an answer to a question using where, are acceptable,

\(^{10}\) Using the inference rules in (i), a version modified by the present author of those given in Jackendoff (1976), we can account for these implicational relations as in (ii)–(vi).

(i) a. \(\text{GO}([X], [\text{TO}(Y)]) \text{ AT } t_1 \Rightarrow \text{ for some time } t_2\)
    \(\text{such that } t_1 < t_2, \text{ BE}([X], [\text{AT}(Y)])\)

b. \(\text{NOT}([\text{GO}([X], [\text{TO}(Y)])]) \text{ AT } t_1 \Rightarrow \text{ for some time } t_2\)
    \(\text{such that } t_1 < t_2, \text{ NOT}([\text{BE}([X], [\text{AT}(Y)])]) \text{ AT } t_2\)

c. \(\text{NOT}([\text{GO}([X], [\text{TO}(Y)])]) \Rightarrow \text{ BE}([X], [\text{AT}(\text{NOT } Y)])\)

d. \(\text{BE}([X], [\text{AT}(Y)]) \text{ where } Y=\text{Proposition} \Rightarrow Y\)

e. \(\text{CAUSE}(Z, E) \Rightarrow E\)

(ii) a. John sent a letter to Bill.
    \(\text{CAUSE}([\text{JOHN}], \text{ GO}([\text{A LETTER}], \text{ TOWARD}([\text{BILL}]))))\)

b. \(\Rightarrow \text{ GO}([\text{A LETTER}], [\text{TOWARD}([\text{BILL}]))}\)
    A letter went toward Bill.

c. \(\Rightarrow \text{ BE}([\text{A LETTER}], [\text{AT}([\text{BILL}])])\)

(iii) a. John sent Bill to die.
    \(\text{CAUSE}([\text{JOHN}], \text{ GO}([\text{BILL}], \text{ TOWARD}([\text{BILL DIE}]))))\)

b. \(\Rightarrow \text{ GO}([\text{BILL}], [\text{TOWARD}([\text{BILL DIE}]))}\)

c. \(\Rightarrow \text{ BE}([\text{BILL}], [\text{AT}([\text{BILL DIE}]))}\)

(iv) a. John led Mary to the station.
    \(\text{CAUSE}([\text{JOHN}], \text{ GO}([\text{MARY}], \text{ TO}([\text{THE STATION}]))))\)

b. \(\Rightarrow \text{ GO}([\text{MARY}], [\text{TO}([\text{THE STATION}]))}\)

c. \(\Rightarrow \text{ BE}([\text{MARY}], [\text{AT}([\text{THE STATION}]))}\)
    Mary was at the station.

(v) a. John led Mary to believe that he was a millionaire.
    \(\text{CAUSE}([\text{JOHN}], \text{ GO}([\text{MARY}], \text{ TO}([\text{MARY BELIEVE } \ldots]))))\)

b. \(\Rightarrow \text{ GO}([\text{MARY}], [\text{TO}([\text{MARY BELIEVE } \ldots]))}))\)

c. \(\Rightarrow \text{ BE}([\text{MARY}], [\text{AT}([\text{MARY BELIEVE } \ldots]))})\)

d. \(\Rightarrow [\text{MARY BELIEVE THAT HE WAS A MILLIONAIRE}]\)
    Mary believed that he was a millionaire.

(vi) a. John made Bill work.
    \(\text{CAUSE}([\text{JOHN}], [\text{BILL WORK}]))\)

b. \(\Rightarrow [\text{BILL WORK}]\)
    Bill worked.
though somewhat loose:

(41) Where did the fact lead him?
   It led him to conclude that that linguistic theory is wrong.

(42) Where did that direct him?
   It directed him to make a new discovery.

(43) Where did his sense of being guilty drive him?
   It drove him to confess what he did.

(44) Where did his crime send him?
   It sent him to die.

Furthermore, we can note that there are cases in which to-infinitives can be conjoined with PP's expressing Goal, as seen in the following:

(45) That led them to fall into a snare and then to destruction.
(46) That directed him to make a new discovery and then to the prize.
(47) That drove her to fall into a snare and then to black despair.
(48) His crime sent him to prison and then to die.

Moreover, it is worth noting that the adverbial phrases all the way and on the way, which modify path expressions, can precede some to-infinitive complements as well as PP's of the verbs in question. Observe the sentences below.

(49) a. The guide led us all the way to the top of the mountain.
    b. John led her all the way to confess what she did.

(50) a. John sent Bill all the way to Europe.
    b. The king sent him all the way to fetch some gold from South America.

(51) a. He drove Mary all the way to the station.
    b. He drove Mary all the way to confess what she did.

(52) a. He directed us all the way to the top of the mountain.
    b. ?John directed Mary all the way to confess what she did.

(53) a. He sent her on the way to the star.
    b. The king sent him on the way to fetch some gold from South America.

3. Is the Passive of Make a Counterexample to the Present Analysis?

Thus far I have argued for the difference of meaning between cause and make as the structural difference between (1b) and (2b). A question might arise at this point whether or not the passive of make with the to-infinitive complement would constitute a counterexample to the present analysis,
since an active sentence and its corresponding passive sentence are generally considered to carry the same cognitive meaning. Considering that this question concerns another hitherto unsolved question of how the passive should be represented on the semantic level, to fully argue against it seems to be quite difficult. In the discussion that follows, however, it is shown that the to-infinitive of the *make* passive differs in semantic behavior from the bare infinitive of its corresponding active, and thus, that the passive of *make* by no means contradicts the above analysis.

First of all, notice that state-of-affairs complements can be embedded under the passive more comfortably than under the corresponding active, as seen in the contrast between (7) and (8). Observe the following:

(54) a. *We made John be in need of assistance.
    b. John was made to be in need of assistance.

(55) a. *John made Mary be happy.
    b. Mary was made to be happy.

(56) a. *John made Bill know the truth.
    b. Bill was made to know the truth.

Secondly, we note that the to-infinitive taken by the passive of *make* again permits passive more easily than the bare infinitive taken by its active counterpart. Consider the following:

(57) a. *They made John be kissed by Mary.
    b. John was made to be kissed by Mary.

Moreover, it is interesting to note that the same can be said of some *have*-passives as well. Compare (a) with (b) in the following pairs:

(58) a. *They made John have his wallet stolen.
    b. John was made to have his wallet stolen.

(59) a. *They made John have his car break down.
    b. John was made to have his car break down.

Furthermore, note also that, like other to-infinitive verbs, the passive of *make* can be preceded by a negator before its to-infinitive, whereas the active cannot:

(60) a. *We made only John not run away.
    b. Only John was made not to run away.

So far we have seen cases in which the passive of *make* has no corresponding active.\(^\text{11}\) Now let us turn to cases in which the active of

\(^{11}\) As for the above pairs (57)–(60), among the four American and two British informants I consulted, it was the British speakers who found the (b) sentences of (57)–
"make" has no corresponding passive. Observe the following:

(61) a. They made John do his homework.
    b. John was made to do his homework.
(62) a. John made Bill fall into the pond.
    b. Bill was made to fall into the pond.
(63) a. Fear made John tremble.
    b. *John was made to tremble by fear.
(64) a. The sun made the sea glisten.
    b. *The sea was made to glisten by the sun.

It is clear from (61)–(64) that the active of "make" takes a corresponding passive only when its subject plays the role of Agent as shown by "they" and "John" in (61) and (62), and, otherwise, as shown by "fear" and "the sun" in (63) and (64), it takes no corresponding passive.

From the cases observed above, it may be concluded that the active of "make" with the bare infinitive complement does not run parallel to the passive with the to-infinitive complement and that the to-infinitive of the passive exhibits several, if not all, characteristics in common with the to-infinitive occurring with causative verbs like "cause." Thus, the fact that the passive of "make" takes a to-infinitive complement by no means constitutes a counterexample to the present analysis.

4. Implications

Through the foregoing sections I have tried to show that the basic structural difference in meaning between "cause" and "make" can be represented as the contrast between (1b) and (2b) and that the passive of (60) acceptable. Nevertheless, even the American speakers admit that all of the (b) sentences are far better than their active counterparts.

12 Examples (61), (63) and (64) are taken from Babcock (1972). Nevertheless, the discussion thereof is entirely my own.

13 We could account for the lack of the passive of such sentences as (63a) by considering that as pointed out in Ikegami (1990), the unmarked structure of the causative verb "make" is "Subject (inanimate) + make + Object (human)" and that the transitive verb with a non-Agentive subject is less likely to be passivized than the one with an Agentive subject. This line of reasoning, however, fails to predict the (b) sentences of (54)–(60) as opposed to the (a) sentences, and the passive of the verb "cause" as in:

(i) Mary was caused to be taken for an actress by her hair-do.
(ii) The company was caused to be taken over by insider transaction.

(Cf. *Bill was caused to work by John.)
make with the to-infinitive complement cannot be considered as a counterexample to the present analysis. One might wonder at this point what implications this analysis will have, namely how far this analysis will apply to the semantic accounts of other causative verbs. There are two directions of implications conceivable: the first is for other periphrastic causatives, and the second, for lexical causatives.

Among the other periphrastic causatives, the most interesting case fitting the above analysis is the verb help with both to-infinitive and bare infinitive complements. In many respects these two complements appear to correspond to the contrast between cause and make. As for the directness of involvement on the part of the subject, observe the following pairs:

(65)  a. I helped them to carry the load by having my secretary get them a cart.
     b. *I helped them carry the load by having my secretary get them a cart.

(Gee (1975:312))

(66)  a. ?Go and help to wash up at the sink.
     b. Go and help wash up at the sink.

(67)  a. Mary's hair style helped Bill to fall in love with her.
     b. ?Mary's hair style helped Bill fall in love with her.

Notice that the difference in acceptability between these pairs follows directly from our analysis. The bare infinitive case involves a more direct relation to the event denoted by the complement than the to-infinitive case. Thus, (65b) is less acceptable than (65a), since the direct relation shown in the complement contradicts the indirect involvement suggested by the by-phrase. On the contrary, (66b) is more natural than (66a), since the imperative construction implies a circumstance in which the hearer’s direct involvement is expected. As in the case of (27), (67b) is less acceptable than (67a), since John’s falling in love is not the kind of event that the subject NP is capable of helping directly in bringing about. More evidence comes from the interactions of these complements with state-of-affairs expressions, passives, the negator not and adverbs finally and eventually, as we have seen above in the discussion of cause and make. Consider the

14 According to a native speaker of German, almost the same can be observed in the German counterparts of (66):

following:

(68) a. The counselor helped John to know himself.
b. *The counselor helped John know himself.

(69) a. His wife helped John to be independent.
b. *His wife helped John be independent.

(70) a. John helped Bill to be accepted by that famous teacher.
b. *John helped Bill be accepted by that famous teacher.

(71) a. His faith helped him not to despair.

(Mittwoch (1990: 117))
b. *His faith helped him not despair.

(72) a. They helped John finally to discover a linguistic rule.
b. *They helped John finally discover a linguistic rule.

(73) a. What she did helped John eventually to be more relaxed.
b. *What she did helped John eventually be more relaxed.

As far as other to-infinitive causative verbs are concerned, it should be clear from the preceding discussion that the structure (1b) can be applied mutatis mutandis to many of their semantic representations. 15 Although further research must be made along these lines, there are several indications which lend support to this claim. For example, in addition to examples (49)–(53) above, there are some other verbs without any notion of spatial transfer whose infinitives can be modified by the adverbial phrases all the way and on the way. Note the following:

(74) John pressured Mary all the way to confess what she did.

(75) John pressured Mary on the way to confess what she did.

(76) John forced Mary all the way to confess what she did.

(77) John persuaded Mary all the way to confess what she did.

(78) John encouraged Mary all the way to confess what she knew.

Moreover, with verbs of this kind, the to-infinitive can be the object of another preposition expressing Goal, into:

(79) What John forced Bill into was to do his homework.

(Gruber (1976: 158))

(80) What John pressured Mary into was to stay another week.

(81) What they enticed Mary into was to leave her parents.

(82) What John coaxed Mary into was to confess what she did.

15 On a difference between cause and force, see footnote 9.
What her parents coerced her into was to marry him.

Now let us go on to bare infinitive causatives. Except the above-mentioned help with the bare infinitive complement, there seem to be hardly any other verbs whose semantic behavior is similar to that of make. Let is distinguished from make by the kind of causation performed by the subject; in the former the subject NP only ceases to prevent an event, while in the latter the subject NP brings about an event. Thus, to represent these two relations, Jackendoff (1976) employs two semantic functions \( \text{LET}(X, E) \) and \( \text{CAUSE}(X, E) \). LET differs from CAUSE in some of the inference rules drawn from the predicate. Observe the following:

(84) a. *John made Mary leave the room, but she didn’t leave.
    b. John let Mary leave the room, but she didn’t leave.
    c. John didn’t make Mary leave the room, but she left.
    d. *John didn’t let Mary leave the room, but she left.

Thus, the inference rules in (a) and (d) of (85) hold true, whereas those in (b) and (c) do not:

(85) a. \( \text{CAUSE}(X, E) \Rightarrow E \)
    b. \( \text{LET}(X, E) \Rightarrow E \)
    c. \( \text{NOT}(\text{CAUSE}(X, E)) \Rightarrow \text{NOT E} \)
    d. \( \text{NOT}(\text{LET}(X, E)) \Rightarrow \text{NOT E} \)

There is a further difference between let and make. Let is different from make in that the former permits states-of-affairs as well as events in the complement, as shown in:

(86) Let there be no mistake.
(87) Please let me know when the lessons begin.

Hence either \( \text{LET}(X, E) \) or \( \text{LET}(X, S) \) is valid. Have also seems to be different from make in the kind of role the subject NP plays. The subject of the latter, either animate or inanimate, assumes no more than the role of ‘Cause’. On the other hand, the subject of the former, besides being in the role of ‘Cause’, is the recipient, or the goal in our terms, to which the action expressed by the complement is directed; thus, it is parallel to the subject of have with the sense of ‘take’ and ‘receive’. Although the full discussion on the semantics of have-causatives must be developed elsewhere, the semantic structure of (88a) could be represented as something like (88b):

(88) a. John had Bill wash the car.
    b. \( \text{CAUSE}([\text{Thing JOHN}], [\text{Event GO([Event BILL WASH THE CAR], [Path TO([JOHN])])}]) \)
This is suggested by the impossibility of a reflexive with have, as opposed to make. Compare the following:

(89)  He made himself wash the car.
(90)  *He had himself wash the car.

As for lexical causatives, first take a look at the following data:

(91)  a.  His heavy smoking caused him to die of lung cancer.
      b.  ?His heavy smoking made him die of lung cancer.
      c.  *His heavy smoking killed him of lung cancer.

(92)  a.  John caused the glass to break by ordering Mary to raise the temperature to over 100 degrees.
      b.  ?John made the glass break by ordering Mary to raise the temperature to over 100 degrees.
      c.  ?*John broke the glass by ordering Mary to raise the temperature to over 100 degrees.

(93)  a.  John caused the door to open by pushing Mary against it.
      b.  ?John made the door open by pushing Mary against it.
      c.  ?*John opened the door by pushing Mary against it.

(94)  a.  The frequent occurrence of scandals caused the popularity of the Prime Minister to decrease.
      b.  The frequent occurrence of scandals made the popularity of the Prime Minister decrease.
      c.  *The frequent occurrence of scandals decreased the popularity of the Prime Minister.

(95)  a.  A sense of guilt caused Dick to withdraw from Barbara.
      b.  A sense of guilt made Dick withdraw from Barbara.
      c.  *A sense of guilt withdrew Dick from Barbara.

It might be said from the above examples that with regard to the directness of causation, most lexical causatives are closer to make than cause. There seem, however, to remain many other factors to be clarified before we can decide the definite structure of this class. For example, is the difference in acceptability between make and lexical causatives in (94)–(95) attributable to selectional restrictions or to idiosyncratic features of each verb? This area again must await future research.

16 Examples (a) and (c) of (92)–(95) are from Yamanashi (1977). However, the acceptability judgments and the discussion thereof are mine.
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