

On Complements and Adjuncts

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1 Introduction.

A classic problem in English syntax is distinguishing between verbal complements and adjuncts. Expanding on Grimshaw's (1990) distinction between arguments, adjuncts and argument-adjuncts, we argue that three classes of dependents can be discerned within the verb phrase. The first class includes what are unquestionably complements of the verb. We term these 'primary complements.' They include the theta roles of theme, patient, goal, source, path, and experiencer as in (1), where a book is theme and (2) where to the store is goal.

- (1) Kim read a book. (theme)
- (2) Kim went to the store. (goal)

The third class includes what are unquestionably adjuncts modifying the verb. This class includes time, location, manner, and possibly reason, as in (3) where in her room is the location and (4) where on Sunday is the time of the event:

- (3) Kim put a book on her desk in her room. (location)
- (4) Kim died on Sunday. (time)

The second class shares properties with primary complements and with adjuncts. We term these 'secondary complements.' They include instruments, agents, benefactives, and possibly purpose, as in (5) where with a flashlight is instrument and (6) where for his mother is benefactive.

- (5) Kim read a book with a flashlight. (instrument)
- (6) Kim bought a package of cigarettes for his mother. (benefactive)

Grimshaw's (1990) class of argument-adjuncts includes only passive by-phrases and possessive phrases in event nominalizations. She notes that they have properties of both adjuncts and arguments. Like adjuncts, they are optional, but like arguments they are licensed by the argument structure of their associated head.

2 Syntactic Evidence: Constituency Tests.

2.1 Adjuncts vs. Primary and Secondary Complements.

We use two syntactic tests to distinguish adjuncts from both primary and secondary complements: the “Preposition Stranding” Test and the “WH-coordination” Test.

2.1.1 Preposition Stranding Test.

First, it is well known that prepositions cannot be stranded in adjuncts, but they may be in primary and secondary complements, as (7)-(9) show.

(7) *It was his room that Kim put a book on the desk in.

(8) It was the store that Kim went to.

(9) It was a flashlight that Kim read a book with.

This behavior is explained by Huang’s (1982) Condition on Extraction Domains: extraction is possible out of a complement but not out of an adjunct.

One complication of this test is that preposition stranding is sometimes possible with locative adjunct PPs: when they don’t follow another PP, as shown in (10) and (11).

(10) It was our kitchen that Mary cooked breakfast in.

(11) It is his own bedroom that John sleeps in.

This is not possible with time or manner adjuncts, as (12) and (13) show:

(12) *It is the morning that Polly studies syntax in.

(13) *It is a slow manner that Mary works in.

With locative PPs not following another PP it is necessary to use other tests to determine whether the PP is an adjunct or a complement. We believe that the explanation for the peculiar behavior of locative PPs is that locative PPs are in a state of transition from adjunct status to secondary complement status, but time and manner PPs are not.

2.1.2 WH-word Conjunction Test.

A second test to distinguish adjuncts from both types of complement is the “WH-word conjunction” test. If two WH-words refer to primary or secondary complements with two different theta roles, they cannot be conjoined, as (14) and (15) show, but if two WH-words refer to two adjuncts as in (16) they can be conjoined:

(14) *Who and what did John give to?(theme, goal)

- (15) *With what and for whom did John paint the hallway? (instrument, benefactive)
- (16) When and how did you find your missing ring?(time, manner)

2.2 Primary vs. Secondary Complements.

We use four syntactic tests to distinguish primary complements from secondary complements and adjuncts: the “Pseudocleft” Test, the “VP-Preposing” Test, the “Do So Test” and the “Omission” Test. The first test is new; the other three are well known.

2.2.1 Pseudocleft Test.

The “Pseudocleft Test” shows that secondary complements and adjuncts can occur after the verb *do* in a VP-focussed pseudocleft, as (17) and (18) show:

- (17) What Kim did with a flashlight was read a book.
- (18) What Kim did in his room was put a book on the desk.

However, primary complements cannot occur in this position, as (19) and (20) show:

- (19) *What Kim did a book was read.
- (20) *What Kim did to the store was go.

2.2.2 VP-Preposing Test.

A similar test is the well-known “VP preposing” test. Primary complements must move with the verb in VP-preposing, as (21) shows, but secondary complements and adjuncts may be left behind, as shown in (22) and (23):

- (21) *Kim wanted to go to the store, and go she did to the store.
- (22) Kim wanted to read a book with a flashlight, and read a book she did with a flashlight.
- (23) Kim wanted to read a book on Sunday, and read a book she did on Sunday.

2.2.3 Do-So Test.

Thirdly, to distinguish primary complements from secondary complements and adjuncts there is the well-known “Do-So Test”. An adjunct and a secondary complement can appear after *do so*, as (25) and (26) show, but a primary complement cannot, as shown in (24).

- (24) *Kim went to the store, and Pete did so to the library.
- (25) Kim opened the door with a key, and Pete did so with a credit card.
- (26) Kim read a book on Sunday, and Pete did so on Monday.

Of these three tests, the pseudocleft test seems to elicit the strongest intuitions, even from introductory syntax students, so it is a valuable test. All three of these tests involve the pro-form *do*. They thus can only apply only to active as opposed to stative verbs. The fourth test applies to stative verbs as well as active verbs.

2.2.4 Omission Test.

The fourth test to distinguish primary complements from secondary complement and adjuncts is the “Omission Test”: if a dependent cannot be omitted it is a primary complement, as illustrated in (27). Adjuncts and secondary complements are always omissible, as illustrated in (29) and (30). The complication is that primary complements are sometimes omissible, as shown in (28).

- (27) a. John likes syntax. (primary complement)
b. *John likes.
- (28) a. John and Mary like to play indoor games.(primary complement)
b. John and Mary like to play.
- (29) a. Seymour sliced the salami with a knife. (secondary complement)
b. Seymour sliced the salami.
- (30) a. Mary jogs on Sundays. (adjunct)
b. Mary jogs.

Sometimes omitting a primary complement changes the meaning of the verb phrase, as in (28), but this isn’t always the case, as (31) shows:

- (31) a. John wrote a letter to Mary.
b. John wrote a letter.

In “John wrote a letter to Mary”, the meaning of the verb phrase “write a letter” doesn’t change by omitting the goal, “to Mary”: it always implies a goal, unlike in (28), where (28b) with the theme omitted doesn’t imply a theme.

3 Secondary Complements.

Now we turn to a demonstration that instrumental, benefactive, and passive by phrases, phrases test out as secondary complements.

3.1 Instrumental phrases.

Instrumental phrases are perhaps the clearest case of secondary complements. They pass the preposition stranding test for non-adjuncts as (33) shows, and fail the WH-coordination test for adjuncts as (34) shows. They pass all four secondary complement tests: pseudocleft in (35), VP-preposing in (36), do so in (37) and omission in (38).

- (32) John opened the door with this key.
- (33) It was this key that John opened the door with.
- (34) *With what and why did John open the door?
- (35) What John did with this key was open the door.
- (36) I said that John would open the door with this key, and open the door he did with this key.
- (37) Mary opened the door with a credit card, and John did so with this key.
- (38) John opened the door.

3.2 Benefactive phrases.

Similarly, benefactive phrases show the same pattern. They pass the preposition stranding test for non-adjuncts as shown in (39); they fail the WH-coordination test for adjuncts as shown in (40). They pass all three do-based tests for non-primary complements as shown in (41)-(43), and they pass the omission test as shown in (44).

- (39) Mary wrote a book for John.
- (40) It is John that Mary wrote a book for.
- (41) *For whom and why did Mary write a book?
- (42) What Mary did for John was write a book.
- (43) I said that Mary would write a book for John, and write a book she did for John.
- (44) Sue wrote a book for Jeff, and Mary did so for John.

(45) Mary wrote a book.

3.3 Passive by-phrases.

Passive by-phrases are more complex because passive verbs are stative. Thus, they automatically fail the three do-based tests show in (49)-(51). They clearly are not adjuncts, however, as they pass the preposition stranding test as shown in (47) and fail the WH-coordination test as shown in (48). Because they so clearly pass the omission test, as shown in (52), we can tentatively conclude they are secondary complements as opposed to primary complements. However, because primary complements are sometimes omissible we cannot be sure. Purely syntactic tests are uncertain in this case. We need to turn to semantic argumentation.

(46) John was hit by a bus.

(47) It is a bus that John was hit by.

(48) *By what and how was John hit?

(49) *What John did by a bus was he hit

(50) *I said that John would be hit by a bus, and be hit he did by a bus.

(51) *Mary was hit by a car, and John did so by a bus.

(52) John was hit.

We now turn to semantic argumentation for further evidence of the existence of secondary complements.

4 Semantic Evidence: Aktionsarten

In this section we provide evidence from lexical semantics for the existence of secondary complements. The evidence is found in aktionsarten: event and argument structure. We now turn to a brief review of aktionsarten.

4.1 Aktionsarten

Pustejovsky (1995: 61) divides aktionsarten into three basic types: states, processes, and transitions. Transitions include accomplishments and achievements. Processes are also known as activities. He further analyzes verbs into their subevent structure. We will consider here only those with a single subevent and two subevents. States denote no change:

(53) The book is interesting.

Process verbs denote a change, either with no endpoint:

- (54) a. John sang for awhile.
b. The ship sank slowly for five minutes.

or with an unfocussed endpoint:

(55) The ship sank.

Example (55) implies that the ship sank to an end point: presumably the bottom.

Transitions focus in part on end points. Achievement verbs do not focus on processes but they focus on an end point:

(56) The train finally arrived in Ottawa at 5 p.m.

Accomplishment verbs focus on the endpoint and they denote a process which may be focussed. When a sentence containing almost is ambiguous, the verb is an accomplishment:

- (57) a. Max almost painted the door.
b. Sally Ann almost washed the dishes.

In one interpretation, almost modifies the event:

- (58) a. Max almost started to paint the table (but he didn't).
b. Sally Ann almost started to wash the dishes, but she didn't.

In the second interpretation, almost takes directly into its scope the direct object:

- (59) a. Max painted almost the entire door.
b. Sally Ann washed almost all the dishes.

4.2 Activity - external causation

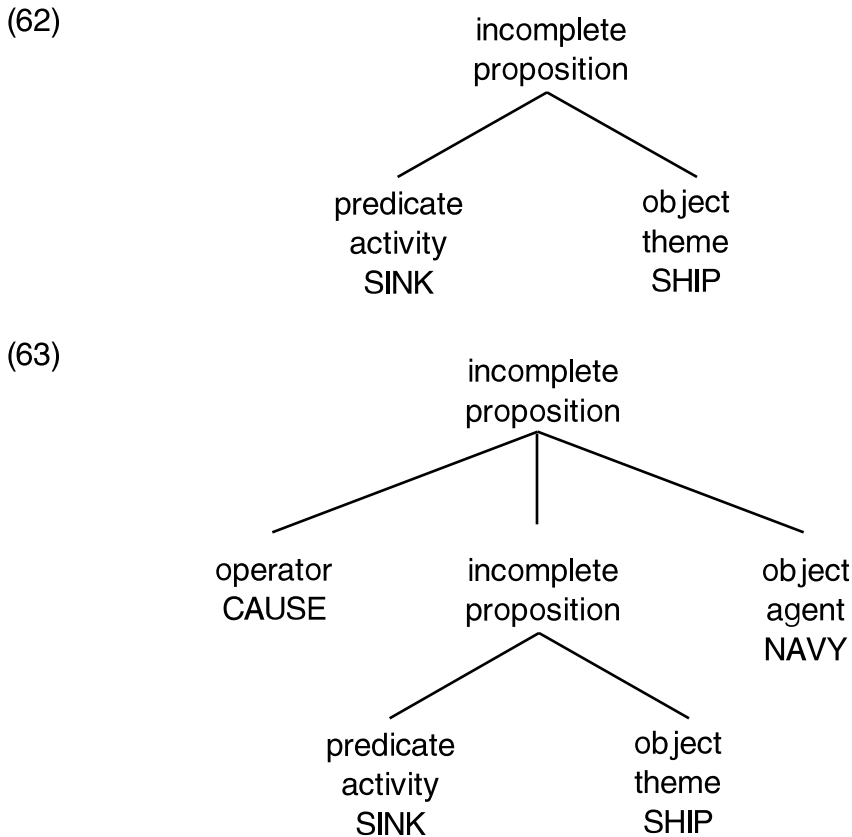
In this subsection we discuss the relation of activity verbs and the accomplishment verbs which directly incorporate them semantically. Let us consider first the sentences in (60):

- (60) a. The ship sank.
b. The navy sank the ship.

As Pustejovsky (1995) and others have pointed out, (60b) entails (60a). That is for every instance where (60b) is true, (60a) is true. After extracting all the operators, (60a) and (60b) can be semantically decomposed into:

- (61) a. SINK <theme: SHIP>
- b. CAUSE < SINK <theme:SHIP>> <agent:NAVY>.

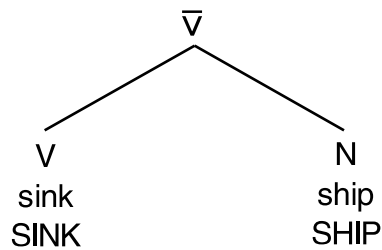
Capitalized forms such as SINK represent conceptual forms; arguments are enclosed in angled brackets. The activity (61a) (= (60a)) is an argument of the operator CAUSE. The agent is the second argument. We can illustrate both (61a) and (61b) in tree diagrams (62) and (63):



If an eventuality cannot be semantically decomposed into an operator and another visible eventuality, we say that the eventuality is primary and that the arguments of a primary eventuality are the integral or primary arguments of the eventuality and its corresponding lexical verb form. Thus SHIP is an integral part of the meaning of SINK and a primary argument of SINK. In the syntax we say that the ship is a primary complement of the intransitive verb sink.

When (62) is passed through the lexicon¹ categories are assigned to each form:

(64)



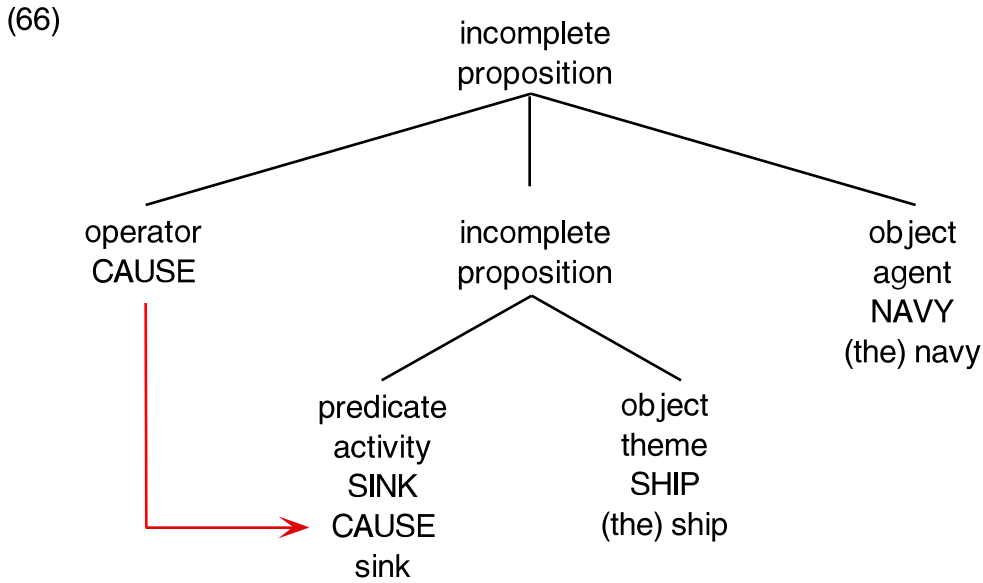
The omitted operators will determine that ship is spelled out as the ship. The NP is not checked for Case in the above structure. It raises and is adjoined to TP where it is checked for the nominative Case by the feature Agr in T.

When the primary activity (process) occurs as an argument of CAUSE, the object argument of CAUSE occurs. It is a primary argument of CAUSE. CAUSE is a conceptual operator and in English it can not be realized as a lexical verb, although it may be a feature in the lexical verb cause, which we are not covering here. Consequently, it must merge with its propositional argument: here it is the activity SINK. This process may occur in the lexicon as indicated in (65):

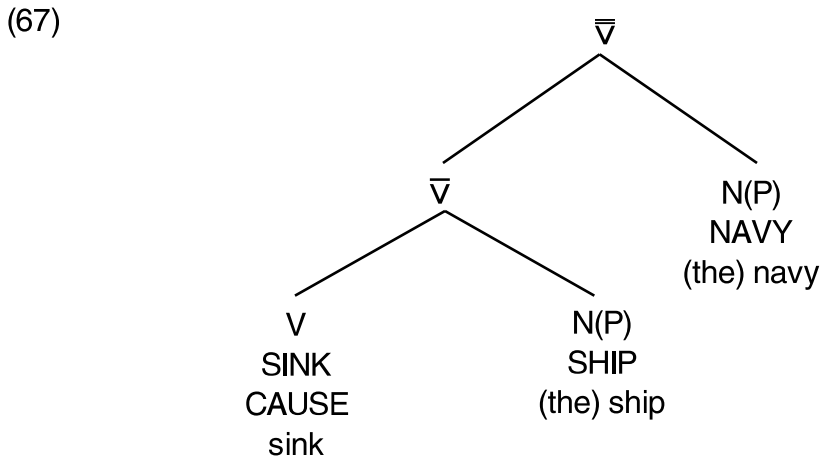
(65) CAUSE <SINK> → SINK+CAUSE.

Without argument here we prefer to think that the operator CAUSE is copied to SINK. When these forms are spelled out in the syntax, both SINK and SINK+CAUSE are spelled out as sink, though each form has a different argument structure. The intransitive verb sink is an unaccusative verb whose complement must raise in the syntax to the external argument (or subject) position (Levin and Hovav (1996)). More interesting is the transitive verb sink. The Primary argument of SINK is a direct complement (the direct object). The argument of CAUSE remains external to the primary verb. It must occur either as a secondary complement in the passive voice or as the subject of the sentence in the active voice:

1. Structures such as (62) originate either in the lexicon or in some other component. We must put this question aside for now. We will use the term pass through the lexicon loosely until this question has been resolved.



In the syntax, the operator CAUSE is not spelled out. Sink is a verb. We represent the node dominating the primary complement as \bar{V} , and the node dominating the secondary complement as \bar{V} :



Although D-structure no longer exists as an autonomous level (Chomsky (1995)), Figure (67) corresponds to what would have been the D-structure of the verb.

In (67) direct object the ship is checked for the accusative Case. However, the navy is not checked for Case. It must raise to Spec-T where it is checked by Agr. At the same time the Extended Projection Principle is satisfied since the navy is now functioning as the subject of the verb.

When the activity merges with CAUSE, the result is an accomplishment:

(68) The navy almost sank the ship.

In one reading the navy almost decides to sink the ship. In the other reading the missile shot by the navy almost hits the ship. Thus, we claim now that a secondary complement occurs when merge results in a change of the aktionsart class of the verb.

4.3 Activity - Internal Causation.

The term internal causation refers to the subevent that is directly involved in an activity verb. For example, consider the following sentence:

(69) Seymour sliced the salami with a meat slicer.

The meat slicer is an instrument that is directly involved in the slicing of the meat. Without it or a related instrument such as a knife, one could not use the verb slice:

(70) *Seymour sliced the salami with his palm.

Instruments of this sort we will call argument instruments.

Adjunct instruments are those which are not directly involved in the activity. For example:

(71) Melissa eats chicken with her fingers.

The PP with her fingers is considered an instrument, but its function is an adjunct, since fingers, knives, forks, teeth, and so forth have nothing to do directly with eating process. They are conveniences or aids for the activity of eating.

We now return to internal causation. Consider the sentences in (72):

- (72) a. The ship sank.
b. The torpedo sank the ship.

Similarly, we may decompose (72) into (73)

- (73) a. SINK <theme: SHIP>
b. INT-CAUSE < SINK <theme:SHIP>> <arg-instrument:TORPEDO>.

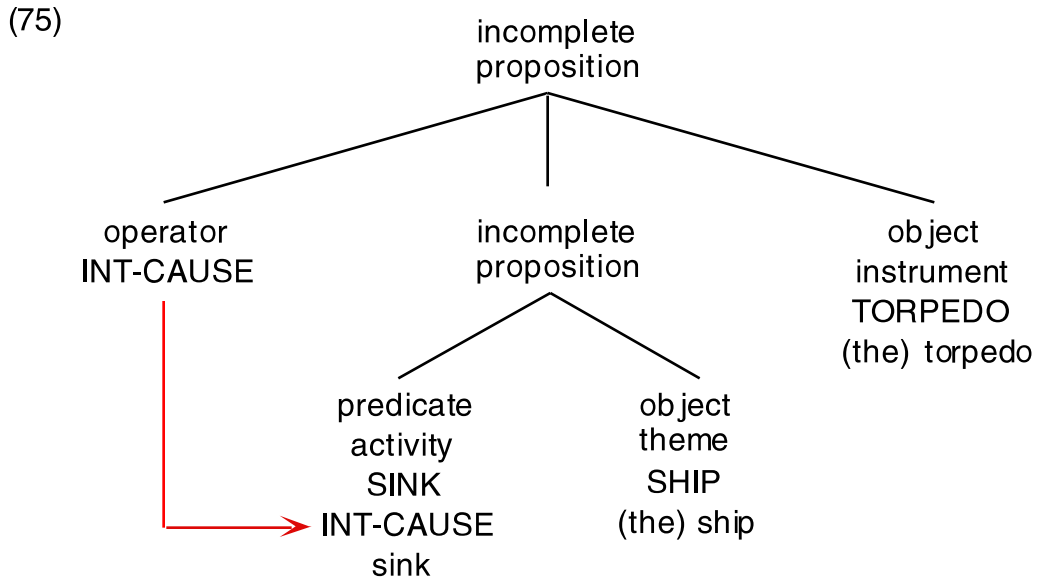
Example (72a) is an activity verb, but (72b) is an accomplishment. Thus when an activity occurs as an argument of INT-CAUSE, the result is an accomplishment.

When sink is modified by almost, sink is ambiguous:

(74) The torpedo almost sank the ship.

In one reading, the torpedo narrowly missed the ship. In the other reading, the torpedo hit the ship, the ship sank a little, but then the ship stopped sinking and it just listed.

As indicated in (73b) the argument instrument is an argument of INT-CAUSE. As in the case of the external cause, INT-CAUSE must be copied to SINK, which is spelled out as the transitive verb sink, and the argument instrument remains as a secondary argument of the verb sink:



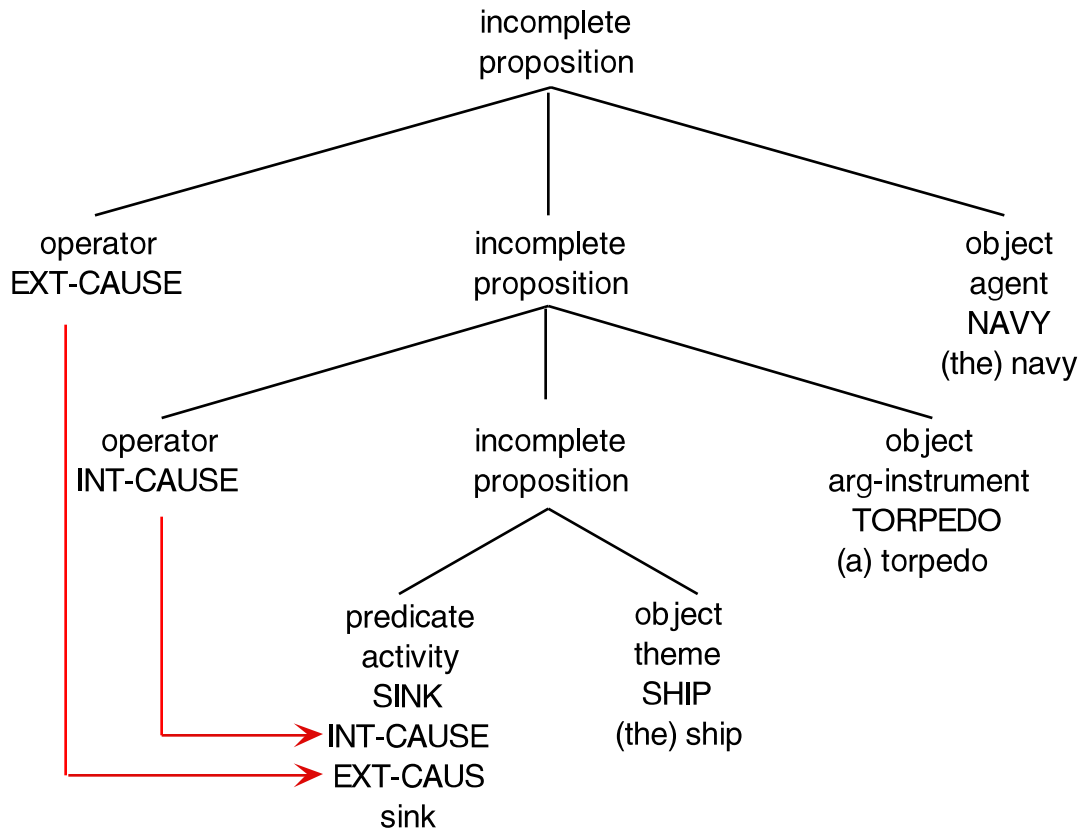
4.4 Activity - Internal Causation - External Causation

Consider example (76). It can be decomposed into an activity, an internal cause, and an external cause:

(76) The navy sank the ship with a torpedo.

As we have seen above, with a torpedo is an argument instrument, and the navy is an agent:

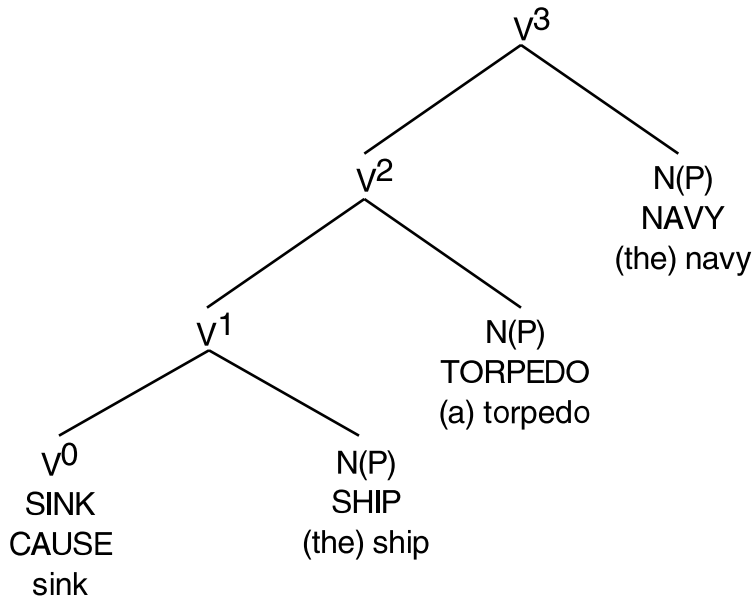
(77)



Significantly, we note that both an external cause and an internal cause mark an accomplishment. But the aktionsart status of an internal cause is not changed when it is an argument of an external cause. Since there is no change, there is no need to consider the argument of an external cause to be at a different level than the argument of an internal cause. We consider both of them secondary arguments and secondary complements in syntax.

In the syntax we add a bar to every V for each complement assigned by a different operator. For typological reasons, V-triple bar is too difficult to represent. Hence, we replace each bar with a numeral corresponding to the number of bars, a somewhat common convention:

(78)



Both secondary complements need to be checked for Case. The θ -Criterion blocks raising both NPs to Spec-T. Obviously, the navy raises; the instrument cannot:

(79) *The torpedo sank the ship by the navy.

If the agent is always highest in the theta hierarchy, then we claim that the NP which is the highest member in the theta hierarchy raises to Spec-T. The preposition with is inserted to save a torpedo by checking its Case.

4.5 Non-decomposable activities

There are a countless number of accomplishments that cannot be decomposed into INT-CAUSE and an activity. For example consider the following examples:

- (80) a. Olga almost ate the sandwich (with her fingers).
- b. The three tenors almost sang the aria (with a powerful microphone).
- c. John almost painted the house (with a nylon brush).

If we extract CAUSE out of each sentence in (80), the resulting activity has no lexical form:

- (81) a. *The entire sandwich ate. (Someone ate the sandwich.)
- b. *The aria sang. (Someone sang the aria.)
- c. *The house painted. (Someone painted the house.)

The verbs eat, sing, and paint are not unaccusative verbs.

We believe that there is some sort of a causative relationship here. The subject of the sentences in (80) is some kind of an agent in that the subject has some sort of control over the accomplishment. Furthermore, the agent arguments in the passives of these sentences are marked with *by* and they behave exactly like secondary complements.

The instruments in these kinds of verbs in (80) are adjunct instruments. Adjunct instruments are not arguments of internal cause, as there is no internal cause. They are marked by the preposition *with*, but they cannot occur as subjects:

- (82) a. *Her fingers almost ate the sandwich.
 b. *A powerful microphone almost sang the aria.
 c. ??A nylon brush almost painted the house.

The class of PPs which include these adjunct instruments we call secondary adjuncts. Sentence (82c) does not appear to be either ungrammatical or very acceptable. A nylon brush seems to be a second adjunct as in (83b) and (83c) which are ungrammatical:

- (83) a. Do you see the meatslicer slicing the salami?
 b. *Do you see the nylon brush painting the house?
 c. *Look! The nylon brushes are painting the house.

A secondary adjunct cannot modify all eventualities as the temporal and locative true adjuncts do. For example, an adjunct instrument can modify only activities and accomplishments that contain an external cause and do not contain an internal cause:

- (84) a. John eats with a fork.
 b. *Books read with a pair of glasses.
 c. *It is cold with a pair of glasses.
 d. *Arias sing with powerful microphones.

(84a) is OK because *eat* is an activity, and it contains an external cause (agent=John) who is John and there is no internal cause. (84b) is not acceptable because there is no external cause (agent). (84c) is not acceptable because *cold* is a state, not an activity or accomplishment. (84d) is not acceptable because there is no external cause.

Other secondary adjuncts include benefactives. Benefactives do not change the aktionsart of the basic clause. They can modify only activities and accomplishments:

- (85) a. John washes the windows for his mother.
 b. *The book is interesting for Mary.
 c. *Mary arrived in Ottawa for her sister. (sister = benefactive)

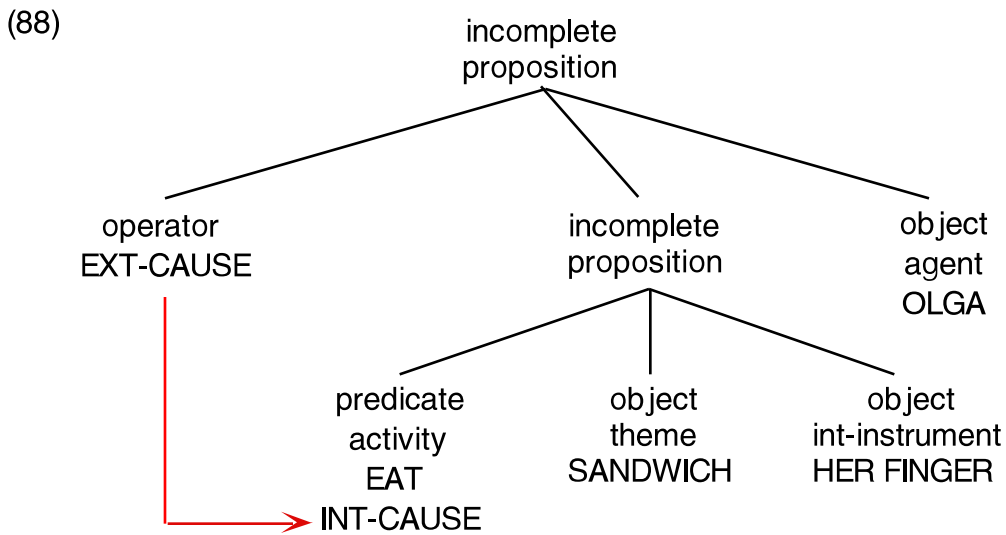
- (86) a. The dog fetches the newspaper for his master.
- b. *The dog was brown for his master.
- c. *Kyle won the game for his friend. (friend = benefactive).

Secondary adjuncts unlike pure adjuncts do not modify an event but a particular part of the verb. They modify certain aktionsarten, but they do not modify others. Unlike secondary complements they do not change the aktionsart of the verb but merely add information.

The compositional structure of

- (87) Olga ate a sandwich with her fingers.

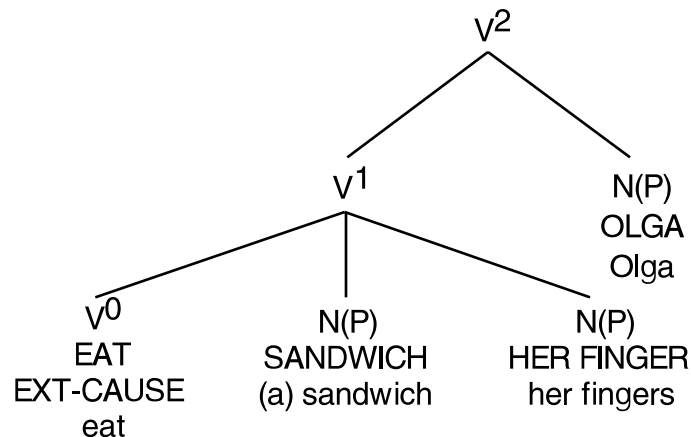
is shown in:



In the syntax, where with NP is an adjunct, we do not increase the number of bars.²

². We are putting aside the question of the compositional analysis of her fingers.

(89)



Once, again Olga raises to Spec-T to be checked for Case and to satisfy the EPP.

5 Conclusion

In the first part of this paper we distinguished three levels of complements and adjuncts, justifying the distinctions on the basis of syntactic tests. We assigned the label secondary complement to the intermediate level. We argued based on syntactic tests that agents, instruments, and benefactives belong to this intermediate class.

Then we used aktionsarten to further justify the above distinctions based on semantic criteria. We proposed two operators: EXT-CAUSE and INT-CAUSE, each of which takes two arguments: one is an incomplete proposition, and the other an object argument. EXT-CAUSE takes an agent, and INT-CAUSE takes an instrument. Furthermore, we split the class of secondary complements into two subclasses: one a true secondary complement and the other a secondary adjunct. A secondary complement changes the aktionsart of the basic clause, while a secondary adjunct does not change the aktionsart of the basic clause, but it does modify an internal part of the verb in the basic clause.

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