## **Chapter 3 Exercises Solutions**

There are a number of points to be made relevant to the material in this chapter. First, in case it's not clear, in Figure 3.1a the person is supposed to be breaking the window by smashing it with a rock held in his hand, while in Figure 3.1b he has broken the window by throwing a rock through it. The contrast which the figures are supposed to illustrate is breaking something with an instrument held in the hand vs. breaking something with a projectile.

Second, some English-speaking students seem to have a very difficult time grasping the notion that the various stative predications with *be* in English are in fact semantically very different from each other, e.g. *the drink is cold* (objective statement about the properties of an entity) vs. *I am cold* (statement about internal experience of speaker) vs. *the book is on the table* (locational state) vs. *the game is over* (result state). Examples are given from languages which do not use a copular verb for these constructions as well as examples from languages which lack a verb like English *be* altogether (pp. 102-3). **Be**' in the semantic metalanguage is used only for identificational and attributive predications; it is not used for any other kind of stative predication. It is not equivalent to the English verb *be* in stative predications, which, as shown in Figure 2.19 (p. 51), is analyzed as part of the operator projection and is not analyzed as a nuclear predicate at all.

Third, it is very important to emphasize that the semantic metalanguage employed in the lexical decompositions in chapter 3 and the remainder of the book is intended to be a universal semantic metalanguage and is not just funny looking English. Hence the lexical decompositions for verbs in all languages should be formulated in this metalanguage; this is stated explicitly on p. 102, and students' attention needs to be directed to this paragraph. This also means that the interpretation of the order of the arguments in logical structures, discussed in §3.2.3, does not, and is not intended to, correspond to the order of syntactic arguments in sentences in any language. This can be seen most clearly in the simple fact that a logical structure like **see**' (girl, boy) can be mapped, via the linking system to be developed in chapters 4 and 7, into any sentence meaning 'the girl sees the boy' in any human language, regardless of its word order. It applies equally to Malagasy (VOS), Zapotec (VSO), Korean (SOV), and Hixkaryana (OVS), as well as to English (SVO).

1. Determine the class of each of the following English verbs, using the tests in Table 3.2. If a verb can be used in more than one way, classify each of its uses.

(1) *collapse* Accomplishment (*The roof collapsed*) or causative accomplishment (*The weight of the snow collapsed the roof*)

The intransitive use of this verb is an accomplishment rather than an achievement, because it is possible to say *The roof is collapsing* and *The roof collapsed slowly*, indicating that it is non-punctual.

(2)	<i>devour</i> With a mass nour	Active accomplishment ( <i>The lion devoured the gnu</i> ) n or bare plural object, this verb can also be interpreted as an activity.
(3)	dissolve	Accomplishment ( <i>The tablet dissolved</i> ) or causative accomplishment ( <i>The acid dissolved the metal</i> )
(4)	draw	Activity(The child is drawing (pictures)) or active accomplishment (The

child drew the picture)

(5) *doubt* State (*I doubt his story*)

(6) *irritate* Causative state (*His attitude irritates me*)

The fact that this verb receives a present tense interpretation in the morphological simple present indicates that it is stative, and it also passes the causative paraphrase test.

(7) *perish* Achievement (*The passengers perished in the crash*)

This verb is an achievement rather than an accomplishment because it cannot take the progressive (\**The passengers are/were perishing in the crash*) and it cannot occur with adverbs like slowly (\**The passengers perished slowly*). As such it contrasts with *die*, which is an accomplishment.

2. Determine the class of each of the following Mparntwe Arrente verbs (Wilkins 1989). Use the tests in Table 3.2; apply test 6 to the English translation, on the assumption that it accurately reflects whether a verb is causative or not. Discuss the evidence provided by each example sentence that led you to assign a given verb to a particular class. Give the logical structure for each verb. Comment on any patterns in the verbal morphology which correlate with the class of the verb. Note: the asterisk means that the sentence is impossible with the meaning specified; some of the sentences are fine with a different meaning, but that is irrelevant to this problem.

1. are 'see'

- a. Class: State
- b. Evidence
  - 1. The failure to take the progressive in (b) shows that it is not an activity or accomplishment verb; this is compatible with it being a state or achievement verb.
  - 2. The unacceptability of the adverb in (c) shows that this verb is not dynamic.
  - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded, while the ungrammaticality of (e) shows that it is not temporally bounded.
  - 4. It fails the causative paraphrase test.
- c. Logical structure: **see**<sup>'</sup>(x,y)
- 2. irrernte 'cold'
  - a. Class: State
  - b. Evidence
    - 1. The failure to take the progressive in (b) shows that it is not an activity or accomplishment verb; this is compatible with it being a state or achievement verb.
    - 2. The unacceptability of the adverb in (c) shows that this verb is not dynamic.
    - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded, while the ungrammaticality of (e) shows that it is not temporally bounded.
  - c. Logical structure: **feel** (x, **[cold** ])
- 3. ate 'explode'
  - a. Class: Achievement
  - b. Evidence
    - 1. The failure to take the progressive in (b) shows that it is not an activity or

accomplishment verb; this is compatible with it being a state or achievement verb.

- 2. The unacceptability of the adverb in (c) shows that this verb does not have temporal duration.
- 3. The failure to cooccur with any temporal expression indicates that it is punctual.
- c. Logical structure: INGR exploded' (x)
- 4. alyelhe 'sing'
  - a. Class: Activity
  - b. Evidence
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not states or achievements.
    - 2. The adverbs in (c) show that this verb is dynamic.
    - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded.
    - 4. The failure of the *in*-adverbial test in (e) shows that the verb is not temporally bounded.
  - c. Logical structure: do'(x, [sing'(x)])
- 5. unthelhile 'make wander'
  - a. Class: Causative activity
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not states or achievements.
    - 2. The adverbs in (c) show that this verb is dynamic.
    - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded.
    - 4. The failure of the *in*-adverbial test in (e) shows that the verb is not temporally bounded.
    - 5. It passes the causative paraphrase test, as is clear from the English translation.
  - c. Logical structure:  $[\mathbf{do'}(\mathbf{x}, \emptyset] \text{ CAUSE } [\mathbf{do'}(\mathbf{y}, [\mathbf{wander'}(\mathbf{y})])]$
- 6. urrperle 'black'
  - a. Class: State
  - b. Evidence
    - 1. The failure to take the progressive in (b) shows that it is not an activity or accomplishment verb; this is compatible with it being a state or achievement verb.
    - 2. The unacceptability of the adverb in (c) shows that this verb is not dynamic.
    - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded, while the ungrammaticality of (e) shows that it is not temporally bounded.
  - c. Logical structure: **be**<sup>'</sup> (x, [**black**<sup>'</sup>])

## 7. irrerntearleirre 'get cold'

- a. Class: Accomplishment
- b. Evidence:
  - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not with states or achievements.
  - 2. The unacceptability of the adverb in (c) shows that this verb is not dynamic.
  - 3. The acceptability of the *in*-adverbial in (d) shows that it is temporally bounded.
  - 4. (e) is irrelevant.
- c. Logical structure: BECOME feel' (x, [cold'])

## 8. unthe 'go walkabout, wander'

- a. Class: Activity
- b. Evidence:
  - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not states or achievements.
  - 2. The adverb in (c) shows that this verb is dynamic.
  - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded.
  - 4. The failure of the *in*-adverbial test in (e) shows that the verb is not temporally bounded.
- c. Logical structure: **do**<sup>'</sup> (x, [**wander**<sup>'</sup> (x)])
- 9. urrperlearleirre 'become black'
  - a. Class: Accomplishment
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not with states or achievements.
    - 2. The unacceptability of the adverb in (c) shows that this verb is not dynamic.
    - 3. The acceptability of the *in*-adverbial in (d) shows that it is temporally bounded.
    - 4. (e) is irrelevant.
  - c. Logical structure: BECOME **black**' (x)
- 10. irrerntearleirrelhile 'cool down'
  - a. Class: Causative accomplishment
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not with states or achievements.
    - 2. The adverb in (c) shows that this verb has temporal duration.
    - 3. The acceptability of the *in*-adverbial in (d) shows that it is temporally bounded.
    - 4. (e) is irrelevant.
    - 5. It passes the causative paraphrase test, i.e. 'the water caused me to become cool'.
- c. Logical structure:  $[\mathbf{do'}(\mathbf{x}, \emptyset)]$  CAUSE  $[BECOME \mathbf{feel'}(\mathbf{x}, [\mathbf{cold'}])]$
- 11. arrewe 'shiver'
  - a. Class: Activity
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not with states or achievements.
    - 2. The adverb in (c) shows that this verb is dynamic.
    - 3. The *for*-adverbial test in (d) shows that the verb is temporally unbounded.
    - 4. The failure of the *in*-adverbial test in (e) shows that the verb is not temporally bounded.
  - c. Logical structure: **do'** (x, [**shiver'** (x)])
- 12. irrerntearlelehile 'make, keep cold'
  - a. Class: Causative state
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity, accomplishment and causative verbs but not with (plain) states.
    - 2. The adverb in (c) shows that this verb has temporal duration.
    - 3. The unacceptability of the *in*-adverbial in (d) shows that it is not temporally bounded.

- 4. (e) is irrelevant.
- 5. It passes the causative paraphrase test, i.e. 'the water caused me to become cool'.
- c. Logical structure:  $[\mathbf{do'}(\mathbf{x}, \mathbf{\emptyset})]$  CAUSE  $[\mathbf{feel'}(\mathbf{x}, [\mathbf{cold'}])]$
- 13. urrperlearleirrelhile 'blacken'
  - a. Class: Causative accomplishment
  - b. Evidence:
    - 1. The progressive in (b) is compatible with activity and accomplishment verbs but not with states or achievements.
    - 2. The adverb in (c) shows that this verb is dynamic.
    - 3. The acceptability of the *in*-adverbial in (d) shows that it is temporally bounded.
    - 4. (e) is irrelevant.
    - 5. It passes the causative paraphrase test, i.e. 'I caused some bark to become black'
  - c. Logical structure:  $[\mathbf{do}'(\mathbf{x}, \emptyset)]$  CAUSE  $[BECOME \, \mathbf{black}'(\mathbf{x})]$

13. Morphological patterns:

-*arle*- = result state State + *irre* (BECOME marker) = Accomplishment State/Activity/Accomplishment + *lhile* (CAUSE marker) = Causative State/Activity/Accomplishment

3. Determine the class of each of the following Icelandic verbs. Use the tests in Table 3.2; apply test 6 to the English translation, on the assumption that it accurately reflects whether a verb is causative or not. There are not examples for every test for every verb. Discuss the evidence provided by each example sentence that led you to assign a given verb to a particular class. Give the logical structure for each verb. Note: the asterisk means that the sentence is impossible with the meaning specified; some of the sentences are fine with a different meaning, but that is irrelevant to this problem.

- 1. hlaupa 'run'
  - a. Class: Activity
  - b. Evidence
    - 1. The *for*-adverbial test in (1) shows that the verb is temporally unbounded, while the incompatibility with the *in*-adverbial shows that it is not temporally bounded.
    - 2. The progressive in (2) is compatible with activity and accomplishment verbs but not with states or achievements.
    - 3. The adverbs in (3) show that this verb is durative and dynamic.
  - c. Logical structure: do'(x, [run'(x)])
- 2. sjá 'see'
  - a. Class: State
  - b. Evidence
    - 1. The *for*-adverbial test in (4) shows that the verb is temporally unbounded, while the incompatibility with the *in*-adverbial shows that it is not temporally bounded.
    - 2. The failure to take the progressive in (5) shows that it is not an activity or accomplishment verb; this is compatible with it being a state or achievement verb.
    - 3. The unacceptability of the adverb in (6) shows that this verb is not dynamic.

- 4. It fails the causative paraphrase test.
- c. Logical structure: **see** (x,y)
- 3. sökkva 'sink'
  - a. Class: Causative accomplishment
  - b. Evidence
    - 1. The *in*-adverbial test in (7) shows that the verb is temporally bounded.
    - 2. The progressive in (8) is compatible with causative, activity and accomplishment verbs but not with states or achievements.
    - 3. It passes the causative paraphrase test, e.g. 'the captain caused the ship to sink'.
  - c. Logical structure:  $[\mathbf{do}'(\mathbf{x}, \emptyset)]$  CAUSE  $[BECOME \mathbf{sunk}'(\mathbf{y})]$
- 4. hvolfa 'capsize'
  - a. Class: Accomplishment
  - b. Evidence
    - 1. The *in*-adverbial test in (9) shows that the verb is temporally bounded.
    - 2. The adverbs in (10) shows that this verb is durative but not dynamic.
  - c. Logical structure: BECOME **capsized** (x)
- 5. skila 'give back, return'
  - a. Class: Causative accomplishment
  - b. Evidence:
    - 1. The progressive in (11) is compatible with causative, activity and accomplishment verbs but not with states or achievements.
    - 2. The *in*-adverbial test in (12) shows that the verb is temporally bounded.
    - 3. It passes the causative paraphrase test, e.g. 'I caused her to receive the money'.
  - c. Logical structure:  $[\mathbf{do}'(\mathbf{x}, \emptyset)]$  CAUSE  $[BECOME \mathbf{have}'(\mathbf{y}, \mathbf{z})]$
- 6. dansa 'dance'
  - a. Class: Activity
  - b. Evidence:
    - 1. In (13), the *for*-adverbial test shows that the verb is temporally unbounded and the adverb shows that this verb is dynamic, while the incompatibility with the *in*-adverbial shows that it is not temporally bounded.
    - 2. The progressive in (14) is compatible with causative, activity and accomplishment verbs but not with states or achievements.
  - c. Logical structure: **do**<sup>'</sup> (x, [**dance**<sup>'</sup> (x)])
- 7. bráðna 'melt'
  - a. Class: Accomplishment
  - b. Evidence:
    - 1. The *in*-adverbial test in (15) shows that the verb is temporally bounded.
    - 2. The unacceptability of the adverbs in (16) shows that this verb is not dynamic but is durative.
  - c. Logical structure: BECOME melted'(x)

## 8. Frank 'think, consider'

- a. Class: State
- b. Evidence:
  - 1. The *for*-adverbial test in (17) shows that the verb is temporally unbounded, while the incompatibility with the *in*-adverbial shows that it is not temporally bounded.
  - 2. The failure to take the progressive in (18) shows that it is not a causative, activity or accomplishment verb; this is compatible with it being a state or achievement verb.
  - 3. The unacceptability of the adverbs in (19) shows that this verb is not dynamic.
  - 4. It fails the causative paraphrase test.
- c. Logical structure: **consider** (x,y)

4. Italian has two different auxiliary verbs that appear in the perfect tenses with intransitive verbs: *avere* 'have' and *essere* 'be'. Most verbs take one or the other, but some can take either one. Based on the following data (from Centineo 1986), what predicts which auxiliary a given intransitive verb will take?

- (1) Activity verbs take *avere*.
- (2) Achievement, accomplishment and active accomplishment verbs take *essere*.

In other words, [-telic] verbs take *avere* and [+telic] verbs take *essere*.

5. Intransitive verbs in Fijian (Dixon 1988) fall into two general classes, depending upon how they form transitive verbs when a transitivizing suffix is added. Based on the following sets of data, what appears to be the basic difference between the two types of intransitive verbs?

- (1) Type 1 verbs are activities; with the suffix added they are active accomplishments.
- (2) Type 2 verbs are states; with the suffix added they are causative states or accomplishments.

6. What is the function of the morpheme *-so* and the function of the morpheme *-ma* in the verbal system of Sanuma, the language of the Yanomami in Brazil and Venezuela (Borgman 1989)? With respect to *-so*, explain its use in (2h). They are both glossed '??'; there is another morpheme *-ma*, a completive aspect marker glossed 'CMPV' which is not the focus of this problem. The examples in (1) do not contain either morpheme, while those in (2) contain *-so* and those in (3) contain *-ma*.

(1) -so can be characterized as representing 'BECOME' in logical structures, such that when it is added to a verb, the resulting logical structure has the form 'BECOME **predicate**' (...).' When the base predicate is a state, as in most examples, the result is an accomplishment. In (2g), however, it is added to an activity verb, and the result is an inchoative activity, 'start to hurt'. In (2h) it is added to a causative accomplishment verb se- 'hit, kill', and because the resulting logical structure has to have the form of an accomplishment, it is translated with a passive-like meaning 'get killed' or 'get hit', i.e. [do' (x, hit' (x, y)] CAUSE [BECOME dead' (y)] BECOME dead' (y).

(2) -ma is a causative morpheme which derives causative verbs from plain states, activities and accomplishments; it can even be added to lexical causative verbs, as in (3f), to create 'cause to kill'.