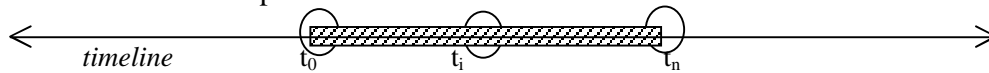


1 Pustejovsky

0. Events and Aspect:



1. 3 types of events

a) Transitions: come in 2 flavors

- (i) *agentive* (where the LCS' introduces an *act* predicate)
- (ii) *non-agentive* (where the LCS' only makes use of basic V)

b) Processes

c) States

2. Correspond to classical event classes:

- a) Accomplishments: Mary built a house
Mary destroyed a table
- b) Achievements: Mary died
Mary arrived
Mary won the race
- c) Activities: Mary ran
Mary slept
- d) States: Mary was sick
Mary knew French.
Mary believes that John loves her.

3. Some tests for the above:

a) Accomplishments have a logical endpoint. occur with *frame adverbials*

Mary built a house *in a year*

and are strange with *durative adverbials*:

Mary built a house *for a year*.

Further, when these events are in an imperfective tense, it's entailed that they haven't been completed yet.

Mary is building a house. Mary has not built (that) house yet.

Further, Accomplishments take time, and as we'll see, have two distinct subevents in them. Adverbials can modify either of them:

Mary left the room rudely

John almost closed the door

(cf. John opened the door again).

b) Achievements *happen at an instant*, occur with *point adverbials*

Mary died at 3 p.m.

Mary arrived at noon.

and are also strange with *durative adverbials* (modulo result-interpretation)

Mary died for a year.

John found his wallet for a year.

The same results obtain as with Achievements with imperfectivity:

Mary is winning the race Mary has not yet won the race.

Further, with Achievements, the progressive focusses a time period *prior* to the event itself:

c) Activities *have no logical endpoint*, they occur with *durative adverbials*

Mary ran *for an hour*

Mary walked for an hour.

and are strange (modulo coerced (usually habitual) natural endpoint interpretation) with *frame adverbials*

Mary walked *in an hour*.

Also, when the activity is imperfective, e.g. in the progressive, it entails that some event of that activity have already happened. I.e. subevents of running are themselves running events:

Mary is running. Mary has run.

d) States also have no logical endpoint, but also there is no action, nothing *happening*. They are homogenous. Like Activities, they occur naturally with durative adverbials (as long as they are *stage-level predicates*):

Mary was sick *for a day*

Mary believed John loved her *for about 2 minutes*.

and, unlike Activities, are strange with imperatives and progressives:

Know French!

Be sick!

Mary was believing John loves her.

4. *Some ways to manipulate the event classes of whole VPs:*

a) Activity Accomplishment: add a resultative phrase
Mary hammered the metal flat in three hours/*for an hour

b) Activity Accomplishment: add a directional PP to a manner of motion verb:
Mary walked to the store in an hour/*for an hour.

N.B. this doesn't work with non-motion verbs, unless you add a "false object":

*Mary laughed to/until death *in three hours

Mary laughed herself to death in three hours.

N.B. further: this is a subcase of (a), if the subjects of motion verbs with PPs are really objects (c.f. Dutch auxiliary selection facts), creating an unaccuative structure.

- c) Accomplishment Activity: make direct object NP to a bare plural/mass noun
 Mary destroyed tables *in three hours/for three hours.
 Mary built houses *in a year/for a year.
N.B. this doesn't work with Activities that have no object!
 Also, as we saw last week, if we change a locatum NP to a bare plural/mass noun,
 it works as well:
 Mary covered the wall with paint for an hour.
 Mary covered the wall with the paint *for an hour/in an hour
- d) Accomplishment Activity: change direct object NP to PP:
 Mary ate at the apple *in an hour/for an hour
 Sue built on the house *in an hour/for an hour (and then took a break).
- e) General coercion one way or the other: habitual interpretations of Activities, sub-
 event interpretations of Accomplishments, etc.

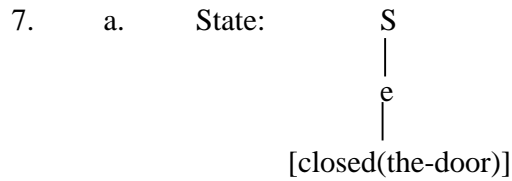
5. *The forgotten event class:*
 Semelfactives (Smith 1990):
 I hit the wall at 10:00
 I am hitting the wall.
 I hit the wall for an hour.
 *I hit the wall in an hour
 Hit the wall!
 *I hit the wall down.

5. Pustejovsky's against definitions (sort of). He proposes a combination of
 definitional and generative representations of lexical meanings (although misrepresents
 Jackendoff as non-generative in his lexical representations).

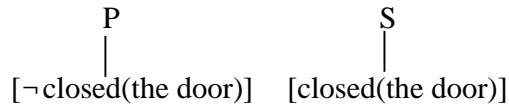
A lexical item will have a *qualia structure* which will represent 4 types of information:

- a. *constitutive* the relation between a word and its constituent parts
 = roughly, "what it means", i.e. what makes *closed* different from *open*
- b. *formal* that which distinguishes it within a larger domain
 = its event type, as outlined above. *closed* is a Transition. (What about State?)
 Transition entails *opposition*, [closed] and [not closed]
- c. *telic* its purpose and function
 = ?
- d. *agentive* whatever brings it about
 = ?

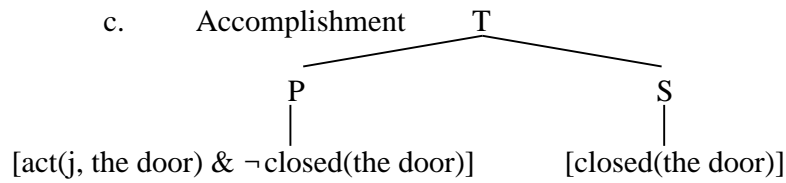
6. a. The door is closed. State
 b. The door closed. Achievement (Transition subtype ii)
 c. Mary closed the door. Accomplishment (Transition subtype i)



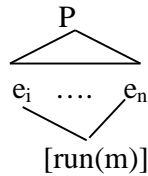
b. Achievement: T



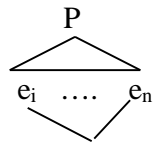
c. Accomplishment



d. Process



(causative) Process:



push [act(m, the cart) & move(the cart)]

8. Pustejovsky confusion:
Accomplishments/Achievements can be distinguished entirely on the basis of the agentive/non-agentive distinction.

"When a verb makes reference both to a predicate opposition and the activity bringing about this change, then the resulting aspectual type is an accomplishment."

I.e. if there's an [act(x,y) predicate in a Transition, it's an accomplishment; otherwise, it's an achievement.

9. Support for this position:

- a. John almost closed the door. (2 readings)
- b. The door almost closed. (1 reading)

10. Achievement verbs, he asserts, need not be agentive, despite seeming agentivity in examples like a,b below:

- a. Mary arrived at the party.
- b. John won the race.

- c. The package arrived at the post office.
- d. Mary won the lottery.

This is a funny notion of achievement verb. Plenty of non-agentive change-of-state verbs pass the Accomplishment tests but fail the Achievement ones:

- e. The fruit ripened in three days.
- f. The mud caked in two hours.

Further, especially verbs of motion which can compose with a PP to become Accomplishments need not be Agentive:

- g. Mary walked to the store in an hour.
- h. 'The ball rolled to the bottom of the plane in 3 minutes,' said Galileo.

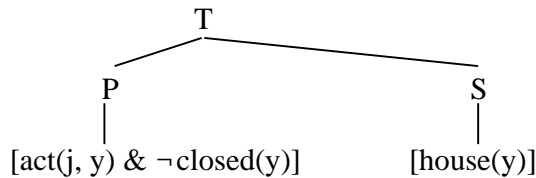
11. Here, seems more likely that the telicity of unaccusatives makes them all Accomplishments, and other factors tell us if they're instantaneous or not. Consider:

- a. John opened the door again. (2 readings)
- b. The door opened again. (2 readings)

There are purely *agent-oriented* adverbials (*deliberately, on purpose, e.g.*): it seems possible that *almost* is homophonous between an agent-oriented adverb and a completion adverb.

12. Further illustration of the system:

build



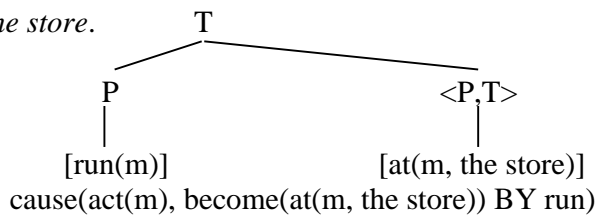
Question: what's y before the event is over?

13. Mary built a chair in an hour.

P S[*build*(P,S) agent(m, (P,S)) theme(*chair*, (P,S)) in-an-hour(P,S)]
in an hour = measure of time: (S - onset of P) = 1 hour

14. Goal PPs: Activity Accomplishment

Mary ran to the store.



ditto for *Mary hammered the metal flat.*

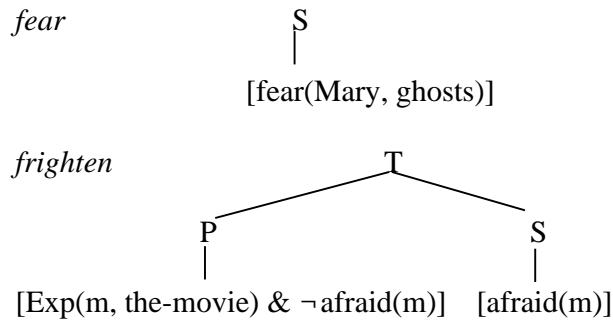
15. Psych verbs and backwards binding:

- a. *Each others' students fear the teachers.
- b. Pictures of each other frighten the teachers.

- c. *Each other frighten John and Mary.
- d. John and Mary fear each other/frighten each other.

16. Interesting tidbit: object stimulus intensional, subject stimulus extensional:
 Mary fears ghosts/big dogs.
 #Ghosts/Big dogs frighten Mary.

16. Backwards binding is because of event structure:

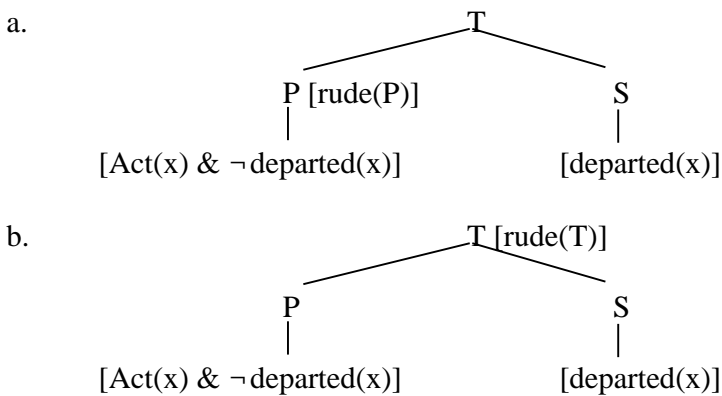


Mary's position in the initial part of the event structure is sufficient to license backwards binding of anaphora within NPs, but not anaphoric arguments...

- 17. Adverbial interpretation:
 - a. Lisa rudely departed
 - b. Lisa departed in a rude manner/ it was rude of Lisa to depart (c.f. *again* cases from above, last week)

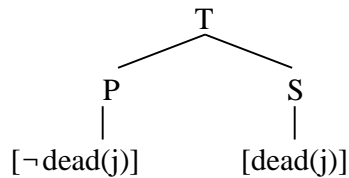
18. Higginbotham/McConnel-Ginet end up with *rude*₁ and *rude*₂.

19. Multiple events permit multiple modifications:

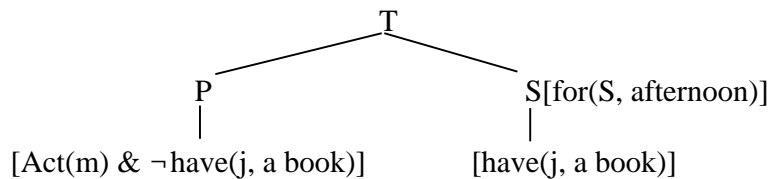


(Syntactic compositionality?)

20. John almost built a house vs. John almost died.
same predicate in both subevents of 'died'



21. Some kinds of post-event modification:
 a. Mary ran into the house for 20 minutes.
 b. Mary gave John a book for the afternoon.
 c. John built a shack for 1 year's shelter.



22. Principles of event structure argument structure mapping.

A. The semantic participant involved in a predicate opposition is mapped onto the internal argument position of the lexical structure (roughly the d-structure object position).

B. The agentive participant in the initial subevent of event structure is mapped onto the external argument position(roughly the d-structure subject position)

"An analysis in terms of event structure allows us to speculate on just what an unaccusative is, in terms of LCS. Namely, *an unaccusative is a transition involving a unary predicate opposition and nothing else.*"

But what the heck is an Achievement, then?

"Achievements and accomplishments can be distinguished solely in terms of an agentive/non-agentive distinction." (Cf. Pustejovsky's 19a,b).

Are Unacc. and Achievements a matched set? No. See discussion above.

C. If the predicate opposition involves an relation, then both the participants are mapped onto internal argument positions of the argument structure. Otherwise, relational arguments are mapped directly as expressed at event structure. For example, *give* and *put* are examples where the culminating state is a relation, and both arguments are realized as internal arguments.

D. Any participant in the initial event not expressed by principles A or B is mapped onto the external argument position.

What about "frighten", above? Why does Exp(m,movie) end up with *m* as external argument?

E. Each subevent must be associated with at least one argument position at lexical structure.

Explains: *Sue laughed *(herself) silly.*

Not vice versa: *Sue pushed the cart to the store*

What about: *The door closed?*

2 Jackendoff: Parts and Boundaries

1. Bill went into the house.

[Event GO ([Thing BILL], [Path TO ([Place IN ([Thing HOUSE])])])]

2. $\left(\begin{array}{l} \text{into} \\ \text{P} \\ \text{[Path TO ([Place IN ([Thing])])]} \end{array} \right)$
 $\left(\begin{array}{l} \text{go} \\ \text{V} \\ \text{[Event GO ([Thing], [Path])]} \end{array} \right)$
 $\left(\begin{array}{l} \text{Bill} \\ \text{NP} \\ \text{[Thing BILL]} \end{array} \right)$
 $\left(\begin{array}{l} \text{the house} \\ \text{NP} \\ \text{[Thing HOUSE]} \end{array} \right)$

3. $\left(\begin{array}{l} \text{enter} \\ \text{V} \\ \text{[Event GO([Thing], [Path TO ([Place IN([Thing])])])]} \end{array} \right)$

cf. Bierwisch and Schreuder

4. Rules of construal

- a. The light flashed until dawn.
- b. Bill slept "
- c. Lights flashed "
- d. #Bill ate the hot dog "
- e. Bill ate hot dogs "
- f. #Bill ate some hot dogs "
- g. Bill was eating the hot dog "
- h. ?Bill ran into the house "
- i. People ran into the house "
- j. ?Some people ran into the house "
- k. Bill ran toward the house " .
- l. Bill ran into houses "
- m. Bill ran into some houses "
- n. Bill ran down the road "
- o. #Bill ran 5 miles down the road " .

5. "The multiplicity of entities (events or things) is a feature of conceptualization that is orthogonal to the distinction between objects and events"
 — iterative aspect for s sentences like a. in some languages.
Repetition of events and plurality of objects is the same thing.

6. The ham sandwich in the corner wants another cup of copy.

7. Rule of construal at work in 4: substitutes "multiple events of category X" for "event of category X", when necessary and possible. (Notice #Bill ate the hot dog until dawn).

8. Fundamental conceptual features: [\pm bounded], [\pm internal structure]

- a. There was water all over the floor.
- b. There were books all over the floor.
- c. #There was a book all over the floor.
- d. Bill ate custard until dawn.
- e. Bill ate hot dogs until dawn.
- f. *Bill ate a hot dog until dawn.

9. Bare mass nouns and bare plurals are both [-b].
 What's the difference?
 Bare mass nouns are [-i]
 Bare plurals are [+i]

10. Categorizing former Things, now Material Entities:

[+b, -i]	Individuals	(a pig)
[+b, +i]	Groups	(a committee, a herd)
[-b, +i]	Aggregates	(busses, cattle)
[-b, -i]	Substances	(water)

11. Creating plural/unbounded items: operation on [+b]

a. $\left(\begin{array}{c} +b, -i \\ \text{Mat DOG} \end{array} \right)$ a dog.

b. $\left(\begin{array}{c} -b, +i \\ \text{PL} \\ \text{Mat} \left\{ \left(\begin{array}{c} +b, -i \\ \text{Mat DOG} \end{array} \right) \right\} \end{array} \right)$ dogs

c. $\left(\begin{array}{c} +b, +i \\ \text{Mat COMMITTEE} \end{array} \right)$ a committee.

d. $\left(\begin{array}{c} -b, +i \\ \text{PL} \\ \text{Mat} \left\{ \left(\begin{array}{c} +b, +i \\ \text{Mat COMMITTEE} \end{array} \right) \right\} \end{array} \right)$ committees

12. Pluralizing events (iterative aspect):

a. The light flashed
 $\left. \begin{array}{l} +b, -i \\ \text{Event LIGHT FLASHED} \end{array} \right\}$

b. The light flashed (until dawn)
 $\left. \begin{array}{l} -b +i \\ \text{PL} \\ \text{Event} \left\{ \begin{array}{l} +b-i \\ \text{Event LIGHT FLASHED} \end{array} \right\} \end{array} \right\}$

13. Creation of individual items: operation on [-b]

a. rice
 -b, +i
 Mat RICE

b. a grain of rice.
 $\left. \begin{array}{l} +b, -i \\ \text{ELT} \\ \text{Mat} \left\{ \begin{array}{l} -b +i \\ \text{Mat RICE} \end{array} \right\} \end{array} \right\}$

c. a drop of water.
 $\left. \begin{array}{l} +b, -i \\ \text{ELT} \\ \text{Mat} \left\{ \begin{array}{l} -b -i \\ \text{Mat WATER} \end{array} \right\} \end{array} \right\}$

14. Other potential functions: COMP (composed of, *a house of wood, a cup of coffee, three coffees*. Also known as the Universal Packager) GR (grinder, the material of, *There was dog all over the street, much pork (*many pork)*), PART (a part of X: *leg of the table, the roof of the porch*) and CONT (*house with an orange roof, drop-leaf table, beef stew, the ham sandwich in the corner*).

15. Dimensionality:

a. point = 0D

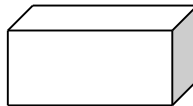
.

b. line = 1D

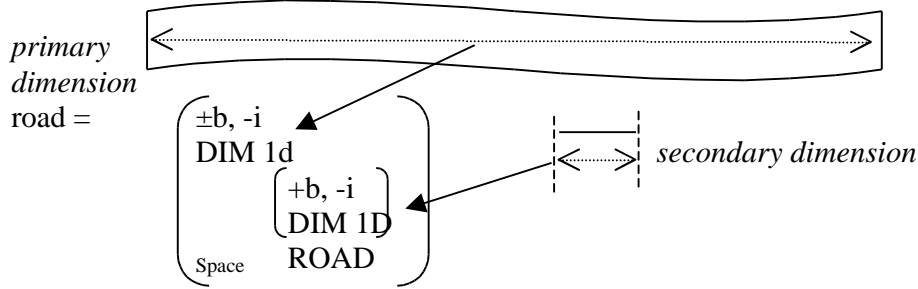
c. plane = 2D



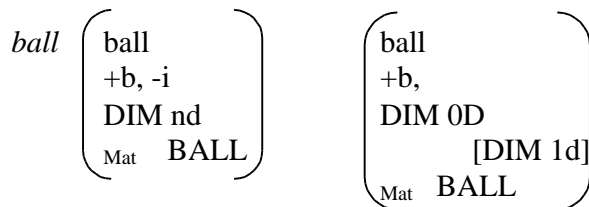
d. volume = 3D



16. Everything has a *primary* and a *secondary* dimension.
road, river, ribbon



16. Further, some things with more than one dimension can be construed as simply being a point. So, e.g.:



17. Finally, any 1-dimensional thing, or something that can be construed as a 1-dimensional thing, can be *directional* as well, that is, a vector, or path. Using this feature, we can again *reduce the ontology of types* of primitives (cf. the decomposition of Thing types above). PATHS and PLACES are both SPACES. However, PLACES may be N-dimensional, and are non-directional, while PATHS are 1-dimensional and directed.

Further, we can distinguish between STATES and EVENTS. STATES and EVENTS are both *eventualities*, or *event types*; Jackendoff will call them SITUATIONS. STATES, however, are like PLACES, in being non-directional, while EVENTS have an inherent direction along the time axis.

- a. PLACE [Space -DIR]
- b. PATH [Space +DIR]
- c. STATE [Situation -DIR]
- d. EVENT [Situation +DIR]

18. Boundaries:

Anything that's bounded and has an inherent shape and that has an axis can have a boundary. Boundaries are always one dimension less than the bounded things:

- a. boundary of a line (1D) is a point (0D)
- b. boundary of a surface or a plane (2D) is a line (1D)
- c. boundary of a volume (3D) is a plane (2D).

However, if, e.g. a volume has an axis, it can be conceived of as having a primary 1D dimension, with a 2D secondary dimension. This is how volumes can have *ends*:

19. Ends: 0D points on objects with a 1D primary dimension

- a. line $\left[\begin{array}{c} \text{[DIM 1D]} \\ \text{[DIM 1D]} \end{array} \right]$ end of line $\left[\begin{array}{c} \text{[DIM 0D]} \\ \text{[DIM 0D]} \end{array} \right]$
 b. ribbon $\left[\begin{array}{c} \text{[DIM 1D]} \\ \text{[DIM 1D]} \\ \text{[DIM 1D]} \end{array} \right]$ end of ribbon $\left[\begin{array}{c} \text{[DIM 0D]} \\ \text{[DIM 1D]} \\ \text{[DIM 1D]} \end{array} \right]$
 c. beam $\left[\begin{array}{c} \text{[DIM 1D]} \\ \text{[DIM 2D]} \end{array} \right]$ end of beam $\left[\begin{array}{c} \text{[DIM 0D]} \\ \text{[DIM 2D]} \end{array} \right]$

20. a. "ribbon" [DIM 2d] = "edge of ribbon" [DIM 1d]
 b. "table top" $\left[\begin{array}{c} \text{[DIM 2D]} \\ \text{[DIM 1D]} \end{array} \right]$ = "edge of table" $\left[\begin{array}{c} \text{[DIM 1D]} \\ \text{[DIM 1D]} \end{array} \right]$

21. "end" as including a small piece of the axis?

Set the cup on the end of the table.

Cut off the end of the ribbon.

object $\left[\begin{array}{c} \text{[DIM 1D]} \\ \text{[DIM nD]} \end{array} \right]$ "end of object" $\left[\begin{array}{c} \text{[DIM } 0(+\epsilon)\text{D]} \\ \text{[DIM nD]} \end{array} \right]$

22. Further functions BD_{\pm} (+ = end, - = beginning); $BDBY_{\pm}$ (+ = end, - = beginning)

23. Decomposing PATH functions using dimensionality and directionality:

a. TO X $\left(\begin{array}{c} +b, -i \\ \text{DIM 1D DIR} \\ \text{BDBY+ ([Space X])} \end{array} \right)$ NB. directionality

b. TOWARDS X $\left(\begin{array}{c} -b, -i \\ \text{DIM 1D DIR} \\ \text{GR } \left\{ \begin{array}{c} +b, -i \\ \text{DIM 1D DIR} \\ \text{BDBY+ ([X])} \end{array} \right\} \end{array} \right)$ NB. "ground-up" to
 : subpaths "towards
 the house" are also
 "towards the house"

c. VIA X $\left(\begin{array}{c} -b -i \\ \text{DIM 1D DIR} \\ \text{Space CONT ([Space X])} \end{array} \right)$ *past, through....*

24. Vendler classes:

a. State $\left[\begin{array}{c} -i \\ \text{Sit[-DIR]} \end{array} \right]$

b. Activity: $\left[\begin{array}{c} +b \\ \text{Sit [+DIR]} \end{array} \right]$ (0 or 1 D, *flash vs.sleep*)

c. Accomplishment $\left(\begin{array}{l} +b \\ \text{[DIM 1D DIR]} \\ \text{Sit BDBY+ ([])} \end{array} \right)$ (NB inherent complexity)

d. Achievement $\left(\begin{array}{l} -b \\ \text{[DIM 0 (+ε) D DIR]} \\ \text{Sit BD+ ([])} \end{array} \right)$

25. The light flashed until dawn:

$$\left(\begin{array}{l} +b \\ \text{[DIM 1D DIR]} \\ \text{COMP} \left\{ \begin{array}{l} -b +i \\ \text{PL} \left\{ \begin{array}{l} +b \\ \text{[DIM 0D DIR]} \\ \text{LIGHT FLASH} \end{array} \right\} \end{array} \right\} \\ \text{Sit BDBY+([Time DAWN])} \end{array} \right)$$