

# Funcons-beta: Breaking \*

The PPlanCompS Project

Breaking.cbs | PLAIN | PRETTY

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## Breaking

```
[ Datatype  breaking
  Funcon    broken
  Funcon    finalise-breaking
  Funcon    break
  Funcon    handle-break ]
```

Meta-variables  $T <: \text{values}$

Datatype `breaking` ::= `broken`

`broken` is a reason for abrupt termination.

Funcon `finalise-breaking`( $X : \Rightarrow T$ ) :  $\Rightarrow T$  | `null-type`  
 $\rightsquigarrow$  `finalise-abrupting`( $X$ )

`finalise-breaking`( $X$ ) handles abrupt termination of  $X$  due to executing `break`.

Funcon `break` :  $\Rightarrow \text{empty-type}$   
 $\rightsquigarrow$  `abrupt`(`broken`)

`break` abruptly terminates all enclosing computations until it is handled.

Funcon `handle-break`( $\_ : \Rightarrow \text{null-type}$ ) :  $\Rightarrow \text{null-type}$

`handle-break`( $X$ ) terminates normally when  $X$  terminates abruptly for the reason `broken`.

Rule 
$$\frac{X \xrightarrow{\text{abrupted}(\_)} X'}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(\_)} \text{handle-break}(X')}$$

Rule 
$$\frac{X \xrightarrow{\text{abrupted}(\text{broken})} \_}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(\_)} \text{null-value}}$$

Rule 
$$\frac{X \xrightarrow{\text{abrupted}(V:\sim \text{breaking})} X'}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(V)} \text{handle-break}(X')}$$

Rule 
$$\text{handle-break}(\text{null-value}) \rightsquigarrow \text{null-value}$$

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\*Suggestions for improvement: [plancomps@gmail.com](mailto:plancomps@gmail.com).  
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.