

Funcons-beta: Breaking *

The PPlanCompS Project

Breaking.cbs | PLAIN | PRETTY

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 :  $\Rightarrow$  empty-type
   $\rightsquigarrow$  abrupt(broken)
```

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

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

```

*Suggestions for improvement: plancomps@gmail.com.
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.