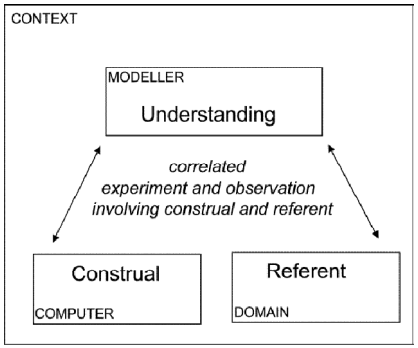
The process of construal



The key semantic principle in EM

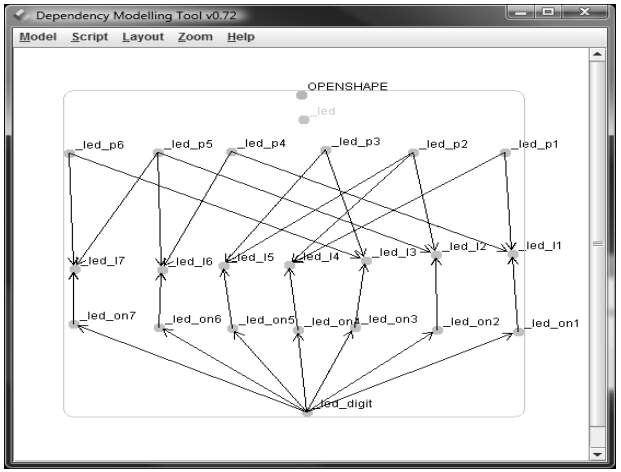
How is the connection between the construal and the referent established in the experience of the human observer?

"By embodying in the construal the pattern of observables, dependencies and agencies that we encounter in the referent"

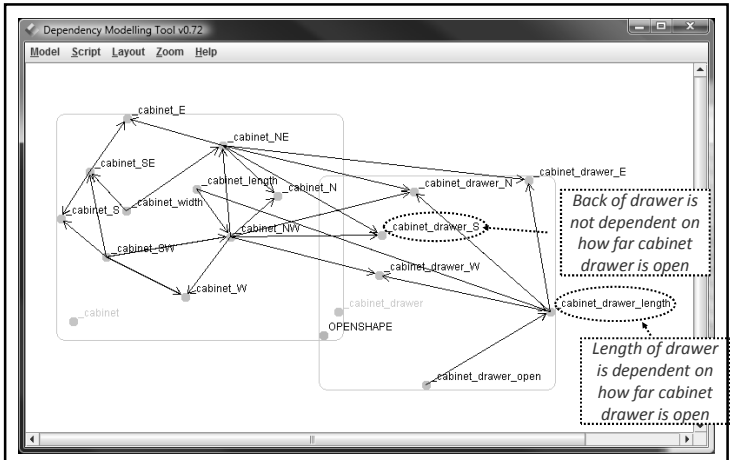
```
openshape led
within led {
   int digit
   point p1, p2, p3, p4, p5, p6                    # 6 points
   line l1, l2, l3, l4, l5, l6, l7                 # 7 segments
   boolean on1, on2, on3, on4, on5, on6, on7       # status of the 7 segments

   digit = 8                                       # initially display all segments

   p1 = {100, 800}          on1 = digit != 1 && digit != 4
   p2 = {100, 500}          on2 = digit != 0 && digit != 1 && digit != 7
   p3 = {100, 200}          on3 = digit != 1 && digit != 4 && digit != 7
   p4 = {400, 800}          on4 = (digit == 0 || digit >= 4) && digit != 7
   p5 = {400, 500}          on5 = digit == 0 || digit == 2 || digit == 6 || digit == 8
   p6 = {400, 200}          on6 = digit != 5 && digit != 6
                            on7 = digit != 2
   l1 = if on1 then [p1, p4] else [p1, p1]
   l2 = if on2 then [p2, p5] else [p2, p2]
   l3 = if on3 then [p3, p6] else [p3, p3]
   l4 = if on4 then [p1, p2] else [p1, p1]
   l5 = if on5 then [p2, p3] else [p2, p2]
   l6 = if on6 then [p4, p5] else [p4, p4]
   l7 = if on7 then [p5, p6] else [p5, p5]
}
```



Dependencies in the digit line-drawing construal



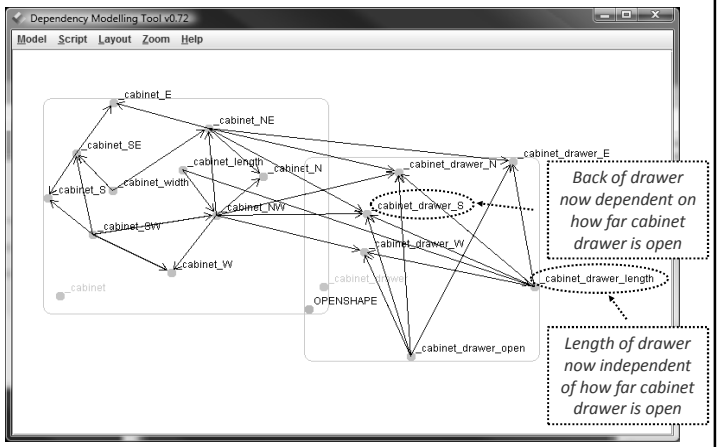
Dependencies in the flawed projection of the filing cabinet

Original construal of the drawer

```
%donald
within cabinet {
  within drawer {
    length = ~/length * open
    N = [~/NW + {0, length}, ~/NE + {0, length}]
    S = [~/NW, ~/NE]
    W = [~/NW + {0, length}, ~/NW]
    E = [~/NE + {0, length}, ~/NE]
  }
}
```

Improving the construal of the drawer

```
%donald
within cabinet {
  within drawer {
    S = [~/NW - {0, length * (1-open)}, ~/NE - {0, length * (1-open)}]
    W = [~/NW + {0, length * open}, ~/NW - {0, length * (1-open)}]
    E = [~/NE + {0, length * open}, ~/NE - {0, length * (1-open)}]
    N = [~/NW + {0, length * open}, ~/NE + {0, length * open}]
    length = ~/length * 1.0
  }
}
```



Dependencies in the improved construal of the filing cabinet