

# Arbitrary Object and Structure

## 1. Arbitrary object

Value-range

Independent vs. dependent

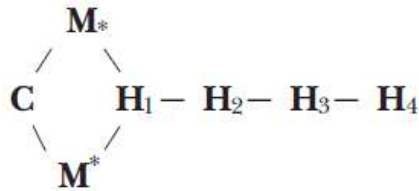
*Criteria of Identity (Independent)* A=B if they has the same range of values.

*Criteria of Identity (Dependent)* A=B if they depend on the same A-objects in the same way.

## 2. Structure

Naïve metaphysics

A two-step construction of an A-object as *the structure* ( $M^*$ ):



## 3. Further Questions

### 3.1 Type theory of A-objects?

$M^*$  is first-order, which means that the structural universal of *being a  $CH_4$*  cannot be in the value range of  $M^*$ . But we sometimes say that *being a  $CH_4$*  has the same structure with a particular  $CH_4$  molecule. Do we need an A-object that has both  $CH_4$  molecules and *being a  $CH_4$*  as its values?

### 3.2 Two-step construction vs. fine-grained A-object

$\langle k_1, 1 \rangle$	$\langle k_2, 1 \rangle$	$\langle k_3, 1 \rangle$	...	$\langle k_p, 1 \rangle$
$\langle k_1, 2 \rangle$	$\langle k_2, 2 \rangle$	$\langle k_3, 2 \rangle$	...	$\langle k_p, 2 \rangle$
$\langle k_1, 3 \rangle$	$\langle k_2, 3 \rangle$	$\langle k_3, 3 \rangle$	...	$\langle k_p, 3 \rangle$
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$
$\langle k_1, p \rangle$	$\langle k_2, p \rangle$	$\langle k_3, p \rangle$	...	$\langle k_p, p \rangle$

$a = b \Leftrightarrow$  in every possible situation, the value taken by  $a$  is identical to the value taken by  $b$ . (Horsten 2019, 45)

In this way, we can simply say  $H_1 \neq H_2$  without the aid of the dependence relations.