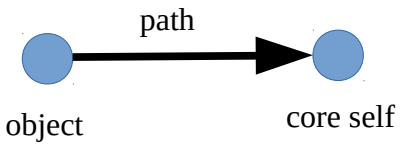
Avatar Graphs

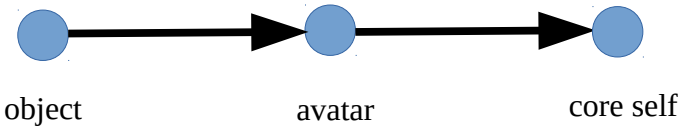
by Sven Nilsen, 2020

In this paper I represent a graph of constructive avatars and show that all paths from the unique n-avatar to 1-avatars is isomorphic to Cartesian combinatorics.

A core self is a node that is identified as the undefinable notion of an observer.
All meaning of objects in the world is derived from paths, starting at the object and ending at the core.

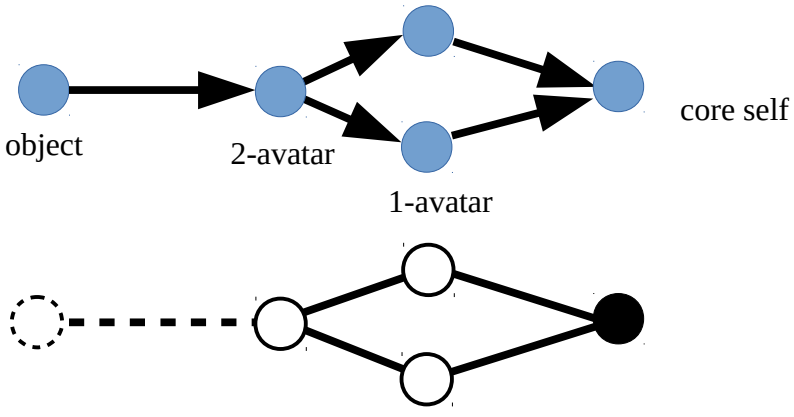


The observer models meaning as information stored inside the path, not inside the core self.
A core self is like an atom, it contains no internal relations (edges) that can be used for introspection.
Normally, information stored in edges does not permit introspection of the core self.
However, one can encode such information used for introspection inside an avatar:



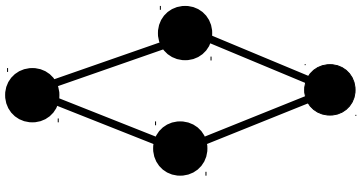
The avatar is a representation of the core self that acts in a role, such that all paths going to the avatar are associated with that role. A core self can create many avatars, however, avatars can not communicate among themselves. All avatars relay information to the core self in a directional matter.

The problem of making avatars consistent with the core self can be solved by adding 2-avatars that relay information to avatars relaying information to the core. A 2-avatar is responsible for sending information to each avatar such that their actions are consistent with the core self and not contradictory to each other:

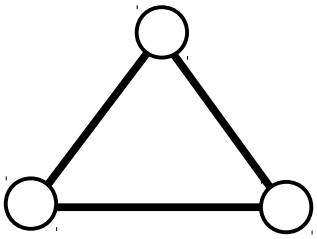


This idea is generalized with a simpler notation and all objects are erased from the graph.

Usually, it is difficult to figure out where the core self is hiding in a network of avatars.
One wishes to study graphs where the core self can occur more than one place.
Since the previous graph is symmetric with respect to the core self, all avatars can act as the core self:

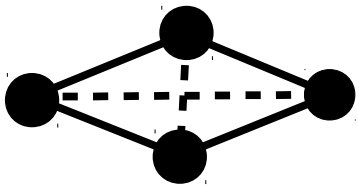


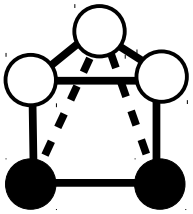
There are graphs that can not have any core self, e.g. a triangle:



All n-avatars added at the same level are in some sense trivial, once one of them exists.
Therefore, it is only interesting to study graphs where there exists a *unique* n-avatar per core self.
There can be several ways to construct the graph, but they all need to be isomorphic to each other.

For every core self, there is an associated avatar which corresponds to the unique n-avatar:

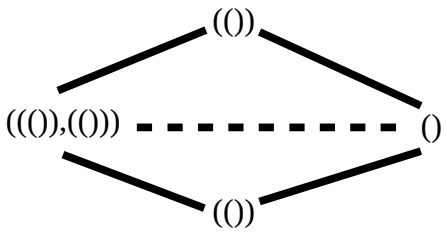




The unique n-avatar can be also shared between candidates for the core self, as shown to the right.

The problem is: How do you prove that there exists a core self given a unique n-avatar?

It turns out that if one uses Cartesian stair pair combinatorics[1], then each neighbor node destructs the Cartesian product, visiting every node, until the terminal node has the unit element:



A such Cartesian product is possible to construct if and only if the graph has this property.
All paths from the unique n-avatar to 1-avatars is isomorphic this Cartesian combinatorics (`(()) => ()`).

References:

[1] “Cartesian Stair Pair Combinatorics”
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https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/cartesian-stair-pair-combinatorics.pdf