# Implicit Activation

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*In this paper I present an implicit activation theorem in found in Path Semantical Logic.*

The Implicit Activation Theorem is a proof in Path Semantical Logic[1]:

$$(c_0, a_0, b_0)\ (c_1, a_1, b_1):$$
$$c_1 \Rightarrow (a_1 = b_1),\ c_0 = c_1,\ a_0 = a_1,\ b_0 = b_1 \ \ \Rightarrow\ \ a_1 = b_1$$

Here, the tuple `$(c_0, a_0, b_0)$` has level 0 and the tuple `$(c_1, a_1, b_1)$` has level 1.
Notice that these levels follow the new standard order[2].

With other words, an implicit equality in level 1 is activated when cloning the state in level 0.

To prevent implicit activation, one must use two propositions, e.g. `$c_1$` and `$d_1$` with a binary relation `f` that **does not** transport concretely[3] (`and, fst, snd, or, eq, rimply, imply, $true_2$`):

$$(c_0, d_0, a_0, b_0)\ (c_1, d_1, a_1, b_1):$$
$$f(c_1, d_1) \Rightarrow (a_1 = b_1),\ c_0 = c_1,\ a_0 = a_1,\ b_0 = b_1 \ \ \Rightarrow\ \ a_1 = b_1$$

For example, `f <=> xor` can be used since it does not transport concretely.

Notice that the special `$false_2$` binary relation is not considered transporting concretely.
However, here it prevents implicit activation, unlike for concrete transport where it can prove anything.

## References:


[1] "Path Semantical Logic"
AdvancedResearch – Reading sequence on Path Semantical Logic
https://github.com/advancedresearch/path_semantics/blob/master/sequences.md#path-semantical-logic

[2] "New Standard Order for Levels"
Sven Nilsen, 2021
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip2/new-standard-order-for-levels.pdf

[3] "Concrete and Abstract Transport"
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/concrete-and-abstract-transport.pdf