Implicit Theorems

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In this paper I present three implicit transport theorems found in Path Semantical Logic.

Similar to Normal[1], Abstract[2] and Constrained[3] Implication Theorems, there are three Implicit Theorems, which are proofs in Path Semantical Logic[4]:

(a, b, c) (A, B): a(A), b(B), c=>(a=>b) => A=>B	Normal Implicit Theorem
(a, b, c) (A, B): a(A)=b(B), c=>(a=>b) => A=>B	Abstract Implicit Theorem
(a, b, c) (A, B): a(A)=>b(B), c=>(a=>b) => A=>B	Constrained Implicit Theorem

Here, the tuple \`(a, b, c)\` has level 1 and the tuple \`(A, B)\` has level 0.
The notation \`a(A)\` means \`a=>A\` where \`A\` is at a lower level.

There are many more general version of these theorems, that uses even more implicit conditions. Instead of \`c\`, one can use e.g. \`contr(c, d, e, f)\` that is true only when \`c, d, e, f\` are all \`true\` or all \`false\`[5]. Or, one can use e.g. \`c=(d=>(e=f))\`. Or, one can use e.g. \`c ∨ d\`.

References:

[1] "Implication Theorem"
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https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/implication-theorem.pdf

[2] "Abstract Implication Theorem"
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/abstract-implication-theorem.pdf

[3] "Constrained Implication Theorem"
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/constrained-implication-theorem.pdf

[4] "Path Semantical Logic"
AdvancedResearch, reading sequence on Path Semantics
https://github.com/advancedresearch/path_semantics/blob/master/sequences.md#path-semantical-logic

[5] "Contractible Types"
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/contractible-types.pdf