- HC system

```
fof(c3, axiom, ![A,B]: ( pr(i(i(n(B), n(A)), i(A, B))))).
fof(c1, axiom, ![A,B]: ( pr(i(A, i(B, A))))).
fof(c2, axiom, ![A,B,C]: ( pr(i(i(A, i(B,C)),i(i(A,B), i(A, C)))))).
fof(mp, axiom, ![A,B]: ((pr(A) & pr(i(A,B)))=>pr(B))).

%first
%fof(ia, conjecture, ![A,B,C]:(pr(i(i(A, B), i(i(B, C), i(A,C)))))). %True
%second
%fof(ib, conjecture, ![A]:(pr(i(n(n(A)),A)))). %True
%third
%fof(ic, conjecture, ![A]:(pr(i(A,n(n(A)))))). %True
%fourth
%fof(id, conjecture, ![A,B]:(pr(i(i(i(A,B),A),A)))). %True
%fifth
%fof(ie, conjecture, ![A,B]:(pr(i(i(n(A),B),i(i(n(A),n(B)),A))))). %True
%sixth
%fof(if, conjecture, ![A,B]:(pr(i(i(n(A),B),i(n(B),A))))). %True
%seventh
%fof(ig, conjecture, ![A,B]:(pr(i(i(n(A),B),i(B,A))))). %FALSE-PARADOX
```

- HI system

```
fof(i1, axiom, ![A,B]:(pr(i(A,i(B,A))))).
fof(i2, axiom, ![A,B,C]:(pr(i(i(A,i(B,C)), i(i(A,B), i(A,C)))))).
fof(i3, axiom, ![A,B]:(pr(i(i(A,B),i(i(A, n(B)), n(A)))))).
fof(i4, axiom, ![A,B]:(pr(i(A,i(n(A),B))))).
fof(mp, axiom, ![A,B]: ((pr(A) & pr(i(A,B)))=>pr(B))).


%fof(twoa, conjecture, ![A,B,C]:(pr(i(i(A, B), i(i(B, C), i(A,C)))))). %TRUE
%fof(twob, conjecture, ![A]:(pr(i(n(n(A)),A)))). %FALSE-PARADOX
%fof(twoc, conjecture, ![A]:(pr(i(A,n(n(A)))))). %TRUE
%fof(twod, conjecture, ![A,B]:(pr(i(i(i(A,B),A),A)))). %FALSE-PARADOX
%fof(twoe, conjecture, ![A,B]:(pr(i(i(n(A),B),i(i(n(A),n(B)),A))))). %FALSE-PARADOX
%fof(twof, conjecture, ![A,B]:(pr(i(i(n(A),B),i(n(B),A))))). %FALSE-PARADOX
%fof(twog, conjecture, ![A,B]:(pr(i(i(n(A),B),i(B,A))))). %FALSE-PARADOX
```

- COMPARISON
  both i3 and i4 were provable in HC-so HI is provable in HC.
  c3 is not provable in HI – so HI isn't provable in HC.