The tweets of Curt Jaimungal inspired an attempt to understand Gödel's incompleteness theorem and related constructions from the TGD point of view. The basic idea is that the laws of physics, as they are formulated in the TGD framework, can be regarded as analogs for the axioms of a formal system.

1. Space-time surface which by holography= holomorphy vision is analogous to a Bohr orbit of particles represented as a 3-surface is analogous to a theorem. The slight classiocal non-determinism implies that there are several Bohr orbits associated with the same 3-surface at the passive boundary of causal diamond remaining un-affected in the sequence of small state function reductions (TGD counterpart of the Zeno effect).

   The holographic data would be in the role of the assumptions of a theorem, which need not to be proved and reduced to axioms, and the Bohr orbits would correspond to theorems deducible from these assumptions.

2. The adelization of physics means that real space-time surfaces obtained using extension of E of rationals are extended to adelic space-time surfaces. The p-adic analogs of the space-time surface would be correlates for cognition and cognitive representations correspond to the intersections of the real space-time surface and its p-adic variants with points having Hamilton-Jacobi coordinates in E.

3. Concerning Gödel, the most important question is how self references as a metamathematical notion is realized: how space-time surfaces can represent analogs of statements about space-time surfaces. In this framework, meta level could correspond to the maps $g : C^2 \to C^2$ mapping the function pairs $f = (f_1, f_2) : H \to C^2$ defining space-time surfaces as their roots to the composites $g \circ f$. g should act trivially at the passive boundary (PB) of CD. One can construct hierarchies of these composites.

4. Second realization would be in terms of the hierarchy of infinite primes analogous to a repeated second quantization of a supersymmetric arithmetic quantum field theory for an extension E of rationals. Also the Fock basis of WCW spinor fields relates to WCW like the set of statements about statements to the set of statements.

The TGD counterpart for the action of an object of a formal system acting as a morphism on another object is the action of the space-time surface X^4 to another surface Y^4 and vice versa. This correspond to the interaction of the Bohr orbits of X^3 and Y^3 involving a temporary formation of a connected 3-surface as an intermediate state (monopole flux tubes could connect the 3- surfaces).This action is highly unique and fixed apart from the weak classical non-determinism. The interaction would be analogous to sensory perception. The time reversal of this sensory perception involving two BSFRs changing the arrow of time would correspond to motor action. In this view, the infinite self reflection hierarchy is replaced with a finite SSFRs and self is a dynamical object.