the improbable yet elementary case

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a mathematical paradigmatic mashup: Thomas Kuhn Vs map-territory Vs ...?

prefer the simplest explanation [1]

consider all mathematics as pseudo-mathematics; a means for a novice mathematician to express ideas in less time and fewer words than a similarly novice writer might, in prose. all terms are tentative. corrections $\wedge\vee$ *advice, welcome.*

...

[1] which works

1 territory

(T)

1.1 set-of-all

$(\overset{\cup}{_{Ch}})$

For any phenomenal scope Sp, the set-of-all phenomenal characteristics $\overset{\cup}{_{Ch}}$ is a union $\cup$, of respective universal phenomena Ph:

$$\overset{\cup}{_{Ch}} = \{Sp|Ph_1 \cup Ph_2 \ldots\}$$

$$\overset{\cup}{_{Ch}} = \{Sp| \bigcup_{Ch \in Ph} Ch\} \, , \bigcup Sp$$

1.2 set-of-common

$(\overset{\cap}{_{Ch}})$

For a phenomenal scope Sp, the set-of-common phenomenal characteristics $\overset{\cap}{_{Ch}}$, is an intersect $\cap$, of respective phenomena Ph:

$$\overset{\cap}{_{Ch}} = \{Sp|Ph_1 \cap Ph_2 \ldots\}$$

$$\overset{\cap}{_{Ch}} = \{Sp| \bigcap_{Ch \in Ph} Ch\} \, , \bigcap Sp$$

1.3 symmetric difference

$(\overset{\cap\triangle}{_{CH}})$

The symmetric difference $^{\cap\triangle}$ *(or common complement* $^{\cap\complement}$*)*, is the set-of-all characteristics $\overset{\cup}{_{Ch}}$, minus the set-of-common characteristics $\overset{\cap}{_{Ch}}$:

$$\overset{\cup}{_{Ch}} \setminus \overset{\cap}{_{Ch}} = \overset{\cap\triangle}{_{Ch}} \, : \, \overset{\cap\complement}{_{Ch}}$$

1.4 general special

$(\overset{Gc}{_{Ch}} \, , \overset{Sc}{_{Ch}} \, , \overset{\subset Sc}{_{Ch}})$

territory aligns by the general case; maps ought to

For a phenomenal scope Sp, the set-of-common characteristics $\overset{\cap}{_{Ch}}$, represents the general case ^{Gc}:

$$\overset{\cap}{_{Ch}} \equiv \overset{Gc}{_{Ch}}$$

For a phenomenal scope Sp, the symmetric difference $\overset{\cap\triangle}{_{Ch}}$ represents the special case ^{Sc}:

$$\overset{\cap\triangle}{_{Ch}} = \overset{Sc}{_{Ch}}$$

1.5 common, common

(${}^{\cap\cap}_{Ch}$)

The common, common characteristics ${}^{\cap\cap}_{Ch}$ between phenomenal scopes, $Sp_{1,2}$, ought now qualify combination, as necessary:

$$ {}^{\cap\cap}_{Ch} = \bigcap Sp_1 \cap \bigcap Sp_2 $$

$$ {}^{\cup\cap}_{Ch} = \bigcup Sp_1 \cap \bigcup Sp_2 \ , \ {}^{\cap\cup}_{Ch} = \bigcap Sp_1 \cup \bigcap Sp_2 \ , \ {}^{\cup\cup}_{Ch} = \bigcup Sp_1 \cup \bigcup Sp_2 $$

$$ \textit{or as intersecting general case: } {}^{\cap Gc}_{Ch} = \{Sp_1|^{Gc}_{Ch}\} \cap \{Sp_2|^{Gc}_{Ch}\} $$

1.6 complexity

($|{}^{\cap}_{Ch}| < |{}^{\cup}_{Ch}|$)

The phenomenal scope set-of-common characteristics ${}^{\cap}_{Ch}$, is a subset $\subseteq$, of the phenomenal scope set-of-all characteristics ${}^{\cup}_{Ch}$:

$$ {}^{\cap}_{Ch} \subseteq {}^{\cup}_{Ch} $$

The phenomenal scope set-of-common characteristics ${}^{\cap}_{Ch}$, is simpler than the phenomenal scope set-of-all-characteristics ${}^{\cup}_{Ch}$:

$$ |{}^{\cap}_{Ch}| < |{}^{\cup}_{Ch}| $$

The set of common, common characteristics ${}^{\cap\cap}_{Ch}$, between *any* two phenomenal scope Sp, is simpler still:

$$ Sp_1 \rightarrow {}^{\cap_1}_{Ch} \ , \ Sp_2 \rightarrow {}^{\cap_2}_{Ch} : |{}^{\cap\cap}_{Ch}| < |{}^{\cap_1}_{Ch}| \ AND \ |{}^{\cap\cap}_{Ch}| < |{}^{\cap_2}_{Ch}| $$

note: ignoring further treatment for time being; diversity; etc

1.7 reconciliation

(set theory principle of inclusion and exclusion)

"the universe does not double count"—conservation laws

The set theory principle of inclusion and exclusion states:

$$ |X \cup Y| = |X| + |Y| - |X \cap Y| $$

for an accurate account, the sum of set cardinals must be subtracted by the cardinal of the common set

"paradigms which do not reconcile by the general case, double count"

$$ X \cap Y \equiv {}^{\cap\cap}_{Ch} \equiv {}^{\cap Gc}_{Ch} $$

□