the improbable yet elementary case

@causalmechanics/ @themanual4am

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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 paradigm, measure, common measures, incommensurability

(Pa , Me , $\overset{\cap}{_{Me}}$, $\overset{\cap\varnothing}{_{Me}}$)

1.1 a gentle introduction

(Pa , Me)

Let us consider a paradigm Pa, as a set of two measures Me_1 and Me_2:

$$Pa = \{Me_1, Me_2\} : |Pa| = 2$$

1.2 totality, commonality

($\cup$, $\cap$)

If paradigm Pa_1, contains measures $Me_{1,2,3}$, and paradigm Pa_2, contains measures $Me_{2,3,4}$:

$$Pa_1 = \{Me_1, Me_2, Me_3\}$$

$$Pa_2 = \{Me_2, Me_3, Me_4\}$$

The *set-of-all* measures $\overset{\cup}{_{Me}}$, across Pa_1 and Pa_2, can be found by union $\cup$:

$$\overset{\cup}{_{Me}} = Pa_1 \cup Pa_2 = \{Me_1, Me_2, Me_3, Me_4\}$$

The *set-of-common* measures $\overset{\cap}{_{Me}}$, between Pa_1 and Pa_2, can be found by intersection $\cap$:

$$\overset{\cap}{_{Me}} = Pa_1 \cap Pa_2 = \{Me_2, Me_3\}$$

Observing:

$$|\overset{\cup}{_{Me}}| = 4 \ , \ |\overset{\cap}{_{Me}}| = 2 \ , \ |\overset{\cap}{_{Me}}| < |\overset{\cup}{_{Me}}|$$

note: remember, this is a simplification, and an introduction

1.3 incommensurability

($\cap\varnothing$) [2]

Consider paradigms Pa_3 and Pa_4, whereby:

$$Pa_3 = \{Me_1, Me_2, Me_3\}$$

$$Pa_4 = \{Me_4, Me_5, Me_6\}$$

When paradigms Pa_3 and Pa_4, do not share common measures, then $\overset{\cap}{_{Me}}$, is an empty set $\varnothing$:

$$\overset{\cap}{_{Me}} = Pa_3 \cap Pa_4 = \varnothing : |\varnothing| = 0$$

And paradigms Pa_3 and Pa_4, can be said to be incommensurable $\overset{\cap\varnothing}{_{Me}}$:

$$\overset{\cap}{_{Me}} = Pa_3 \cap Pa_4 = \varnothing : \overset{\cap}{_{Me}} \rightarrow \overset{\cap\varnothing}{_{Me}} \ , \ |\overset{\cap\varnothing}{_{Me}}| = 0$$

$\square$

[2] famously, two paradigms which share no common measures are incommensurable.