1. paradigm, measure, common measure, incommensurability

> Pa , ${}^{\cup}_{Me}$, ${}^{\cap}_{Me}$, ${}^{\cap\varnothing}_{Me}$

> *reading notes*

a reinterpretation of Thomas Kuhn's paradigm, measure, common measure, and commensurability [1], through the lens of set-theory(-ish) mathematics:

—famously, two paradigms which share no common measures are incommensurable

$$\ldots$$

> *note: consider all set-theory as pseudo-set-theory; a means for a novice mathematician [2] to express ideas in less time and space, than a similarly novice writer might, in prose.*
>
> *all terms are tentative. corrections $\wedge\vee$ advice, welcome.*
>
> [3]

1.1 paradigm, measure

> Pa , Me

> *simplifying, a paradigm contains measures: measures, which may-or-may-not align with the measures of other paradigms*

consider a paradigm Pa, as a set of measures Me :

$$Pa = \{Me, \ldots\}$$

$$Pa = \{\ldots\}_{Me}$$

1.2 totality, commonality

> $\cup$, $\cap$

in the case whereby a paradigm Pa , is considered a set of measures M :

if paradigm Pa_1 , contains measures $Me_{1,2,3}$:

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

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

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

$$\ldots$$

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

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

$${}^{\cup_{1,2}}_{Me} = Pa_1 \cup Pa_2$$

$$\ldots$$

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

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

$${}^{\cap_{1,2}}_{Me} = Pa_1 \cap Pa_2$$

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

1.3 cardinality

> n

> *counting elements*

the cardinality of any set, refers to the number of contained elements, expressed as follows:

$$|\{\ldots\}| = n$$

so where:

$$A = \{a, b, c\}$$

the cardinality is:

$$|A| = 3$$

1.4 incommensurability

> ∩∅

> *—famously, two paradigms which share no common measures are incommensurable*

considering paradigm Pa_3 , and paradigm 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 ${}^{\cap}_{Me}$, is an empty set $\{\}$ *(or ∅)* :

$${}^{\cap}_{Me} = Pa_3 \cap Pa_4$$

$${}^{\cap_{3,4}}_{Me} = \{\} \mid \varnothing$$

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

$$Pa_3 \cap Pa_4 = \varnothing : {}^{\cap}_{Me} \to {}^{\cap\varnothing}_{Me}$$

and:

$$|Pa_3 \cap Pa_4| = |\varnothing| = |{}^{\cap\varnothing_{3,4}}_{Me}| = 0$$

> *note: while any two paradigms may appear incommensurable as an isolated pair, we will later discover that there exists a universally special paradigm, which by analysis or composition, renders all paradigms reconcilable, and as such, commensurable*

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1. Thomas Kuhn 'On The Structure of Scientific Revolutions' ↩
2. yeh, yeh. mathemat(ish)ian, perhaps ↩
3. this reinterpretation did not begin as set-theory, nor does it depend upon it, however, it does appear to align nicely, to my novice eyes. wherever possible, i encourage an attempt to see past this particular, specific map, to the territory beyond, to which i am pointing. and a generous interpretation, to make up for inevitable mistakes of expression. these documents will be updated as necessary ↩