Complexity Conclusions

Expansion of model depends on evaluating small incremental aggregation of previously verified sub components or sub models

An implication of this is visibility into modeled space is required to establish presence and validity and probability of sub components

✓

Sub Component

Sub Component

Sub Component

Sub Component

Sub Component

Sub Component

feedback required at all levels

wave of model Convergence

Computation
Computational
Structure

Computation
Computational
Structure

Comp
Struct

Comp
Struct

Comp
Struct

Comp
Struct

Data
Struct

Competitive
Computational
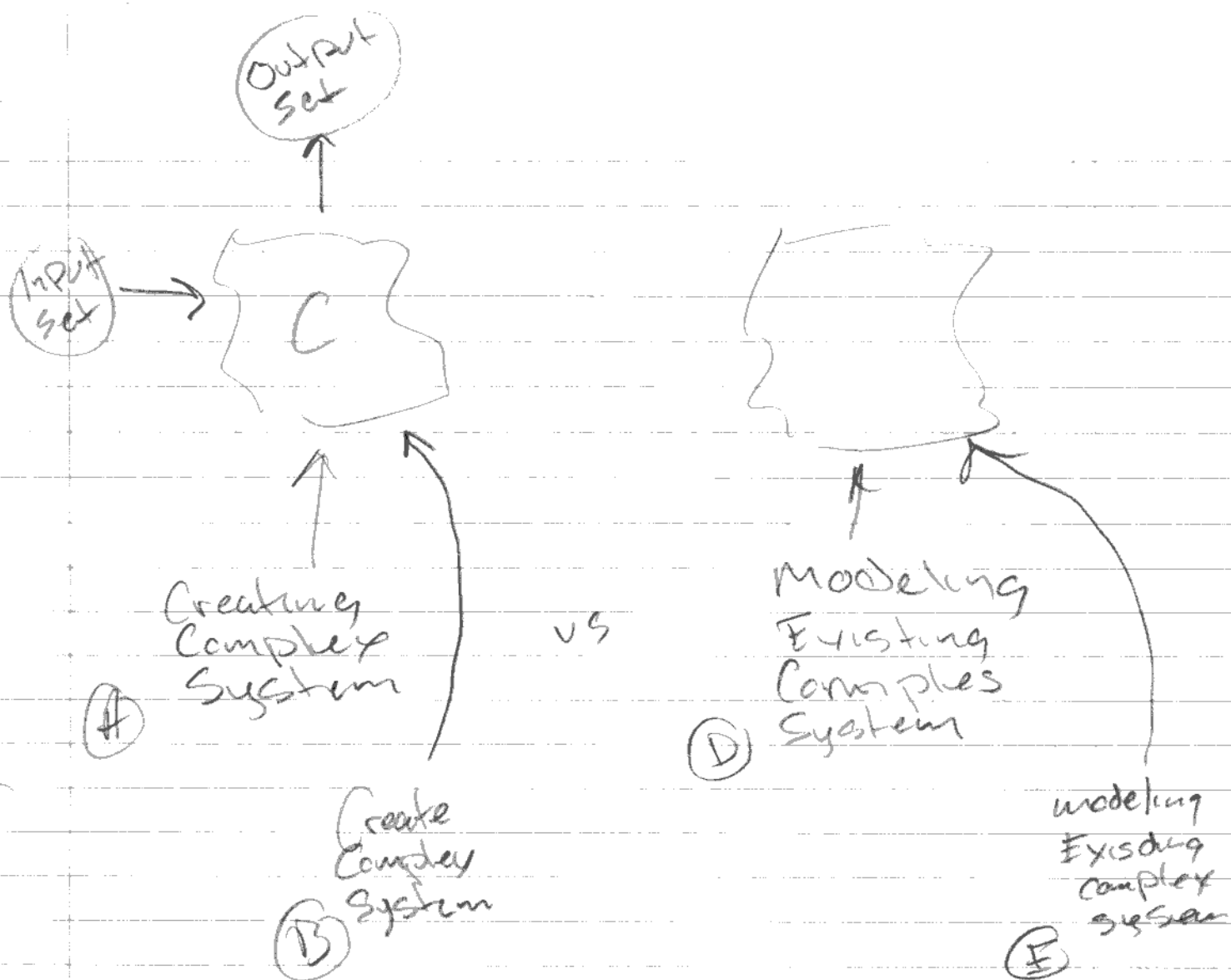element

Competitive
Computational
element

Converged
Computational
element

Converged
Computational
element

Converged
Computational
element

Converged
Data
Structure

Less viable configurations / combinations
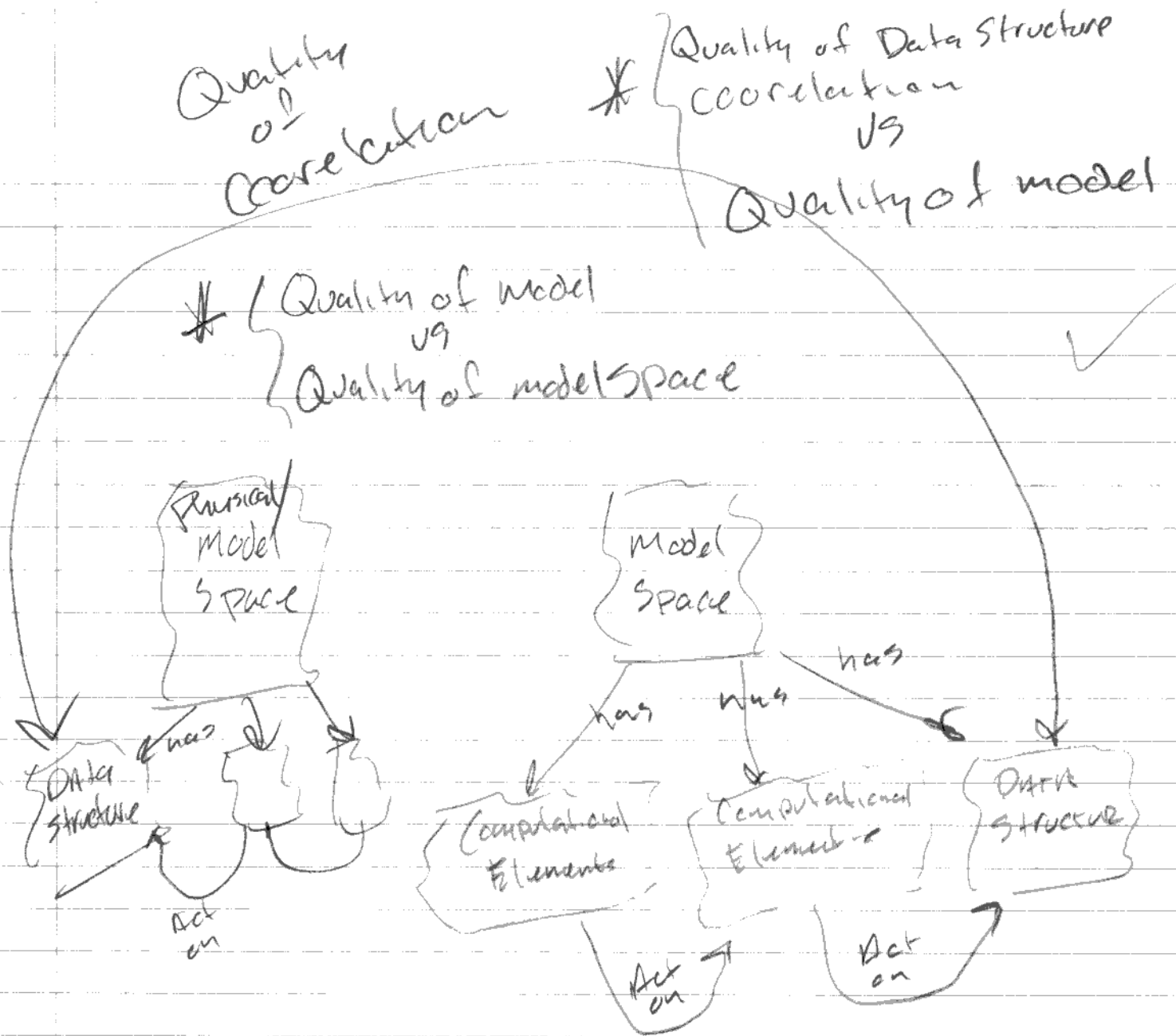
Retaing emergent / convergent properties

Output
Set

Input
Set → ~C~

Creating
Complex
System
(A)

vs

Modeling
Existing
Complex
System
(D)

Create
Complex
System
(B)

modeling
Existing
complex
system
(E)

why A vs B

Input Space   vs Comp   vs Out
Characteristic   Space   Space
                         Characteristic   Characteristic

$$\text{Compression Effectiveness} = \left(\frac{\dfrac{\# \text{Stable}}{\text{output states}}}{\dfrac{\# \text{Stable}}{\text{Input states}}} = 1 \right)$$

$$\left(\begin{array}{c} \text{Comp Space} \\ \text{Complexity} \end{array} \right)$$

Quality
of
Ccorrelation

* { Quality of Data Structure
ccorrelation
vs
Quality of model

* { Quality of model
vs
Quality of model space

Physical
Model
Space

Model
Space

has

has   has

Data
Structure   has

Computational
Elements   Computational
Elements   Data
Structure

Act
on

Act
on   Act
on

Problem)
What is a sufficient fitness function?

A) There are not enough samples to look
down many variables
We must assume the computational
entities, at least most of them,
are correct.

Potential Parameters

Density —   Physical
                            Space

Model   has   Data Structure
Space
                has   Actor

        has   Computational
                          Elements

Computational   Act
Elements   in