Machines in increasing order of complexity

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Abstract

In this paper, I describe machines in increasing order of complexity.
The paper ends with "The End"

Introduction

Machines, both simple and complex, exist in many economies.
In this paper, I describe machines in increasing order of complexity.

Algorithmic machines

Algorithmic machines can be described by

$$O = A[I]$$

$$I = A^{-1}[O]$$

where
I is the input
A is the algorithm
O is the output
A^{-1} is the reverse-algorithm

Kingdom machines

Kingdom machines can be described by

$$f(K, Q) = 0$$

$$K = M[I, O]$$

$$Q = N[O, I]$$

where
f is the function
K is the king
Q is the queen
M is the map
I is the input
O is the output
N is the reverse-map

Regular machines

Regular machines can be described by

$$O = X[I, C]$$

$$C = Y[O, I]$$

$$I = Z[C, O]$$

where
I is the input
C is the control
O is the output
X is the actuator
Y is the connection
Z is the feedback

Irregular machines

Irregular machines can be described by

$$R = \Delta_1 [I_1, C_1, O_1]$$

$$R = \Delta_2 [I_2, C_2, O_2]$$

where
R is the resistance
Δ_1 is the primary daemon
I_1 is the primary input
C_1 is the primary control
O_1 is the primary output
Δ_2 is the secondary daemon
I_2 is the secondary input
C_2 is the secondary control
O_2 is the secondary output

Generative machines

Generative machines can be described by

$$N_1 = E_1 [I_1, C_1, O_1, N_2]$$

$$N_2 = E_2 [I_2, C_2, O_2, N_1]$$

where
E_1 is the primary economics
I_1 is the primary input
C_1 is the primary control
O_1 is the primary output
N_1 is the primary numenaire
E_2 is the secondary economics
I_2 is the secondary input
C_2 is the secondary control
O_2 is the secondary output
N_2 is the secondary numenaire

Empirical machines

Empirical machines can be described by

$$M = M_{1,2} = M_{2,1}$$

$$N_1 = E_1 \left[I_1, C_1, O_1, N_2, M, Y_1 \right]$$

$$N_2 = E_2 \left[I_2, C_2, O_2, N_1, M, Y_2 \right]$$

where

M is the market common to both the primary and secondary economies
$M_{1,2}$ is the primary market in the secondary economy
$M_{2,1}$ is the secondary market in the primary economy
E_1 is the primary economics
I_1 is the primary input
C_1 is the primary control
O_1 is the primary output
N_1 is the primary numenaire
Y_1 is the primary information
E_2 is the secondary economics
I_2 is the secondary input
C_2 is the secondary control
O_2 is the secondary output
N_2 is the secondary numenaire
Y_2 is the secondary information

Complete machines

Complete machines can be described by

$$\lim_{t->\infty} F_{1\to 2}(t) = \lim_{t->\infty} F_{2\to 1}(t) = \infty$$

$$M = M_{1\to 2} = M_{2\to 1}$$

$$N_1 = \mathfrak{E}_1 \left\{ E_1 \left[F_{2\to 1}(t), I_1, C_1, O_1, N_2, m_1, M, Y_1 \right] \right\}$$

$$N_2 = \mathfrak{E}_2 \left\{ E_2 \left[F_{1\to 2}(t), I_2, C_2, O_2, N_1, m_2, M, Y_2 \right] \right\}$$

where

$F_{1\to 2}(t)$ is the primary economy's financing of the secondary economy
$F_{2\to 1}(t)$ is the secondary economy's financing of the primary economy
M is the market common to both the primary and secondary economies
$M_{1\to 2}$ is the primary market in the secondary economy
$M_{2\to 1}$ is the secondary market in the primary economy
$\mathfrak{E}_1$ is the primary engineering
E_1 is the primary economics
I_1 is the primary input
C_1 is the primary control
O_1 is the primary output
N_1 is the primary numenaire
m_1 is the primary memory
Y_1 is the primary information
$\mathfrak{E}_2$ is the secondary engineering
E_2 is the secondary economics
I_2 is the secondary input
C_2 is the secondary control
O_2 is the secondary output
N_2 is the secondary numenaire
m_2 is the secondary memory
Y_2 is the secondary information

The End