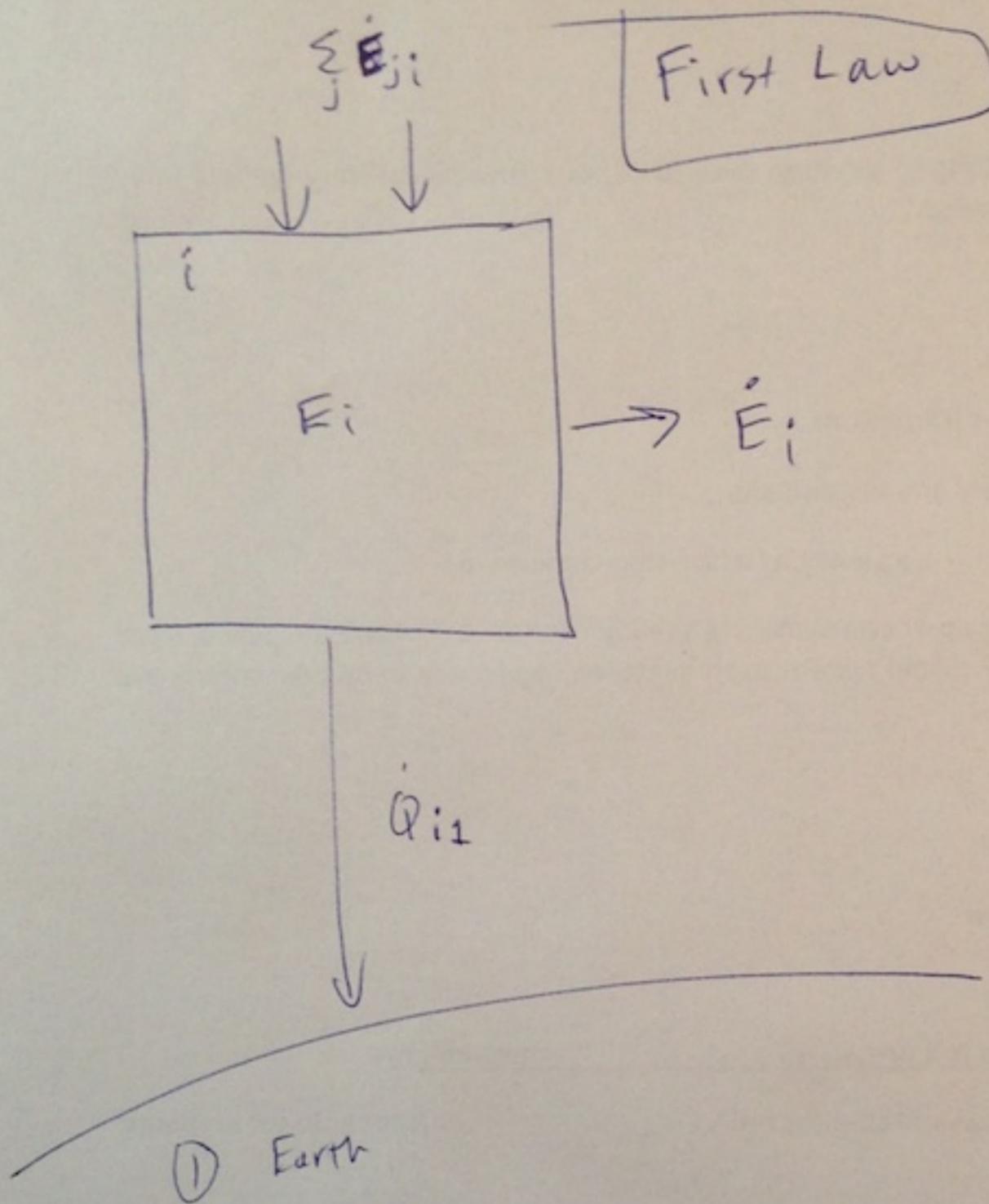


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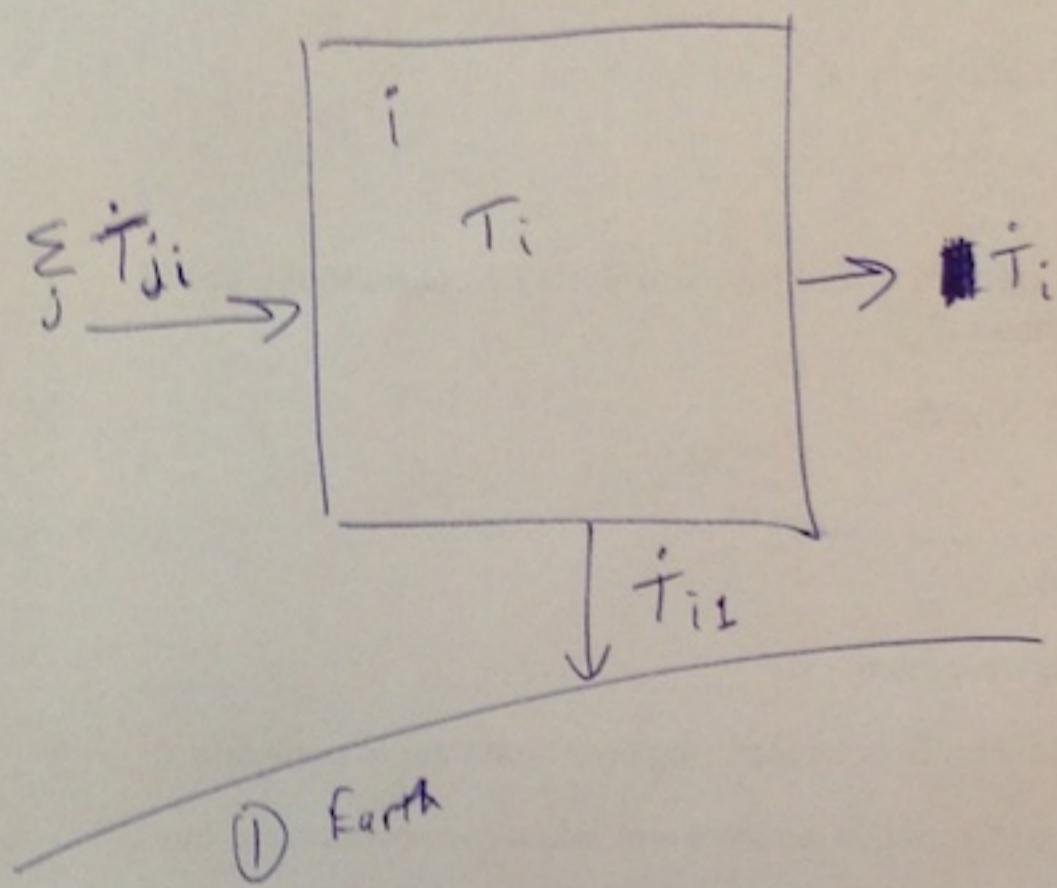
with
$$\frac{dE_i}{dt} = \sum_j \dot{E}_{ji} - \dot{E}_i - \dot{Q}_{i1}$$

$$\dot{Q}_{i1} = \sum_j \dot{E}_{ji} - \dot{E}_i$$

①

Total Energy

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$$\frac{dT_i}{dt} = \sum_j \dot{T}_{ji} - \dot{T}_i - \dot{T}_{i,1}$$

$$\frac{dE_i}{dt} + \frac{dB_i}{dt} = \sum_j \dot{E}_{ji} + \sum_j \dot{B}_{ji} - \dot{E}_i - \dot{B}_i - \dot{E}_{i,1} - \dot{B}_{i,1} \quad (2)$$

sub ① into ②

$$\frac{dE_i}{dt} = 0$$

$$\dot{E}_{i,1} = 0$$

Embodied Energy

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$$\frac{d\dot{B}_i}{dt} = \sum_j \dot{B}_{ji} - \dot{B}_i - \dot{B}_{i1} + \dot{Q}_{i1}$$

③

define $B = S + L$

$$\dot{B} = \dot{S} + \dot{L}$$

Durable Goods

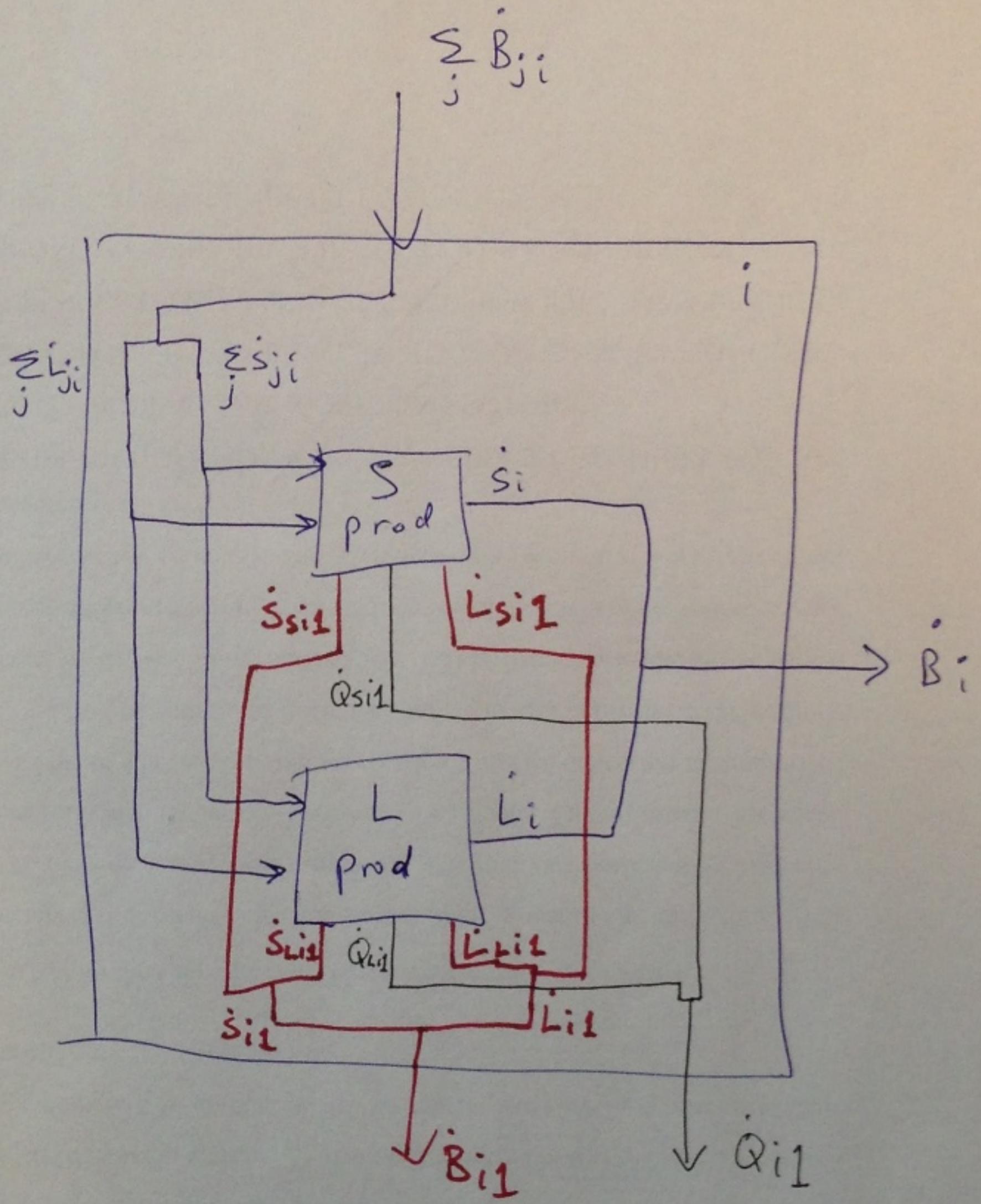
$$\frac{dS_i}{dt} + \frac{d\cancel{B}_i}{dt} = \sum_j \dot{s}_{ji} + \sum_j \dot{l}_{ji} - \dot{s}_i - \dot{l}_i - \dot{s}_{i1} - \dot{l}_{i1} + \dot{Q}_{i1}$$

$$\left[\frac{dS_i}{dt} \right] + \left(\frac{d\cancel{B}_i}{dt} \right) = \left[\sum_j \dot{s}_{ji} - \dot{s}_i - \dot{s}_{i1} \right] + \left(\sum_j \dot{B}_{ji} - \dot{l}_i - \dot{l}_{i1} \right) + \dot{Q}_{i1} \quad (4)$$

[] terms look almost identical to Eqn. ③ except for \dot{Q}
 () terms "

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Saying

$$\frac{ds_i}{dt} = \sum_j s_{ji} - s_i - s_{i1}$$

is akin to proportioning all of \dot{Q}_{i1} to L production. That doesn't seem right.

Saying

$$\dot{s}_{i1} = \sum_j \dot{s}_{ji}$$

(sort of) ignores \dot{s}_i and indicates that

indicates that L is converted to \dot{s} and that the conversion of L into \dot{s} is the only means of producing \dot{s} . Is this fair?