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## **The Cybernetics of Learning**

We live in a world full of chaos. A world where every living entity must learn to survive, evolve and progress. An entity which fails to do so is mercilessly driven to extinction.

A developed organization with its core-knowledge and learning abilities develops its own survival instincts exactly like a living organism. A surviving organization therefore, is also a living entity.

The cybernetics of learning, as described here, is applicable to all living entities, including individuals, organized groups and corporations.

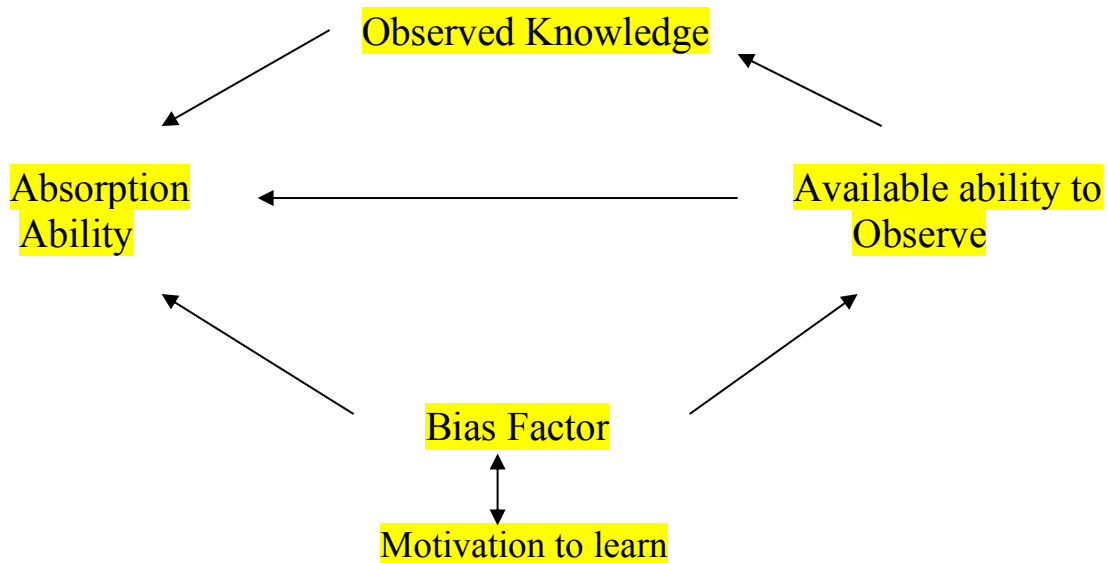
### **The Postulation:**

It is my understanding that there are four prime factors, which influence the process of learning:

- Motivation to learn
- Bias Factor \*
- Ability to Observe
- Ability to Absorb.

The relationship among the above is as drawn in the following diagram.

**Fig 1.**



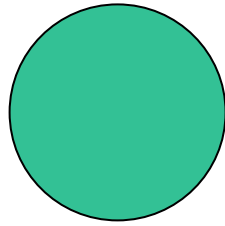
Let us take a closer look at these factors to understand the detailed implications of these in the process of learning.

**Motivation to learn:**

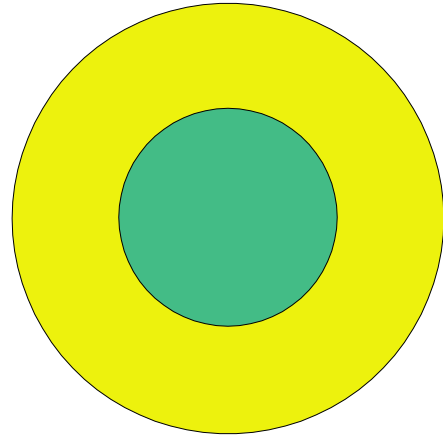
There is inherent thirst in the human mind to seek knowledge and reach the truth. Yet, in the world that we live in, the ultimate intention becomes of little significance as we try and seek goals blurred in chaos and illusion. The “success”, and “failure”, the euphoria and frustration, thus experienced, influences the motivation and ability to learn.

**Bias Factor:**

Bias factor is a measure to define the degree of illusion in a living entity. To understand the factor let us refer to the figure below.



**Fig 2a.**



**Fig 2b.**

In fig (2a) let us assume that this small circle represents living Entity.

In fig (2b) the circle surrounding the entity represents the real knowledge in the context of a subject. This knowledge however, is measured and perceived differently by the entity depending upon its own biases( or illusions). Let us refer this as felt knowledge. This relationship between the real knowledge and the felt knowledge could allow us to interpret the Bias factor.

$$(B) \text{ Bias Factor} = \frac{\text{Felt Knowledge (FK)}}{\text{Real Knowledge (RK)}}$$

It can be safely assumed that an entity with pragmatic frame of mind in the context of a subject will have a Bias factor of 1, while an entity in illusion, will demonstrate a huge fluctuation.

**Ability to Observe:**

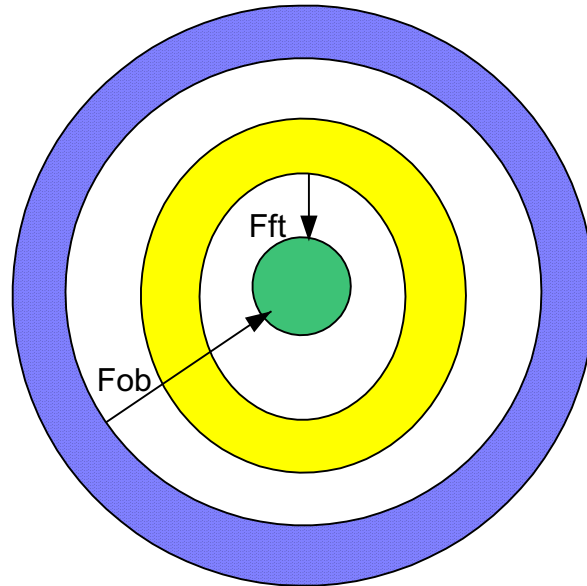
Let us now look at the next element in the process of learning.

Every living entity has the ability to scan the environment, competition, influences, changes and other relevant knowledge banks. The capacity to observe in this context is measured here as Ability-to-observe. However its ‘Ability-to-observe’ is affected by the Bias factor inherent with the entity in the manner as depicted by the following formula..

$$\text{Available-Ability-to-Observe} = \frac{1}{\text{Bias Factor}} \times \text{Ability-to-observe}$$

And using the available capacity to observe the entity brings in the observed knowledge into a layer, represented by the outer circle.

**Fig 3.**

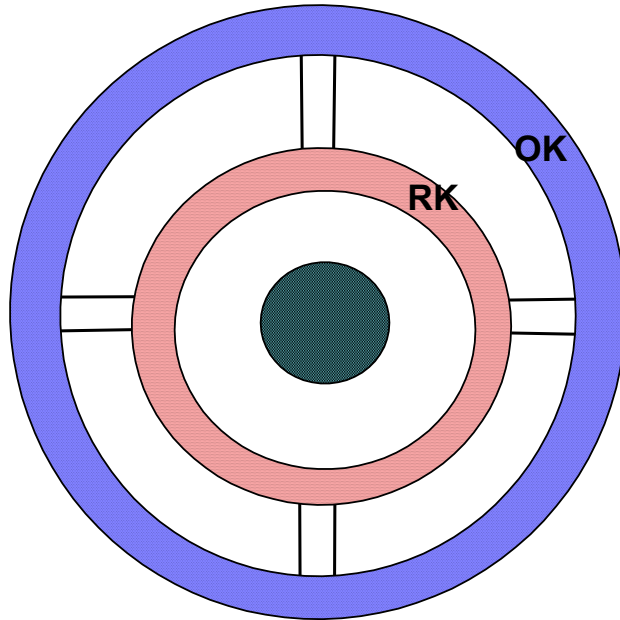


**Ability to Absorb:**

Absorption may be defined as the process where the entity takes the “observed knowledge” and integrates it with the Real Knowledge around the entity.

As in Fig (4) the connectors joining the outer circle and the inner circle represents the dissemination abilities present for the absorption. In the normal circumstances presuming that the entity is well equipped to disseminate the Observed Knowledge –(OK) through its absorption channels represented by the four connectors, the observed knowledge will immediately integrate with RK to form the New real knowledge of the entity.

**Fig 4.**



**Back to Bias factor:**

Let us presume that Felt Knowledge exerts a force  $F$  (ft) on the Entity and Observed Knowledge exerts a force  $F$ (ob) on the Entity, as in Fig (3).

And say,  $F$  (ft)- $F$  (ob) =  $\Delta F$   
 [  $\Delta F$  is the differential Force]

This differential Force has the direct effect on the Bias Factor in the following manner.

Modified Bias factor = Bias Factor x  $\frac{\Delta F}{F$  (ft) [Where  $\Delta F > 0$ ]

The Observed Knowledge, thus, affects the Bias Factor which in turn alters the motivation to learn. Hence learning itself changes the learning ability of a living entity.

Thus goes on the cycle of learning.

## **Derivations from the postulation.**

1. Every living entity makes an assessment of its core knowledge on a subject under the influence of its motivation and state of mind. The Felt Knowledge, thus assessed, is often different than the Real Knowledge. This creates a bias in its core.
2. The Bias acts against the Entity's Observation Ability and generally identifies only a small fraction of the available knowledge, for absorption.
3. This Knowledge is then, absorbed by the Entity creating a new level of Real Knowledge and a modified Bias Factor. In group Entities and corporations, however, the efficiency of absorption will depend upon the dissemination channels established as a part of the infrastructure dedicated to this purpose.
4. The new knowledge and the thus modified bias, influences the motivation of the Entity, causing changes in the personality of the Entity.