The TOC Pillars
The Foundations That Shape all of TOC

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Content

• History
• The five pillars
• Parallels between the Pillars and other parts of TOC
  – For next time or “go and learn”
History

• OPT principles (parallel to Demming’s 14 principles)
• The Race, Essays on TOC, etc.
• Focusing Steps (The Goal)
• Satellite Series (SLP)
  – First mention of 2 principles (explicitly) + 1 (implicitly)
• Beyond the Goal
  – Technology based principle
History

- Necessary and Sufficient series
- The Choice (4 pillars)
- Preface of The TOC Handbook
- Introduction to the unfinished The Science of Management
Definition of TOC

• TOC, briefly is:

Focus

• Do what should be done and do nothing else

• So: what should be done? And what shouldn´t?
The Pillars

1. Simplicity
2. Consistency
3. Respect
4. Variability
5. Change

- Newton (Principia) N&S#2, The Choice, …
- (SLP #7), (N&S#9) The Choice
- TQM, Intro to Science of Management
- The Choice, Never Say “I Know”, SOSOG,…
Newton’s Principia

*Natura Valde Simplex est et Sibi Consona*

• Nature is very simple and harmonious with itself

• Nature values simplicity = Simplicity

• is harmonious with itself = Consistency
Simplicity

• “The more complex the problem, the simpler the solution must be!”

• Cornerstone of Humanity and TOC:
  – We have limited capacity (see Herbert A. Simon’s Bounded Rationality)
  – We only thrive as species because we tackle more and more complex situations successfully
  – TOC is trying to make this THE way to manage human organizations (complex by nature)
1 Simplicity

• Where does it come from?
  – Newton

• Based on:
  – Exponential statistical distributions (Pareto)
  – Strongly Connected Systems = few degrees of freedom
  – Causes converge on Anamnesis
  – Flow capacity (in statistically variable dependent systems) is dominated by one (or few) elements’ capacity
Simplicity

Strongly Connected Systems = Few degrees of freedom

• The more relations among elements of a system, the less one element behavior is independent of others

• Less degrees of freedom means less variables to explain the whole system, and less points to control the whole system
Simplicity

Exponential statistical distributions

• Most independent phenomena follow an power-law (exponential) distribution

• That is: a minority of elements determine a majority of effects

• Most well-known case: Pareto Principle (20%-80%) dictates a power law with an exponent of 1.161...
Simplicity

Causes converge (Anamnesis)

• The more effects you have the less causes are likely to have produced them:
Simplicity

Flow capacity is dominated by few elements’ capacity

• In dependent processes with finite resources (and variability), few or (many times) one, resource capacity determines the flow speed.
• The weakest link, bottleneck, leverage point, chocking point, etc.
• Notice variability enhances the effect and sometimes determine the critical resources.
• (Sandclock effect)
Consistency

• There are no conflicting facts in nature (only interpretations)
• All inconsistency are a product and reside on the mind.
• Any Theory that tries to achieve a lasting impact (and exponential growth) must be consistent.
• How many heights a tower can have?
Consistency

• Regarding a inconsistent argument as a fact is the opposite of Consistency.

• Any inconsistency / conflict / dilemma must, therefore, be a product of the mind

• Notice that entertaining inconsistent thoughts is possible in human minds, but costly.

• Therefore solving inconsistencies produces better utilization of the human mind besides solid theories.
People are not stupid, even when they do stupid things” E.G.

People Are Good, even when they do Bad Things

- This is a working assumption to force us to ask: **why** the action was taken instead of **who** did this.
- I.e. what is the wrong assumption/idea instead of the wrong person.
Respect

• This also implies: a complete
• Avoidance of blaming and labeling of people
  = Respect for everyone
• Distrust of any idea (ours or not)
  = Disrespect for any idea
Respect

- What about exceptions?
- **If** they exist they should be disregarded because:

  - “Bad” mean bad consequences
  - Those labeled “bad” are beyond redemption
  - I have to check people
  - I have less chance of stopping or minimizing bad consequences in the future
  - I don’t try to really understand “bad” people
  - I use my (limited) capacity in labeling instead of understanding
  - Some people may be “bad”
My kid is celiac

She says: “I can’t eat gluten”

Colleagues label her “fussy”

Conflicts flourish...

Her colleagues have some wrong idea...

Her colleagues are idiots...

Get new colleagues? Nothing?

Kids are saturated with “fashion” diets (among them the “gluten free” one)

My kid says “If I eat gluten my intestines inflame and bleed”

Colleagues say “wow” and help her check food labels etc.
Variability

“Reacting to noise increases variability”

• Our fear of the unknown drive us to create ever more sophisticated solutions and dedicate more and more attention to details. To optimize within the noise.
• This is the basis of TOC buffers
• Concept articulated in TQM
Variability

- Well illustrated by the Funnel Experiment:
Variability

- Incorporated as working procedures (buffer management):

![](chart.png)
Change

“Never say I Know”

• The *stronger* the base the higher the next jump

• Change is not optional.
  – Environments change
  – Successful solutions speed up until obsolete
  – Human minds cannot stand sameness

• POOGI
Change

“Never say I Know”

• Saying you “know” blocks further thinking.
• (BTW saying “I don’t know” also)

The stronger the base he higher the next jump

• Using the simplicity principle we can aspire exponential growth, IIF the non constraints hold...
What is TOC?

- Checklist:
  1. Simplicity
  2. Consistency
  3. Respect
  4. Variability
  5. Change
Questions?
About Humberto

• Husband and father changing the world one person at a time
• Scientist seeking to apply science to people’s endeavors
• Hunter of hidden assumptions
• Teacher, student and colleague of students
• Strong believer of values over tools
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