

Gilb's Laws: Uncommon Sense for Planners and Decision- Makers

12/08/2010 15:58

© Tom@Gilb.com, 2006-08-07

PREFACE

This unchanged draft from 2006 is put on my website (Gilb.com) August 2010, so as to see interest and receive feedback (tmsgilb@gmail.com). In some parts there is no detail, only a sketch of the content. After 4 years I decided it was better to put it on the website than to keep it hidden. I often write draft manuscripts that are not published, and I also can spend 13 years between published books – trying to get the right quality. My last book (Competitive Engineering 2005) was intentionally a voluminous handbook. Now I am struggling to find a way to convey my ideas in a brief and accessible form, for many purposes. I have about 6 prototypes like this one! As Churchill noted, it is more difficult to be brief.

I am currently working on another project (**'Plan Smart'**), using Potshots, started August 2010, which is more of a 'workshop method' for teaching Planguage and Evo. (do ask me to share details if you have an interest in this).

I left *this* draft aside, because I did not feel I should pursue it. But I may return to it or use it as a basis for something. In any case please enjoy it!

I have just now added some URL Links to papers of more depth, to make up for the sketchiness of the manuscript.

A NOTE ON MY 'PRINCIPLES' (Jokingly called 'Laws' by some)

A large Collection of Gilb's Principles is found in my books PoSEM 88, CE 2005, and my papers and slides at gilb.com downloads. A summary of my Competitive Engineering (100+) principles, and some others is at

http://www.gilb.com/tiki-download_file.php?fileId=352

If you need more depth to the principles, my books are the place. Initially 'Principles of Software Engineering Management (PoSEM, 1988, over 20 printings to date, about 144 principles. Principles depth is also found in 'Competitive Engineering', samples of which are at

http://www.gilb.com/tiki-download_file.php?fileId=26 Ch 5 Scales of Measure

http://www.gilb.com/tiki-download_file.php?fileId=77 Ch 10 Evo

http://www.gilb.com/tiki-download_file.php?fileId=387 Glossary

The original Gilb's 'Laws' were published by me in Datamation, March 1975.

a (poor, I will do better if asked!) photocopy, with the laws printed separately and more nicely is at

http://www.gilb.com/tiki-download_file.php?fileId=338

They seem to be twittered daily even today (sometimes without credit!), the one usually quoted is:

“Computers are unreliable, but humans are even more unreliable.”

It has been encouraging to know 35 years later, that I managed to capture some observations that others think are worth sharing!

A Good example of quoting them is at

<http://www.sanjeev.net/murphys-laws/murphys-laws-065.html>

So, feel free to quote and twitter my principles in this draft – and others downloadable above. And, if you want to credit them:

Use 'Tom Gilb', or '© Tom Gilb' (year), or 'from Gilb.com', or 'Source: Gilb.com'

Nice to bring people to the website! You can also say 'Quoted with Permission'!

It is wise to share wisdom, but not wise to pretend you are the author!

Introduction:

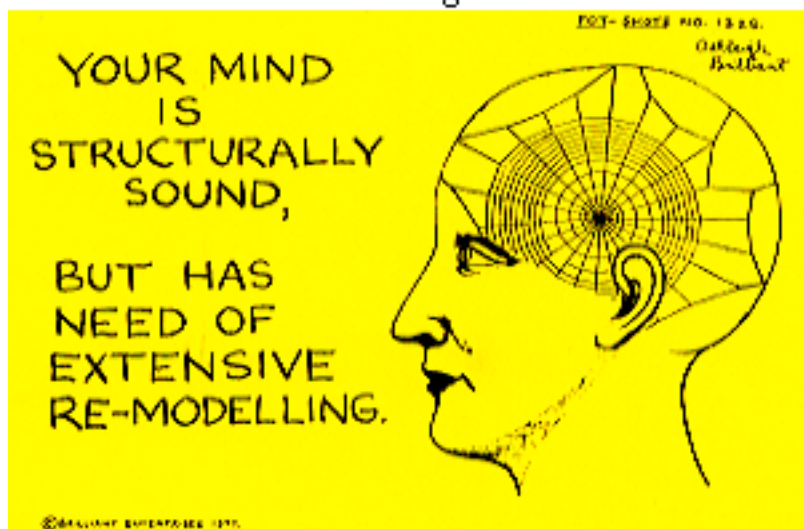
Mind Tools:

Purpose: show how to avoid planning failures and develop habits that promote successful outcomes.

Premise: conscious effort will permit us to improve our planning.

Method: integrate the measurement of selected quality factors into our planning process.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

1. Real Goals Law

Know what you want and show what you want:

Your 'real goals' are probably well hidden – even from yourself.

POT-SHOTS — Brilliant Thoughts in 17 words or less



If we do not know, and document our 'real goals', we are unlikely to reach them on time! If we don't document them, we cannot easily analyze them, and cannot easily and systematically change them in the right direction. If we don't document our goals we cannot easily communicate them correctly to other people who might help us reach them.

TWO big problems stand between

1. Making our goals make sense to ourselves and to others.
2. Making sure our goals are what we really want.

We could have our most critical goal worded so badly that it gets misunderstood and consequently not delivered. Just as easily, we could have one written very clearly but we might not really care much about it. To succeed reliably we need to ensure that neither of these happens by mistake.

http://www.gilb.com/tiki-download_file.php?fileId=28

Real Requirements Paper

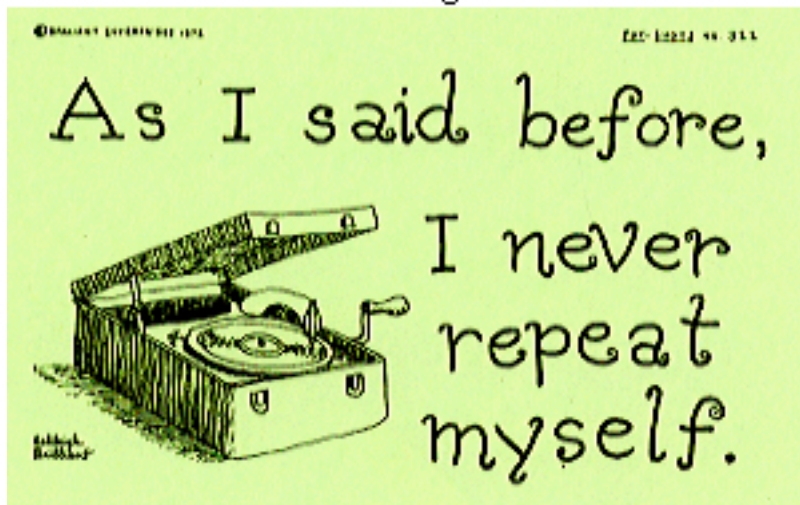
Gilb's Real Goals Principles - 10 Practical Principles for Determining and specifying real goals:

How do we make sure our goals are clear enough?

1.1 Rewrite: Keep on rewriting goals until you and others sense they are clear, unambiguous, and can be measured or tested in practice for being met.

<note to reader of manuscript: I expect to supply more detail, up to a page for every principle. But for the moment I just want to get the skeleton of 100 principles and corresponding Pot-Shots established and see how that feels.> tg Aug 15 2006

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

1.2 Quantify: If they vary in any sense (qualities, costs) then quantify them: define a scale of measure and put a number on your goal level.

For example:

Initial goal statement: "*better flexibility*"

Improvement:

Flexibility:

Scale: speed of bringing old employees to average productivity in new processes.

Goal: 1 day (within same working day as introduction)

http://www.gilb.com/tiki-download_file.php?fileId=36 Quantifying Stakeholder Values paper

http://www.gilb.com/tiki-download_file.php?fileId=124 Quantifying Quality Paper

POT-SHOTS — Brilliant Thoughts in 17 words or less



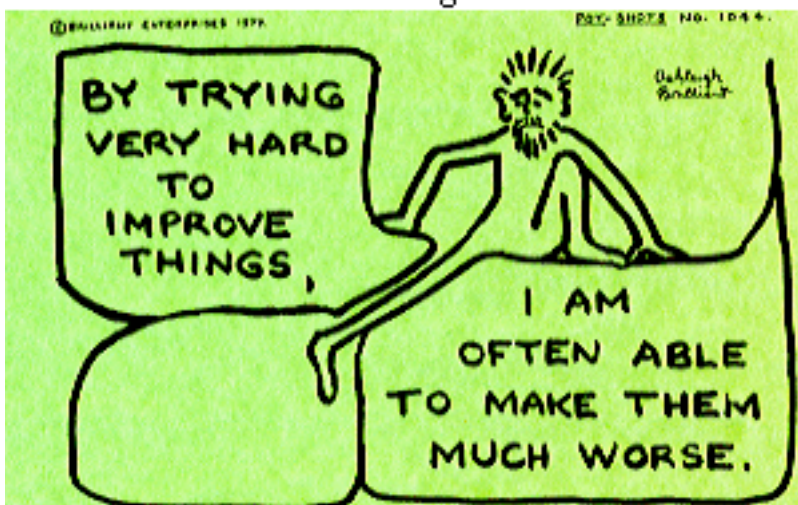
© Ashleigh Brilliant

www.ashleighbrilliant.com

1.3 Qualify: add information to make your goal more specific.

For example: Stakeholders, Risks, Issues, Supports, Impacts,

POT-SHOTS — Brilliant Thoughts in 17 words or less

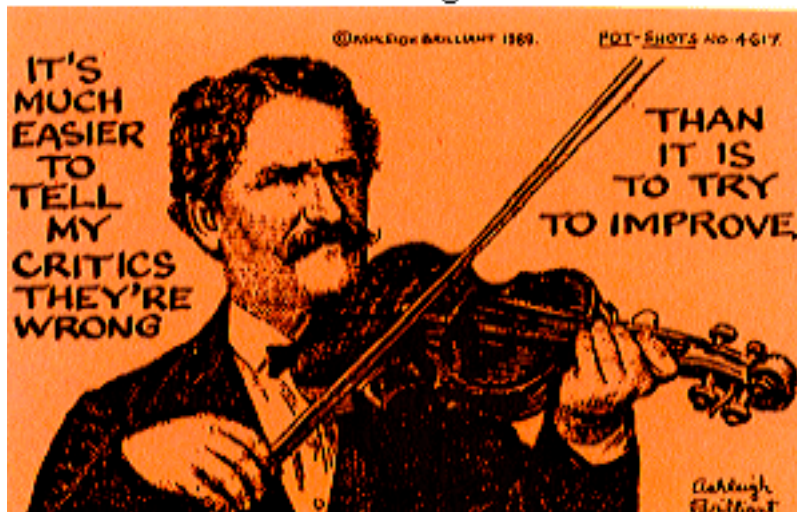


© Ashleigh Brilliant

www.ashleighbrilliant.com

1.4 Differentiate: recognise and specify that you have different goal levels for different situations

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

1.5 Justify:

POT-SHOTS — Brilliant Thoughts in 17 words or less



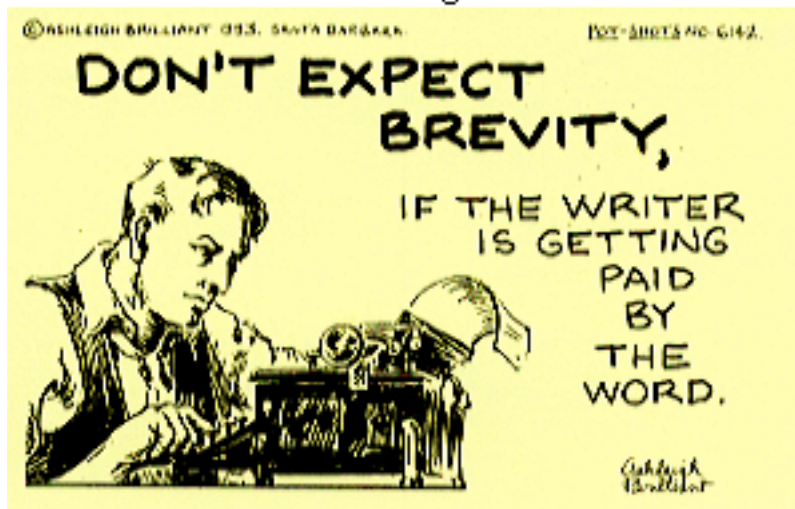
© Ashleigh Brilliant

www.ashleighbrilliant.com

How do we make sure our goals are the right ones?

1.6 Ends: Ends not means:

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

1.7 Why?: Asking Why? Brings you up towards real goals

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

1.8 Who? : Relate the goal to specific stakeholders:

POT-SHOTS — Brilliant Thoughts in 17 words or less

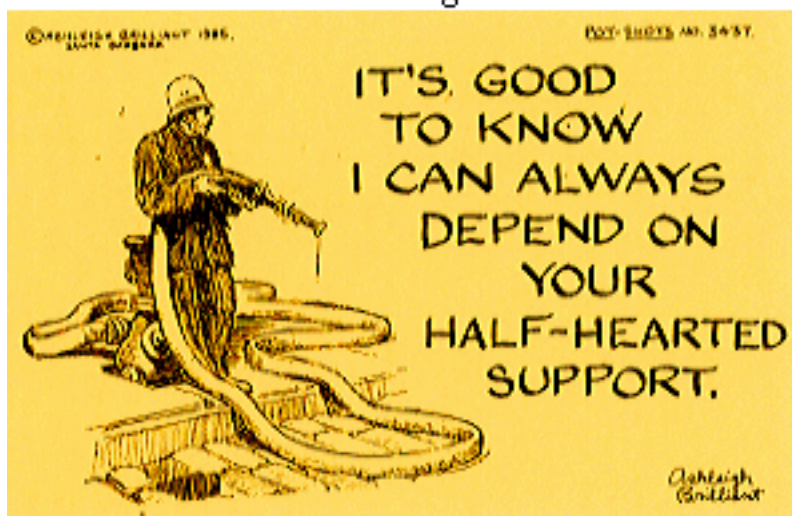


© Ashleigh Brilliant

www.ashleighbrilliant.com

1.9 Supports: Specify higher level Goals Supported by This goal:

POT-SHOTS — Brilliant Thoughts in 17 words or less

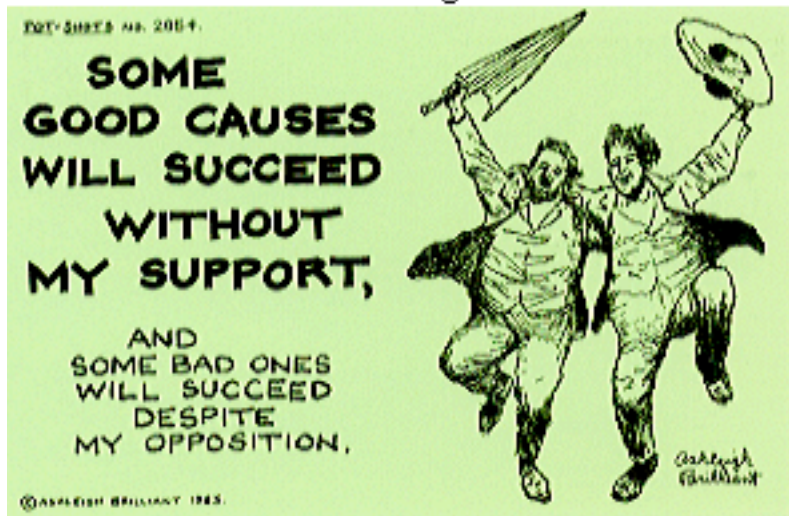


© Ashleigh Brilliant

www.ashleighbrilliant.com

1.10 Supported By: Specify Lower-Level Goals that support this Goal

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

2. Stakeholders Law

Your Stakeholders determine your real goals – and they may not realize it.

POT-SHOTS — Brilliant Thoughts in 17 words or less



Stakeholders are those people, group, and things (like laws and standards) that influence our objectives, and requirements (like constraints). They influence our requirements because we want to please them, or we want to avoid displeasing them. We can deal with them now, or pay the price of not having done so later. It is usually more efficient to deal with them immediately. So, analyzing who your stakeholders are; and what they might want from us – in order to determine our requirements, and then to prioritize their delivery – is just good practice.

You will find, even for 'small' projects, that it is easy to brainstorm many dozen stakeholders. That give no guarantee that you have thought of all the critical ones.

For a customary area of work, you can expect to learn a lot about your stakeholders from previous experience in that domain. But that is still no guarantee that new stakeholders, and new stakeholder needs for old stakeholders have been identified.

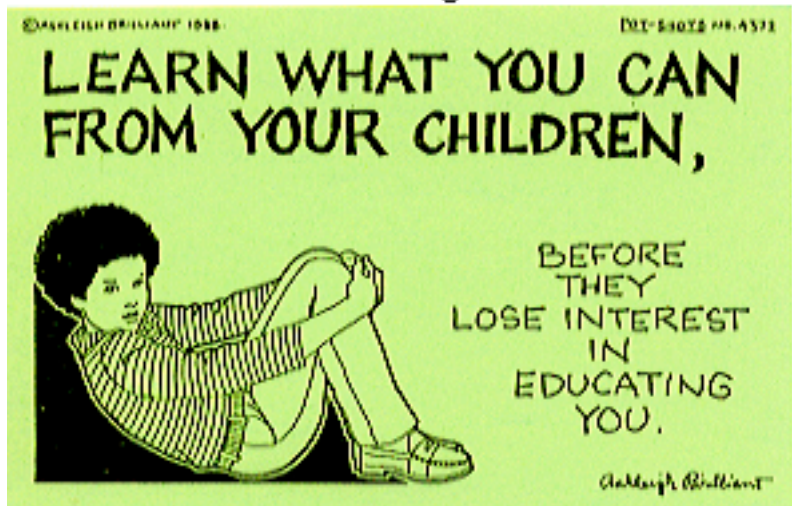
However a serious initial effort, updated by constant vigilance – for example during reviews and early trials – can be expected to be much better than no systematic effort at all (the norm today).

Gilb's Stakeholder Principles:

2.1 Consciousness: Be Conscious of your stakeholders: before they knock you unconscious

Make a list of around 40 stakeholders. There may be more or less, but this is an enlightening process.

POT-SHOTS — Brilliant Thoughts in 17 words or less



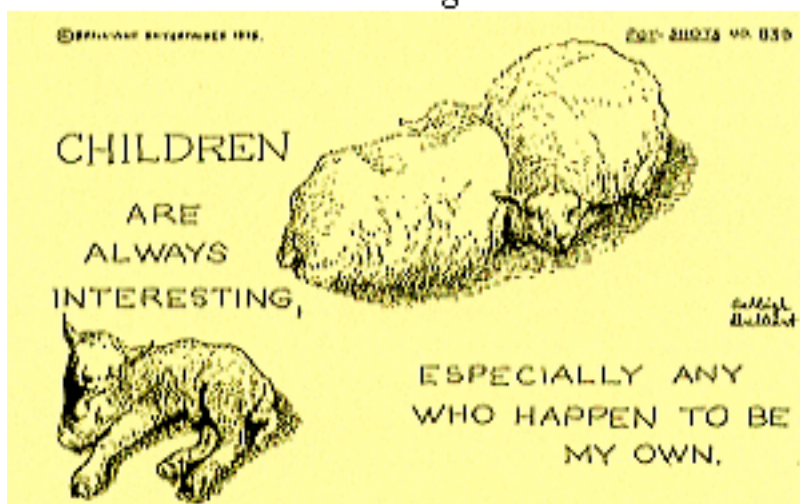
© Ashleigh Brilliant

www.ashleighbrilliant.com

2.2 Internal/External: Distinguish between internal and external stakeholders

This will help you make sure that your many internal stakeholders – people who produce or develop your products and services – and maintain and operate them.

POT-SHOTS — Brilliant Thoughts in 17 words or less

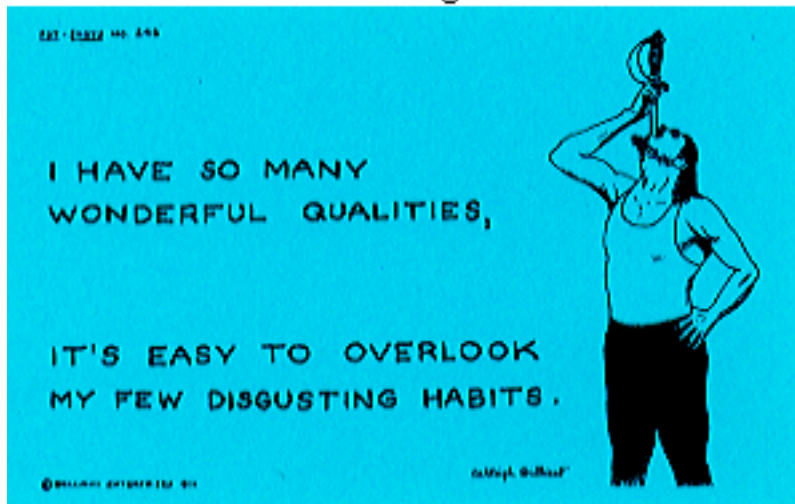


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.3 Plurality: Assume stakeholders have more than one 'need' that you must note as a 'requirement' for your project (a goal or constraint)

POT-SHOTS — Brilliant Thoughts in 17 words or less

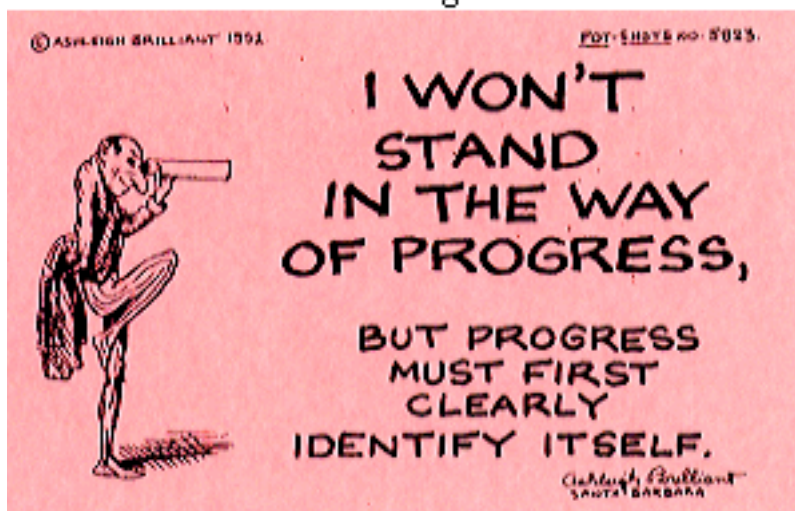


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.4 Clarification: Quantify or clarify unambiguously the stakeholder-driven requirements.

POT-SHOTS — Brilliant Thoughts in 17 words or less

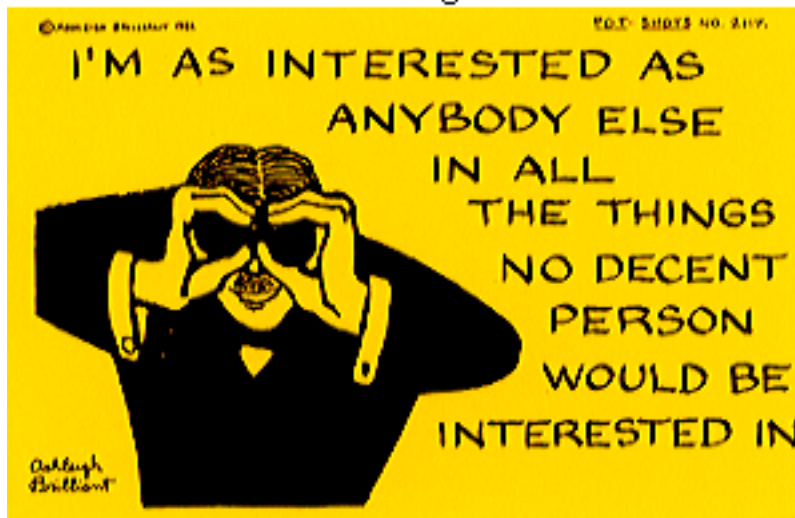


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.5 Verification: verify with real stakeholders, or experts on them, that your clarified requirements really represent their needs

POT-SHOTS — Brilliant Thoughts in 17 words or less

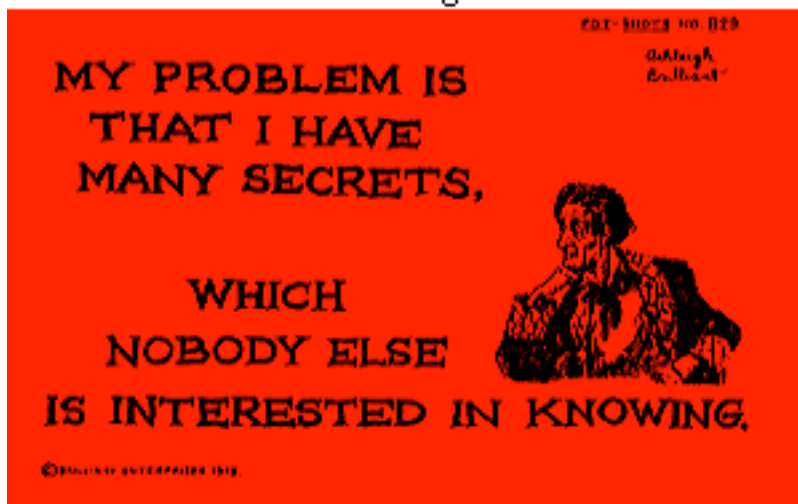


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.6 Analyze without Commitment: Do not agree to any stakeholder requirements in advance – it is too early to determine their priority – and some may never be acceptable or necessary. You will never satisfy all needs of all stakeholders – but you do need intelligent prioritization of them

POT-SHOTS — Brilliant Thoughts in 17 words or less

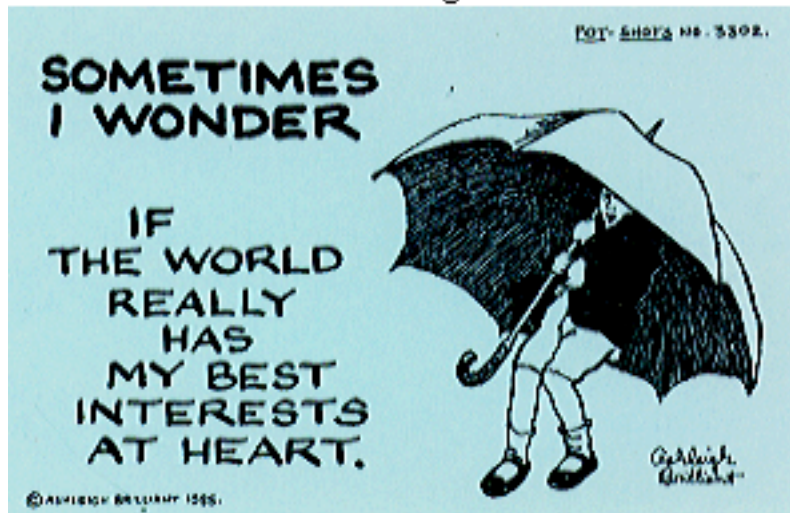


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.6 Differentiate: one general class of stakeholders (example Adult Buyers) may in fact have many different levels of requirement in the same area (example Reliability) depending on timing and circumstances; so make sure you clarify the different need, and do not lump them all together into one 'requirement' (like 'high reliability').

POT-SHOTS — Brilliant Thoughts in 17 words or less

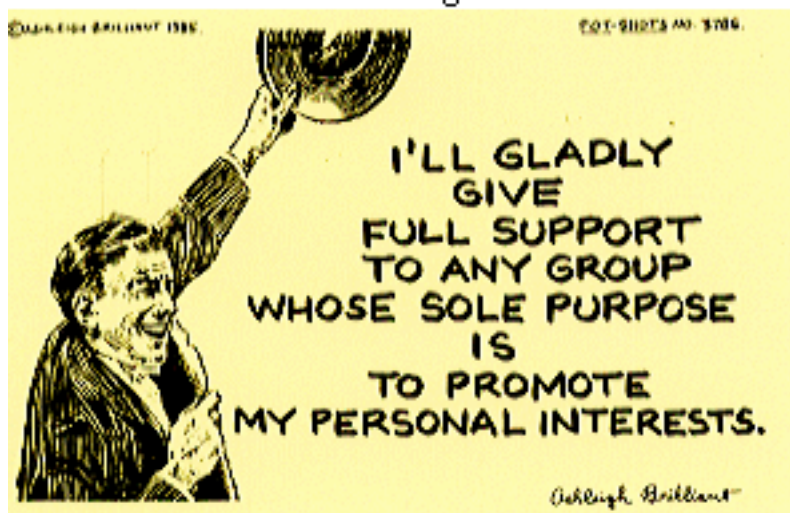


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.7 Background: collect and document any potentially useful background information such as sources, risks, issues, dependencies, justification.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

2.8 Design and Cost: Design solutions and strategies to meet your goals, then estimate the costs for your designs.

POT-SHOTS — Brilliant Thoughts in 17 words or less

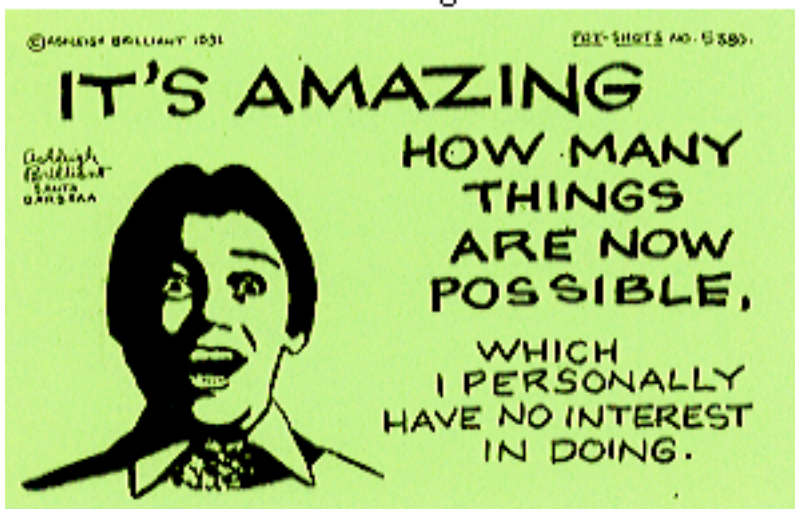


© Ashleigh Brilliant

www.ashleighbrilliant.com

2.9 Prioritize: Based on value and costs of solutions, decide which ones fit your budgets or constraints, and which ones do not. You can make these decisions in small steps, rather than all at once.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

http://www.gilb.com/tiki-download_file.php?fileId=48

Choice and priorityPaper

http://www.gilb.com/tiki-download_file.php?fileId=60

Managing Priority paper

2.10 Deliver and Learn: Deliver the initially prioritized solutions, and see what value they really deliver, what they really cost; and what other unexpected things happened (new stakeholders or new stakeholder needs?). Then on that basis decide what to prioritize doing next.

POT-SHOTS — Brilliant Thoughts in 17 words or less



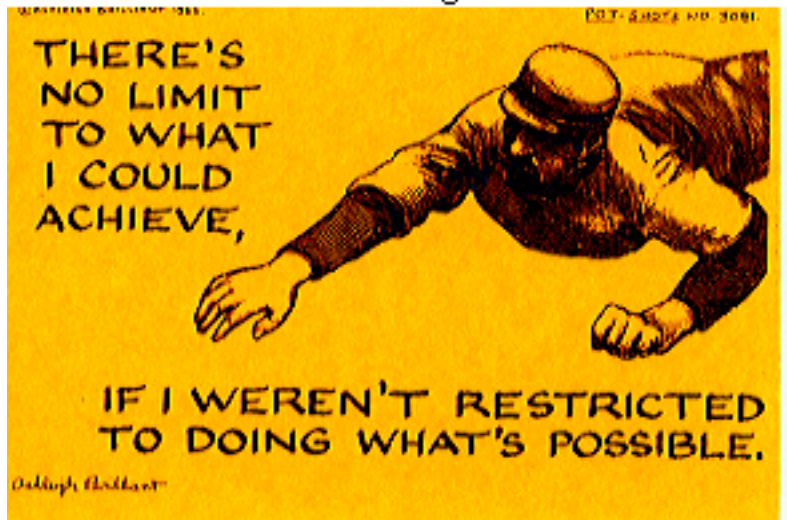
© Ashleigh Brilliant

www.ashleighbrilliant.com

3. Constraints Law

Critical constraints can crucify your quest, if not completely considered

POT-SHOTS — Brilliant Thoughts in 17 words or less



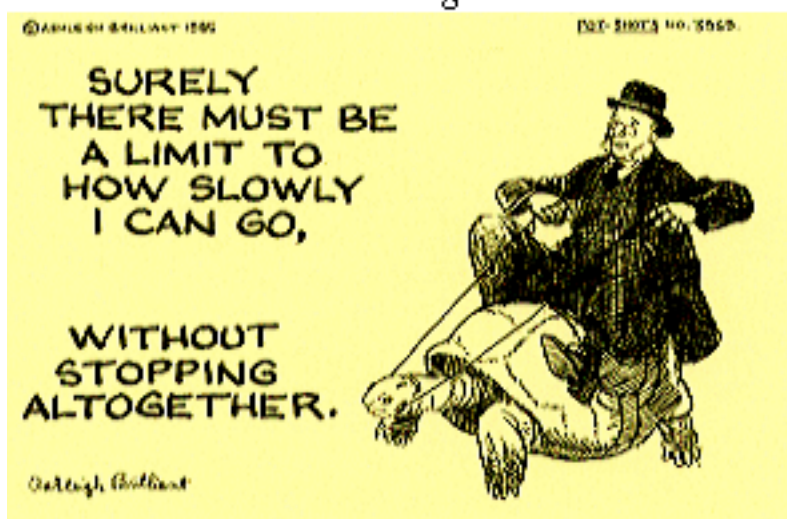
© Ashleigh Brilliant

www.ashleighbrilliant.com

Gilb's Constraint Principles:

3.1 All systems have real constraints, even if you have failed to identify them yet.

POT-SHOTS — Brilliant Thoughts in 17 words or less

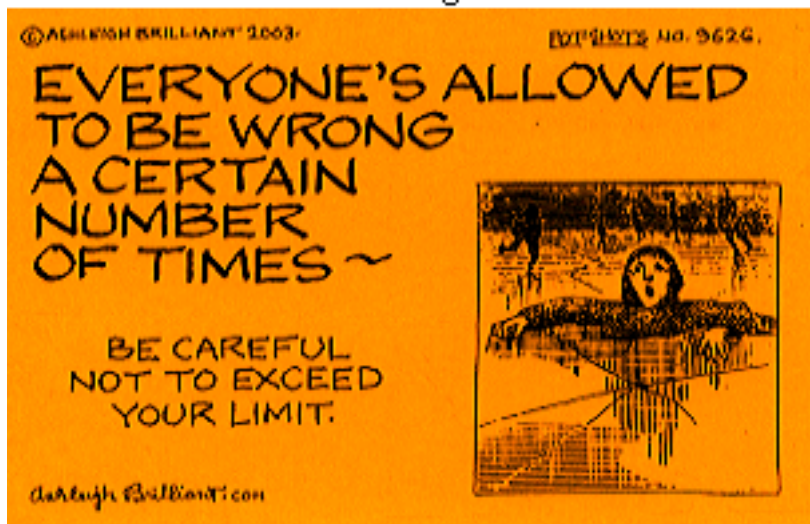


© Ashleigh Brilliant

www.ashleighbrilliant.com

3.2 Projects have constraints, and the resulting systems have constraints, some of which are different from the project constraints.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

3.3 Constraints, like all other requirements, have different priorities.

POT-SHOTS — Brilliant Thoughts in 17 words or less

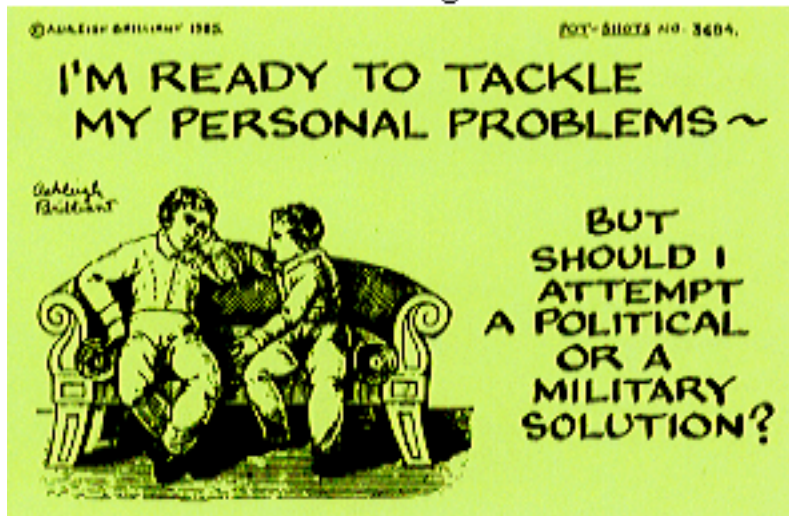


© Ashleigh Brilliant

www.ashleighbrilliant.com

3.4 Constraints, like all requirements, have many potential solutions for meeting them,

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

3.5 A given constraint solution has a cost, that might exceed the cost of not dealing with the constraint.

POT-SHOTS — Brilliant Thoughts in 17 words or less

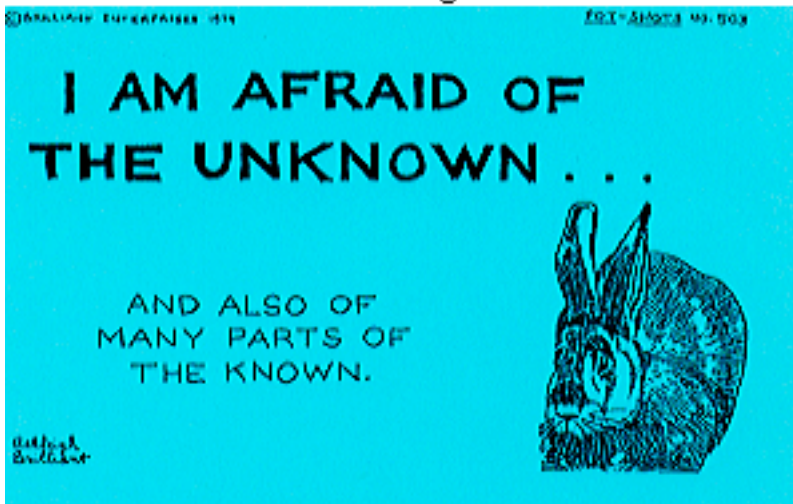


© Ashleigh Brilliant

www.ashleighbrilliant.com

3.6 Multiple simultaneous constraints must be considered, when finding solutions, for multiple project objectives.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

3.7 Any identified constraint may be false, or may change at any time – so constraint specifications must be continuously updated and reconsidered.

POT-SHOTS — Brilliant Thoughts in 17 words or less

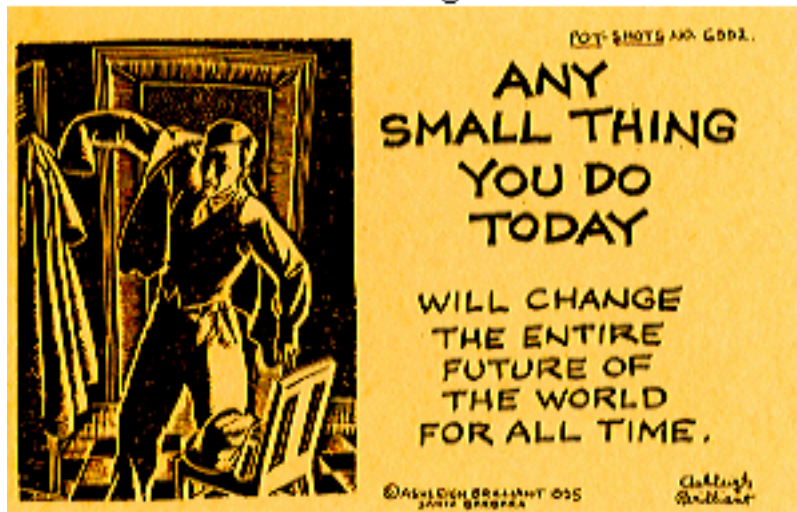


© Ashleigh Brilliant

www.ashleighbrilliant.com

3.8 The consequence for solutions, and therefore all costs and benefits, of one slight change to a prioritized constraint can be unpredictably dramatic.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

3.9 Any constraint can change at any time, for better or for worse for you.

POT-SHOTS — Brilliant Thoughts in 17 words or less

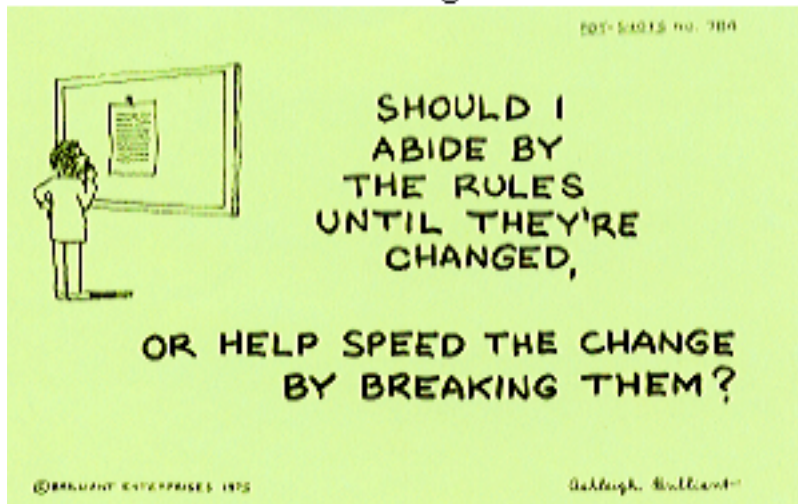


© Ashleigh Brilliant

www.ashleighbrilliant.com

3.10 One last resort way to discover constraints is to bump into them in practice, but early.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

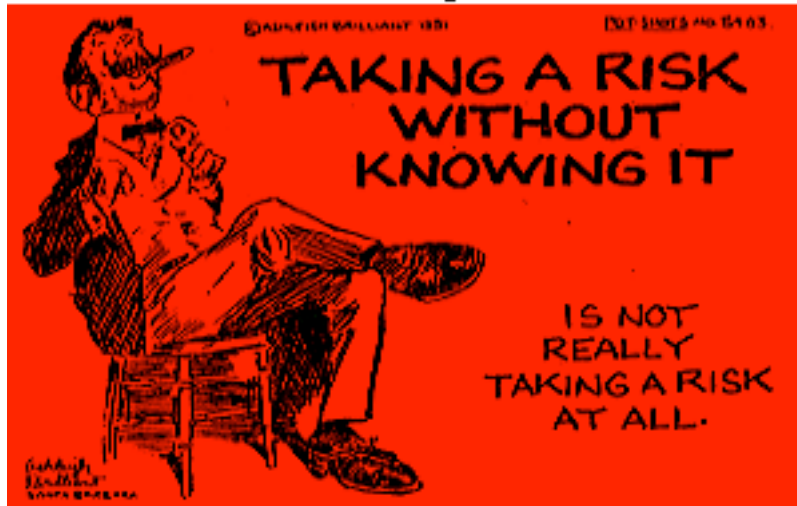
www.ashleighbrilliant.com

4. Risk Law

Risks worthy of attack, will prove their worth by fighting back (Gilb, 1988, PoSEM)

Risks are unpredictable – but more (risk) work will give less pain

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

Gilb's Risk Principles: (Source: Gilb, CE book, Fig. 1.2, 2005)

4.1 **Quantify requirements:** All critical performance and resource requirements must be identified and quantified numerically.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

http://www.gilb.com/tiki-download_file.php?fileId=20

Risk Paper

4.2 **Maximize profit, not minimize risk:** Focus on achieving the maximum benefits within budget and timescales rather than on attempting to eliminate all risk.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

4.3 **Design out unacceptable risk:** Unacceptable risk needs to be 'designed out' of the system consciously at all stages, at all levels in all areas, for example, architecture, purchasing, contracting, development, maintenance and human factors. This means selecting lower-risk options.

POT-SHOTS — Brilliant Thoughts in 17 words or less

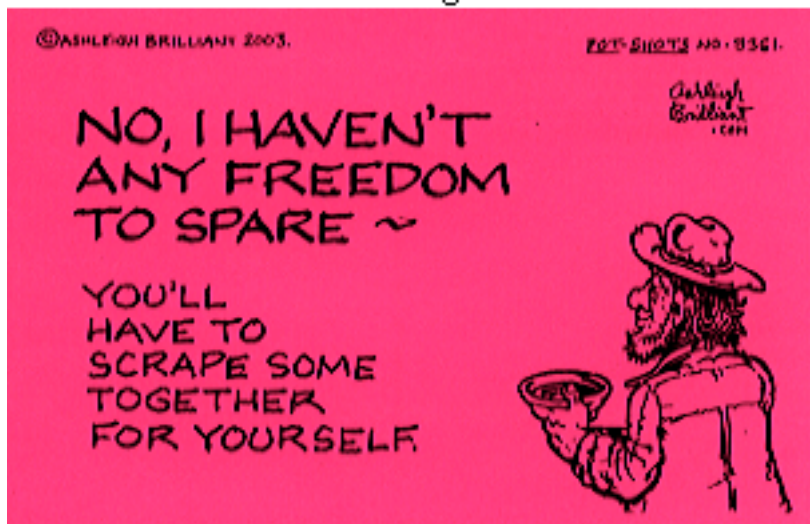


© Ashleigh Brilliant

www.ashleighbrilliant.com

4.4 **Design in redundancy**: When planning and implementing projects, conscious backup redundancy for outmaneuvering risks is a necessary cost.

POT-SHOTS — Brilliant Thoughts in 17 words or less

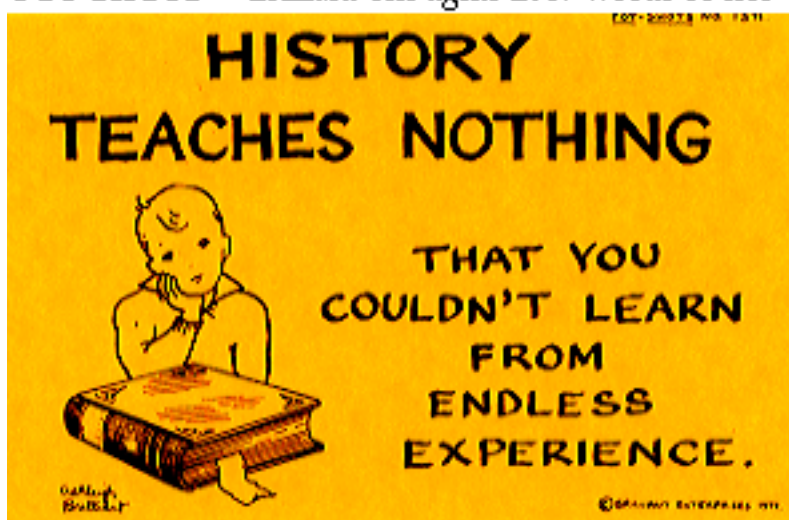


© Ashleigh Brilliant

www.ashleighbrilliant.com

4.5 **Monitor reality**: Early, frequent and measurable feedback from reality must be planned into your development and maintenance processes, to identify and assess risks before they become dangerous.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

4.6 **Reduce risk exposure**: The total level of risk exposure at any one time should be consciously reduced to between 2% and 5% of total budget.

POT-SHOTS — Brilliant Thoughts in 17 words or less

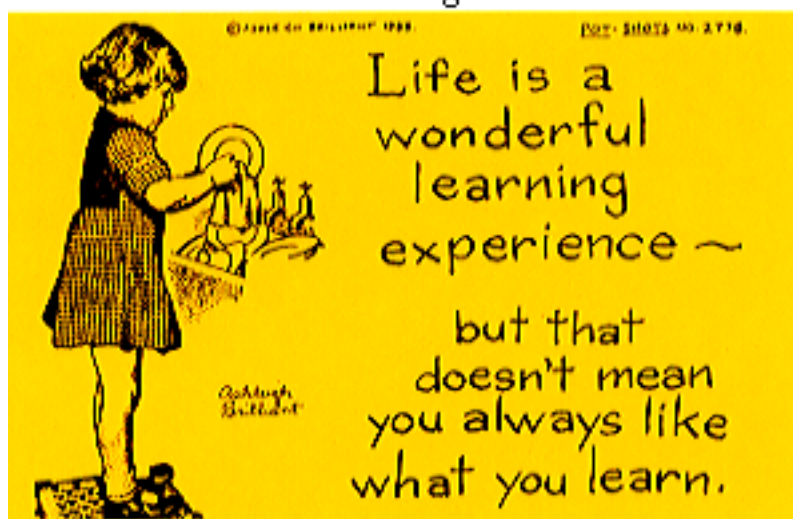


© Ashleigh Brilliant

www.ashleighbrilliant.com

4.7 **Communicate about risk**: There must be no unexpected risks. If people have followed guidelines, and are open about what work they have done, then others will have the opportunity to fight risks constructively. Where there are risks, then share that information.

POT-SHOTS — Brilliant Thoughts in 17 words or less

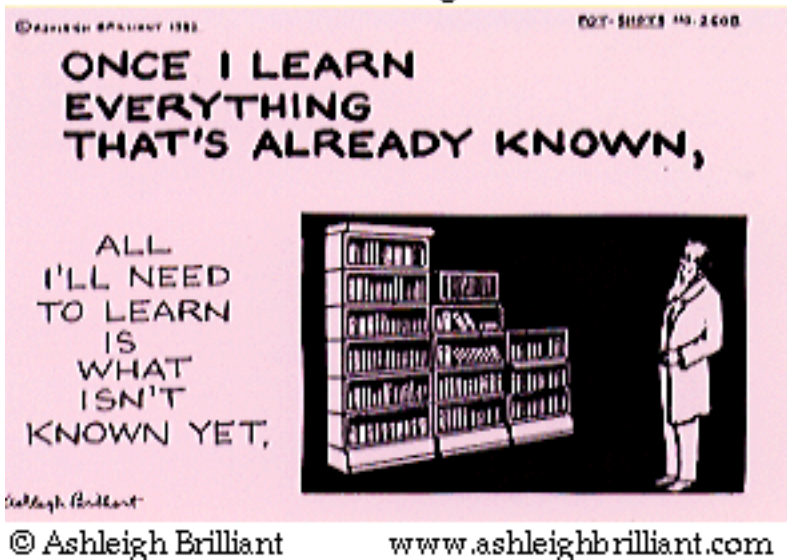


© Ashleigh Brilliant

www.ashleighbrilliant.com

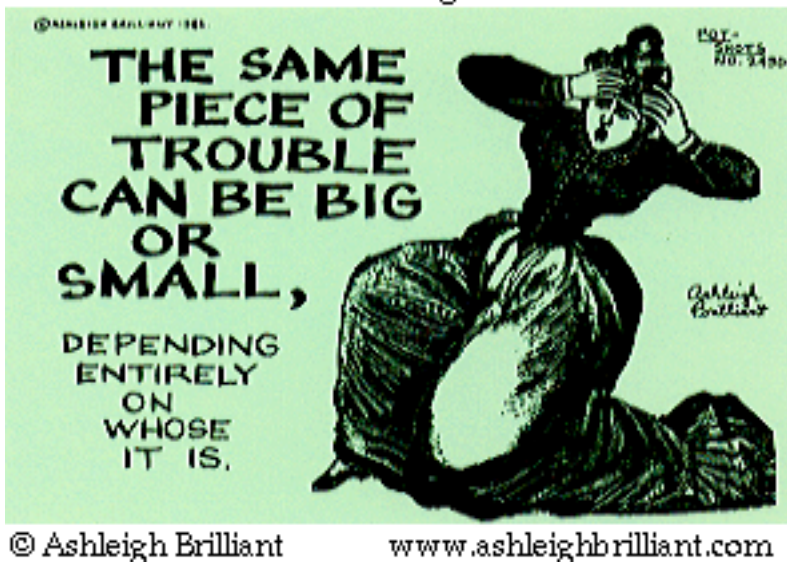
4.8 **Reuse what you learn about risk**: Standards, and other forms of work process guidance, must capture and assist good practice. They must be subject to continuous process improvement.

POT-SHOTS — Brilliant Thoughts in 17 words or less



4.9 **Delegate personal responsibility for risk**: People must be given personal responsibility in their sector for identification and mitigation of risks.

POT-SHOTS — Brilliant Thoughts in 17 words or less



4.10 **Contract out risk**: Make vendors contractually responsible for risks. They will give you better advice and services as a result.

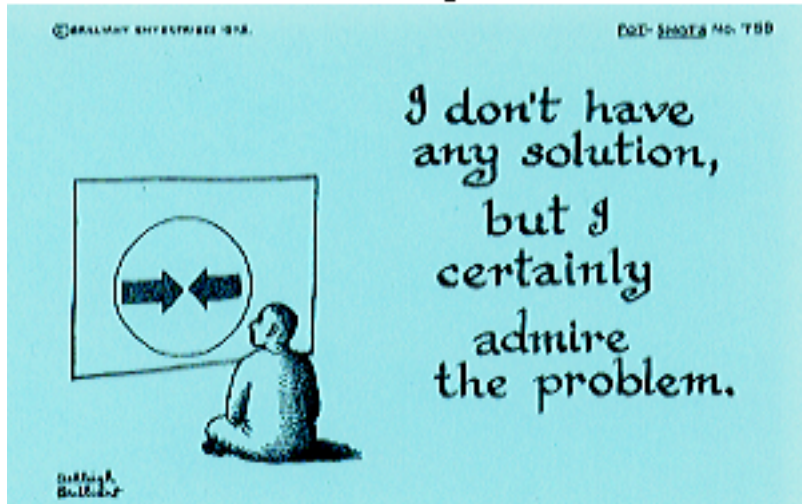
POT-SHOTS — Brilliant Thoughts in 17 words or less



5.The Solution Law

Solutions will be many, multi-attribute, hypothetical, conflicting, and need live proof.

POT-SHOTS — Brilliant Thoughts in 17 words or less



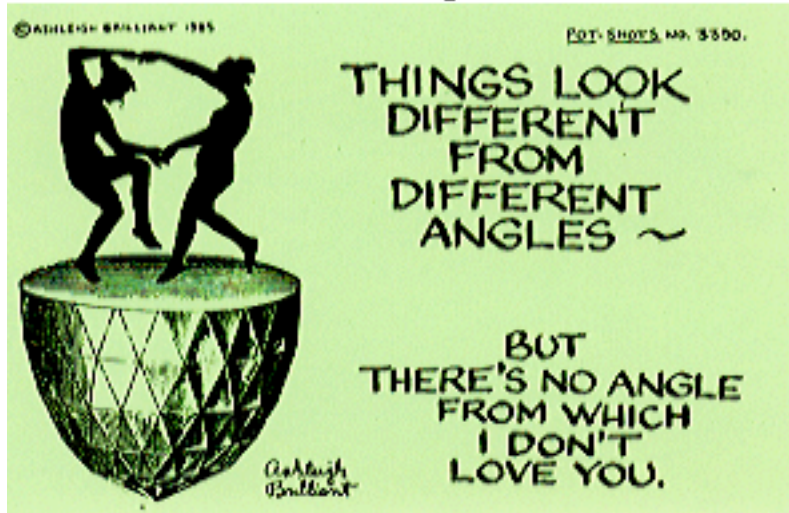
© Ashleigh Brilliant

www.ashleighbrilliant.com

6. Multiplicity

Nothing is one dimensional, and you will be attacked by at least one more dimension than you plan for – so plan for it!

POT-SHOTS — Brilliant Thoughts in 17 words or less



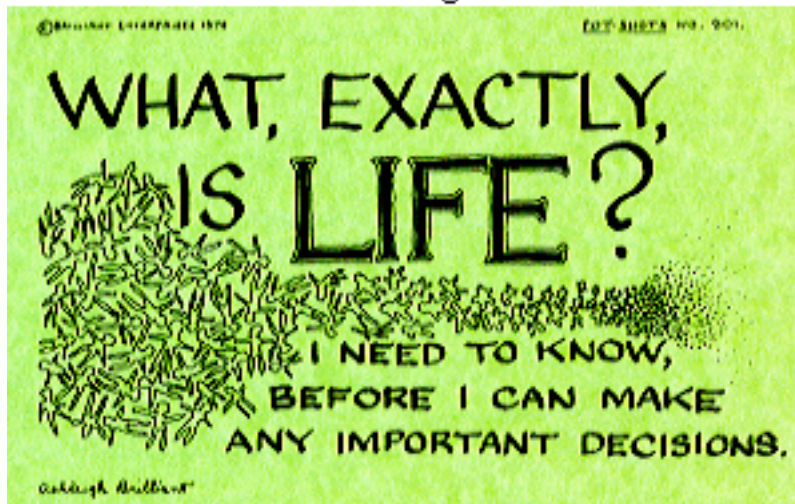
© Ashleigh Brilliant

www.ashleighbrilliant.com

7. Decisions – Priority

Your choice depends on your politics: but 'sure-value for money' is usually a good choice.

POT-SHOTS — Brilliant Thoughts in 17 words or less

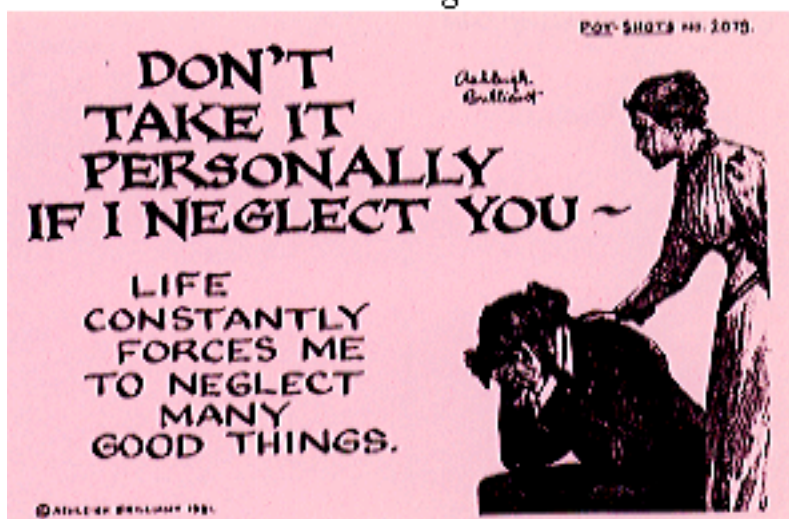


© Ashleigh Brilliant

www.ashleighbrilliant.com

----- extra ps for Priority 7

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

http://www.gilb.com/tiki-download_file.php?fileId=48

Choice and priority Paper

http://www.gilb.com/tiki-download_file.php?fileId=60

Managing Priority paper

8. Evaluation

You need to evaluate choices based on very many uncertain factors, but the deeper you probe the better the choice.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

www.ashleighbrilliant.com

Design Evaluation Paper: “**Design Evaluation: Estimating Multiple Critical Performance and Cost Impacts of Designs**” http://www.gilb.com/tiki-download_file.php?fileId=58

9. Delivery

Plan to deliver early and frequent results – they beat glorious unfulfilled promises

POT-SHOTS — Brilliant Thoughts in 17 words or less



http://www.gilb.com/tiki-download_file.php?fileId=59

Evo Principles.

http://www.gilb.com/tiki-download_file.php?fileId=41

Decomposition

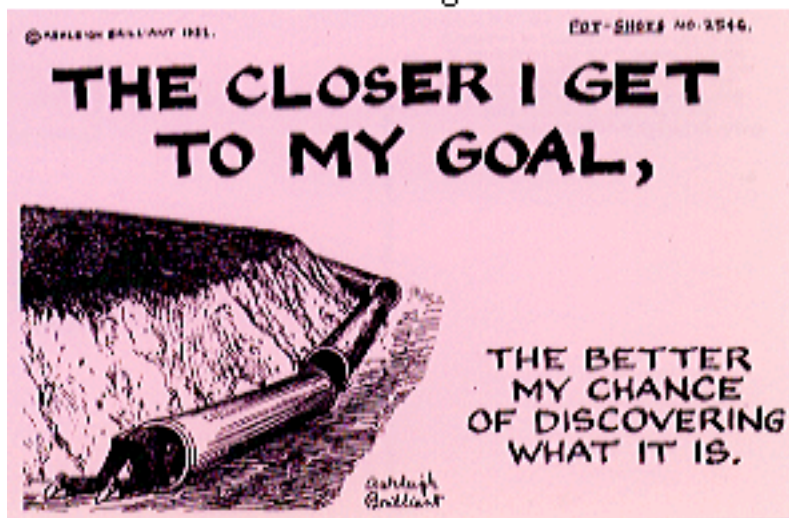
http://www.gilb.com/tiki-download_file.php?fileId=77

CE book chapter 10 Evo

10. The Feedback Law

Change reality, learn fast, change now.

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant

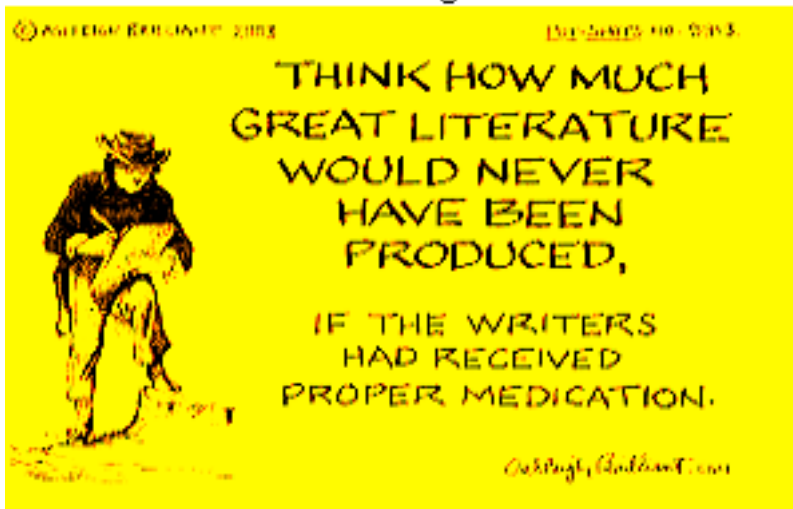
www.ashleighbrilliant.com

----- Pot shots for the Feedback Principles –

POT-SHOTS — Brilliant Thoughts in 17 words or less

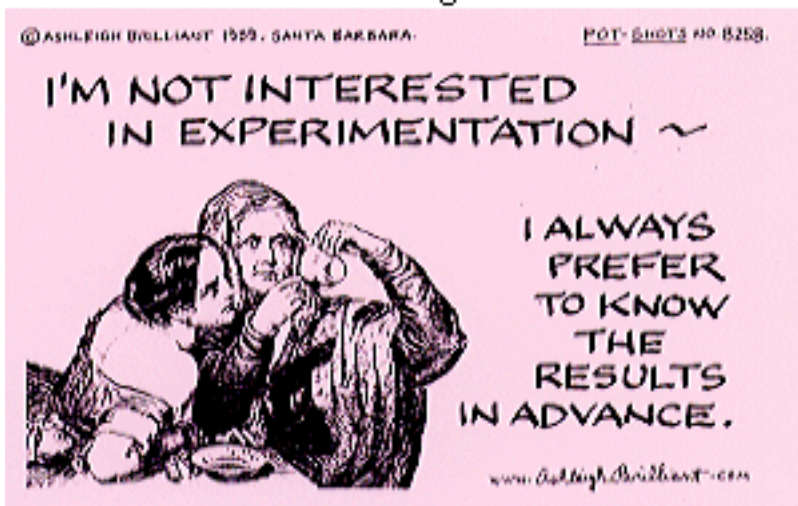


POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant www.ashleighbrilliant.com

POT-SHOTS — Brilliant Thoughts in 17 words or less



© Ashleigh Brilliant www.ashleighbrilliant.com

POT-SHOTS — Brilliant Thoughts in 17 words or less

©ASHLEIGH BRILLIANT 1998.

POT-SHOTS No. 4324.



I CAN'T
DEFINE
MYSELF
IN
PRECISE
TERMS,

BECAUSE
WHILE I'M DEFINING,
I'M CHANGING.

Ashleigh Brilliant

© Ashleigh Brilliant

www.ashleighbrilliant.com

Credits:

Richard Karpinski: chief nitpicker, who gave me some early feedback here.

dickkarpinski@gmail.com

Ashleigh Brilliant:

Ashleigh Brilliant has of course allowed me to use his Potshots. We have a contract for their use.

Please do not otherwise (outside of my work) use them without *his* permission. See his website

www.ashleighbrilliant.com. You can buy a CD

with all his thousands of Potshots! My contract allows me free use of Potshots in my papers and slides, but pays royalties for paid published works with them. 12 Aug2010. TG

