

On a Journey from Jerusalem, Exploring Systems Thinking, Innovation, Judaism, and How it all Worked Out

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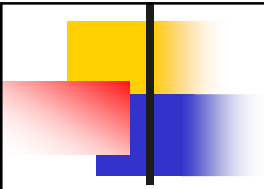
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Version 1.2.1





Rules of engagement

1. I do not expect real-time answers to the rhetorical questions I pose as a result of a disturbing thought during the presentation
2. If you wish to answer a question, make a comment or ask another question, please note the **slide number** and **wait until the end of the talk**
3. This is due to the time limit constraint on the talk
4. If we do eventually run out of time, lets keep the discussion going off-line

This talk shares the thinking process

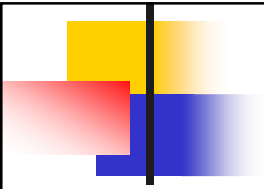
1. How this talk relates to systems engineering
 1. "Systems engineering is a way of life" (Derek Hitchins)
 2. Systems engineering is the application of systems thinking to problem-solving (Joe Kasser)
2. This talk is about a journey sharing the thinking process that led to
 1. Out-of-the box innovation in
 - Systems engineering, Project management and Postgraduate education
 2. Disturbing thoughts about
 - INCOSE, Jews and Judaism
 3. And working out how you can become a systems thinker



Situation Awareness Levels

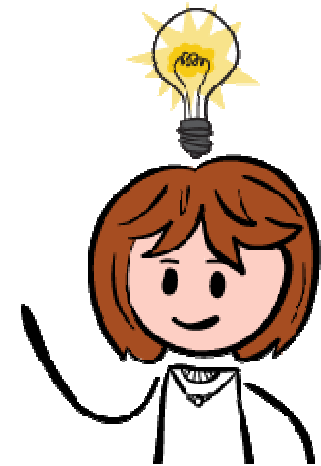
6. Doing something about the situation	
6.A Walking away	6.B Trying to change the situation
5. Working out what is wrong	
4. Grumbling and complaining	
3. Accepting situation (living with it)	
2. Identifying that something is wrong	
1. Not even realizing that something is wrong/undesirable	

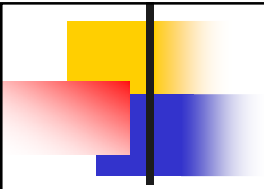




Topics

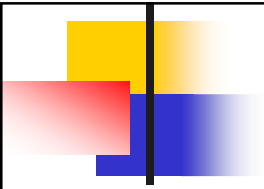
1. **1981 Once upon a time**
2. 1997-1999 University of Maryland University College (UMUC)
3. 1999 - 2007 University of South Australia
4. 2007 - 2008 Cranfield University
5. 2008 - 2016 National University of Singapore
6. 2016 – 2??? Adelaide
7. How you too can become a systems thinker



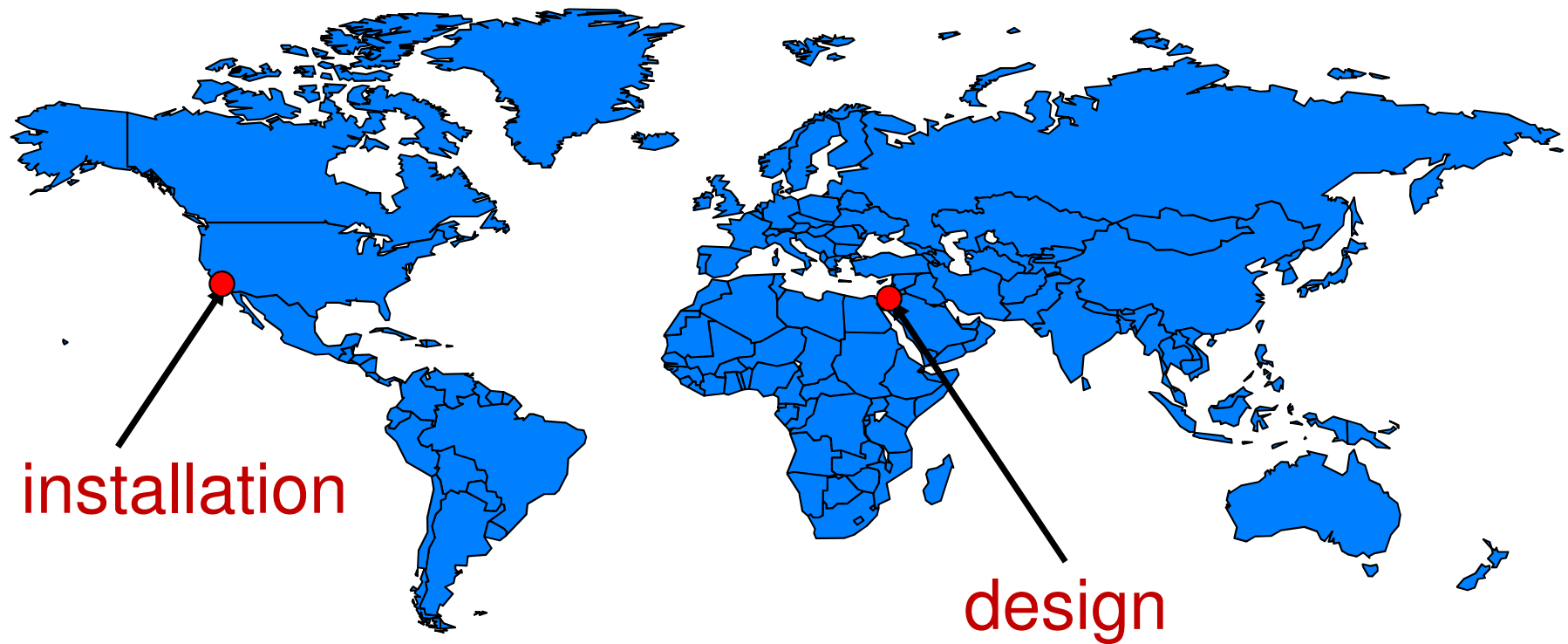


Luz in Jerusalem

1. In the 1980's
2. The world's first commercial solar electrical power generating system (SEGS-1)
3. The first of its kind
4. Small and Medium Enterprise
5. Start-up
6. R&D in Jerusalem
7. Installation & integration in Mojave Desert, California



Luz SEGS-1



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Luz SEGS-1 during installation



On a Journey from Jerusalem

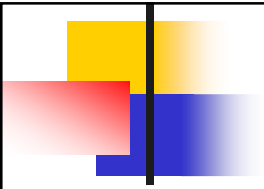


Questions asked by a systems engineer

1. Where are the requirements?
2. What is the concept of operations (CONOPS)?
3. What is the accuracy of the sun angle calculation?
4. Who controls motor movement?
5. Where is the intelligence in the system?
6. What is the effect of mirror vibration?
7. What happens when scattered clouds block the sun for short periods of time?
8. What is the nature of the E-M environment?
9. What kind of data and data rates does the LOC need to receive and generate?
10. What voltage is power is to be distributed?
11. What about maintenance and troubleshooting?
 - Downtime is loss of revenue



**Let's think
about them**



The situation-3 (control and electronics)

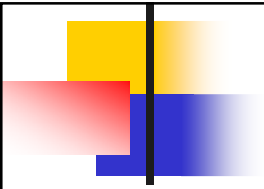
1. Minicomputer based Central Station assumed/dreamed/envisaged
 - High risk, major learning curve
2. Ethernet 10 Mbps network envisaged
 - High risk, new technology
3. Dumb μ p based local controllers (LOC)
 - Pulse counting position sensing
 - Three phase power motor controllers were blowing SCRs.
4. Prototypes unsuitable for large array
5. My boss (VP Engineering) was responsible for the situation
6. My first position as a manager

So what
happened?

Its big



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18 months later: the situation when I left Luz

1. Central station and LOC network worked first time
2. US \$300,000 cost avoidance per central station controller
 - Z80 based microcomputer instead of minicomputer
3. On schedule
4. Minimal problems
 - Software
 - None
 - Hardware
 - Connector/cable problem easily found and fixed
 - Latent defect in sun sensor (so I heard)

**So how did
it happen?**

**It took me
15 years to
figure it out**

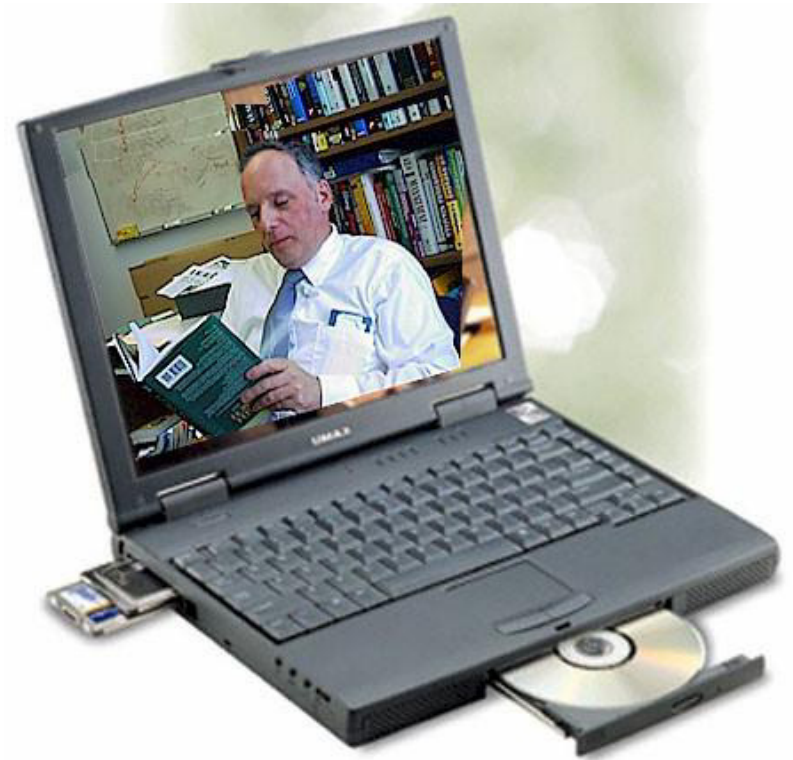
The systems approach

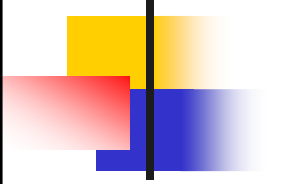


1. I realized that I had systems engineered the system development, not managed it in the traditional sense
2. Systems engineering is the application of systems thinking to problem-solving
3. I kept on doing it until I worked out what was doing
4. Then I did it even better
5. Created some innovative tools
 - For systems engineering and project management
6. Got some recognition
7. Raised some disturbing thoughts

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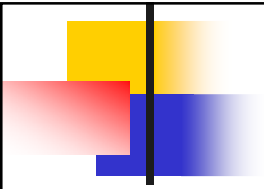
University of Maryland University College (UMUC)

1. Teaching project management
2. Cannot answer question "What do you mean. You can't tell me how much of my project has been completed?"
 - Earned Value Analysis (EVA)?
 - Only measures money spent
 - Requirements completed ?
 - Come in all categories and sizes
 - But can be grouped into ranges
3. Asked standard copycat question
 - Who has faced this problem before and what did they do about it?

A tool to measure technical ...



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Non systems approach: Project management and systems engineering were decoupled

1. Separate project management and systems engineering databases
2. Project planning state
 - WBS used as input tool
 - Often missed activities
 - PBS and WBS did not match
3. Project performance state
 - Compares actual costs with estimated costs (EVA)
 - **Can't tell if a project is in trouble**
 - **Can't tell how much of a project is completed**
4. Applied systems thinking to the situation



CRIP chart at contract award

	Identified			In process			Completed			In test			Accepted		
Range	P	E	A	P	E	A	P	E	A	P	E	A	P	E	A
1	0	86	0												
2	0	73	0												
3	0	23	0												
4	0	34	0												
5	0	26	0												
6	0	15	0												
7	0	8	0												
8	0	7	0												
9	0	5	0												
10	0	2	0												
Totals	0	279	0												

CRIP Chart at SRR

	Identified			In process			Completed			In test			Accepted		
Range	P	E	A	P	E	A	P	E	A	P	E	A	P	E	A
1	0	86	81	81											
2	0	73	78	78											
3	0	23	35	35											
4	0	34	30	30											
5	0	26	26	26											
6	0	15	20	20											
7	0	8	8	8											
8	0	7	7	7											
9	0	5	5	5											
10	0	2	2	2											
Totals	0	279	292	292											

CRIP Chart at PDR (nominal)

	Identified			In process			Completed			In test			Accepted		
Range	P	E	A	P	E	A	P	E	A	P	E	A	P	E	A
1	0	0	0	0	81	81	0								
2	0	0	0	0	78	78	0								
3	0	0	0	0	35	35	0								
4	0	0	0	0	30	30	0								
5	0	0	0	0	26	26	0								
6	0	0	0	0	20	20	0								
7	0	0	0	0	8	8	0								
8	0	0	0	0	7	7	0								
9	0	0	0	0	5	5	0								
10	0	0	0	0	2	2	0								
Totals	0	0	0	0	292	292	0								

CRIP Chart at PDR (requirements creep)

	Identified			In process			Completed			In test			Accepted		
Range	P	E	A	P	E	A	P	E	A	P	E	A	P	E	A
1	0	0	20	0	81	101	0								
2	0	0	0	0	78	78	0								
3	0	0	0	0	35	35	0								
4	0	0	0	0	30	30	0								
5	0	0	2	0	26	28	0								
6	0	0	0	0	20	20	0								
7	0	0	4	0	8	12	0								
8	3	0	0	0	7	7	0								
9	0	0	10	0	5	5	0								
10	0	0	0	0	2	2	0								
Totals	3	0	36	0	292	318	0								

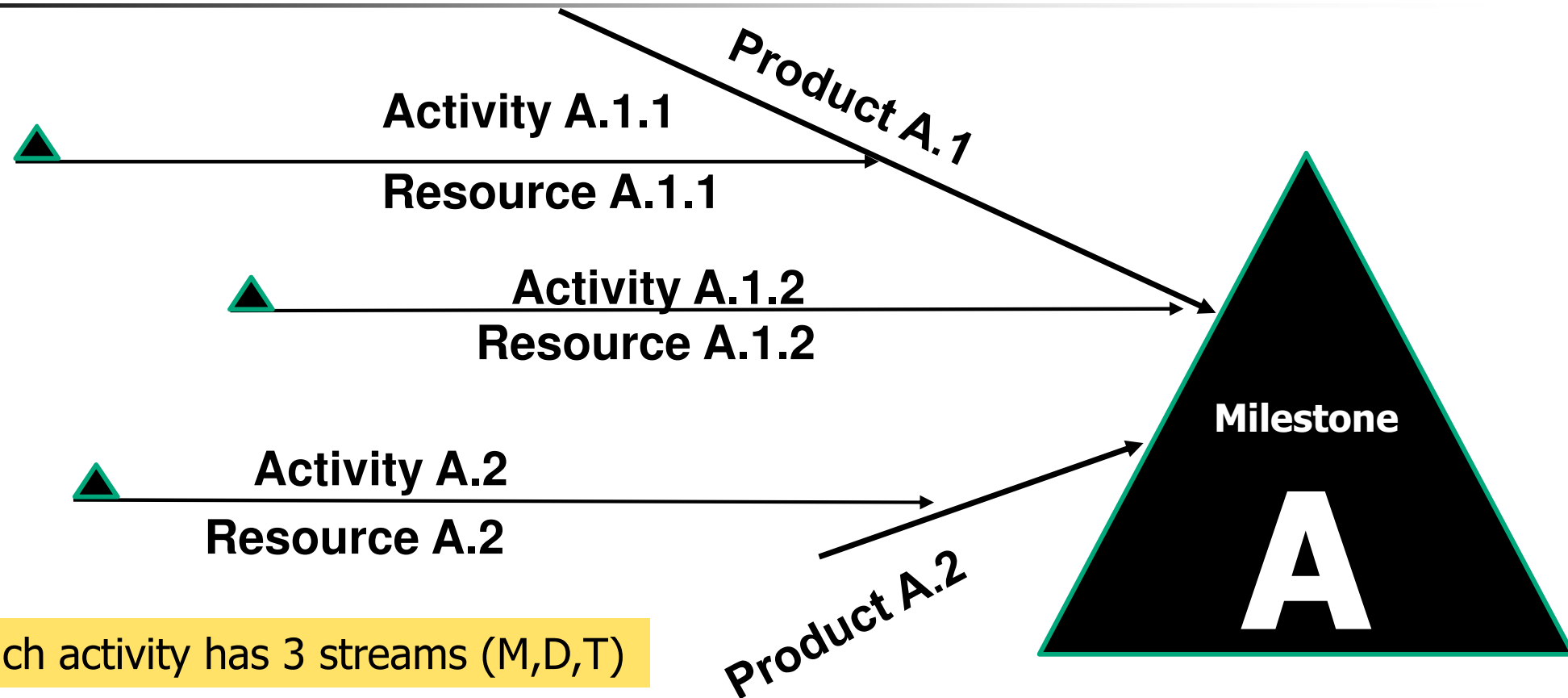
Impact of additional work should also show on EVA cost and Gantt schedule charts

A tool to facilitate ...



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Product-Activity-Milestone (PAM) chart

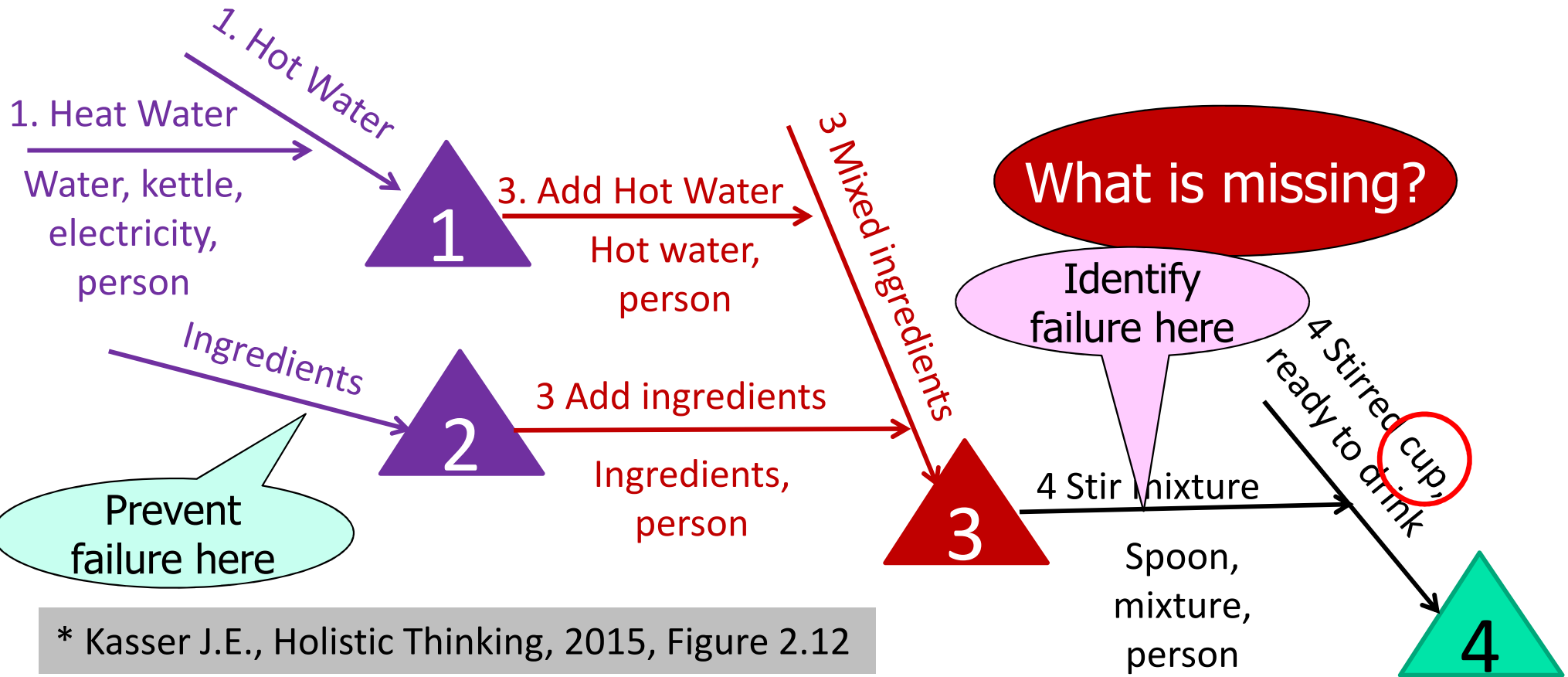


A tool to facilitate ...



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Example: Partial PAM Chart for making a cup of instant coffee*



* Kasser J.E., Holistic Thinking, 2015, Figure 2.12

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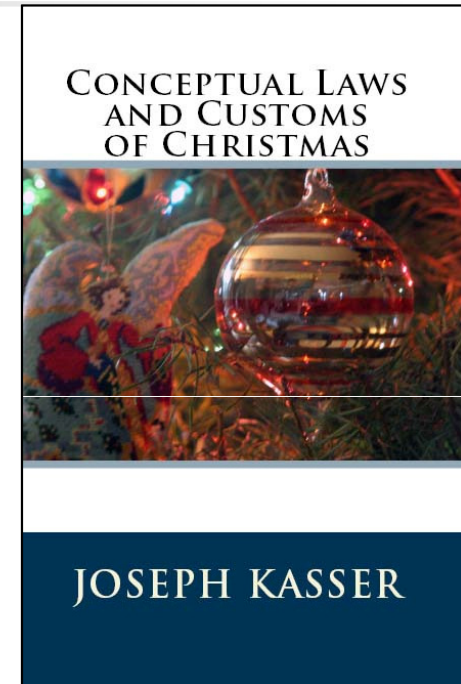
Thinking about the Torah ?



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Detailed observance instructions

1. Preparing for Christmas
2. The tree
3. Decorating the tree
4. The Christmas lights
5. Gifts and gift giving
6. The office party
7. The festive meals
8. Santa Claus
9. Rituals of the synagogue service
10. Christmas and Chanukah



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Paperback
from \$5.95

The size of the tree ...

II.6. The required height of the tree is as follows.

According to Beit Shamai an indoor tree must be tall enough so that the space between the top of the tree and the ceiling is less than one cubit (9). An outdoor tree must be at least 20 cubits tall. On the other hand, Beit Hillel state that the size doesn't matter; it is the overall effect that is important (10).

- (9) Where local fire codes prohibit the use of such large trees, a smaller tree may be used in accordance with the principle that Jewish religious laws do not overrule the secular law of the country.
- (10) The ruling is according to Beit Hillel, namely size doesn't matter.



The office holiday party-1



1. *VI.3. The mitzvah of holding a "holiday party" requires a great deal of ritual drinking. One must drink and continue drinking up to (7) the point he (8) cannot tell the difference between his wife and his secretary (9), (10).*

- (7) In this case, "up to" means "up to, but *not* including" the point when he cannot tell the difference. Once one has reached this point he is excused from further drinking, although those zealous in the performance of this mitzvah often continue drinking past this point.

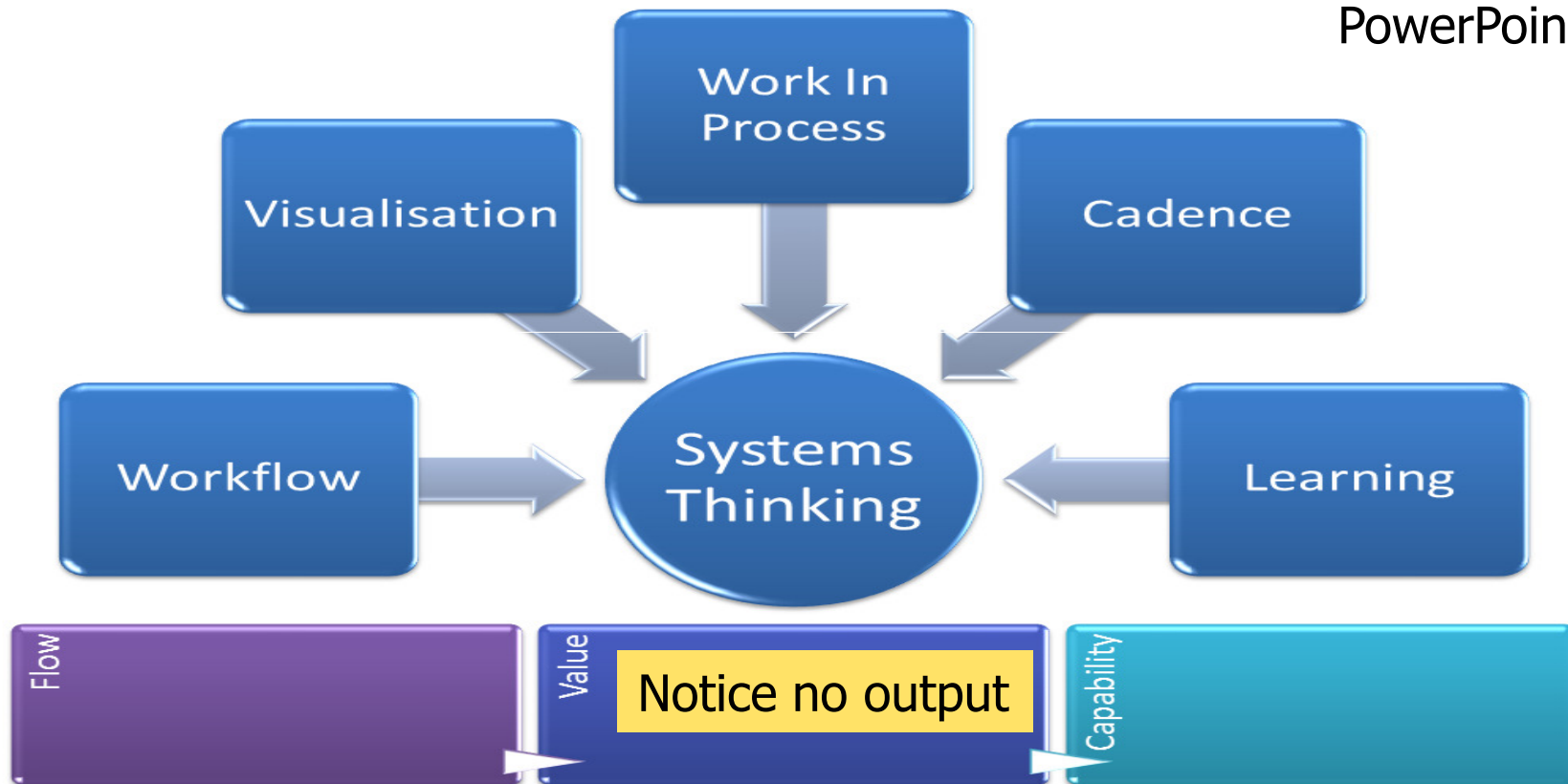
Back to UniSA



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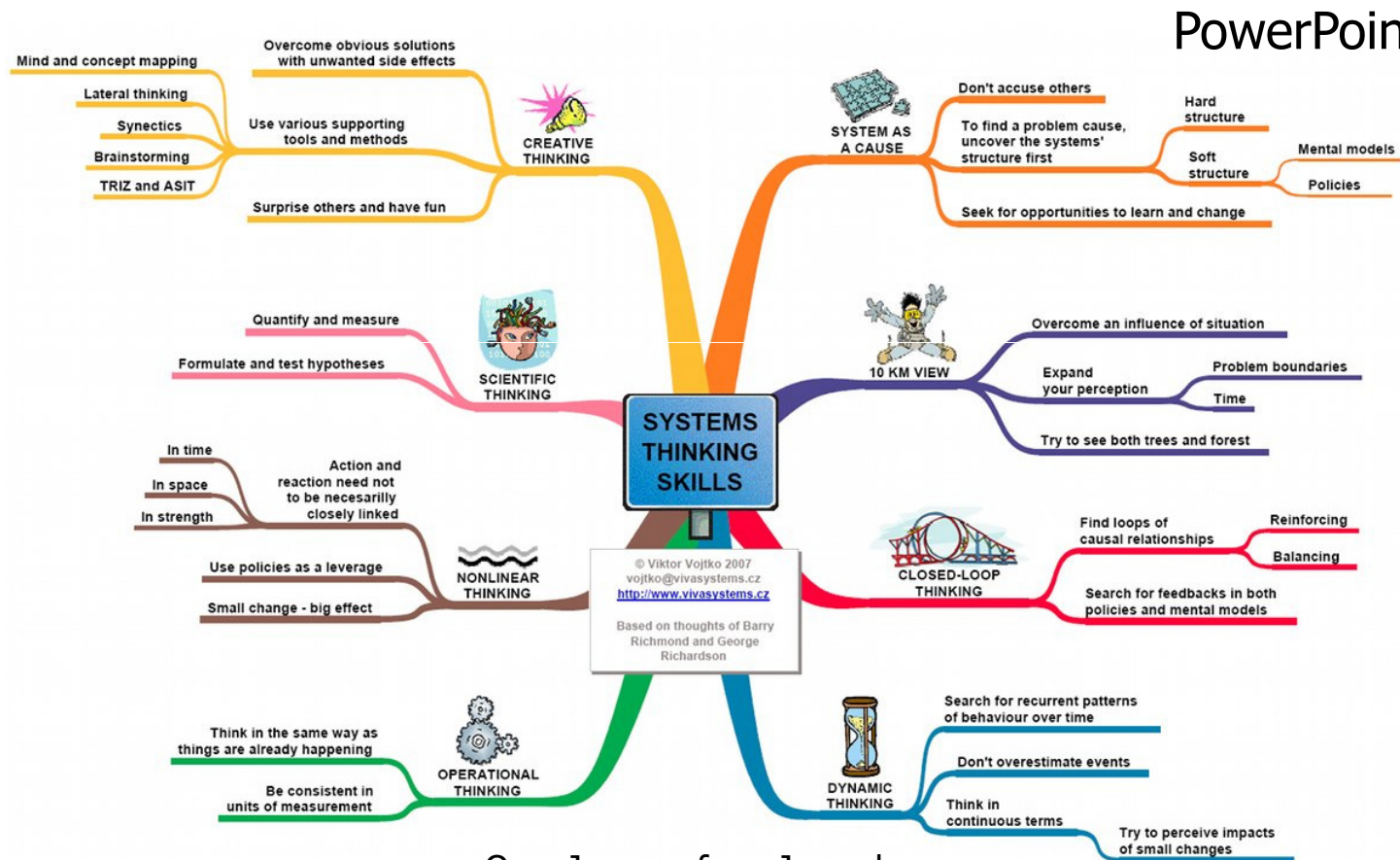
Teaching systems thinking ?

PowerPoint clip art



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Violates basic principles of systems thinking



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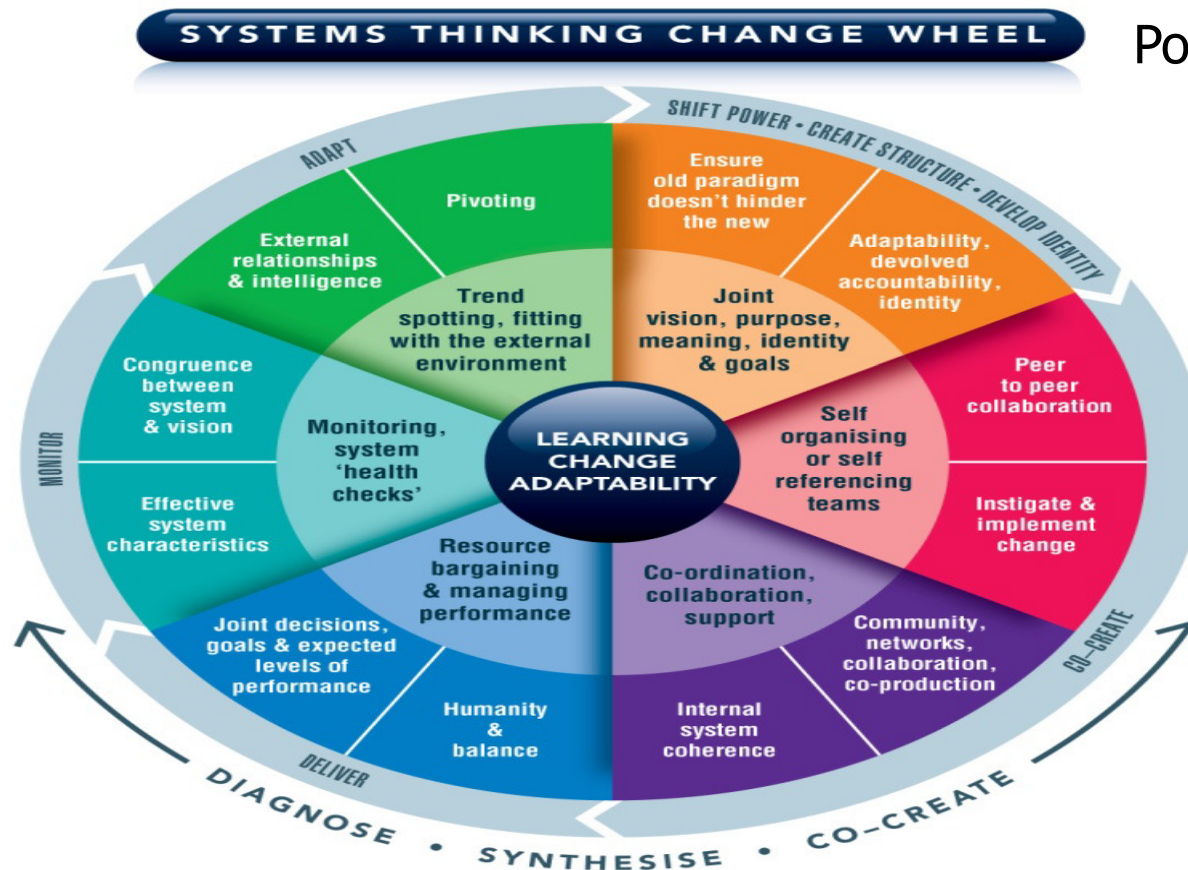
So ambiguous as to be meaningless

PowerPoint clip art

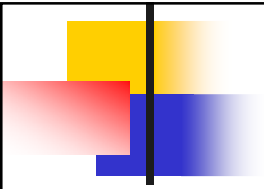


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Wheel needs to get real



PowerPoint clip art



Troublesome thoughts

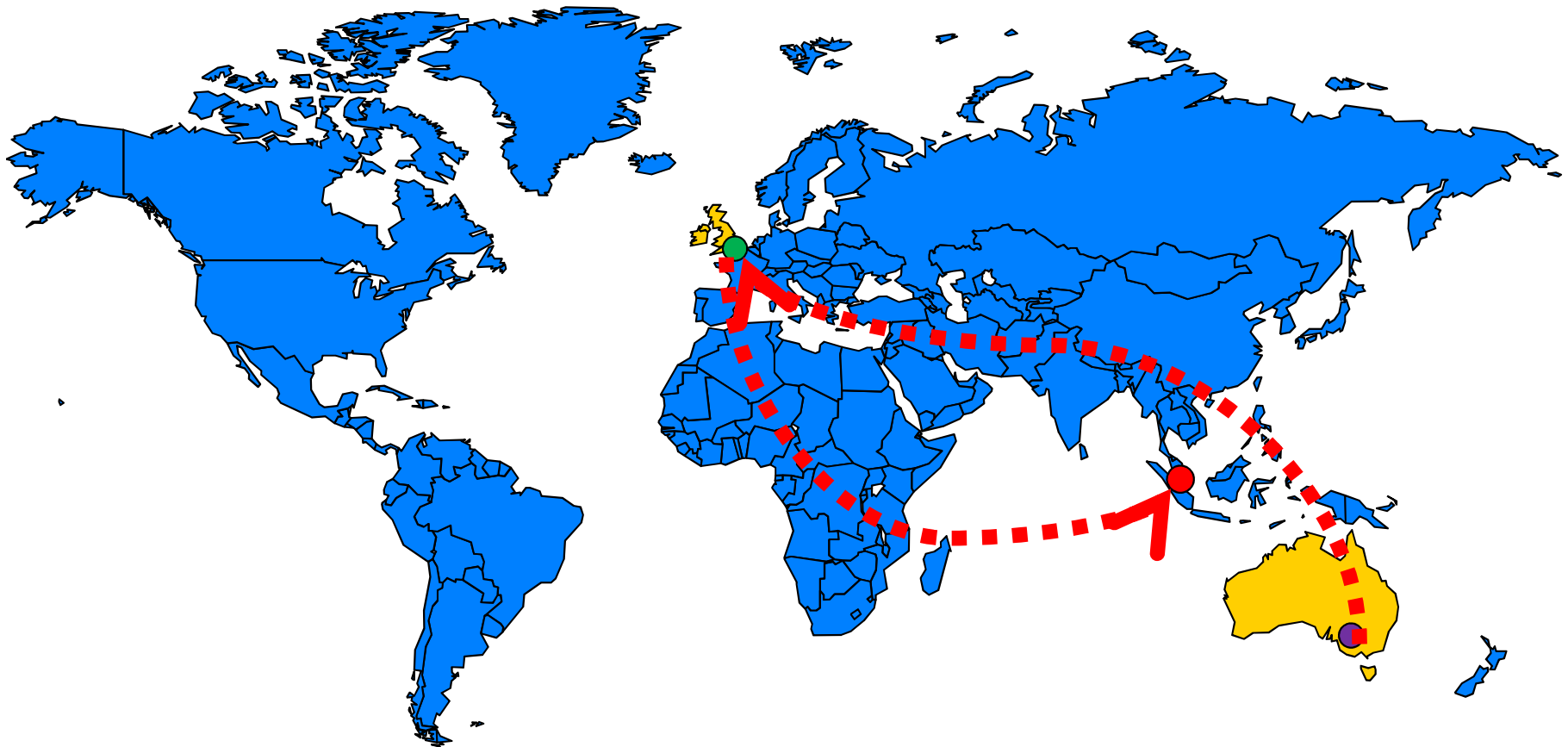
1. No requirements for contents of courses in systems engineering
2. I was often telling the students, “and you won’t find that in the text books”
3. When teaching systems thinking, I could teach
 - The history and benefits of using systems thinking
4. I could not teach
 - How to be a systems thinker
5. I could tell students that in 20 years time if they were doing it, they would know it
6. Courses were lecture-based, while pedagogy recommended active learning and flipped classrooms

"Death by PowerPoint"



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Moved half way around the world



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The four questions

[Product requirements]

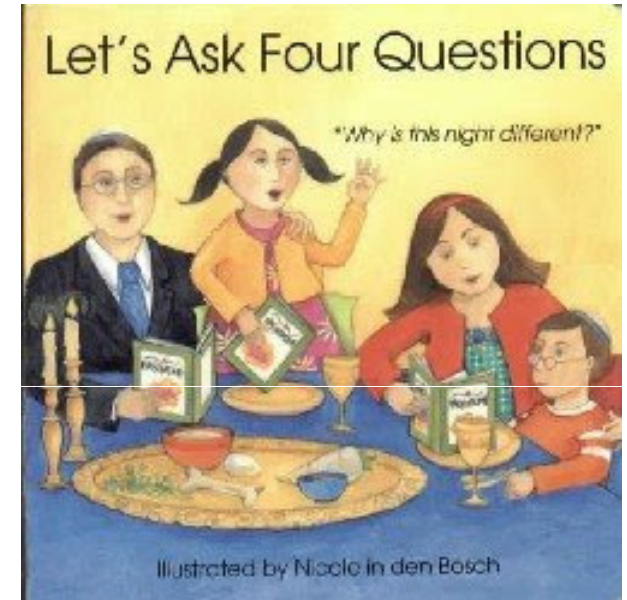
1. Who are the stakeholders?
2. What should be taught?

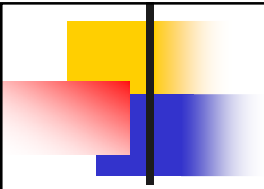
[Process requirements]

3. How should the course be taught?

[Design approach/requirements]

4. What would it take to create a 21st century course that met the requirements?





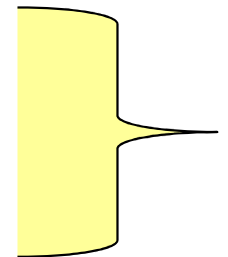
1. Who are the stakeholders?

1. Bill payers (the ones who pay the tuition)
2. Students
3. Employers of students
4. Staff – instructors
5. Staff – administrative

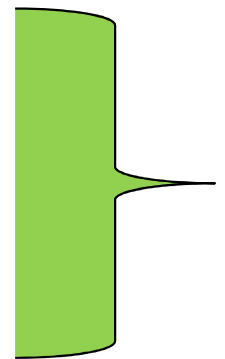
2. What should be taught?

1. Whatever it takes to produce these types of systems engineers

- **Type 1** - who can be told "**how**" to implement a solution
- **Type 2** - who can be told "**what**" needs to be done to implement a solution and can work out how to do it (**define the solution**)
- **Type 3** - who can "**define the problem**" (Wymore, 1993 p 2) and then determine what needs to be done to implement solutions
- **Type 4** - who can conceptualize and create the solution

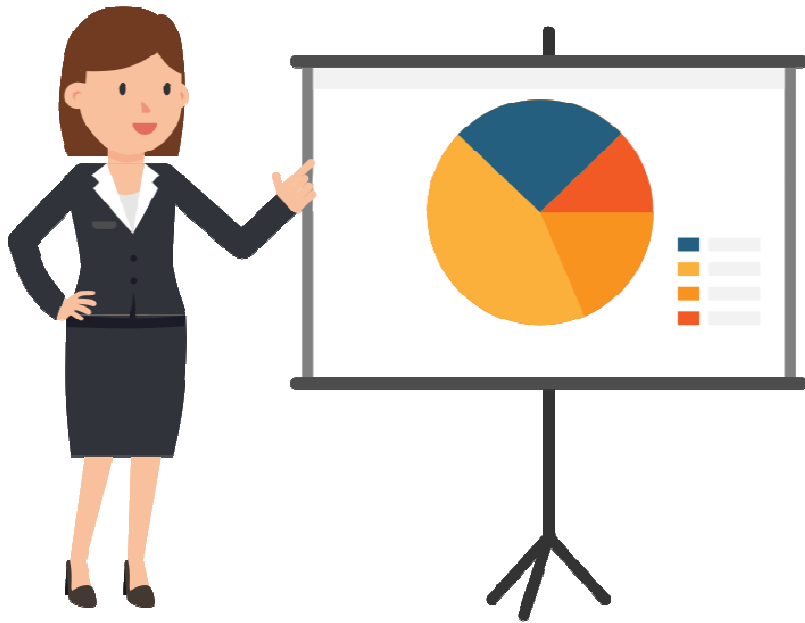


Traditional courses

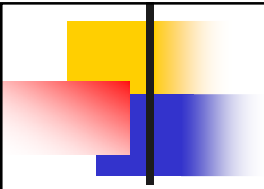


Systems thinking

3. How should the course be taught?

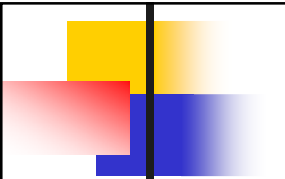


1. No more “Death by PowerPoint” lectures
 - Use problem based “active” learning
2. Should emphasize conditional knowledge not declarative and procedural knowledge
 - But students are more comfortable with declarative and procedural knowledge 😊
3. Flipped classrooms don’t work in practice



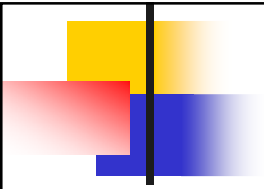
Cranfield, November 2007

1. Created first-ever Block mode Immersion Course in Systems Engineering
 - Very little lecturing, mostly exercises
2. Eight students beginning Engineering Doctorate programme
- 3. Students went to initial shock at course workload**
4. Students coped with it
5. Learning appeared to be better than earlier lecture-centric classes
 - Day 2 here was like Day 5 at UniSA (2000-2006)
6. Overall student evaluations positive
- 7. Seven out of the 8 students recommended that other classes be converted to the format**



Selected Student Feedback – Best part of Day 1

1. Rather than being lectured at, the learning was more group based, **allowing us to learn and understand more fully**
2. Very involved, meaning that even though it was very intense and a struggle at times, **it didn't allow me to switch off** which meant 'the learning curve' was so much steeper.
3. **Satisfaction of developing skills that I actually can apply to my work immediately**
4. Interactive learning approach



NUS January and May 2008

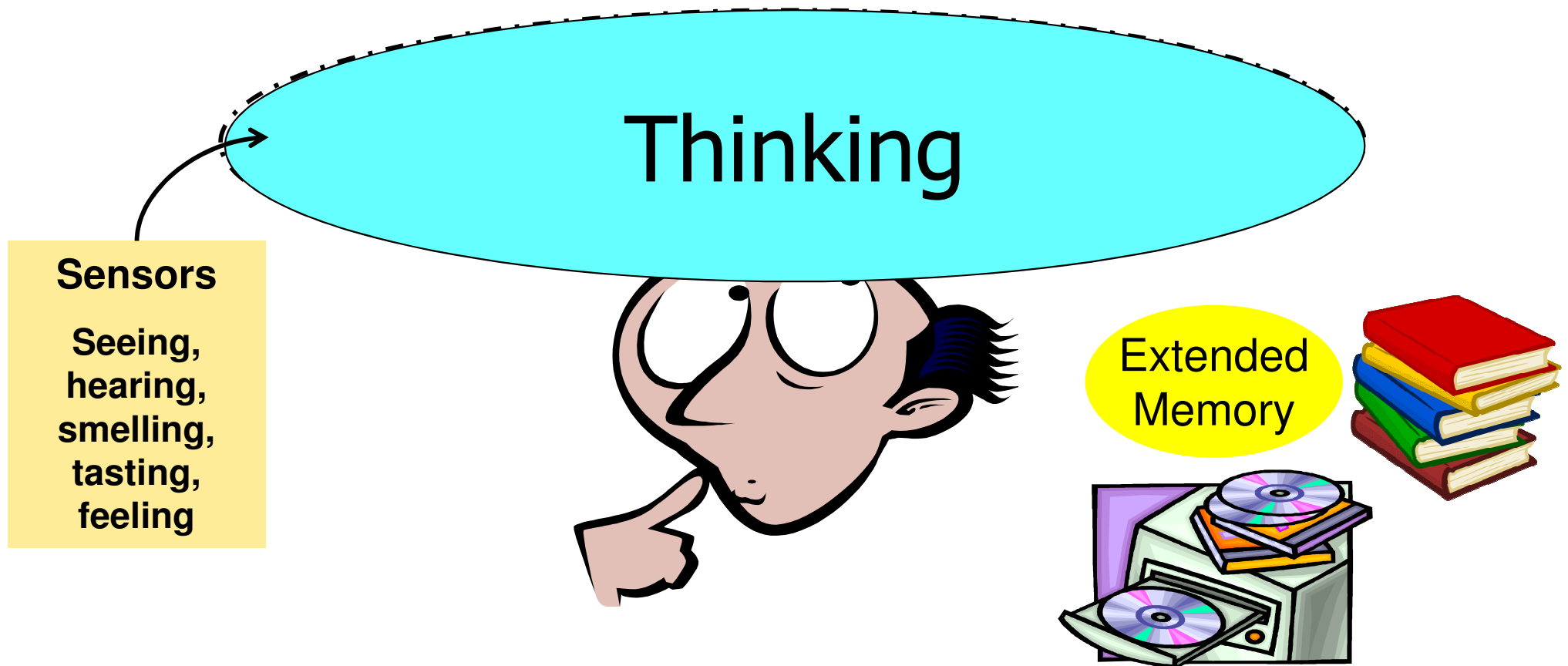
1. January – 50 students
2. May – 15 students
3. Similar initial response as in Cranfield
 - Initial course workload overload
4. Similar “improvement” in learning
5. Similar daily student comments
6. Overall evaluations positive

Coping happily



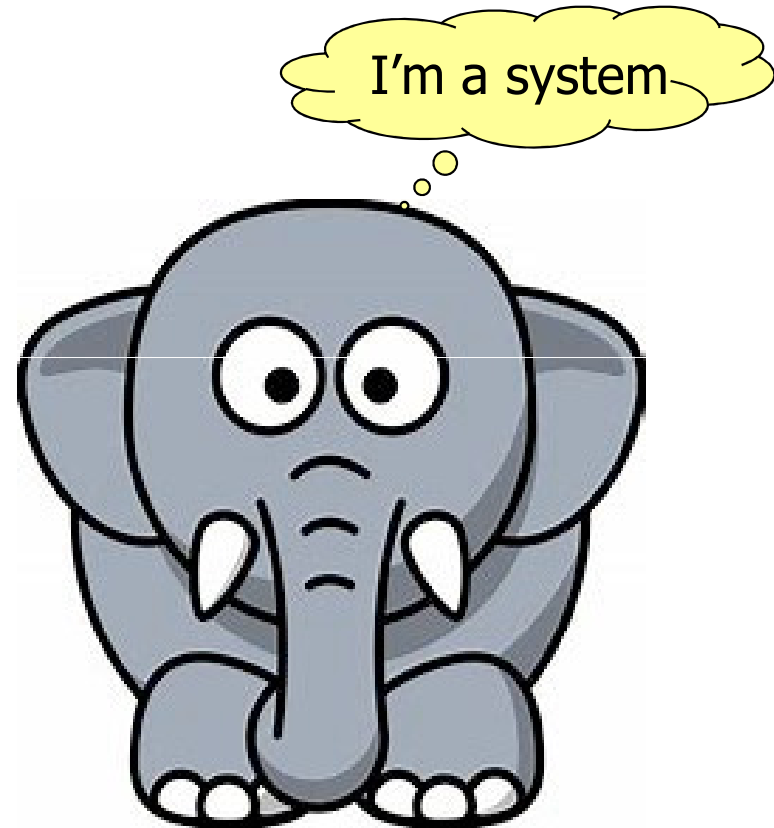
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Human information system

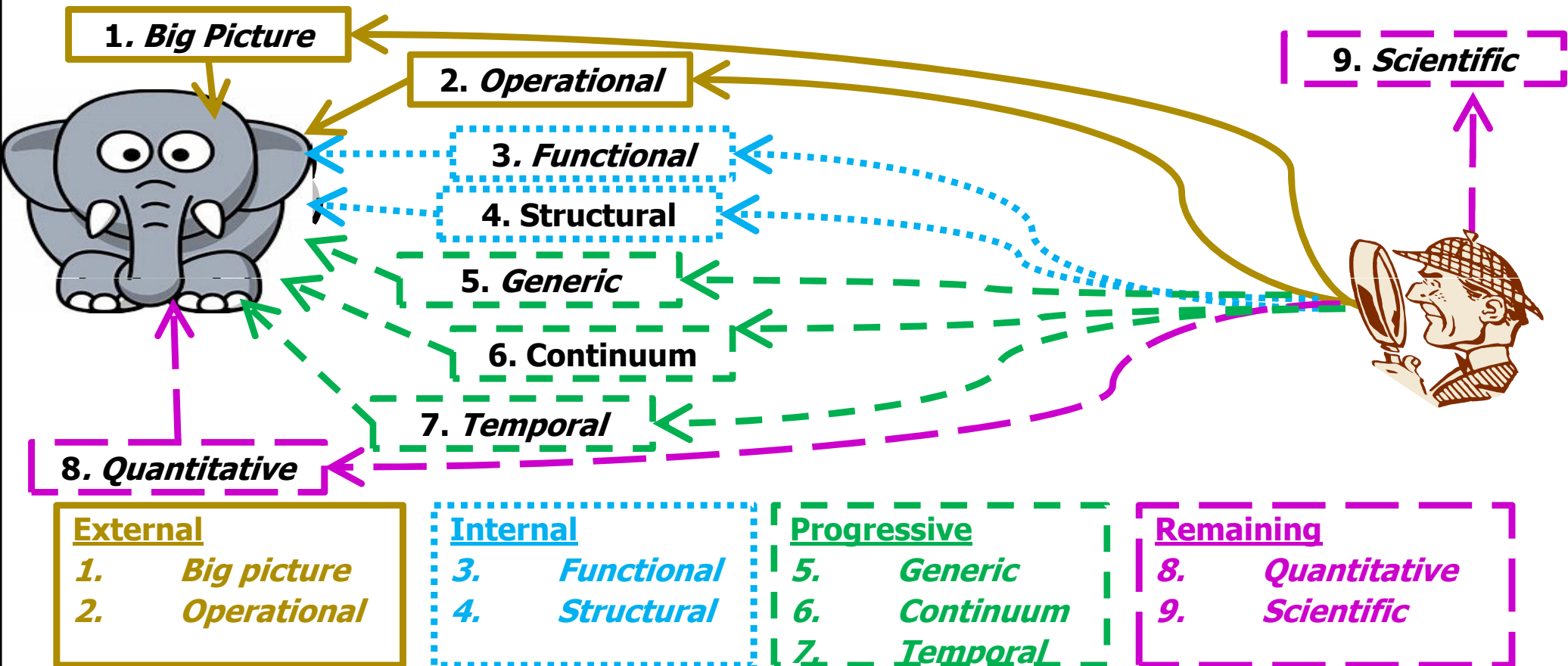


Standard set of perspectives

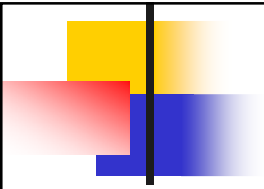
1. Big Picture
2. Operational
3. Functional
4. Structural
5. Generic
6. Continuum
7. Temporal
8. Quantitative
9. Scientific



The Holistic Thinking Perspectives



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Which perspective is needed?

1. It depends on the problem
2. External
 - ~Systems thinking
 - How object relates to ...
3. Internal
 - Analysis
 - How object functions
4. Progressive and Remaining
 - Beyond systems thinking



Understanding
of situations

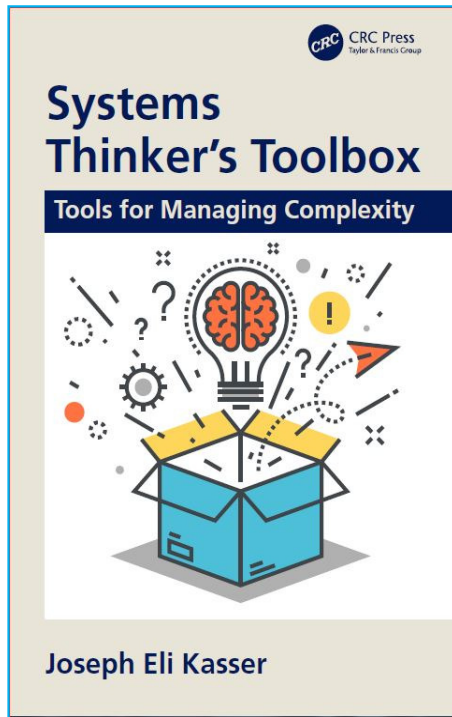
Solutions

Critical thinking - Plastic bag tree?

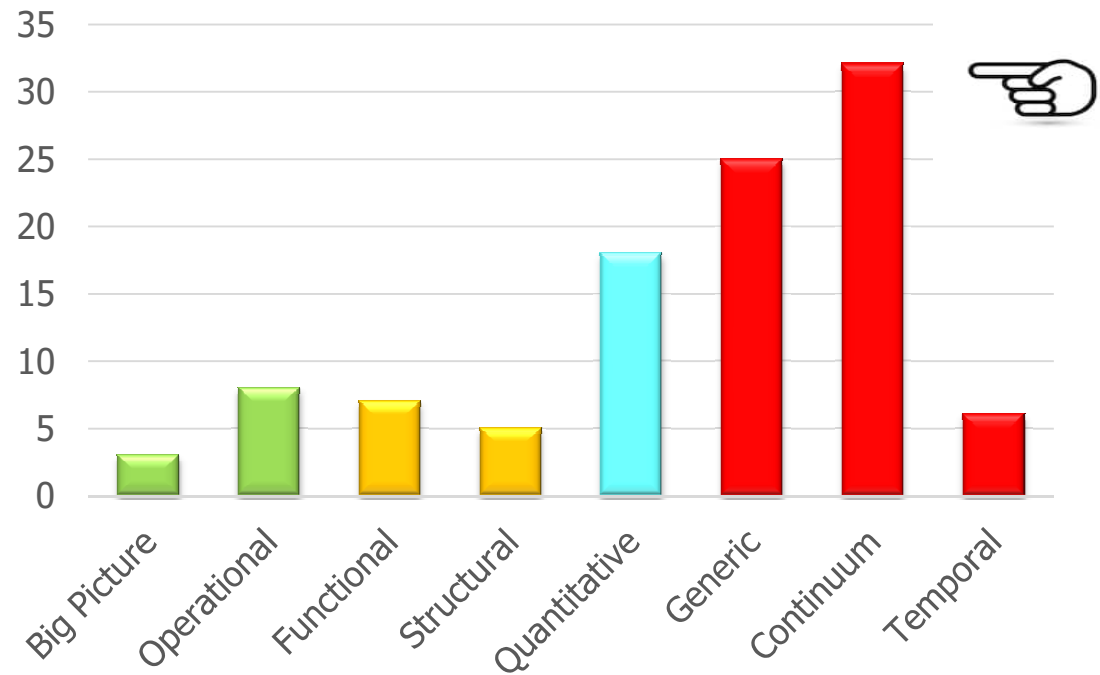


Conclusions, decisions and inferences are only as good as your domain knowledge

Distribution of HTPs - Toolbox

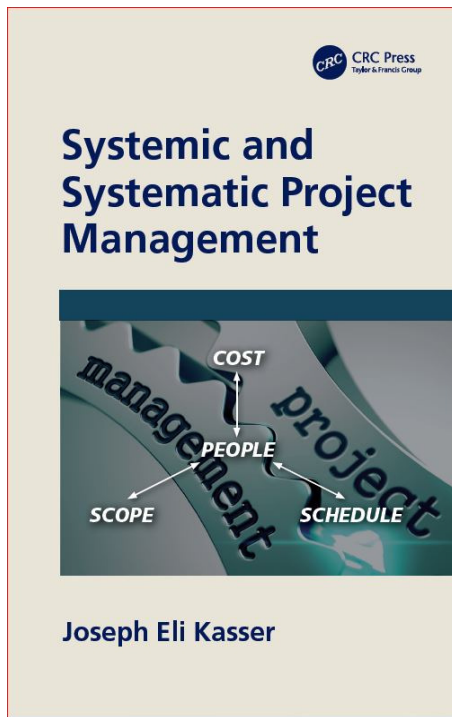


September 2018

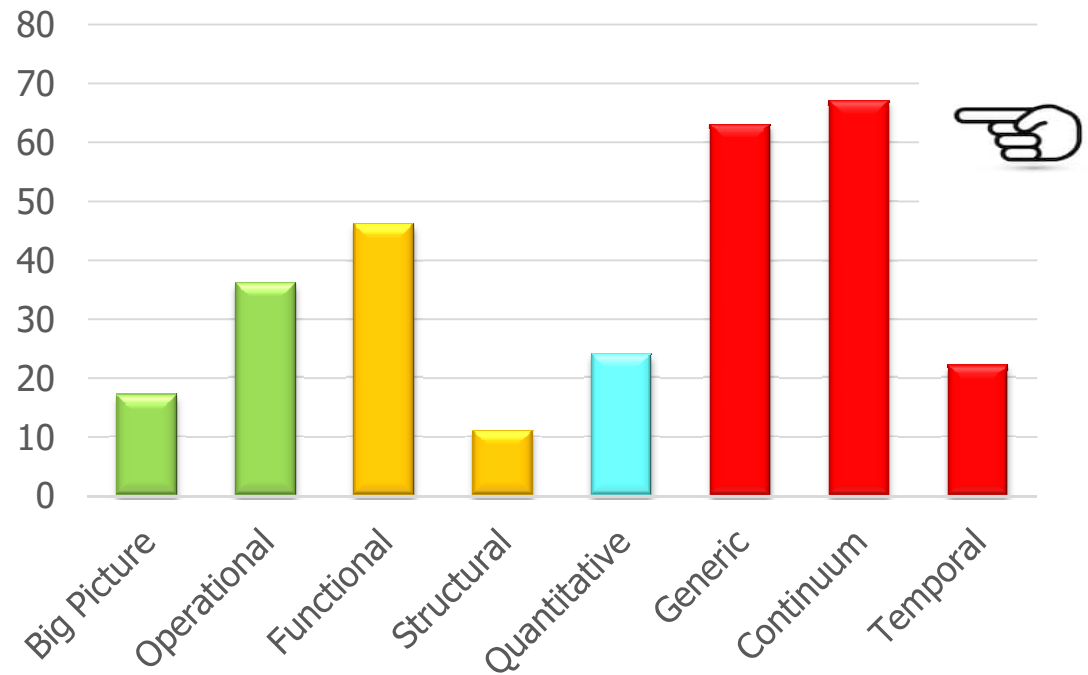


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Distribution of HTPs – Project management

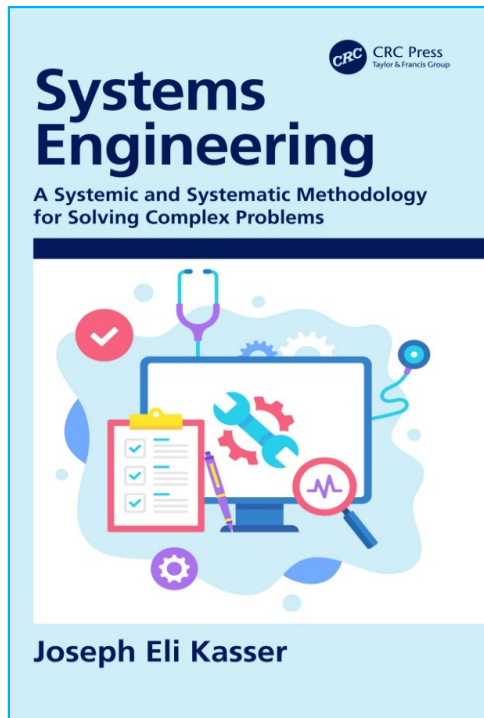


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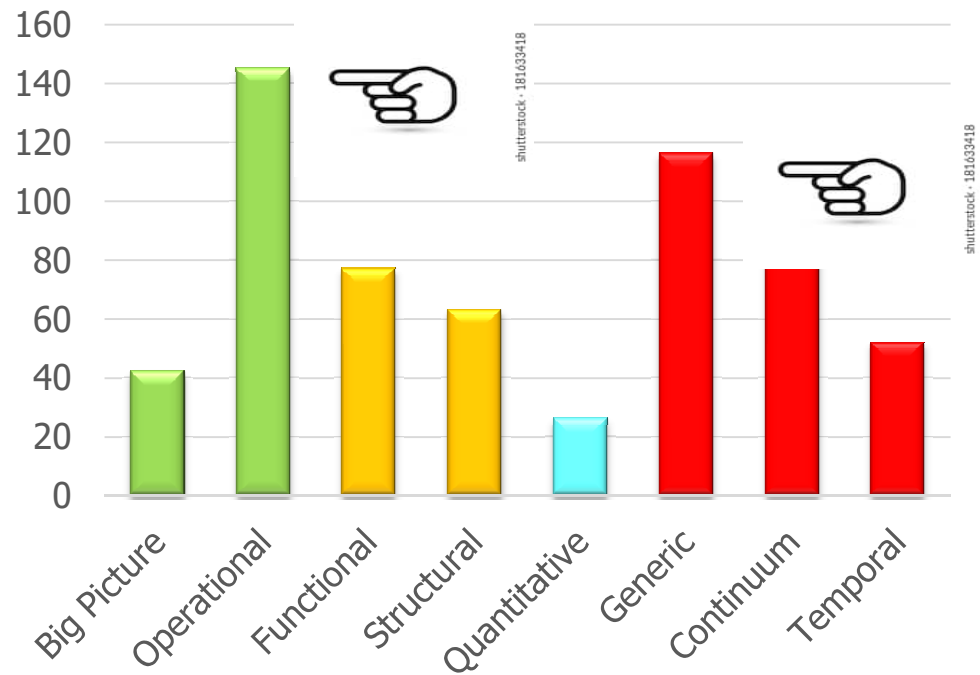


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Distribution of HTPs – Systems engineering

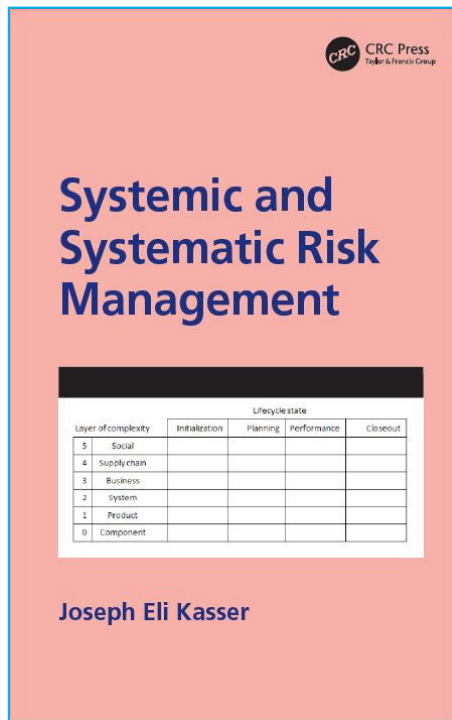


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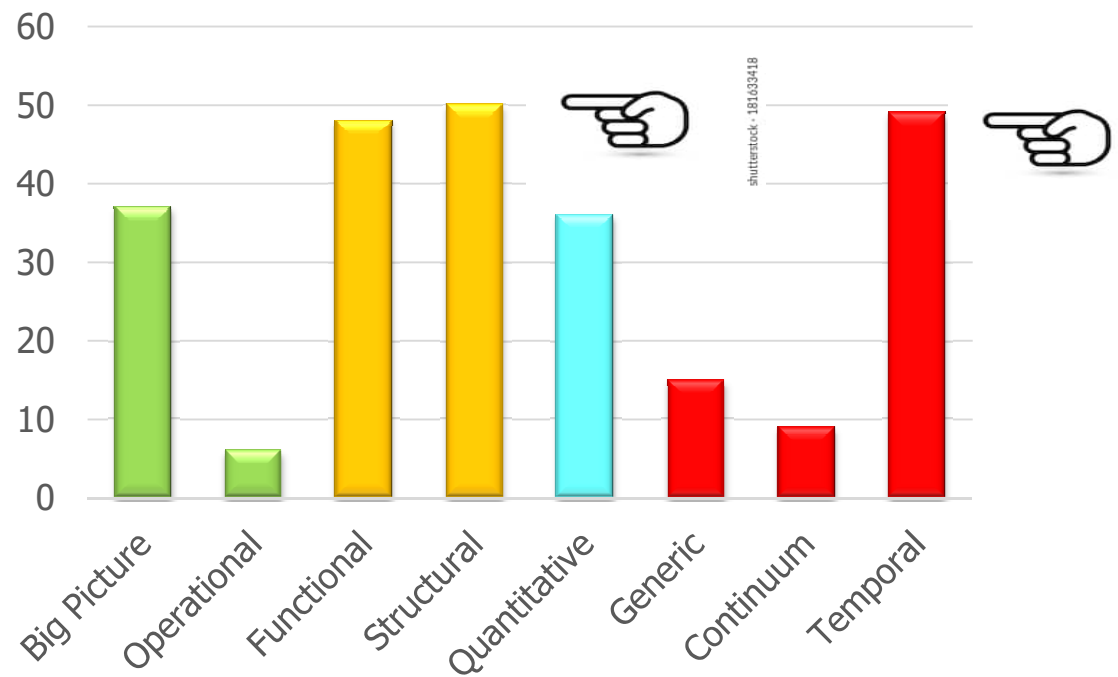


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Distribution of HTPs - Risk management



July 2020



Active Brainstorming: HTP Matrix for triggering ideas

	1	2	3	4	5	6
HTP	Who?	What?	Where?	When?	Why?	How?
Big picture						
Operational						
Functional						
Structural						
Generic						
Continuum						
Temporal						
Quantitative						
Scientific						

There may not be an immediate answer to every question
Input tool, not a storage tool

Forward-backward-forward

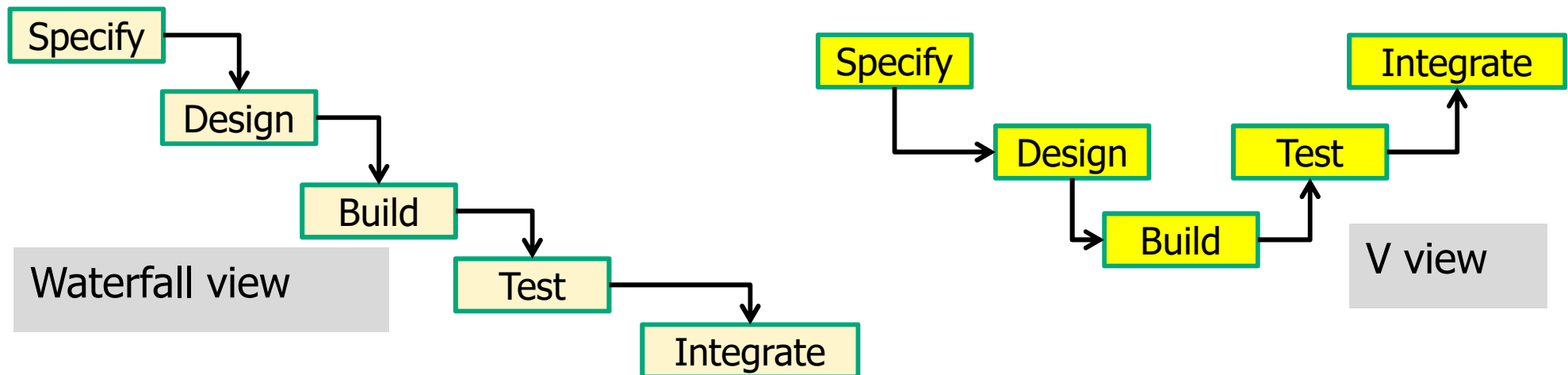


Conceptualize a vision of the FCFDS

Work backwards, conceptualizing the process to get there

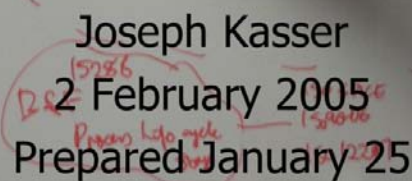


Document the process as a forward looking plan



On a Journey from Jerusalem

- Data
- Continuity
- Progress
- Humour



Non-ST: 11 Project introduction

Agenda - Projects

- DMO MPM Degree
- DMO Certification Contract
- DSTO Evaluating Coalition C4ISR Architectures Contract
- DSTO Maritime Support Contract
- Wedgetail TRDC C4ISR Course
- Research student supervision
- Semester 1 Software T&E Course
- PETS
- Research Group Meetings
- SEEC Administrative tasks
- INCOSE Region VI Support



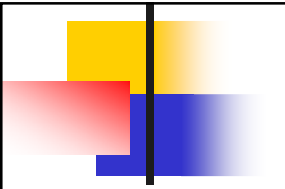
Use of traffic light chart

DMO Certification Contract

- SEEC Project number <23 69578>
- DMO Contract number C439008
- Staff
 - Project Manager - J. Kasser
 - Administrative Support – D. Perin
 - A Hari, D. Larden

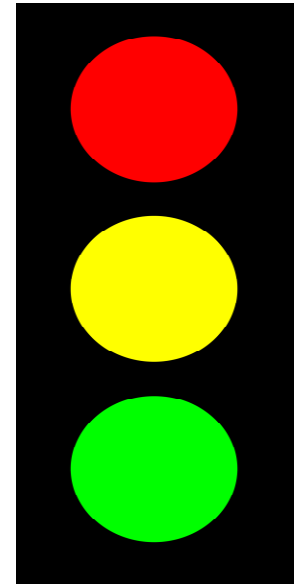


21



Temporal perspective produces innovation

1. Traffic light charts show snapshot in time
2. Improve the use of traffic light project status signals for quick overview
3. Three traffic lights, not one
 1. Three aspects of the state of the project
 2. Together with Cost, Gantt and CRIP Charts
4. Adds change over time to show trend



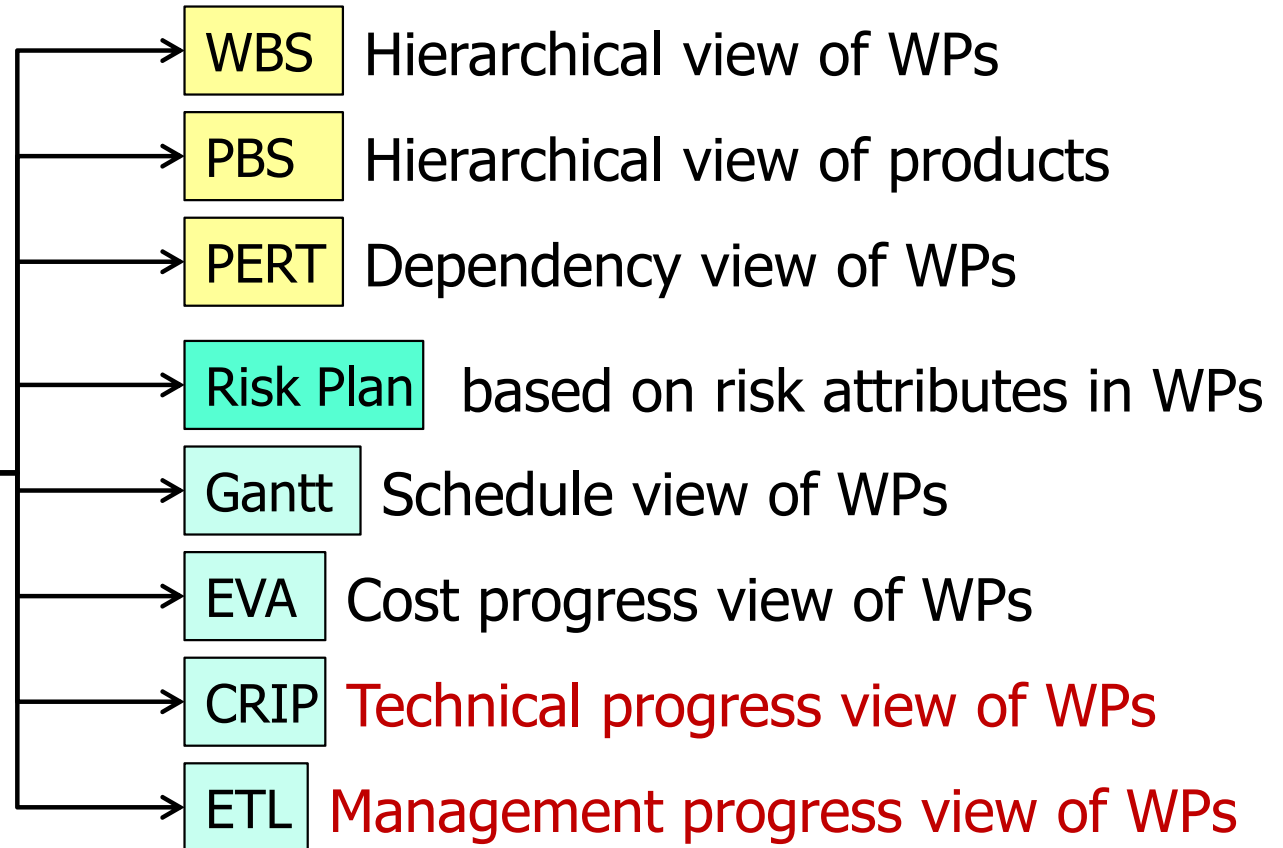
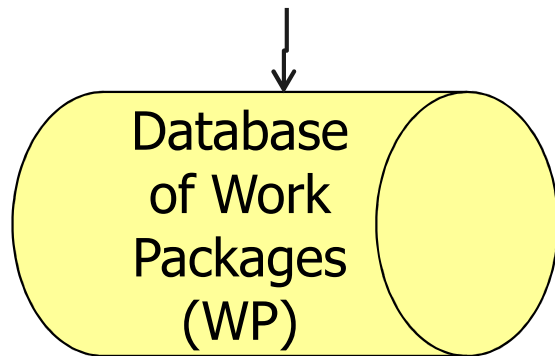
Enhanced Traffic Light Chart

#	Projects	Last time	Current		Next
		(Actual)	Expected	Actual	Projected
1	<u>Project Ho-hum</u>				
2	<u>Project Oh oh</u>	P B		P	P
3	<u>Project Catching up</u>	P	P	P	
4	<u>Project Replace manager</u>	B S	B S	B S	B S
5	<u>Project Very happy customer</u>				
6	<u>Project Completed</u>				N/A
7	<u>Project Promote manager</u>	P	P		
8	<u>Project Watch this person</u>	B S			
9	<u>Project No risk management</u>		P	P	P
10	<u>Project Took course in risk management</u>				P
11	<u>Project Manager doing risk management</u>	P	P	P	P

* Systems Thinker's Toolbox Figure 8.24, added since video was made

Views of project data (linked)

Insert information during
Planning and
Performance states of
project into WPs (PAM)



Topics

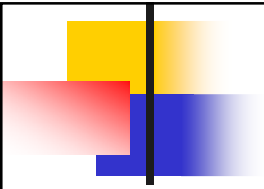
1. 1981 Once upon a time
2. 1997-1999 University of Maryland University College (UMUC)
3. 1999 - 2007 University of South Australia
4. 2007 - 2008 Cranfield University
5. **2008 - 2016 National University of Singapore**
6. 2016 – 2????? Adelaide
7. How you too can become a systems thinker



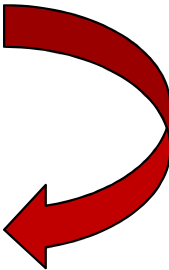
Improving education



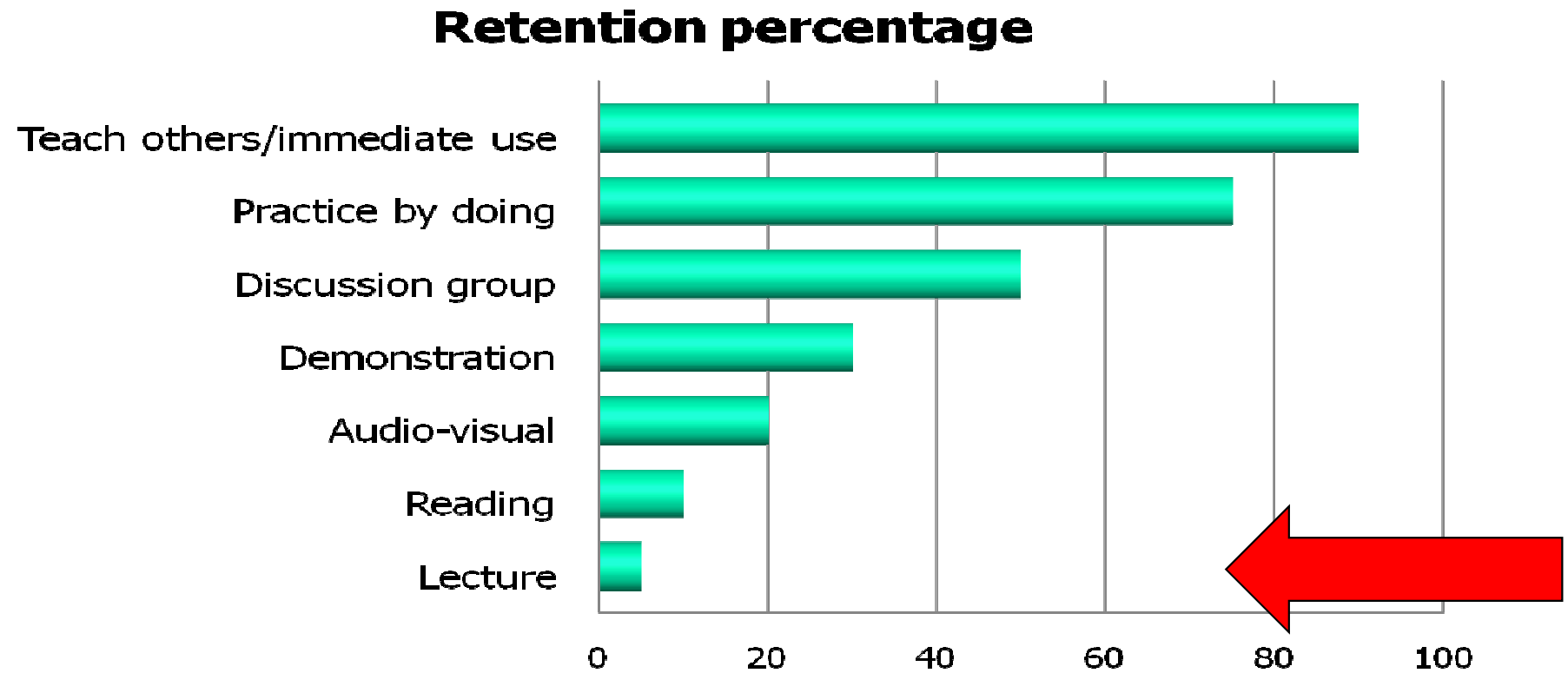
On a Journey from Jerusalem



Undesirable situation: *Operational* HTP

1. Flipped classroom
 - Students ***are supposed*** read the session material individually before the session begins, but don't
 2. Lecture by the instructor
 - Summarises the readings
 - Highlights the main points
 - Adds additional material pertinent to the session
 3. Group exercise
 - Presentations
 - Short discussion facilitated by the instructor
- 

Quantitative HTTP: Retention rate after 2 weeks



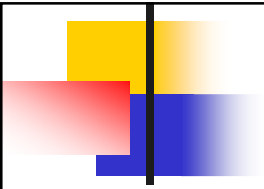
Redrawn Dales' cone and Learning Pyramid

On a Journey from Jerusalem

Continuum: Teaching and learning



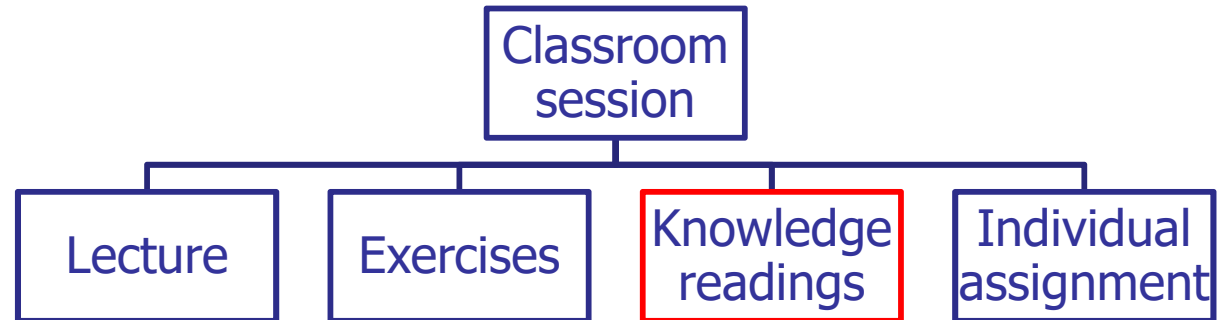
EJ and Spot.



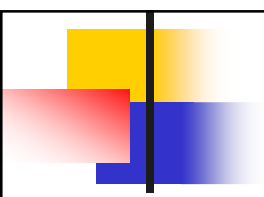
Desirable situation

1. Providing the **five top aspects of the engineering design process** that best equip secondary students to understand, manage, and solve technological problems (Wicklein, et al., 2009)
 - Including **systems thinking** and **problem-solving**
2. **Grading** based on **cognitive skills** and knowledge
 - Incorporating higher levels of Bloom's taxonomy
3. Going beyond systems thinking to holistic thinking
 - Systems thinking provides understanding
 - Holistic thinking identifies problems and provides solutions
4. Providing required domain knowledge

Solution situation



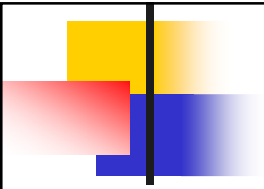
Bloom's taxonomy		Lecture	Exercises	Knowledge readings
6	Creating			√
5	Evaluating			√
4	Analyzing			√
3	Applying		√	
2	Understanding	Unknown	√	√
1	Remembering	Listened	√	√



Solution situation

Knowledge readings provide additional and extra opportunities

5 top aspects (Wicklein, et al.) (student's perspective)	Lecture	Exercises	Knowledge readings
1. Multiple solutions to a problem/requirement	Listened	Experienced	Experienced additional examples
2. Oral communications	-	Experienced	Experienced
3. Graphical/pictorial communications	Received	Experienced	Experienced
4. Ability to handle open-ended/ill-defined problems	-	Experienced	-
5. Systems thinking	Listened	Went beyond	Went well beyond



Perceptions of systems-1

1. *Structural*

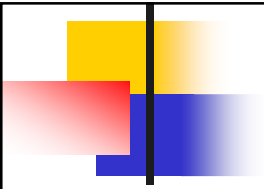
- **Complexity** is in the eye of the beholder
 - Jackson, M. C. and Keys, P., "*Towards a System of Systems Methodologies*", Journal of the Operations Research Society, Vol. 35 (1984), no. 6, pages 473-486

2. *Functional*

- Complexity and complex systems are concerns when *thinking* about problems and issues

3. *Quantitative HTP*

- What is a justifiable value of "large" in the definition of complexity?



Perceptions of systems-2

1. *Generic - similarity*

- Definitions of complex and non-complex systems are the same
 - Common element – objects and relationships between the objects

2. *Continuum - differences*

1. Subjective complexity
 - Level of difficulty in understanding
2. Objective complexity
 - Number of elements and interconnections

3. *Quantitative*

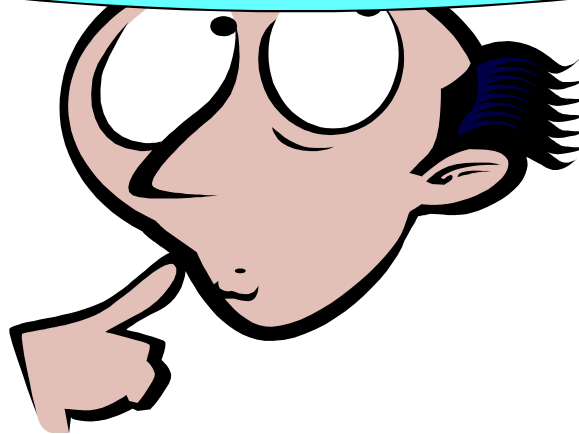
- Definitions of complex and complexity may contain numbers

Human information system

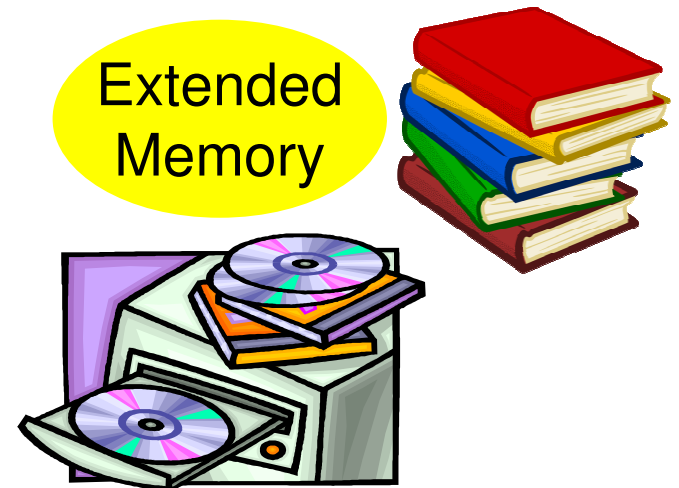
Thinking about
complex problems

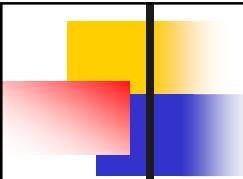
Sensors

Seeing,
hearing,
smelling,
tasting,
feeling



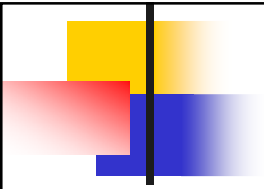
Extended
Memory





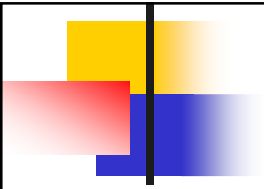
Thinking about the value of “large”

- *Operational*
 - Complexity is in the eye of the beholder
 - Jackson, M. C. and Keys, P (1984)
- *Functional*
 1. Complexity is actually sensed by the eye of the beholder
 2. Beholder thinks about the complexity
 3. Complexity is in the mind of the beholder
- *Quantitative*
 - Limitation on number of manageable elements in mind is 7 ± 2 (Miller's rule)
- *Scientific* (out of the box) conclusion
 - **Value of 'large' is “more than 7 ± 2 ” (applying Miller's rule)**



Generic HTTP: Hypothesis test

1. (Where) is that number being used to manage complexity successfully?
 - Management's span of control
 - Civilian and military organization structures
2. How?
 - Using the Principle of Hierarchies



Moving on to ... 2013



On a Journey from Jerusalem

Variations on a theme

*Panel presentation in "Are Postgraduate
Courses in Systems Engineering Teaching the
Right Things?"*



Academia is not teaching the
right things in systems
engineering Master's courses

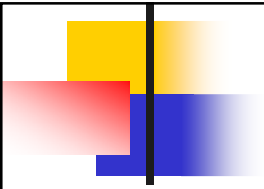
Joseph Kasser, Eileen Arnold

Rev 0.5

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permission**



1



Types of degrees

1. Pure systems engineering
 - Systems, cognitive skills, problem formulation/ solving, quantitative methods, decision-making
2. Applied systems engineering
 - Requirements, architectures, V&V, engineering management, engineering, *ilities, etc.
3. Domain systems engineering
 - a. Depth (Several courses in single domain)
 - b. Breadth (Courses in several domains)

Similar to Mathematics (pure and applied)

Percentage courses by types of degrees

No degree was purely one type

Degree	1	2	3	4	5	6	7	8	9	10	11
Pure systems engineering	0.25	0.09	0	0.50	0.10	0	0	0.10	0	0	0.10
Applied systems engineering	0.55	0.22	0.50	0.42	0.80	0.40	0.40	0	0	0.60	0.40
Domain systems	0	0	0	0	0	0	0	0.10	0	0	0.30
Management	0.10	0.31	0.10	0.08	0	0.10	0.20	0.10	0.20	0.20	0
Total*	0.90	0.62	0.60	1.00	0.90	0.50	0.60	0.30	0.20	0.80	0.80

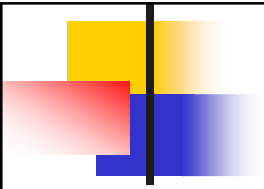
Numbers show % of topics in [descriptions of] required courses in degrees

Example:

If degree has 10 courses, 5 required courses = 0.50

1 required course = 10%, 1 elective course = 0%

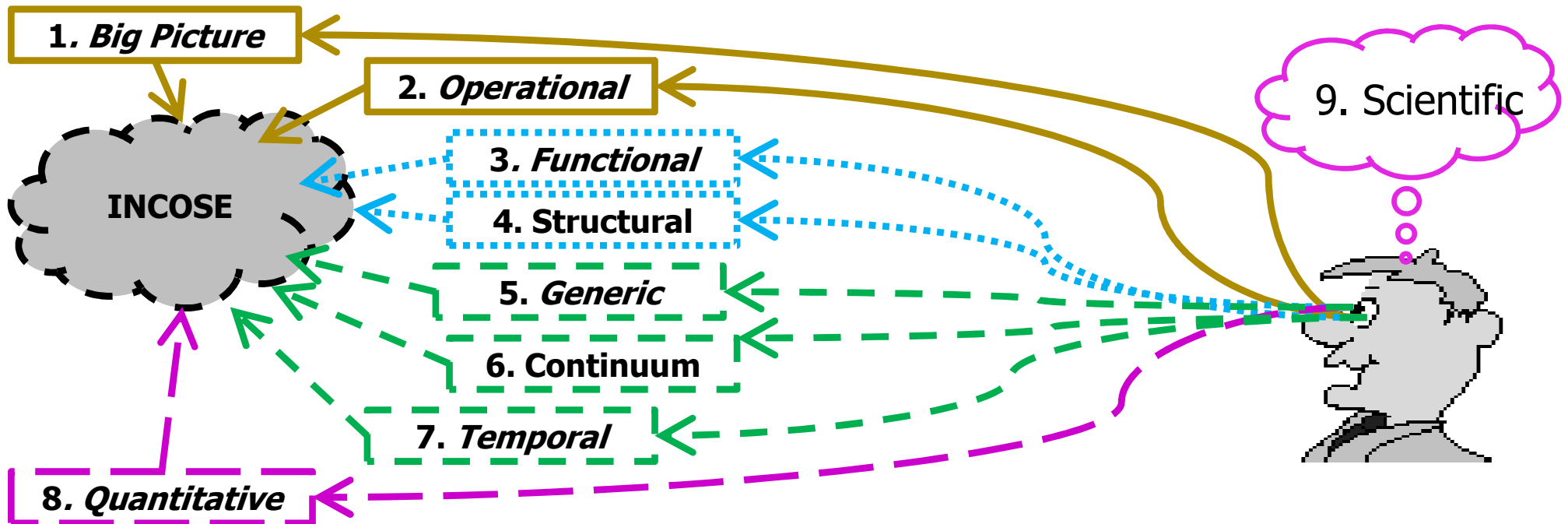
* Numbers may not add up to 100% due to electives

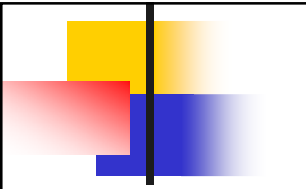


Undesirable situation in INCOSE in 2016

1. Email from Cecilia Haskins in 2015 telling me
 - A complaint had been received about an incident at the IS in 2014
 - I had been informally tried by a self-appointed group in absentia and found guilty
 - My punishment was I had been banned from presenting at the next two INCOSE IS
 - I noted the informal trial had violated INCOSE's policies
2. I filed a complaint with INCOSE
3. I was never informed who complained and what the charges were
4. Witnesses stated that I had done nothing wrong
5. My punishment was eventually revoked in a libelous letter from the then president
6. Based on that letter, I am still under notice that I can be summarily ejected from an IS if someone complains about my behaviour

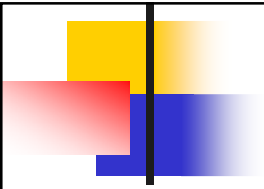
Viewing INCOSE from the HTPs in 2016





Lack of systems engineering in 2016

1. Projects and products
2. Certification was narrow and process based
3. Competency model was flawed
4. Web site was not user friendly
5. Dial-in meeting software did not work on Macs
6. Can't think of any useful product in teaching systems engineering
7. BKCASE and GRCSE (Education)
8. Requested the systems engineering analysis supporting BKCASE and GRCSE (Education)
 - No idea what I was talking about
9. Symposium review process was very subjective



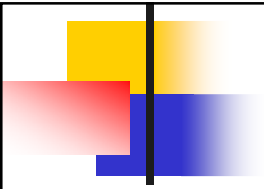
Leadership in 2016

1. Standard volunteer organization distribution
 - Few motivated real workers
 - Minority of membership
 - Some seek status rather than do work
 - Some are content to be seen but don't contribute
 - Peter principle in action
2. Mostly ignorant
 - Technical knowledge, dealing with volunteers & other cultures
 - Nobody seems to be doing the IV&V, Q/C or mentoring
3. Mediocre (at least the academics)
4. Focus on startups rather than accomplishments
5. Most achievements seem to be 'meetings took place'

So, where's the value as of 2016?

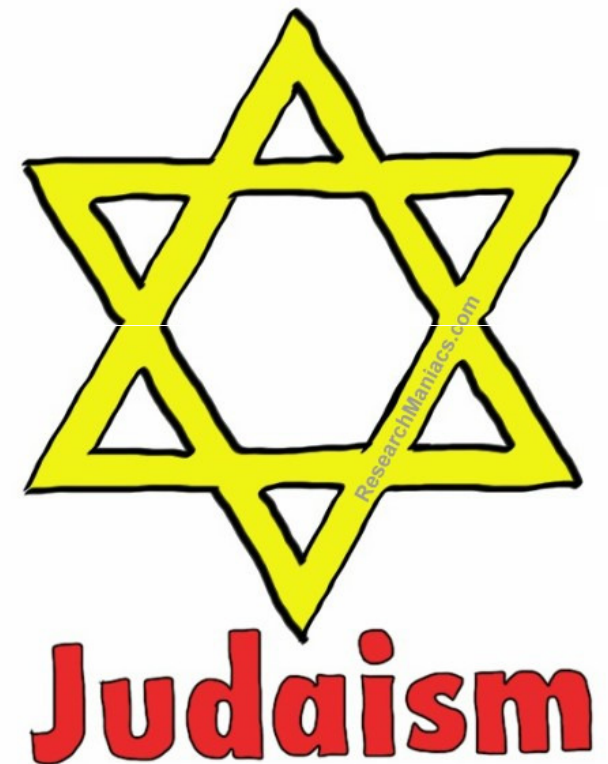
- After 25 years, no significant contribution to the discipline of systems engineering
- **International Club Organized for Systems Engineers**
 - Provides international social networking opportunities
 - Chapter meetings
 - Special Interest Groups
 - International Workshop
 - International Symposium
- Still waiting for an answer





Topics

1. 1981 Once upon a time
2. 1997-1999 University of Maryland
University College (UMUC)
3. 1999 - 2007 University of South Australia
4. 2007 - 2008 Cranfield University
5. 2008 - 2016 National University of
Singapore
6. **2016 – 2??? Adelaide**
 - You too can become a systems thinker



Blessings before doing something (E)

1. "Blessed art thou ... who has commanded us to
..."

- Where?
- When?



2. Example: *kindle the Sabbath light*

■ Exodus (20: 8)

- Remember the Sabbath day
- Thou shall not do any work

■ Deuteronomy (5:12-15)

- Keep the Sabbath day to sanctify it
- Thou shall not do any work

Blessings before doing something (H)

1. "Blessed art thou ... who has commanded us to ..."

- Where?
- When?



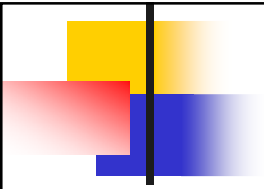
2. Example: *kindle the Sabbath light*

■ Exodus (20:8-9)

- זְכוֹר אֶת-יּוֹם הַשַּׁבָּת לְקַדְּשׁוֹ
- לֹא תַעֲשֶׂה כָל-מְלָאכָה

■ Deuteronomy (5:12-15)

- שָׁמֹר אֶת-יּוֹם הַשַּׁבָּת לְקַדְּשׁוֹ
- כִּי אֲשֶׁר צִוָּה יְהוָה אֱלֹהֶיךָ
- לֹא-תַעֲשֶׂה כָל-מְלָאכָה



The Shabbat goy (E)

1. *Structural (full text)*

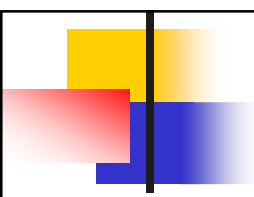
- *Exodus 20:10*: But the seventh day is the Sabbath of the LORD thy God: in it **thou shalt not do any work, thou**, nor thy **son**, nor thy **daughter**, thy **manservant**, nor thy **maidservant**, nor thy **cattle**, nor thy **stranger** that is within thy gates.
- *Deuteronomy 5:14*: But the seventh day is the Sabbath of the LORD thy God: in it **thou shalt not do any work, thou**, nor thy **son**, nor thy **daughter**, nor thy **manservant**, nor thy **maidservant**, nor thine **ox**, nor thine **ass**, nor any of thy **cattle**, nor thy **stranger** that is within thy gates; that thy manservant and thy maidservant may rest as well as thou.

2. *Scientific (logic)*

- Premise: the Shabbat goy is either a manservant, a maidservant or a stranger (~~or an ass~~)
- Conclusion: the Shabbat goy is a violation of the commandments

3. *Continuum*: **no prohibition on thy "wife"**

On a Journey from Jerusalem



The Shabbat goy (H)

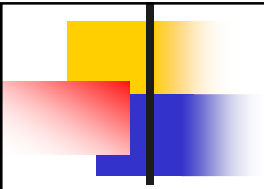
1. Structural (full text)

- **Exodus 20:10:** וְיוֹם הַשְּׁבִיעִי שַׁבַּת לַיהוָה אֱלֹהֶיךָ לֹא תַעֲשֶׂה כָל-מְלָאכָה אַתָּה וּבִנְךָ-וּבִתֶּךָ עַבְדְּךָ וְאַמְתֶּךָ וּבְהֵמָתְךָ וְגֵרְךָ אֲשֶׁר בְּשַׁעְרֶיךָ.
- **Deuteronomy 5:14:** וְיוֹם הַשְּׁבִיעִי שַׁבַּת לַיהוָה אֱלֹהֶיךָ לֹא-תַעֲשֶׂה כָל-מְלָאכָה אַתָּה וּבִנְךָ-וּבִתֶּךָ וְעַבְדְּךָ-וְאַמְתֶּךָ וְשׁוֹרְךָ וַחֲמֹרְךָ וְכָל-בְּהֵמָתְךָ וְגֵרְךָ אֲשֶׁר בְּשַׁעְרֶיךָ לְמַעַן יָנוּחַ עַבְדְּךָ וְאַמְתֶּךָ כָּמוֹךָ.

2. Scientific (logic)

- Premise: the **goy** שַׁבַּת is either a **עַבְדְּךָ**, a **וְאַמְתֶּךָ** or a **גֵר**
- Conclusion: the **goy** שַׁבַּת is a violation of the commandments

3. Continuum: **no prohibition on thy "wife"**



The Sabbath Jew (E)

1. Shabbat goy gets paid to work on Sabbath
2. Shabbat Jew gets paid to work on the Sabbath or festival
3. Leading services by chanting prayers
 - Cantor (Chazzan)
4. Leading the services in the synagogue and chanting the torah portion
 - Rabbi, cantor
5. Preparing the synagogue and tidying up before and after the services
 - Beadle (Shamash)
6. Leading high holiday services in outlying communities
7. Some rabbis may even work 7 days a week ?????????



The תַּשְׁ Jew (H)

1. תַּשְׁ **goy** gets paid to work on תַּשְׁ
2. תַּשְׁ **Jew** gets paid to work on the תַּשְׁ or **festival**
3. Leading **services** by chanting **prayers**
 - Cantor (**Chazzan**)
4. Leading the services in the synagogue and chanting the **torah** portion
 - Rabbi, chazzan
5. Preparing the **synagogue** and tidying up before and after the **services**
 - Beadle (**Shamash**)
6. Leading **high holiday services** in outlying communities
7. Some **rabbis** may even work 7 days a week ?????????

The 10 commandments (E)

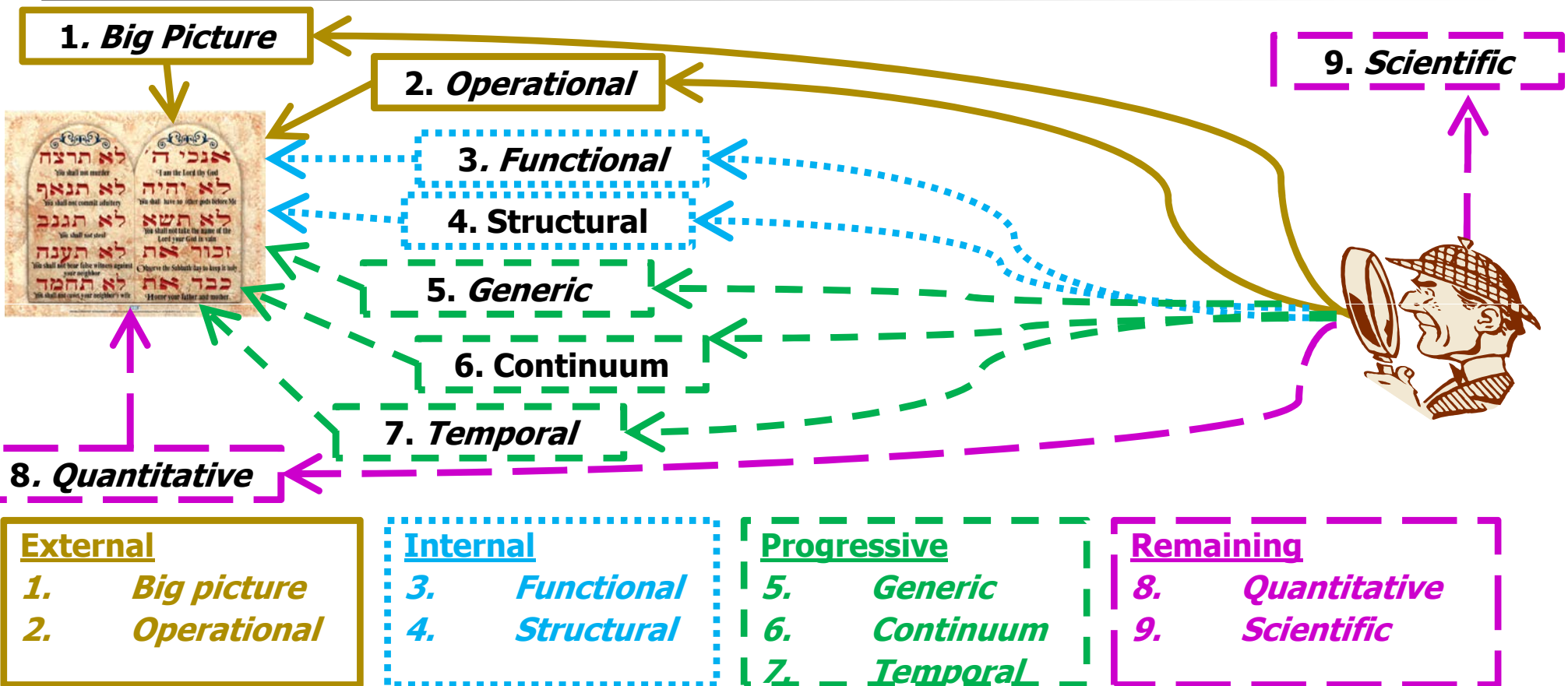


The 10 commandments (H)

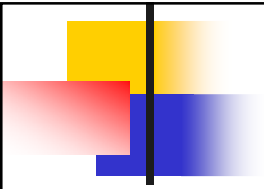


On a Journey from Jerusalem

Thinking about the 10 commandments



On a Journey from Jerusalem



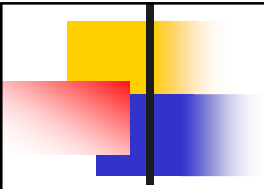
Big Picture

- **Who** gave them to whom?
 - God gave them to the children of Israel
- **What** are they?
 - Some of the commandments in the five books of Moses
- **Where** are they located?
 - Exodus 20:1-17
 - Deuteronomy 5:6-21
- **Where** were they given?
 - Mount Sinai
- **When** were they given?
 - After the exodus from Egypt
- **Why** were they given?
 - Not relevant to number issue
- **How** were they given?
 - Verbally and written on stone tablets
- **How** do we know there are 10 of them?
 - Stated in
 - Exodus 34:28
 - Deuteronomy 4:13 and 10:4

What is a Commandment? (*Structural*)

1. An instruction to do or not to do something
 - A sentence containing imperative verb
 - e.g., Thou shalt ..., honour, remember, etc.
2. 'or' and 'nor' are implied instructions, so there are multiple commandments in the sentence
3. Is known as a **requirement** in systems engineering





Structural/Quantitative – details 1E

Verse	Exodus 20	Verse	Deuteronomy 5	#
1	And God spake all these words, saying			
2	I am the Lord thy God, which have brought thee out of the land of Egypt, out of the house of bondage.	6	I am the Lord thy God, which brought thee out of the land of Egypt, from the house of bondage.	
3	Thou shalt have no other gods before me.	7	Thou shalt have none other gods before me.	1 (1)

KJV

Structural/Quantitative – details 1H

Verse	Exodus 20	Verse	Deuteronomy 5	#
1	וַיְדַבֵּר אֱלֹהִים אֶת כָּל־הַדְּבָרִים הָאֵלֶּה לְאַמֵּר			
2	אֲנֹכִי יְהוָה אֱלֹהֶיךָ אֲשֶׁר הוֹצֵאתִיךָ מֵאֶרֶץ מִצְרַיִם מִבְּתֵי עֲבָדִים	6	אֲנֹכִי יְהוָה אֱלֹהֶיךָ אֲשֶׁר הוֹצֵאתִיךָ מֵאֶרֶץ מִצְרַיִם מִבְּתֵי עֲבָדִים	
3	לֹא יִהְיֶה לְךָ אֱלֹהִים אֲחֵרִים עַל־פְּנֵי	7	לֹא־יִהְיֶה לְךָ אֱלֹהִים אֲחֵרִים עַל־פְּנֵי	1 (1)

Structural/Quantitative – details 2E

Verse	Exodus 20	Verse	Deuteronomy 5	#
4	Thou shalt not make unto thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the water under the earth.	8	Thou shalt not make thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the waters beneath the earth.	4 (5)
5	Thou shalt not bow down thyself to them, nor serve them. for I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.	9	Thou shalt not bow down thyself unto them, nor serve them. for I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.	2 (7)

Structural/Quantitative – details 2H

Verse	Exodus 20	Verse	Deuteronomy 5	#
4	לֹא תַעֲשֶׂה לָךְ פֶּסֶל וְכָל־תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בָּאָרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ	8	לֹא־תַעֲשֶׂה לָךְ פֶּסֶל־כָּל־תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בָּאָרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ	4 (5)
5	לֹא־תִשְׁתַּחֲוֶה לָהֶם וְלֹא תַעֲבֹדֵם כִּי אֲנֹכִי יְהוָה אֱלֹהֶיךָ אֵל קַדָּשׁ עֹנֵן אֲבֹת עַל־בָּנִים עַל־שְׁלֵשִׁים וְעַל־רִבְעִים לְשָׁנָאִי	9	לֹא־תִשְׁתַּחֲוֶה לָהֶם וְלֹא־תַעֲבֹדֵם כִּי־אֲנֹכִי יְהוָה אֱלֹהֶיךָ אֵל קַדָּשׁ פֹּקֵד עֹנֵן אֲבֹת עַל־בָּנִים וְעַל־שְׁלֵשִׁים וְעַל־רִבְעִים לְשָׁנָאִי	2 (7)



Structural/Quantitative – details 3E

Verse	Exodus 20	Verse	Deuteronomy 5	#
6	And showing mercy unto thousands of them that love me, and keep my commandments.	10	And showing mercy unto thousands of them that love me and keep my commandments.	
7	Thou shalt not take the name of the Lord thy God in vain; for the Lord will not hold him guiltless that taketh his name in vain.	11	Thou shalt not take the name of the Lord thy God in vain; for the Lord will not hold him guiltless that taketh his name in vain.	1 (8)
8	Remember the Sabbath day, to keep it holy.	12	Keep the Sabbath day to sanctify it, as the Lord thy God hath commanded thee.	2 (10)

- *Continuum:* **Remember** and **keep** are different commandments but may be “how’s” ways to keep it holy/sanctify it (What”)

Structural/Quantitative – details 3H

Verse	Exodus 20	Verse	Deuteronomy 5	#
6	וְעָשָׂה חֹסֶד לְאֵלִים לְאַהֲבָי וּלְשִׁמְרֵי מִצְוֹתַי	10	וְעָשָׂה חֹסֶד לְאֵלִים לְאַהֲבָי וּלְשִׁמְרֵי מִצְוֹתַי (כְּתִיב מִצְוֹתוֹ)	
7	לֹא תִשָּׂא אֶת־שֵׁם־יְהוָה אֱלֹהֶיךָ לְשׁוֹא כִּי־לֹא יִנָּקֶה יְהוָה אֶת אֲשֶׁר־יִשָּׂא אֶת־שֵׁמוֹ לְשׁוֹא־	11	לֹא תִשָּׂא אֶת־שֵׁם־יְהוָה אֱלֹהֶיךָ לְשׁוֹא כִּי־לֹא יִנָּקֶה יְהוָה אֶת אֲשֶׁר־יִשָּׂא אֶת־שֵׁמוֹ לְשׁוֹא־	1 (8)
8	זָכוֹר אֶת־יְוֹם הַשַּׁבָּת לְקַדְּשׁוֹ	12	שָׁמֹר אֶת־יְוֹם הַשַּׁבָּת לְקַדְּשׁוֹ כְּאֲשֶׁר צִוָּה יְהוָה אֱלֹהֶיךָ	2 (10)

- Continuum:* זָכוֹר and שָׁמֹר are different **commandments** but may be “how’s” ways to לְקַדְּשׁוֹ (What”)

Structural/Quantitative – details 4E

The overlooked commandment

Verse	Exodus 20	Verse	Deuteronomy 5	#
9	Six days shalt thou labour, and do all thy work.	13	Six days thou shalt labour, and do all thy work.	1 (11)
10	But the seventh day is the Sabbath of the Lord thy God. in it thou shalt not do any work, thou, nor thy son, nor thy daughter, thy manservant, nor thy maidservant, nor thy cattle, nor thy stranger that is within thy gates.	14	But the seventh day is the Sabbath of the Lord thy God. in it thou shalt not do any work, thou, nor thy son, nor thy daughter, nor thy manservant, nor thy maidservant, nor thine ox, nor thine ass, nor any of thy cattle, nor thy stranger that is within thy gates; that thy manservant and thy maidservant may rest as well as thou.	1 (12)

Structural/Quantitative – details 4H

The overlooked commandment

Verse	Exodus 20	Verse	Deuteronomy 5	#
9	שֵׁשֶׁת יָמִים תַּעֲבֹד וְעָשִׂיתָ כָּל־מְלֹאכֶתְךָ	13	שֵׁשֶׁת יָמִים תַּעֲבֹד וְעָשִׂיתָ כָּל־מְלֹאכֶתְךָ	1 (11)
10	וַיּוֹם הַשְּׁבִיעִי שַׁבָּת לַיהוָה אֱלֹהֶיךָ לֹא תַעֲשֶׂה כָל־מְלָאכָה אֹתָהּ וּבִנְךָ־וּבִתְךָ עֹבְדֶיךָ וְאִמְתְּךָ וּבִהְמֹתְךָ וְגֵרְךָ אֲשֶׁר בִּשְׁעָרֶיךָ.	14	וַיּוֹם הַשְּׁבִיעִי שַׁבָּת לַיהוָה אֱלֹהֶיךָ לֹא־תַעֲשֶׂה כָל־מְלָאכָה אֹתָהּ וּבִנְךָ־וּבִתְךָ וְעֹבְדֶיךָ־וְאִמְתְּךָ וְשׂוֹרְךָ וְחִמְרְךָ וְכָל־בְּהֶמְתְּךָ וְגֵרְךָ אֲשֶׁר בִּשְׁעָרֶיךָ לְמַעַן יָנוּחַ עֲבָדְךָ וְאִמְתְּךָ כָּמוֹךָ	1 (12)

Structural/Quantitative – details 5E

Verse	Exodus 20	Verse	Deuteronomy 5	#
11	For in six days the Lord made heaven and earth, the sea, and all that in them is, and rested the seventh day: wherefore the Lord blessed the Sabbath day, and hallowed it.	15	And remember that thou was a servant in the land of Egypt, and that the Lord thy God brought thee out thence through a mighty hand and by a stretched out arm: therefore the Lord thy God commanded thee to keep the Sabbath day.	
12	Honour thy father and thy mother. that thy days may be long upon the land which the Lord thy God giveth thee.	16	Honour thy father and thy mother, as the Lord thy God hath commanded thee; that thy days may be prolonged, and that it may go well with thee, in the land which the Lord thy God giveth thee.	2 (14)
13	Thou shalt not kill (murder). Thou shalt not commit adultery. Thou shalt not steal. Thou shalt not bear false witness against your neighbor.	17	Thou shalt not kill (murder)	4 (18)
		18	Neither shalt thou commit adultery.	
		19	Neither shalt thou steal.	
		20	Neither shalt thou bear false witness against thy neighbour.	

Structural/Quantitative – details 5H

Verse	Exodus 20	Verse	Deuteronomy 5	#
11	כִּי שִׁשִּׁתַּיִּמִּים עָשָׂה יְהוָה אֶת־הַשָּׁמַיִם וְאֶת־הָאָרֶץ אֶת־הַיָּם וְאֶת־כָּל־אֲשֶׁר־בָּם וַיָּנַח בַּיּוֹם הַשְּׁבִיעִי עַל־כֵּן בֵּרַךְ יְהוָה אֶת־יוֹם הַשַּׁבָּת וַיְקַדְּשֶׁהָ	15	וַיִּרְתֵּךְ כִּי עָבַדְתָּ הָיִיתָ בְּאֶרֶץ מִצְרַיִם וַיֹּצֵאֲךָ יְהוָה אֱלֹהֶיךָ מִשָּׁם בְּיָד חֲזָקָה וּבְזֵרַע נְטוּיָה עַל־כֵּן צִוְּךָ יְהוָה אֱלֹהֶיךָ לַעֲשׂוֹת אֶת־יוֹם הַשַּׁבָּת	
12	כִּכְּ אֶת־אֲבִיךָ וְאֶת־אִמְךָ לְמַעַן יָאָרְךָ וְיִמְיָךְ עַל־הָאֱמָה אֲשֶׁר־יְהוָה אֱלֹהֶיךָ נָתַן לָךְ	16	כִּכְּ אֶת־אֲבִיךָ וְאֶת־אִמְךָ כָּאֲשֶׁר צִוְּךָ יְהוָה אֱלֹהֶיךָ לְמַעַן יָאָרְךָ וְיִמְיָךְ וְלִמְעַן יִיטֵב לָךְ עַל־ הָאֱמָה אֲשֶׁר־יְהוָה אֱלֹהֶיךָ נָתַן לָךְ	2 (14)
13	לֹא תִרְצָח : לֹא תִנָּאֵף : לֹא תִגְנוֹב: לֹא־תַעֲנֶה בְרֵעֲךָ עַל שְׁקֹר	17	לֹא תִרְצָח וְלֹא תִנָּאֵף וְלֹא תִגְנוֹב וְלֹא־תַעֲנֶה בְרֵעֲךָ עַל שְׁוֹא	4 (18)

Structural/Quantitative – details (6E)

Verse	Exodus 20	Verse	Deuteronomy 5	#
21	Thou shalt not covet thy neighbour's house, thou shalt not covet thy neighbour's wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is thy neighbour's.	21	Neither shalt thou desire thy neighbour's wife, neither shalt thou covet thy neighbour's house, his field , or his manservant, or his maidservant, his ox, or his ass, or any thing that is thy neighbour's.	1 or 7 (19 or 25)

1. Continuum

1. KJV **Exodus** is positive, **Deuteronomy** is negative
2. Order is different
3. E.g. Neighbour's wife

2. Quantitative – how many commandments in this verse ?

Structural/Quantitative – details (6H)

Verse	Exodus 20	Verse	Deuteronomy 5	#
14	לֹא תִחְמַד בֵּית רֵעֶךָ לֹא-תִחְמַד אִשֶּׁת רֵעֶךָ וְעַבְדּוֹ וְאִמָּתוֹ וְשׁוֹרְךָ וְחִמְרְךָ וְכָל אֲשֶׁר לְרֵעֶךָ	18	וְלֹא תִחְמַד אִשֶּׁת רֵעֶךָ וְלֹא תִתְאַוֶּה בֵּית רֵעֶךָ שְׂדֵהוּ וְעַבְדּוֹ וְאִמָּתוֹ שׁוֹרְךָ וְחִמְרְךָ וְכָל אֲשֶׁר לְרֵעֶךָ	1 or 7 (19 or 25)

1. Continuum

1. Order is different

2. E.g. אִשֶּׁת רֵעֶךָ

3. שְׂדֵהוּ

2. Quantitative – how many **commandments** in this **verse** ?

What's and how's (E)

The 10 commandments

Exodus 20:14 Thou shalt not covet

...

20:14:a
Neighbour's house

20:14:b
Neighbour's wife

20:14:c,d,e
Neighbour's ...

What's and how's (H)

The 10 commandments

לֹא תִהְיֶה לְךָ אֱלֹהִים אֲחֵרִים *Exodus 20:21*

...

בֵּית רֵעֶךָ 20:21:a

אִשְׁתִּי רֵעֶךָ 20:21:b

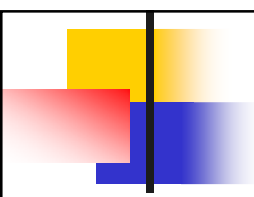
רֵעֶךָ ... 20:21:c,d,e

Multiple commandments (E)

Verse	Exodus 20	Verse	Deuteronomy 5	Sub
4	Thou shalt not make unto thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the water under the earth.	8	Thou shalt not make thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the waters beneath the earth.	1+3
14	Thou shalt not covet thy neighbour's house , thou shalt not covet thy neighbour's wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is thy neighbour's.	21	Neither shalt thou desire thy neighbour's wife, neither shalt thou covet thy neighbour's house, his field , or his manservant, or his maidservant, his ox, or his ass, or any thing that is thy neighbour's.	1+6 or 7

Multiple commandments (H)

Verse	Exodus 20	Verse	Deuteronomy 5	Sub
4	לֹא תַעֲשֶׂה-לָּךְ פֶּסֶל וְכָל-תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בַּאֲרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ	8	לֹא-תַעֲשֶׂה לָּךְ פֶּסֶל כָּל-תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בַּאֲרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ.	1+3
14	לֹא תִחַמֵּד בֵּית רֶעֶךָ לֹא-תִחַמֵּד אִשְׁתִּי רֶעֶךָ וְעַבְדּוֹ וְאִמָּתוֹ וְשׁוֹר׃ וְחֲמֹר׃ וְכָל אֲשֶׁר לְרֶעֶךָ	18	וְלֹא תִחַמֵּד אִשְׁתִּי רֶעֶךָ וְלֹא תִתְּאוּהָ בֵּית רֶעֶךָ שְׂדֵהוּ וְעַבְדּוֹ וְאִמָּתוֹ שׁוֹר׃ וְחֲמֹר׃ וְכָל אֲשֶׁר לְרֶעֶךָ.	1+6 or 7

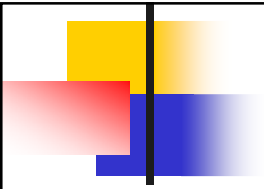


Another what and how's? 15-6=9?

Verse	Exodus 20	Verse	Deuteronomy 5	#
3	Thou shalt have no other gods before me.	7	Thou shalt have none other gods before me.	1
4	Thou shalt not make unto thee any graven image , or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the water under the earth.	8	Thou shalt not make thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the waters beneath the earth.	4
5	Thou shalt not bow down thyself to them, nor serve them . for I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.	9	Thou shalt not bow down thyself unto them, nor serve them. for I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.	2

Another what and how's? 15-6=9?

Verse	Exodus 20	Verse	Deuteronomy 5	#
3	לֹא יִהְיֶה-לָּךְ אֱלֹהִים אֲחֵרִים עַל-פָּנַי	7	לֹא-יִהְיֶה לָּךְ אֱלֹהִים אֲחֵרִים עַל-פָּנַי	1
4	לֹא תַעֲשֶׂה-לָּךְ פֶּסֶל וְכָל- תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בָּאָרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ	8	לֹא-תַעֲשֶׂה לָּךְ פֶּסֶל כָּל-תְּמוּנָה אֲשֶׁר בַּשָּׁמַיִם מִמַּעַל וְאֲשֶׁר בָּאָרֶץ מִתַּחַת וְאֲשֶׁר בַּמַּיִם מִתַּחַת לָאָרֶץ	4
5	לֹא-תִשְׁתַּחֲוֶה לָהֶם וְלֹא תַעֲבֹדֵם כִּי אֱנִי יְהוָה אֱלֹהֶיךָ אֵל קִנְאָה פֹקֵד עֹן אָבוֹת עַל-בְּנֵים וְעַל-שְׂלִישִׁים וְעַל-רִבְעִים לְשָׁנָאִי	9	לֹא-תִשְׁתַּחֲוֶה לָהֶם וְלֹא תַעֲבֹדֵם כִּי אֱנִי יְהוָה אֱלֹהֶיךָ אֵל קִנְאָה פֹקֵד עֹן אָבוֹת עַל-בְּנֵים וְעַל-שְׂלִישִׁים וְעַל-רִבְעִים לְשָׁנָאִי	2



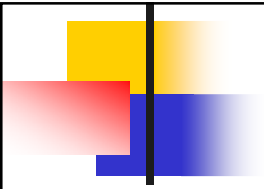
Questions (E)

1. How many commandments are there?
2. What are they?
3. Why is "Six days shalt thou labour, and do all thy work" ignored?
4. Does the 5-day working week transgress this commandment?
5. While the temple priests were exempted from working on the Sabbath¹, where is the written exemption for today's clergy to (do God's) work on the Sabbath outside the temple?
6. If there isn't an exemption, why are the clergy² working on the Sabbath in transgression of the commandment?

Notes

1 they were commanded to bring sacrifices on the Sabbath (not to pray)

2 professional religious persons, e.g., rabbi, cantor and beadle



Questions (H)

1. How many commandments are there?
2. What are they?
3. Why is "שְׁשֶׁת יָמִים תַּעֲבֹד וְעָשִׂיתָ לְמַלְאכָתִי" ignored?
4. Does the 5-day working week transgress this commandment?
5. While the **temple priests** were exempted from working on the מִזְבֵּחַ¹, where is the written exemption for today's clergy to (do God's) work on the מִזְבֵּחַ outside the **temple**?
6. If there isn't an exemption, why are the clergy² working on the מִזְבֵּחַ in **transgression of the commandment**?

Notes

1 they were commanded to bring **sacrifices** on the מִזְבֵּחַ (not to **pray**)

2 professional religious persons, e.g., **rabbi**, **cantor** and **beadle**

The second day of a Jewish festival(E)

1. *Big Picture*

- Living in Jerusalem
- Overseas visitors staying with us
- Second evening of holiday

2. *Operational*

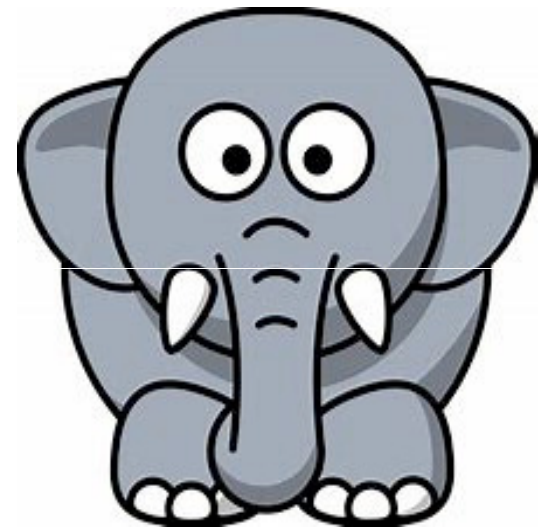
- I kept one day, they kept two days

3. *Functional*

- I made havdalah, they made kiddush

4. *Scientific (observation)*

- This situation did not make sense, we were in the same place



The second day of a Jewish festival(H)

1. *Big Picture*

- Living in **Jerusalem**
- Overseas visitors staying with us
- **Second evening of holiday**

2. *Operational*

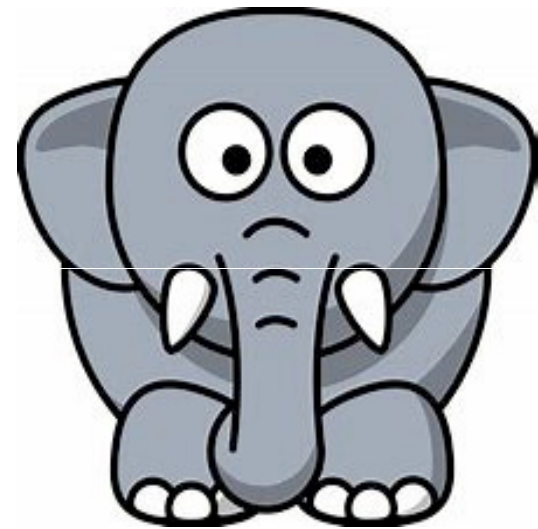
- I kept one day, they kept two days

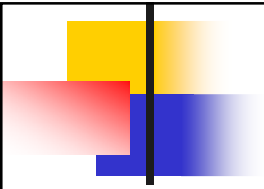
3. *Functional*

- I made **havdalah**, they made **kiddush**

4. *Scientific (observation)*

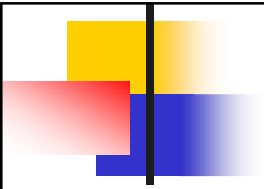
- This situation did not make sense, we were in the same place





Temporal (Biblical times)

1. Torah commanded, the first day of the month be set based on hearing the testimony of witnesses who had seen the new moon
 - First day of Rosh Hashanah was not predictable
 - Only known after the fact
2. Risk management
 - Keep two days based on expected day
 - Allowed whole country to keep correct day (either first or second)
 - Days of holidays later in month were then known, so no need for two days
 - Later extended to Babylon (the Diaspora)



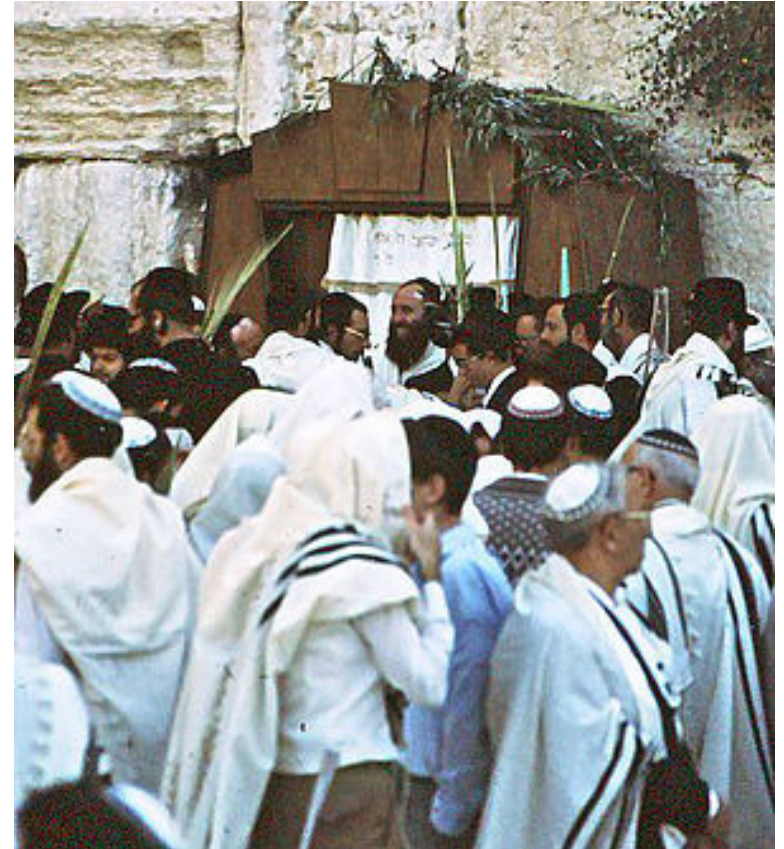
Quantitative

Holiday	Date
New Year – Rosh Hashanah	1 Tishrei
Day of Atonement – Yom Kippur	10 Tishrei
Tabernacles - Sukkot	15 Tishrei
Passover - Pesach	15 Nissan
Pentecost –Shavuot*	6 Sivan

Observation: Shavuot is the 50th day of the Omer,
there is **no ambiguity** as to the date

Disturbing thought

- ***Scientific***
 - By changing the requirement to be based **on nationality** and **not on location**, the Israel **orthodox rabbinate** have quietly **abolished the rabbinical two-day Diaspora tradition** (requirement)





Priority of the commandments

1. Torah does not prioritize

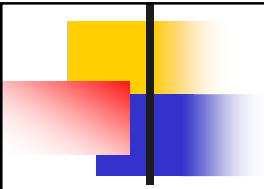
- Each is as important as the next (See 11th commandment)
- Perhaps by number of repetitions?
 - 10 commandments ?
 - Repetition of positive treatment of strangers – many times ?

2. Evolved hierarchy?

1. Divine – 'de raitha'
2. Rabbinical – 'de rabanan'
3. Customs and traditions

1. *Continuum* HTP question

- Disturbing thought
- So what makes one
 - Ultra orthodox?
 - Orthodox?
 - Conservative?
 - Progressive?
 - Reform?



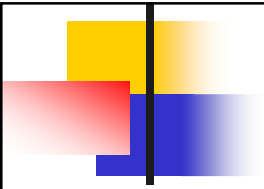
Separation of church and state

1. *Temporal*

- Torah split church and state
 - Moses became head of state
 - Aaron became head of church (Exodus 28:1, 29:44)
- Hasmoneans combined them
- Modern Israel has religious political parties in the government

2. *Scientific* inference (disturbing thought)

1. Modern Israel religious political parties taking part in the government violate the separation of church and state
2. The state of the government in Israel provides an example of why the commandment exists



The 11th commandment? (E)

1. *Big Picture*

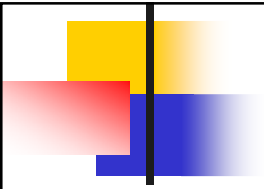
- Moses addressing the people before his death
- Deuteronomy Chapter 4

2. *Structural*

1. ~~"Now therefore hearken, O Israel, unto the statutes and unto the judgments, which I teach you, for to do them, that ye may live, and go in and possess the land which the LORD God of your fathers giveth you."~~

2. **"*Ye shall not add unto the word* which I command you, ***neither shall ye diminish ought from it***, that ye may keep the commandments of the LORD your God which I command you."**

3. *Continuum* - difference between adding and interpreting



The 11th commandment? (H)

1. *Big Picture*

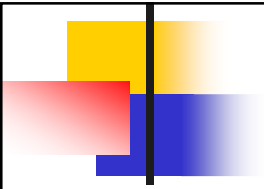
- **Moses** addressing the people before his death
- **Deuteronomy** Chapter 4

2. *Structural*

~~1. וְעַתָּה יִשְׂרָאֵל שִׁמְעֵ אֶל-הַחֻקִּים וְאֶל-הַמִּשְׁפָּטִים אֲשֶׁר אֲנִי מְלַמֵּד אֶתְכֶם
לַעֲשׂוֹת לְמַעַן תַּחֲיוּ וּבִאתֶם וְיִרְשְׁתֶּם אֶת-הָאָרֶץ אֲשֶׁר יְהוָה אֱלֹהֵי אֲבוֹתֵיכֶם
נָתַן לָכֶם~~

2. לֹא תֹסֵפוּ עַל-הַדְּבָר אֲשֶׁר אֲנִי מְצִוֶּה אֶתְכֶם וְלֹא תִגְרְעוּ מִמֶּנּוּ לְשֹׁמֵר
אֶת-מִצְוֹת יְהוָה אֱלֹהֵיכֶם אֲשֶׁר אֲנִי מְצִוֶּה אֶתְכֶם:

3. *Continuum* - difference between adding and interpreting



Temporal (additions and subtractions)

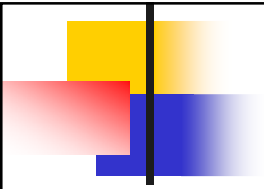
1. Romans deleted temple commandments by destroying the temple
2. Rabbinical commandments building a fence around the core added
 - Fence in case of accidental transgression
 - Fences around fences
 - Takes a lot of fun out of life
 - Leads to transgression of divine as well as rabbinical commandments
 - Rebels stop keeping divine and rabbinical commandments
 - Don't know the difference
3. Reform subtracted commandments
 - Takes a lot of Judaism out of life
 - Led to assimilation – no difference between being Jewish and non-Jewish



Scientific (after some critical thinking)

1. There is no divine oral law
 - A claim there is*, is a violation of Deuteronomy :4:2
2. There is rabbinic law based on later interpretations to fit changing circumstances over time as documented in
 - Talmud in the rabbinical disputes in the Mishna and Gemarra
 - Later writings, e.g. Rambam, Rashi, Shulchan Orech, et al.
3. The warning in the commandment has come true
 - **Additions** have led to not **keeping the divine commandments** as well as evil in organized religion
 - **Subtractions** have led to **not keeping the divine commandments** as well as assimilation

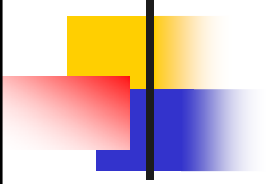
* R. Levi b. Hama says further in the name of R. Simeon b. Lakish , Brachot 5a



Leads to ... evil

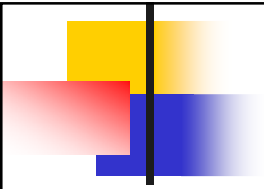
1. Keep 'kosher' (according to Rabbinical interpretation)
 - Two kashrut boards in London*
 - Sephard and Ashkenaz
 - Tax on meat and other kosher food supports their rabbinate
 - Basar Chutz (out of town meat)
 - Someone who became orthodox (Baal teshuva) is forbidden by their rabbi to honour non-kosher parents (a divine commandment) who live in a different city by visiting them, in case they violate the rabbinical commandment to keep 'kosher' by eating their mother's home-cooked meal
2. *Scientific*
 - Not much to do with religion, more to do with finance and control

* Hyamson, A. M, The LONDON BOARD for SHECHITA 1804-1954



Yizkor prayer (*Temporal/Continuum*)

1. The British United Synagogue (Singer's) prayer book (Routledge Pentecost 10th edition, 1937, page 114b)
 - *"We beseech thee, Lord of compassion, shelter them forevermore under the cover of thy wings, and let their souls be bound up in the bond of life, and may they rest in peace upon their couches; and let us say Amen"*
2. New Union Prayer book (1975, page 551)
 - *"May they be at one with the One who is life eternal. May the beauty of their lives shine for evermore, and may my life always bring honour to their memory"*
3. Artscroll (American ultra-Orthodox) (page 810)
 - *"I shall give charity on his behalf. As a reward for this, may his soul be bound in the bond of life together with the souls of Abraham, Isaac, Jacob, Sarah, Rebecca, Rachel and Leah, and together with the other righteous men and women in the Garden of Eden"*



Yizkor prayer (*Scientific*)

1. Evolution in concept of afterlife
2. Artscroll
 - ***"I shall give charity on his behalf. As a reward for this, may his soul be bound in the bond of life together with the souls of Abraham, Isaac, Jacob, Sarah, Rebecca, Rachel and Leah, and together with the other righteous men and women in the Garden of Eden"***
3. Conclusions (for the ultra orthodox?)
 - While you may not be able to buy your way into heaven, your children can
 - So don't upset them, they may have the final say on how you spend eternity!

Rosh Hashanah (E)

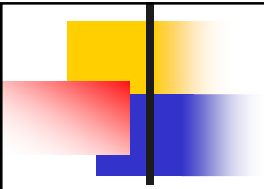
1. "On Rosh Hashanah you are judged"
2. "On Yom Kippur the judgment is sealed"
3. "But repentance, prayer and charity can temper the severity of the judgment"
4. Questions
 - Where is that written in the Torah?
 - Evolution over the millennia
 - What is charity?



Rosh Hashanah (H)

1. "On Rosh Hashanah you are judged"
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4. Questions
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 - What is charity?

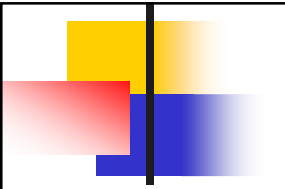




Charity (T'zdakah)

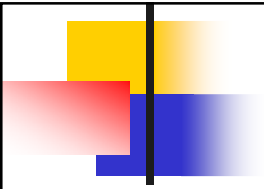
1. Donating money to

- ~~Poor and helpless people~~
- Organized religion
 - Education
 - Yeshivot
 - Jewish day schools
 - Synagogues
 - Orthodox, conservative and reform



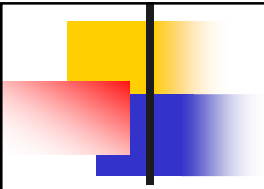
Scientific HTP: Organized religion (E)

1. Is not about
 - Living according to the commandments and performing Mitzvot
 - Perpetuating the religion into the future
 2. Is about
 - Finance
 - Control
 3. By violating
 - *Leviticus 19:17* ... thou **shalt love thy neighbour as thyself**
 - with the intersect strife.
 - Hillel's golden rule "What is hateful to thee, do not unto thy fellow; this is the whole law" (Tractate Sabbath)
- Shouldn't it practice what it preaches?



Scientific HTP: Organized religion (H)

1. Is not about
 - Living according to the commandments and performing **Mitzvot**
 - Perpetuating the religion into the future
2. Is about
 - Finance
 - Control
3. By violating
 - **Leviticus 19:17** ... **אַהֲבַת לרֵעֶךָ כְּמוֹךָ**
 - with the intersect strife.
 - **Hillel's golden rule** "What is hateful to thee, do not unto thy fellow; this is the whole law" (Tractate **אֵרָוָה**)
4. Shouldn't it practice what it preaches?



Topics

1. 1981 Once upon a time
2. 1997-1999 University of Maryland University College (UMUC)
3. 1999 - 2007 University of South Australia
4. 2007 - 2008 Cranfield University
5. 2008 - 2016 National University of Singapore
6. 2016 – 2??? Adelaide
- 7. You too can become a systems thinker**

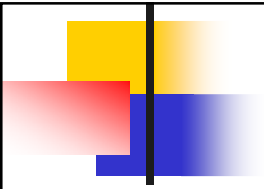
Current situation

1. Observations

- Some of us are systems thinkers
 - All of the time
 - Most of the time
 - Some of the time
 - None of the time
- When not thinking emotionally



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Situation Awareness Levels

6. Doing something about the situation 6.B Trying to change the situation 6.A Walking away		Remaining steps in problem-solving
5. Working out what is wrong	Next step in problem-solving	
4. Grumbling and complaining		
3. Accepting situation (living with it)		
2. Identifying that something is wrong	First step in problem-solving	
1. Not even realizing that something is wrong/undesirable		

You too can be a systems thinker

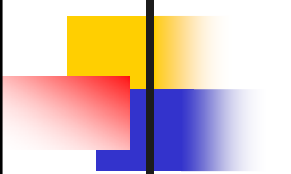
1. Developed a simple effective way to teach system thinking
 - Started teaching this way in 2008 and still fine tuning
2. Postgraduate students found it easy to learn
 - Australia, Brunei, Germany, Israel, Japan, Singapore, South Africa. Switzerland, Taiwan and UK
 - But retention rates were not good
3. Retention improved when I
 - Stopped teaching in block mode
 - Introduced the semester-mode balanced classroom
4. **No reason why you can't learn and retain it as well**



What makes it all worthwhile

1. **Six years after the class and no contact, came a surprise unsolicited message on LinkedIn**
2. "I really enjoyed your teaching at NUS - It was a quite memorable course that I often think back on in my professional career"
 - Mathias Halkjær Petersen
 - Chief Digital Officer (CDO) at Clayton Power
 - Odense S, South Denmark, Denmark

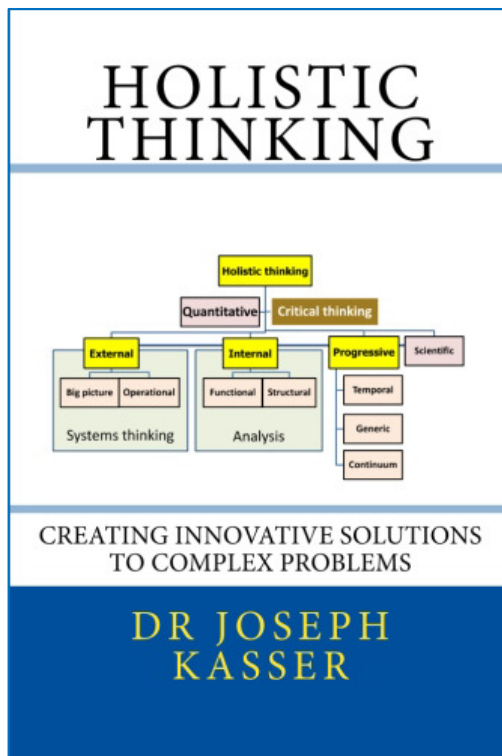




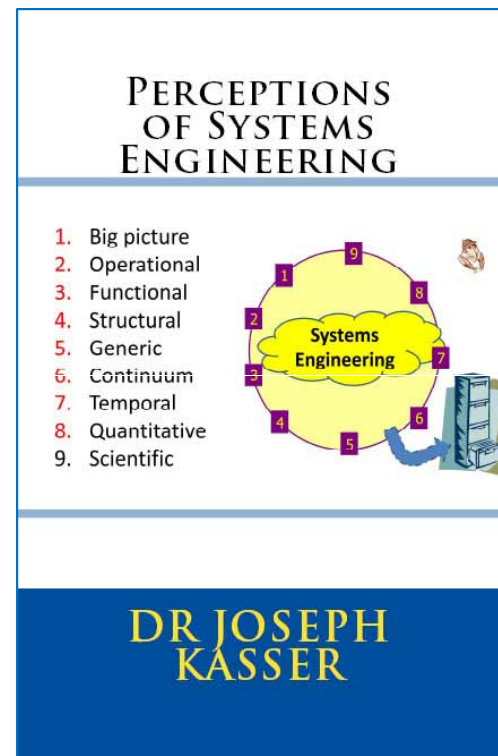
Systems thinking and beyond (STAB)

1. You will learn about
 - The HTPs and their application to:
 - Problems and complex problems
 - Project management
 - Systems engineering
 - Risk management and prevention
2. Using the balanced classroom pedagogy to
 - Maximize your learning
 - Let you practice using the HTPs
 - Let you receive guidance to reinforce your learning
3. Three text books are supplied as free PDFs

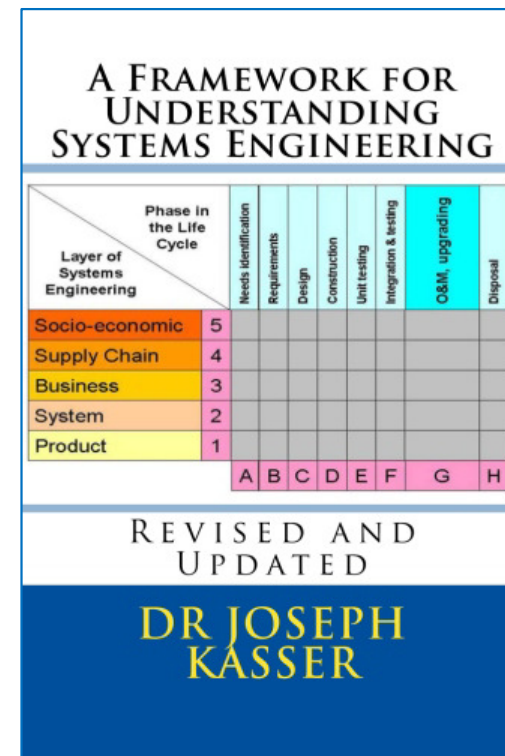
Three text books supplied as PDFs



\$39.95

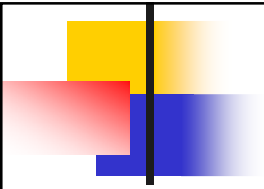


\$39.95



\$29.95

On a Journey from Jerusalem

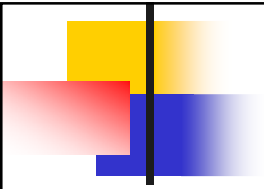


Starting in October

1. Balanced classroom approach not block mode
 - Beyond the flipped classroom
2. 10 sessions, one 3 hour session a week **\$4,000 value**
3. Three text books **\$109.85 value**
4. Covid discounted classes
5. Go to Covid URL on my web page for further details and registration
6. Class size is limited to maximize instructor-participant interaction

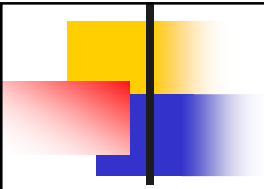
Only Euro 199

On a Journey from Jerusalem



Summary

1. 1981 Once upon a time
2. 1997-1999 University of Maryland University College (UMUC)
3. 1999 - 2007 University of South Australia
4. 2007 - 2008 Cranfield University
5. 2008 - 2016 National University of Singapore
6. 2016 – 2??? Adelaide
7. 2020 Showed how you too can become a systems thinker



Postscript

1. The commandments (in the old Testament) are a requirements specification for relationships between
 1. Man and God (Bain adom v'makom)
 2. Man and his neighbour (Bain adam v'chavero)
2. I do not dispute the specification, nor have I found any contradictions in the original
3. I have some disturbing thoughts about
 - The way the specification has been modified over time
 - Organized religion

Questions and comments



All graphics in this presentation are PowerPoint clipart unless I have permission to use, or created the graphic

[Http://therightrequirement.com](http://therightrequirement.com)