

HARVARD-RADCLIFFE CLASS OF 1965 50TH REUNION
JEFFREY RACE -- TEN-MINUTE TALK
"THE BONFIRE OF THE VERITIES"
[PRESENTED IN SCIENCE CENTER B OF HARVARD UNIVERSITY ON MAY 26, 2015]

[PANEL 01]

WHO KNOWS THE POEM 'THE GODS OF THE COPYBOOK HEADINGS'?

PLEASE RAISE YOUR HAND.

THAT'S SIGNIFICANT. WE'LL COME BACK TO THAT IN NINE MINUTES.

FIFTY YEARS AGO I PLAYED A BIT PART IN THE BIGGEST DISASTER TO BEFALL OUR COUNTRY SINCE THE CIVIL WAR.

SOON AFTER WADING ASHORE IN VIETNAM I SENSED SOMETHING WAS WRONG.

WHY WAS THE TEAM WITH THE BLANK CHECK FROM A SUPERPOWER LOSING INFLUENCE TO PEOPLE WEARING SANDALS MADE FROM OLD TIRES?

NO ONE COULD SAY WHY.

TO GET THE ANSWER I ASKED TO TRANSFER FROM A DESK IN SAIGON TO A FIELD COMBAT ROLE AND TO STAY A SECOND YEAR. THEN I RETURNED FOR A THIRD YEAR ON MY OWN AS A CIVILIAN RESEARCHER.

MY SCIENTIFIC QUESTION WAS PUT BY TOLSTOY MORE DRAMATICALLY IN *WAR AND PEACE*
[PANEL 02]

[NAPOLEON'S ARMY] [THE VIETNAMESE ARMY DIDN'T MARCH OUT TO WAR]

THE TRIVIALY SIMPLE ANSWER WAS WELL KNOWN TO SOCIOLOGISTS.

I WROTE IT UP AS A BOOK [PANEL 03] AND LATER TURNED IT IN AS MY DOCTORAL DISSERTATION.

IT WAS RECENTLY REPUBLISHED IN AN EXPANDED EDITION AFTER 40 YEARS IN PRINT.

AMAZON SAYS I'M AMONG THE TOP TEN MILITARY THINKERS OF ALL TIME

YOU'LL SEE ME UP THERE BETWEEN THUCYDIDES AND MAO TSE-TUNG. [PANEL 04]

1 TITLE PAGE 2 TOLSTOY'S QUESTION 3 WCTLA 4 AMAZON PAGE

The Bonfire of the Verities

Count Tolstoy poses a challenging question in Chapter IV of
War and Peace

"Napoleon commanded an army to be raised, and to march
out to war .

The question [is] why six hundred thousand men go out to
fight when Napoleon utters certain words"

That is exactly the same question as

"Why did the United States lose the Vietnam War?"

South Vietnam's President Ngo dinh Diem ordered an army to be
raised and to march out to war.

America financed it.

But it didn't go out to war with the same vigor as its opponent's.

That was the question before me in 1967.

War Comes to Long An

REVOLUTIONARY CONFLICT
IN A VIETNAMESE PROVINCE

Jeffrey Race

"Brilliantly conceived and executed." —*The New York Times*

WAR COMES to LONG AN



Revolutionary
Conflict in a
Vietnamese
Province

UPDATED AND EXPANDED

JEFFREY RACE

Best Military Theorists

A Listmania! list by [Bill Dries](#) (Tucson, AZ United States)

 [Share with friends](#)

- | | |
|--|--|
| <p> </p> <p>1. The Art of Warfare (Classics of Ancient China) by Sun Tzu</p> <p>The list author says:
"The seminal work on strategy -- with a better translation"</p> <p>\$18.26 Used & New from: \$1.48
★★★★★  (30 customer reviews)</p> <p>Create your own Listmania! with this book</p> | <p></p> <p>6. Some Principles of Maritime Strategy (Classics of Sea Power Series) by Lesa A. McComas</p> <p>The list author says:
"Clausewitz for the sea"</p> <p>\$48.95 Used & New from: \$0.27
★★★★★  (1 customer review)</p> <p> Add to Cart Create your own Listmania! with this book</p> |
| <p> </p> <p>2. The Landmark Thucydides: A Comprehensive Guide to the War of the Peloponnese by Thucydides</p> <p>The list author says:
"Must have for anyone interested in the use of political and military strategy"</p> <p>\$14.93 Used & New from: \$6.75
★★★★★  (120 customer reviews)</p> <p>Create your own Listmania! with this book</p> | <p> </p> <p>7. The Air Campaign: Revised Ed. by John A. Warden</p> <p>The list author says:
"Warden reinvestigates Strategic Bombing Theory"</p> <p>\$14.95 Used & New from: \$0.01
★★★★★  (7 customer reviews)</p> <p> Add to Cart Create your own Listmania! with this book</p> |
| <p> </p> <p>3. On War (Penguin Classics) by Michael Howard</p> <p>The list author says:
"The basis of most modern western military thought"</p> <p>\$10.72 Used & New from: \$0.01
★★★★★  (95 customer reviews)</p> <p>Create your own Listmania! with this book</p> | <p> </p> <p>8. Command of the Air by Giulio Douhet</p> <p>The list author says:
"The Italian that has been ripped off by 'original' airpower theorists for 80 years"</p> <p>Used & New from: \$19.28
★★★★★  (6 customer reviews)</p> <p> See all buying options Create your own Listmania! with this book</p> |
| <p> </p> <p>4. Strategy by A. Svehin</p> <p>The list author says:
"Hard to find but worth the search -- one of the fathers of Deception"</p> <p>\$28.27 Used & New from: \$12.93
★★★★★  (2 customer reviews)</p> <p>Create your own Listmania! with this book</p> | <p> </p> <p>9. War Comes to Long An: Revolutionary Conflict in a Vietnamese Province by Jeffrey Race</p> <p>The list author says:
"A great book to help Westerners understand Eastern thinking"</p> <p>Used & New from: \$0.01
★★★★★  (7 customer reviews)</p> <p> See all buying options Create your own Listmania! with this book</p> |
| <p> </p> <p>5. In Pursuit of Military Excellence: The Evolution of Operational Theory by Shimon Naveh</p> <p>The list author says:
"The development of Operational Theory -- dense but enlightening"</p> <p>\$51.07 Used & New from: \$47.06
★★★★★  (2 customer reviews)</p> <p>Create your own Listmania! with this book</p> | <p> </p> <p>10. On Guerrilla Warfare by Zedong Mao</p> <p>The list author says:
"Mao's real genius was in military theory"</p> <p>\$12.40 Used & New from: \$0.01
★★★★★  (66 customer reviews)</p> <p> Add to Cart Create your own Listmania! with this book</p> |

Harvard-Radcliffe Class of 1965 50th Reunion Presentation -- Jeffrey Race

BUT I THOUGHT OF VIETNAM NO MORE AFTER '75 BECAUSE I WAS SURE AMERICA
WOULD NEVER GET INTO SUCH A MESS AGAIN. MY BOOK WAS NOW OUT!

IN 1983 I SET UP AN OFFICE AS A MANAGEMENT CONSULTANT IN BANGKOK AND NEEDED
AN ELECTRONIC DEVICE WHICH DID NOT EXIST.

I LEAD A PARALLEL LIFE IN ELECTRICAL ENGINEERING SO DESIGNED IT FOR MY OWN
USE, BUT MANY OTHERS NEEDED IT TOO SO I'VE BEEN MANUFACTURING IT FOR 32
YEARS.

THIS IS WHAT I DO WHEN I'M NOT THINKING ABOUT SOCIAL SCIENCE ISSUES IN
GOVERNMENT OR ECONOMICS OR SOCIOLOGY. [PANEL 05] [PANEL 06]

MY ENGINEERING WORK IS IMPORTANT IN WHAT FOLLOWS.

BUT THEN I NOTICED THAT THESE DISASTERS CONTINUE. THINK IRAQ AND AFGHANISTAN.

AND SOMETHING EVEN MORE INTERESTING:

THE DECISIONS LEADING TO THESE DISASTERS WERE MADE BY VERY INTELLIGENT
PEOPLE WITH DEGREES FROM TOP UNIVERSITIES, WITH GREAT STAFFS AND ALMOST
LIMITLESS INFORMATION-GATHERING BUDGETS. [PANEL 07] [PANEL 08]
[PANEL 09] [PANEL 10] [PANEL 11] YOU'LL RECOGNIZE SOME FACES.

AND THEY WERE AMPLY WARNED OF DISASTER.

BUT WAIT -- THERE'S MORE! THIS PATHOLOGICAL DECISION-MAKING WAS NOT
REGION-SPECIFIC OR JUST FOREIGN MILITARY INVOLVEMENTS.
THINK 2008 FINANCIAL CRISIS.

SO IN 2012 I STARTED A NEW PROJECT AS A FELLOW AT THE KENNEDY SCHOOL.

THE SCIENTIFIC QUESTION IS WHAT YOU SEE ON THE SCREEN. [PANEL 12]

WHY DOES THIS PATHOLOGICAL BEHAVIOR EXIST AND WHAT CAN WE -- MUST WE --
DO ABOUT IT?

[5] BLACK MAGIC MARKETING SHEET [6] CIRCUITRY FROM TDT
[7] VN: BUNDY [8] KISSINGER [9] MACNAMARA
[10] SUMMERS [11] BERNANKE
[12] THE NEW QUESTION "WHY AND WHAT TO DO?"

The World's Smallest Ringing Generator!

The *Black Magic*tm Telephone Ringing Generator

actual size
micro model



Features

- Output 86 v, 20 hz, 10 watts (mini model), 5 watts (micro model). Custom voltages and frequencies available on special order.
- Square-wave output, modifiable with filters to sine or quasi-sine if required.
- Input: 24 or 48 v dc (mini model); 5 or 12 v dc (micro model). Custom voltages available on special order.
- Environmentally encapsulated. Unique to the *Black Magic*tm family.
- Weight: only 110 grams (3.9 oz) for the mini model; 28 grams (1.0 oz) for the micro model.
- Size: mini only 51 x 51 x 18 mm (2 x 2 x 11/16"); micro only 33 x 33 x 13 mm (1.3 x 1.3 x 0.5 in). Unique to the *Black Magic*tm family.

Applications

- Industrial and railway systems
- Speech-plus, AVD and carrier systems
- Special signalling circuits
- Foreign exchange and order wire circuits
- Any application requiring an ultra-small on-card ringing power source
- PABXs and Key Systems
- Customer premise equipment
- Mobile telephones
- Test equipment

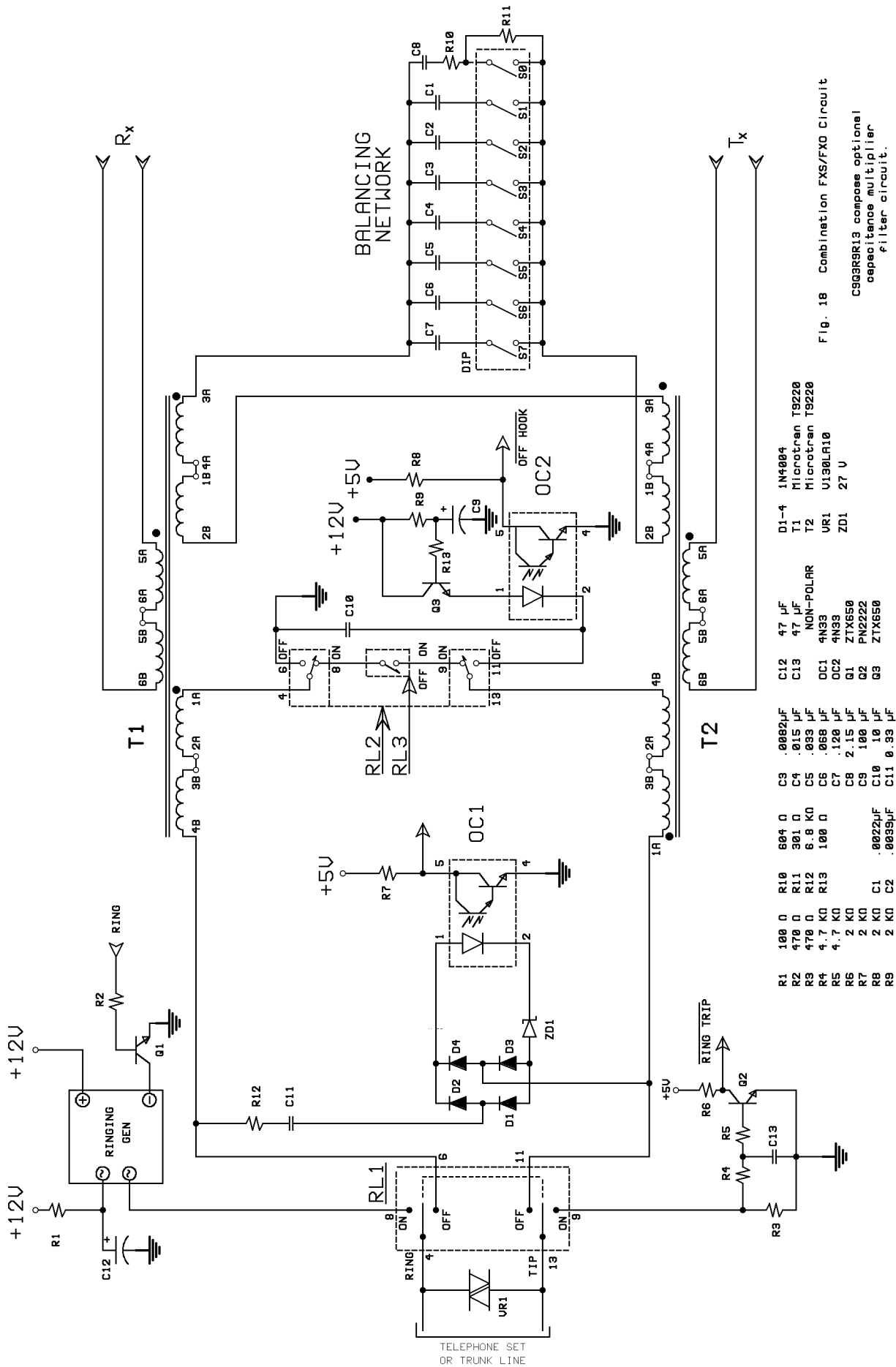


Fig. 18 Combination FXS/FXO Circuit

C903R9R13 compose optional capacitance multiplier filter circuit.

R1	100 Ω	R10	604 Ω	C9	.0082μF	C12	47 μF	D1-4	1N4004
R2	470 Ω	R11	301 Ω	C4	.015 μF	C13	47 μF	T1	Microtran T9220
R3	470 Ω	R12	6.8 KΩ	C5	.033 μF	OC1	NON-POLAR	T2	Microtran T9220
R4	4.7 KΩ	R13	100 Ω	C6	.068 μF	OC2	4N33	UR1	UI30LA10
R5	4.7 KΩ	D1	2 KΩ	C7	.120 μF	Q1	4N33	ZD1	27 V
R6	2 KΩ	D2	2 KΩ	C8	2.15 μF	Q2	ZTX650		
R7	2 KΩ	D3	2 KΩ	C9	100 μF	Q3	PN2222		
R8	2 KΩ	C1	.0022μF	C10	10 μF				
R9	2 KΩ	C2	.0039μF	C11	0.33 μF				

VTXFX18



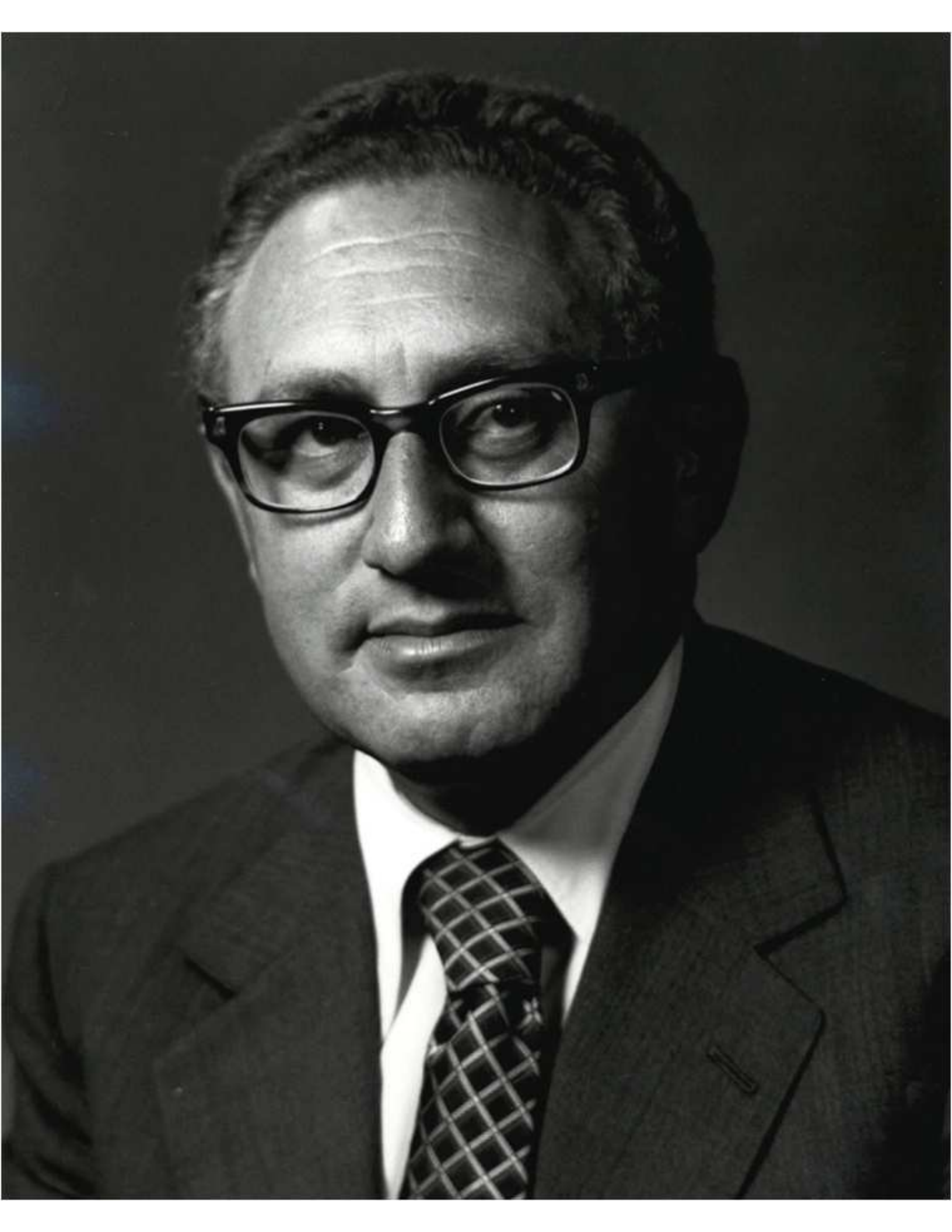






PHOTO: CHIP SOMODEVILA



Those crafting catastrophic courses of action

- 1 are very smart**
- 2 have degrees from excellent universities**
- 3 have excellent staffs**
- 4 have expansive budgets to collect data on which to base decisions**
- 5 are credibly warned beforehand that choices will have catastrophic consequences**

Why?

And what to do about it?

THE METHOD OF SCIENTIFIC CHOICE IS TO SPECIFY A PIECE OF REALITY,
THEN IDENTIFY YOUR GOALS IN IT, [PANEL 13 BLACK BOX]

THEN IDENTIFY THE INPUT-OUTPUT RELATIONS TO ACHIEVE YOUR GOALS IN
THAT DOMAIN. [PANEL 14 BLACK BOX WITH I/O]

HOW FAR DO YOU TURN DIAL FOR THE LIGHT TO GO ON?

YOUR PROGRAMS AND POLICIES ALTER THE 'I' TO AFFECT THE 'O'

A PROPERLY SPECIFIED I/O MODEL HAS AT LEAST THESE PROPERTIES

- * SPECIFIES THE ENTIRE RANGE OF INPUTS AFFECTING THE OUTPUT
- * DEFINES EACH I/O RELATIONSHIP DIRECTIONALLY AND IF POSSIBLE NUMERICALLY
- * THE I/O SPECS MUST HANDLE STEP FUNCTIONS AND DISCONTINUITIES
- * YOU HAVE TO STATE ASSUMPTIONS AND BOUNDARY/LIMITING CONDITIONS
- * YOU HAVE TO KNOW WHETHER THE 'BLACK BOX' IS A STATE MACHINE
OR AN INTELLIGENT MACHINE.
- * YOU MUST IDENTIFY FEEDBACK PATHS AND RESONANCES FOR THEIR
EFFECT ON SYSTEM STABILITY.

THAT'S THE WAY I DESIGN A POWER SUPPLY. THAT'S THE WAY ONE DESIGNS
A BRIDGE OR AN AIRPLANE.

WHEN MY DEVICES BLOW UP, AND THEY DO, I KNOW WHY.

I FIX MY DESIGN AND GIVE MY CUSTOMERS A FREE REPLACEMENT.

IF A BRIDGE COLLAPSES, YOU KNOW WHY.

IF THE ENGINEER DESIGNED THE BRIDGE NEGLIGENTLY AND PEOPLE DIE,

HE GOES TO PRISON.

[13] BLACK BOX [14] BLACK BOX WITH I/O





BUT IF YOU ASK A PANEL OF ECONOMISTS WHY THE ECONOMY CRASHED,
THEY FALL TO QUARRELING.

50 YEARS LATER PEOPLE ARE STILL ARGUING ABOUT THE VIETNAM WAR.

BIG GUNS ARE STILL DISPUTING THE IRAQ MESS -- IF YOU DON'T BELIEVE ME
VIEW THIS FILM [PANEL 15 "THE UNKNOWN KNOWN"]

IT'S UNPROFESSIONAL, IT'S UNSCIENTIFIC,

IN MEDICINE IT'S CALLED QUACKERY.

BUT IT'S EASY TO UNDERSTAND AND TO FIX.

HERE IT IS:

THESE CLEVER WELL-EDUCATED SOCIAL SO-CALLED SCIENTISTS HAVE GOOD INTENTIONS
BUT NO IDEA HOW TO SPECIFY RELIABLE SCIENTIFIC MODELS.

THEY HAVE LITTLE IDEA WHAT TO DO WHEN THEY HAVE BAD ONES.

SOCIAL SCIENTISTS WITH THE EAR OF DECISION-MAKERS PROFFER AND ACCEPT
SIMPLISTIC THINKING.

VIETNAM: BOMBING FAILED; USE MORE BOMBS!

ECONOMY: PRINTING CLAIMS TO WEALTH FAILS TO MAKE PEOPLE WEALTHY.
PRINT MORE PAPER CLAIMS!

DURING MY KENNEDY SCHOOL FELLOWSHIP I MADE A VERY INTERESTING DISCOVERY
FROM AUDITING POLICY AND PROGRAM DESIGN COURSES,

NOWHERE IN ANY CURRICULUM OR SYLLABUS IS COVERED "HOW DO I AVOID MAKING
A DECISION TENDING TO CATASTROPHIC CONSEQUENCES?"

I ASSUME IT'S THE SAME AT OTHER ELITE SCHOOLS [PANEL 16]

ESSENTIALS OF SCIENTIFIC AND LOGICAL THINKING ARE JUST NOT TAUGHT!

THIS IS WHY WE GET DEADLY RESULTS AND NO ACCOUNTABILITY

[15] RUMSFELD [16] HKS COURSES

Remarkable discovery about HKS courses!

They brilliantly teach you how to craft excellent policies, design proper implementing programs, perfectly execute, and then post facto monitor implementation.

Nowhere in any curriculum or syllabus is covered “How do I avoid making a decision tending to catastrophic consequences?”

(It is a completely different body of knowledge.)

OTHERS HAVE NIBBLED AROUND THE EDGES OF THIS PROBLEM.

THE SCREEN SHOWS A NUMBER OF WELL-STUDIED FAILURE MODES.

THESE ARE ESSENTIAL TO UNDERSTAND BUT INSUFFICIENT TO

DEAL WITH THE PROBLEM. [PANEL 17] [PANEL 18]

I WORK DIFFERENTLY.

I DERIVE FILTERS FROM CASE STUDIES WHICH, IF APPLIED TO THE
POLICY RECOMMENDATIONS, WOULD HAVE MITIGATED THE BAD OUTCOMES.
[PANEL 19]

I'M GOING TO DISCUSS ONLY A FEW OF THE TWELVE AND ONLY BRIEFLY.

YOU MAY FOLLOW MY WORK ON JEFFREYRACE.COM

[17] WELL-UNDERSTOOD FAILURE MODES [18] NOT SUFFICE [19] CASE STUDIES

Well-Understood Failure Modes

- * Arrow Impossibility Theorem
- * Lack of factual knowledge
- * Uncertainty
- * Incompetence
- * Personal corruption
- * Lack of time
- * Lack of analytical skills
- * Lack of analytical model
- * [others]

All of the above are shown and overviewed only for sake of typological completeness.

Awareness of them, though now inadequate, still would not prevent catastrophic decisions

Deriving the decision filters

- * Iraq II campaign
- * Afghanistan campaign
- * Decision-making leading to 2007/2008 US financial crisis
- * Official response to 2007/2008 US financial crisis
- * The Anti-Corruption Industry
- * "Spam"

[PANEL 20]

THE FIRST TWO FILTERS ARE VERY ANCIENT AND THEY DEMAND OUR RESPECT

THE FIRST TRANSLATES INTO CONTEMPORARY WORDS AS

"HAVE A GOOD OPERATIONAL MODEL"

IF YOU LACK A VALID MODEL THEN YOU ARE A HOSTAGE TO FORTUNE.

THE SECOND COMMANDS US TO DO NO HARM WHEN WE LACK A GOOD MODEL.

FOR EXAMPLE, IN GUERRILLA WAR DON'T USE INDISCRIMINATE VIOLENCE
BECAUSE EACH PERSON YOU KILL HAS LOTS OF RELATIVES. VIOLATING
THIS VERITY IN VIETNAM LED TO A DEATH SPIRAL FOR THE UNITED STATES,

THE SAME IS HAPPENING IN AFGHANISTAN AND IRAQ.

[20] SEE REALITY DO NO HARM

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Twelve Verities as Decision Filters

- * The Classical Verity of “seeing reality as it really is”

Pāli: yathābhūta-ñāṇadassana (Skt: yathābhūta-jñānadarśana)

Parsed: according-to-reality/knowledge-vision

(Contemporary formulation: have a proper operational model)

*** THIS IS THE MOST IMPORTANT RULE OF ALL THE TWELVE ***

- * The Classical Verity of *epi deleseis de kai adikieis eirkeia*

ἐπὶ δηλήσει δὲ καὶ ἀδικίῃ εἰρήσιν

(known now as *primum non nocere*: Do no harm!)

*** THIS IS THE SECOND MOST IMPORTANT RULE OF THE TWELVE ***

[PANEL 21]

WE'LL HAVE TO PASS THIS BY BUT IT'S VERY IMPORTANT IN LIGHT OF THE
ECONO-BABBLE YOU READ IN THE NEWSPAPERS AND HEAR ON TALK SHOWS.

[PANEL 22]

THE VERITY OF REVERSION TOWARD THE MEAN
THE SAME COMMENT AS ABOVE. SOME POLICIES AND PROGRAMS PEOPLE DISPUTE
VIGOROUSLY ABOUT AS WISE OR UNWISE, AFFORDABLE OR NOT, ETC. ARE JUST
MATHEMATICALLY IMPOSSIBLE IF YOU ACCEPT THAT SOME VARIABLES MUST
REVERT TOWARD EXPECTED VALUES.

THE VERITY OF ACTION AND CONSEQUENCE IS AN ENGINEERING CONCEPT CALLED
FEEDBACK.

IF IT'S 'NEGATIVE' YOU FORCE THE SYSTEM'S OUTPUT TO CONVERGE ON A GOAL

IF IT'S 'POSITIVE' YOUR SYSTEM WILL MOVE TO A LIMIT, WHAT THE NEWSPAPERS
CALL A CRASH.

IT YOU DON'T KNOW WHETHER IT'S POSITIVE OR NEGATIVE, YOU ARE A HOSTAGE
TO FORTUNE.

FEEDBACK WAS NOT BUILT INTO THE CRASHES WE'VE SEEN. HARDLY ANYONE
EVEN TALKS ABOUT BUILDING FEEDBACK INTO PROGRAMS AND POLICIES. THOSE
WHO TRY ARE USUALLY SHUSHED WITH "PEOPLE WILL GET UPSET IF YOU INSIST
THAT ACTIONS HAVE CONSEQUENCES."

[PANEL 21] WEALTH [PANEL 22] REVERSION + ACTION AND CONSEQUENCE

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MINUTE SEVEN

The Verity of Wealth

Increased wealth comes only from:

- * production function [e.g. Haber-Bosch process/ammonia; synthetic rubber]
- * production method [e.g. interchangeable parts]
- * business process [e.g. division of labor]
- * transport/communication to reduce delivered costs [e.g. phone;internet]
- * market expansion [e.g. reduction of physical, cost or legal barriers]
- * labor availability/effectiveness [e.g. quantity/quality of human capital]

The Verity of Reversion toward the Mean

System values have expected ranges and predictably revert toward these expected values.

The Verity of Proper Specification

Note Relative to the requirement

The Verity of Action and Consequence

Negative reverse linkage (in engineering language, “negative feedback,” can force any desired degree of conformity to system goals within system operation limits. Absence of negative feedback permits unguided system which will diverge from goals under perturbation.

[PANEL 23] ALL CYCLIC PROCESSES BY DEFINITION HAVE A CYCLE TIME.

WHAT IS IT?

IN CASES I STUDIED, THE QUESTION WAS NOT ANSWERED AND USUALLY NOT EVEN ASKED.

"START WITH THE END IN MIND"

IF YOU DON'T DO THIS, AND IT'S OFTEN NOT DONE,
THEN YOU CAN'T DESIGN A FEEDBACK LOOP.

CRASH IS COMING!

[PANEL 24] "THE VERITY OF RELIABILITY"

MOST PEOPLE WITH THE EARS OF DECISION-MAKERS HAVE NEVER EVEN
HEARD OF THESE DESIGN PRINCIPLES FROM SAFETY AND RELIABILITY
ENGINEERING

SKIP PANEL 25

[PANEL 26] SOME EXAMPLES

YOU MAY RECALL ALAN GREENSPAN DECLARING 'A CRASH IS UNLIKELY'
HE HAD A BAD MODEL AND HE WRECKED A LOT OF LIVES

THAILAND WHERE I'VE LIVED MOST OF MY LIFE, IS JUST AS CORRUPT AS
50 YEARS AGO DESPITE EXTENSIVE ANTI-CORRUPTION PROGRAMS --
BECAUSE THEIR DESIGNERS MISCHARACTERIZE SOCIETY AS A STATE MACHINE
WHEN IT'S AN INTELLIGENT MACHINE

[PANEL 27] MANY GOVERNMENT PROGRAMS AND PRIVATE PENSION FUND
PROJECTIONS ARE BASED ON MATHEMATICAL IMPOSSIBILITIES

[PANEL 28] EVERY OTHER DAY YOU READ PAUL KRUGMAN IN THE NEW YORK TIMES
SHOUTING

"PRINT MORE PAPER CLAIMS TO WEALTH IN ORDER TO MAKE PEOPLE WEALTHY.
THERE'S NO INFLATION!"

IT'S NONSENSE. NOT BECAUSE OF THE POLITICS WHICH IS WELL-INTENTIONED.
IT'S NONSENSE BECAUSE IT'S A SCIENTIFICALLY INVALID STATEMENT.
HE DOESN'T ADDRESS CYCLE TIMES IN HIS EXPRESSION OF AN I/O RELATIONSHIP.

[SKIP 29]

[PANEL 23] TIME [PANEL 24] RELIABILITY [PANEL 26] [PANEL 27]

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MINUTE EIGHT

The Verity of Time

All cyclic processes by definition have a cycle time which has a range of expected values

A statement "X is true" will be valid only over the relevant time period. Obligated to ask, "What is the relevant time period?"

The Verity of Prior End-State Specification

You must define the end state before starting.

The Verity of Principle Conformity

Does the contemplated action conform to the I/O relationships defined by the verified operational model (Verity #1) **only**? (Not extraneous factors like peer pressures, public fashions, political correctness. Thatcher example.)

The Verity of Reliability

Design principles from safety and reliability engineering

- * reserve capacity [mitigates instability]
- * loose coupling ("slack") [averts cascading failures] ORD airport!!!
- * no single point of failure [mitigates sudden state change]
- * graceful degradation [overcomes catastrophic failure]

At every point, you are obliged to ask: does my contemplated action conform?

The Verity of Legal Claims

Tangible objects of value are the only currency not a liability to someone.

Fiat currency and credit (debt), as someone's liability, are claims on the behavior of others that continually affect behavior until extinction.

Before creation, a plan must be put in place for either stability or extinction.

The Verity of Truthfulness

Negative feedback cannot operate if the organization lies to itself or to outsiders.

EXAMPLES OF CONSEQUENCES OF VIOLATING THE VERITIES

The Classical Verity of Seeing Reality as it Really Is [having a good model]

- * Greenspan: "crash not likely"
- * Failed anti-corruption industry-- wrong model: views society as state machine, not as the intelligent machine which it really is

The Classical Verity of 'Do No Harm'

The Verity of Wealth

- * Bernanke and QE: wealth created by printing paper
- * Contra Merkel policy: wealth created by structural change
- * Jack Lew nonsense advice to Europe: “The driver for economic growth will be consumer demand”

The Verity of Reversion toward the Mean

- * 2007 housing market
- * Mathematically impossible pension-fund projections of returns incorporating “appreciation of earnings multiples”

The Verity of Proper Specification

- * rising stock market instead of rising well-being
- * mis-specification of well-being as 'current consumption' (lacks the attribute of sustainability)

The Verity of Action and Consequence

Design metrics: (all from engineering feedback theory)

- * time period
- * lags/speed of coupling
- * sensitivity
- * coupled to whom?
- * meaningfulness of feedback to actor

The Verity of Time

Daily Krugman lesson in NY Times: “See, there’s no inflation!”
(But he doesn’t mention the well-known cycle time.)

The Verity of Prior End-State Specification

plan backward

The Verity of Principle Conformity

The Verity of Reliability

The Verity of Legal Claims

Inferred rule: at the moment of creation one must have a plan for their non-catastrophic extinction. Later it's too late.

The Verity of Truth

* Bremer and Cheney regarding Iraq (read Chandrasekaran or Rory Stewart)

THE PEOPLE WHOSE PICTURES YOU SAW ON THE SCREEN ARE JUST AS
SMART AS WE ARE.

THEY WILL NEVER FIX THESE PROBLEMS.

THEY CAN'T EVEN HAVE THE COGNITIONS.

IF BY ACCIDENT THEY WERE TO HAVE SUCH COGNITIONS AND TO START
TALKING ABOUT THEM, THEY WOULDN'T BE INVITED TO THE A-LIST
PARTIES

A SOLUTION HAS TO COME FROM THE OUTSIDE.

THE STEPS ARE ON THE SCREEN.

[PANEL 30]

[30] NO VOLUNTEERS

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MINUTE NINE

FEW WILL VOLUNTARILY RESPECT THESE VERITIES

(due to peer and small-group disincentives)

Fix #1: Create Verities Checklists (processes must be documented)

Fix #2: Distinguish invalid, negligent and mistaken decisions
Innovation of fiduciary duty

Fix #3: Create external audit bodies (like GAO and professional standards bodies)
verifying Best Current Practice

Fix #4: Personal liability for failure to follow Best Current Practice

I MAY SOUND A BIT PEEVED BUT I RISKED MY LIFE IN A POORLY
DESIGNED WAR.

MANY DIDN'T COME BACK, SOME FROM THIS UNIVERSITY.

I HAVE A COMBAT INFANTRYMAN'S BADGE. I HAVE THE RIGHT TO SPEAK.

AND I TELL YOU THAT A SUPERPOWER CAN'T BE RUN ON LUCK.

SO, WHY DO SMART OFFICIALS REPEATEDLY MAKE CATASTROPHIC DECISIONS?

THE ANSWER [PANEL 31]

FIRST

PROFOUND IGNORANCE

IGNORANCE OF THINGS NEEDED TO MAKE GOOD MODELS AND
TO EXECUTE GOOD PROGRAMS

- IGNORANCE OF HISTORY
- IGNORANCE OF FOREIGN CULTURES
- IGNORANCE OF FOREIGN LANGUAGES
- IGNORANCE OF THE ESSENTIALS OF SOUND DECISIONS

SECOND:

INDIFFERENCE TO THESE APODICTIC VERITIES

A CENTURY AGO EVERY SCHOOLBOY KNEW THE KINDS OF VERITIES
KIPLING WROTE ABOUT.

NOW THEY ARE FORGOTTEN, OR WORSE, SCORNE, AND WE SEE THE RESULTS.

THE QUESTION

"Why do smart officials repeatedly make catastrophic decisions?"

THE ANSWER

- * Profound ignorance

- * Indifference to apodictic verities

Kipling had it right a century ago with the title of his poem
"Gods of the Copybook Headings"

Every schoolboy knew the kinds of wisdom detailed above; now
no one learns these verities, least of all at Harvard; replaced by
social statistics!

No one in this room even knows the meaning of "Copybook
Headings." Look it up on Wikipedia.

ash_0422.pptx <jrace@post.harvard.edu>