

1578

Standard Comparisons

**EFFECTS OF NEW TECHNOLOGIES**

- NRC committee requested by US Army Research Institute spent 2 years evaluating 11 "New Age" performance enhancers of Army interest.
- NRC found only 2 (mental practice and stress reduction) were effective.

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**DATA ARE BEST PROTECTION AGAINST EXTRAVAGANT CLAIMS**

- Do not select new techniques based on personal experience market popularity, or testimony.
- Select new techniques by comparing their effects with the methods you now use.

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**Articles in P&I Vol 28 1989**

Number	126	100%
Text Only	47	37%
with Diagrams	41	37%
" Matrices	35	28%
" Check Lists	17	13%
" Procedure Tables	14	11%
with Data	5	4%

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**Types of Data in P&I Vol 28 1989**

No. of Articles	126	100%	Size
with Surveys	0	0%	0
" Rating Scales	0	0%	0
" Test Scores	0	0%	0
" Count / time	4	3%	*4/yr
" Gain Factors	3	2%	*4/yr
" PIP's	1	1%	*4

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**SUMMARY OF P&I JOURNAL ARTICLE COUNTS**

- Few performance technology articles contain data ( only 4%).
- But, those few articles with data publish gain factors with fairly large sized (\*4/yr) effects.
- If effect measurement was made easier and standardized, more would publish data.

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**CONSTANT MULTIPLIER GROWTH**

- Chemistry - Mass Law
- Biology - Organic Growth Ln
- Banking - Compound Int +12%
- Math - Exponential Growth Log
  - Geometric Series
  - Power Series
  - Harmonic Series
  - Fibonacci Series
- All are straight lines on SCC™

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### STANDARD CELERATION™ CHARTS

- Frequencies up the left on 6 cycle X 10 scale.
- Calendar time across bottom synchronized on + scale.
- 8 x 5.25 " grid fits screens.
- Corner to corner ( 34° angle) is doubling each Celeration Period™.

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### STRETCH TO FILL CHARTS

Unique chart for each case with:

- Frequencies up the left on + or X scale, truncated and laminated to fill screen.
- Sessions across bottom on + scale, truncated and laminated to fill screen.
- Start at case birth date, not calendar synched.

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### SCC™ PERFORMANCE MEASURES

Performance:

Frequency no/min a dot

Performance Trend:

Celeration™ no/min/wk a slope  
(Acceleration or Deceleration)

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### SCC™ PERFORMANCE EFFECTS

Performance Jump:

a factor (\* or /) a vertical line

Performance Trend Turn:

a factor (\* or /) change in slope

Both can be “\* up” or “/ down”  
and are independent.

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### INTEGRATED SCC™ SET

Frequency charted: Celeration™ observed:

Daily	Weekly
Weekly	Monthly
Monthly	6 Month
Yearly	5 Year

From: Behavior Research Co.  
Box 3351, Kansas City KS 66103

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### SCC™ MONITORING ADVANTAGES

- Save time - 2 min / chart.
- See directly effect quantities.
- Project outcome date easily.
- Compare with other cases.
- Separate jumps from turns.
- Discover variables from:
  - celeration™ changes.
  - exceptional days.
- Combine cases in meta charts.

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### COMPARING PERFORMANCE TECHNOLOGY EFFECTS

- Displaying and measuring effects on STF charts is contrasted with SCC™ charts.
- Examples are taken from:
  - *Miller's Behavior Management.*
  - *Performance & Instruction.*

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### LOCATING PERFORMANCE MATRIX CONFLICTS

- Different celerations™ of units within an organization indicate matrix conflicts.
- Examples are:
  - the classic Parkinson's Law.
  - MR releases and readmissions.

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### FINDING POTENTIAL FOR IMPROVING PERFORMANCE

- 1 Chart performance for each worker on each task on SCC™.
  - 2 Mark middle performer on each task distribution..
  - 3 Draw line from middle to top of each task distribution.
  - 4 Longest line is the task with the biggest PIP.
- Samples in *Human Competence*

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### CONCLUSIONS

- Standard Celeration Chart™ technology is now available.
- It should be used in monitoring performance and locating PIPs.
- It must be used in comparing effects of technologies.

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# NRC Evaluation of “New Age” Techniques

**NRC committee formed 1985**

Committee on Techniques for the Enhancement of Human Performance formed by National Research Council at request of Army Research Institute to investigate “New Age” techniques. Committee met six times in two years, made ten site visits, invited twenty briefings, and commissioned ten background review papers. The committee met twice with an Army Resource Advisory Group.

**Fourteen Committee members**

The committee consisted of John A. Swets, chair, Robert A. Bjork, Thomas D. Cook, Gerald C. Davison, Lloyd G. Humphreys, Ray Hyman, Daniel M. Landers, Sandra A. Mobley, Lyman W. Porter, Michael I. Posner, Walter W. Schneider, Jerome E. Singer, Sally P. Springer, and Richard F. Thompson.

**Eleven “New Age” techniques evaluated**

The “New Age” performance enhancement techniques investigated by the committee and a brief statement of the committee's findings were:

“New Age” Technique	NRC Committee Finding	
Learning During Sleep	If truly asleep, no evidence of recall.	-
Accelerated Learning	Extravagant claims unjustified.	-
Motor Skills: Mental Practice	Gain of 1/2 Standard Deviation.	+
Motor Skills: Visual-Training	No research evidence.	-
Motor Skills: Biofeedback	Too many loose ends in research.	-
Mental States: Hemi-Sync	Do not appear to be effective	-
Stress Management	Certainty decreases stress - can Army?	+
Neurolinguistic Programming	No evidence that it is effective.	-
Group Cohesion (COHORT)	No current evidence of effectiveness	-
Parapsychology: Psychokinesis	No scientific warrant for existence.	-
Parapsych: Remote Viewing	No scientific warrant for existence.	-

**Committee warnings**

Army should not select new techniques based on:

- Personal experience
- Marketplace popularity
- Testimony

**Committee research suggestions**

Army should conduct research to investigate further

- Long-term retention of skills
- Optimizing performance in special emotional or physical states.
- Subliminal methods of enhancing emotional states.
- Preparation to perform under pressure.
- Models of expert performance.
- Enhancing group performance.

**Summarized more fully in**

Swets, John A. & Bjork, Robert A. (1990). Enhancing human performance: An evaluation of “New Age” techniques considered by the U. S. Army. *Psychological Science, 1*, 85-96.

**Presented by**

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