

The Subconscious as a Subject of Engineering

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The Subconscious in Engineering

- “Subconscious”
 - Need not mean either instinctual or irrational
 - Processes faster than conscious processing (a fact that “offends” the conscious ego)
 - Color Vision
 - Image Sizing
 - Muscle Memory
 - Letter sequences
- Some examples
 - Engineering to use Subliminal Training (SLIC)
 - Engineering to use Intuitive Capacity (UNIQ)

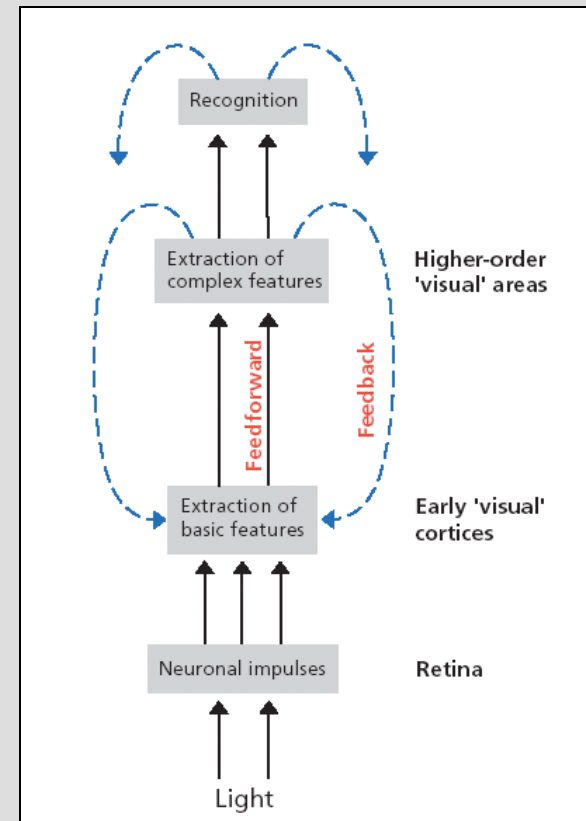
SLIC

SubLiminally Induced Choices

How Does SLIC Subliminal Perceptual Training Work?

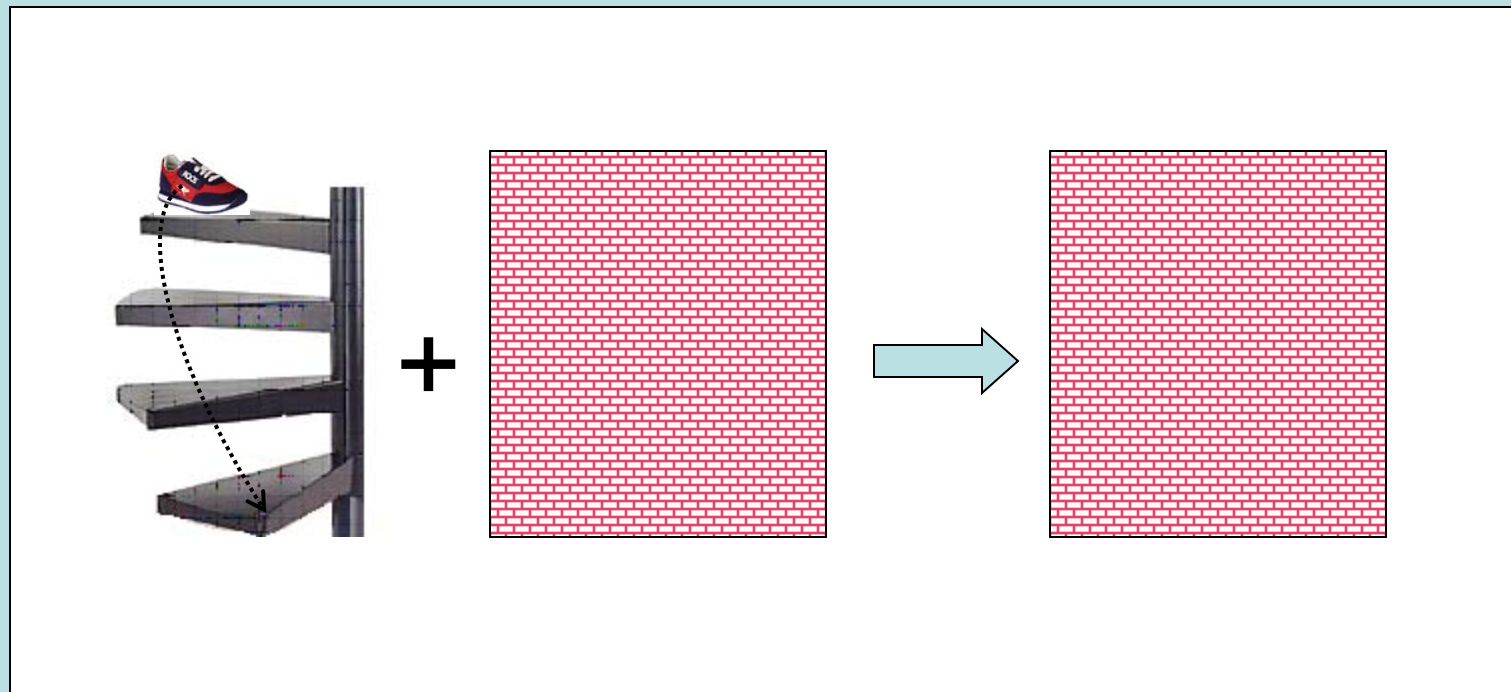
SLIC Greatly differs from historic subliminal concepts

- SLIC is:
 - Experientially-based
 - Emotionally-tied
 - Visually unfocused
- Historic concepts are:
 - Not experientially-based
 - Not emotionally-tied
 - Not visually unfocused
- SLIC subliminal perceptual training
 - Takes place at lower cortical brain levels
 - Works by riding along on bias effects of strong perceptions

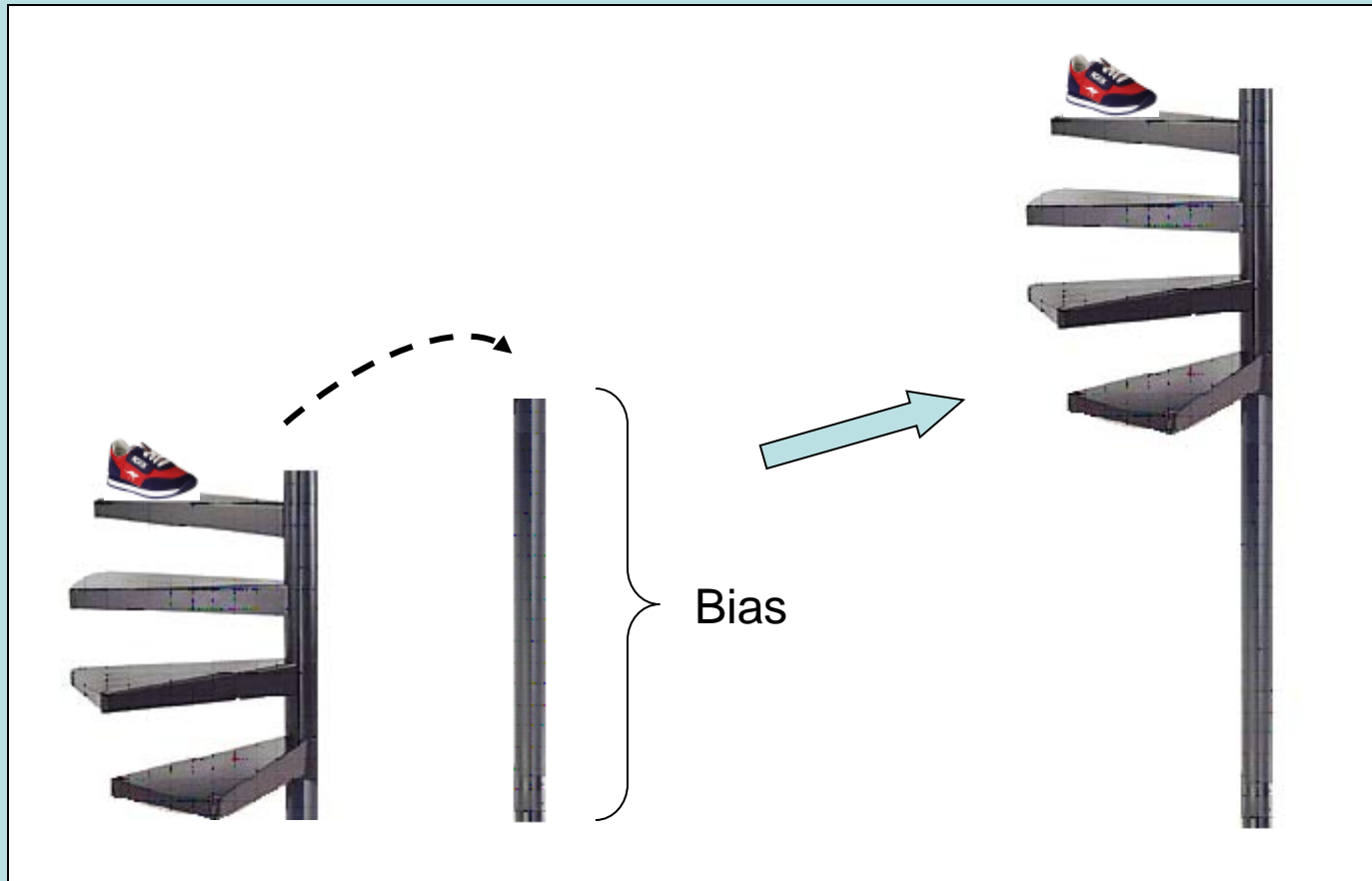


What Does “Bias Effect” Mean

The “Invisible Man” wears one of his shoes and walks up and down a short flight of stairs to make people think the shoe is hopping up and down by itself. However, the stairs are behind a brick wall. So, even though the shoe is moving up and down the stairs, no one can see it.



A Bias Lifts the Short Staircase to a Higher Level Without Adding More Steps



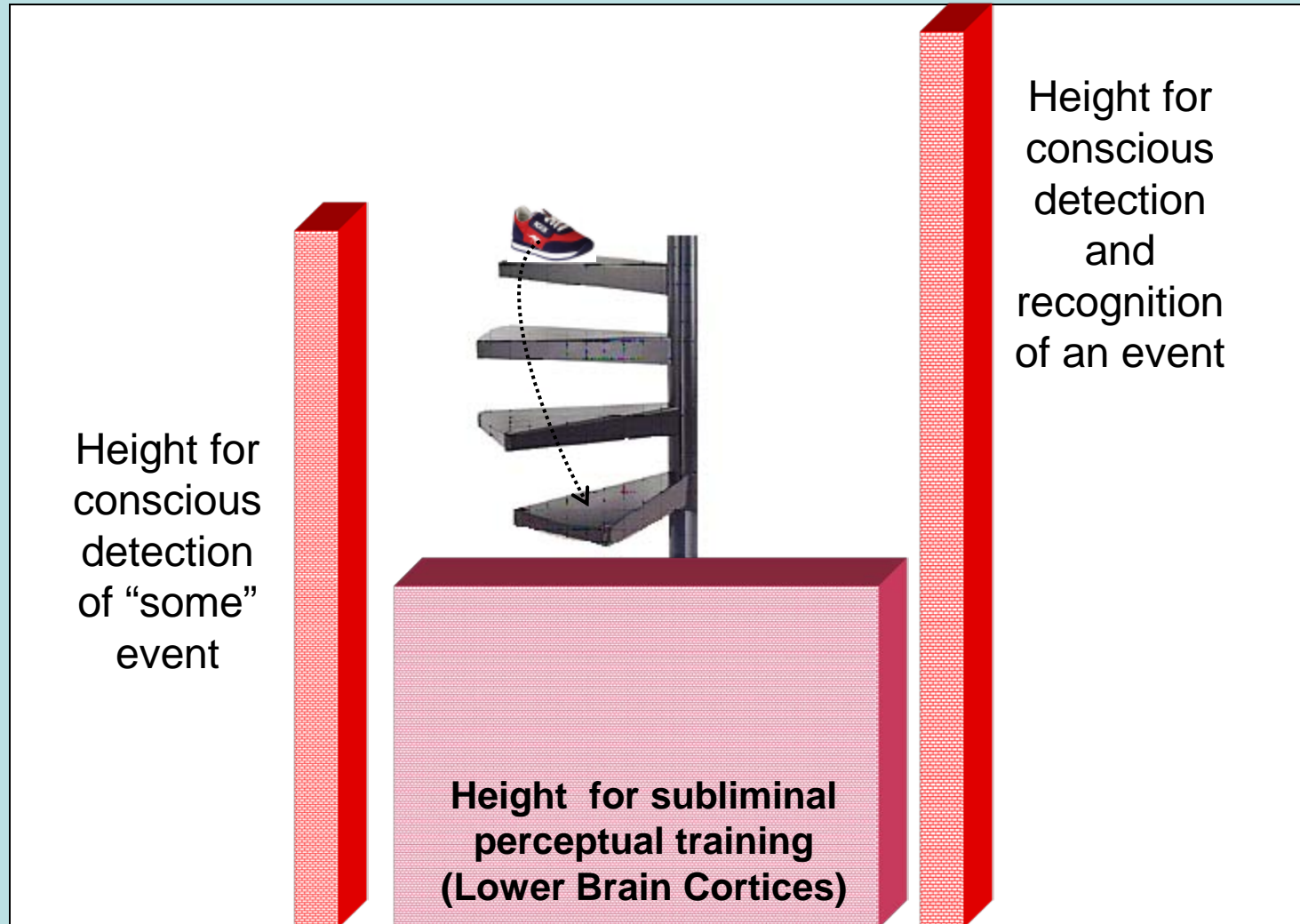
Now the Shoe's Steps Can Be Seen

When the Invisible Man moves up and down the short staircase he doesn't supply any more energy or do anything else different than he did when the stairs were hidden below the wall. But, now the results of his energy can be viewed.

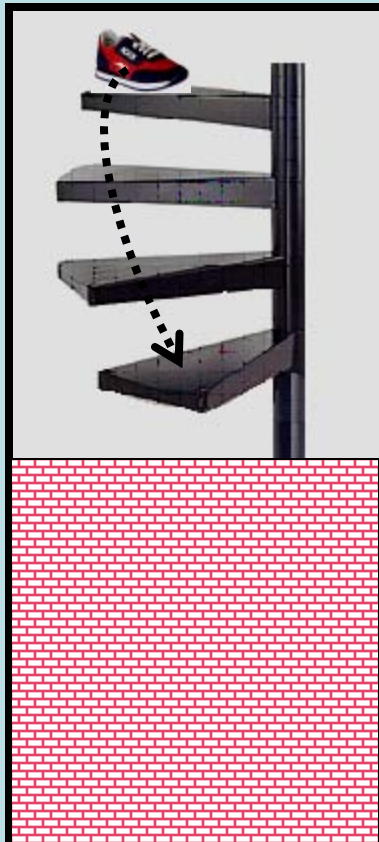
The bias has lifted the movement (energy, activity, etc.) into a region of easy observability without modifying that movement.



Various Observer Functions (With Memory Capacity) Have Various Wall Heights (Thresholds)



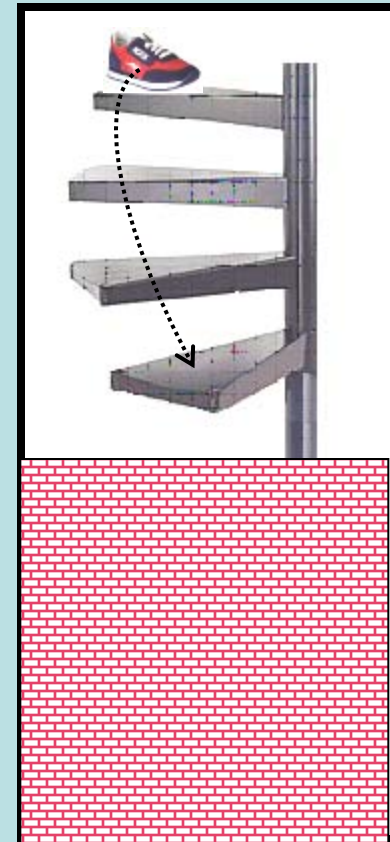
However the visual system responds to unfocused changes in brightness, not just to focused images and focused changes. And the visual system can respond to both simultaneously, even though one may be “seen” and remembered subliminally.



The chemicals produced in the brain by an emotional response to a strong focused image can provide the bias needed for inducing a lower cortical response to a cyclic brightness change (unfocused) so small it would never get above the detection threshold on its own strength. With sufficient repetition, the lower visual brain remembers this subliminal cycle and will associate the brightness change cycle with the emotion.

When provided the change cycle in any context, the emotion will be evoked as a conditioned response.

SLIC uses subliminal brightness cycles for training, and either consciously discernible or subliminal level cycles to later evoke the conditioned emotional response.



A Basis for SLIC

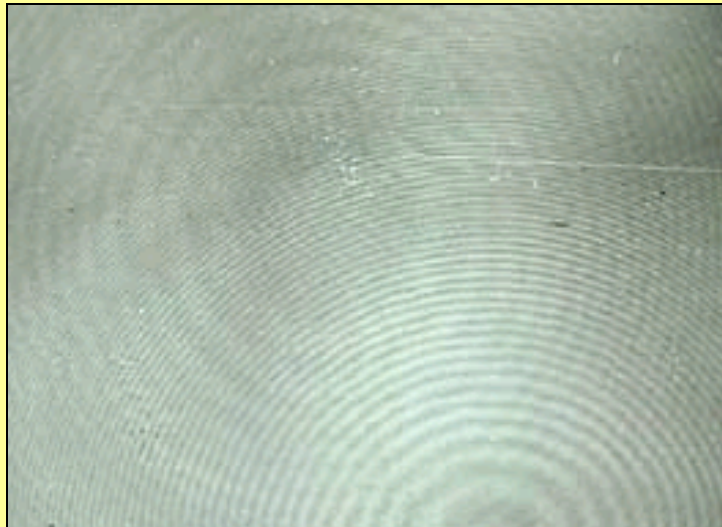
Two events, one an emotion created by a focused (consciously recognizable) image and one a diffuse image (not consciously recognizable) that induces no emotion on its own merit, can be recorded in memory at the same time, even though the diffuse image would ordinarily not have enough stimulus to produce a useful response and memory effect. In this case, the larger energy of the emotion produced by focused images is used to bias the lower energy of the diffuse image up to the needed level for memory.

Again: It is not the focused images themselves that provide the bias. It is the brain chemical response to the emotion produced by focused images that gives the bias.

SLIC Builds a “Focused Emotional Image” Via Recording Subliminal Diffuse Visual Images that are Repeatedly Presented Simultaneously with Strong Emotions

Holographic Analogy: The two images below have the same information, but in different forms. The hologram is a diffuse (unfocused) recording and not interpretable. However, when developed by “diffusely illuminating” it with the same stimulus used to make the original recording, an image is created in a form that is focused and can be interpreted and responded to by a person.

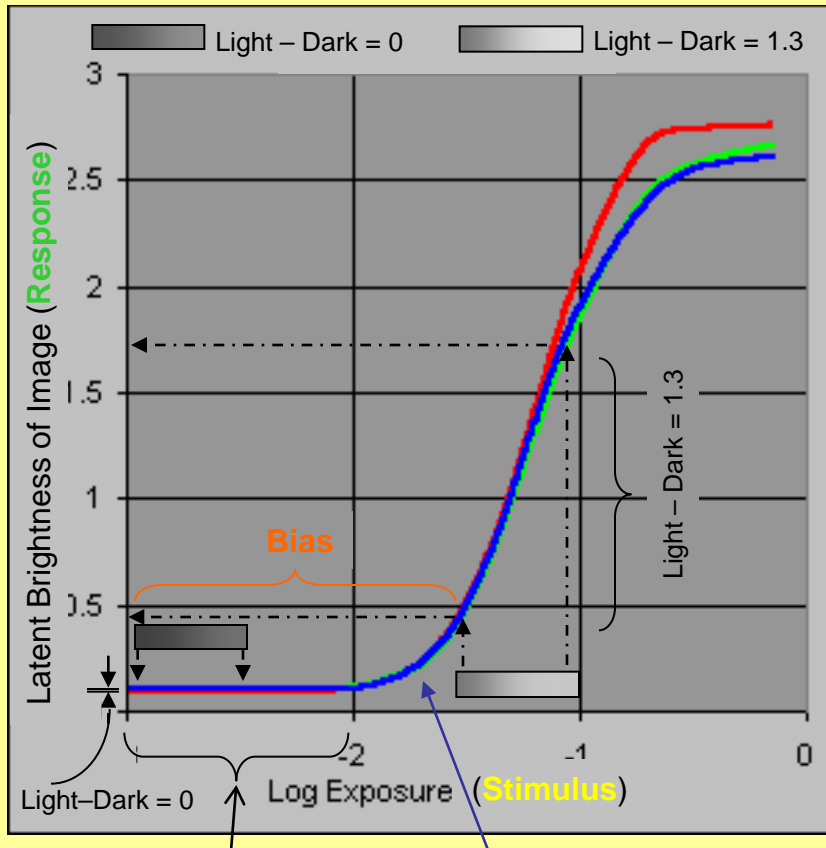
Hologram (Diffuse)



Task Image (Focused)



People Who Make Photographic Holograms Understand Bias Concepts Applied to Films and the Interrelationship Between Focused and Unfocused (Diffuse) Images



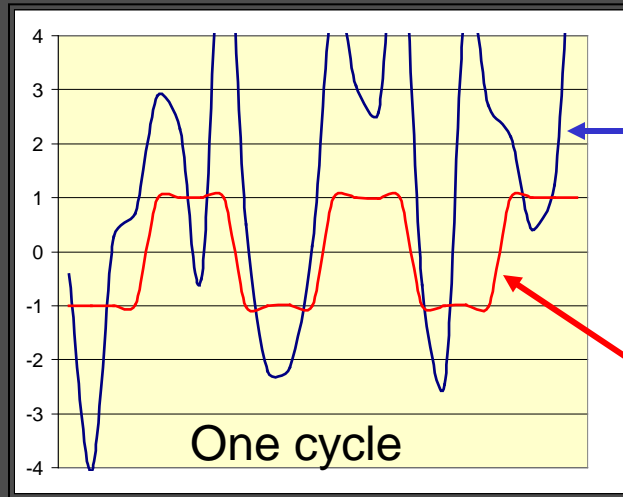
Film exposed to an image whose parts all have exposure brightness (**stimulus**) below a **threshold** do not produce a recordable **response** difference. Adding a constant level of **bias** light everywhere (not focused object light) increases the stimulus so the low level image elements shift into a region of film sensitivity where responses to light and dark areas differ proportionally. Image structure is recorded in a latent form that can be transformed into a usable, real image via a development process.

Bias “noise” (fluctuation in the bias energy) often exceeds diffuse image energy.

Therefore, although the diffuse image has been raised to level where it is recorded, the image’s elements are masked by the noise.

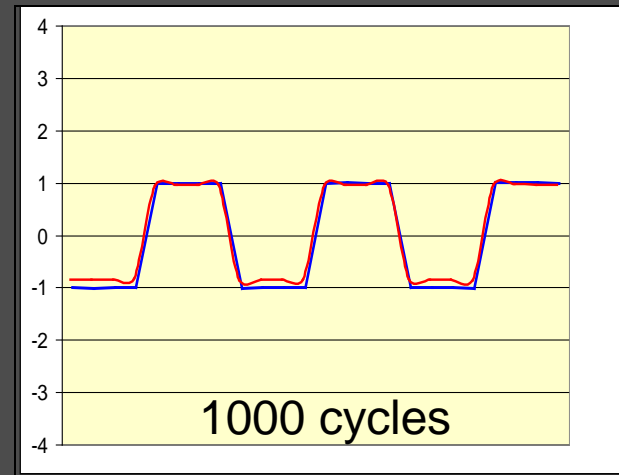
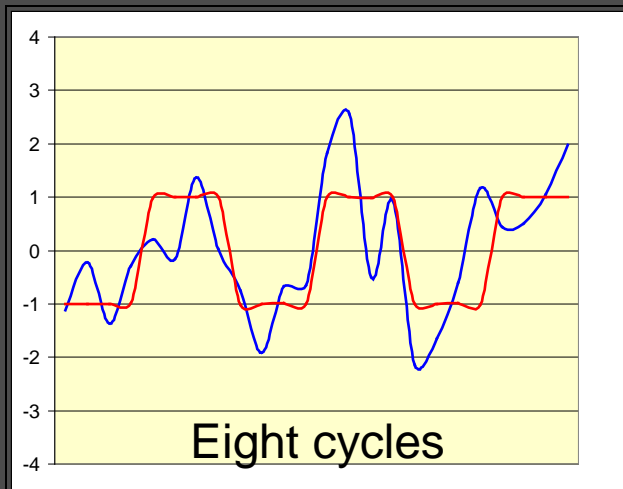
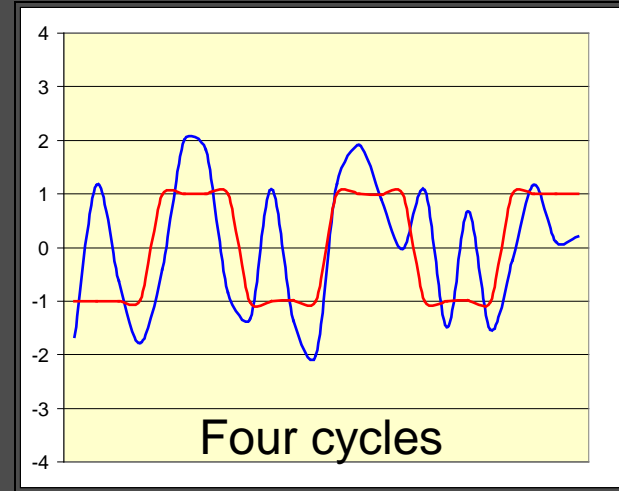
**THIS EFFECT CAN BE
OVERCOME BY
REPETITION**

Repetition Extracts Diffuse Imprint from “Noise”

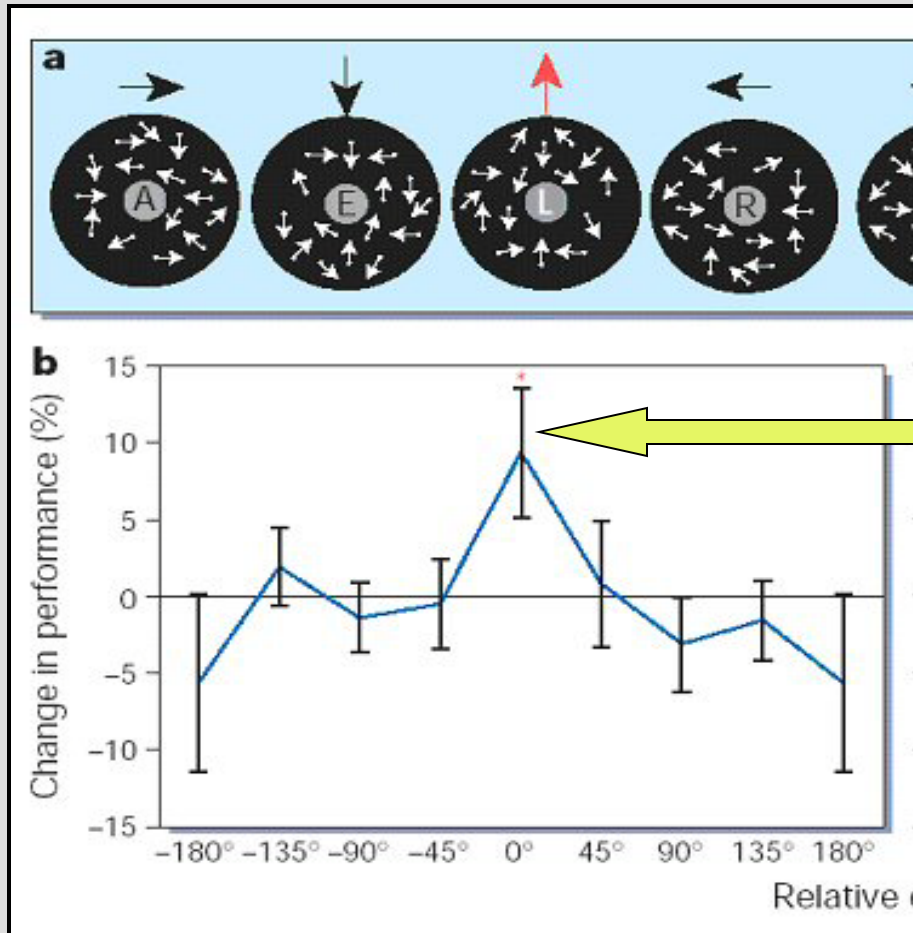


Diffuse
image
profile
mixed
with bias
noise

True
diffuse
image
profile



Is There Conclusive Evidence For Subliminal Perceptual Training?



Yes. Here is just one example: Working with a small fraction of the number of training events than will be used for SLIC, Watanabe, et al, have shown that subliminal training is a realizable process. Subliminal motion of dots in a background of a focused tasks (reading letters) leads to a significantly enhanced ability of a person to consciously respond to such movements when encountered later.

What Would a Subliminal
Change Look Like
Compared to a Discernable
Image Change?

Discernable Difference Image Pair

1



2







Subliminal Difference Image Pair

1



2







Uniqueness of SLIC

We pointed out already that SLIC Greatly differs from historic subliminal concepts in that SLIC is:

- Experientially-based

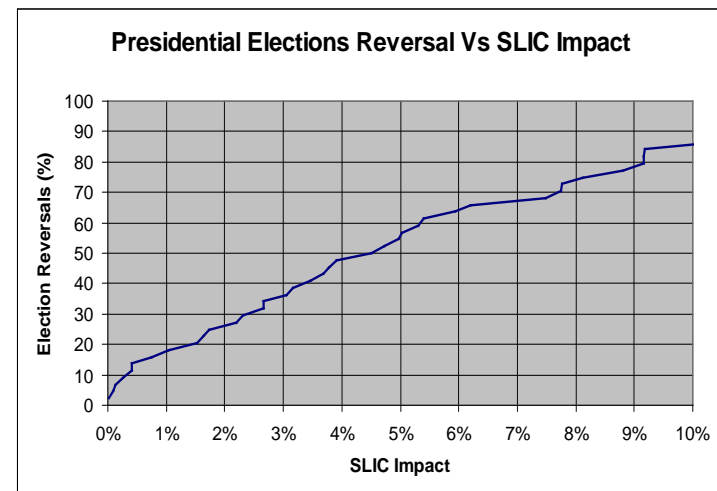
- Emotionally-tied

- Visually non-resolved

But there are other unique factors as well ...

SLIC Differences Cont'd

- SLIC uses already in-place world-wide system for training & application
 - Couldn't develop a better system for \$Trillion
 - Training content and hardware already exists
 - Enthusiasm for training exposure already exists
- SLIC does not require high “hit rates”
- US already dominates SLIC trigger nodes



National Security Use

- OFFENSIVE:**

- Modify behavior of entire populations

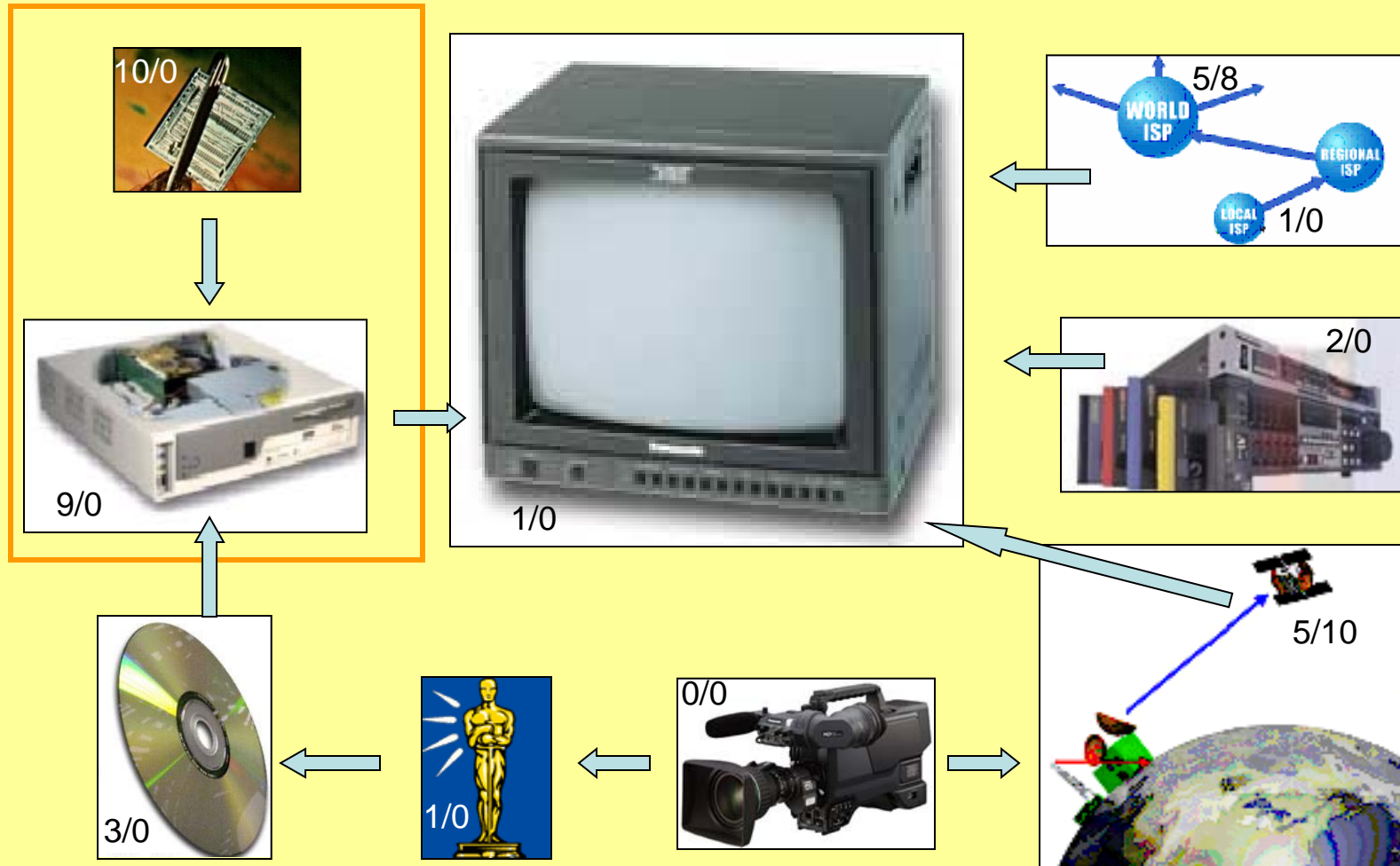
- Subliminal programming the subconscious via existing media

- Subliminal triggering of conditioned response via existing media

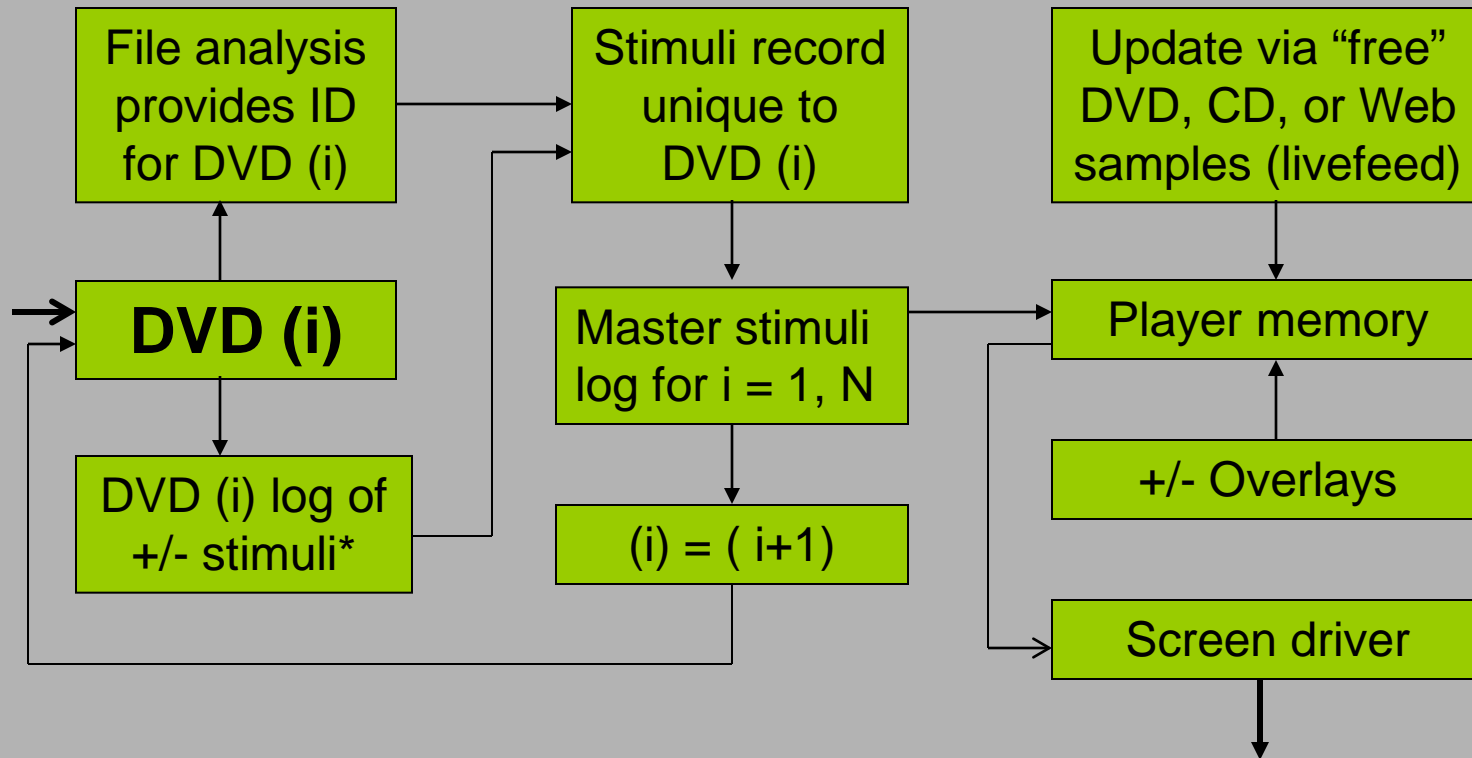
- DEFENSIVE:**

- Protect US population against subliminal exploitation.

System Components & Utilities

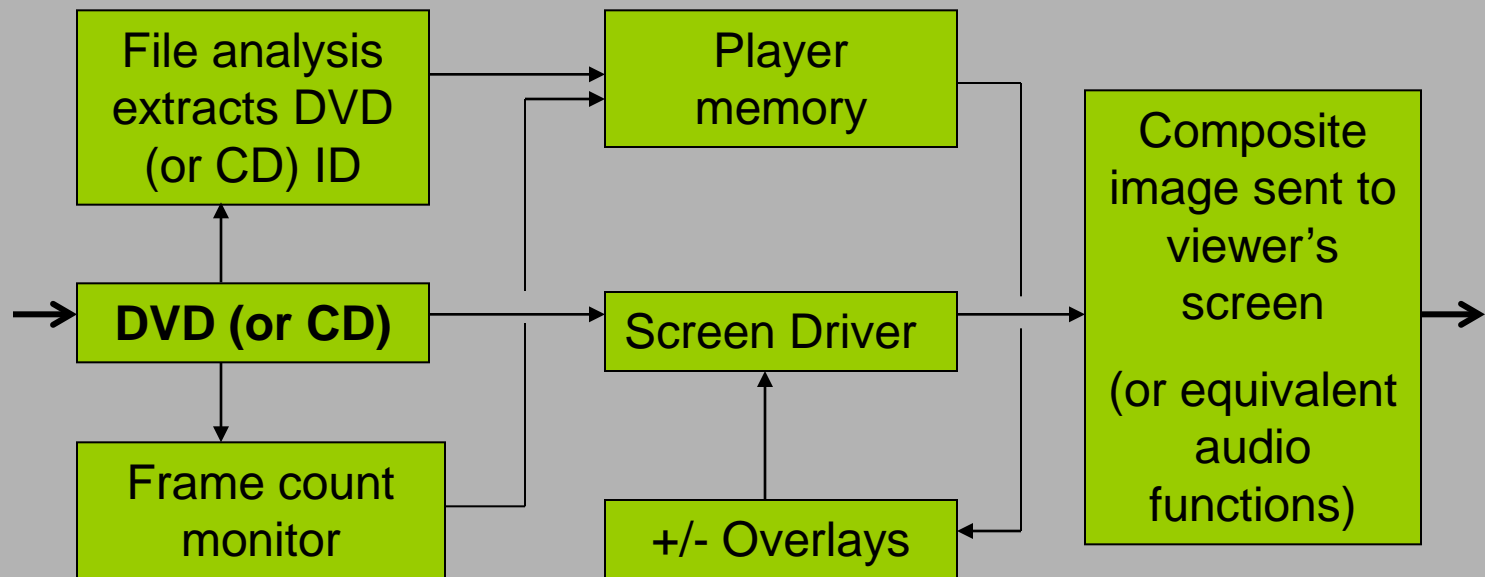


Initializing/Updating Player Memory



* reviewer reports or instrumented viewer, with acknowledgement of national/ethnic/etc biases

Institution of Training Function



Subliminal Training of the Subconscious

- Training/Learning
 - Requires a sensor system that can be addressed (discernable or subliminal)
 - Requires a communication system between trainer and sensor
 - The chemistry of training/learning involves the biochemistry of emotional response via increasing synaptic elasticity
 - True whether it involves discernable or
 - Subliminal stimuli (Watanabe)
 - Training/learning is reinforced/strengthened by
 - Consistency of presentation
 - Number of repetitions
 - Associated emotional strength
- SLIC
 - Human eye-brain is the available and exploitable sensor system
 - Use the existing video communication system (TV, movies, etc.)
 - Tag specific emotionally neutral subliminal stimuli to discernible emotionally-rich content to amplify the subliminal training as negative or positive experience (feelings)
 - Provides an unprecedented number of training repetitions with unparalleled consistency of presentation
 - Subliminal trigger uses existing communications networks

Two-Phase Process

- Training Phase
 - Stimuli use composite discernible/subliminal integration
 - Discernable (Consciously notable without major effort)
 - Subliminal (Consciously notable only with great effort or not at all)
 - Response categories
 - Subliminal conditioned reaction [This project]
 - Subliminal intellectual (intuition)
- Utilization Phase
 - In-Flow
 - with expectation
 - without expectation
 - Out-of-flow (isolated)
 - with expectation
 - without expectation

Example Response Options

- Singular: A single conditioned response anytime the subliminal training stimulus is imbedded in a normally flowing display.
- Binary In-Flow Choice: A conditioned response to chose between two options in accord with two different subliminal training stimuli imbedded in a normally flowing display.
- Binary Forced Choice: A conditioned response to chose between two options in accord with a subliminal stimulus when a required binary choice is presented in isolation.
- Variable Level: A conditioned response to increase/decrease a scalar variable control where the quantitative level of increase/decrease is based on the increase/decrease of variable characteristics of a subliminal stimulus.
- Variable Direction: A conditioned response to proportionally alter direction based on a variation in a subliminal stimulus.
- Variable Vector: Variable Level and Variable Direction combined

Uses Excess Visual Channel Capacity & Existing Media Streams

- Human system processes billions of bps (bits/sec)
 - Necessary rate for routine functions
 - Most processing is subconscious, alerting the conscious only as “executive” attention is needed.
 - Conscious process is only 25 bps
- Eye-brain handles 100s of millions of bps
 - Can process delineated (“focused”) and diffuse (“unfocused”) objects
 - Traditional information display uses focused-image capacity
 - Mostly requiring conscious processing
 - Small amount using subconscious information compression
 - Eye-brain has excess capacity available subliminally
 - Subliminally stored information can be recovered at will (like audio, smell, etc)
 - Displays should use unfocused elements to free conscious from saturation & extraneous distractions, subliminal inputs call executive only when needed.
- Invention: Interfaces for ...
 - Existing media streams (TV, movies. computers, etc.)
 - Subliminal use of unfocused display (Amplitude, area & temporal options)
 - Training emphasis on experiential learning

“Vanilla” Application Situation Awareness

Non-Temporal Text Example

Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface

Standard Text



Subliminal Data



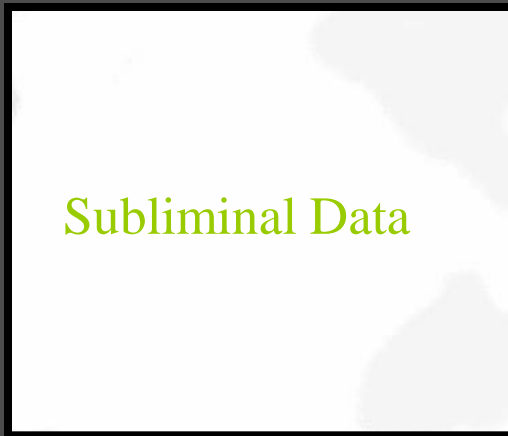
Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface
Subliminal and Near-Subliminal Processing Interface

Fused Data

Non-Temporal IR Image Example



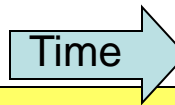
Image Example with Temporal Dynamic







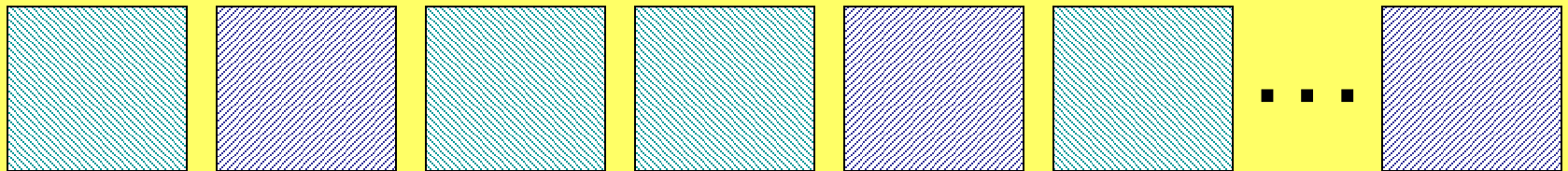
SubL Overlay



A B A A B A ... B

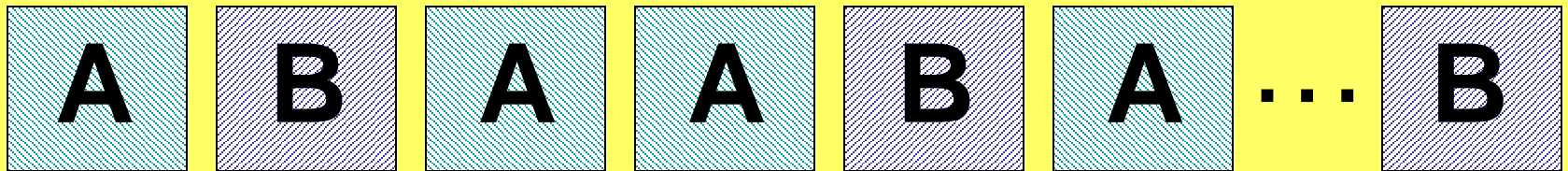
Emotional Element

Positive emotion background corresponds to "A" w/ negative to "B"



Conscious Task exposes Viewer to Secondary Training

Images merged during training presentation



T_1 T_2 T_3 T_4 T_5 T_5 T_n

SLIC Essentials Already In Place

- SLIC exploitable in-place visual media with time-active emotional content
 - Broadcast television (movies, sports, commercials, news, etc.), video/VCR, live entertainment, motion picture theaters, computer games, lighted sales environments.
 - Approximately 11,000 opportunities per year
 - Average ~30 training opportunities per day
 - In-place average exposure >4 hours per day with 15 training opportunities per hour
 - 365 days of in-place SLIC exploitable events
- 80%+ goes through “modification” nodes
 - Satellites, distribution networks, media rental centers
 - Ground relay links, etc.
 - Initial production facilities
- US does (or can) control large % of world-wide nodes

Example Positive/Negative Images







A UNIQ Opportunity

Can You Imagine?



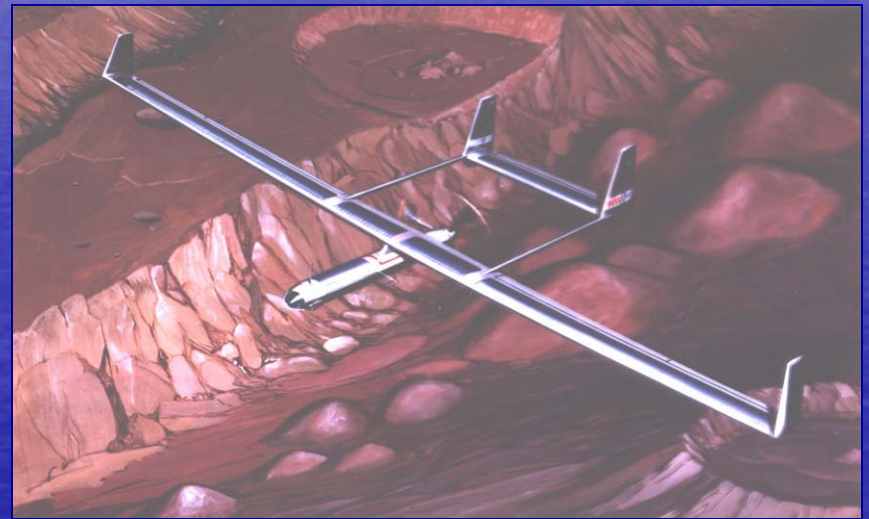
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Can You Imagine?



=



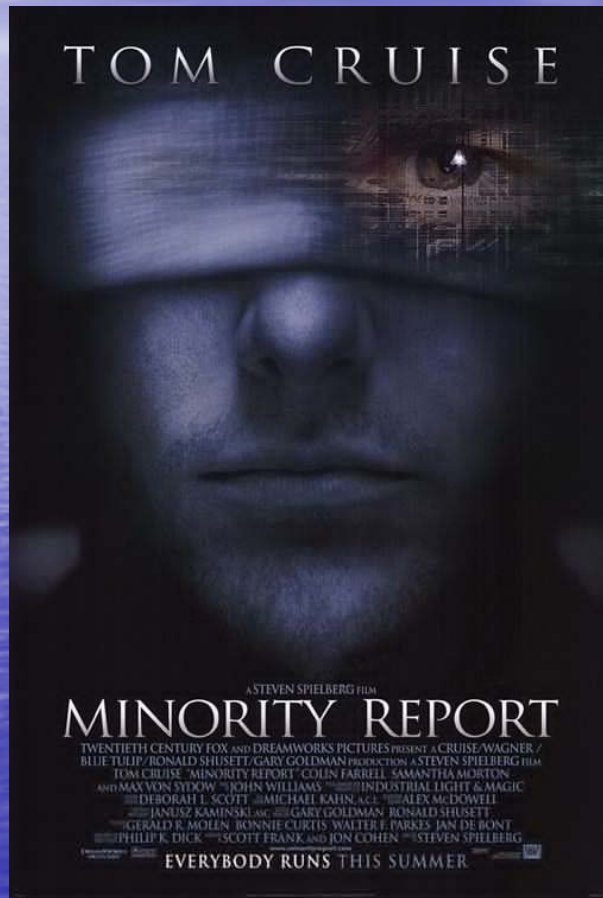
Can You Imagine?



=



This Is UNIQ: Minority Report



The Technology

- UNIQ: Ultra Neural Intuition Quotient
- Invention has many applications
 - Video games
 - Computing & engineering design efforts
 - Card games
 - Research tools for human cognition studies
 - Psychiatric assessments

UNIQ: Ultra Neural Intuition Quotient

- Patent title: Objective-Subjective Translator
- "The user of the invention, by subjective means, answers objective questions associated with physical, mathematical and logical relationships."
- The interface allows "the subconscious rational processing elements of a neurological system to solve, via subjective means, problems whose natures have been thought previously to be addressable only along objective avenues of solution."
- Can be used with or without Training Cycles.

Figure 1

The Invention

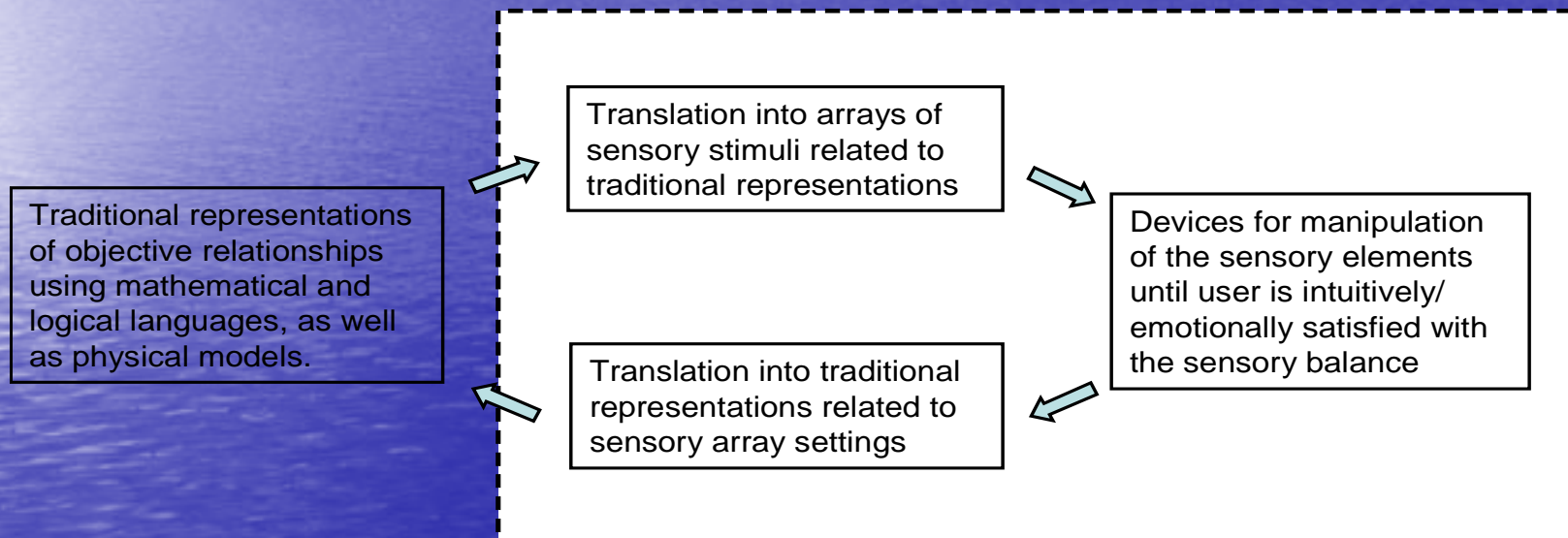


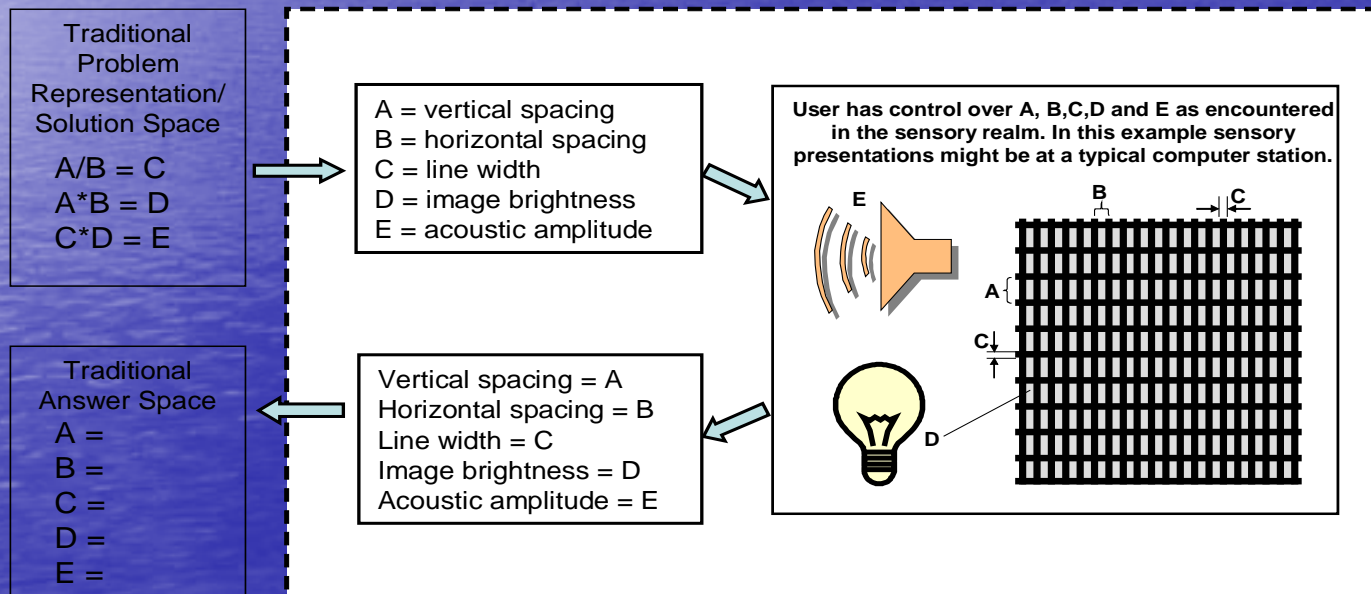
Figure 2

Equivalency Chart

A	Brightness	B	Pitch (Hz)
0	0	0	0
1	10	1	100
2	20	2	200
3	30	3	300
4	40	4	400
5	50	5	500
...
25.5	255	25.5	2550

Figure 3

Invention Translates to Sensory-Based Representation for Solution
(user is to employ intuition, impression, emotions – not analysis)



Tapping Into the Adaptive Unconscious

From Malcolm Gladwell's new book, *Blink: The Power of Thinking Without Thinking*:

"The part of our brain that leaps to conclusions is called the adaptive unconscious, and the study of this kind of decision making is one of the most important new fields in psychology....This new notion of the adaptive unconscious is thought of as a kind of giant computer that quickly and quietly processes a lot of the data we need to function as human beings." (p.11)

UNIQ Demonstration

The background of the slide is a photograph of a vast, calm blue ocean stretching to the horizon. The sky above is a deep blue with wispy white clouds. A bright, soft light source, likely the sun, is visible on the left side of the horizon, creating a gentle glow and a slight reflection on the water's surface.

Inventor's Dream

- Use the UNIQ technology to enhance lives of people with conditions such as autism.
- Non-traditional communicators such as autism and stroke victims could benefit from UNIQ's subconscious computer-to-brain interface. Releasing fine, yet trapped, minds.
- Imagine a PC without a keyboard or mouse to input data...or a monitor to display data. The CPU is fine but has no way to interact with outside world.

(Note: Research in the video-game world could solve these "input/output" human tragedies.)

High Gain Front Projection Screen



High Gain Screen: Window



At left the projector is off. At right the projector is on. Note that the boy is behind the window in both cases, but is unaware the projector is on. The window seems normal to him when on or off.

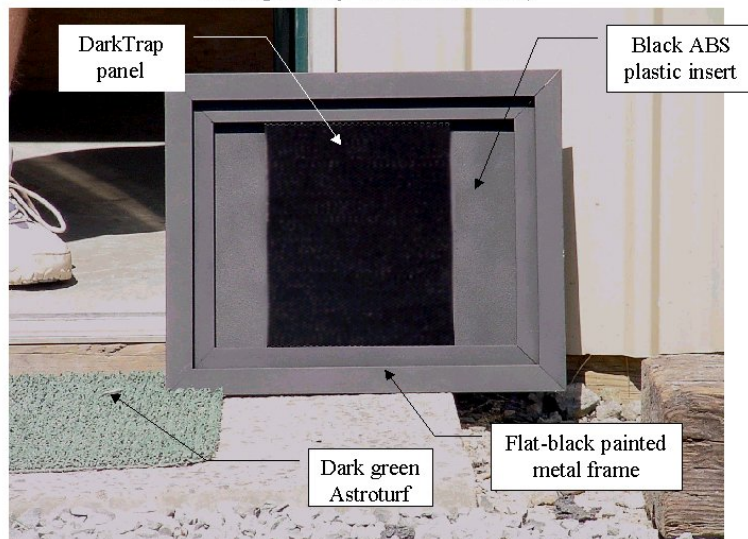
Protection of Missile Launcher Without and With



DarkTrap

DarkTrap™ in Direct Sunlight

(Note: Normal blacks and dark colors appear lighter because digital photography cannot record the extreme darkness of DarkTrap and still keep normal items looking as they would otherwise.)



Digital Photo of Dark Trap

Goal is Reflectance = 0.1%

