



# Resilient Grid

**Activating Human Performance Programs  
(And Avoiding Perverse Incentives)**

**Mike Legatt, Ph.D., CPT**

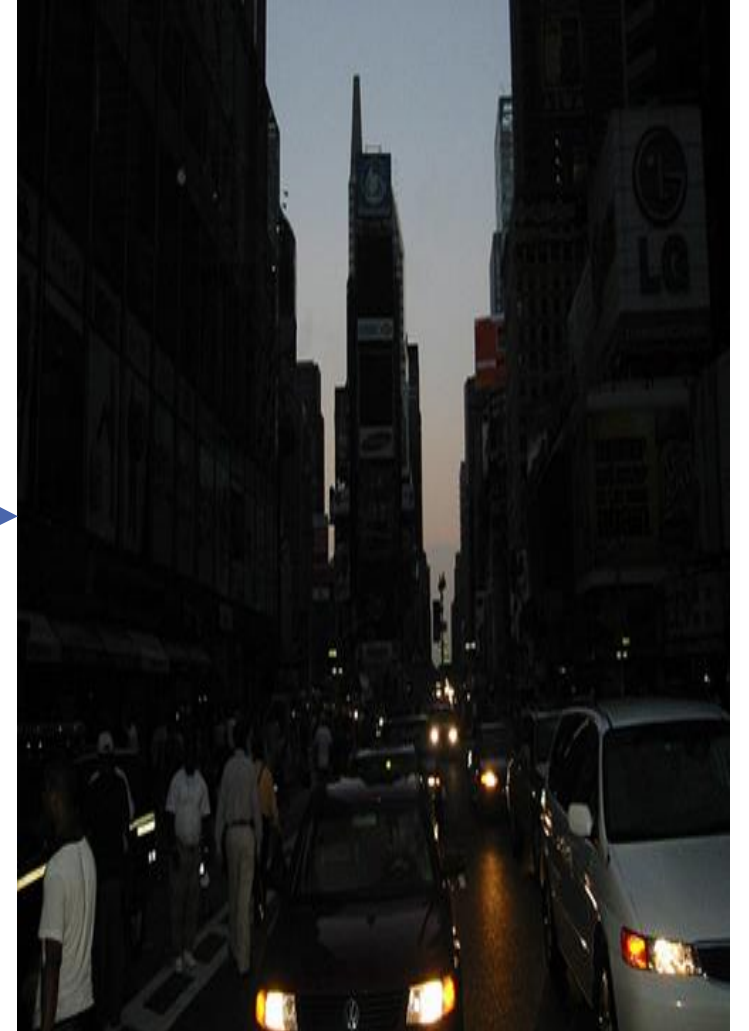
**NERC Human Performance Conference**

So, you're implementing a Human Performance Improvement (HPI) plan.

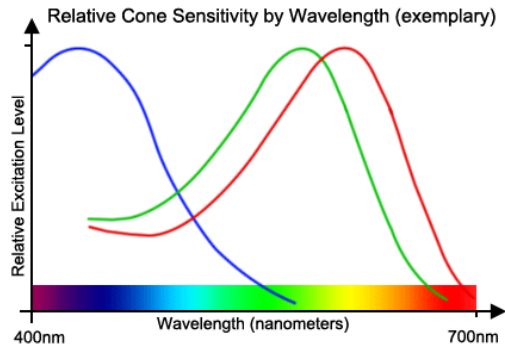
1) How can implementing these plans backfire?

2) How can I make the implementation more effective?

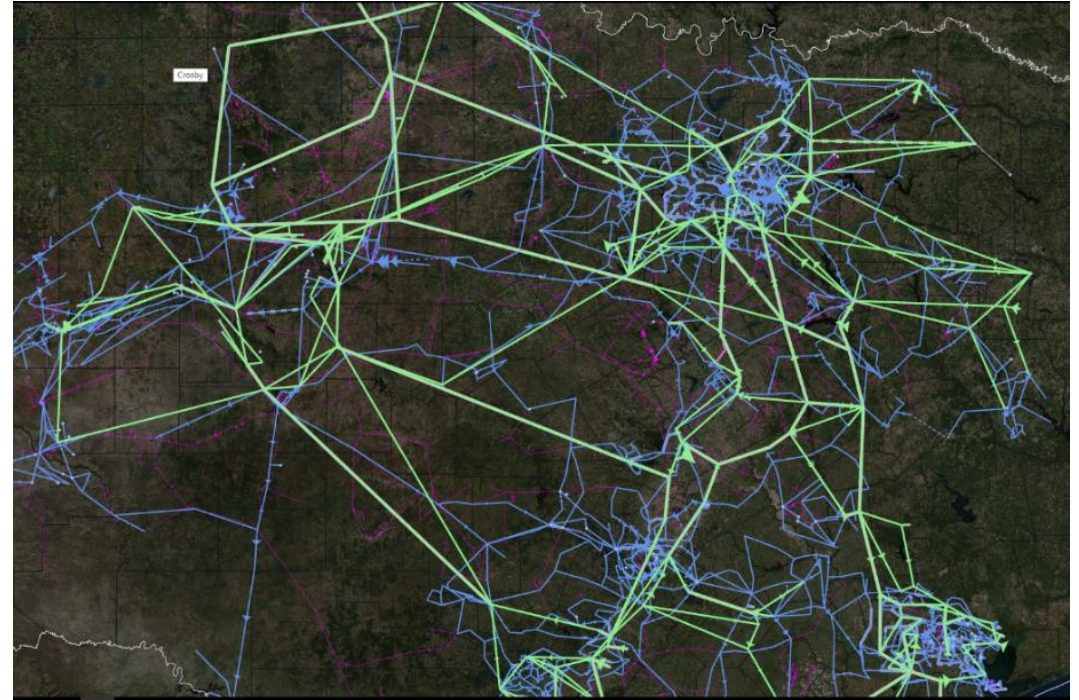
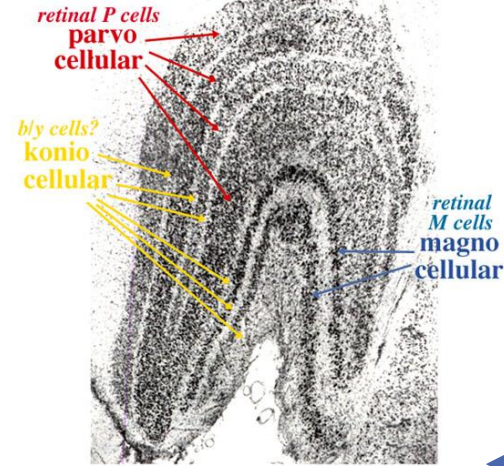
# Who Am I?



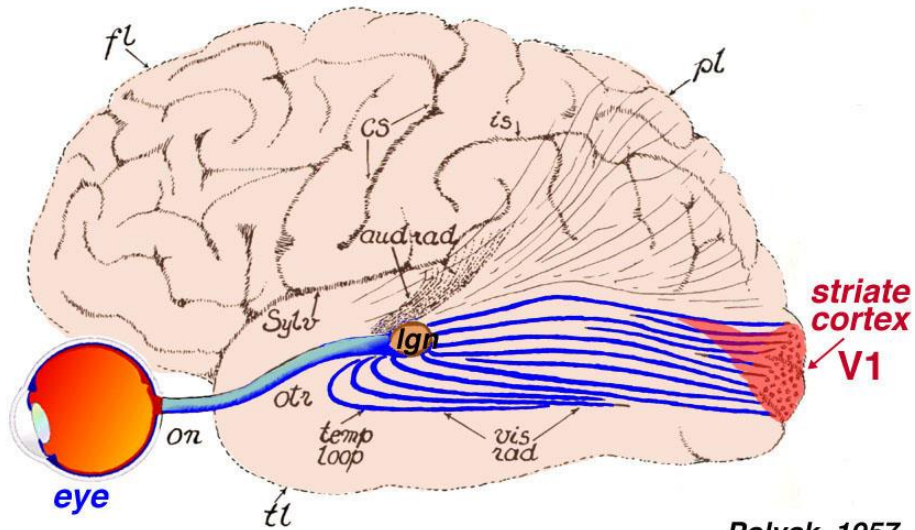
# What do I do?



Layers of the LGN

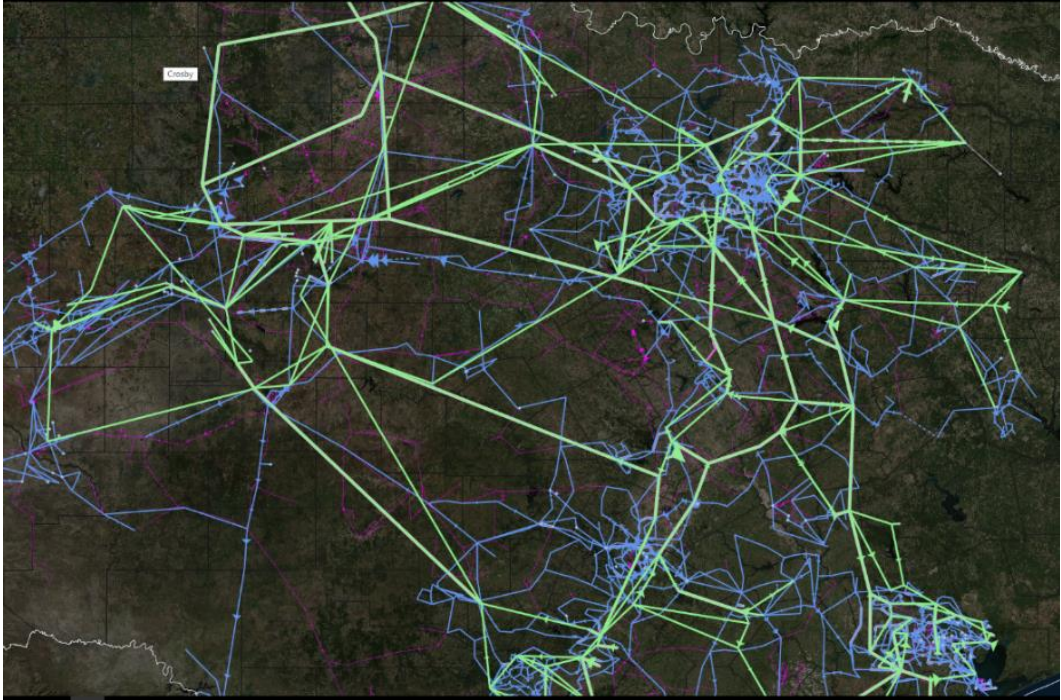


Nonlinear  
Contrast  
Gain  
Control



Polyak, 1957

# What do I do?



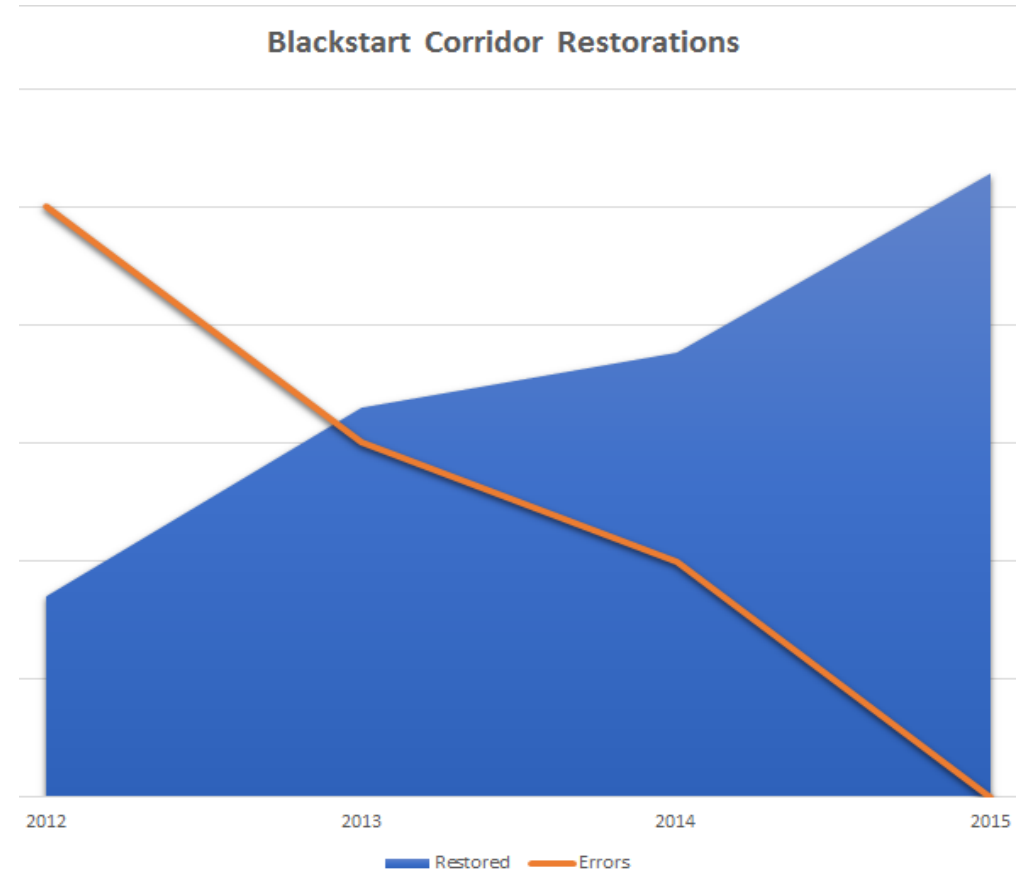
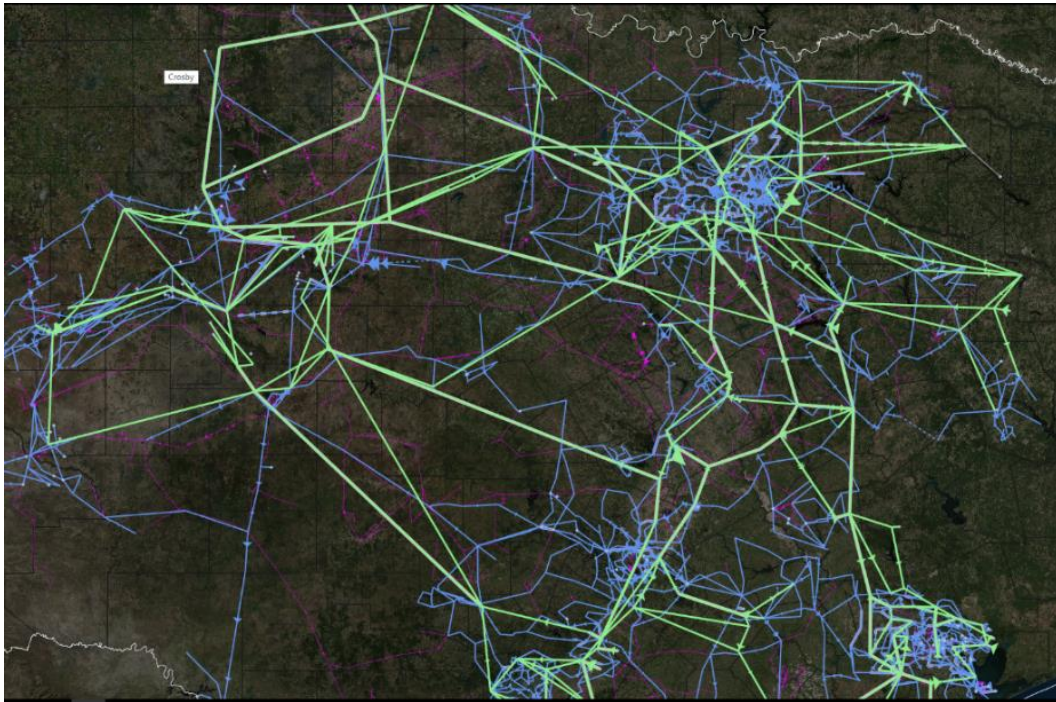
Normal Ops

Socio-

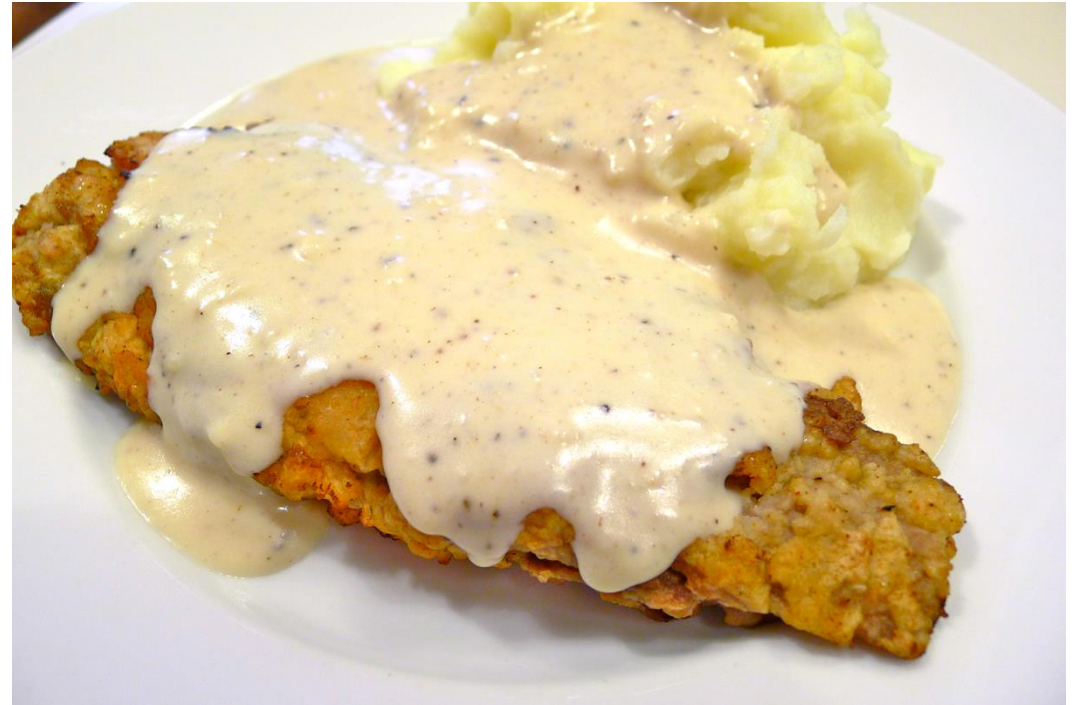
Emergency Ops

Technical

# Does It Work?



# What do I do?



# Some Questions:

So, you're implementing a Human Performance Improvement (HPI) plan.

1) How can implementing these plans backfire?

2) How can I make the implementation more effective?



# Unintended Consequences

## The Cobra Effect





# Unintended Consequences

## Making a Difference

Two questions:

1) What are we creating inside our organizations?  
**Learned helplessness** or **learned optimism**?

2) What are we fighting for inside our organizations?  
**Control** or **excellence**?

# Some Questions:

So, you're implementing a Human Performance Improvement (HPI) plan.

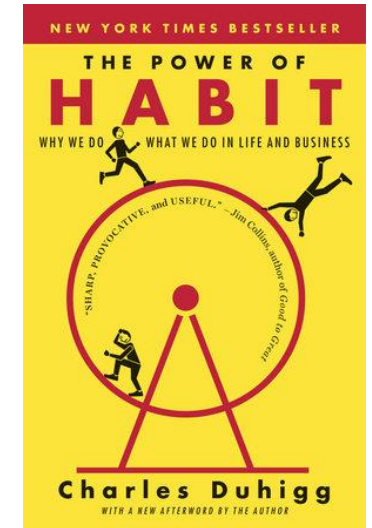
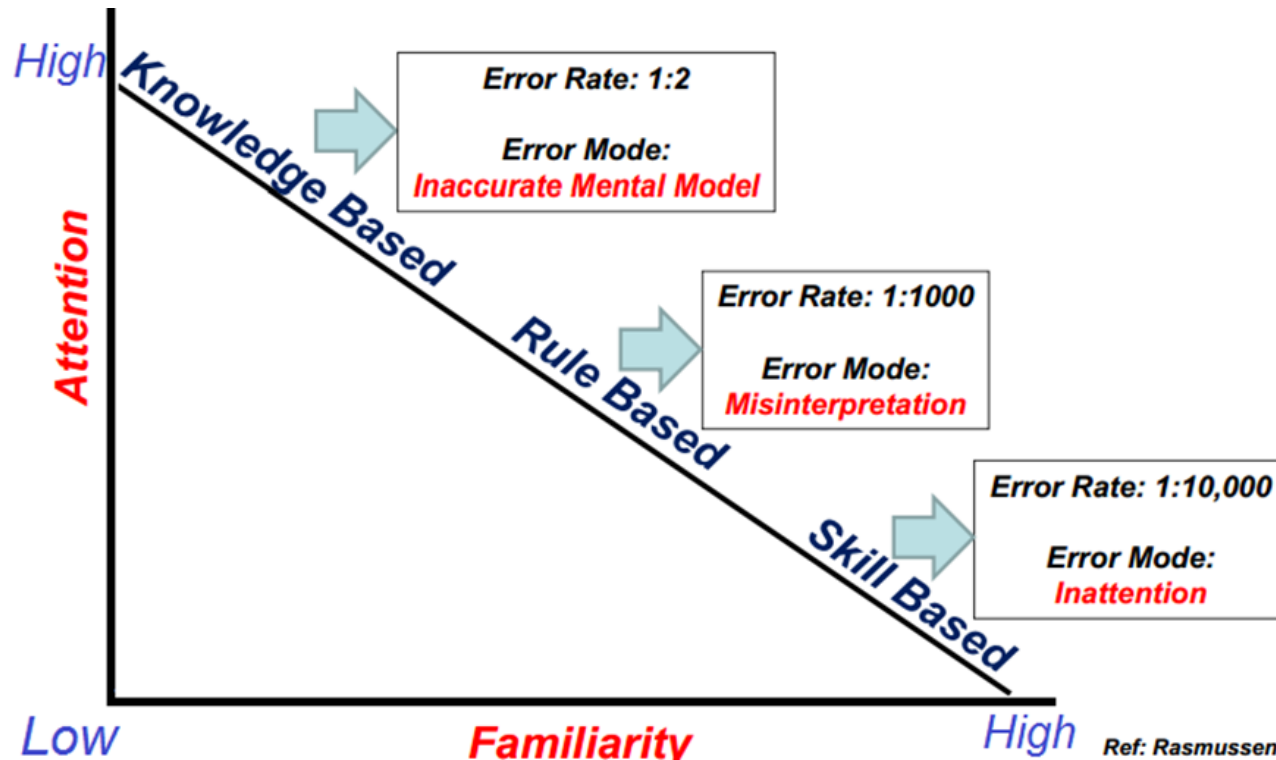
1) How can implementing these plans backfire?

2) How can I make the implementation more effective?

# Habits of Human Performance

Cue -> Routine -> Reward -> Cue...

- Patterns unfold automatically – brain spends resources on other tasks
- Much (> 40%) of what we do each day not a decision, rather a habit.



# Effectiveness of Habits

## Brushing vs. Flossing



# Creating / Changing Habits

Takes a significant amount of *willpower*.

(Put another way, *willingness and ability for self-control*).

Self-control as a muscle?

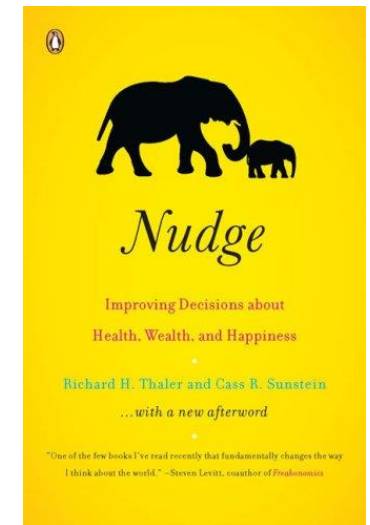
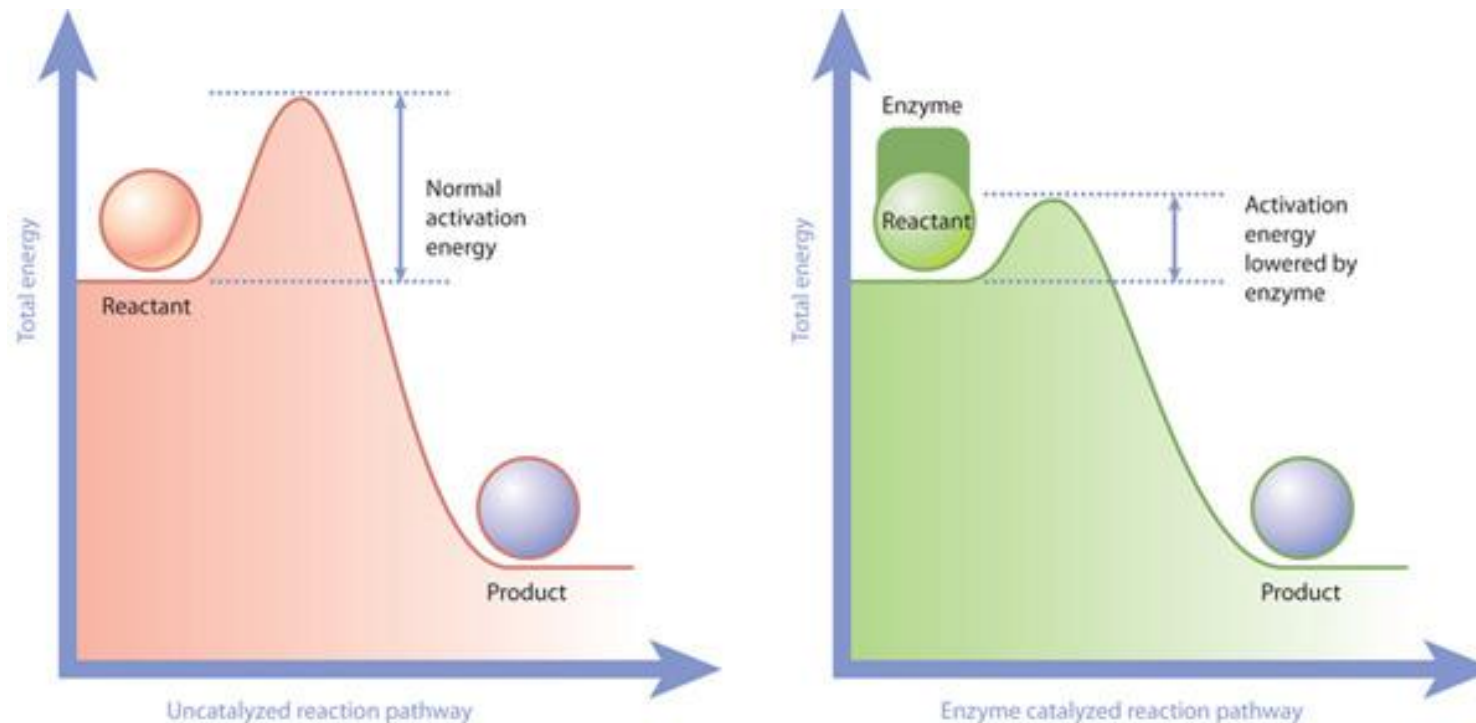


**Ego Depletion**

# Activating Better Habits

In Chemistry, **activation energy** is what's needed to make a reaction happen; without it, the reaction won't occur.

In Psychology, it's the motivation needed to start a task.





# Activating Better Habits

Main Map - "RGTEST" - ResilientGrid Map®

ResilientGrid 3/3/2015 14:00:22 Freq:60.000 Hz Gen:4,517 mw Load:4,517 mw Wind:7 mw (0%) PRC:894 mw Est. Post-Clg S G P I

New 64 55 VA 32

KV	Elem	Text	Ti...
Other Sp...	105.8%	(36.501 kV)	3 ...
Other W...	105.3%	(36.31125 kV)	3 ...
Other Bl...	105.7%	(36.4596 kV)	3 ...
Other Sc...	92.7%	(12.79674 kV)	3 ...
Other Sc...	92.7%	(12.79674 kV)	3 ...
Other Gr...	91.3%	(31.4985 kV)	3 ...
Other Mi...	105.0%	(14.49 kV)	3 ...
Other Fo...	105.1%	(14.49965 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Br...	94.9%	(17.0748 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Fo...	95.0%	(11.87 kV)	3 ...
Other H...	105.6%	(1.0556 kV)	3 ...
Other H...	105.6%	(12.6572 kV)	3 ...
Other Ce...	106.2%	(24.4329 kV)	3 ...
Other Ce...	106.2%	(1.0623 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Fo...	107.3%	(14.8005 kV)	3 ...
Other Te...	106.4%	(14.63182 kV)	3 ...
Other Sh...	106.3%	(13.28375 kV)	3 ...
Other Te...	106.5%	(14.70114 kV)	3 ...
Other Ho...	94.9%	(32.75085 kV)	3 ...
Other Te...	105.9%	(14.61696 kV)	3 ...
345 Ho...	94.5%	(326.094 kV)	3 ...
Other Te...	106.4%	(14.63182 kV)	3 ...
Other Sh...	113.2%	(14.1475 kV)	3 ...
Other Sh...	113.2%	(14.15 kV)	3 ...
Other W...	112.4%	(38.78835 kV)	3 ...
Other Lo...	89.0%	(30.6912 kV)	3 ...
Other Ok...	87.3%	(12.04602 kV)	3 ...
Other Sh...	111.5%	(13.93376 kV)	3 ...
Other Pa...	113.8%	(39.25055 kV)	3 ...
Other Lo...	113.0%	(38.9988 kV)	3 ...
Other Sh...	113.0%	(14.12625 kV)	3 ...
Other Lo...	113.0%	(38.9988 kV)	3 ...
Other Sh...	113.0%	(14.12625 kV)	3 ...
Other Pa...	113.8%	(39.25055 kV)	3 ...
Other Mi...	88.5%	(11.67672 kV)	3 ...
Other Fo...	111.2%	(15.3465 kV)	3 ...
Other Ve...	86.3%	(11.9994 kV)	3 ...
Other Mi...	113.7%	(11.1371 kV)	3 ...
Other Ho...	84.4%	(29.1318 kV)	3 ...
Other Ho...	84.4%	(29.1318 kV)	3 ...
Other Gr...	114.5%	(39.49905 kV)	3 ...
Other Gr...	114.5%	(39.49905 kV)	3 ...
69 Co...	110.2%	(76.0179 kV)	3 ...
Other Gr...	119.6%	(41.25165 kV)	3 ...
69 Sn...	110.2%	(76.0311 kV)	3 ...
69 Pl...	110.2%	(76.0311 kV)	3 ...
69 En...	110.4%	(76.1829 kV)	3 ...
Other Tr...	88.6%	(12.22818 kV)	3 ...
Other Mi...	89.7%	(11.84436 kV)	3 ...
Other La...	110.0%	(24.2 kV)	3 ...
Other Co...	88.6%	(12.22956 kV)	3 ...
Other Or...	112.0%	(14.78136 kV)	3 ...
Other VA	95.0%	(11.32872 kV)	3 ...

Lasso display - "RGTEST" - ResilientGrid Map®

Summary	Type	#	ed_MW	Estimated_MW	Telemetered_MW	Telemetered_MW	Estimated_MVAR	Estimated_MVAR
Breaker	37	510.7266	-513.4616		67.5	-67.375		
BusbarSection	37	510.7266	-494.468		67.5	-67.375		
Capacitor	12	-93.7721	-99.658	100.8	-12.9697	-2.7461		
CombinedCycleConfiguration	4	5	238.3385	-58.968	59.616	2.123	-15.9971	
LaaR	8	2	-111.3357	-45.386	44.6146	-102.2529	90.9814	
Line	151	2	-111.3357	-42.02	41.5296	-102.2529	90.9814	
Load	178	3	11.7178	88.5	-88.3732	16	-18.3984	
Reactor	6	5	-233.9653	62.4504	-62.8	-44.7891	38.8566	
Substation	109	11	277.8864	-657.72	656.9077	-1.4395	-7.4307	
Switch	1,755	26	59	26	238.3385	-58.6109	58.968	-15.9932
Transformer	59	26	7	65.6953	-278.4563	278.6703	32.2285	-39.832
TransformerWinding	118	31	47	322.1697	-365.3112		77.3613	-77.0957
Unit	25	73	321.3494	-368.4768	44.457	-109.2754		

Grid View

In: 2,555 MW Out: 2,860 MW

Caps (#/mvar): Avail: 10/415 Used: 2/82 Units: 8/58

Reacs (#/mvar): Avail: 4/110 Used: 1/26 Units: 9/164

Gen: 3,608 MW Load: 1,611 MW Avail: 1,309 MW

Violations

Line ST248 Tracking History Switch orientation

Delta 0

MWFlow

Base 94

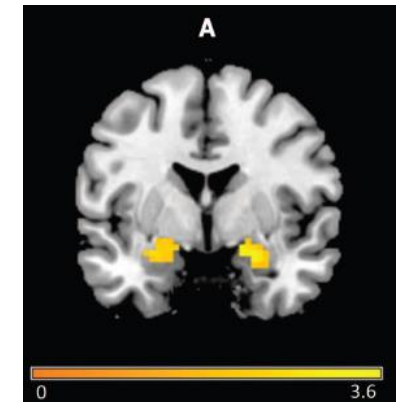
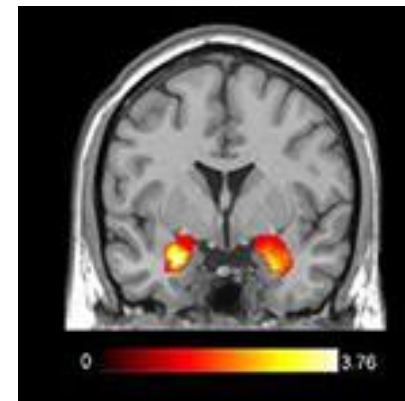
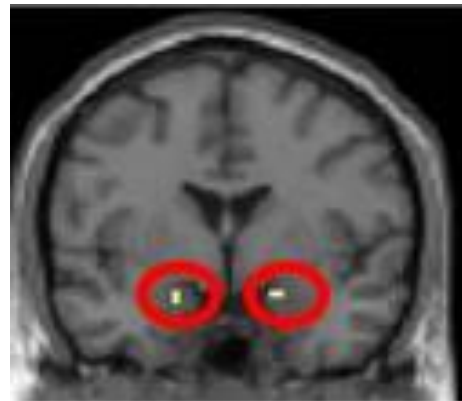
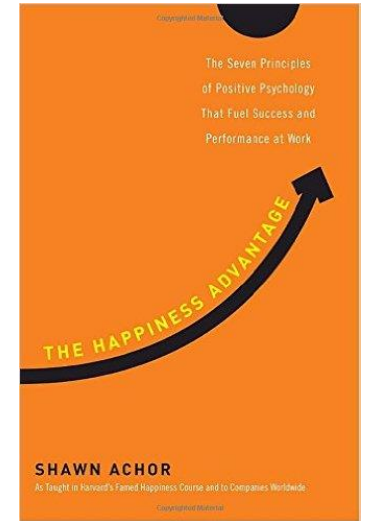
Delta 0

MVAFlow

# Activating Better Habits

Use a **positive psychology** principal:

- Ratio of **positive** to **negative** > 2.901 to 1
- > Linked to higher performance, lower anxiety
- > 7:1 for “**superstar**” teams
- < associated with **punitive** / **fear-based** cultures.



# Activating Human Performance Improvement

1) What are we creating inside our organizations?

**Learned helplessness** or **learned optimism**?

2) What are we fighting for inside our organizations?

**Control** or **excellence**?

3) Are we making it **easier** for people to do the **right things**, and **harder** to do the **wrong things**? Have we set them up to be successful?

## Core Philosophy:

“All organizations are perfectly aligned to get the results they get.”

Arthur W. Jones



Thank you

Mike Legatt, Ph.D., CPT  
legatt@resilientgrid.com