SOME THOUGHTS ON CHANGE

AND WHY WE DON’T ALWAYS REACH THE OUTCOME WE WANT…

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Objectives

• Understanding underlying psycho-biological reasons why we don’t always reach the outcome we want.

• Understand some approaches that can lead to desired outcome.
Diffusion of Innovation

Champions

- 2.5% Innovators
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%

Source: Everett Rogers, Diffusion of Innovations model
The Champions Role

Spread the Word
Presumption that evidence alone is sufficient to lead to behavior change.

Evidence → Early Adopters / Champions → Behavior Change → Improved Outcomes
What is the evidence for the model?

Evidence

Behavior Change

RESEARCH REPORTS
Clinical

The Effectiveness of Sealants in Managing Caries Lesions

Sealants and dental caries
Dentists’ perspectives on evidence-based recommendations

Evidence-based clinical recommendations for the use of pit-and-fissure sealants
A report of the American Dental Association Council on Scientific Affairs
Results: In the absence of radiographic evidence of caries, 37.4 percent and 42.3 percent of GDs and PDs, respectively, indicated that they would seal the NCCL in the molar. With radiographic evidence of caries in dentin, less than 4 percent of all dentists surveyed indicated that they would seal the NCCLs, 90 percent indicated that they would remove the caries and place restorations. <40 percent of dentists indicated that they sealed NCCLs in their practice.

Conclusions. The U.S. dentists surveyed have not adopted evidence-based clinical recommendations regarding the sealing of NCCLs.

• 60% NOT seal NCCL
  • (even when no radiographic evidence of caries)
• 96% NOT seal if radiographic evidence in dentin.
• <40% of dentists used sealants at all in their offices

JADA, 2011
What reality looks like

Economic
Technological
Knowledge
Inertia
Psychological

Reality: KNOWLEDGE (evidence) is RARELY sufficient to lead to behavior change.
We must conclude...

- Change is difficult
- Knowledge alone is insufficient
Frustration
And raises the inevitable question……

Why The Fear
Why do we fear change?

• Change is difficult
• Knowledge is necessary but not sufficient
• We are hard wired to resist some forms of information and change.
Decreasing Ability to Change

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Source: Everett Rogers, Diffusion of innovations model
Why do we get it wrong

- The world is rarely clear cut and unambiguous
- but we hunger for patterns and consistency.
- We are “hard wired” to create “certainty” when none exists.
And information taken from” The Critical Thinkers Academy” (with permission by K. deLaplante)
Why is Change Difficult?

Decision-making, belief and behavioral biases

Many of these biases affect belief formation, business and economic decisions, and human behavior in general. They arise as a replicable result to a specific condition: when confronted with a specific situation, the deviation from what is normatively is expected can be characterized by:

- **Ambiguity effect** – the tendency to avoid options for which missing information makes the probability seem "unknown."[4]
- **Anchoring** – the tendency to rely too heavily, or "anchor," on a past reference or on one trait or piece of information when making decisions (also called "insufficient adjustment").
- **Attentional Bias** – the tendency of emotionally dominant stimuli in one's environment to preferentially draw and hold attention and to neglect relevant data when making judgments of a correlation or association.
- **Availability heuristic** – estimating what is more likely by what is more available in memory, which is biased toward vivid, unusual, or emotionally charged examples.
- **Availability cascade** – a self-reinforcing process in which a collective belief gains more and more plausibility through its increasing repetition in public discourse (or "repeat something long enough and it will become true").
- **Backfire effect** – when people react to disconfirming evidence by strengthening their beliefs[5]
- **Bandwagon effect** – the tendency to do (or believe) things because many other people do (or believe) the same. Related to groupthink and herd behavior.
Thinking Error #1: Sometimes we see patterns when there is nothing there.

An example: Pareidolia

Pareidolia: phenomenon involving vague and random stimulus being perceived as “significant”

…I see “faces”
Pareidolia = False Positives

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Pareidolia = False Positives

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Thinking Error #2: We are really bad at weighing evidence.

An example: Dr. Goodhands

- Dr. Goodhands specializes in TMD using his “New Therapy”
- He claims great success.
- He provides evidence: He reports a record review that showed 90% of his patients with TMD reported “significant improvement” in their condition within 2 weeks of being treated.

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So, is Dr. Goodhands “Good”?  

How good is the evidence?

• “strong” evidence = his therapy is effective? (send him all your TMD patients)
• “weak” evidence = there may be something there, but more research is needed?
• “correlational” (causation not actually proven)?
• ACTUALLY, NONE OF THE ABOVE.

Why this is no evidence

• No comparison group.
• Untreated could be higher (tx harmful)
• Disease could resolve spontaneously (no effect)
• Could be beneficial.
Thinking Error #3: Confirmation Bias

Thinking that we’re making a judgment based on a complete body of evidence when the body of evidence we’re considering is “filtered” and “skewed” by **confirmation bias**.
“I will see it when I believe it”

• **Confirmation Bias**

  • We seek out confirmatory information to our beliefs
  • We reject things that are contrary to our beliefs
  • Most importantly, we are not aware that we do it.
  • The result: we build up a tremendous amount of “proof” in the veracity of our belief.

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I will look at any additional evidence to confirm the opinion to which I have already come.

-- Lord Molson, British politician (1903-1991)
Bias toward their pre-existing opinions.

In one experiment the proportion of citizens who strongly favored tax cuts believed that recent tax cuts actually increased federal revenue.

When presented with factual evidence that this was not the case, the number who insisted that it was true grew from 36 percent to 67 percent.

People argue vehemently against the corrective information and end up strengthening their misperception.

A cognitive bias
What happens when we are confronted with the errors of our thinking?

Cognitive Dissonance
Cognitive Dissonance

The state of tension that occurs whenever a person holds two cognitions (ideas, beliefs, attitudes) that are psychologically inconsistent...

...dissonance is disquieting. We go to great lengths to reduce it.
New information can challenge beliefs and threaten our **SELF CONCEPT**.

I am....
- competent, moral, smart...
  - People go to great lengths to hold on to that belief.
  - When self concept challenged...
Engage in **Self Justification**

“**hard wired**”

People do not change their minds in light of changing facts.

Result: “blind spots” in our own beliefs/behaviors.

*When the facts change, I change my opinion. What do you do, sir?*  
-- Lord John Maynard Keynes

*There is no such thing as a conscious hypocrite.*  
-- Aldous Huxley
Dissonance theory challenges the idea that humans process information logically.

Dissonance research shows that the more something (idea, belief, knowledge) “costs” (time, money, effort), the more dearly it is held and irrevocable it becomes.

We are thinking reeds, not rational creatures?

-- Steven Jay Gould
Cognitive Dissonance

A belief is formed

Confirmation bias strengthens belief

We build a “reality” around our belief

New and Better Information is presented that can't be ignored but challenges current belief

Challenge the Messenger

Deny the Information

Accept information and change belief
What is the way out of the forest of self delusion?
Science is what we do to keep from lying to ourselves.

Richard Feynman

The scientific methodology aims to neutralize the effects of these biases, thereby reducing error.
Scientific Method?

- Placebo Effect (Control Group)
- Confirmation Bias (Blinding)
- Test Null Hypothesis (Falsify)
- Publication
  - Transparent Methods
  - Peer Review
- Independent Replication
- Theory-based
Strategies to Facilitate Change

• New Values (CHAMPIONS)
• Face Saving Approaches
• Peer to Peer
• Eliminate Barriers

• Remember: Knowledge alone is not sufficient.
Change Social Norm

- People will do what they think is the norm.
- People don’t like to look inconsistent or foolish.
- If you don’t change their perception of the norm, their behavior won’t change.

What is the current norm:
- Personal experience and “common sense” is the best guide.
- Treatment decisions based primarily on individual preferences
- Wide variations in practice common and considered acceptable
Change Social Norms

**Articulate New Norm**
- Dentistry should be evidence-based
- Clinical decisions based on
  - a rationale
  - that can be articulated
  - and evaluated
- Not knowing (uncertainty) is OK

**Model New Norm**
- Ask questions
- Use evidence
- Change your behavior (when indicated)
Lead by Example

• “I have been using the ADA’s EBD website a lot”

• “I was surprised to read the evidence about X....it really changed the way I approach treatment for...”
Build Trust

- Distrust is a barrier
  - Question the messenger
  - Deny message
  - Won’t participate

- Understand Motivation
- Don’t Judge
- Approach with respect
- Have a conversation (don’t lecture)
- Minimize downside risk: Face Saving
Foster Ownership

- Lack of Ownership is a barrier
  - “Nobody asked us.”
  - “This isn’t the way we do things around here.”

- Equal partners
  - Solving a problem peer to peer
Intervene at Multiple Points

• **People differ in how they learn, what they find compelling**
  • If you present information only one way, you may fail to reach everyone
  • Reinforcement helps learning. The more they hear information, the better they will know it
PERSISTENCE

There is no GIANT step that does it. It's a lot of LITTLE steps.

Attributed to: [Attribution is necessary to provide credit]
Good luck.

We're all counting on you.

Thank You

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