

Theories of Motivation and how they apply to your trainees and colleagues (and you?)

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Disclaimer

- This is a work in progress
- We are going to talk about theory
- Acknowledgements to Dr. David Cook,
MD, MHPE

Outline

- Whys & Whats of Motivation
- Early Theory
- Where we are today
- What does this mean to you?

Why are we interested in Motivation?

Calvin, a clinical clerk, has recently begun his psychiatry (ophthalmology/obstetrics) rotation.

You have seen previous rotation scores and comments that highlight Calvin's abilities.

However, in his first few weeks of the rotation you have seen him completing the bare minimum to succeed, including not completing the E-Learning self-study modules for the rotation.

Theories of Motivation

- Many theories of motivation exist
 - varying epistemologies
 - varying degrees of evidence
- These theories should have better explanatory & predictive power
- Can help us better understand what we mean by ‘motivation’

What is Motivation?



What is Motivation?

- It is a process.....not an outcome
- We infer motivation based on **achievement behaviours**
- “The process whereby goal-directed activity is instigated & sustained”

Schunk, Pintrich & Meece ('08)

What is Motivation?

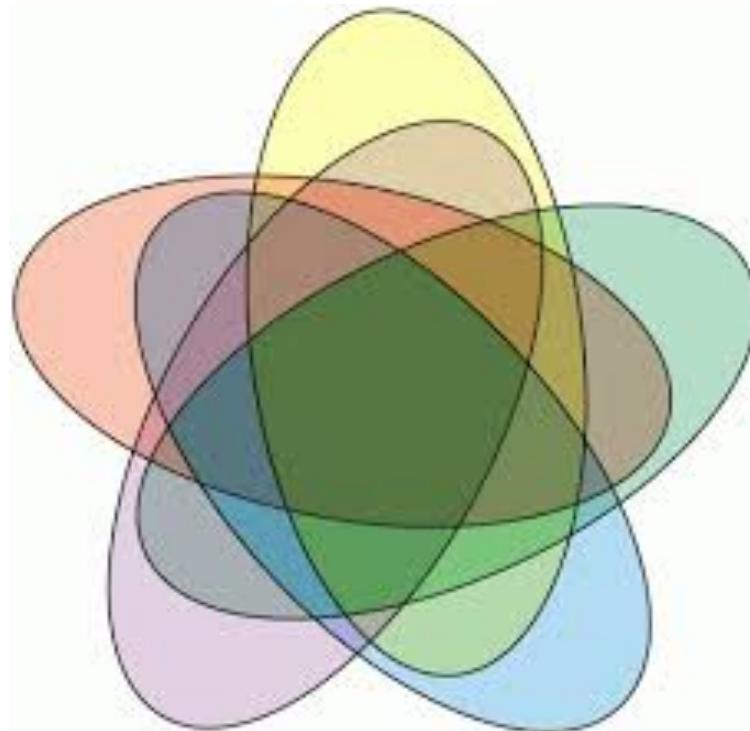
- Tend to think of it for new knowledge or skills
- But it also:
 - Impacts previously learned skills, strategies and behaviour
 - When and how we learn (level of engagement)

What does Motivation mean to Medical Education?

- Decreasing “in-clinic/classroom” hours
- Expect our trainees to be “self-motivated”
- Motivation is not a stable trait
- Suffers from context specificity
 - Domain --> Topic --> Skill

Theories of motivation

- By better understanding these theories we can hopefully better guide our trainees

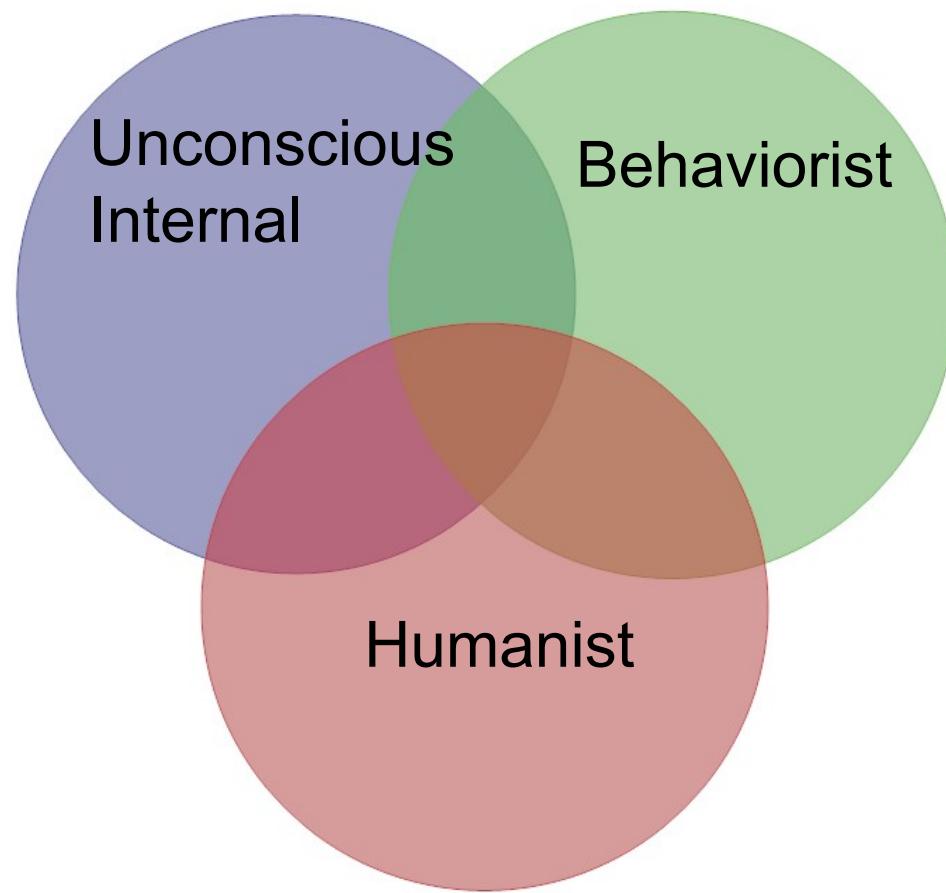


Theories of Motivation

- Theories have significant overlap in terminology, but not always in theoretical framework

“When I use a word” Humpty Dumpty said in a rather scornful tone, “it means just what I choose it to mean - neither more nor less”

Early Theories



Unconscious internal motivators

- Motivation Studies go back to Aristotle



- Our “Will” was driven by our appetite which “pronounced the object to be pleasant or painful, in this case it avoids or pursues”

Unconscious internal motivators (Freud)

- Inner forces drive behavior
 - Needs → accumulate energy = unpleasant
 - Resolve need → release energy = **pleasure**
 - Resist force when activity causes pain
 - Repress = resist release (still there, can cause neurosis)
- Unconscious; ignore cognition & environment
- Much of the theory is vague & difficult to test

Behaviourist: Drive (Hull, Tolman)

- Drive = internal homeostatic force
- Learning when innate behavior insufficient to maintain homeostasis
 - Habit strength (reinforce/inhibit)
- Motivation = learned / habit patterns of behavior (observable, unconscious, not subjective)

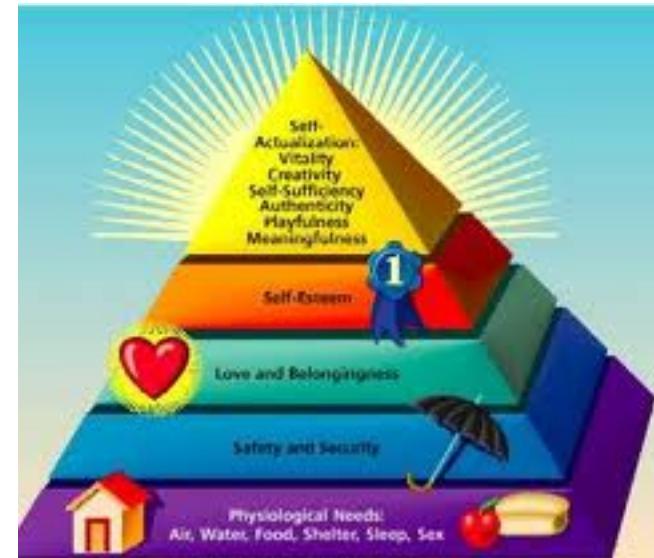
Behaviourist: Conditioning (Skinner)

- Neural connection between sensation & behavior
 - Classical (Pavlov) – bell → salivate
 - Humans smarter than dogs
 - Operant (Skinner)
 - Antecedent → Behav → Consequence
 - Reinforcement ↑ (punishment ↓) likelihood of response
- Nothing internal (cognition, drive, emotion)



Humanist: (Maslow, Rogers)

- Rogers: actualizing tendency → growth, autonomy, freedom (externally driven)
- Maslow hierarchy of needs:
physiologic → safety → love
→ esteem → self-actualization
- Little explanatory power (any behavior is an underlying need, an exhaustive list)



Current Theoretical Frameworks

- As the perspective of psychology changed, so did the theories of motivation
- Interested more in cognitive aspects of motivation
- Increasingly looking at the Intrinsic Factors

Why look inside?

Extrinsic factors/motivation don't always work - in fact sometimes they can be detrimental!

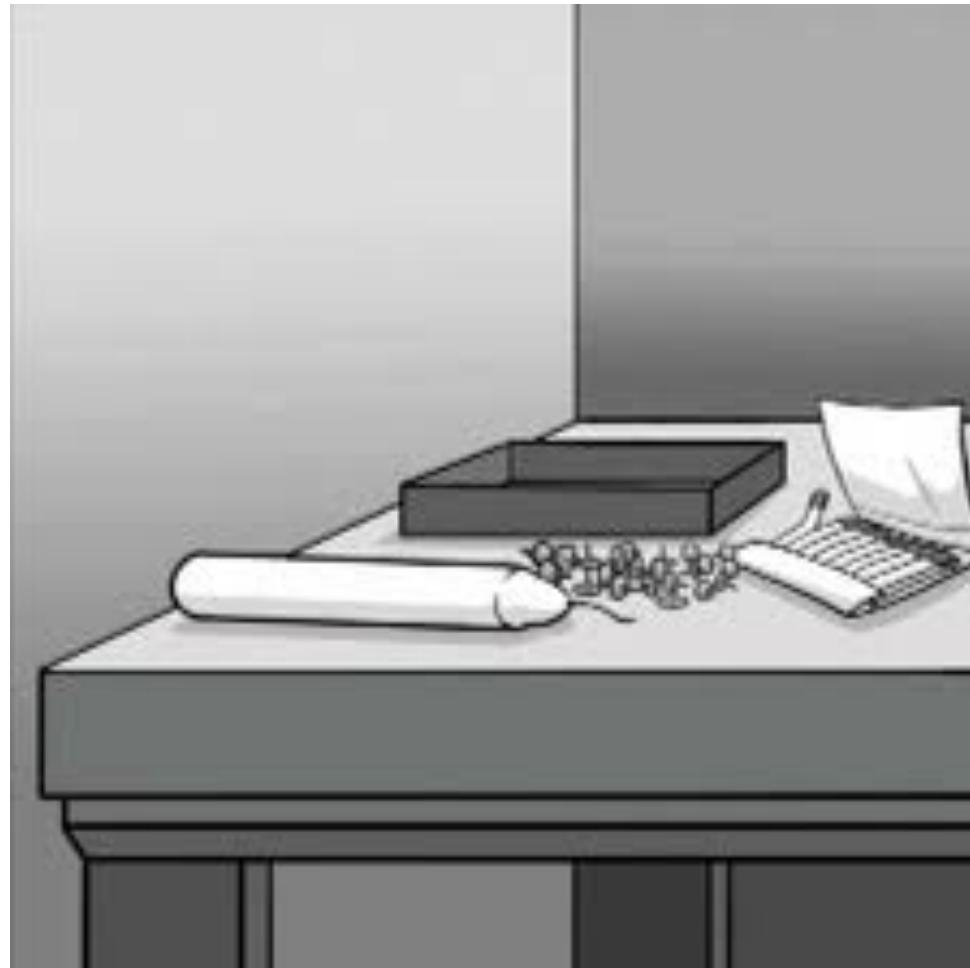
Candle Experiment



Candle Experiment



Candle Experiment

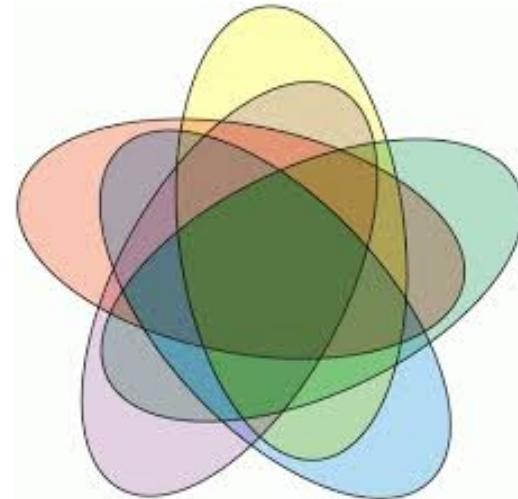


Current Theoretical Frameworks

- Importance on “self-efficacy” which is differentially described across theories ***but*** different from self-assessment
- Self-Efficacy is formed by direct and indirect feedback in specific domains
- Influences achievement behaviours & likelihood of success.

Current Theoretical Frameworks

- Expectancy-Value
- Attribution
- Social-Cognitive
- Goal Orientation Theory
- & others



Current Theoretical Frameworks

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Expectancy-Value (Eccles-Wigfield)

- Motivation (achievement behaviour) predicted:
 - Expectation of success & Value of the outcome
- Expectancy (can I do this?)
 - Too low / high challenge → low Motivation
 - \uparrow expectancy = \uparrow achievement behaviour
- Value (why would I do this?)
 - Low Value = low Motivation
 - Interest, utility (short & long term goals), Importance
- Domain-specific

Expectancy-Value: Implications

- Calvin - Low Expectations or Low Value
- Accurate **specific** feedback, with reasonable statements about competence in that domain
- Note skills will continue to develop
- Tasks/Skills challenging but achievable
- Value of Task

Attribution (Weiner)

Motivation (Achievement behaviour) predicted:

- Intrapersonal + Interpersonal (environment)
- **Perceived** cause of past events (aptitude, effort, difficulty, chance, preceptor, ...)
- Causal dimensions (stability, locus, control)
- Consequences (expectancy, self-efficacy, affect)

Attribution: Implications

- Calvin: Attribute lack of success to ability
- Preceptor can help students attribute to the complexity of task/patient (uncontrollable factors)
- Linking feedback to statements about *prior* success due to effort will be more effective than linking *future* success with effort
- Must be done early in skill development
- Health Professionals will do better with ability feedback and successful skill performance rather than ability + effort, as they see ability as the upper limit of success.

Social-Cognitive (Bandura)

- Motivation (achievement behaviour & learning) predicted:
- **Self-efficacy**
 - Ideally SE > Actual capability
 - Very task & situation (mood etc) specific
- Goals/Outcome expectations (control; ~goal)
 - Ideally specific, moderately difficult but attainable
- Learn appropriateness by watching others including vicarious learning

Social-Cognitive: Implications

- Calvin: Too easy won't engage, poor SE
- Attribution was predominant when SC was developed
- Also link feedback to unstable cause (luck, effort), and \uparrow self-efficacy
- Achievable goals \uparrow SE and \uparrow achievement behaviour
- Students learn by observation of the outcome of others & by hidden curriculum

Goal Orientation (Dweck, Ames)

- Motivation (achievement behaviour) predicted by: Goal Orientation (Why & How)
- Mastery goals
 - Competence based on Self-determined standards
 - “adaptive” attributions (effort) & study habits
- Performance goals
 - Competence based on comparison to peers (norms)
 - Approach Performance (“be the best”) - often good performance outcomes
 - Avoid Performance (“don’t be worst”) - can be maladaptive
 - Attribution to ability

Goal Orientation: Implications

- Calvin: If avoiding, find out his orientation for success
- Mastery- \uparrow SE = \uparrow success

	Approach	Avoid
Mastery	Ideal! Still need specific FB	Aging Physician \uparrow specialization?
Performance	Feels they will outperform others, danger in failure	Feelings of incompetence

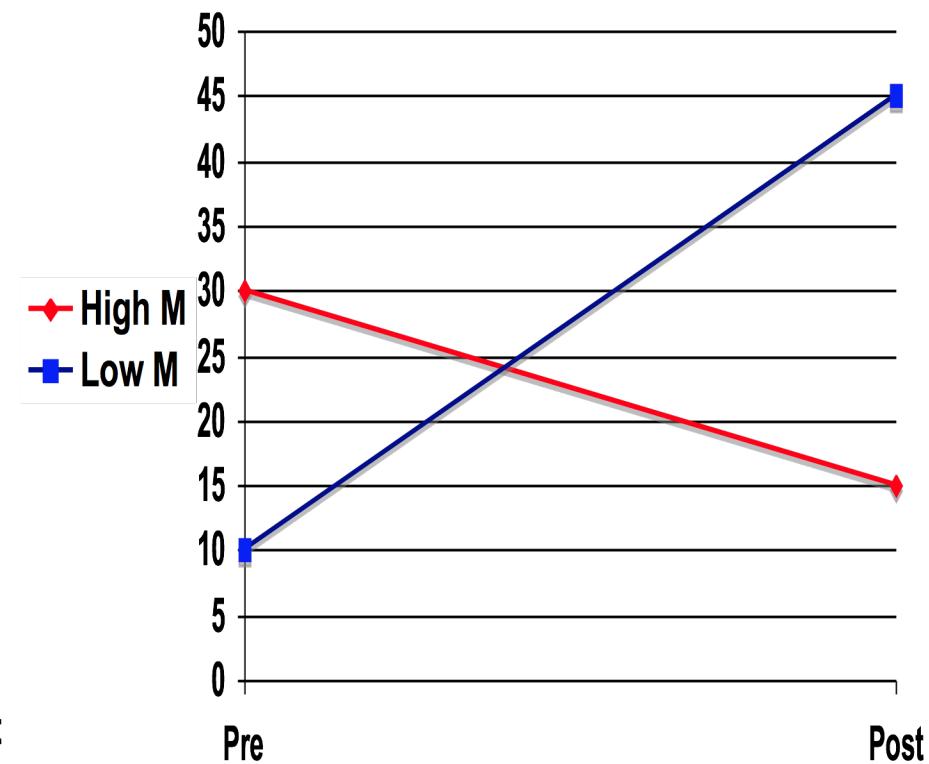
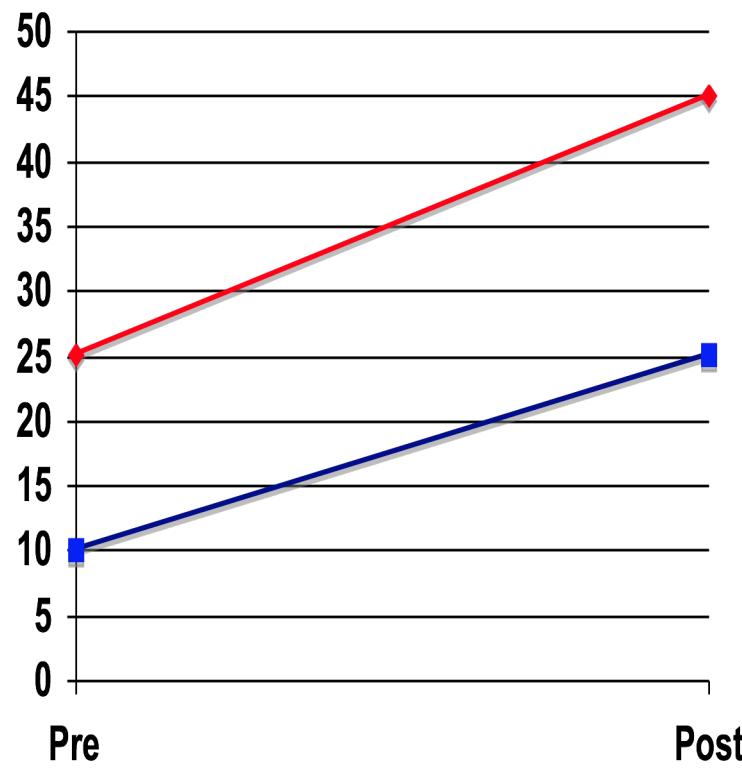
Implications Summary

- Accurate **specific** feedback about goals, with reasonable statements about competence in that domain
- Give FB early, note skills will continue to develop
- Importance of prior effort during feedback
- Tasks/Skills challenging but achievable
- Value of Task (intrinsic) vs. extrinsic
- Achievement of goals (\uparrow SE and \uparrow achievement behaviour)
- Failure attributed to the Controllable (complex pt), unstable cause (luck, effort) \uparrow self-efficacy
- Health Professionals see ability as the upper limit

Should we try and measure it?

- Each theory has its own measurement tool(s)
- Varying psychometrics
- Be aware of the Context
- Critically important to understand the aptitude-treatment interaction

Why measure motivation? Motivation-Intervention interaction



Why measure motivation?

- Decisions
 - Career counseling? (evidence for long-term prediction is weak)
 - Admissions? (really?)
 - What else?

Why measure motivation?

- Theory-building
 - How people learn
 - Insights to ***improve*** instruction
- Theoretical research focuses on general principles (not individual differences)
- But this doesn't justify / require ***measurement*** in real-life context

Why measure motivation?

- Tailored instruction ... computer-assisted **learner model**
 - Knowledge – works
 - Learning styles – doesn't work
 - Metacognition – very preliminary data
 - Spatial ability – inconsistent
 - Motivation – 3 pilot studies ...
- Also may apply to simulation, other ...

Tailored instruction

- Step 1: Identify instrument(s)
- Step 2: Identify potential Motiv-Interv Interactions
 - Theory-guided max/min motiv format
 - Assoc performance x baseline M.
- Step 3: Confirm application (adaptive CAI)

Take Home

- Motivation is specific to tasks and domains rather than the learner
- Preceptor/Trainer involvement is critical
- Early identification through assessments, must be fed-back to student and advisor
- Curriculum and assessments (feedback) should be mapped to the appropriate level



Thank You

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