

MEDITATION AND THE CHOICE OF FRAMES

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Mind Over Matter

“The quality of your life depends on the quality of your thoughts.” - 14th Dalai Lama

“The quality of your life depends not on what happens to you, but on how you perceive and respond to those events. – Yongey Mingyur Rinpoche

“All that we are is the result of what we have thought. The mind is everything. What we think, we become” - Buddha

Why Should Academics Consider Meditation?

- **Boosts resilience** in the face of frequent rejections.
- **Reduces anxiety** around the uncertainty of success.
- **Provides balance** in a highly competitive environment.
- **Offers perspective** amid visible successes and hidden struggles.

Overview

Choosing Healthier Frames

How Does Meditation Help in Choosing the Frame?

Meditation and Productivity: Scientific Evidence

Practical Advice on Meditation

Choosing Healthier Frames

What is Meditation?



What is Meditation?

- **Meditation** is a practice that nurtures awareness, focus, and deeper understanding.
- It involves paying attention to specific aspects of experience, such as:
 - **Focusing on the breath.**
 - **Observing a physical object.**
 - **Attuning to sounds, smells, or other sensory inputs.**
- **Mindful Observation:** Meditation enables individuals to notice their thoughts and emotions without judgment, fostering clarity and self-awareness.

What is a Frame?

- **Definition:**

In cognitive psychology, a frame refers to a mental structure or schema that shapes how individuals perceive, interpret, and respond to information and experiences.

- **Scientific Consensus:**

There is unanimous agreement among social scientists on the profound impact of framing on perception and behavior.

- *Example:*

Tversky and Kahneman's Asian disease framing problem (Tversky & Kahneman, Science, 1981)

Meditation and the Choice of Frames

- **This talk:** The focus of this talk is how meditation empowers us to consciously choose healthier mental frames to interpret the world.
 - *"If you can see your thoughts and emotions as they arise, they lose their power to control you. This is the beginning of true freedom."*
– Yongey Mingyur Rinpoche

Example 1: Reframing a Conflict

Scenario: You discover that someone has been talking badly about your research, while severely misrepresenting your work.

Broadly, there are two possible reactions:

- **Immediate Reaction:** You become angry and may lash out at them, insult them, or start talking badly about them to others.
- **Reframed Reaction:** You consider that their actions may stem from their own suffering, insecurities, or desire for happiness. By reframing, you let go of the anger and respond with understanding or compassion.

Example 2: Reframing a Professional Setback

Scenario: You receive a rejection for a paper that you worked on very hard.

Broadly, there are two possible reactions:

- **Immediate Reaction:** You feel disappointed and discouraged. Doubts about your abilities may arise, leading to a loss of motivation or thoughts of abandoning the project.
- **Reframed Reaction:** You view the rejection as an opportunity for growth – a chance to improve your work based on feedback. You recognize it as part of the normal process in academia and maintain your motivation, seeing this as a stepping stone to eventual success.

The Challenge of Reframing

- Conceptually, reframing seems straightforward, but applying it in real-life situations can be challenging.
- Reframing can be difficult due to the intensity of emotions involved in the moment.
- Effective reframing requires more than just theoretical understanding; it demands practice and experience.
- Meditation is a powerful tool that can enhance your ability to reframe:
 - Conceptual knowledge alone is rarely enough.
 - Consistent meditation cultivates the experiential knowledge necessary to master reframing.

How Does Meditation Help in Choosing the Frame?

Cultivating Awareness

- **Meditation sharpens awareness** of both mental and emotional states.
- By observing these states, **one realizes that they are not fixed or permanent.**
- **Awareness is the first step** toward changing habitual patterns of thinking and behavior.

Understanding Thoughts

- **Thoughts are transient** and do not necessarily reflect reality.
- Meditation creates a **healthy distance** between oneself and thoughts.
- This distance allows for **recognizing multiple possible interpretations** of events.

Mindful Response: The Power of Choice

- **Meditation creates space:** It helps you pause and consciously choose your response instead of reacting automatically.
- **Enhances control:** By delaying the fight-or-flight reaction, meditation gives you the power to choose how to respond, increasing your sense of agency.
- **Reframe experiences:** This pause allows you to see challenges as opportunities for growth rather than threats.
- **Example:** A stressful situation can be viewed as a learning experience, fostering resilience and personal growth.

Applying the Optimal Frame

- **Meditation as a Tool:** Meditation empowers us to adopt the most beneficial mental frames for well-being, personal growth and productivity.
- **Conscious Choice of Frames:** We can intentionally choose frames like *gratitude*, *compassion*, *curiosity*, and *acceptance* to shape our perspective.
- **Transforming Reality:** By shifting our internal frame, we have the power to transform our experience of the external world.

Meditation and Productivity: Scientific Evidence

Background reading

- “Altered Traits: Science Reveals How Meditation Changes Your Mind, Brain, and Body” - Daniel Goleman and Richard Davidson.

Meditation and Neuroplasticity

- **Neuroplasticity:** The brain's ability to reorganize and form new connections.
- **Meditation's Impact:**
 - **Structural Changes:** Increases in prefrontal cortex and hippocampus thickness.
 - **Functional Changes:** Enhanced brain connectivity, improved focus, and emotional regulation.
- **Long-term Benefits:**
 - **Stress Reduction:** Decreased amygdala size, lowering anxiety.
 - **Cognitive Enhancement:** Increased grey matter in learning and memory areas.
 - **Emotional Well-being:** Strengthened pathways for positive emotions.

Meditation and Neuroplasticity

The effect of meditation on brain structure: cortical thickness mapping and diffusion tensor imaging

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A convergent line of neuroscientific evidence suggests that meditation alters the functional and structural plasticity of distributed neural processes underlying attention and emotion. The purpose of this study was to examine the brain structural differences between a well-matched sample of long-term meditators and controls. We employed whole-brain cortical thickness analysis based on magnetic resonance imaging, and diffusion tensor imaging to quantify white matter integrity in the brains of 46 experienced meditators compared with 46 matched meditation-naïve volunteers. Meditators, compared with controls, showed significantly greater cortical thickness in the anterior regions of the brain, located in frontal and temporal areas, including the medial prefrontal cortex, superior frontal cortex, temporal pole and the middle and inferior temporal cortices. Significantly thinner cortical thickness was found in the posterior regions of the brain, located in the parietal and occipital areas, including the postcentral cortex, inferior parietal cortex, middle occipital cortex and posterior cingulate cortex. Moreover, in the region adjacent to the medial prefrontal cortex, both higher fractional anisotropy values and greater cortical thickness were observed. Our findings suggest that long-term meditators have structural differences in both gray and white matter.

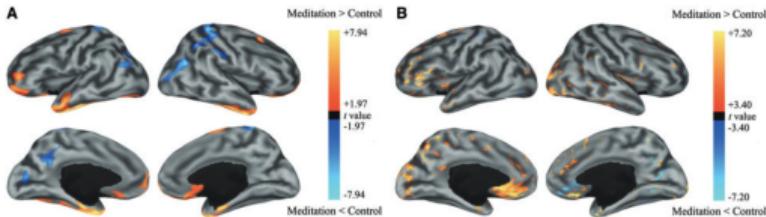


Fig. 1 Regional maps showing the statistical differences (A) in cortical thickness and (B) in FA between meditation practitioners and control subjects.

Gamma Waves in Meditation

- **Definition:** Gamma waves are high-frequency brainwaves, typically ranging from 30 to 100 Hz, often centered around 40 Hz.
- **Heightened Awareness:** Associated with increased perception and consciousness during deep meditation, leading to a strong sense of present-moment awareness.
- **Compassion and Loving-Kindness:** Gamma waves are elevated during meditations focused on compassion, linking them to positive emotional states.
- **Enhanced Cognitive Functioning:** Related to better memory, learning, and cognitive integration across different brain regions.
- **Neuroplasticity:** Regular meditation with increased gamma activity may promote brain reorganization, supporting learning and emotional regulation.

Gamma Waves in Meditation

Long-term meditators self-induce high-amplitude gamma synchrony during mental practice

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Practitioners understand “meditation,” or mental training, to be a process of familiarization with one’s own mental life leading to long-lasting changes in cognition and emotion. Little is known about this process and its impact on the brain. Here we find that long-term Buddhist practitioners self-induce sustained electroencephalographic high-amplitude gamma-band oscillations and phase-synchrony during meditation. These electroencephalogram patterns differ from those of controls, in particular over lateral frontoparietal electrodes. In addition, the ratio of gamma-band activity (25–42 Hz) to slow oscillatory activity (4–13 Hz) is initially higher in the resting baseline before meditation for the practitioners than the controls over medial frontoparietal electrodes. This difference increases sharply during meditation over most of the scalp electrodes and remains higher than the initial baseline in the postmeditation baseline. These data suggest that mental training involves temporal integrative mechanisms and may induce short-term and long-term neural changes.

Does Meditation affect productivity? I

Managing Emotions: The Effects of Online Mindfulness Meditation on Mental Health and Economic Behavior

ADVIK SHREEKUMAR PIERRE-LUC VAUTREY*

MIT MIT

June 14, 2024

Abstract

Mindfulness meditation has gained popularity, fueled by accessible smartphone apps and rising concerns about mental health. While such apps are claimed to affect mental well-being, productivity, and decision making, existing evidence is inconclusive due to limited sample sizes and high attrition. We address these concerns by conducting a large-scale, low-attrition experiment with 2,384 US adults, randomizing access and usage incentives for a popular mindfulness app. App access improves an index of anxiety, depression, and stress by 0.38 standard deviations (SDs) at two weeks and 0.46 SDs at four weeks, with persistent effects three months later. It also improves earnings on a focused proofreading task by 2 percent. However, we find near-zero effects on a standard cognitive test (a Stroop task), and on decisions over risk and information acquisition where past economics research has indicated that emotions affect choice. This study provides evidence that digital mindfulness improves mental health and can raise productivity, but suggests that these effects do not stem from traditional measures of cognitive skills nor do they accompany more primitive changes in the information and risk preferences we measure.

- Conduct a large-scale experiment ($n=2,384$) randomly assigning respondents to Headspace.
- They document large effects on mental health

Does Meditation affect productivity? II

Managing Emotions: The Effects of Online Mindfulness Meditation on Mental Health and Economic Behavior

ADVIK SHREEKUMAR

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Abstract

Mindfulness meditation has gained popularity, fueled by accessible smartphone apps and rising concerns about mental health. While such apps are claimed to affect mental well-being, productivity, and decision making, existing evidence is inconclusive due to limited sample sizes and high attrition. We address these concerns by conducting a large-scale, low-attrition experiment with 2,384 US adults, randomizing access and usage incentives for a popular mindfulness app. App access improves an index of anxiety, depression, and stress by 0.38 standard deviations (SDs) at two weeks and 0.46 SDs at four weeks, with persistent effects three months later. It also improves earnings on a focused proofreading task by 2 percent. However, we find near-zero effects on a standard cognitive test (a Stroop task), and on decisions over risk and information acquisition where past economics research has indicated that emotions affect choice. This study provides evidence that digital mindfulness improves mental health and can raise productivity, but suggests that these effects do not stem from traditional measures of cognitive skills nor do they accompany more primitive changes in the information and risk preferences we measure.

- They document statistically significant and modest effects on productivity.

Does Meditation affect productivity? III

IZA DP No. 15723

Keep Calm and Carry On: The Short- vs. Long-Run Effects of Mindfulness Meditation on (Academic) Performance

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- Conduct a field experiment randomly assigning a standardized 8-week mindfulness course among university students (n=224).

Does Meditation affect productivity? IV

Keep Calm and Carry On: The Short- vs. Long-Run Effects of Mindfulness Meditation on (Academic) Performance*

Mindfulness-based meditation practices are becoming increasingly popular in Western societies, including in the business world and in education. While the scientific literature has largely documented the benefits of mindfulness meditation for mental health, little is still known about potential spillovers of these practices on other important life outcomes, such as performance. We address this question through a field experiment in an educational setting. We study the causal impact of mindfulness meditation on academic performance through a randomized evaluation of a well-known 8-week mindfulness meditation training delivered to university students on campus. As expected, the intervention improves students' mental health and non-cognitive skills. However, it takes time before students' performance can benefit from mindfulness meditation: we find that, if anything, the intervention marginally decreases average grades in the short run, i.e., during the exam period right after the end of the intervention, whereas it significantly increases academic performance, by about 0.4 standard deviations, in the long run (ca. 6 months after the end of intervention). We investigate the underlying mechanisms and discuss the implications of our results.

- They document large effects on mental health and significant and large effects on productivity.

Does Meditation affect productivity? V

- Shockingly few well-powered studies on productivity effects in natural settings.
- Much more evidence on mental health benefits (1000s of studies, though mostly small sample).

Causal Pathways

- There is a growing body of scientific evidence on the effects of meditation on the mind and body. Some of the main effects of meditation that have been reported include:
 1. Reducing stress and anxiety
 2. Improving focus and attention and reducing mind-wandering
 3. Promoting feelings of well-being
 4. Reducing symptoms of depression
 5. Increasing self-control
 6. Improving sleep
 7. Increasing emotion regulation

Practical Advice on Meditation

General guidelines to meditation I

- **Choose a comfortable position:** You can sit on a cushion or a chair, or you can lie down. It's important to find a position that allows you to relax and be comfortable.
- **Focus your attention:** Meditation often involves focusing on a specific object, such as your breath or a mantra. Pay attention to your chosen object and let other thoughts and distractions pass by without getting caught up in them.
- **Don't worry about clearing your mind:** It's normal for thoughts to arise during meditation. The goal is not to get rid of thoughts, but to notice them without getting caught up in them.
- **Start small:** It's best to start with short meditation sessions and gradually increase the length as you become more comfortable with the practice.
- **Mixing methods:** Meditation is most effective when you alternate between different techniques.

General guidelines to meditation II

- **Quality matters:** The quality of meditation is far more important than the quantity.
- **Be patient and persistent:** Meditation can be challenging at times, and it's normal to experience distractions or a busy mind. Don't get discouraged, and try to be patient with yourself.
- **Early morning meditations:** Start your meditation first thing in the morning (before checking your emails or slack).

When Do the Effects of Meditation Materialize?

- **Immediate Effects:**
 - Some individuals experience a sense of clarity immediately after a session.
 - Others may notice little to no immediate effects.
- **Initial Challenges:**
 - Initial meditation practices can sometimes lead to discomfort as individuals become more aware of troubling thoughts.
- **Longer-Term Effects:**
 - Research suggests that significant benefits often emerge after 3-4 weeks of consistent daily practice.
- **Importance of Regularity:**
 - The more regularly a person practices, the more likely they are to experience lasting benefits.
 - Meditation benefits tend to diminish quickly if practice is discontinued.

Main Meditation Techniques

- Common meditation techniques include:
 1. **Focused Attention (Shinay):** Focus on a specific object, such as the breath or a mantra, maintaining this focus while letting go of distractions.
 2. **Open Monitoring/Awareness:** Observe thoughts and emotions non-judgmentally, without trying to change or engage with them.
 3. **Loving-Kindness:** Direct feelings of love and compassion towards oneself and others.
 4. **Tonglen:** Practice compassion by breathing in the suffering of others and breathing out relief and comfort for them.
 5. **Transcendental:** Repeat a mantra or phrase to quiet the mind and achieve higher consciousness.
 6. **Movement:** Focus on movements, like walking or performing physical postures, to cultivate mindfulness.
 7. **Visualization:** Imagine a peaceful or calming scene to relax the mind and body.

Breathwork: An Effective Alternative to Meditation

- Breathwork offers a compelling alternative to traditional meditation practices.
- Example: Box Breathing Technique
 - Inhale deeply for 4 seconds.
 - Hold your breath for 4 seconds.
 - Exhale slowly for 4 seconds.
 - Pause and hold for 4 seconds before repeating the cycle.
- Benefits: Ideal for individuals experiencing high levels of stress, as it promotes immediate calmness and focus.

Conclusion

- **Quality of life** is closely linked to the **quality of our thoughts** and how we interpret life events.
- **Meditation** is a powerful tool for cultivating awareness, enabling us to reframe experiences in healthier ways.
- **Reframing challenges** is difficult but possible with practice, especially through regular meditation.
- **Scientific evidence** confirms the benefits of meditation for mental health, productivity, and overall well-being.
- **Consistent practice** and patience are key to harnessing the full potential of meditation, as its benefits build over time.

Conclusion

Thank you for your attention!

Useful resources

- Guided meditations on apps or on the web
 - Headspace: <https://www.youtube.com/watch?v=sG7DBA-mgFY&t=56s>
 - Calm: <https://www.youtube.com/watch?v=ZToicYchIOU>
 - UCLA Health: <https://www.uclahealth.org/programs/marc/free-guided-meditations/guided-meditations>
 - the Insight Meditation Centre: <https://www.audiodharm.org/series/1/talk/1835/>.
 - Sam Harris: Making Sense Podcast: <https://www.samharris.org/podcasts>
 - Seth Gillihan: Think Act be: <https://sethgillihan.com/podcasts/>
- Recommended readings:
 - "The Joy of Living" by Yongey Mingyur Rinpoche
 - "The Art of Meditation" by Mathieu Ricard
 - "The Tibetan Book of Living and Dying" by Sogyal Rinpoche
 - "The Miracle of Mindfulness" by Thich Nhat Hanh
 - "Wherever You Go, There You Are" by Jon Kabat-Zinn
 - "The Headspace Guide to Meditation and Mindfulness: How Mindfulness Can Change Your Life in Ten Minutes a Day" by Andy Puddicombe
 - "Waking Up" by Sam Harris
 - "Awe: The Transformative Power of Everyday Wonder" by Dacher Keltner
 - "Mindful Cognitive Behavioral Therapy: A Simple Path to Healing, Hope, and Peace" by Seth Gillihan