

Stress, Humor, and Happiness

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Stress

- 50-75% of routine medical practice is devoted to complaints related to stress.
- Problems at work are more strongly associated with health complaints than any other life stressor. 29% of workers report that they feel “quite a bit or extremely stressed at work.” (Yale Univ. Survey, 1997)
- Healthcare expenditures are 50% greater for workers who report high levels of stress (*J of Occ Env Med, 1998*)

Stress

- Obviously, there is an adaptive component to the fight or flight phenomenon. There may also be an adaptive feature to being afraid of loneliness, or shutting down when we are afraid/depressed, which can save energy or elicit concern from others.
- Just as obviously, there is a physical cost from being stressed.
- Not so obvious is defining exactly what stress is.

Stress

- Terrifying versus exciting
- Elevated glucocorticoids, neurotransmitters
- Controlled versus uncontrolled

What is a stressful experience?

- The experience must be unpleasant. (Would you avoid this experience if you could?)
- The experience must lead to a heightened degree of arousal.
- The experience must be out of the subject's control. This determines the intensity of the response. And it is the intensity of the response that determines the degree of stress-induced problems on the organism.

Stress Response: HPA Axis

- Hypothalamic: When stress is perceived, corticotropin-releasing hormone (CRH) and vasopressin are secreted by neurons in the hypothalamus. CRH causes the pituitary to secrete ACTH. ACTH stimulates the adrenal gland to release cortisol which increases glucose levels and suppresses the inflammatory/immune response. This is the hypothalamus-pituitary adrenal axis (HPA.)

Cortisol

- The levels of glucocorticoids in the blood typically follow a daily rhythm - high early in the morning, low later in the day. They increase glucose in the blood, control its metabolism, and regulate the sleep wake cycle.
- High levels of cortisol also affect memory (experimental evidence, Cushing's disease)

Stress Response: LC/NE Pathway

- LC/NE: The locus coeruleus (LC) secretes norepinephrine (NE - related to adrenaline) in the cortex, thalamus, limbic system, hypothalamus, spinal cord. NE acts as a neuromodulator. It also activates the autonomic nervous system for fight or flight. Heart rate, respiration, and blood pressure increase.

Stress: Memory Effects

- The amygdala is a central brain structure that processes fearful stimuli. It is directly connected to the hippocampus.
- The hippocampus is primary structure involved in memory formation.
- Short term stress can enhance memory. These same stress can impair attentional states and learning later on. Ultimately, even amnesia can be result.

Stress: Memory Effects

- When directly stimulated by fearful events, or by stress hormones in the blood, the amygdala:
 - Activates the freeze response
 - Increases blood pressure
 - Increases the release of stress hormones in the LC/NE pathway
 - Increases the startle reflex
 - Signals the hippocampus

Stress: Memory Effects

- The hippocampus reacts to stress hormones in three ways:
 - The process of long term potentiation is inhibited
 - Dendritic pruning is increased
 - Granule cell numbers are decreased

Chronic Stress

- Chronic stress results in hypertrophy of the adrenal gland and persistent elevations of cortisol. The LC also fires faster at lower levels of stimulation.
- These changes result in depression of reproductive functioning, reductions in growth hormone, vagus nerve blockade (GI shutdown), insulin resistance, depression, panic, and anxiety.
- Uncontrollable stress produces reductions in LC-NE levels - depression, learned helplessness.
- High levels of glucocorticoids also lead to neuronal cell death.

Common Physical Symptoms of Stress

- Headache
- Back, shoulder, neck pain
- Sleep problems
- Difficulty concentrating
- GI problems
- Palpitations
- Skin problems
- Tics
- Low energy

Common Emotional Symptoms of Stress

- Job dissatisfaction
- Burnout
- Irritability
- Anxiety
- Depression
- Isolation, withdrawal

Coping With Stress

- Can you identify the cause of your stress?
- Can you do anything about it?
- Can you live a more balanced life?
- Can you do anything better about time management and scheduling?
- Can you reach out to others?
- Can you let some things go?
- Can you take a break?

Nurturing Yourself: The Healthy Life

- Know yourself
- Reduce caffeine intake
- Eat healthy food
- Exercise
- Meditate
- Build in relaxation time, get rest
- Cultivate friendships, but choose friends carefully
- Treat other people well

The Healthy Life

- Leave time for integrating the unexpected, be flexible
- Take control of your life
- Make decisions, don't procrastinate
- Create environments that reduce stress, reduce noise pollution, monitor your media
- Be humble
- Don't gossip

Stress Management

- Communicate to those around you
- Forget the past
- Maintain a sense of humor

Humor

- Nobody understands humor.
- A behavioral neurologist who studied laughter in social settings discovered the biggest laugh getters were not jokes (99% of people can't remember a joke) but remarks like “see you later” or “must be nice.” (You had to be there.) Something being funny doesn't necessarily have anything to do with laughter.

Humor

- Is humor a temperament, a talent?
- Is it innate, learned? How cultural is it?
- What does laughter mean?
- What makes a joke funny?
- The absence of a sense of humor is so rare that it implies a problem.

Humor Test

- The neighbor approached Mr. Smith at noon on Sunday and inquired, “Say, Smith, are you using your lawnmower this afternoon?”
- “Yes, I am,” Smith replied warily.
- The neighbor answered:
 - A. “Oops,” as the rake he walked on hit him in the face.
 - B. “Oh, well. Can I borrow it when you’re done?”
 - C. “You won’t be wanting your golf clubs. I’ll borrow them.”

Richard Wiseman

- Two thousand jokes, generally 4 themes:
 - Trying to look clever and messing up
 - Husband and wife conflict
 - Doctors being insensitive to imminent death
 - God making a mistake
- The funniest animal is a duck
- The funniest joke...

Development of Humor

- Babies smile around 6 weeks, and later chuckle when their mother plays with them. At 10 weeks, a baby smiles at surprises and relief. At 16 weeks, the baby is smiling about 1x per hour. By 10 months, visual and social stimuli are beginning to elicit smiles, like when mom crawls on the floor like a baby. Around 11-12 months, the baby begins to take the initiative in fun: peek-a-boo. Around 4 years old, we see the first signs of kids laughing at themselves.
- As adults, a laugh has lots of social purposes, but the bonding function remains.

Functions of Humor

- Bonding and sense of belonging
- Communication (may express aggression and sexuality in non-threatening way)
- Mitigates stress as a coping mechanism:
 - Reframing (It can't be that bad if I am still laughing)
 - Challenging self-defeating thoughts (I picked a great day to come to work)
 - Distancing
 - Power over what we fear

Functions of Humor

- Gives perspective (a kind of non-defensive distancing)
- Releases excess energy/ tension (embarrassment, excitement, anxiety)
- Facilitates learning, creativity, problem solving, and memory

Physiology of Laughter

- It is easy to make someone smile but hard to make them laugh. It is a neurologically complex action utilizing both sides of the brain. It seem that the left side of the brain understands the language and the situation, and the right side of the brain “gets it.”

Physiology of Laughter

- Amusement initiates the coordination of 15 facial muscles, beginning with the lift of the eyebrows and a series of eye and cheek muscle contractions, known as the “surprise response.”
- There are then spasmodic skeletal muscle contractions, increasing heartbeat, and rapid breathing. The diaphragm contracts in clonic movements that crescendo and diminish.

The Physical Effects of Laughter

The Physical Act of Laughing:

- Increases respiration and oxygen exchange
- Activates muscles - and then relaxes intercostals, abdominals, diaphragm, muscles of neck and shoulders. A hearty belly laugh effects almost all muscle groups.
- Stimulates cardiovascular system
- Stimulates sympathetic nervous system
- Raises blood pressure during laughter, lowers it after
- Body temperature increases
- Increases release of endorphins and enkephalins
- Increases salivary immunoglobulin A

Why are things funny?

- More than 100 theories
- Superiority theory (aggression): Plato, Aristotle
- Incongruity theory: Pascal 17th Century (surprise - coherence, tension release)
- Release theory: Freud
 - “A quota of psychical energy which has earlier been used for cathexis of psychical paths and become unusable so that it can find free discharge.”

Features of Humor

- Three conditions need to be present for humor to occur:
 - 1) relationship between humor originator and receiver must permit the introduction of cognitive dissonance and taboo themes
 - 2) social environment must be conducive to a playful response
 - 3) humor originator must generate play signals which predispose the receiver to a playful mood

Criteria for Humor

- 3 criteria for determining appropriateness of humor:
 - 1) Timing
 - 2) Receptivity
 - 3) Content
- Genuineness of the interpersonal relationship. The relationship must be non-exploitive, respectful, tolerant.

Criteria for Humor

Impediments to humor:

- confusion
- depression
- paranoia
- offensiveness

Humor

- Joy is a skill. You use it or lose it, like any other physical skill or mental acuity. You can cease to be part of the healing and become part of the illness.

Humor and Psychotherapy

- “Humor has its place in life. Let us keep it there by acknowledging that one place where it has a very limited role, if any, is in psychotherapy.” (Kubie, 1971)
- 582,000 hits on Google
- The American Association for Therapeutic Humor

Humor and Psychotherapy

- Inhibitions are released, aids clients feeling relaxed, letting go of defenses
- Aids diagnosis
- Buffers resistance to interpretations
- May facilitate moments of insight
- Helps build perspective

Concerns

- Humor reduces distress, but is this always desirable?
- Inappropriate humor can create more tension and block communication. Inappropriate humor may represent a destructive countertransference. Therapists may be using humor aggressively in an attempt to develop rapport or to avoid anxiety provoking themes.
- Humor can be a form of denial in the client and may perpetuate inaction.

Requirements

- Accurate empathy in clinician. There is usually a subtle context of permission to use humor.
- Awareness of your own feelings (countertransference)
- Avoid sarcasm, abusive humor
- Be aware that clients may not feel you are taking them seriously.
- Some things are not funny.

How to Be Happy: A Primer from the Ages

- Live the virtuous life. Get away with evil.
- Know the truth. Preserve your illusions.
- Restrain your impulses. Be uninhibited in your impulses.
- Live in the present. Live for the future. Cherish your memories.
- Surround yourself with family and friends. Seek to live in peaceful solitude.
- Etc...

Who's Happy? Apparently Everybody.

- 90% of Americans describe themselves as very/fairly happy. Everyone thinks they are happier than the average person. Almost everyone puts themselves near the maximum of possible happiness.
- This has been true throughout history, as far as we have available records.
- Individuals may have ups and downs, but the level of happiness remains very stable from childhood. Like blood pressure, happiness fluctuates around a certain level for each of us.

Are we getting happier?

- There has been no improvement whatsoever in the average levels of life satisfaction in the general population as a result of the introduction of psychotropic drugs or psychotherapy from 1950 to the present. The absence of life satisfaction and positive emotions is more predictive of subsequent mortality and morbidity than the presence of negative emotions.

What Would Make You Happy?

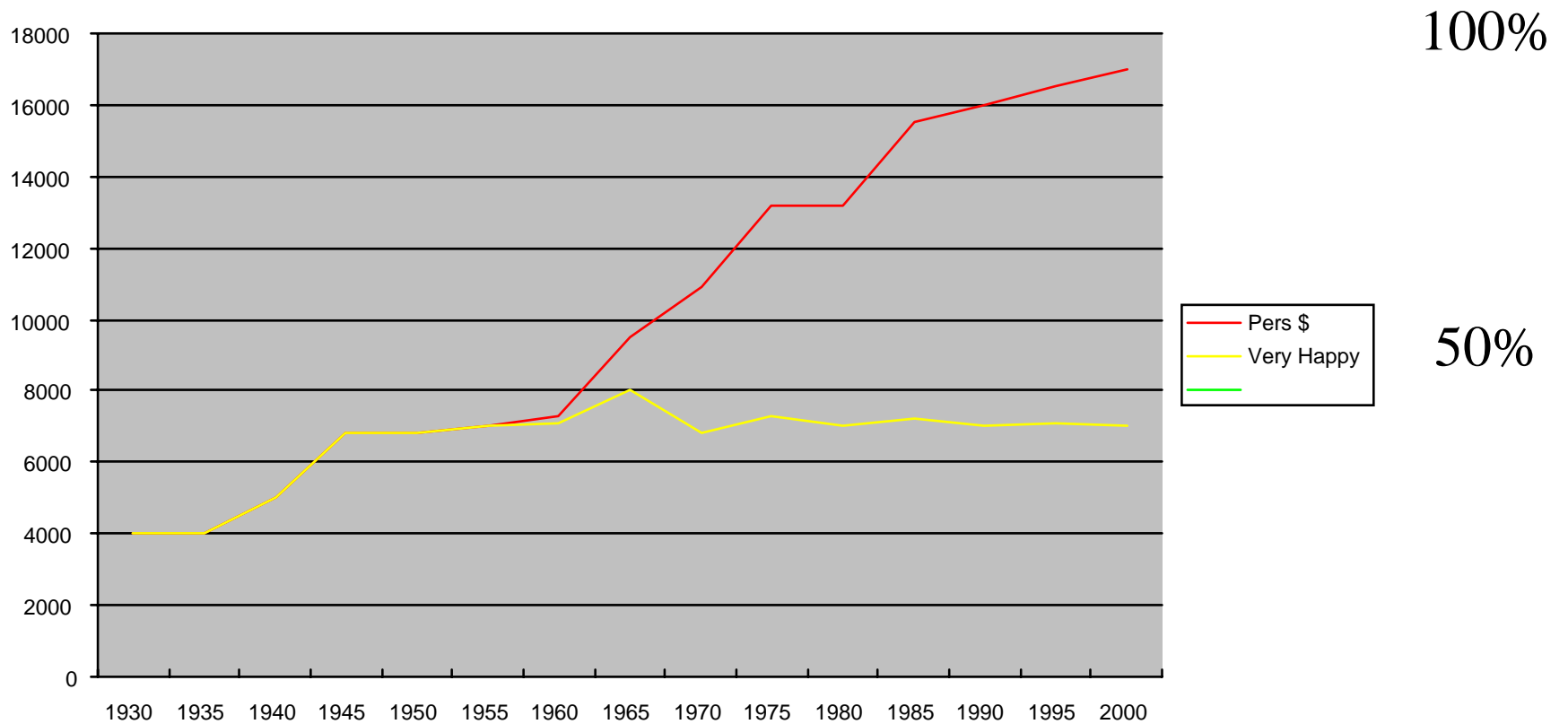
- Most people believe that money and having children would make them happy.
- As far as children are concerned, most parents would say that some of their best moments of happiness involved their children, but on a day-to-day level, people aren't particularly happy when they're interacting with their children. Women looking after their children are significantly less happy than when they're watching TV. Children are hard work.

Does Money Buy Happiness?

- People with lots of money are not happier than those with enough. Wealth is like health: its absence breeds misery, but having it is not guarantee of happiness.
- Most of us believe that just “a little more” money, a little bigger house, five less pounds, etc...we would be happier.

Does Money Buy Happiness?

From: *Historical Statistics of U.S., Economic Indicators*



Predictors of Happiness

- Strong
 - High self-esteem
 - Optimistic and outgoing
 - Close friendships/good marriage
 - Work and leisure that engages skills (usually less expensive - gardening, social contact, etc)
 - Meaningful religious faith
 - “Satisficers” (those who aim for good enough)

Predictors of Happiness

- Weak (less than 2% of the variance)
 - Age
 - Gender
 - Race
 - Educational level
 - Parenthood (frequently negative)

Predictors of Unhappiness

- Strong
 - Hunger
 - Disease
 - Poverty
 - Oppression
 - Dangerous environment
 - “Maximizers” (those who want the best)

The Pursuit of Happiness: Impact Bias/ Adaptation

- Our actions are based on our predictions of the emotional consequences, but when it comes to predicting how we will feel in the future, we are most likely going to be wrong.
- We overestimate the intensity and the duration of our emotional reactions to future events - the good and the bad. This is called “Impact Bias.”
- Impact bias makes sense biologically. We return to our set point, so we can be motivated again. This is called “Adaptation.”

Adaptation

- Our brains are not trying to make us happy. They are trying to regulate us.
- The problem is that we seem unable to learn that we adapt, and we keep being driven by the same desires and pleasures. Our unimaginably successful consumer driven culture is based on this phenomenon.

The Pursuit of Happiness: Defense Mechanisms

- Another reason we overestimate the emotional consequences of our actions is the powerful roles that psychological defenses play in coping with very big problems. These end up causing us less discomfort than the ordinary minor annoyances in our lives. People with cancer are more optimistic about their future than people in good health.

The Effect of Disability on Happiness

- Able-bodied Univ. Ill students:
 - Happy - 50% of the time
 - Unhappy- 22% of the time
 - Neutral - 29% of the time
- Univ Ill students with disabilities:
 - Happy - 50% of the time
 - Unhappy - 22% of the time
 - Neutral - 29% of the time

The Pursuit of Happiness: Empathy Failure

- We cannot seem to predict how we will behave when we are in different states of emotional arousal. Consider our behavior when we're angry, afraid, sexually excited, depressed - and when we are calm and in control.

The Pursuit of Happiness: Comparing Mind

- Satisfaction, success and failure are all relative. We seem unable to not compare ourselves with other people. Sometimes, we can increase our happiness by looking at people less fortunate than ourselves. But most of the time, we feel that we deserve more. (When Oakland athletics outfielder Jose Conseco was offered \$4.7 million annual salary, his fellow outfielder Rickey Henderson refused to show up to spring training because he only made \$3 million annually.)

Can We Be Happy?

- Freud says, no.
- Madison Avenue says, yes.
- Science says, maybe.

Three Aspects of Happiness

- Pleasure
- Feelings of satisfaction and well-being (set at birth, right vs. left brain)
- Overall quality of life (more about ethics and values)

Feelings of well-being

- Can be developed
- Related to three character traits:
 - Self-Directedness (responsible, purposeful, resourceful)
 - Cooperativeness (tolerant, helpful, compassionate)
 - Self-Transcendence (intuitive, judicious, spiritual)

Some Suggestions for Finding Happiness

- Find ways to think less about yourself and more about others.
- Spend time with friends.
- Be physically active.
- Be actively engaged in your activities.
- Cultivate a spiritual life.

Some Suggestions for Finding Happiness

- Work on being a “Satisficer” rather than a “Maximizer.”
 - Restrict your options (two stores, e.g.)
 - Realize when a choice has met your core requirements
 - Consciously limit the time spent on wondering about other options that you have missed.

Some Suggestions for Finding Happiness

- Live longer. The 70's are the best time of life. Older people think less about doing things as an investment, and more about what makes them happy now. (The 20's and 30's are among the least happy decades for adults.)
- Stop looking. Total happiness is not attainable. By pursuing happiness, we cause it to recede farther away from us. True happiness comes when we are focused on living a life of generosity and integrity.