

“I never think about the future ... it is coming soon enough!”

—Albert Einstein

*“Life can only be understood backwards;
but it must be lived forwards”*

—Søren Kierkegaard

*“My interest is in the future,
because I am going to spend the rest of my life there”*

—Charles F. Kettering

“Everybody has a plan, until they get punched in the mouth”

—Mike Tyson

“Never make predictions, especially about the future”

— Casey Stengel

Thinking about the Future:
Whether, When, Why, How, Who,
What ... and So What?

Roy F. Baumeister

Florida State University

& University of Queensland

Thanks

- To coauthors for ideas
 - Martin Seligman, Peter Railton, Chandra Sripada, Gabriele Oettingen
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- To John Templeton Foundation for funding

About the Future

- Psychology studies the past
 - Causal models of behavior
 - Studies of memory
- Easier to know past than future
- But people think more about future than past
- Why? Future has advantages
 - Can still change it
 - Adaptive to orient toward future
 - Direction of evolution?

What Were You Thinking? Past, Present, and Future in a Random Sample of Everyday Thoughts

Goals of Study

- Explore content of everyday thoughts
 - *Lab thoughts may not be the same*
- Examine how thoughts use time
- What emotions, thoughts, etc. accompany thinking about the future?

Method



- Sample
 - N = 492 (62% female) adults from the USA
 - 46.5% students
 - Mean age = 28.8 (range 18 to 67)
- Schedule
 - 6 random signals/day
 - For 3 days
 - Then questions about most recent thought

Defining Past, Present, Future

- Present defined as within 5 minutes of now
 - *Future starts after that*
 - *Same for past*
- Supplementary analyses starting the future a week hence, or a month

How Often?

% of Total Thoughts

- Past only 4 %
- Present only 40 %
- Future only 14 %

How Often?

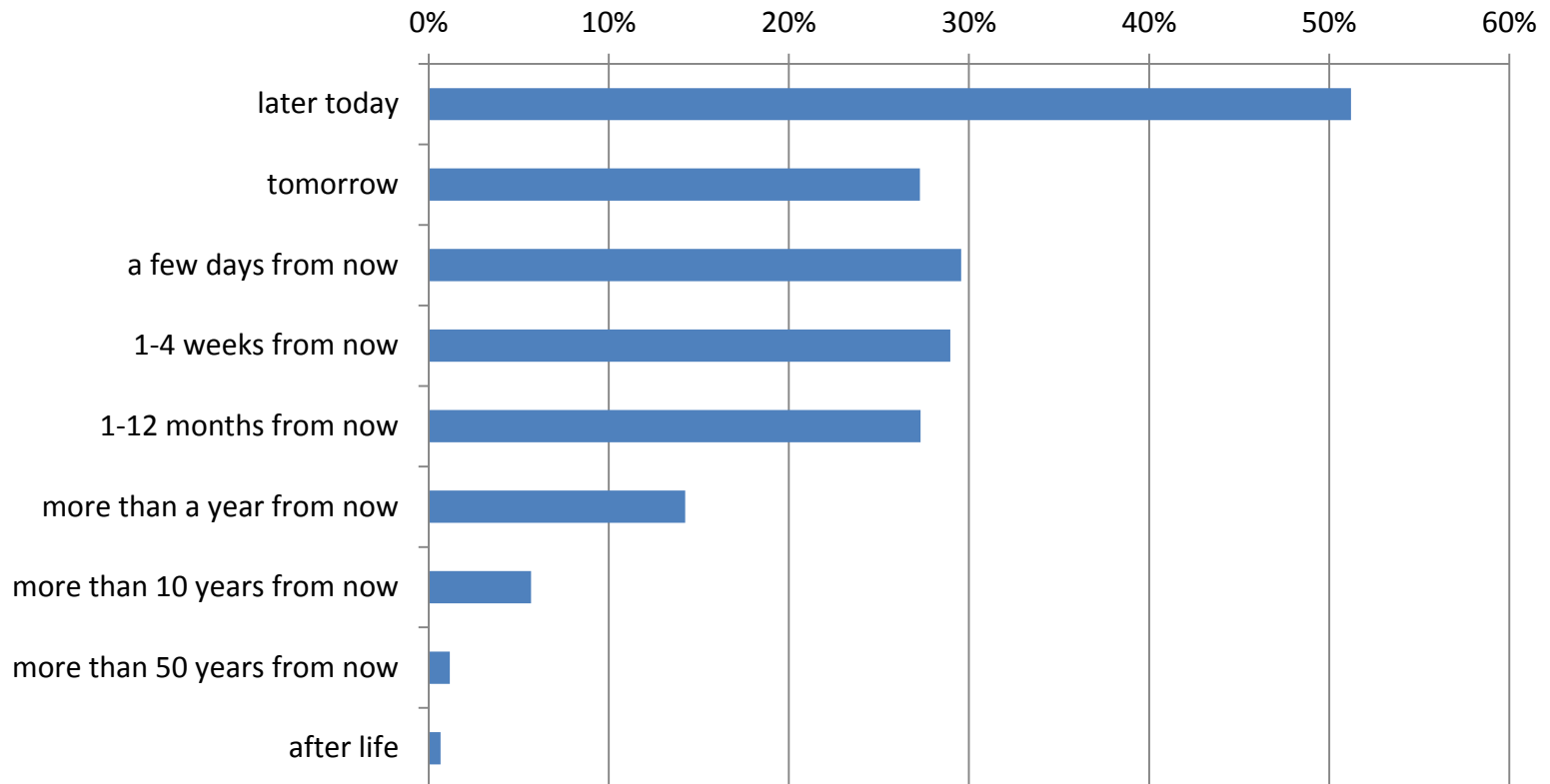
% of Total Thoughts

• Past only	3.8 %	
• Present only	39.8 %	
• Future only	14.2 %	
• Past and present	2.1 %	
• Past and future	0.9 %	
• Present and future	12.1 %	←
• Past, present & future	2.3 %	
• None (no time)	24.4 %	
• + _____ + _____		
• TOTAL	100 %	

So:

- People think much more about future than past

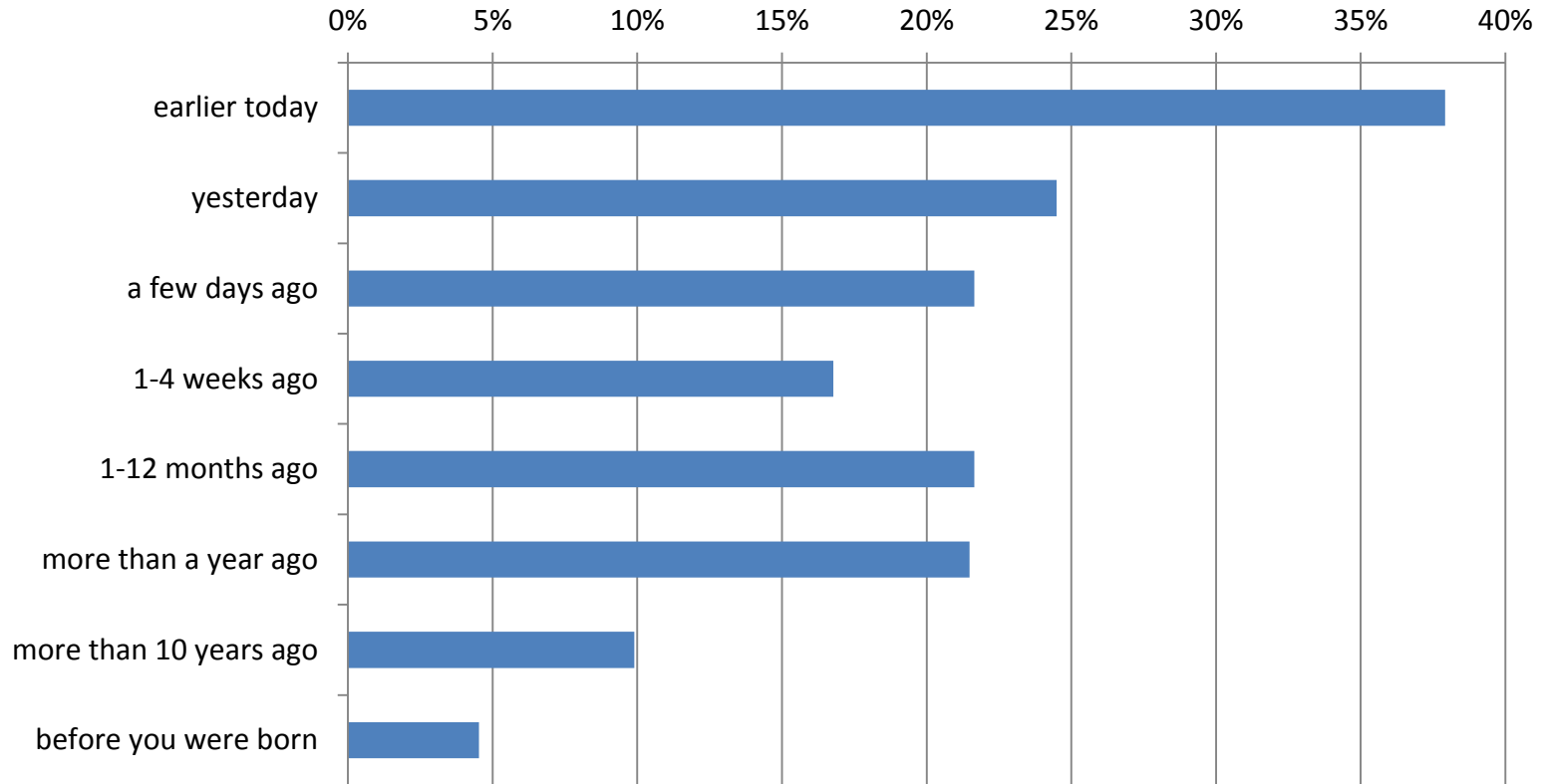
Time frame: future



Pragmatic

- People mainly think about the *near* future

Time frame: past



Thoughts without Time (24.4%)

- Less meaningful
- Less under voluntary control... BUT
- Less mental fatigue
- Less exciting/arousing
- Less happy BUT
- Less angry, anxious, stress, disappointment
- More about self than others
 - Also more frequent when alone than with others, contrary to all other categories with any time aspect
- Thoughts were neither more nor less pleasant
 - *(if anything, trend toward more)*

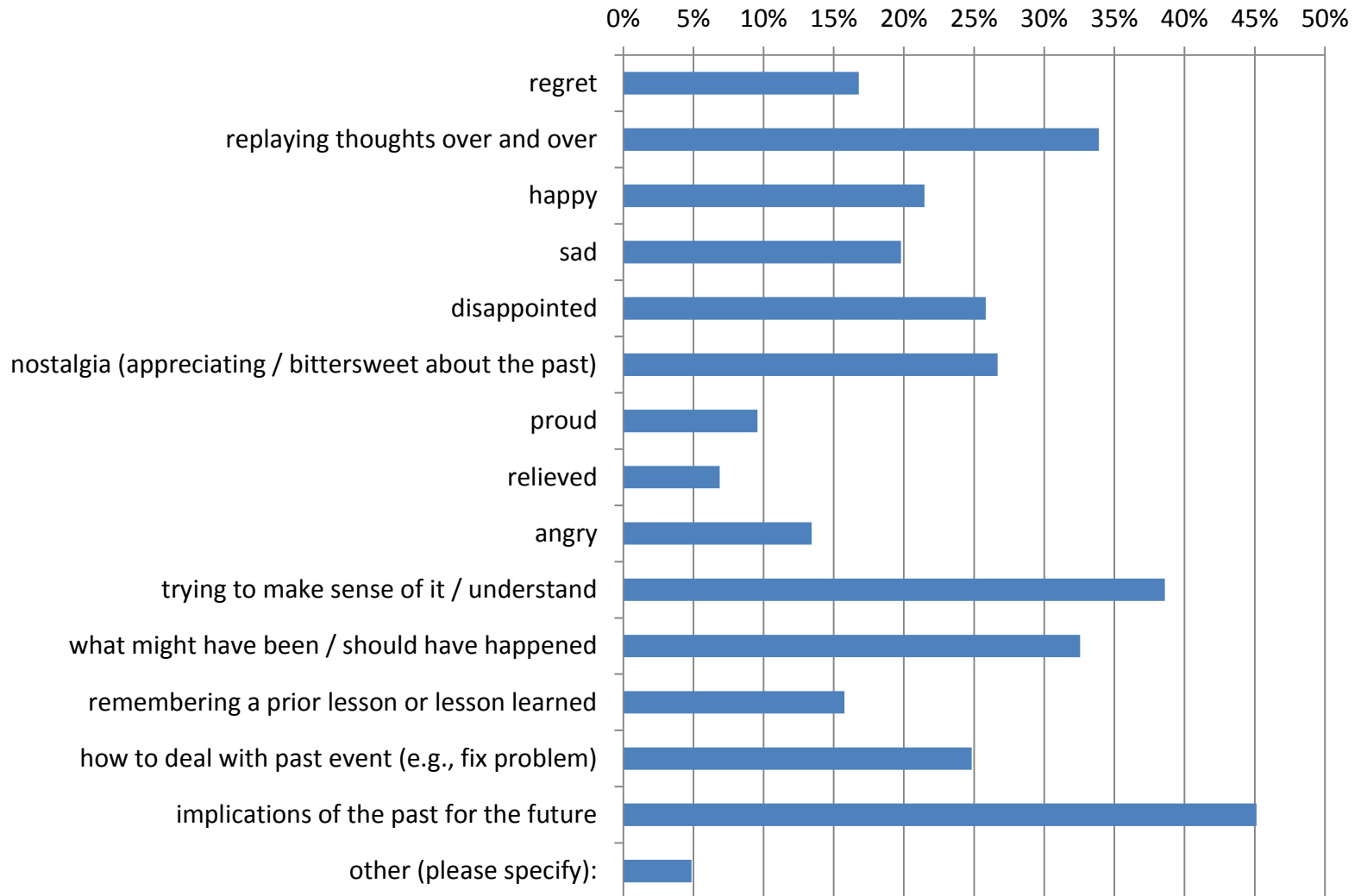
Implications

- Rich human experience occurs within time
 - Meaningful
 - Emotion
 - Social life: Being with others increases temporality; alone, thoughts drift toward more about self, outside of time
 - Presence of others increases focus on the present

Thought Content...

- *What were you thinking about?*
 - *When thinking about past, present, future...*

Describing Thoughts about the Past



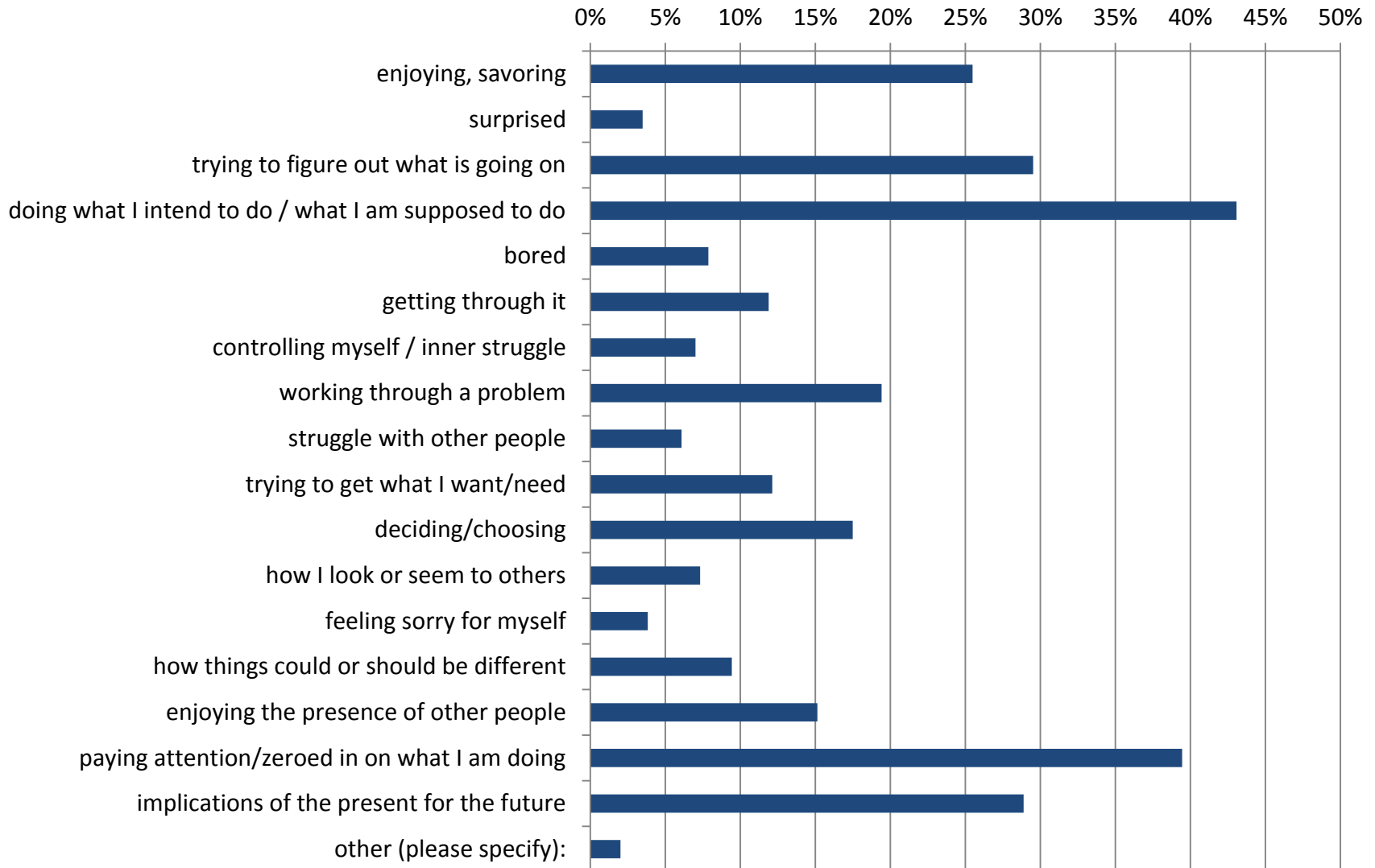
Past: Summary

- Implications of past for future are common
 - *Single biggest category*
 - *Pragmatic*
- Also trying to understand
- Replaying, including counterfactual
 - *Thus thinking about the past has pragmatic coloring*
- Also some involuntary ruminating

Thoughts about the Past: Nutshell Summary

- **So what?**
 - (Implications for future)
- **and What the ***k??**
 - (Trying to figure out)

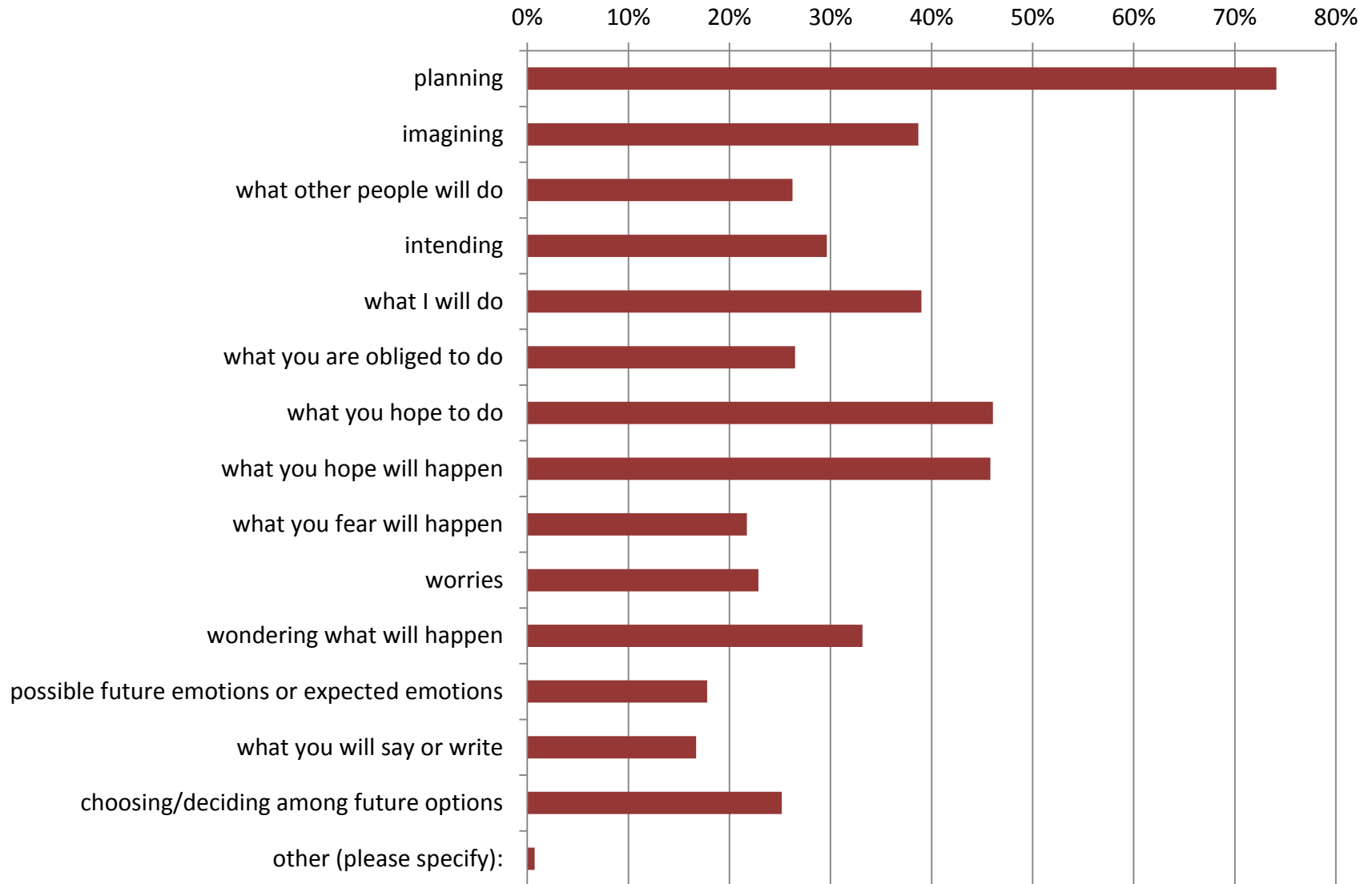
Describing Thoughts about the Present



Thus

- Pragmatic
 - Focused on present activities, tasks
 - Figure out whazzup
 - Implications for future
- Enjoy, savor, elaborate

Describing Thoughts about the Future



Implications: Prospection

- Highly pragmatic: planning, anticipating, preparing
- Emphasize possibilities, uncertainty
- Future as “matrix of maybe”

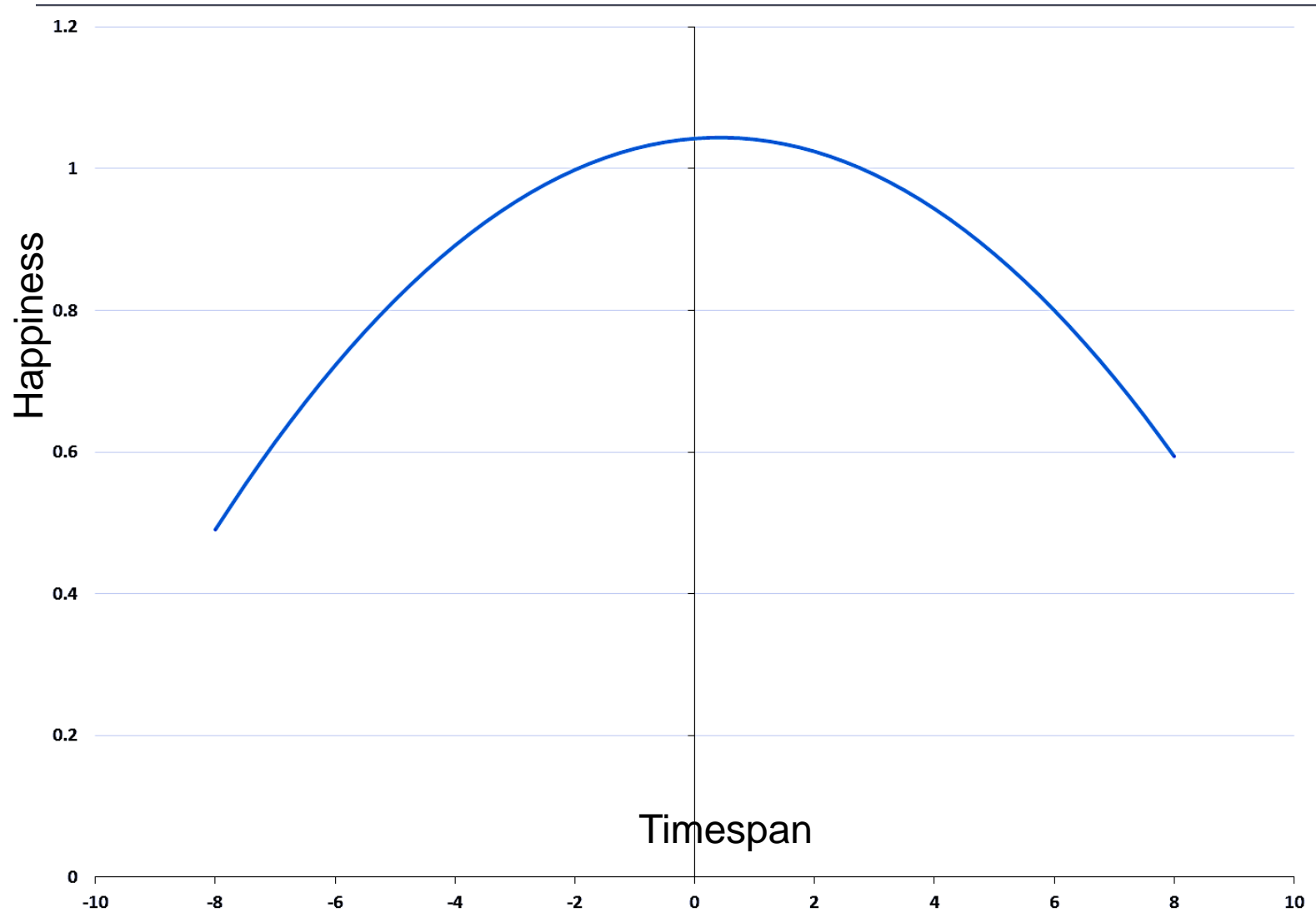
Planning Vs. Other Future Thoughts

- Planning is (more) meaningful and pleasant
- Lower stress, anger, anxiety
- Higher control over thoughts
- Less mental fatigue
- Highly involving

Subjective Experience and Time

- Responses extended from earlier/later the same day, to multiple days, weeks, months, years, up to “before I was born” and “after my life”
- *Each thought was classified according to the farthest time from the present that it invoked*

HAPPINESS

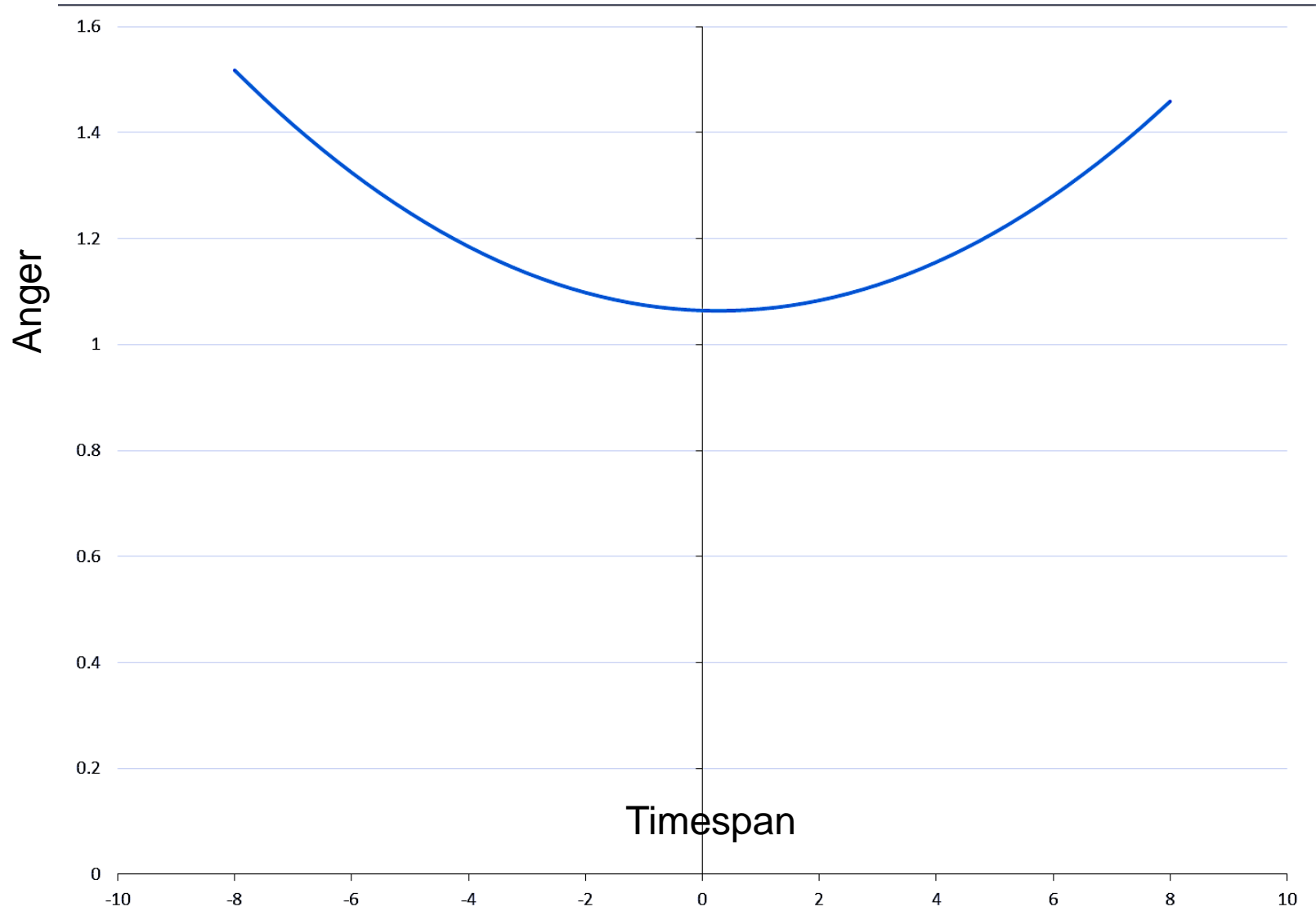


So, emotion is in present moment?

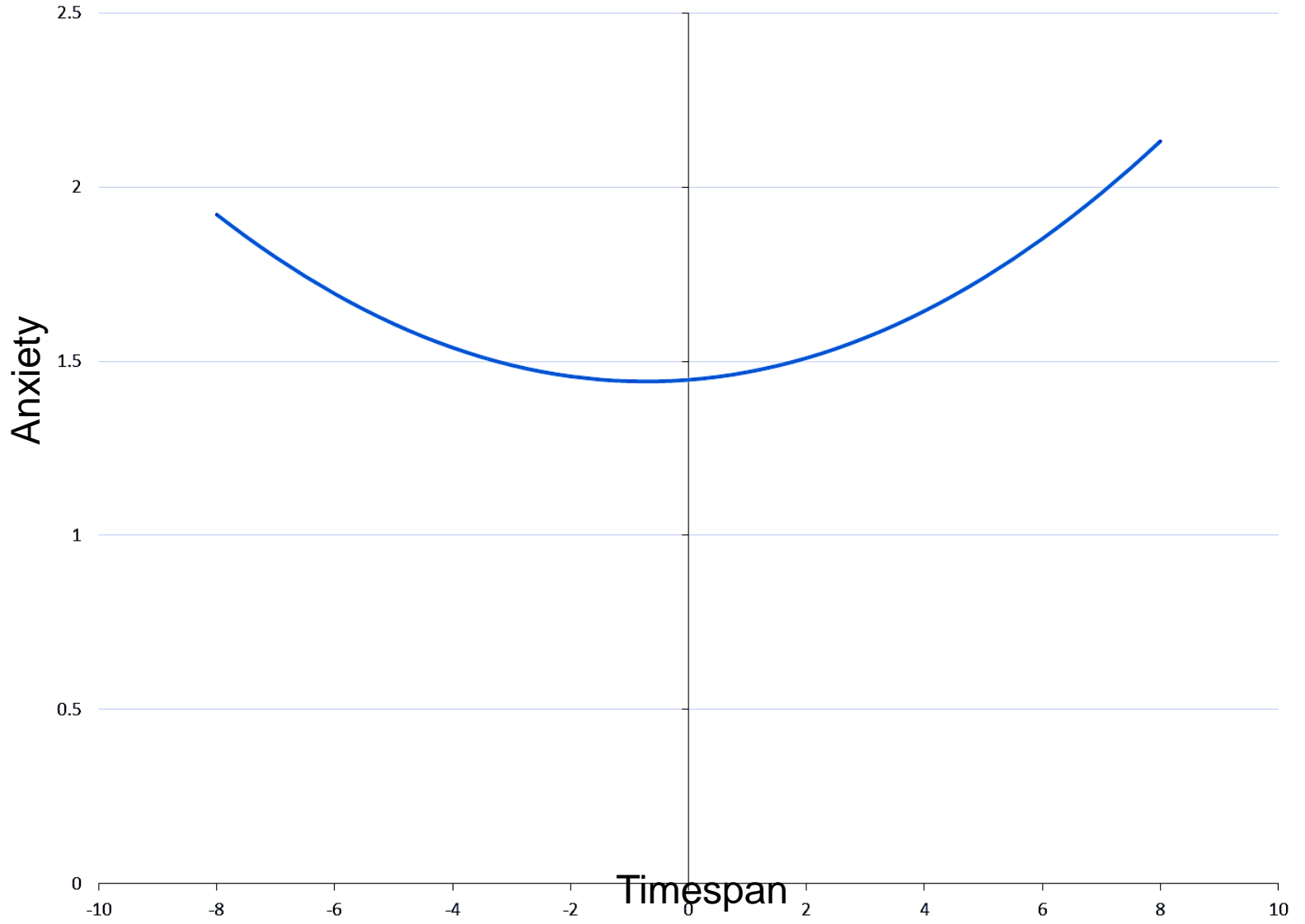
So, emotion is in present moment?

- **No!** Only for positive feelings.
- Negative emotions show a different picture...

ANGER



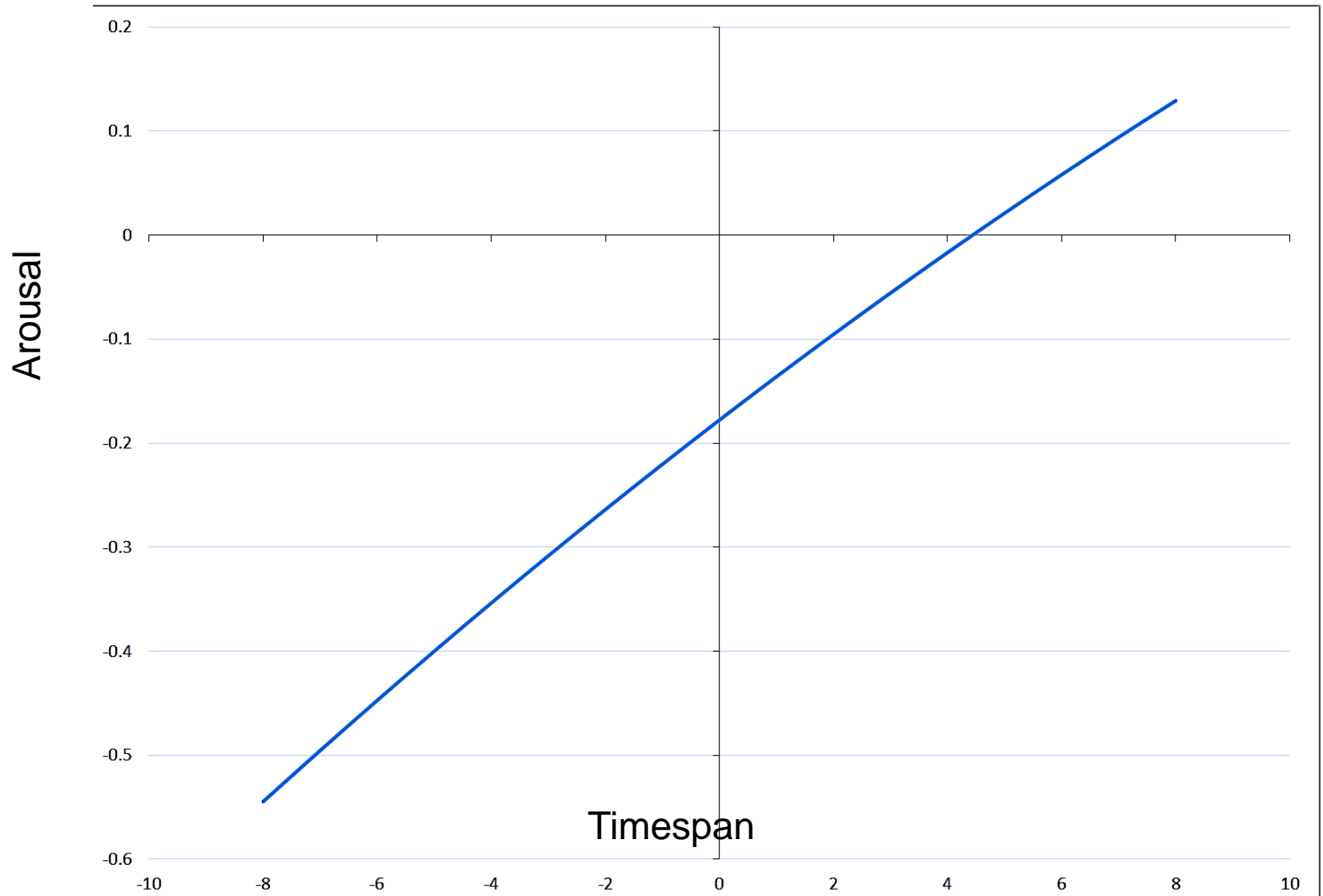
ANXIETY



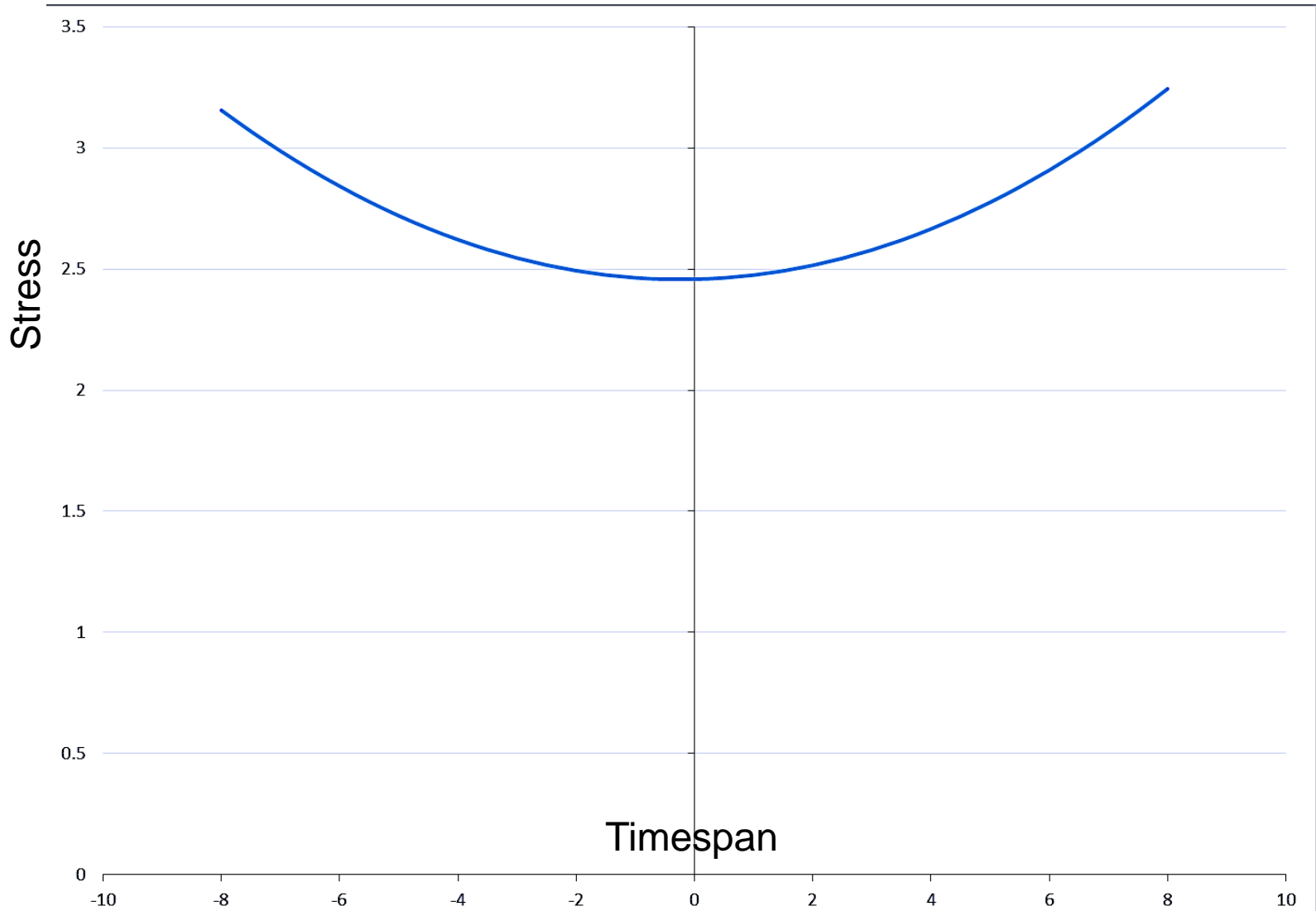
Emotion Circumplex

- Valence (positive/negative)
- Arousal (excitement)

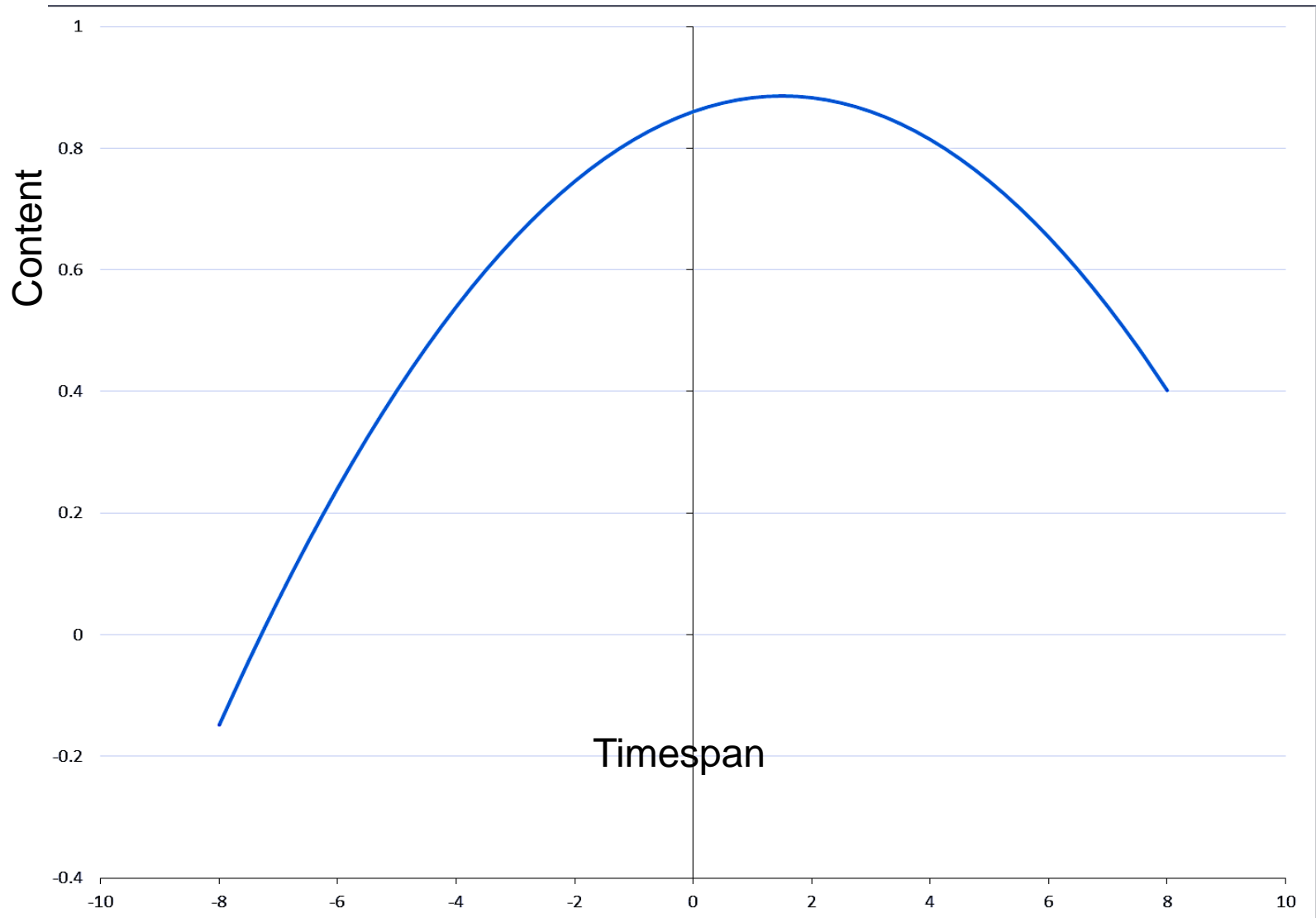
AROUSAL (Excited)



STRESS



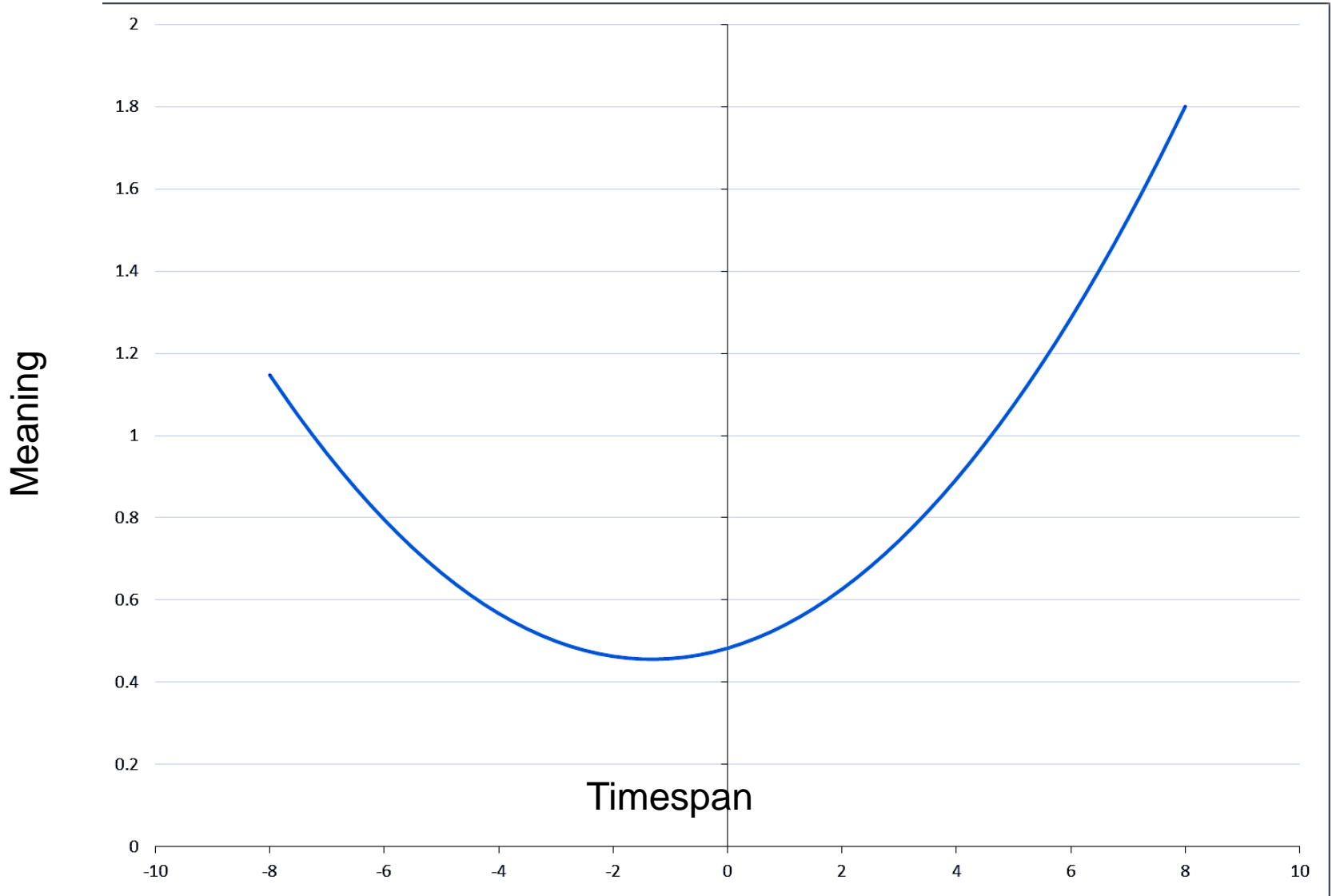
PLEASANT VS. UNPLEASANT THOUGHT



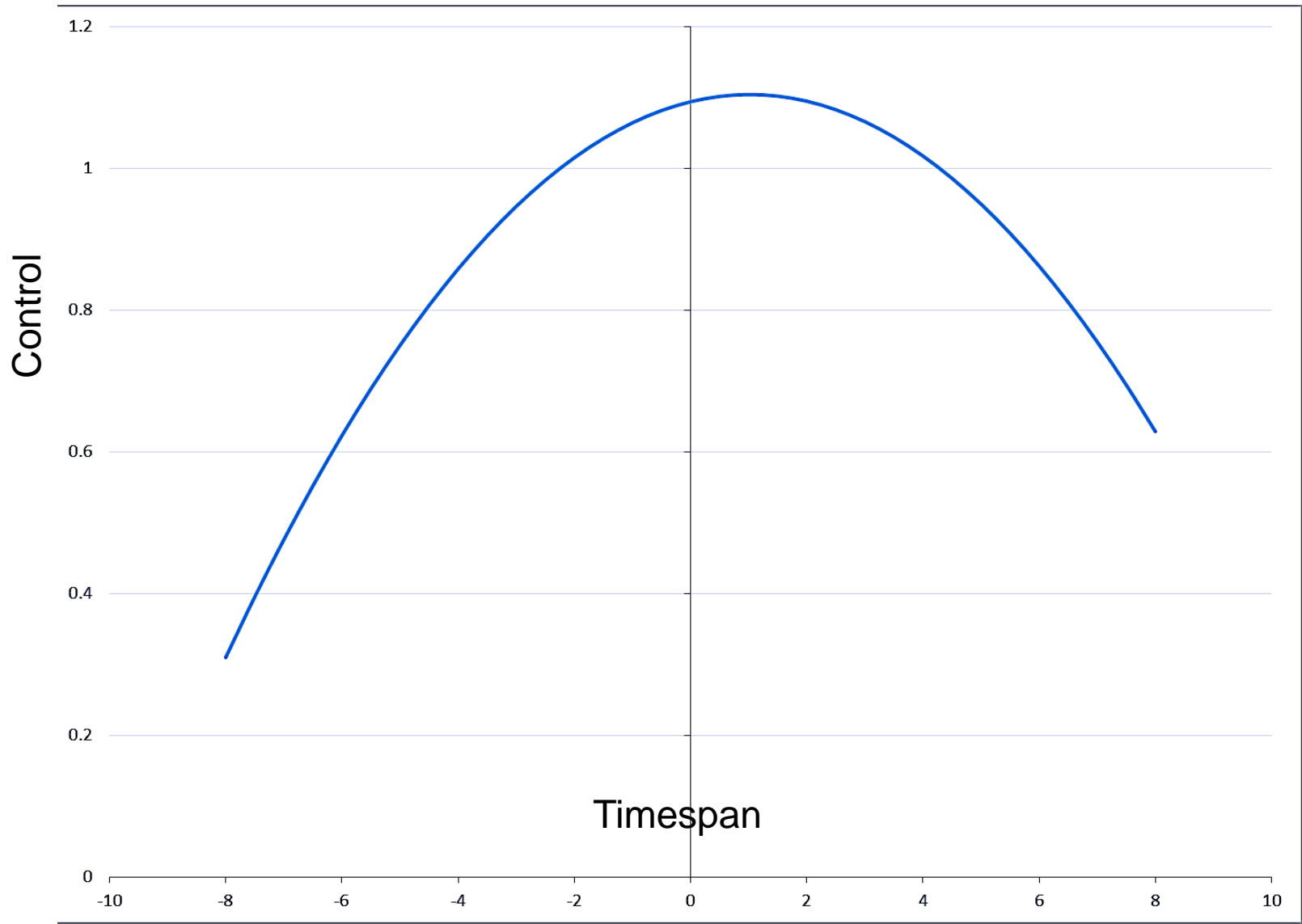
Present Focus is Better?

- Mindfulness: focus in present
- More positive emotion
- Less negative emotion
- Less stress
- Thought itself is more pleasant

MEANINGFUL



THOUGHT WAS UNDER CONSCIOUS CONTROL



Part Summary & Implications

- Present is happy
- Future is meaningful
- Many curvilinear relationships: time travel into either past or future differs from present
- (Negative) emotion increases away from present
- The tired mind wanders in time (esp. past)
 - *It takes effort to stay focused on the present*
- The future is more exciting than present /past
 - Also more about myself

Linking Past, Present, and Future

- Combining across time 'zones'
 - Future plus present is most common
- More meaning
- More negative emotion

Combining Past, Present, Future

- Compared to thoughts that focused on only past or present or future, thoughts that combined two or more were ...
 - More meaningful
 - More arousal / excitement
 - More anger & frustration, more stress
 - More anxiety & disappointment
 - Less happiness (though present-future comb was happy)
- *Note mainly present-plus-future vs. present and future*

Death, the Ultimate Future?

- Death inevitable...
- Theories emphasize mortality as most important fact of life
 - Prospection is ultimately a downer

Death, the Ultimate Future?

- Death inevitable
- Theories emphasize mortality as most important fact of life
 - Prospection is ultimately a downer
- Hardly any thoughts (<1% of total)
 - Not own death (often past, others)

People Are Different: Who Thinks about the Future?

- Major personality differences
- Trait predictors of % future thoughts

Personality: Who Thinks of Future?

- Trait predictors of % future thoughts
 - Most of our hunches yielded nothing
 - More differences on past than future...

Personality: Who Thinks of Future?

- Trait predictors of % future thoughts
 - Most of our hunches yielded nothing
 - More differences on past than future
 - Apparently, **EVERYBODY** thinks about the future
 - Especially optimistic, happy people, and those who seek closure
 - *Thinking about the past is optional*

Personality: Who Thinks of Past?

- Some people think more about the past than others
 - High neurotic, low agreeable, low conscientious, low self-esteem, rumination, depression, pessimism

Personality Summary

- Everybody thinks about the future
- Thinking about the past appeals to unpleasant people:
 - *Argumentative, undisciplined, grumpy, impulsive, unfriendly complainers*

Now to the Laboratory

- Can study specific thought processes under controlled conditions
 - Unlike in everyday life

What Does a Future Mindset Do?

- Context: Past evidence of optimistic predictions
- Consistent across domains, samples
 - *More likely than average to have good future: success, love, health*
 - *Less likely than average to have bad future events*

Implication of Prediction Findings

- *The Future is **Bright !!!***

Putting Money Where Mouth

- Play it safe or go for high-reward, high-risk option?
- Contemplating the future increases optimism
 - *So one doesn't worry as much about risk*
- Therefore, ***after prospection, people will accept high risk to pursue high reward***
 - *A future mindset will increase risk taking*

Exploring the Future Mindset: Experimental Approach

- Instill temporary future-oriented mindset
 - Write about your future self (compared to self now)
 - Re-write sentences referring to future (compared to present)
- Measure consequences
 - Optimism, risk-taking
 - Trust
 - Moral judgment

Investment Optimism Experiment

- Write brief message on present or future self
 - Discuss what your life is like now or what your life will be like in ten years
- After that, make investment choices
 - high-risk, high-reward vs. low-risk, low-reward
- Prediction: after thinking of future, people will favor high-risk, high-reward options
 - *Because of optimistic bias*

Future Mindset *Avoids* Risk !

- 4-item scale yields 10-point preference
 - 10 = favor risky investments
- Wrote about current self, risk = 4.94
- Wrote about future self, risk = **4.41**
- *Thus on hypothetical choices, people shifted toward **safer** investments after contemplating long term*
 - What happened to all that optimism???

Trust Experiment

- Future mindset: read, re-write sentences referring to future or present
 - “I find myself sometimes thinking about how my life might be in the future”
 - “I find myself sometimes thinking about what is going on in my life right now”
- Trust game...

Trust game

- You get \$10, can keep, invest, or divide
- Invested money is **quadrupled** and given to another player, who may keep or share
- 10 games with different partners
- One game will be selected (randomly) for real play and real money

Predictions: Future Mindset and Trust Game

- Optimism will predict more trust?
 - Or risk-averse pessimism lead to less trust?
- Or maybe it's more complicated....

Does a Future Mindset Increase Use of Relevant Information?

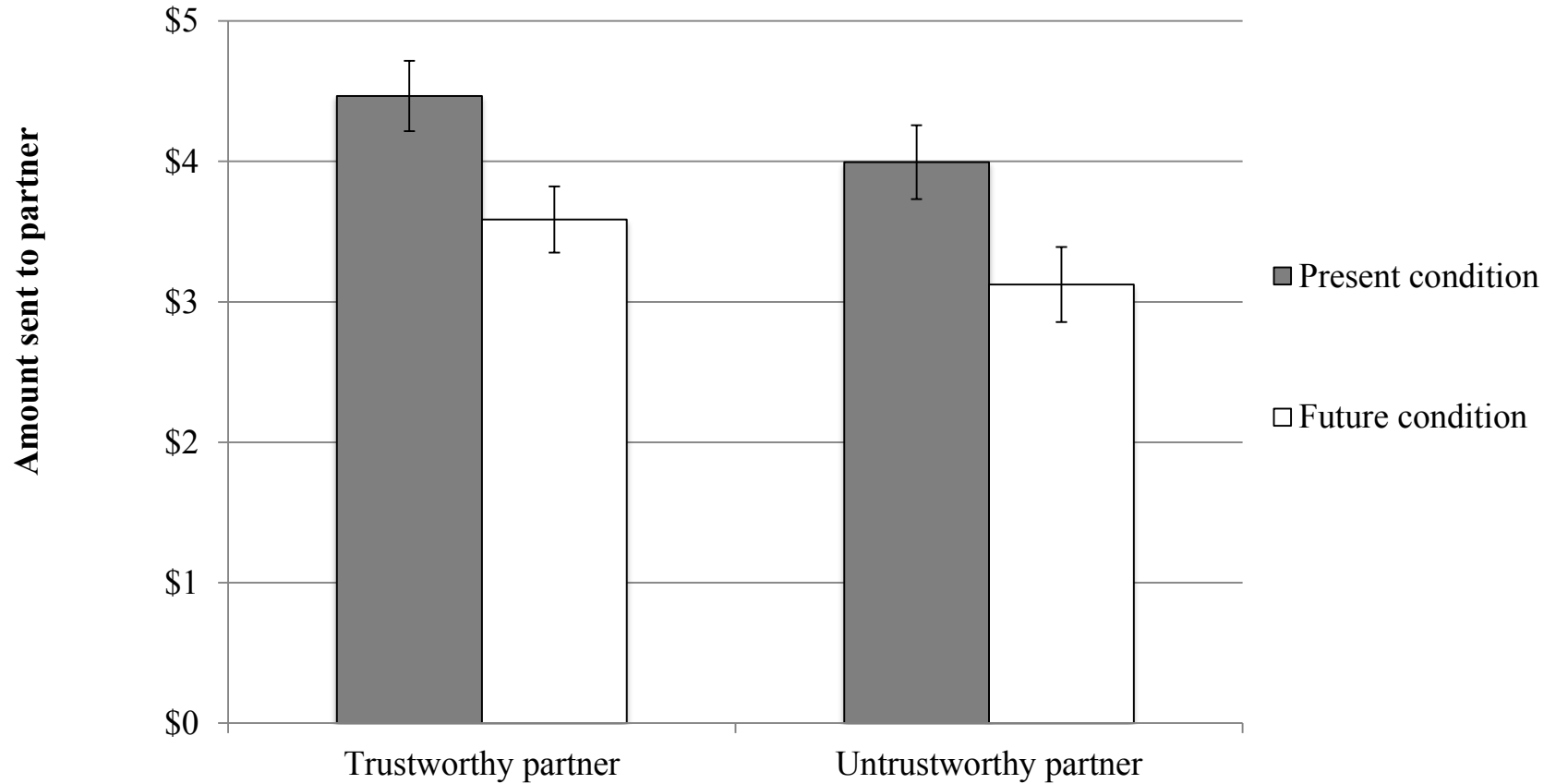
- Showed picture ostensibly of the other player in each game
- Chosen from among those rated most & least trustworthy



Competing Predictions

- Thinking of future should increase optimism, confidence
 - hence high trust
- Thinking of future may make people avoid risk
 - hence low trust
- ***Thinking of future of future may cause people to use information more
 - Hence trust the trustworthy faces, distrust the others
 - (****Most interesting and adaptive prediction*)

Future Mindset Reduces Trust



Exp 3: Future Mindset and Moral Judgments

- More forgiving?
 - Let bygones be bygones
 - Reach out, maintain relationships, confidence about future
 - Risky to tolerate ?
- More punitive?
 - Judge others, uphold rules
 - *More worried about future problems?*

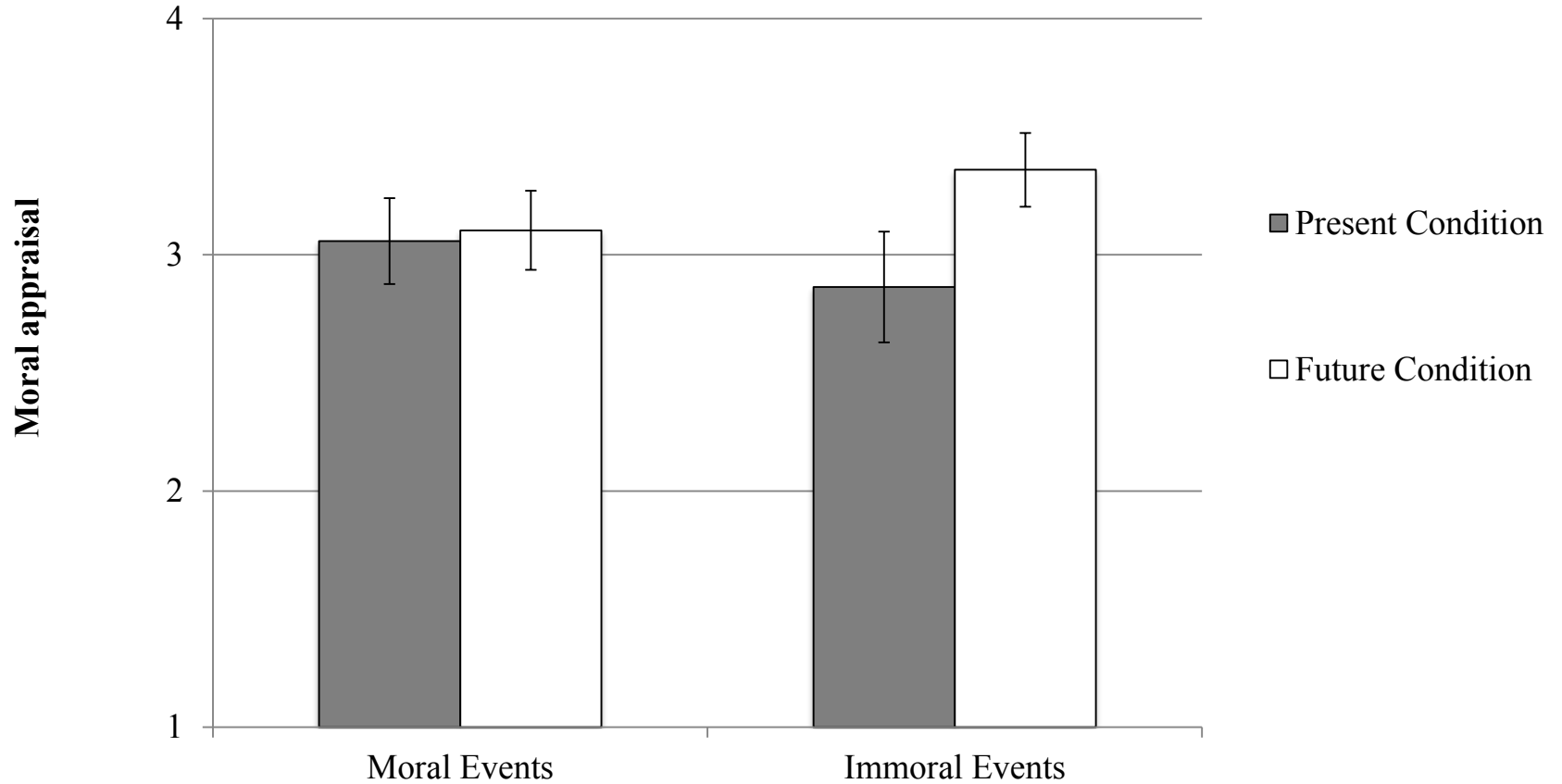
Experiment 3: Future Mindset and Moral Judgments

- Method: Re-write statements about present or future
- Judge 12 scenarios
 - Half morally bad, half morally good
 - Performed actions, or desired to perform them, or merely thought about them
 - *E.g., setting house on fire to collect insurance*

Moral judgment findings

- **Future mindset intensified blame for bad acts**
- Future mindset did *not* affect praise for virtuous acts
 - *Bad is stronger, and more important, than good*
 - *Thinking about future emphasizes preventing bad things from happening*
- Actions were judged more strongly than thoughts or desires
 - No interaction with future mindset

Prospection Increases Blame Only



Implication of Moral Judgment Findings

- More concern over future problems
- Hence more condemnation of wrongdoers

Summary of Lab Findings

- Thinking about future reduced risk-taking, favoring safe investment
- Also reduced trust
 - *Of both trustworthy and untrustworthy people*
- Also increased moral blaming
 - *But no effect on praise for virtuous acts*
- General: seek safety, avoid risk

The Future is **Dark** ???

- Optimism, positive feelings should increase risk taking, but we found the opposite
- Future mindset creates emphasis on avoiding problems, misfortunes, loss
- How to reconcile with all the evidence of optimistic predictions?

Need New Theory?

- Most work has emphasized prediction
- Evidence points toward *pragmatic* orientation
 - “*What is going to happen?*” vs.
 - “*What do I want?*” and “*What should I do?*”
- Core idea: Thinking about the future is for guiding action, dealing with practical concerns

Integrating Findings...

- Predictions are optimistic but plans are cautious
- Separate steps in pragmatic prospection
 - First think what you want
 - Focus on the positive!
 - Without the goal, pragmatism is useless
 - Then think how to bring it about
 - Be practical
 - Focus on the negative!

Two Steps?

- Step one: dream big
- Step two: get real

What are three things you want to do in the future?

1. get a girlfriend

2. visit her

3. rule the world

14.

15.

16.

Two Steps Experiment

- Fast vs. slow prediction should bring different levels of optimism
- Step one: dream big: fast responses optimistic
- Step two: get real: slow responses realistic

Method

- Two pre-registered studies, total N=500
- Predictions about future, on computer
 - Same questions to everyone
- 10-second timer
- Instructions, either...
 - Respond fast, before the 10 seconds
 - Respond slowly, after the 10 seconds
- Study 1: Estimate probabilities for future good events
- Study 2: Predict 3 specific events, self relative to others

Measures (Study 1)

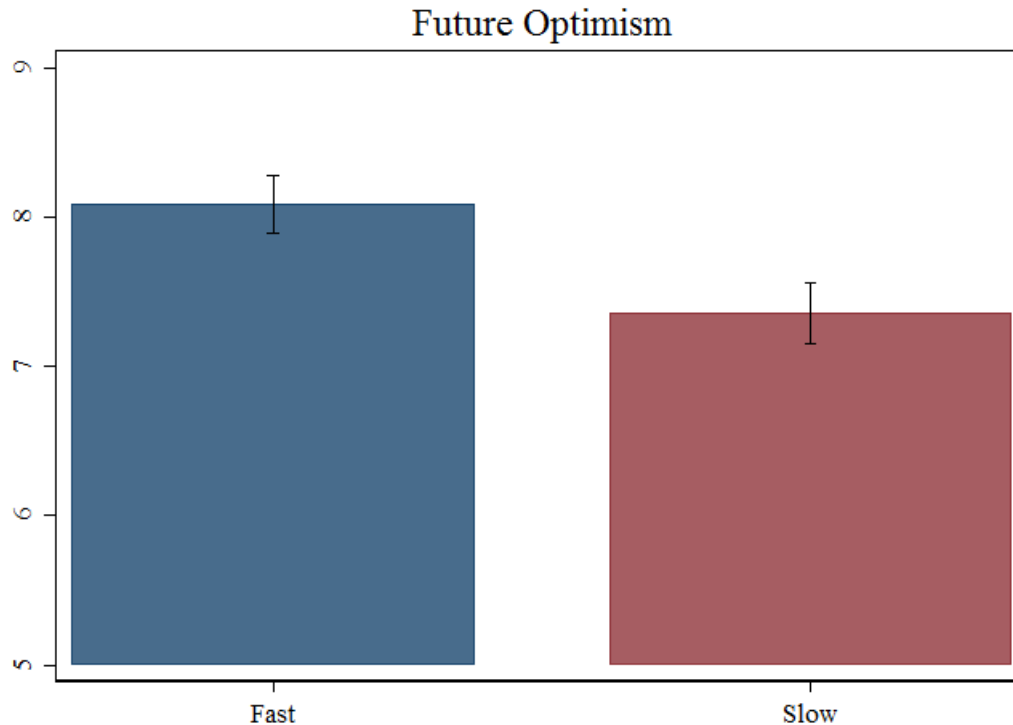
- What is probability that you will...
 - Live past age 80
 - In five years, will
 - Be in romantic relationship
 - Have successful career
 - Achieve your most important goals
 - Future life will be better than past

Faster = More Optimistic

(Sjåstad & Baumeister, 2018)

- **N=200, online experiment, USA**

- Fast (vs slow) judgments were significantly more optimistic about the future
- $p < .01$, $d = .37$
- Successfully replicated in Norway, both for positive and negative events (pre-registered, N=300)



Summary of Findings

- Fast responses were unrealistically optimistic
- Slow responses were more realistic
 - *though still slightly optimistic*
- Fast-optimism effect is bigger for negative events than positive ones
 - *(Suggests it really does take more time to think about bad events actually happening)*

Conclusion: Limits of Optimism

- Yes, quick predictions about the future are optimistic
- But after few seconds' delay, that diminishes sharply
- Pragmatic prospection starts with thinking of desired outcome, then realistically making a plan to get there

Prediction vs. Pragmatic Prospection

- Prediction: Future as what *will* happen
- Pragmatic prospection: Future as what is possible, what *might* happen
 - And how to produce the desired outcomes
 - Useful to predict choice points, performance demands, contingencies

Pragmatic Propection Theory

- Purpose of thinking of future is to produce practical benefits
 - *Especially by guiding action*
 - *Prediction is helpful but secondary*
 - *Predict points of uncertainty, not end results*
- Thinking of future starts by asking what you want, ideally
 - Then assess whether good outcome is feasible
 - If so, make plans, deal with anticipated roadblocks

Pragmatic Prospection Theory Cont'd

- Backward causality (teleology)
 - *Connects by meaning*
- Assume multiple possible outcomes
 - *Subjective indeterminacy; opportunity, threat*
 - *Future as matrix of possibilities ...*

The Matrix of Maybe

- Prediction often assumes the future is already determined, and a particular outcome is inevitable
 - Future as a single road
 - *Destiny, fate, horoscope, scientific determinism*
- Alternatively, future is multiple alternative possibilities, only some of which will come true
 - Yet to be determined
 - Future as many crossroads

Understanding Future as Matrix of Maybe

- A recent evolutionary advance?
- Redshaw & Suddendorf: human children (2-4 yrs) vs. adult chimpanzees, orangutans, gorillas
- Method: drop treat into tube, must catch it when it comes out the bottom



Only Humans

- Human 2-year-olds struggled
- But by 3, they got it fast
- Once they solved it, they got it every time
- Apes: never figured it out
 - *Even if they stumbled onto the idea of using both hands, they didn't sustain*

Evidence for Matrix of Maybe

- People bet more on future than past (even if all else is identical): future seen as changeable
- Anticipated emotions are helpful guides
 - Actual current emotions often cause trouble
- People moralize the future especially
- Voters prefer optimistic leaders
 - They like the rosy future
- Potential is valued over achievement (!)
- Keeping doors open

Planning

- ***Essentially*** pragmatic
 - Both in purpose and in actual effects
 - Advantage: can decide calmly, not in heat of moment
- Assumes multiple possible outcomes
- Teleology
- Anticipated emotion is the main purpose of emotion?
- Action planning vs. coping planning
 - *Action planning helps get started, coping planning increases long-term success*

Peace of Mind vs. Stress

- Intrusive thoughts about unfinished tasks
 - Zeigarnik effect

Why Do Those Thoughts Intrude?

- Thoughts of goals that have not been completed
- Two main theories
 - First: The unconscious is taking care of business, and it just keeps the conscious mind informed
 - Second: The unconscious needs consciousness to help get it done, so it nags the conscious mind until the job is finished

Turns out, it's a third reason

- Make plans, in form of “implementation intentions”
 - Research program by Gollwitzer
- Specific plan: what to do and when to do it. The more precise (on both!), the better.

Testing for Zeigarnik Effect

- Effect vanishes if you merely make a plan
 - Even though you haven't reached the goal
 - *Even though you haven't made any actual progress !*
- *Thus, intrusive thoughts occur because the unconscious is nagging the conscious mind to make a specific plan for action.*

Implications

- Thus, why do you have those annoying thoughts about stuff you need to do? To quiet them, so you can relax at night, it helps to have made a specific plan of when you will do those things.
- It's not that you will keep having those interfering thoughts until everything is done
 - “Everything is done” – never happens

The Power of Planning

- Some of stress is intrusive thoughts about things needing to be done
- These occur because the unconscious needs conscious thinking to make a specific plan
- Make a plan, and the intrusive thoughts subside
 - “If/when X, I will do Y”

Planning Takes Mental Effort

- Forming
- Revising

Decision Fatigue and Planning

Field-Experiment (N=112, Bergen, Norway)

H1: Decision fatigue will cause planning aversion (i.e. lower willingness to plan)

• *“If you had 20 minutes for your disposal right now, please tell us how much you would like to do each activity below by rating each of them on a scale from 0 (Not at all) to 10 (Very much so).”*

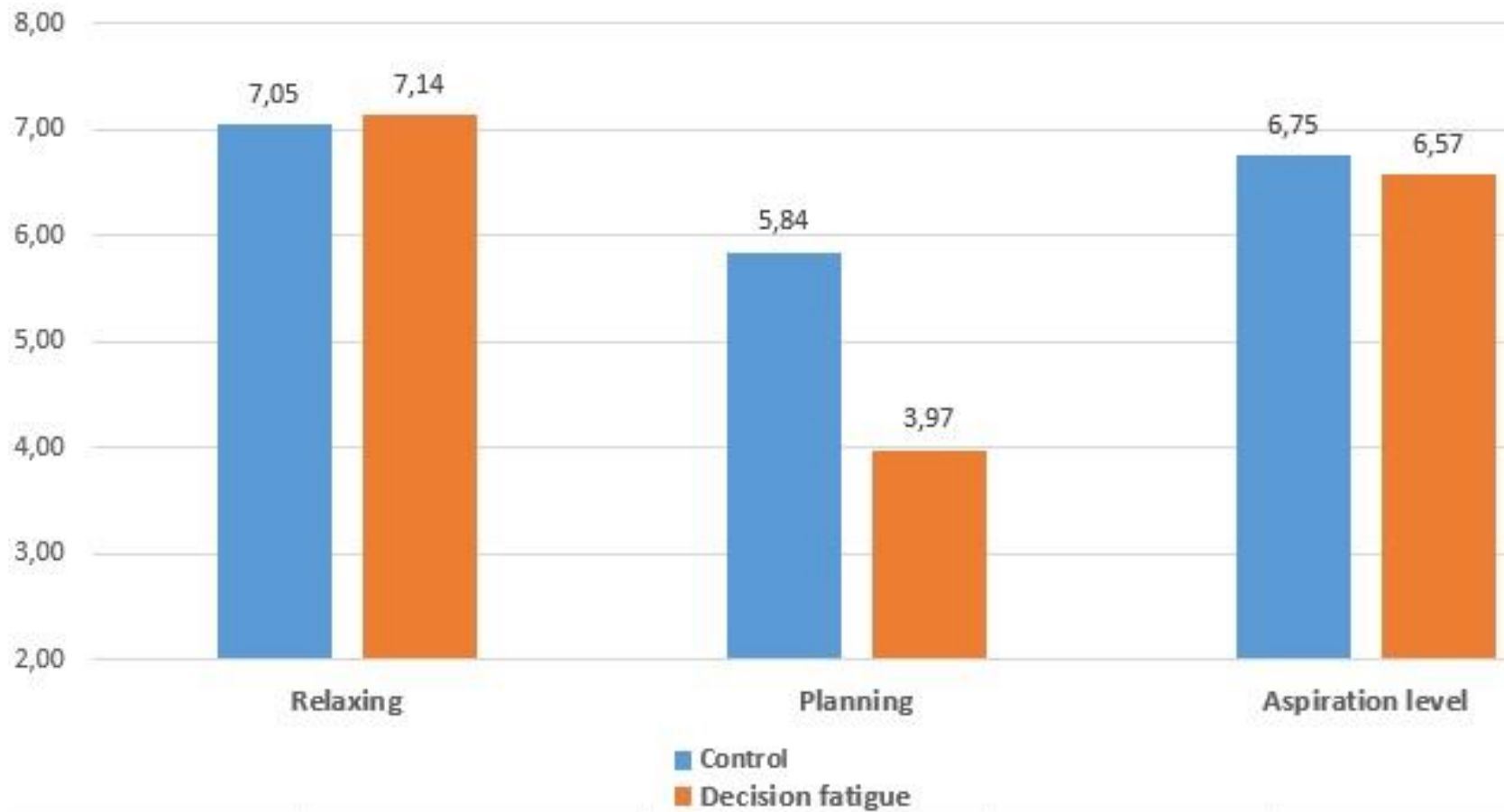
- *Take a relaxing “time out”*
- *Make a plan for the next four weeks*

• **Aspiration level (goals)**: *Compared to how you live your life right now, what are your goals for the next four weeks? Health/Private economy/Moral concern, Pro-sociality (0=Much worse, 10=Much better)*



Study 2: Sjastad & Baumeister, in press, J. Exp. Soc. Psych.
Field-Experiment (N=112, Bergen, Norway)

Decision fatigue caused planning aversion; did not influence aspiration level (goals)



Findings: Planning Takes Effort

- Laboratory ego depletion manipulation reduced willingness to plan
- Effort avoidance mediates
- Depletion had no effects on desire to relax or on level of aspiration (goal setting)
- Low self-control people do less planning

Emotions and Propection

- Anticipated emotions guide behavior
- So... do people adjust their emotional expectations, in order to motivate themselves...???

DeWall et al. (2016), Emotion Review

Emotion: Managing Expectations

- Aesop's fox and the sour grapes:
 - *Revising anticipated emotion?*
 - *Or, are lofty goals ("greener grass") all the more motivating?*
- Method: Ps did first test of "intuitive intelligence"
 - *Told they got 2 or 5 of 6 right*
- Prepare for second test
 - *Told would be prize to get all 6*
 - *How happy would you be to score 6?*
- Then actually took test and received perfect score of 6 correct
- Measured actual happiness
 - *Aesop vs. boost from pleasant surprise*

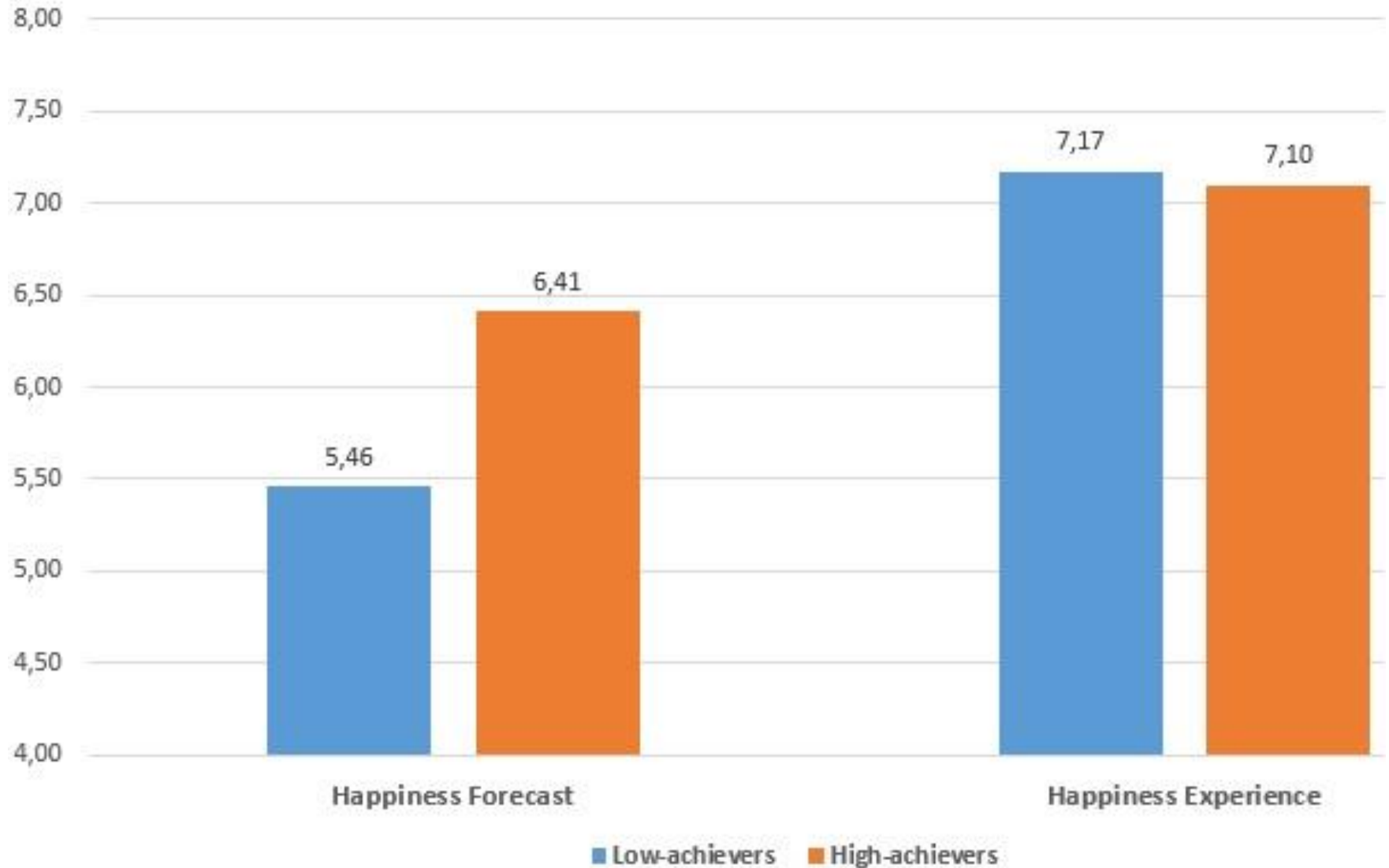
Pilot Study

- Predicting how others would react
- Predicted people would be happier to improve from 2 to 6 than from 5 to 6
- Thus opposite of Aesop's hypothesis
 - Greener grass across the fence is better

But when predicting for self...

- Took first test
- Told either 2 or 5 correct, out of 6
- Predicted happiness if got 6 on second test
- *Also measured actual happiness when it came true*

Study 2: Sjastad, Baumeister & Ent, in preparation Predicted and Actual Happiness



(Results)

- Those who got 2 right predicted less happiness (if they would get 6 next time) than those who got 5
- In the event, they were equally happy
- **Conclusion:** People adjust expectations downward, assume unreachable goal will not bring joy

Moral Reward and Punishment

- Deserve reward for your good deeds?

Past 5.16

Future 6.37

- Deserve punishment for your misdeeds?

Past 5.34

Future 6.85

Thus, future is morally more important than past

Conclusions: Moral Asymmetry

- Deserve more praise, blame for future actions than for past
- Pragmatic orientation: Future can still be changed
- Moralizing the future!

Main Conclusions

- **Primacy** of prospection
 - Much more thought about future than past
 - Future plus present also important
 - Even when think of past or present, often focus on implications for future

Main Conclusions: Pragmatic Prospection

- Present and fairly near future
- Focus on multiple possibilities, not certainties
- Emphasis on what I will do
- Links to present
- Planning...

Main Conclusions: Happy vs Meaningful

- (Mindful) happiness: focus on present
- Meaningfulness: focus on future
- Or, especially, link past-present-future

Main Conclusions: Planning

- Planning (vs. other future thoughts)
 - Meaningful
 - Emotionally positive
 - Takes effort, control
 - Alone or with others (equal)

Main Conclusions: Planning

- Focusing on the present removes anxiety, increases happiness
- But making a plan reduces anxiety over future
 - Also reduces stress, intrusive worries
- The unconscious mind wants very specific plans
- Pragmatic prospection is about preparing what to do
 - Not just predicting what will turn out

Thinking about Future

- Pragmatic prospection has two steps
 - First, what you want: *dream big*
 - Second, how to reach that: *get real*
- Both are important
- Future as matrix of maybe
 - Don't just think about best-case scenario

Final Thoughts

- The past can be known, but the future can still be shaped and changed
- Basing actions on the future rather than the past is adaptive

here for



Chicago Bulls player who signed a \$95 million contract removed the rearview mirror in his car so that he can't look 'back'

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BUSINESS INSIDER By **Scott Davis**
October 20, 2015 9:39 AM



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The End !

Notes from 10/2018

- BetterUp conf
- About 5 min too long – skipped the Aesop study; condensed the Ikea but conveyed gist

Thoughts about the Past: Nutshell Summary

- **So what?**
- **and What the ***k??**

Has This Happened to You?

- *You are involved in something, maybe even something fun, but you keep getting annoying thoughts popping into your mind that there are things you need to do. Work, duty, etc.*
 - *You know you will take care of those things in due course; there's nothing you can do now. But those intrusive thoughts keep disturbing and distracting you.*

Peace of Mind vs. Stress

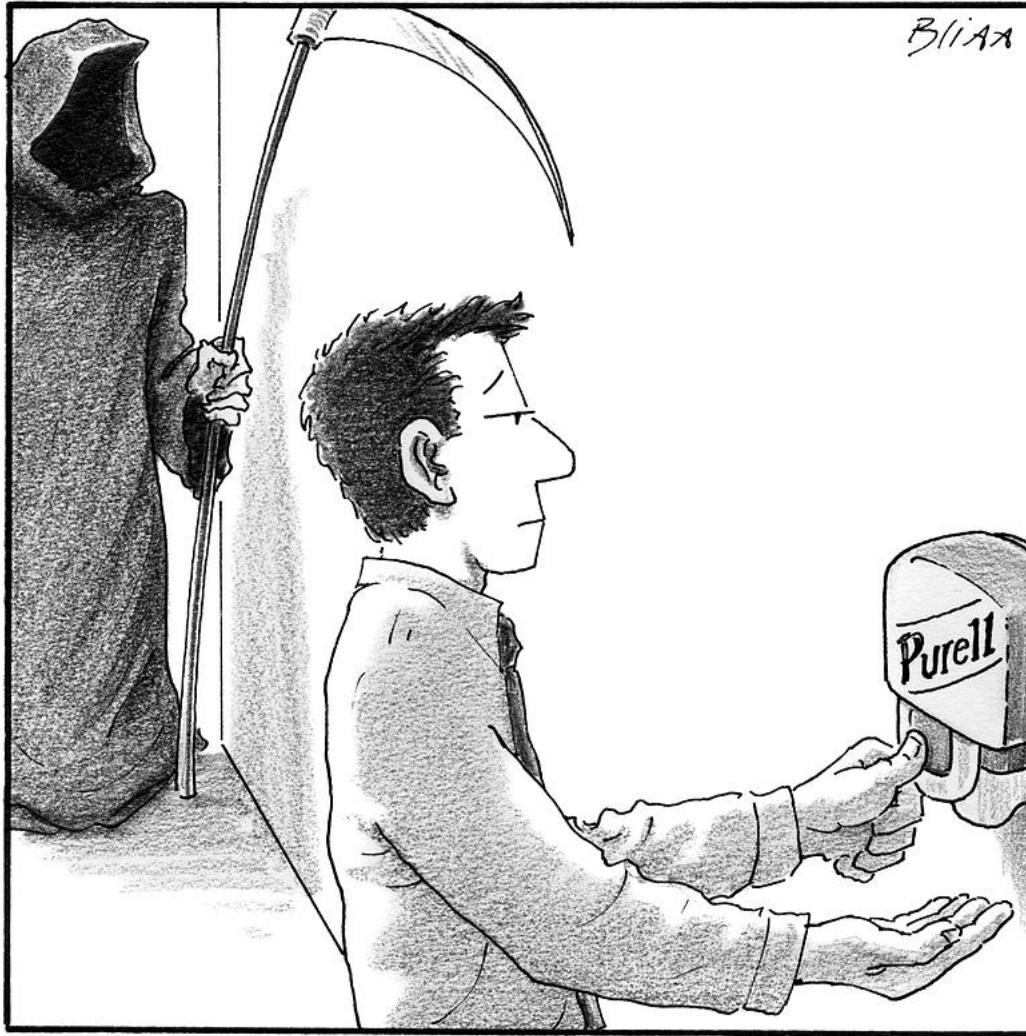
- Intrusive thoughts about things you need to do
- Meet Bluma Zeigarnik

(What is the Unconscious?)

- Freud: a dungeon full of your naughtiest thoughts, that you cannot acknowledge
 - Or a seething cauldron of wicked impulses that could wreak havoc if let loose

(What is the Unconscious?)

- Freud: a dungeon full of your naughtiest thoughts, that you cannot acknowledge
 - Or a seething cauldron of wicked impulses that could wreak havoc if let loose
- Modern: your support staff that runs the show while you focus on the big picture or get distracted



“Don’t bother.”