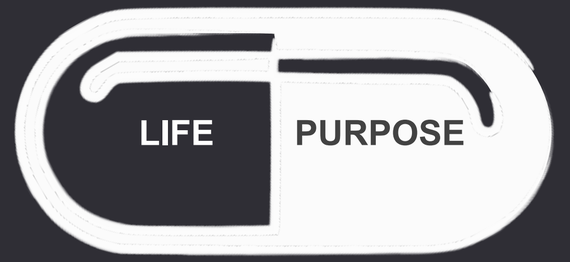


Supporting Resilient Older Adults: A Focus on Life's Purpose

Vic Strecher, PhD, MPH
Professor, University of Michigan
Founder, CEO, Kumanu

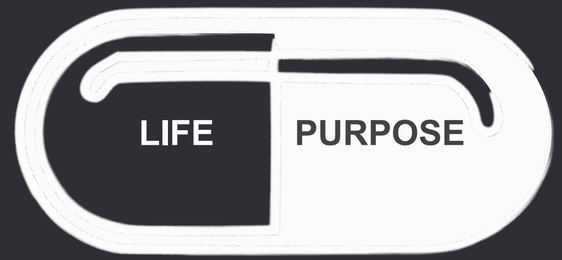
Purpose in life:

- Degree to which people are directed and motivated by valued goals

INCREASED LIKELIHOOD OF:

- Resilience
- Type 1 interferon
- Antibody production
- Longevity
- Sleep improvement
- Diet improvement
- A1C management
- More money

DECREASED LIKELIHOOD OF:



- Cognitive conflict
- Fear response
- Inflamation
- Depression
- Stroke
- Heart attack
- Alzheimers Disease
- Job burnout

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Original Investigation | Public Health

Association Between Life Purpose and Mortality Among US Adults Older Than 50 Years

Aliya Alimujiang, MPH; Ashley Wiensch, MPH; Jonathan Boss, MS; Nancy L. Fleischer, PhD, MPH; Alison M. Mondul, PhD, MPH; Karen McLean, MD, PhD; Bhramar Mukherjee, PhD; Celeste Leigh Pearce, PhD, MPH

Abstract

IMPORTANCE A growing body of literature suggests that having a strong sense of purpose in life leads to improvements in both physical and mental health and enhances overall quality of life. There are interventions available to influence life purpose; thus, understanding the association of life purpose with mortality is critical.

OBJECTIVE To evaluate whether an association exists between life purpose and all-cause or cause-specific mortality among older adults in the United States.

DESIGN, SETTING, AND PARTICIPANTS The Health and Retirement Study (HRS) is a national cohort study of US adults older than 50 years. Adults between the ages of 51 to 61 were enrolled in the HRS, and their spouses or partners were enrolled regardless of age. Initially, individuals born between 1931 and 1941 were enrolled starting in 1992, but subsequent cohort enrichment was carried out. The present prospective cohort study sample was drawn from 8419 HRS participants who were older than 50 years and who had filled out a psychological questionnaire during the HRS 2006 interview period. Of these, 1142 nonresponders with incomplete life purpose data, 163 respondents with missing sample weights, 81 participants lost to follow-up, 1 participant with an incorrect survival time, and 47 participants with missing information on covariates were excluded. The final sample for analysis was 6985 individuals. Data analyses were conducted between June 5, 2018, and April 22, 2019.

Key Points

Question Does an association exist between life purpose and all-cause or cause-specific mortality among people older than 50 years participating in the US Health and Retirement Study?

Findings This cohort study of 6985 adults showed that life purpose was significantly associated with all-cause mortality.

Meaning Life purpose is a modifiable risk factor and as such the role of interventions to improve life purpose should be evaluated for health outcomes, including mortality.

Figure. Survival Curves Illustrating the Association Between Life Purpose and Mortality

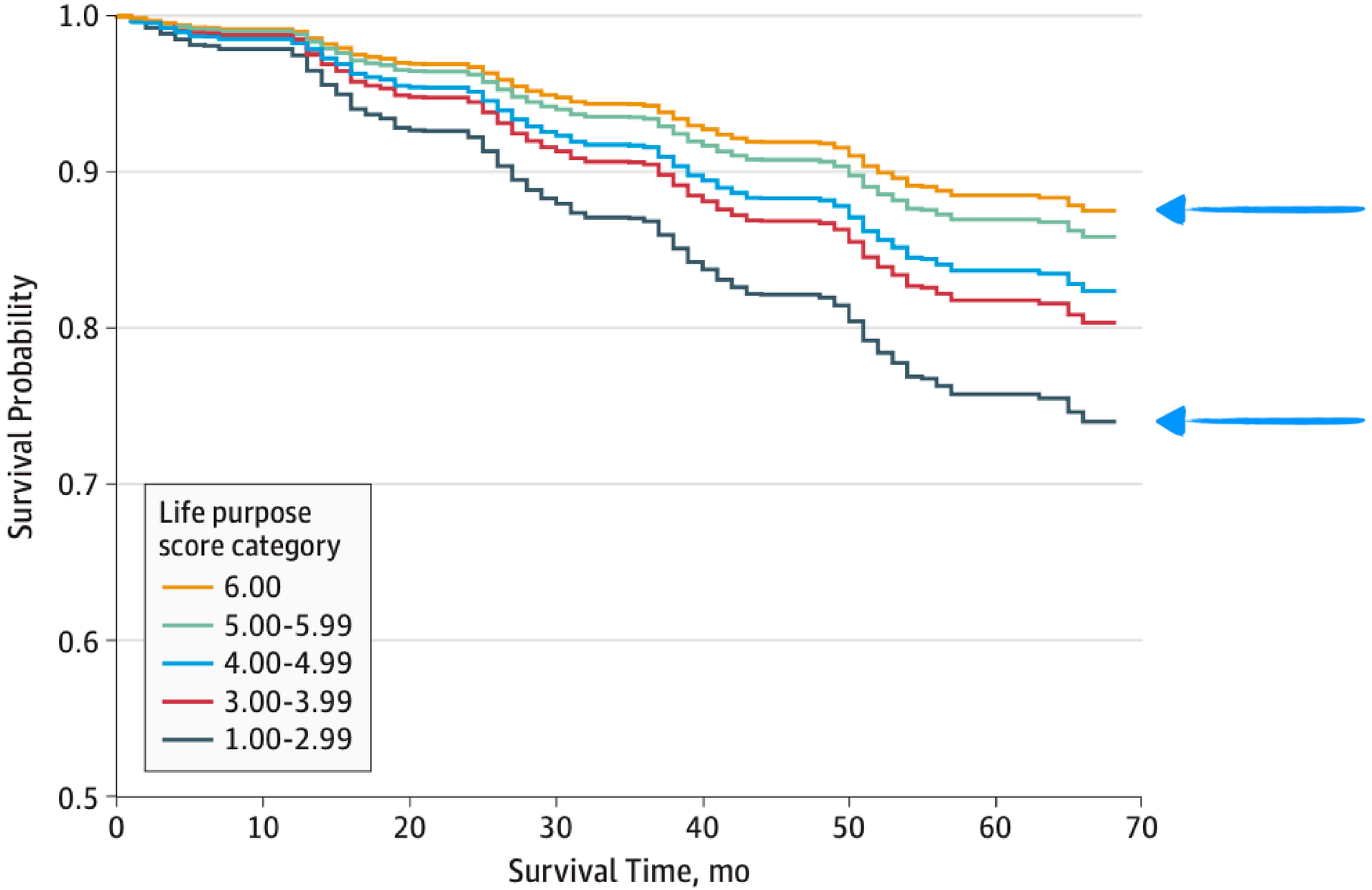
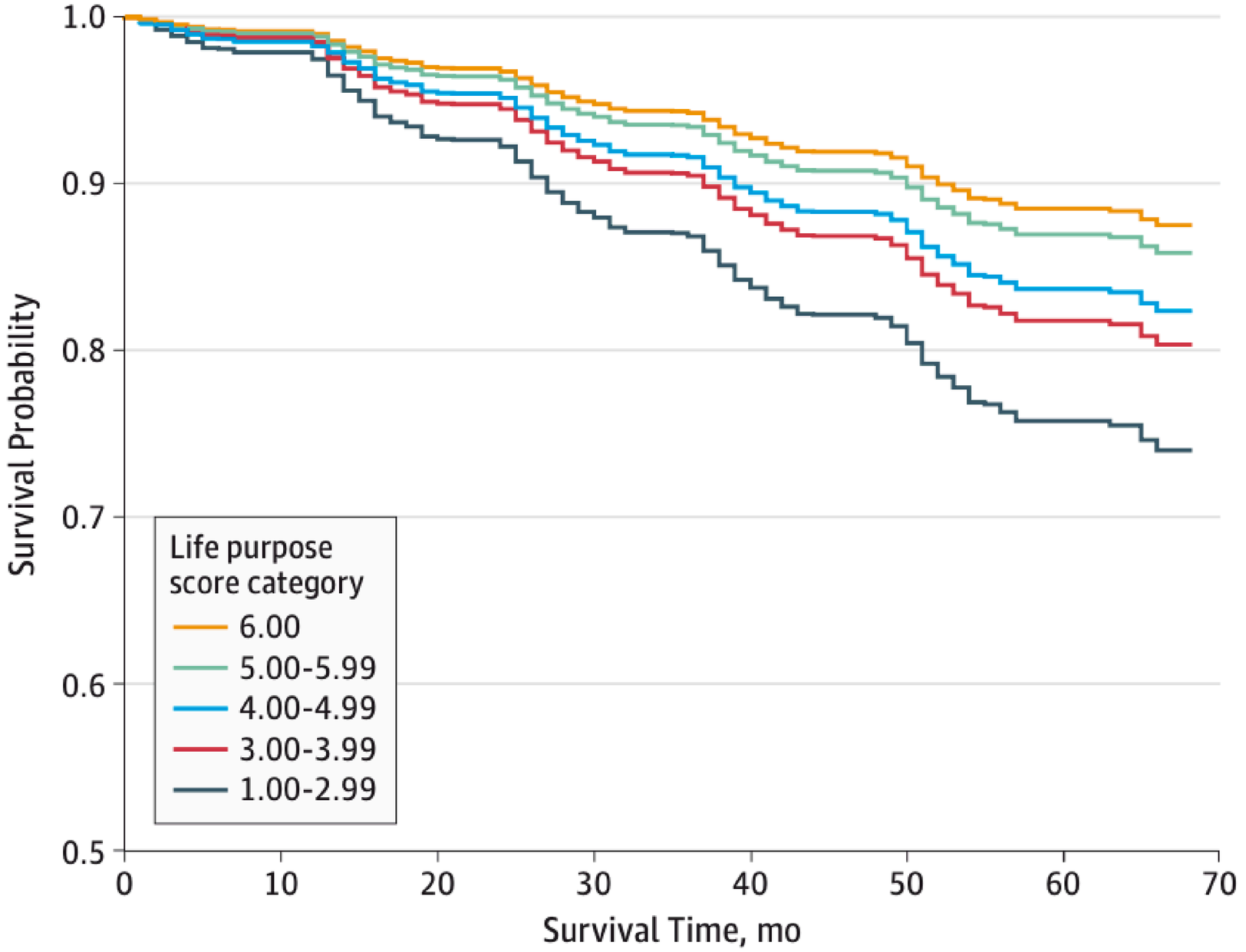


Figure. Survival Curves Illustrating the Association Between Life Purpose and Mortality



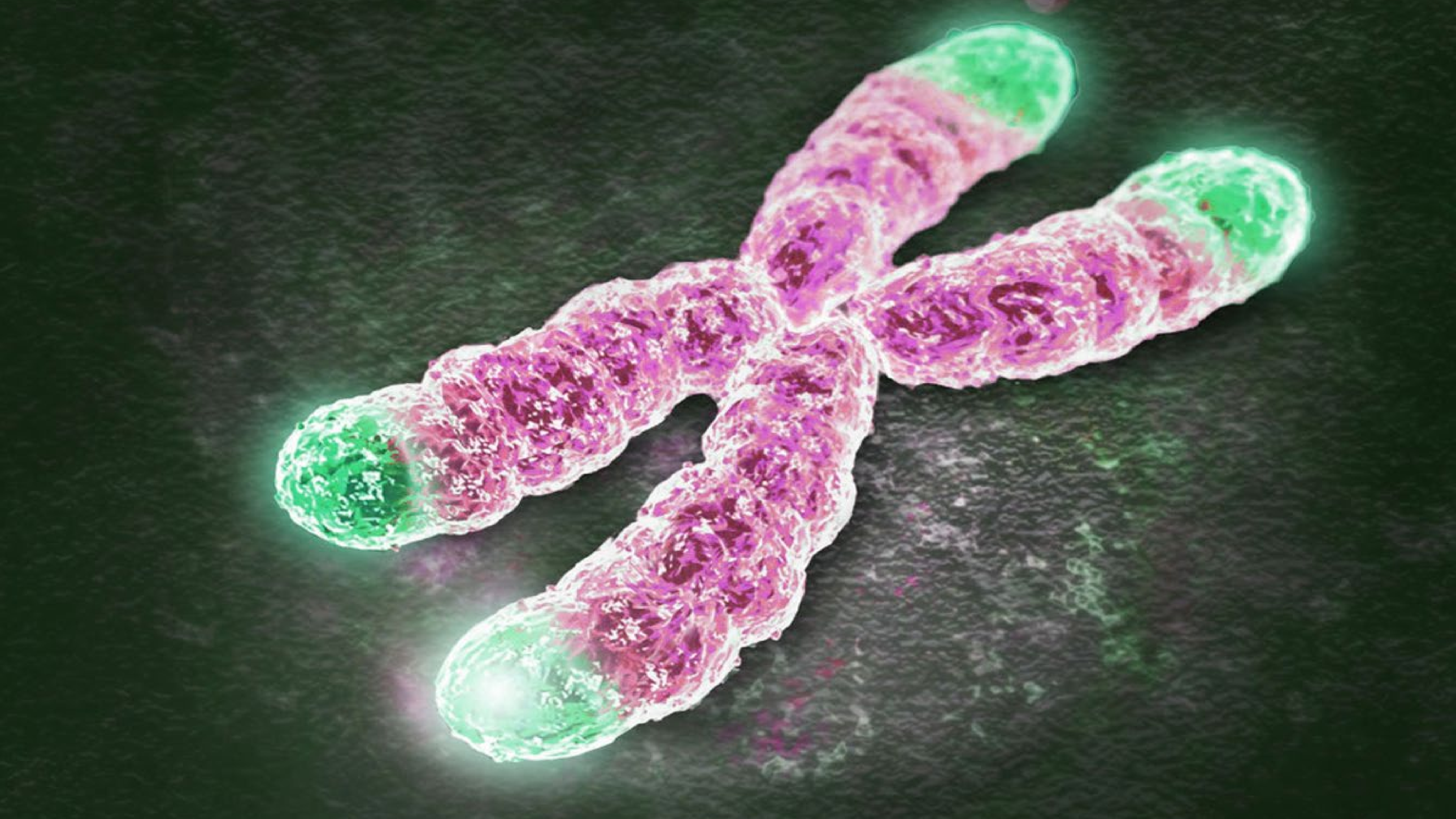
Survival curves are adjusted for age, sex, educational level, race/ethnicity, marital status, smoking status, frequency of physical activity, alcohol consumption, body mass index, functional status, one or more chronic health conditions, depression, anxiety, cynical hostility, negative affect, optimism, positive affect, and social participation.

How?

Perceived age = 64

Perceived age = 74

Composite of 10 Twins



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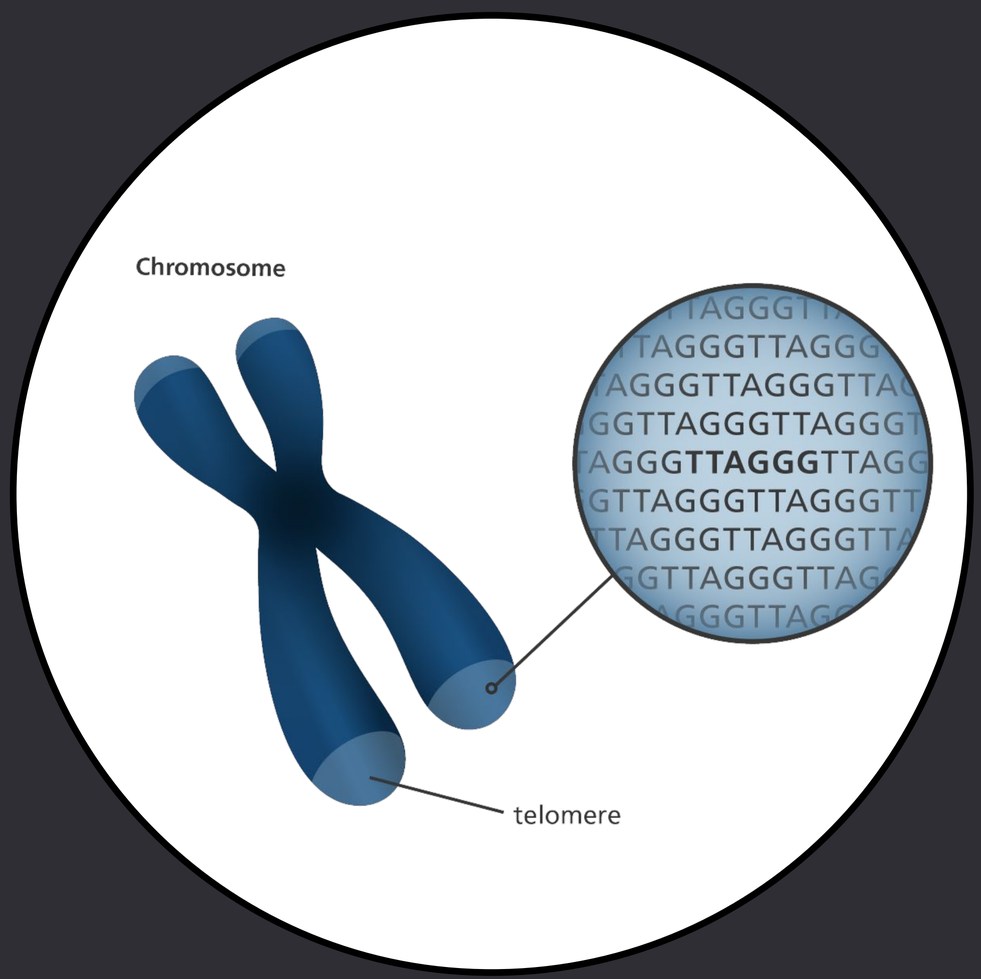
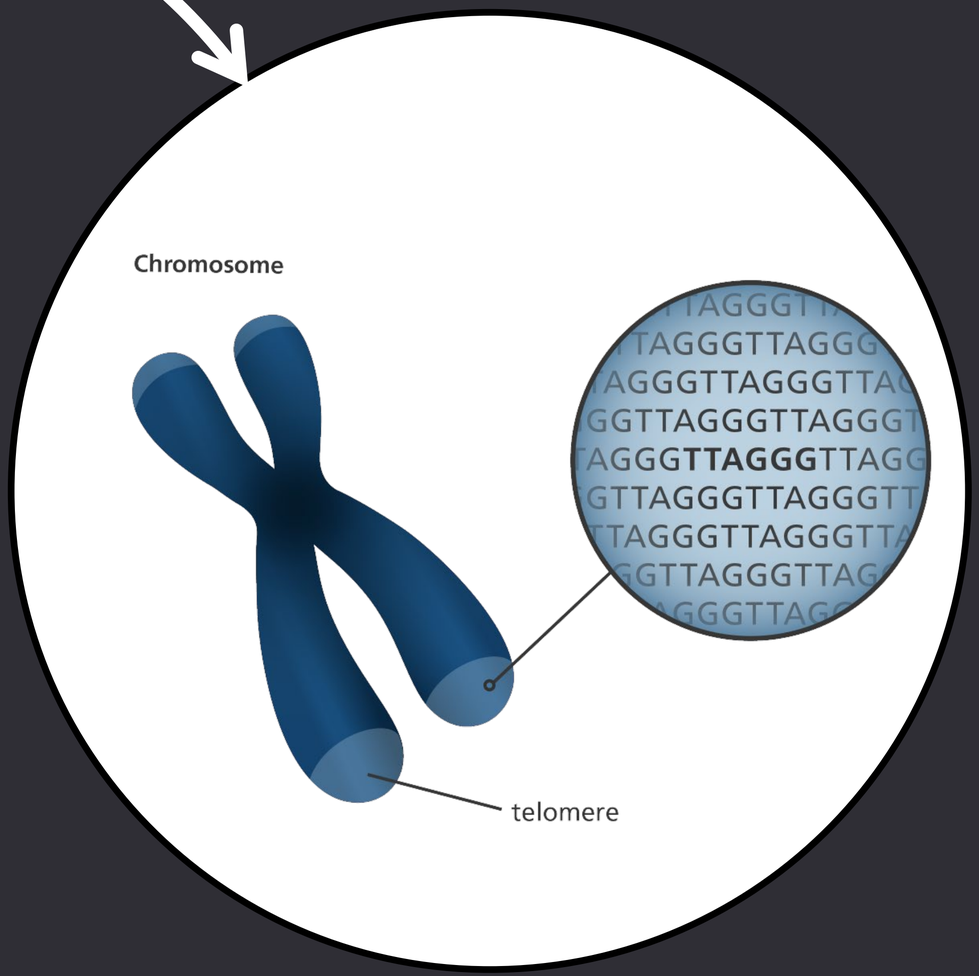
ERIC KANDEL, Nobel laureate and author of *In Search of Memory*

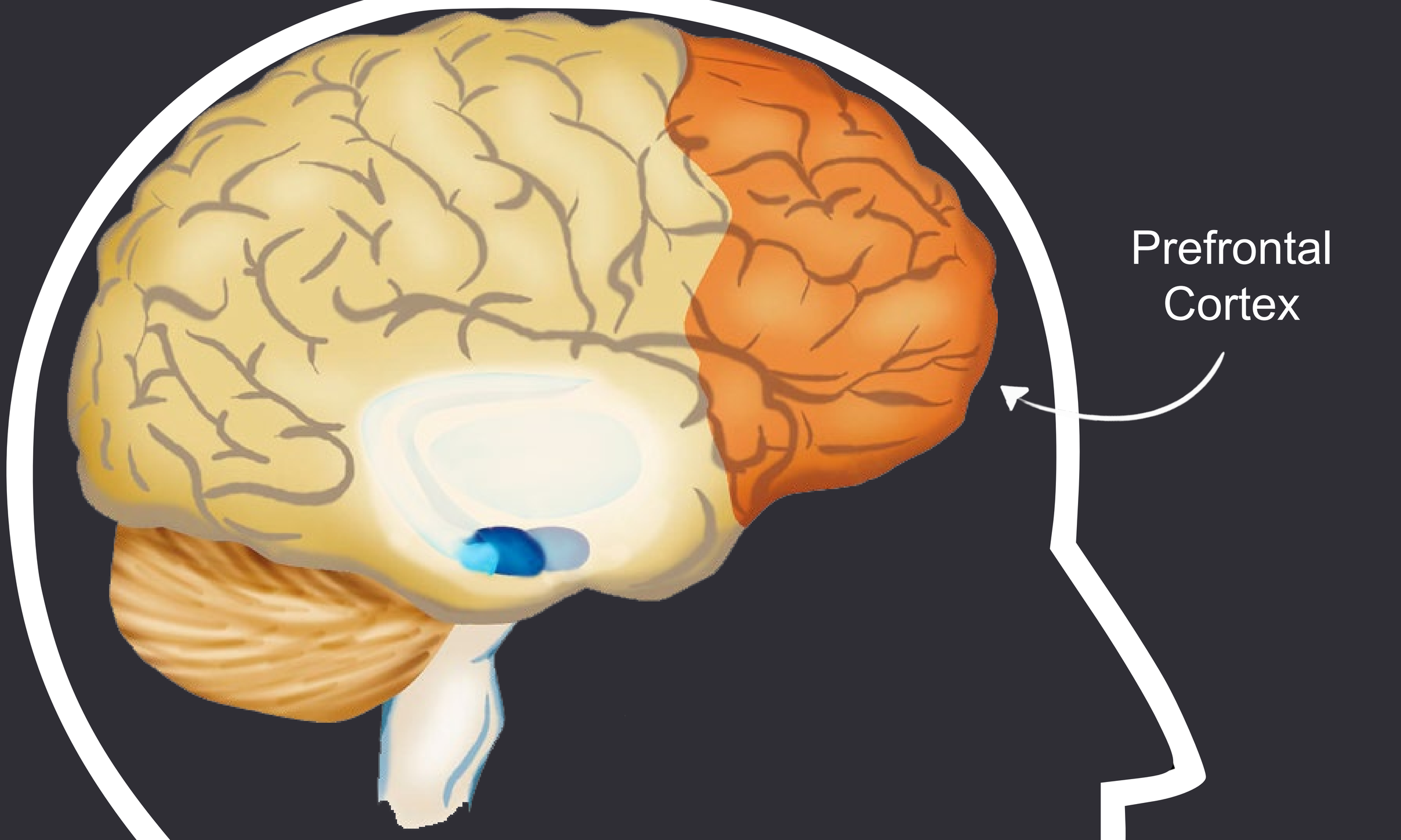

LIVE LONG & PROSPER
THE TELOMERE EFFECT
CBS THIS MORNING
LIVE LONG & PROSPER
HOW EXERCISE, DIET & SLEEP AFFECT AGING

MAY YOU BE HAPPY AND FREE OF SUFFERING…

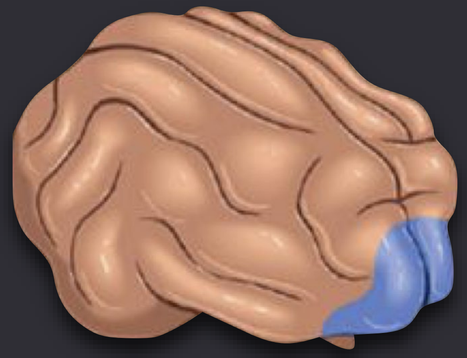


Purpose in Life

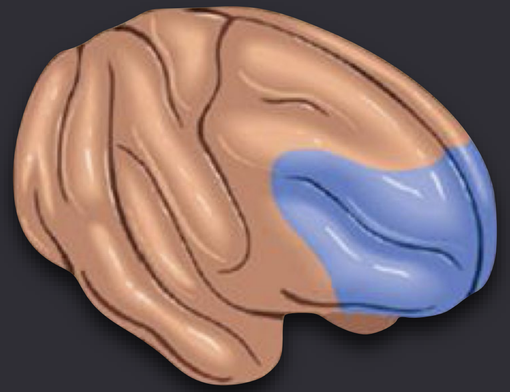



Prefrontal
Cortex

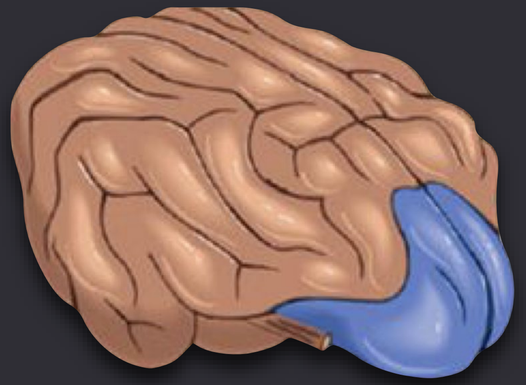
Squirrel monkey



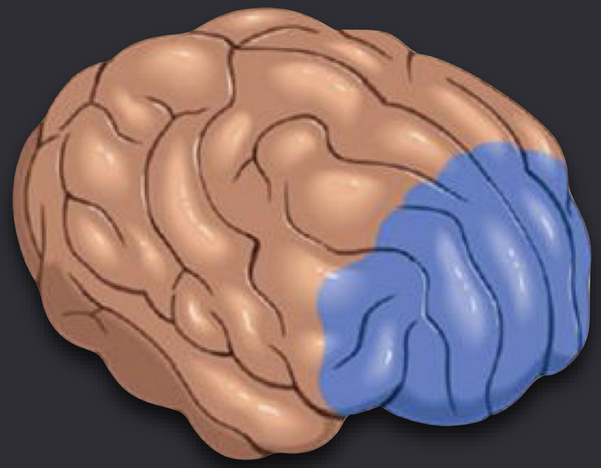
Cat



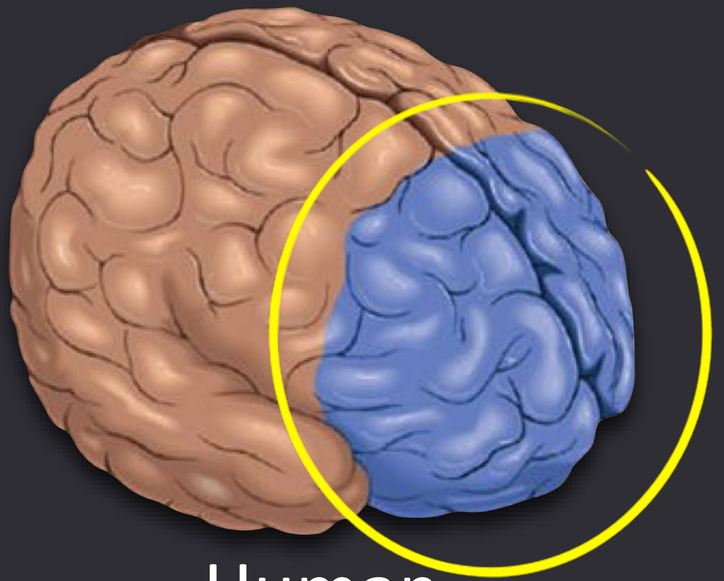
Rhesus monkey



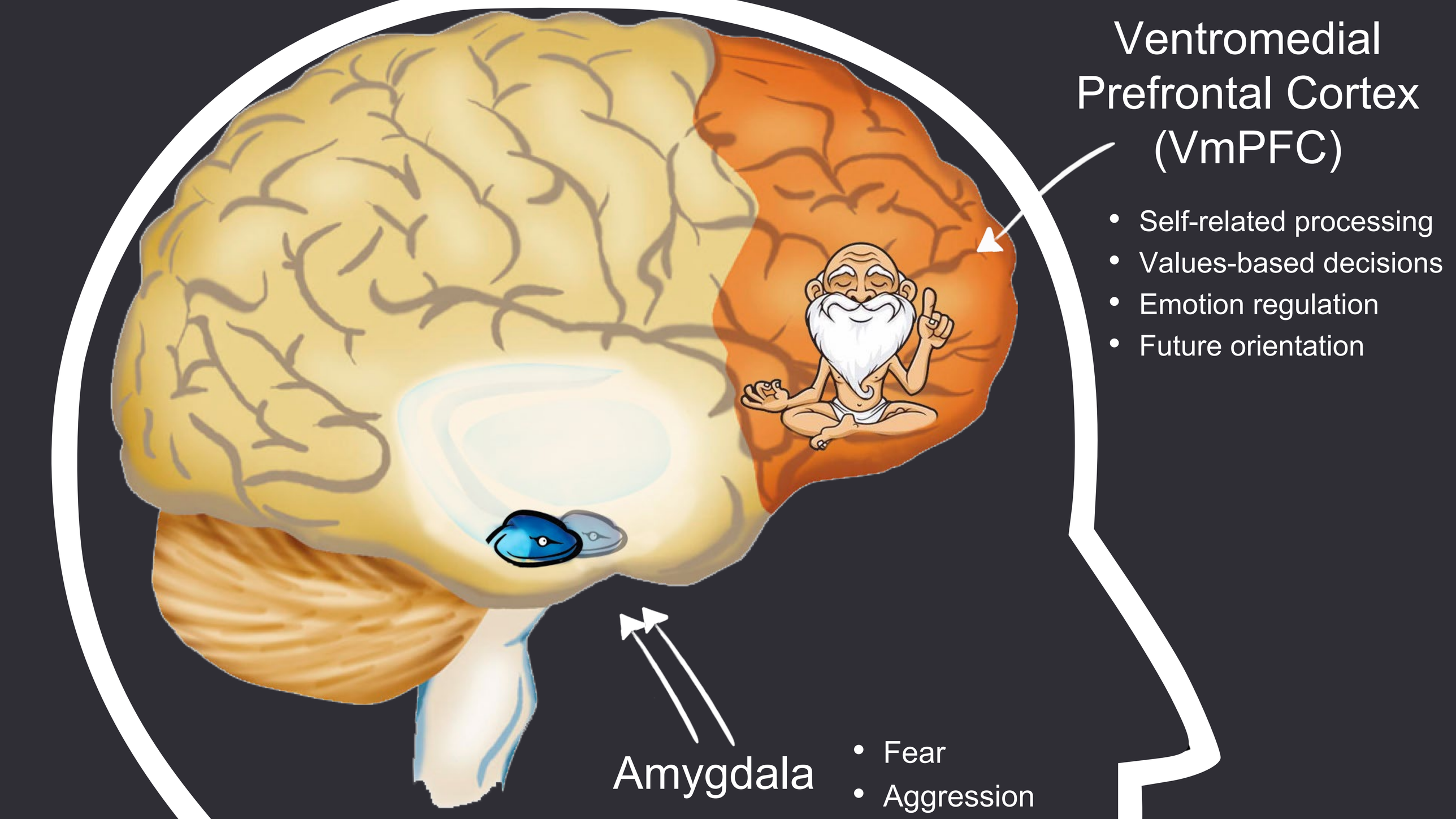
Dog

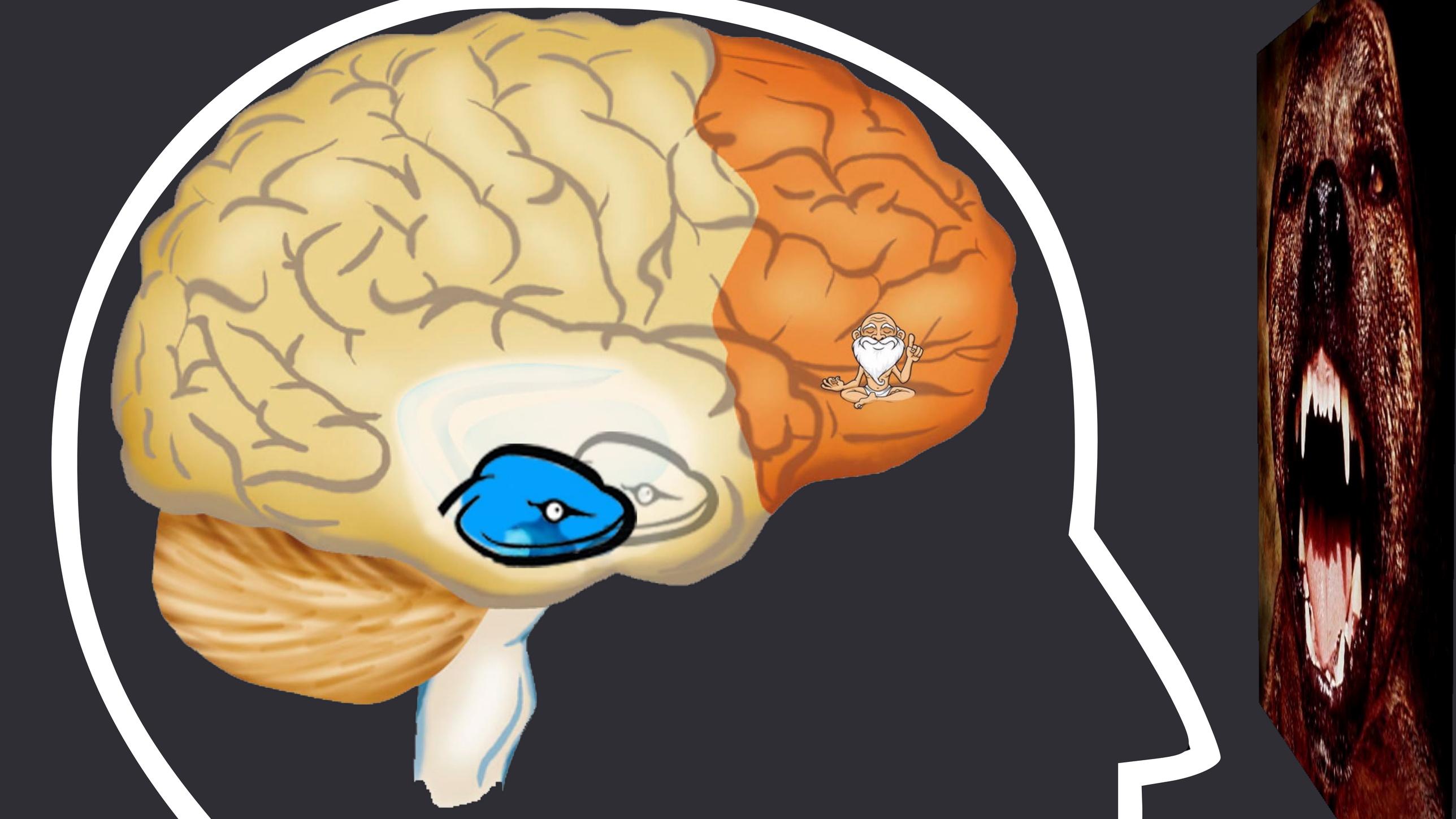


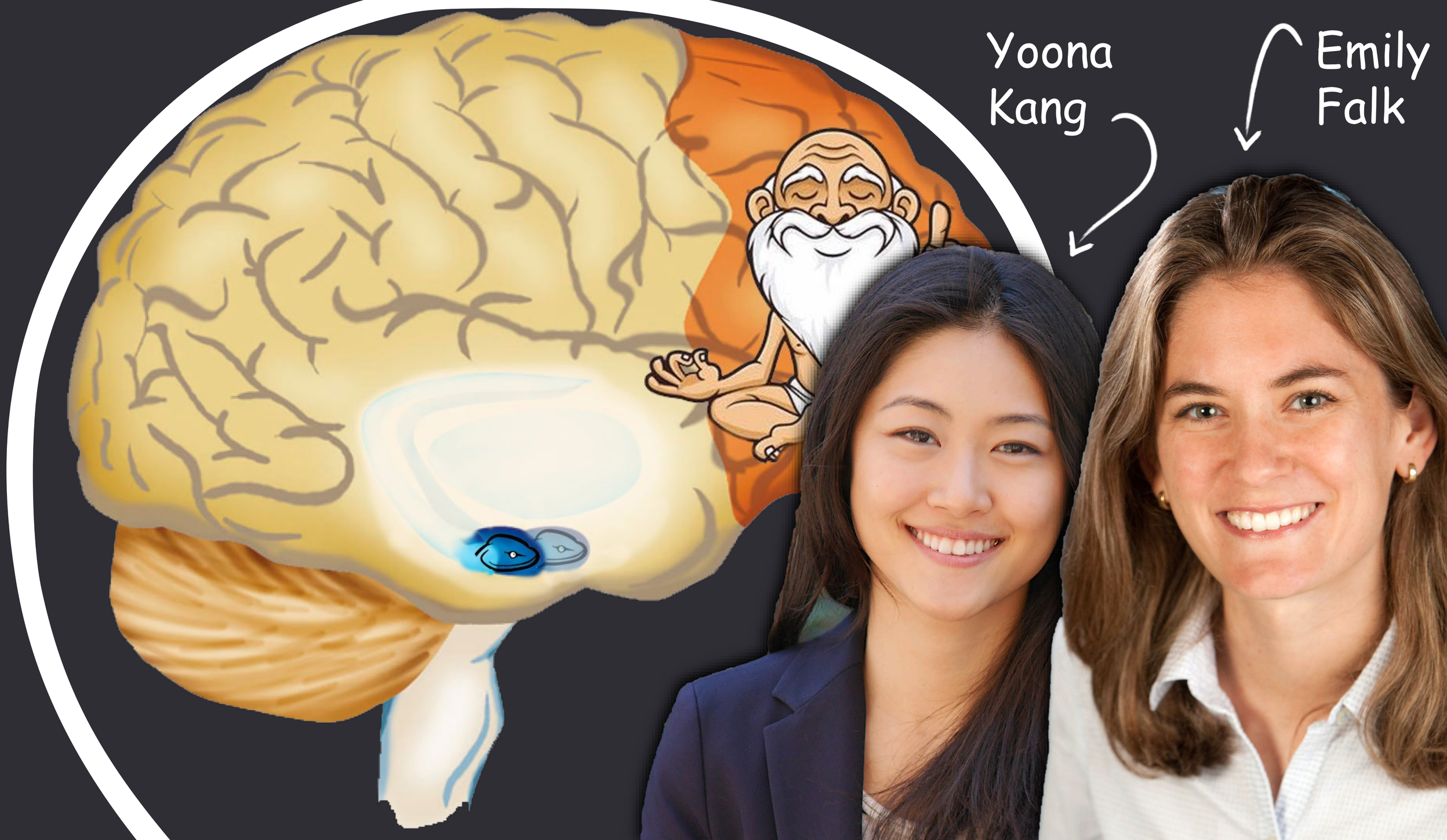
Chimp



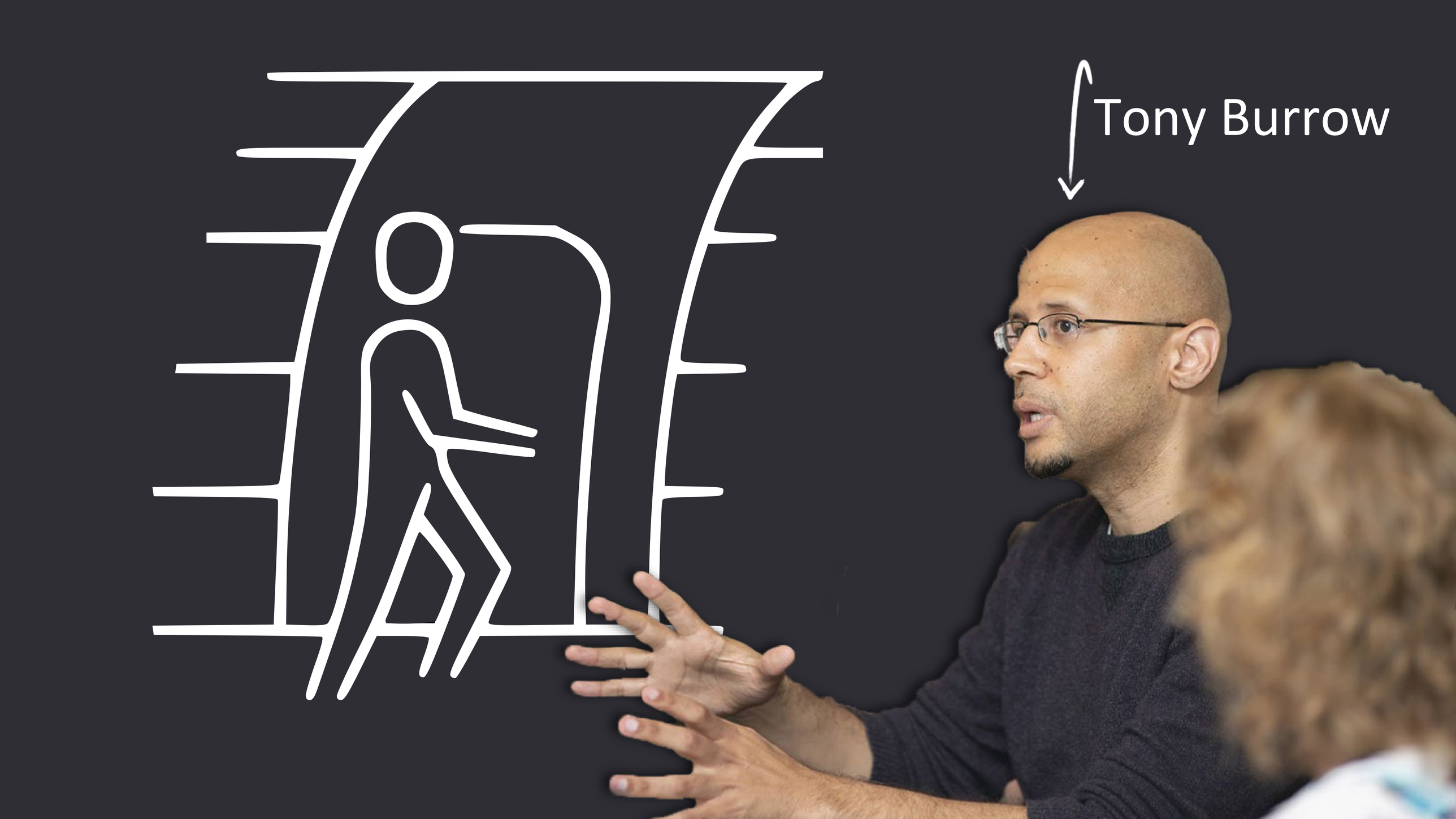
Human


Ventromedial Prefrontal Cortex (VmPFC)
• Self-related processing
• Values-based decisions
• Emotion regulation
• Future orientation
Amygdala
• Fear
• Aggression




Yoona Kang
Emily Falk


Purposeful core values
VmPFC
Amygdala
Behavior change


Tony Burrow

“What does it mean to have a sense of purpose in life?”

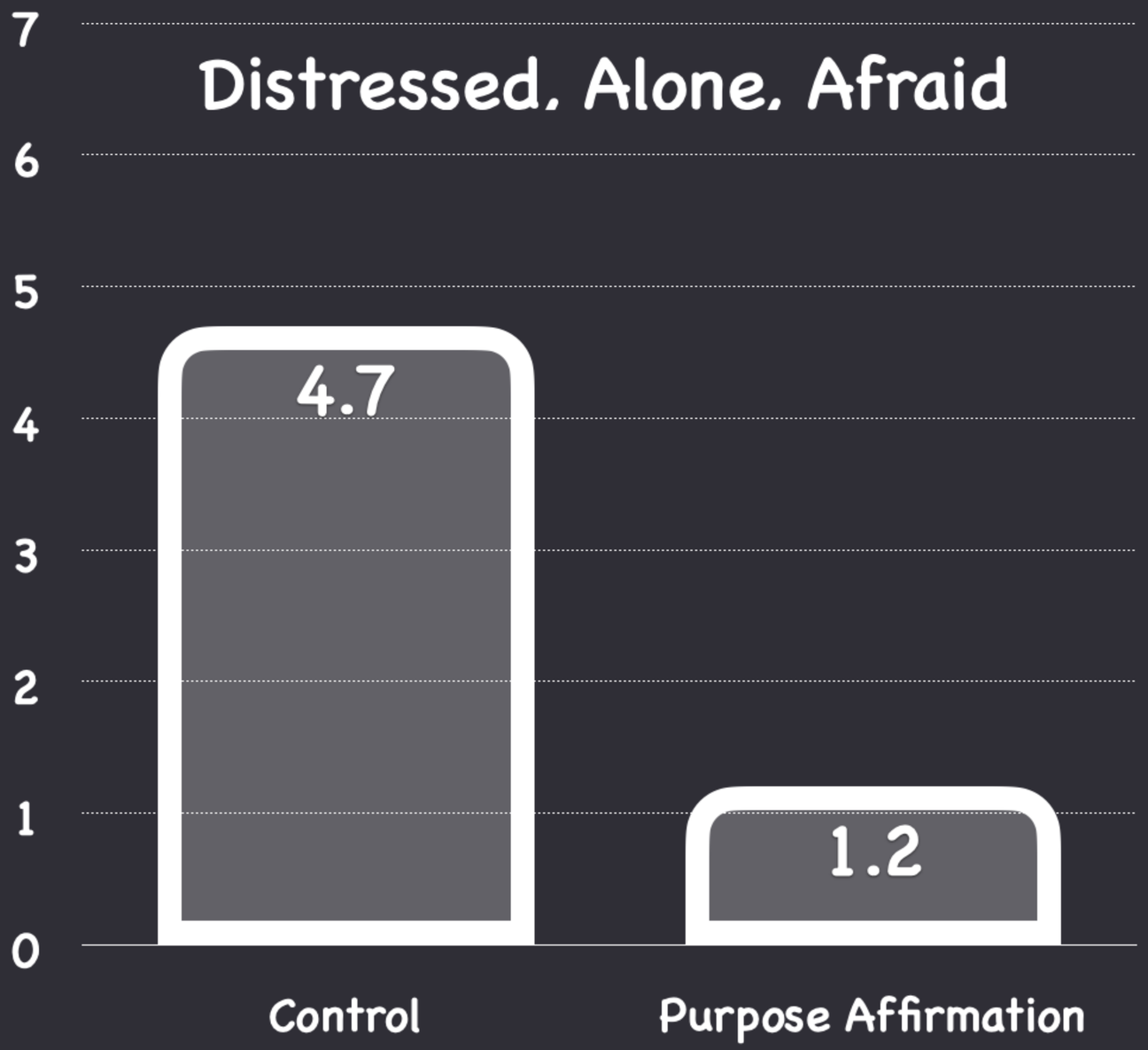
“What is your purpose in life?”

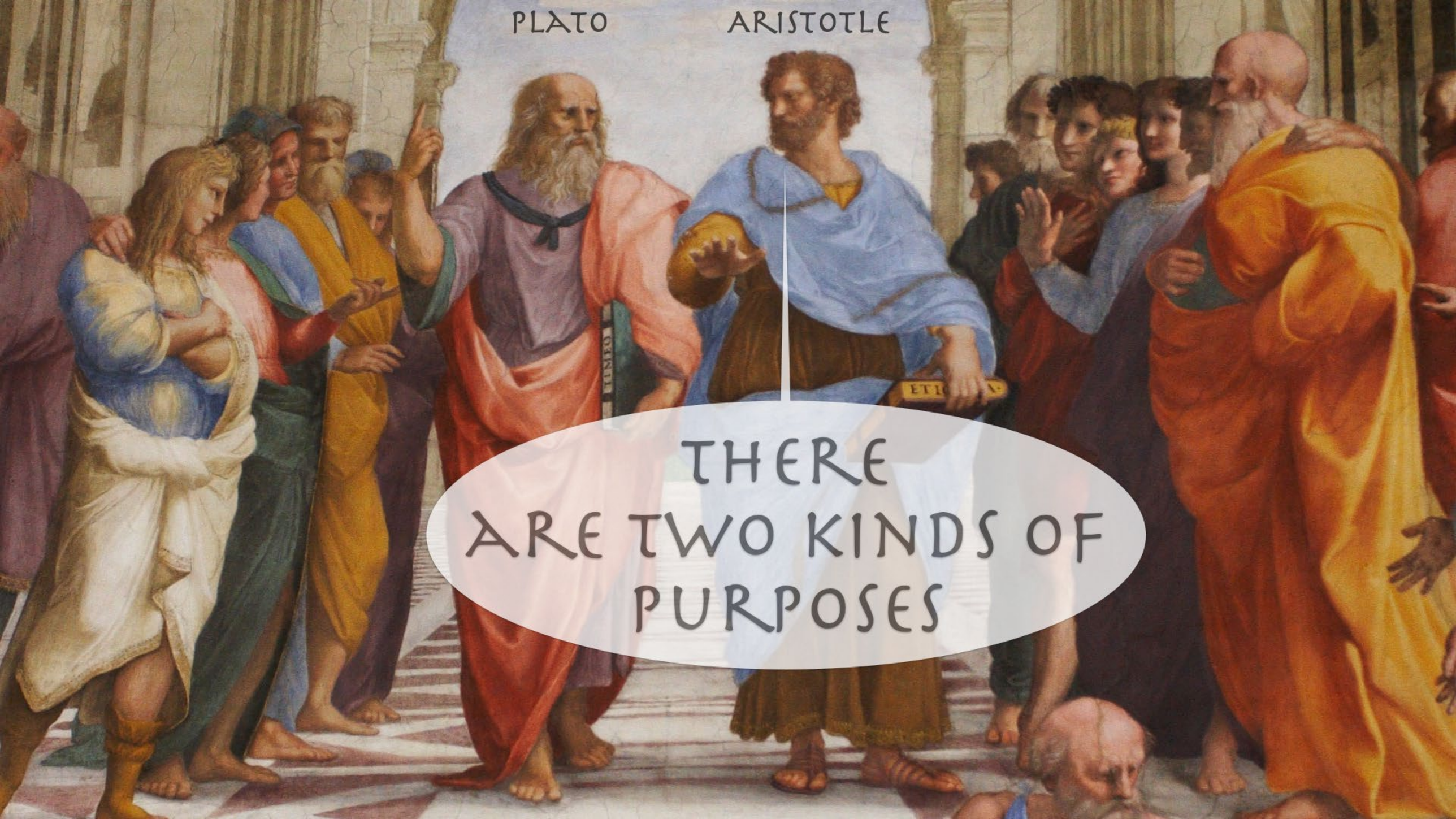
“Where did your sense of purpose come from?”

“What was the last movie you saw?”

“Who were all of the characters in the movie?”

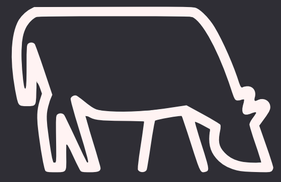
“What was the plot of the movie?”

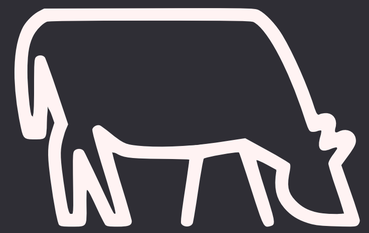

Distressed, Alone, Afraid
7
6
5
4
3
2
1
0
4.7
1.2
Control
Purpose Affirmation

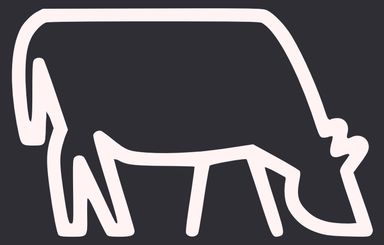

PLATO
ARISTOTLE
THERE
ARE TWO KINDS OF
PURPOSES

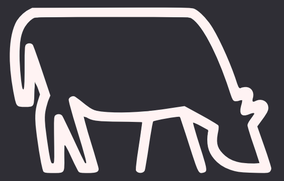
EUDAIMONIC

HEDONIC









A functional genomic perspective on human well-being

Barbara L. Fredrickson[a], Karen M. Grewen[b], Kimberly A. Coffey[a], Sara B. Algoe[a], Ann M. Firestine[a], Jesusa M. G. Arevalo[c], Jeffrey Ma[c], and Steven W. Cole[c,d,1]

[a]Department of Psychology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599; [b]Department of Psychiatry, University of North Carolina School of Medicine, Chapel Hill, NC 27599; [c]University of California, Los Angeles, School of Medicine, Los Angeles, CA 90095; and [d]Jonsson Comprehensive Cancer Center, Norman Cousins Center for Psychoneuroimmunology, AIDS Institute, and Molecular Biology Institute, University of California, Los Angeles, CA 90095

Edited* by Burton H.

To identify molec
health advantages
analyzed leukocyte
adults who were as
as well as potent
behavioral factors.
similar affective c
profiles. Peripheral
high levels of hedo
of a stress-related
(CTRA) involving ir
and decreased expr
and type I IFN res
well-being were a
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scription factor ac
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duced NF-κB and A
ing). Transcript orig
dendritic cells, and
these dynamics. Th
ing engage distinct
effects on total well-being and depressive symptoms implies that the human genome may be more sensitive to qualitative variations in well-being than are our conscious affective experiences.

> "… a 'hedonic' form representing the sum of an individual's positive affective experiences, and a deeper 'eudaimonic form that results from striving toward meaning and a noble purpose beyond simple self-gratification."

vironment of contemporary human society, chronic CTRA activation by social or symbolic threats may promote inflammation-mediated cardiovascular, neurodegenerative, and neoplastic

A functional genomic perspective on human well-being

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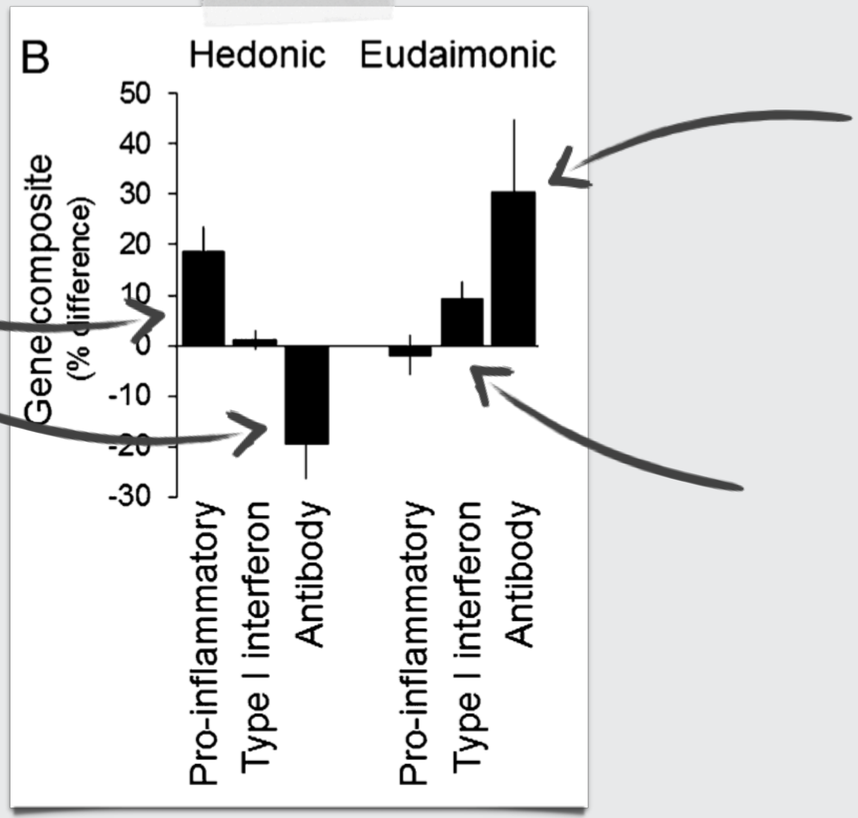
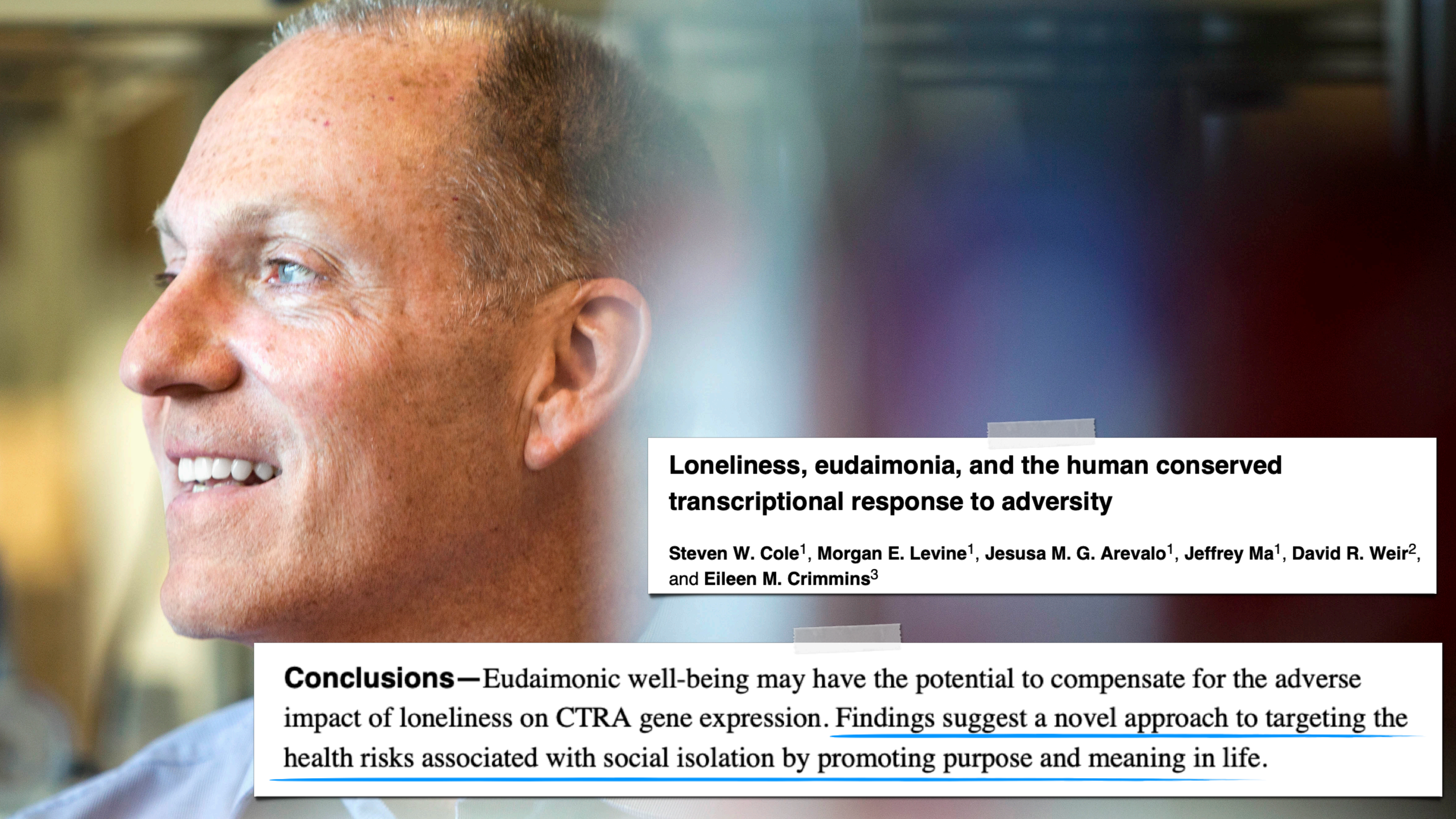
Philosophers have long distinguished two basic forms of well-being: a "hedonic" form representing the sum of an individual's positive affective experiences, and a deeper "eudaimonic" form that results from striving toward meaning and a noble purpose beyond simple self-gratification (6, 13–16). Both dimensions of



Loneliness, eudaimonia, and the human conserved transcriptional response to adversity

Steven W. Cole[1], **Morgan E. Levine**[1], **Jesusa M. G. Arevalo**[1], **Jeffrey Ma**[1], **David R. Weir**[2], and **Eileen M. Crimmins**[3]



Loneliness, eudaimonia, and the human conserved transcriptional response to adversity

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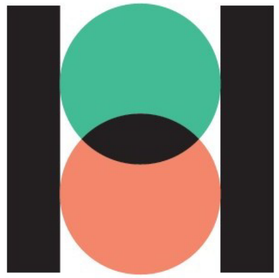
Conclusions—Eudaimonic well-being may have the potential to compensate for the adverse impact of loneliness on CTRA gene expression. Findings suggest a novel approach to targeting the health risks associated with social isolation by promoting purpose and meaning in life.

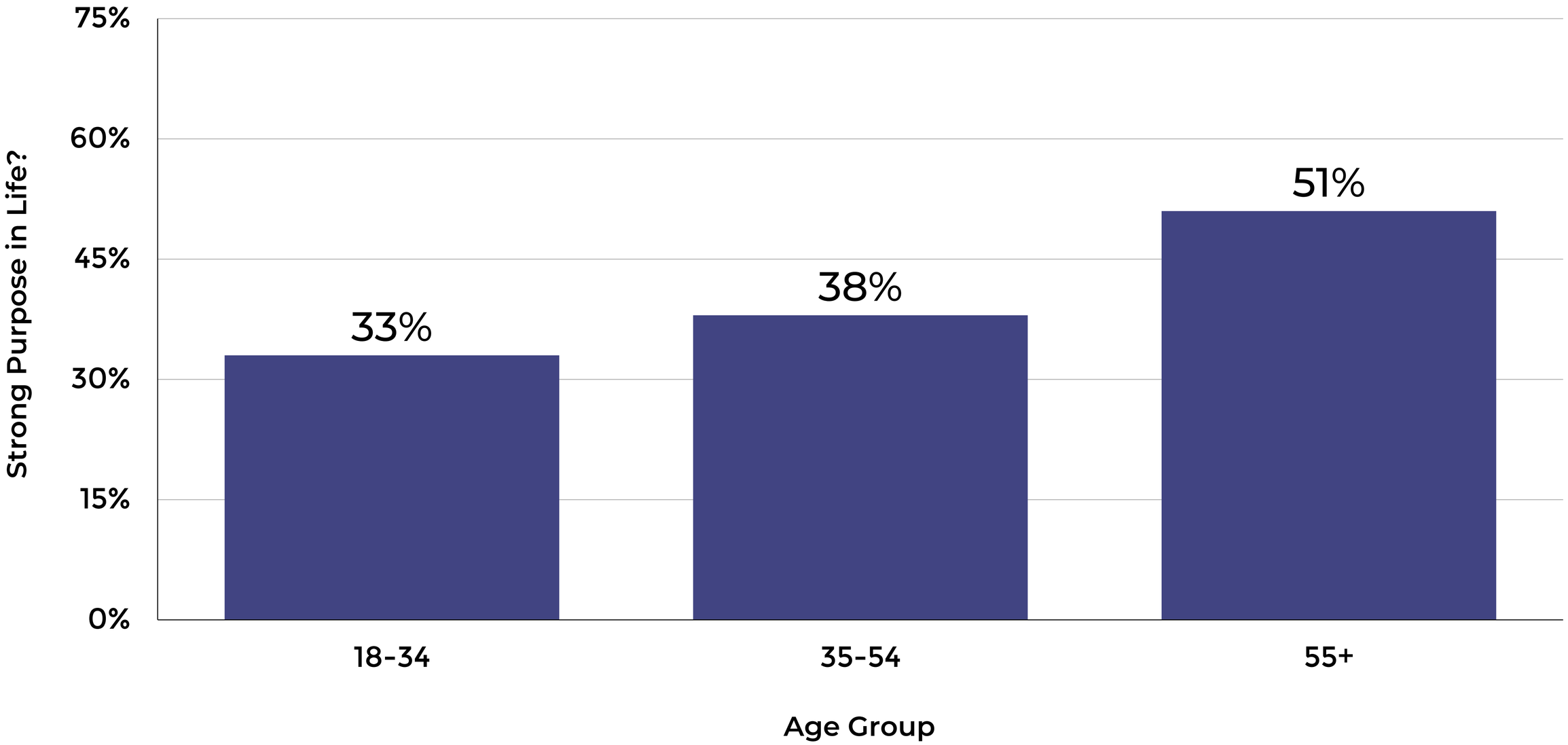


The Harris Poll

kumanu

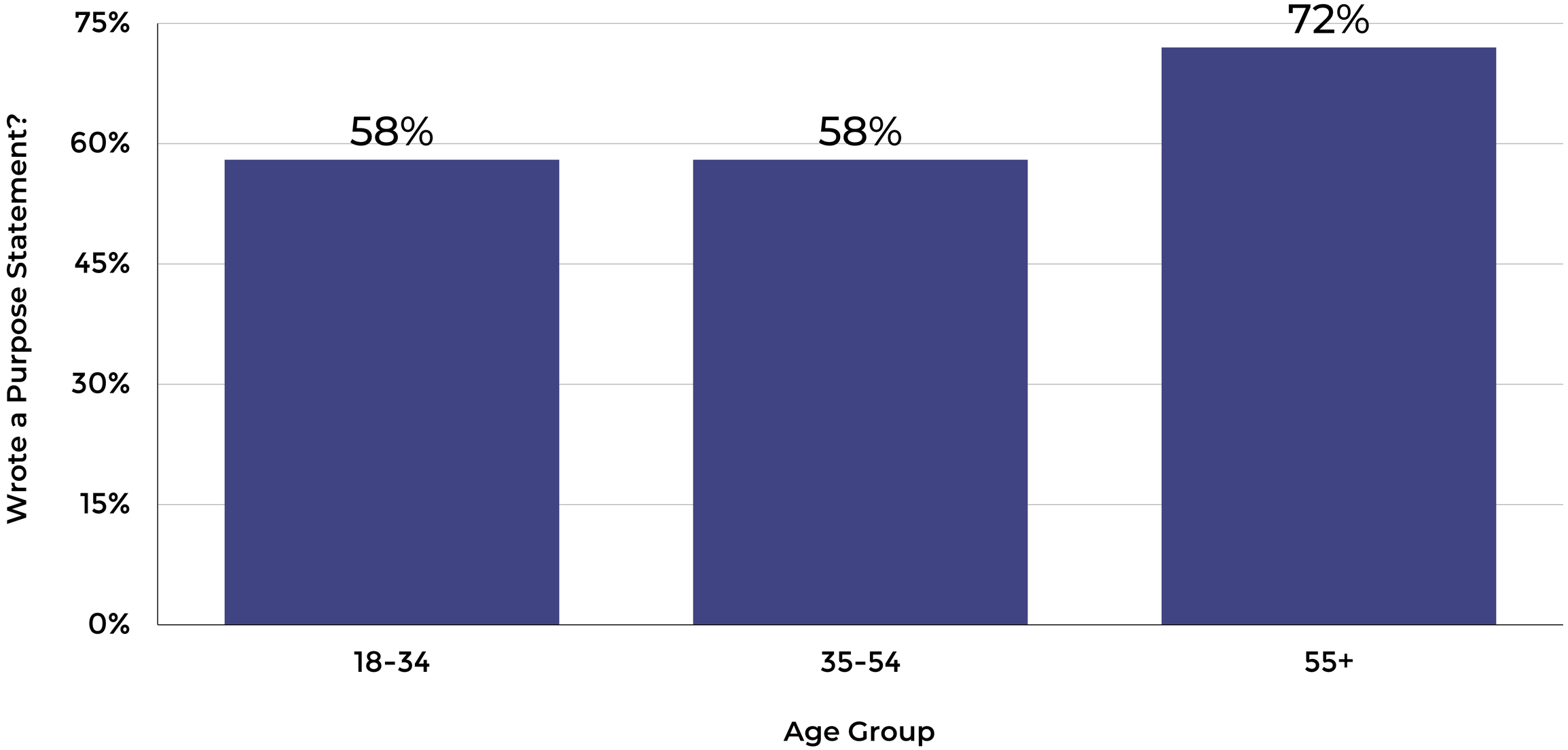
wellbeing starts with why

Strong Purpose in Life by Age Group



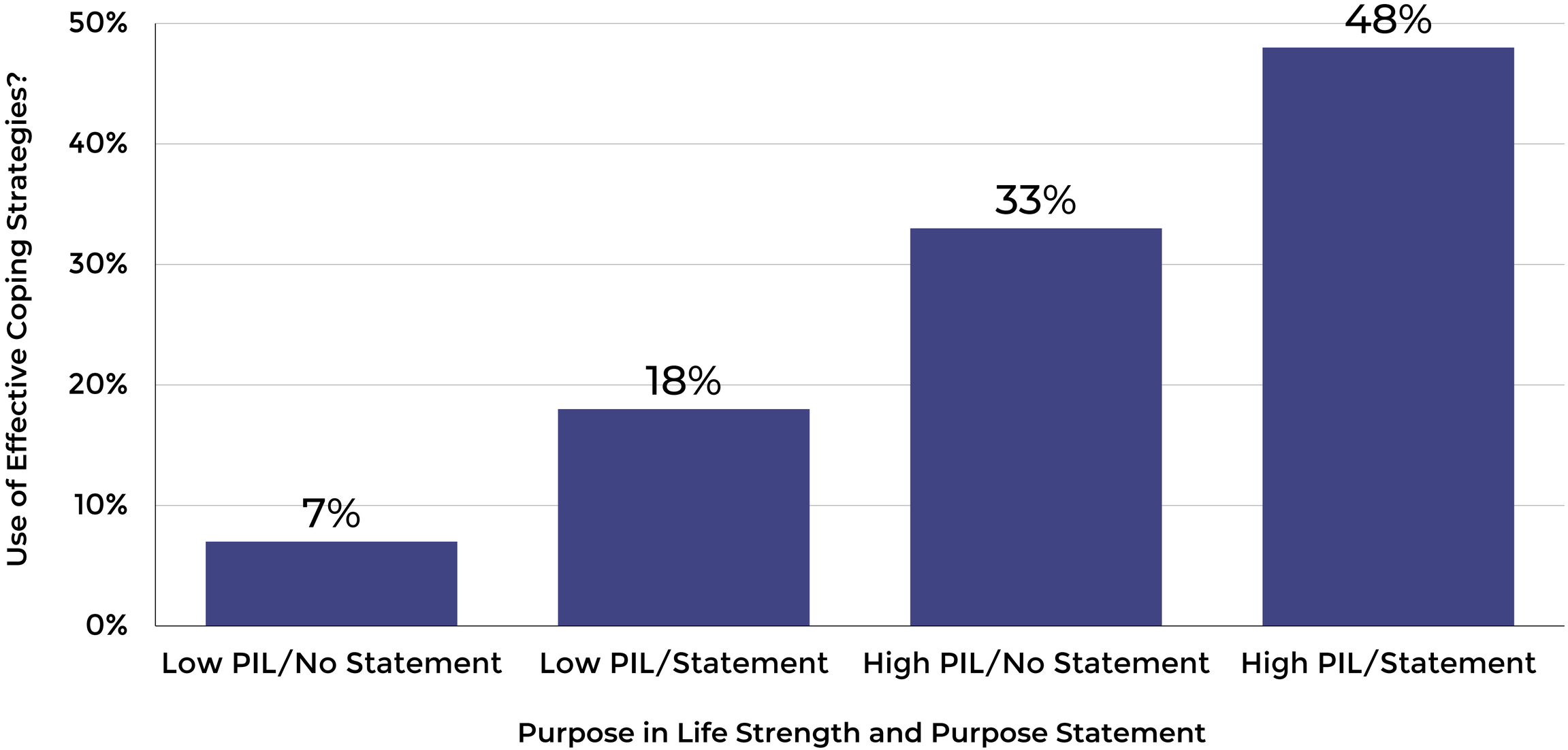
Harris-Kumanu Purpose Poll, May 2021, N=1,666; F=22.5, p<.0001

Wrote a Purpose in Life Statement by Age Group



Harris-Kumanu Purpose Poll, May 2021, N=1,666; F=17.2, p<.0001

Use of Effective Coping Strategies by Strength and Statement of Life Purpose

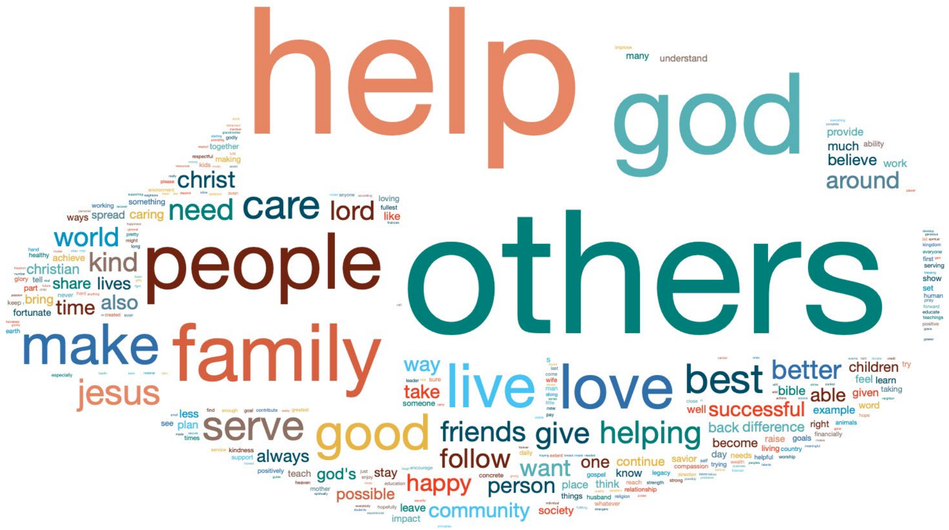


Harris-Kumanu Purpose Poll, May 2021, N=746 U.S. adults ≥55 yrs old; F=39.3, p<.0001

Self-Hedonic

Family

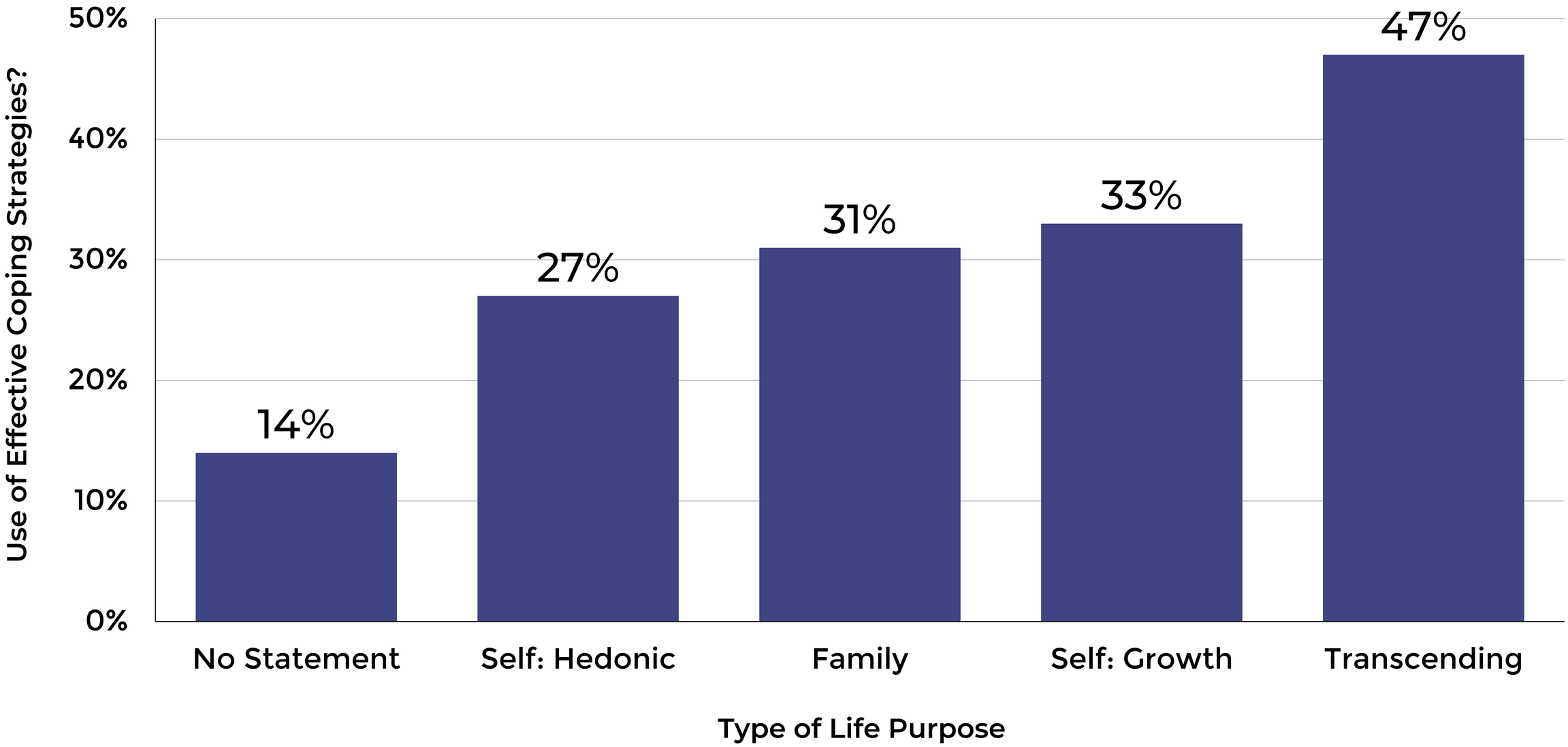
Self-Growth



Transcending

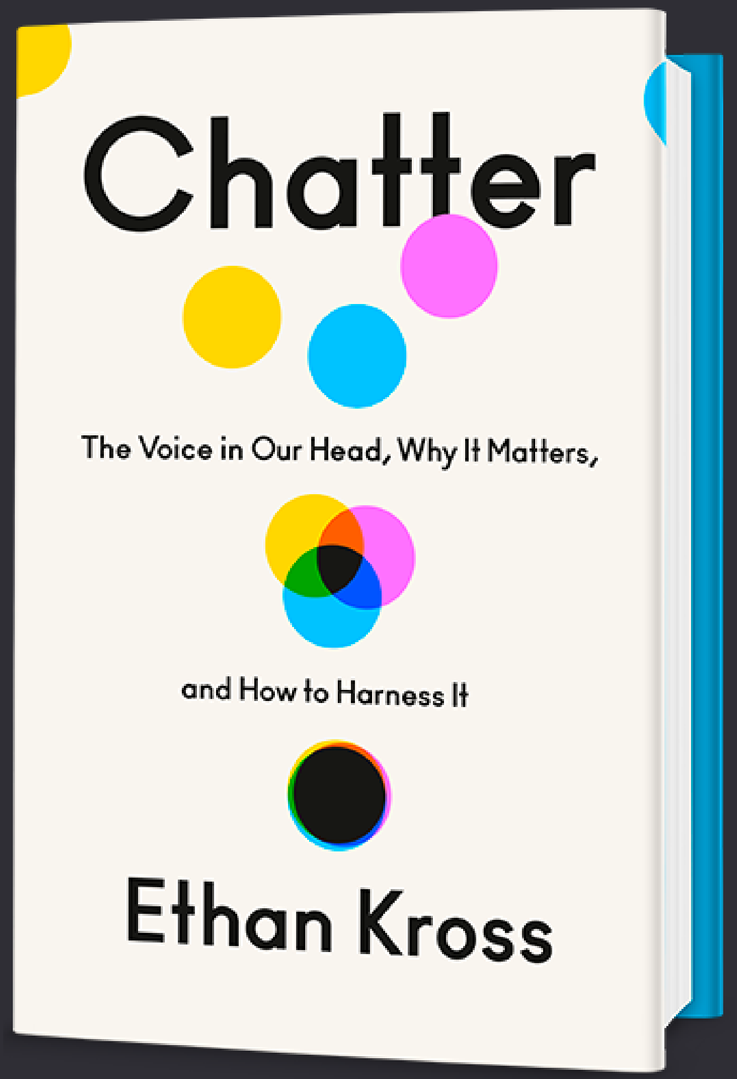
Harris-Kumanu Purpose Poll, May 2021, Adults ≥55 years old, N=746

Use of Effective Coping Strategies by Type of Life Purpose

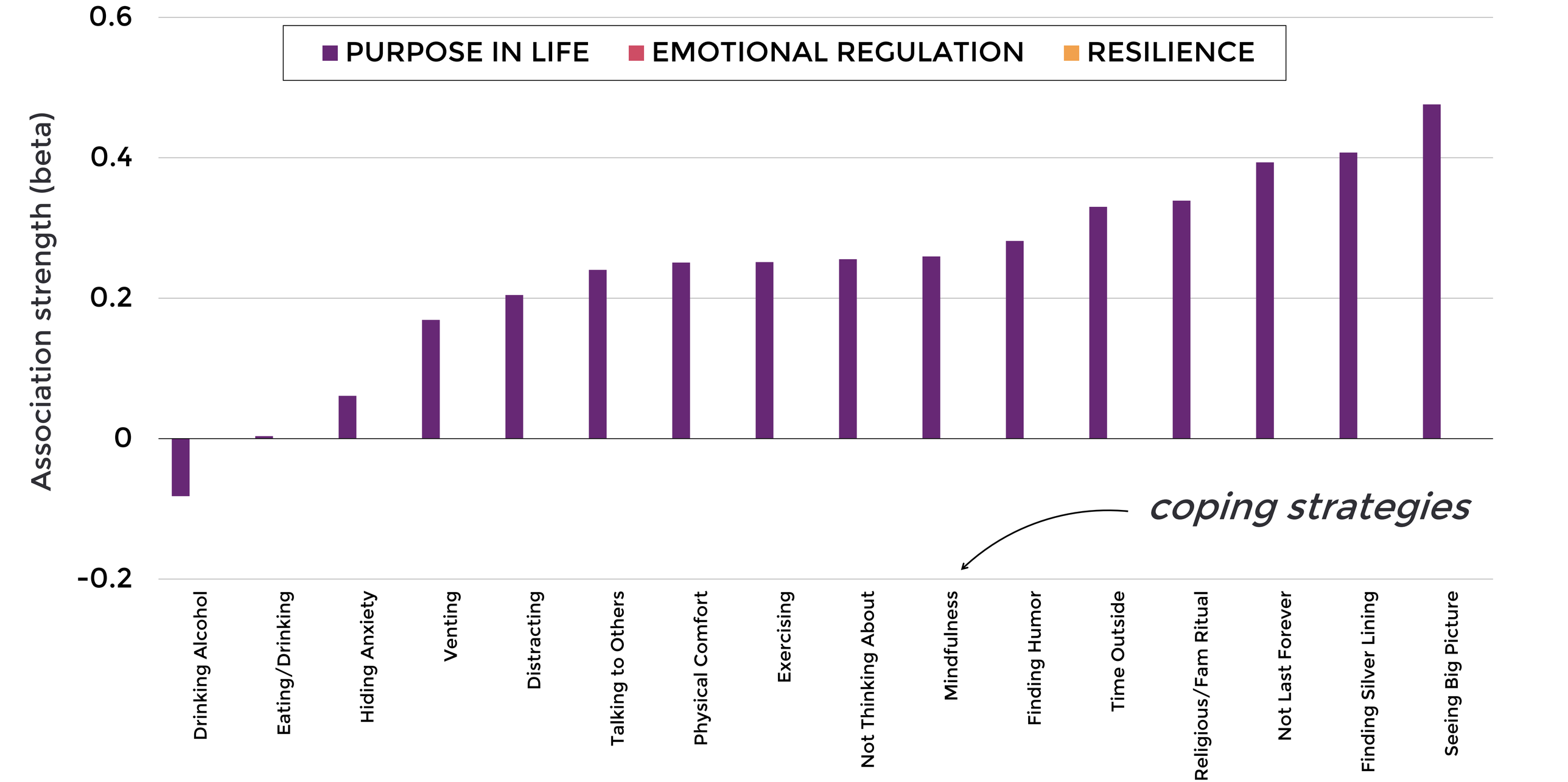


Harris-Kumanu Purpose Poll, May 2021, N=724 U.S. adults ≥55 yrs old; F=13.7, p<.0001

M | EMOTION & SELF CONTROL LAB



Associations between coping strategies and purpose in life, emotional regulation, resilience.



May 2021 Harris-Kumanu Purpose Poll. n=1,666

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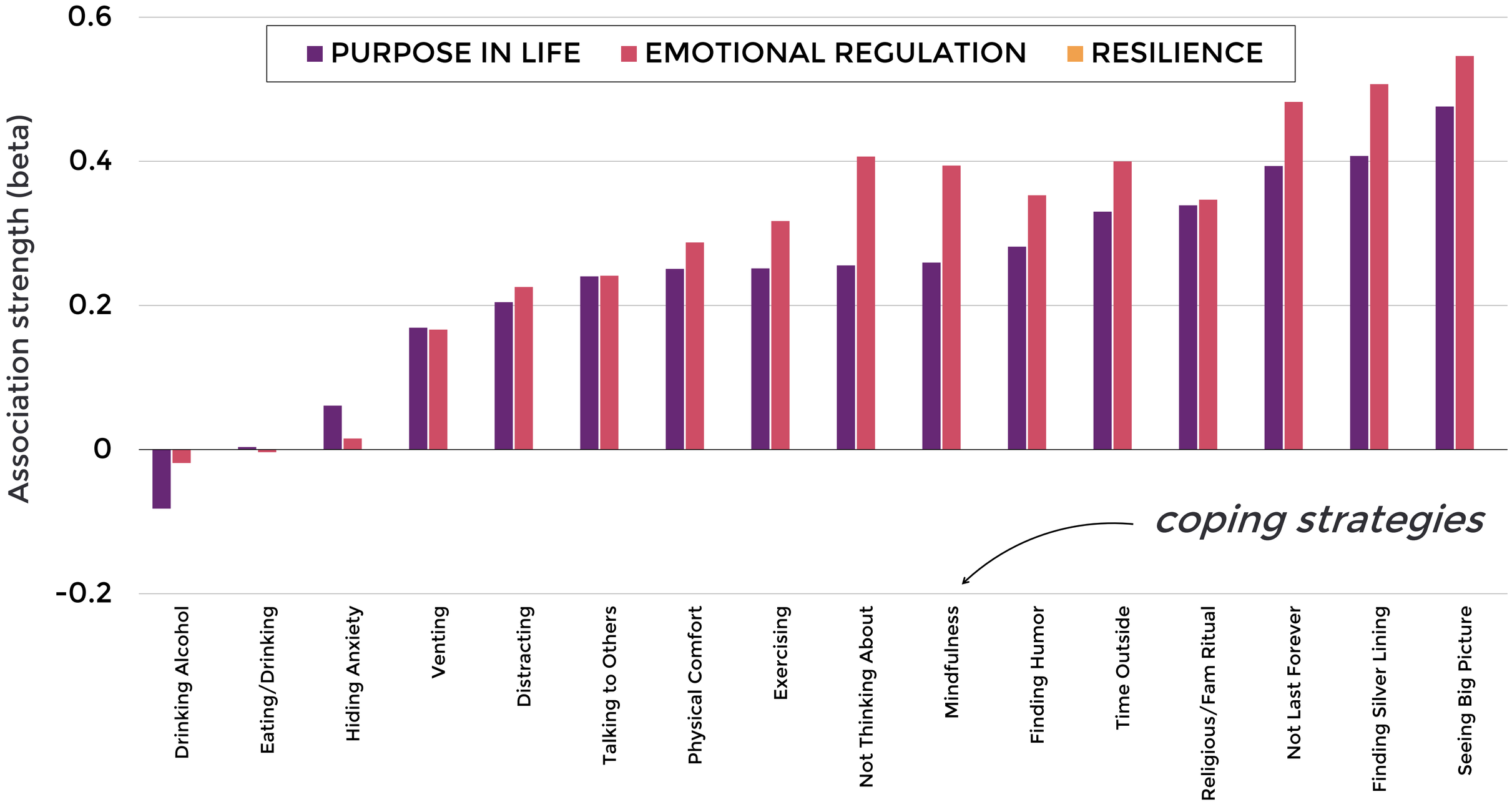

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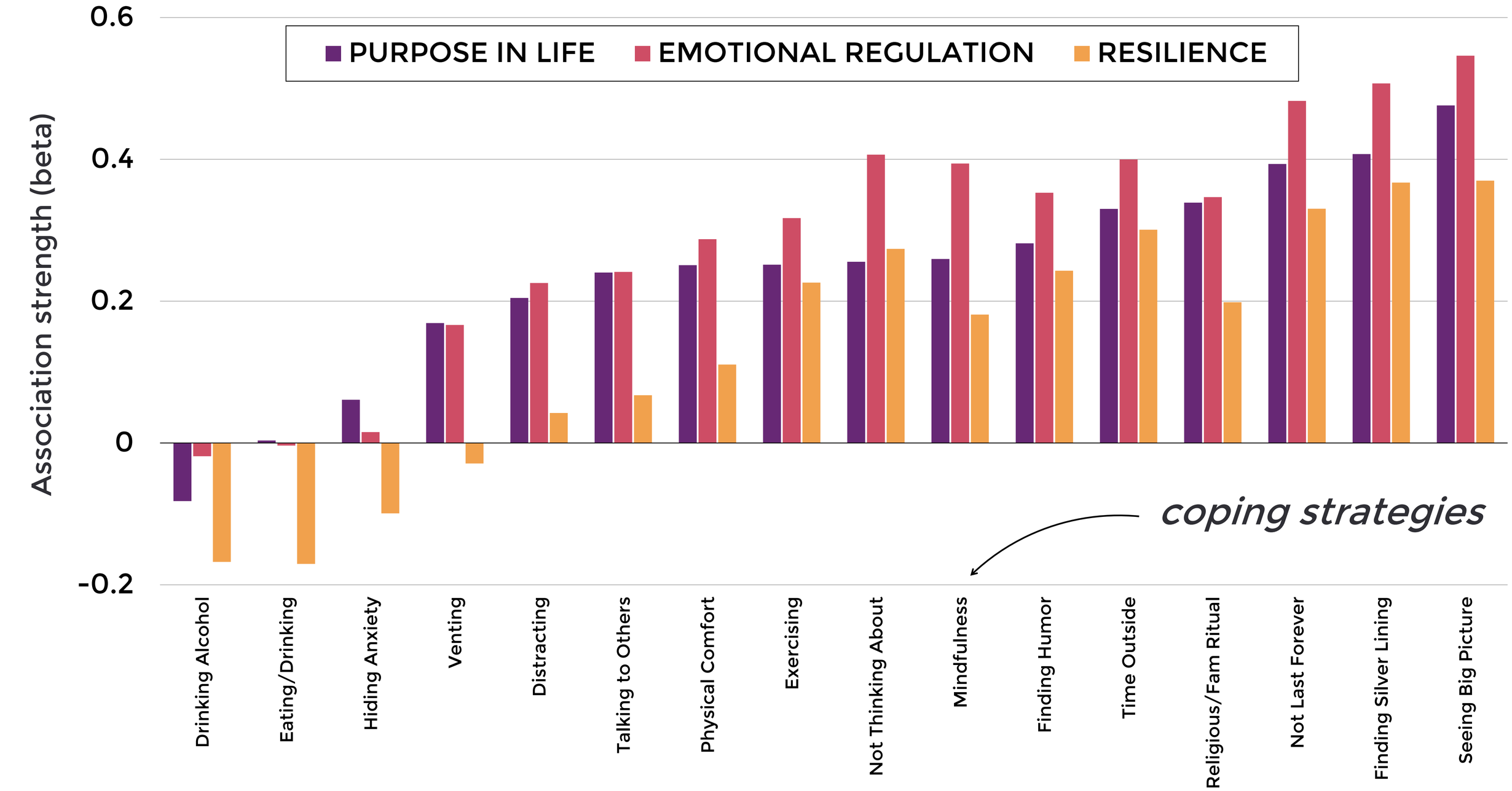
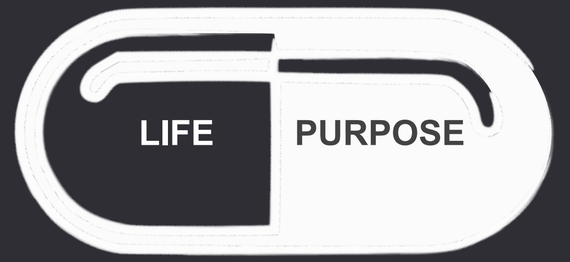
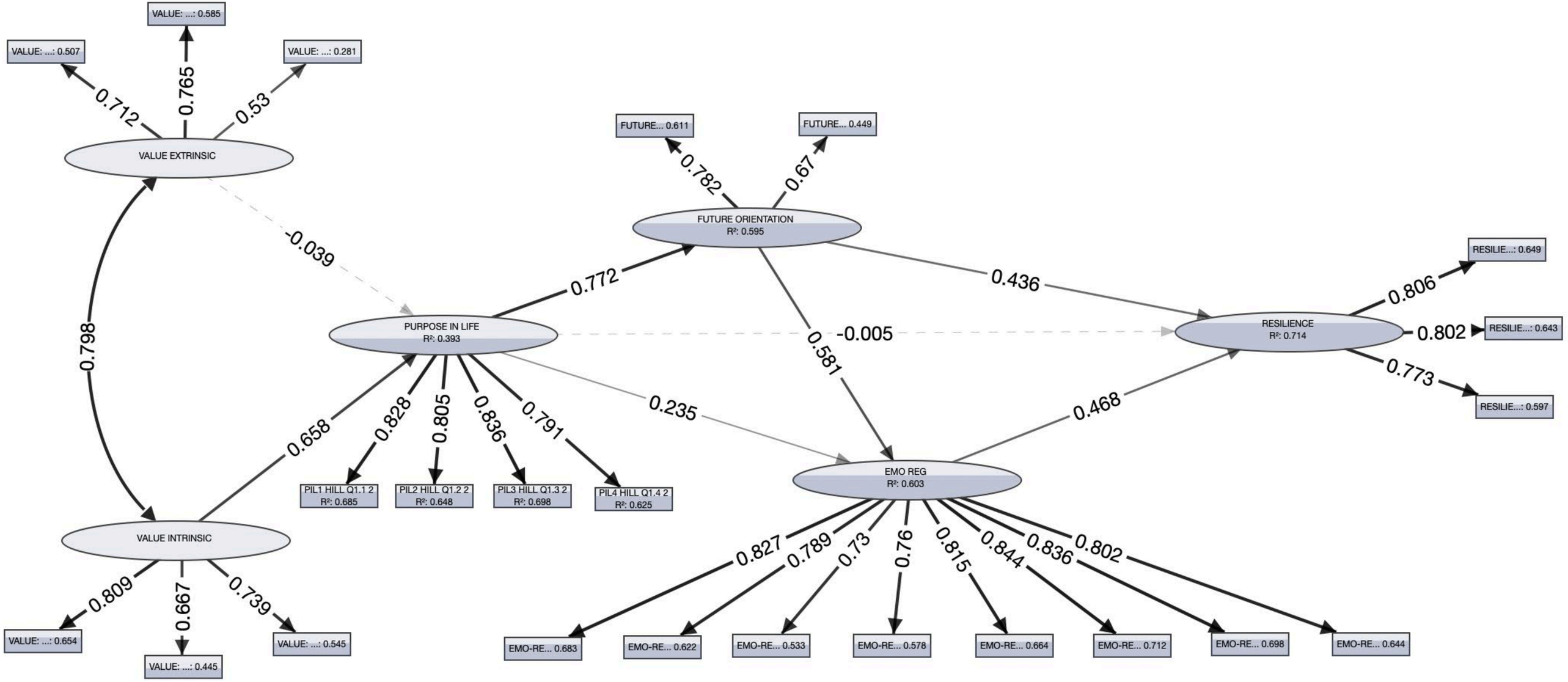


May 2021 Harris-Kumanu Purpose Poll. n=1,666

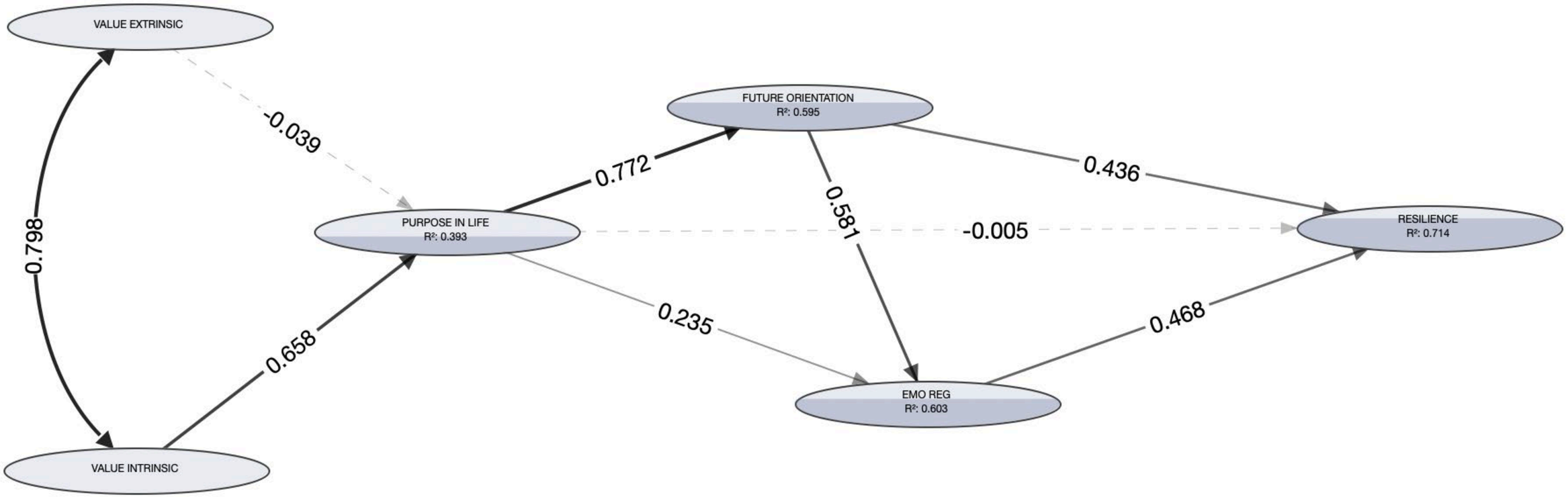


Connecting the dots…

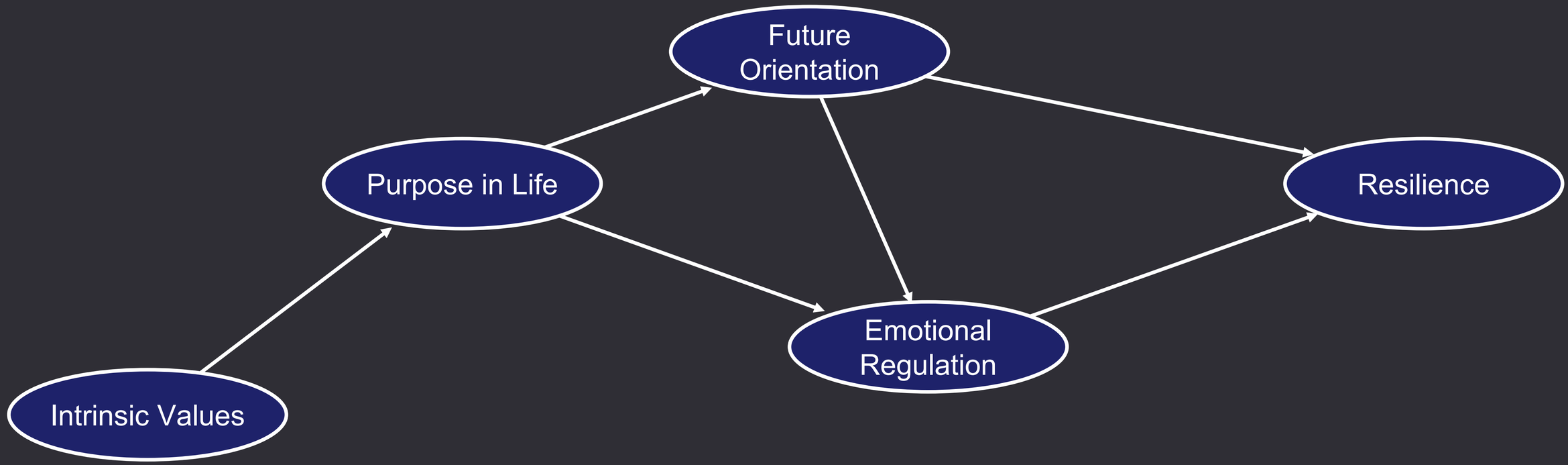
Structural Equation Model (with latent indicators): Predictors of Resilience (BRS) May 2021 Harris-Kumanu Purpose Poll. (n=1,666; CFI=.9746, RMSEA=.0397)



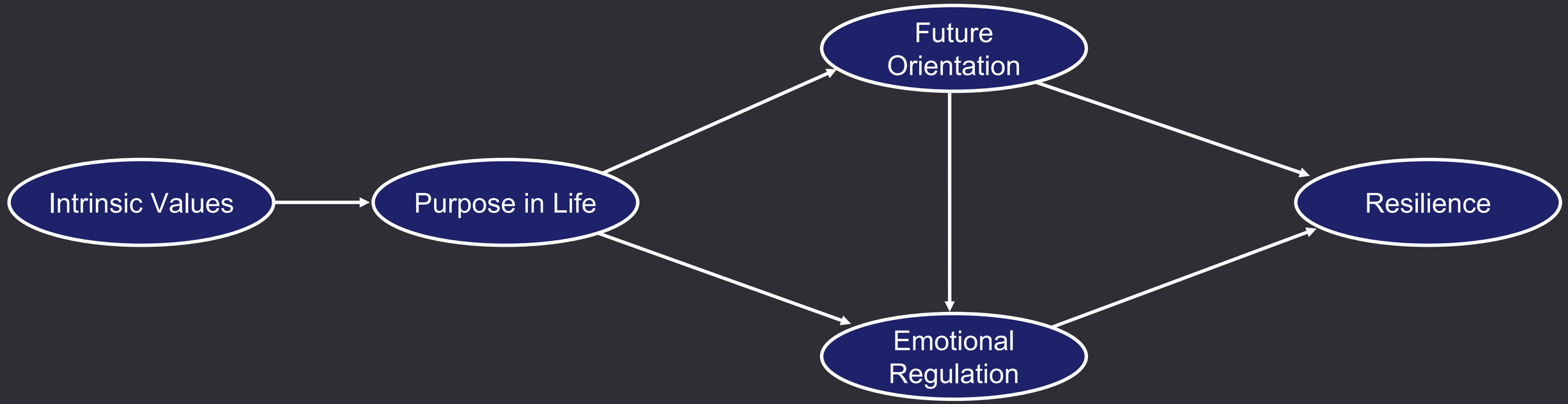
Structural Equation Model (without latent indicators): Predictors of Resilience (BRS) May 2021 Harris-Kumanu Purpose Poll. (n=1,666; CFI=.9746, RMSEA=.0397)

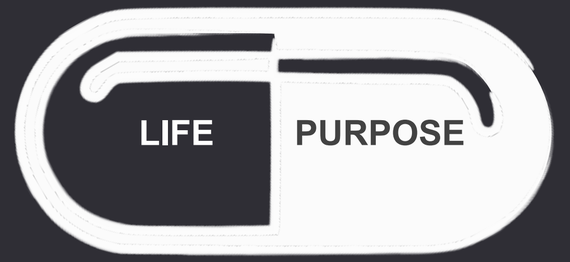


Structural Equation Model (without latent indicators): Predictors of Resilience (BRS) May 2021 Harris-Kumanu Purpose Poll. (n=1,666; CFI=.9746, RMSEA=.0397)



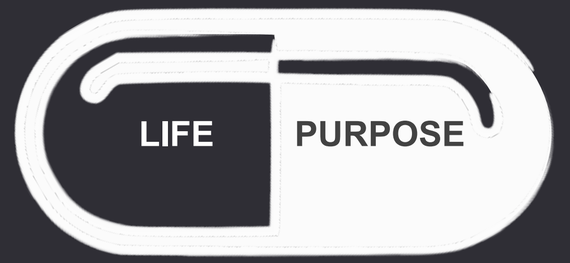
Conceptual Model of Purpose and Resilience





Finding purpose…

What matters most?



Who relies on you?

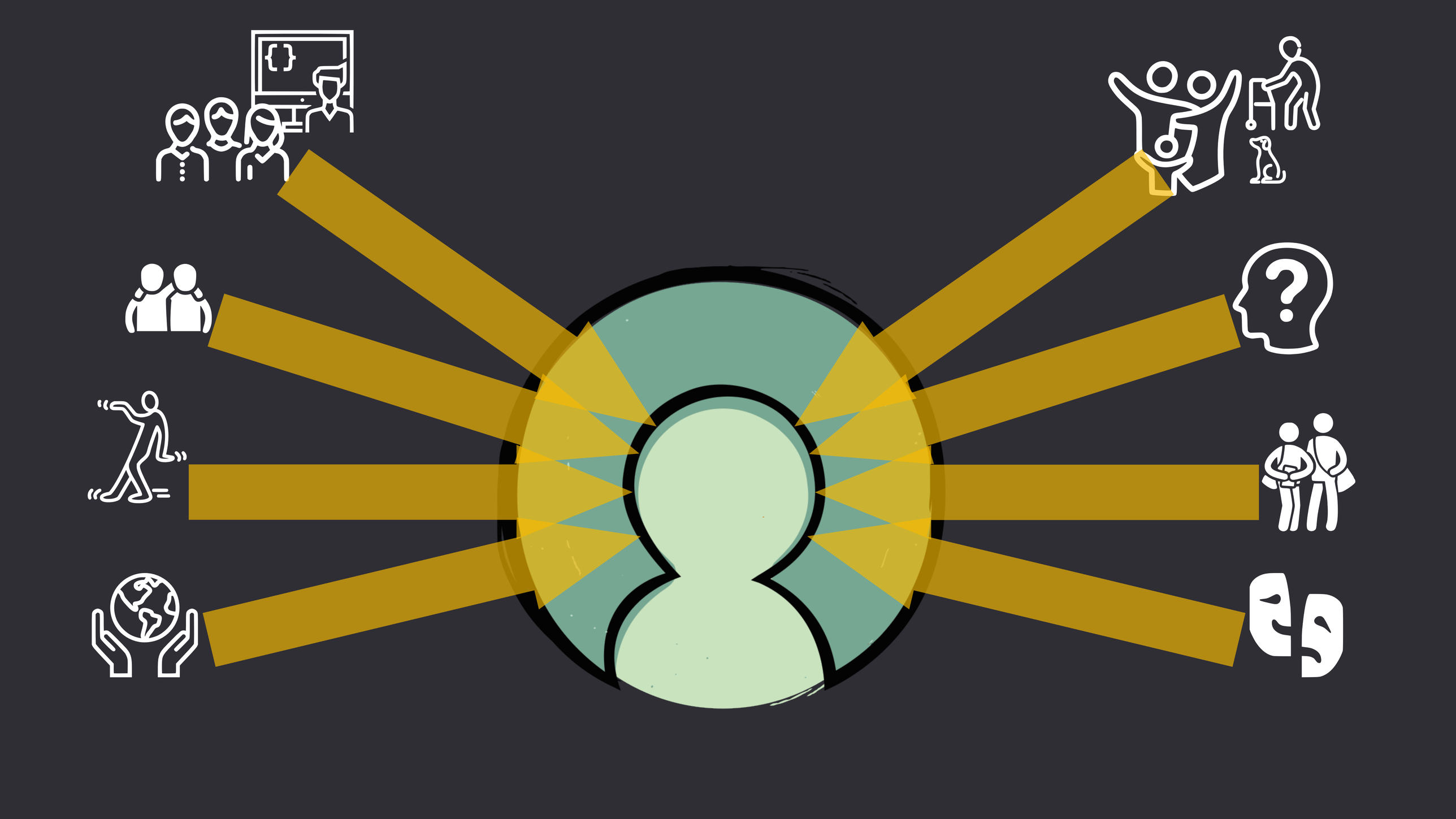
Who inspires you?

What causes do you care about?

What are you grateful for?

What gets you out of bed in the morning?

How do you want to be remembered?



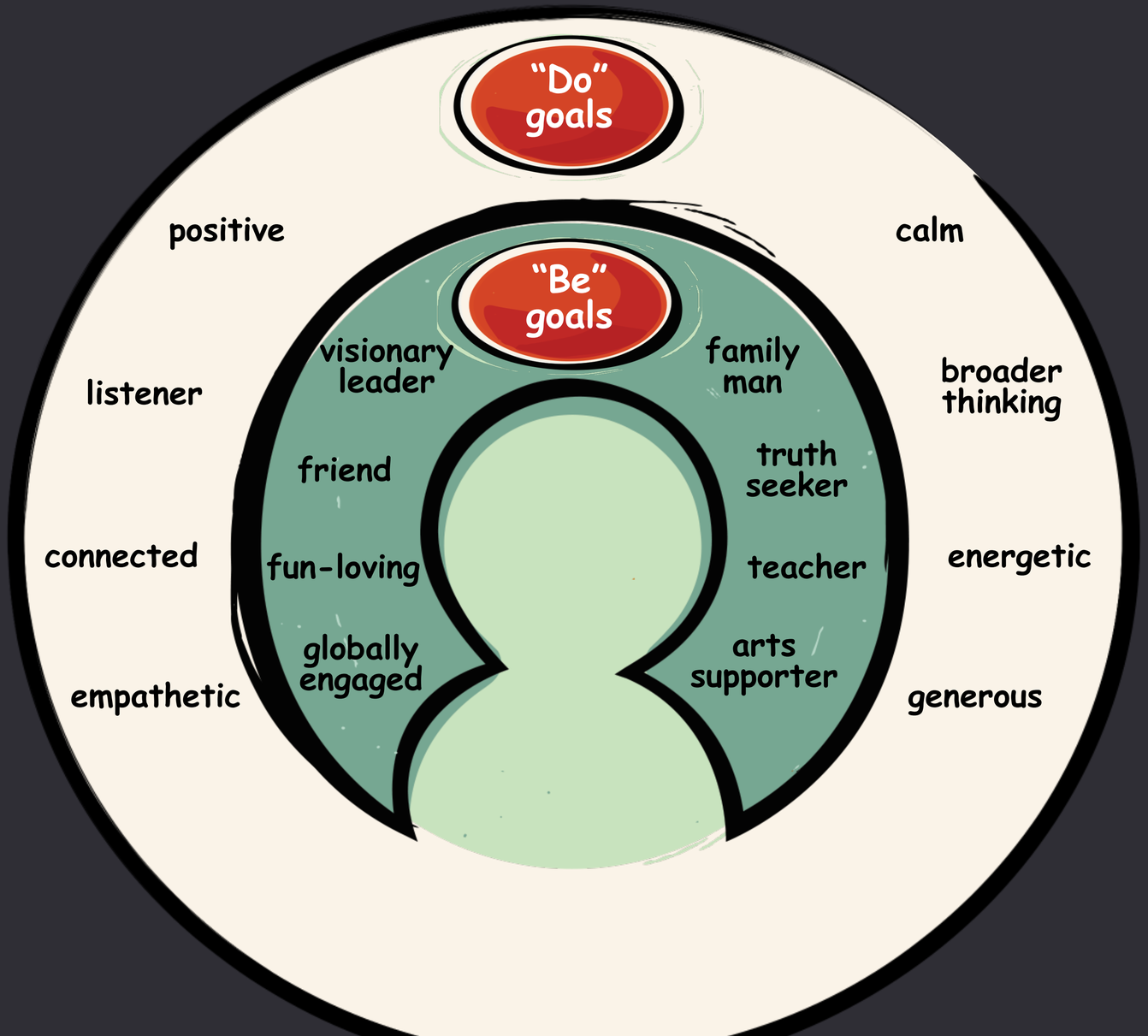
To be a family man, visionary leader, friend, and teacher. To be a seeker and supporter of truth and beauty. To help the world become more purposeful and to get people onto the dance floor!

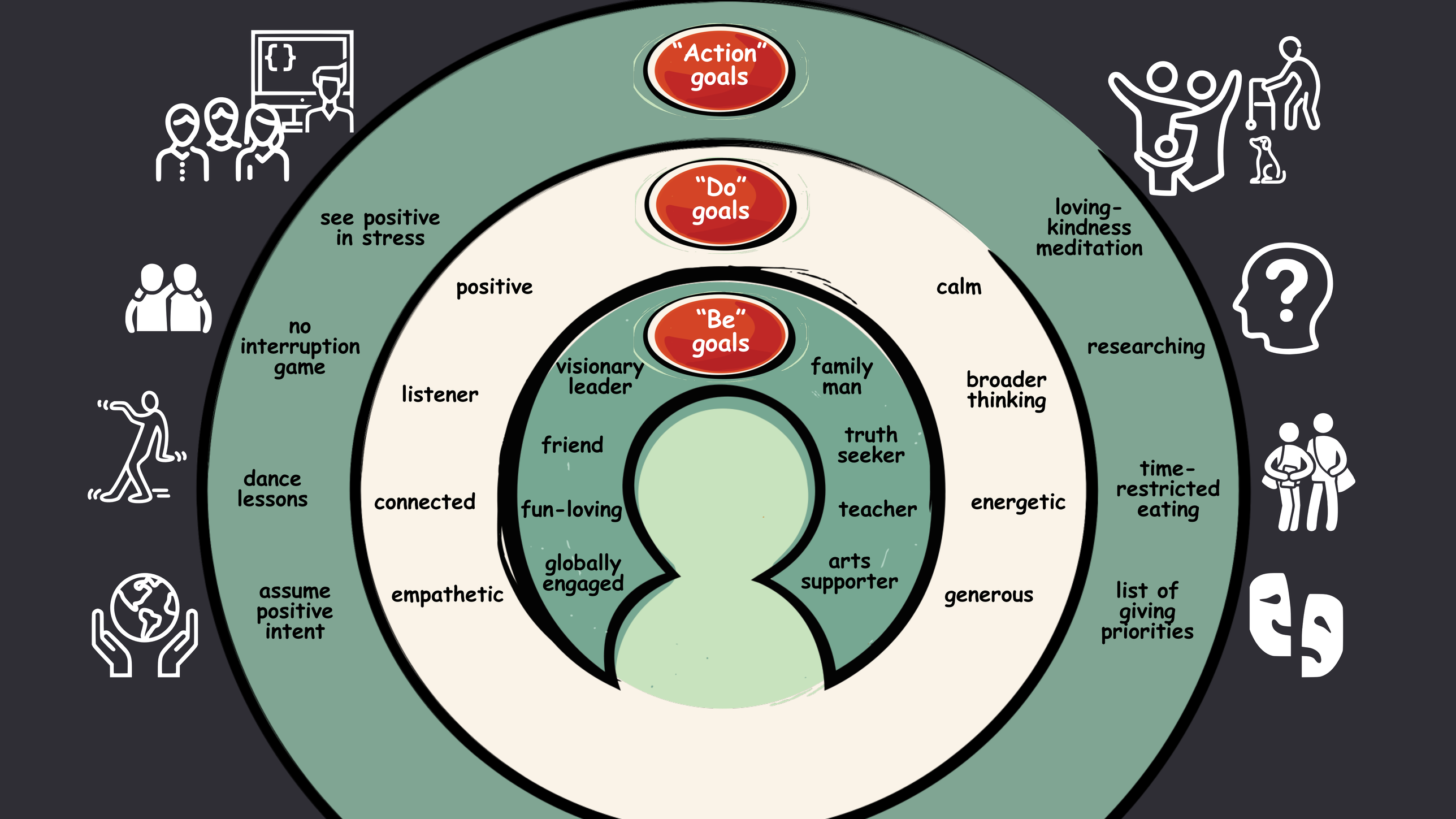
Vic Strecher

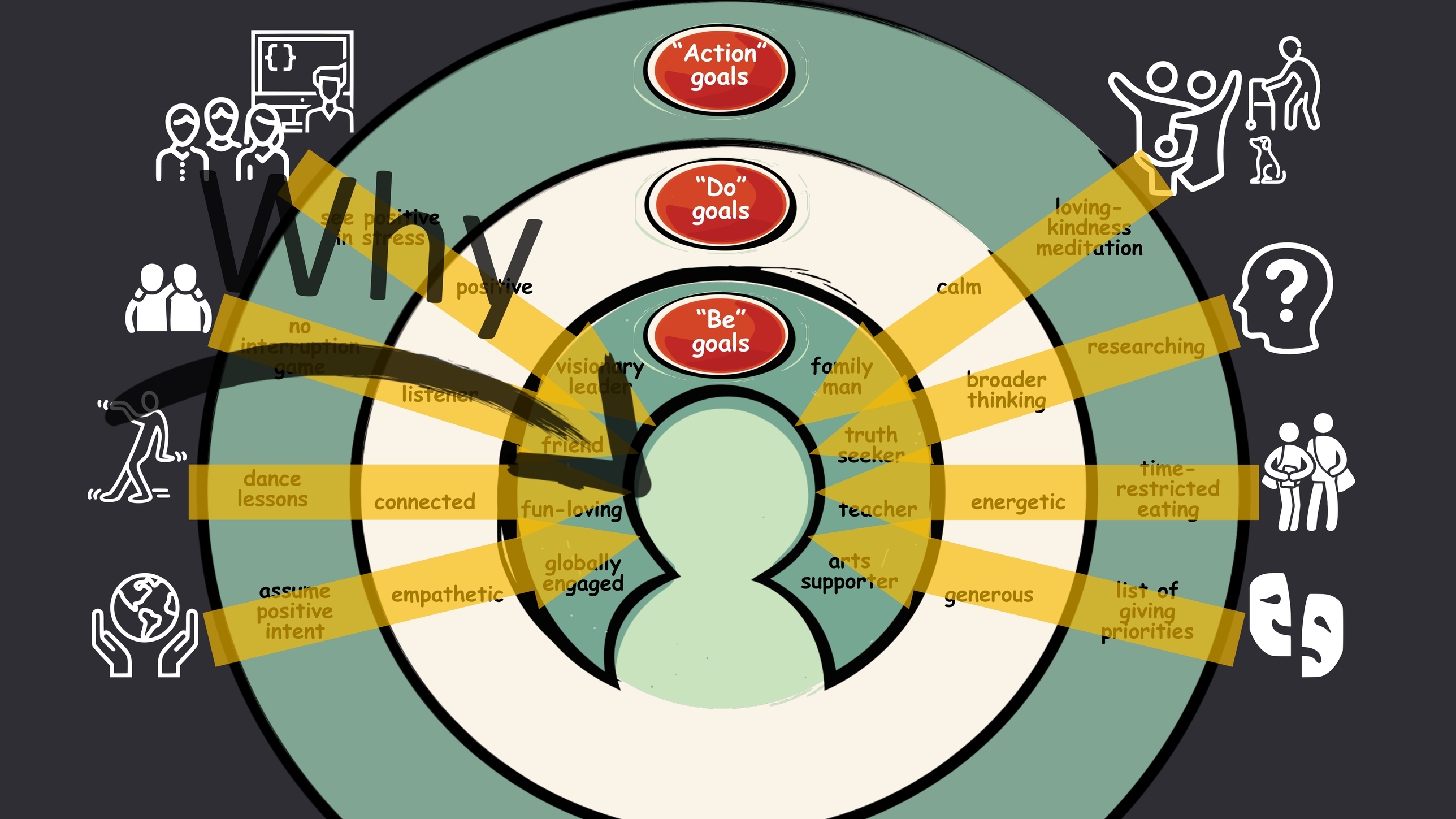
Born 1955

Died Today

A family man, visionary leader, friend, and teacher. Enthusiastic Seeker of truth and beauty. Helped the world become more purposeful. He got us on the dance floor!


"Do" goals
"Be" goals
positive
calm
listener
broader thinking
connected
energetic
empathetic
generous
visionary leader
family man
friend
truth seeker
fun-loving
teacher
globally engaged
arts supporter


"Action" goals
"Do" goals
"Be" goals
see positive in stress
positive
no interruption game
listener
dance lessons
connected
assume positive intent
empathetic
visionary leader
friend
fun-loving
globally engaged
family man
truth seeker
teacher
arts supporter
calm
broader thinking
energetic
generous
loving-kindness meditation
researching
time-restricted eating
list of giving priorities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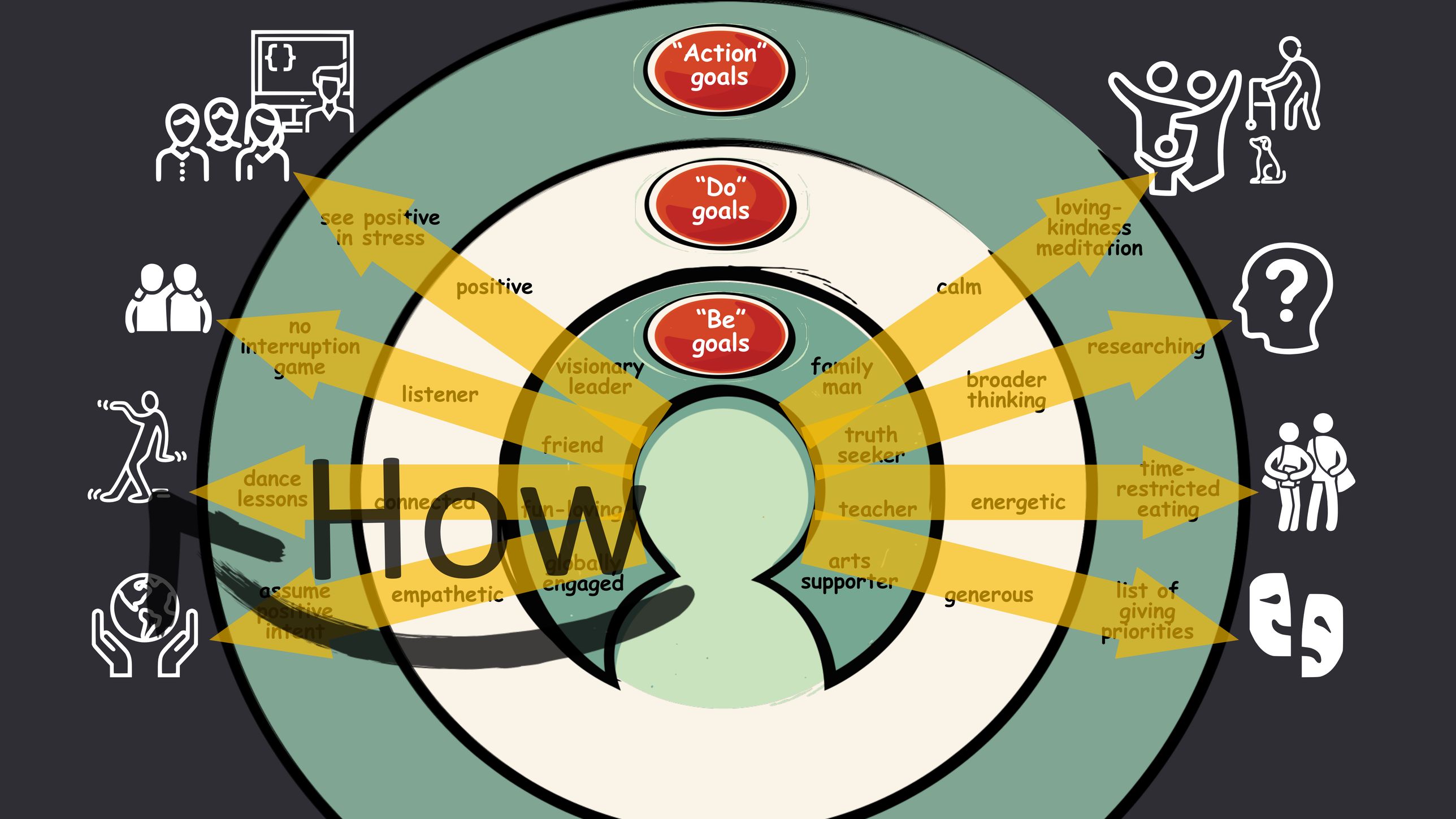
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connected
fun-loving
teacher
energetic
time-restricted eating
globally engaged
arts supporter
assume positive intent
empathetic
generous
list of giving priorities


"Action" goals
"Do" goals
"Be" goals


To be a healer and leader of a team helping the sick and the dying. To serve God.

"Action" goals

"Do" goals

"Be" goals

serve God

stay in touch

healer and leader

energy

empathy

prayer

sleep

eating

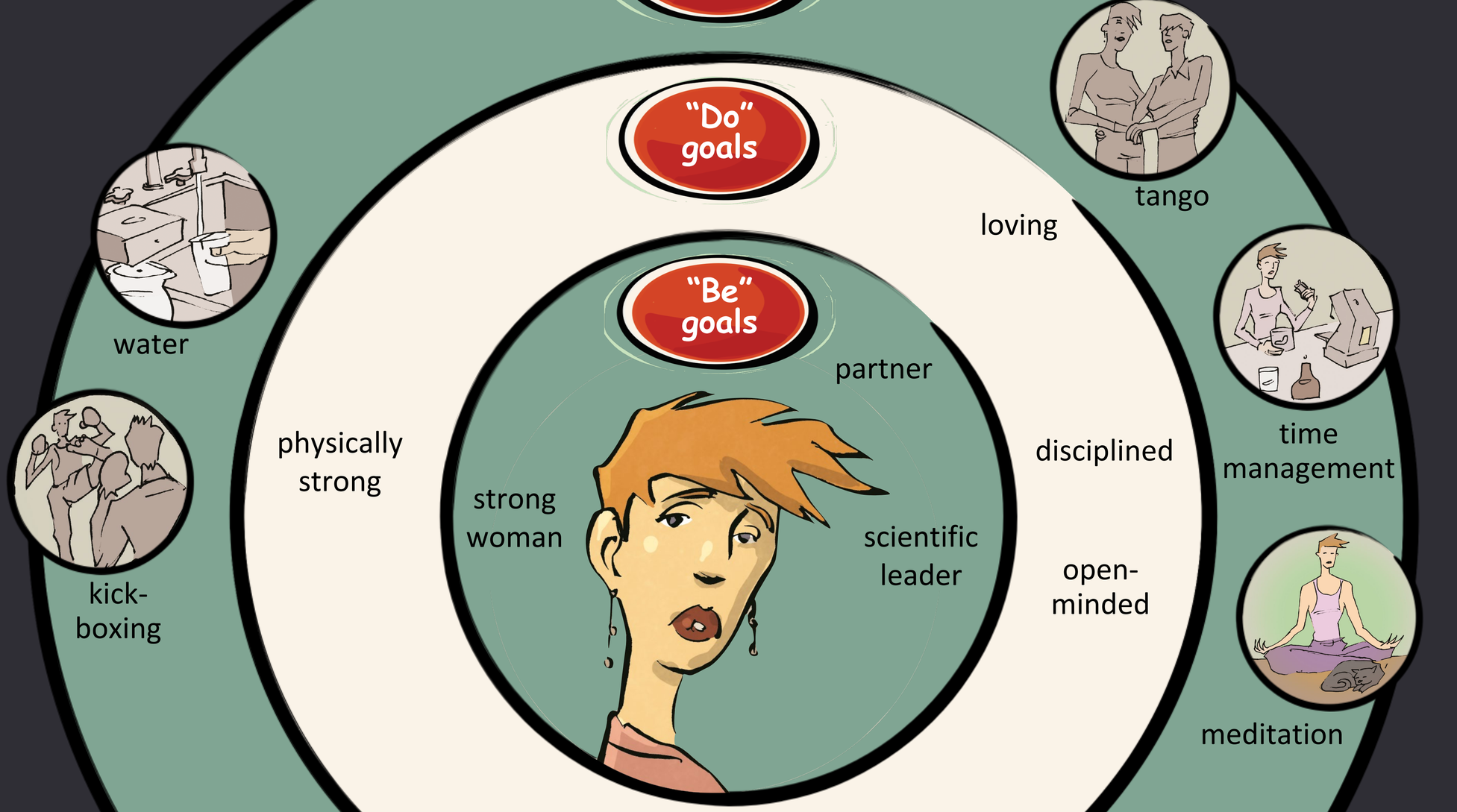
listening


To be a strong woman, finding new discoveries that help others. To be a loving partner.

"Action" goals

"Do" goals

"Be" goals



strong woman

partner

scientific leader

physically strong

loving

disciplined

open-minded

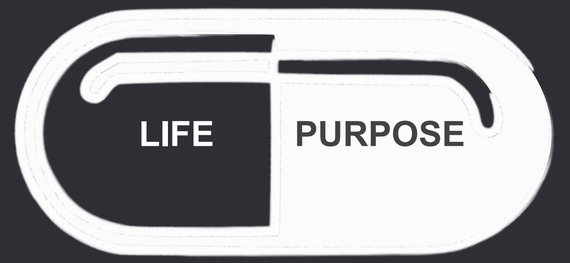
water

kick-boxing

tango

time management

meditation



Interventions…

Purpose in life and use of preventive health care services

Eric S. Kim[a,1], Victor J. Strecher[b], and Carol D. Ryff[c,d]

[a]Department of Psychology, University of Michigan, Ann Arbor, MI 48109; [b]Department of Health Behavior & Health Education, University of Michigan School of Public Health, Ann Arbor, MI 48109; and [c]Department of Psychology and [d]Institute on Aging, University of Wisconsin, Madison, WI 53705

Edited* by Bruce S. McEwen, The Rockefeller University, New York, NY, and approved September 30, 2014 (received for review August 2, 2014)

Purpose in life has been linked with better health (mental and physical) and health behaviors, but its link with patterns of health care use are understudied. We hypothesized that people with higher purpose would be more proactive in taking care of their health, as indicated by a higher likelihood of using preventive health care services. We also hypothesized that people with higher purpose would spend fewer nights in the hospital. Participants (*n* = 7,168) were drawn from the Health and Retirement Study, a nationally representative panel study of American adults over the age of 50, and tracked for 6 y. After adjusting for sociodemographic factors, each unit increase in purpose (on a six-point scale) was associated with a higher likelihood that people would obtain a cholesterol test [odds ratio (OR) = 1.18, 95% confidence interval (CI) = 1.08–1.29] or colonoscopy (OR = 1.06, 95% CI = 0.99–1.14). Furthermore, females were more likely to receive a mammogram/X-ray (OR = 1.27, 95% CI = 1.16–1.39) or pap smear (OR = 1.16, 95% CI = 1.06–1.28), and males were more likely to receive a prostate examination (OR = 1.31, 95% CI = 1.18–1.45). Each unit increase in purpose was also associated with 17% fewer nights spent in the hospital (rate ratio = 0.83, 95% CI = 0.77–0.89). An increasing number of randomized controlled trials show that purpose in life can be raised. Therefore, with additional research, findings from this study may inform the development of new strategies that increase the use of preventive health care services, offset the burden of rising health care costs, and enhance the quality of life among people moving into the ranks of our aging society.

services (7, 8). A central challenge therefore is to identify factors that may increase the likelihood of using preventive health care services. This need is particularly critical in the current climate, given that increased access to preventive care has become available with the Affordable Care Act.

The present study examines a psychological factor—purpose in life—as a potentially important influence on the use of preventive health care services. Conceived as a component of well-being, purpose addresses the extent to which individuals see their lives as having meaning, a sense of direction, and goals to live for (9–12). The concept is often viewed as central to well-being and fulfillment in life (10–15).

A growing body of findings from longitudinal epidemiological studies show that purpose predicts reduced morbidity (e.g., reduced risk of Alzheimer's disease and mild cognitive impairment, as well as reduced risk of stroke and myocardial infarction) and extended longevity (10, 16–21). Further work has linked purpose to better regulation of physiological systems (e.g., reduced inflammatory markers and cardiovascular risk factors) as well as brain-based mechanisms (e.g., insular cortex volume, reduced amygdala activation, sustained ventral striatum activation) (22–30). Additionally, a study that examined gene transcriptional profiles found that eudaimonic well-being (an overarching umbrella term that includes purpose) was associated with enhanced expression of antiviral response genes and reduced expression of proinflammatory genes (31). Furthermore, and perhaps most

Association Between Purpose in Life and Glucose Control Among Older Adults

Dina Hafez MD[1,2,3,4] • Michele Heisler MD, MPA[1,2,3,4] • HwaJung Choi PhD[1,3,4] • Claire K. Ankuda MD, MPH[1,3,4] • Tyler Winkelman MD[1,2,3,4] • Jeffrey T. Kullgren MD, MS, MPH[2,3,4]

Published online 10 February 2018

Abstract

Background Greater purpose in life is associated with lower rates of certain chronic diseases. Whether purpose in life can protect against development of prediabetes or type 2 diabetes is unknown.

Purpose To examine the association between purpose in life and blood glucose control among adults ≥50 years.

Methods We conducted a longitudinal cohort study of 3,907 participants of the Health and Retirement Study who at baseline did not have type 2 diabetes or prediabetes. Baseline purpose in life was measured using the Ryff and Keyes' Scales of Psychological Well-Being and grouped into tertiles (high, medium, and low). We used multivariable linear regression to examine the association between baseline purpose in life and HbA1c over 4 years. Multivariable logistic regression was used to examine the association between baseline purpose and incident prediabetes or type 2 diabetes over the same period.

Results After adjusting for sociodemographic factors, body mass index, physical activity, and physical and mental health factors, HbA1c was 0.07 percentage points lower among participants with high purpose than those with low purpose (95% confidence interval [CI] −0.12 to −0.02; p = .011). Participants with high purpose had lower odds of developing prediabetes or type 2 diabetes than those with low purpose (adjusted odds ratio 0.78; 95% CI 0.62 to 0.98; p = .037).

Conclusions Among older adults, greater purpose in life is associated with a lower incidence of prediabetes or type 2 diabetes. Strategies to promote greater purpose in life should be tested as a part of type 2 diabetes prevention efforts.

Keywords Purpose in life • Hemoglobin A1c • Type 2 diabetes mellitus • Prediabetes

Introduction

Purpose in life, defined as the belief that one's life has meaning and direction [1], is a key dimension of psychological well-being [2], and there is growing recognition of its relationship with physical health and longevity [3]. For example, individuals with greater levels of purpose have lower rates of cardiovascular disease [4], cerebrovascular disease [5, 6], sleep disturbance [7], and all-cause mortality [3]. These associations may be mediated, at least in part, by increased engagement in healthy behaviors such as physical activity [8, 9] and routine health screening [10] among individuals with greater levels of purpose. In addition, greater purpose may directly influence physiologic processes, reducing biochemical measures of stress and inflammation that are associated with the development of chronic diseases [11–13].

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3 University of Michigan Medical School, Ann Arbor, MI, USA

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"Strategies to promote greater purpose in life should be tested as a part of type 2 diabetes prevention efforts."

Purpose in Life and Hospitalization for Ambulatory Care-Sensitive Conditions in Old Age

Robert S. Wilson, PhD, **Ana W. Capuano, PhD**, **Bryan D. James, PhD**, **Priscilla Amofa, BA**, **Zoe Arvanitakis, MD**, **Raj Shah, MD**, **David A. Bennett, MD**, and **Patricia A. Boyle, PhD**
Rush Alzheimer's Disease Center (all authors) and Departments of Neurological Sciences (RSW, AWC, ZA, DAB), Behavioral Sciences (RSW, PAB), Internal Medicine (BDJ), and Family Practice (RCS), Rush University Medical Center, Chicago, IL USA

Abstract

Objective—To test the hypothesis that higher level of purpose in life is associated with lower subsequent odds of hospitalization.

Design—Longitudinal cohort study.

Setting—Participants' residences in the Chicago metropolitan area.

Participants—A total of 805 older persons who completed uniform annual clinical evaluations.

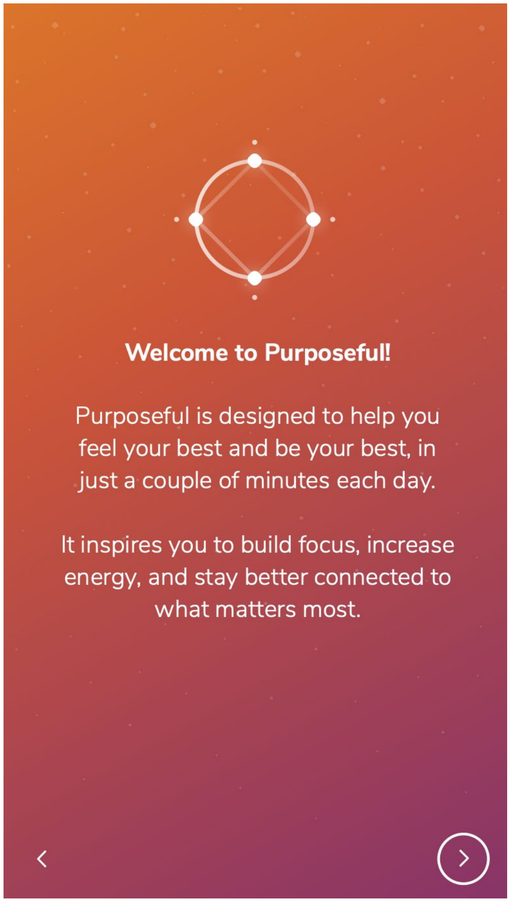
Measurements—Participants annually completed a standard self-report measure of purpose in life, a component of well-being. Hospitalization data were obtained from Part A Medicare claims records. Based on previous research, ICD-9 codes were used to identify ambulatory care-sensitive conditions (ACSCs) for which hospitalization is potentially preventable. The relation of purpose (baseline and follow-up) to hospitalization was assessed in proportional odds mixed models.

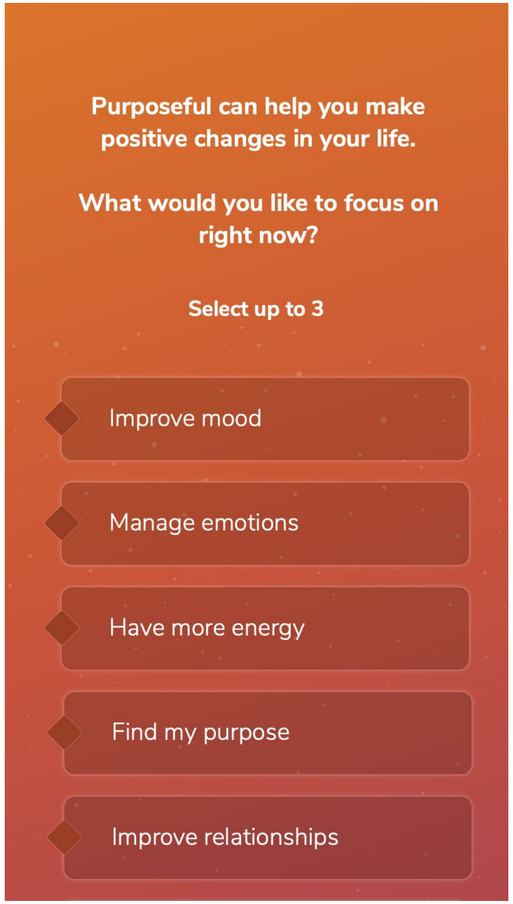
Results—During a mean of 4.5 years of observation, there was a total of 2,043 hospitalizations (442 with a primary ACSC diagnosis, 1,322 with a secondary ACSC diagnosis, 279 with no ACSCs). In initial analyses, higher purpose at baseline and follow-up were each associated with lower odds of more hospitalizations involving ACSCs but not hospitalizations for non-ACSCs. Results were comparable when those with low cognitive function at baseline were excluded. Adjustment for chronic medical conditions and socioeconomic status reduced but did not eliminate the association of purpose with hospitalizations involving ACSCs.

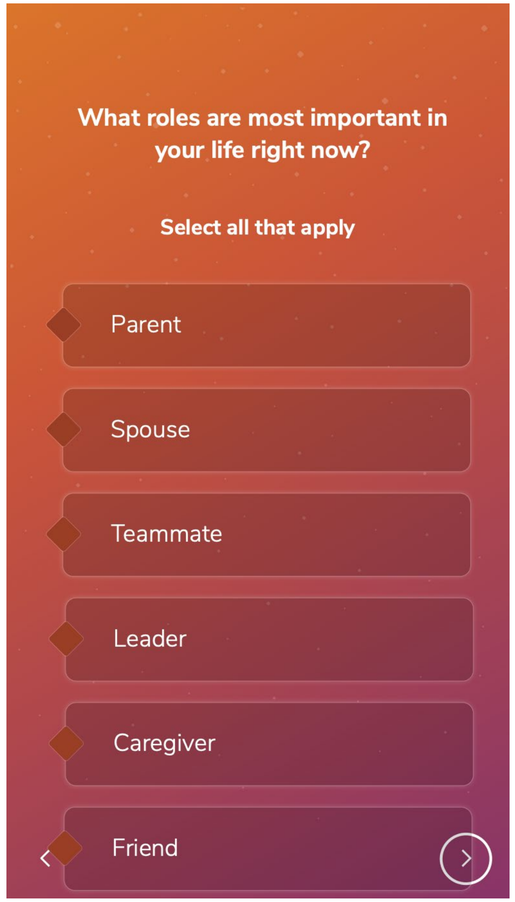
Conclusions—In old age, higher level of purpose in life is associated with lower odds of subsequent hospitalizations for ambulatory care-sensitive conditions.

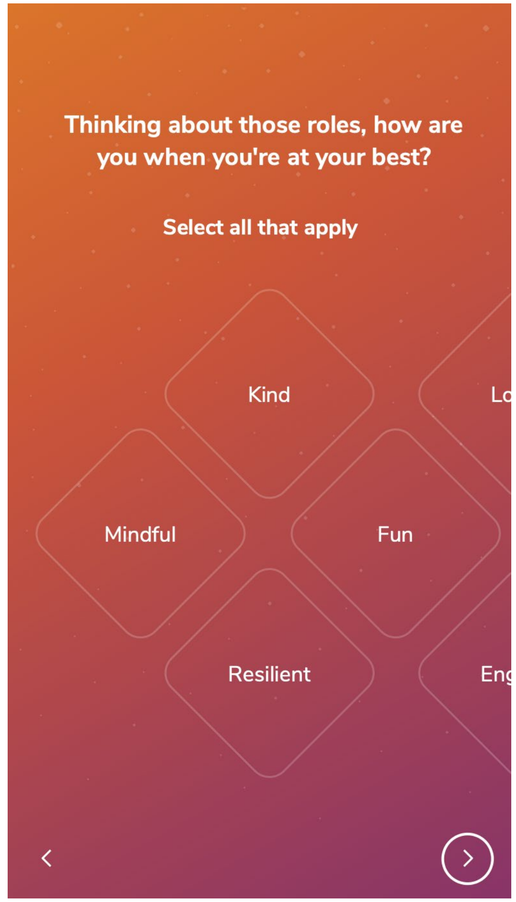
e
hospitalization in older
people.”

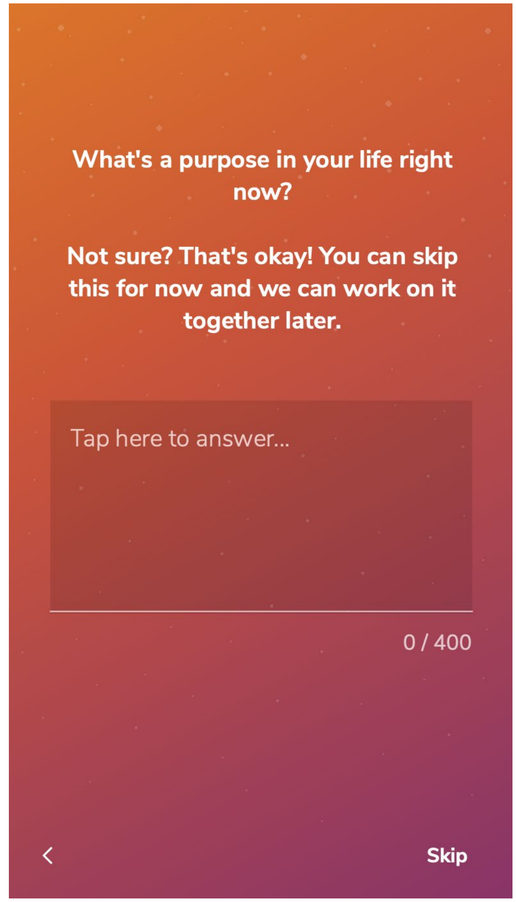
purposeful


Welcome to Purposeful!
Purposeful is designed to help you feel your best and be your best, in just a couple of minutes each day.
It inspires you to build focus, increase energy, and stay better connected to what matters most.

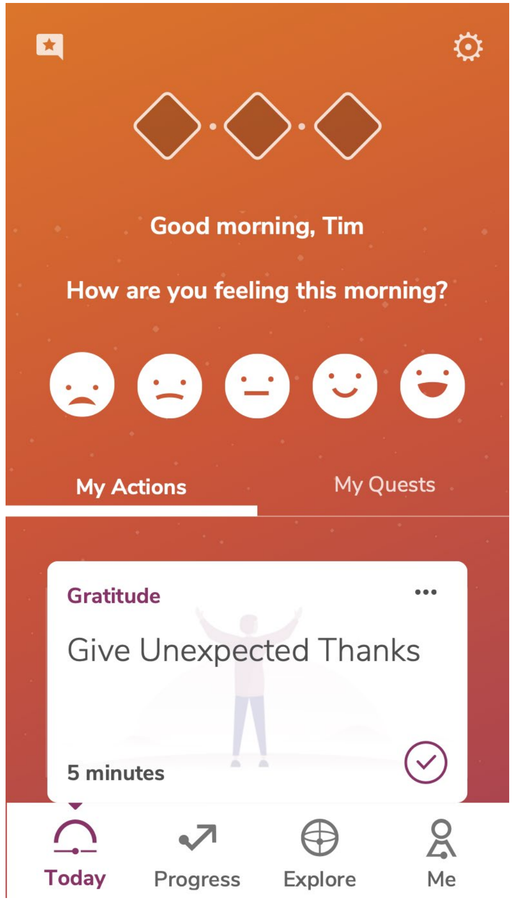

Purposeful can help you make positive changes in your life.
What would you like to focus on right now?
Select up to 3
Improve mood
Manage emotions
Have more energy
Find my purpose
Improve relationships

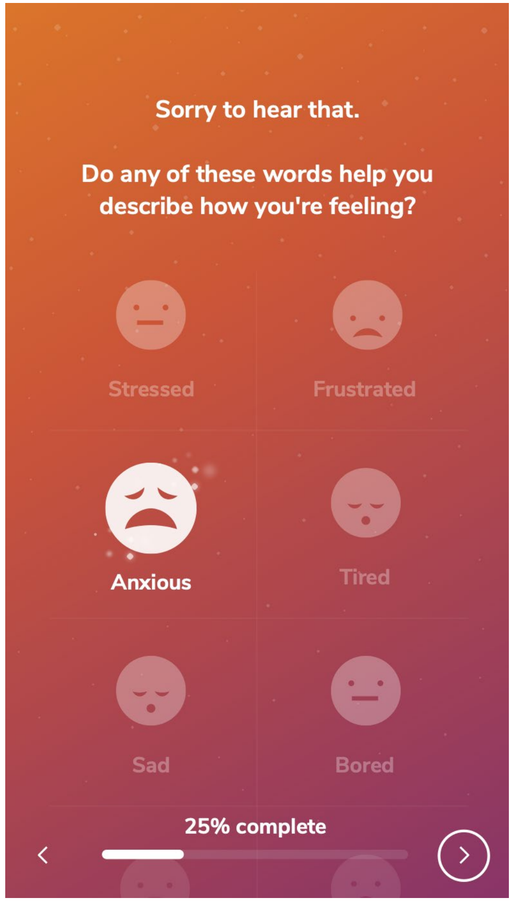

What roles are most important in your life right now?
Select all that apply
Parent
Spouse
Teammate
Leader
Caregiver
Friend

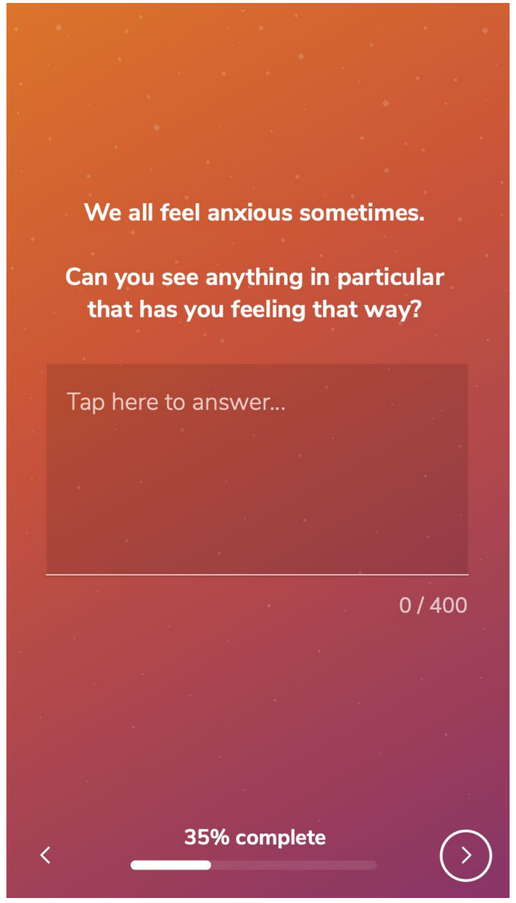

Thinking about those roles, how are you when you're at your best?
Select all that apply
Kind
Mindful
Fun
Resilient

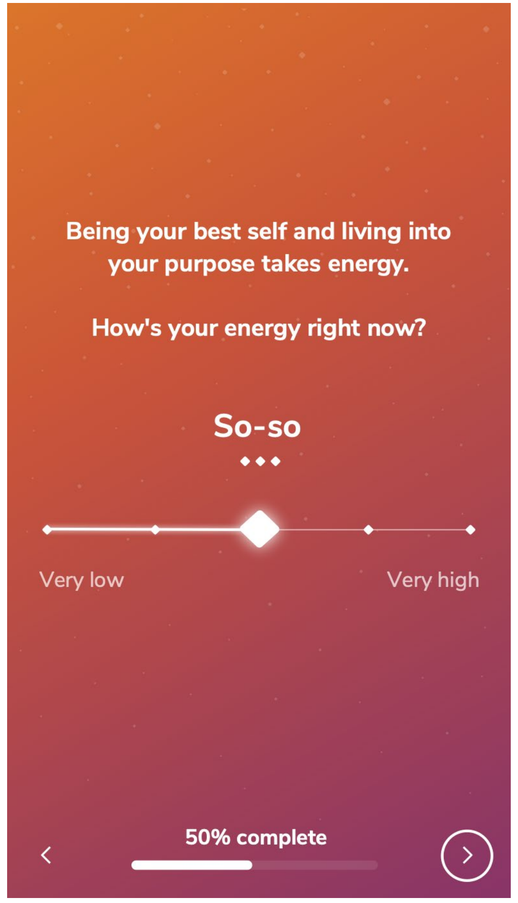

What's a purpose in your life right now?
Not sure? That's okay! You can skip this for now and we can work on it together later.
Tap here to answer...
0 / 400
Skip

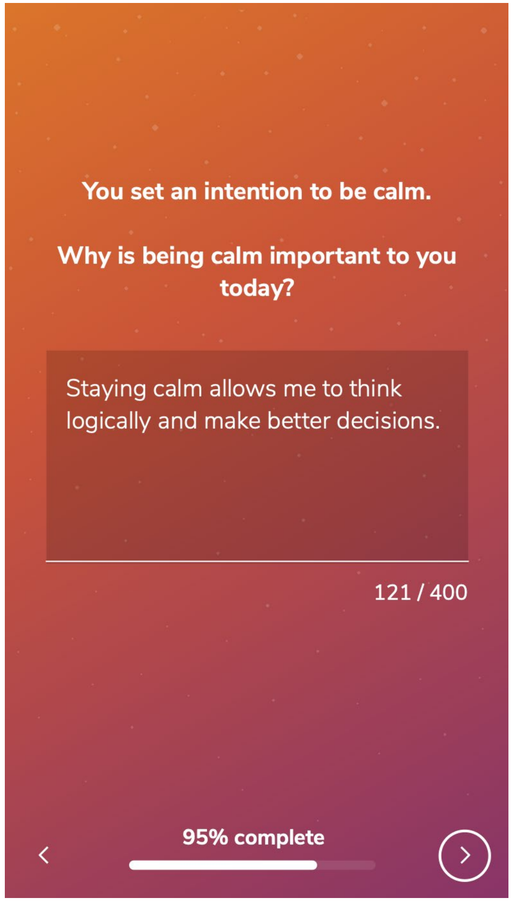
purposeful


Good morning, Tim
How are you feeling this morning?
My Actions
My Quests
Gratitude
Give Unexpected Thanks
5 minutes
Today
Progress
Explore
Me


Sorry to hear that.
Do any of these words help you describe how you're feeling?
Stressed
Frustrated
Anxious
Tired
Sad
Bored
25% complete


We all feel anxious sometimes.
Can you see anything in particular that has you feeling that way?
Tap here to answer...
0 / 400
35% complete


Being your best self and living into your purpose takes energy.
How's your energy right now?
So-so
Very low
Very high
50% complete

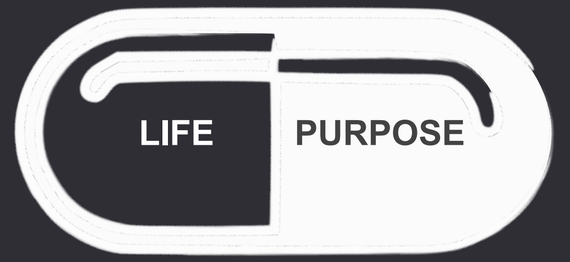

You set an intention to be calm.
Why is being calm important to you today?
Staying calm allows me to think logically and make better decisions.
121 / 400
95% complete


Everything has
been figured
out…


…except how to
live.

Thank you!


Aliya Alimujiang
Tony Burrow
Elissa Epel
Eric Kim
Steve Cole
Yoona Kang
Ethan Kross
Emily Falk



Supporting Resilient Older Adults: A Focus on Life's Purpose

Vic Strecher, PhD, MPH
Professor, University of Michigan
Founder, CEO, Kumanu