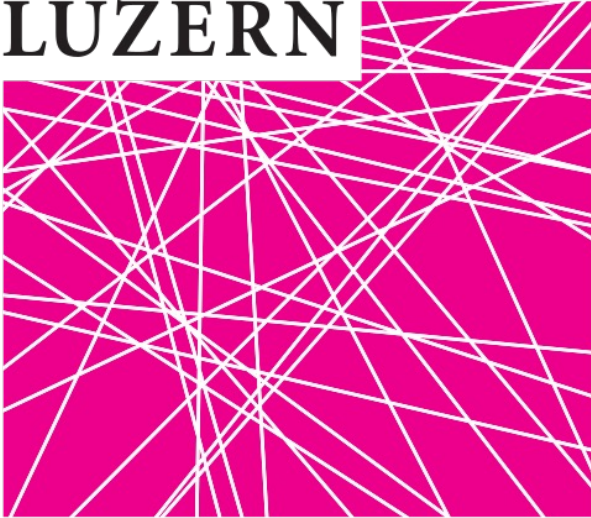


**UNIVERSITÄT
LUZERN**



**YOU, US, MEANINGFUL CHANGE
AND OTHER ISSUES OF THE HEART**

**PROF. ANDREW GLOSTER
FACULTY OF BEHAVIOURAL SCIENCES AND PSYCHOLOGY**

DISCLOSURES

Books

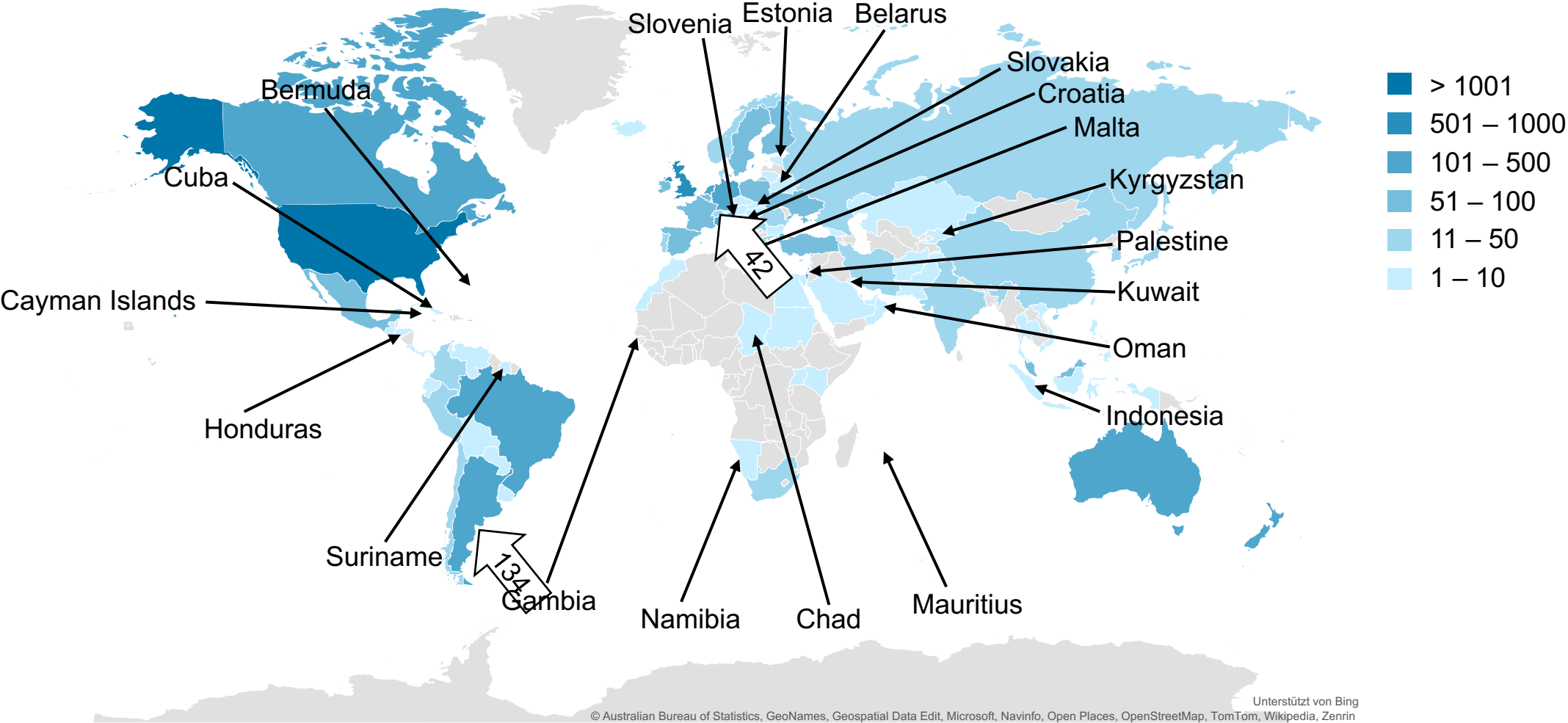
I receive royalties from books published by Hogrefe; Wiley; & Kohlhammer.

UNIVERSITÄT
LUZERN

IT HAS BEEN MY HONOR TO SERVE YOU



YOU MAKE ACBS A REMARKABLE ASSOCIATION
ACBS MEMBERS ACROSS THE WORLD



REMARKABLE VARIETY OF APPROACHES & DOMAINS

Basic Science

Language and Cognition

Evolution

Data Analysis

Training & Education

Public Health

Applied Intervention Science

Psychotherapy

Coaching

Family Caregiving

Schools

Organizations

Groups – per se

Values to Action

Prosocial

Public Health Interventions

REMARKABLE VARIETY OF APPROACHES & DOMAINS

Basic Science

Language and Cognition

Evolution

Data Analysis

Training & Education

Public Health

Applied Intervention Science

Psychotherapy

Coaching

Family Caregiving

Schools

Organizations

Groups – per se

Values to Action

Prosocial

Public Health Interventions

PSYCHOLOGICAL FLEXIBILITY

Set of Intra- and Inter-personal skills that promote:


- Openness
- Awareness
- Engagement in meaningful activities

BREADTH

“...psychological flexibility is relevant to all forms of human action and change.”

Hayes, Strosahl, & Wilson, 2012, pg. 143

WE’VE DONE A GOOD JOB




Journal of Contextual Behavioral Science 18 (2020) 181–192

Contents lists available at [ScienceDirect](#)

Journal of Contextual Behavioral Science

journal homepage: www.elsevier.com/locate/jcbs





Available online at [www.sciencedirect.com](#)

ScienceDirect

Behavior Therapy 48 (2011) 1–10

Review Articles

The empirical status of acceptance and commitment therapy: A review of meta-analyses[☆]

Andrew T. Gloster^{a,*}, Noemi Walder^a, Michael E. Levin^b, Michael P. Twohig^b, Maria Karekla^c



A Meta-Analysis of Compassion-Based Interventions for the Treatment of Anxiety and Depression: A State-of-the-Art Review

However, there is more to this story

James N. Kirby
Cassandra L. Tellegen
Stanley R. Steindl
The University of Queensland

Mindfulness-based therapy: A comprehensive meta-analysis

Bassam Khoury^{a,*}, Tania Lecomte^a, Guillaume Fortin^a, Marjolaine Masse^a, Phillip Therien^a, Vanessa Bouchard^b, Marie-Andrée Chapleau^a, Karine Paquin^a, Stefan G. Hofmann^c

^a Department of Psychology, Université de Montréal, Canada
^b Department of Psychology, Université Laval, Canada
^c Department of Psychology, Boston University, United States





WHY DO PEOPLE GO TO THERAPY?

- Social domains rated among most important goals (Grosse & Grawe, 2002)
- Patients rate social values as most important in therapy (Wersebe et al., 2017)
- Return to normal level of social functioning was most important factor in determining remission in outpatients with MDD (Zimmermann et al., 2006)
- Belonging is a fundamental need (e.g., Gloster, Haller, & Greifeneder, 2021)
- When impaired, high & pervasive levels of dysfunction (e.g., Stein & Kean, 2000)



OVERARCHING QUESTIONS

- How can we improve our therapies?
 1. Psychotherapy
- What do we really know about our patient's life outside the therapy room and does it matter?
 2. Epidemiology/Public Health
 3. Daily Experience
- Do the scientifically derived principles that we use in therapy matter outside the therapy context – and if so, can they be harnessed to help beyond the clinic?
 4. Social and Prosocial

UNIVERSITÄT
LUZERN



**MULTI-METHOD &
MULTI-LEVEL**

1. PSYCHOTHERAPY



PSYCHOTHERAPY...

Works!

- On Average
- Empirical Support
- Most Mental Disorders
- Across Numerous Psychotherapies





66%

WITH LONG-TERM SUCCESS...

...TWO YEARS LATER THE EFFECTS WERE STABLE

~~BUT...~~

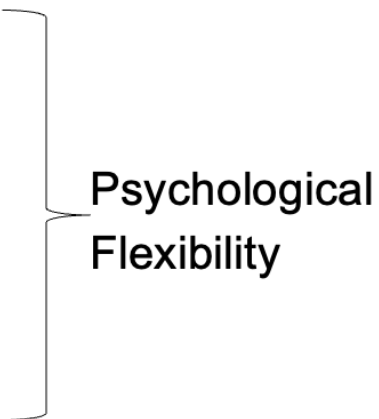
AND...

33%

PROFOUND IMPACT...

- Continued suffering
 - Decreased quality of life
 - Increased mortality
 - Increased suicide rates

WHAT COULD HELP A PATIENT WHO DOES NOT PROFIT FROM THE FIRST/ GOLD STANDARD TREATMENT?

- Per Definition:
 - Stuck
 - Having Difficulty Changing
 - “Inflexible”
 - Change the Client’s relationship to their symptoms
 - Acceptance- and Mindfulness-based approaches are promising
(Gloster et al., 2020; Arch & Ayers, 2013)
 - Focus on functioning
- 
- Psychological
Flexibility

THE IMPORTANCE OF WILLINGNESS DURING EXPOSURE



“How Willing Are You to Engage in Exposure?”

Those who drop out of treatment differ significantly from those who complete the exposure:

$$F(1, 226) = 3.89, p < .05$$

SAMPLE

- n = 43 patients
- Sex: 69.8% Female
- Mean Age: 37.2 y.o. (SD = 9.3)

Mean 42.2 Previous Sessions!

4-Week Manualized Treatment

WITH A DIFFERENT TYPE OF CONVERSATION



"What do you want your
life to stand for?"

RESULTS

66%/33%

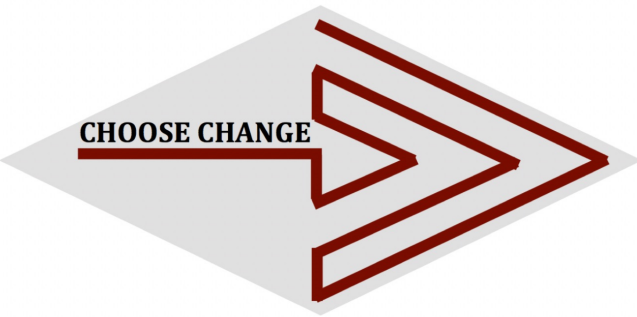


80%

ACT lead to an improvement in 80% of the patients
who did not previously respond.

WHAT CAN WE TAKE AWAY FROM THIS STUDY?

- ACT (Psychological Approach) Appears Feasible for Treating Refractory Anxiety Patients
 - ...with longitudinal stability
 - ...in a tough crowd
 - ...using therapists with no prior ACT experience
 - ...with evidence for hypothesized processes
- Mindfulness-based approaches may be especially useful for patients with moderate to severe depression
- Hope for the “Hidden Third”



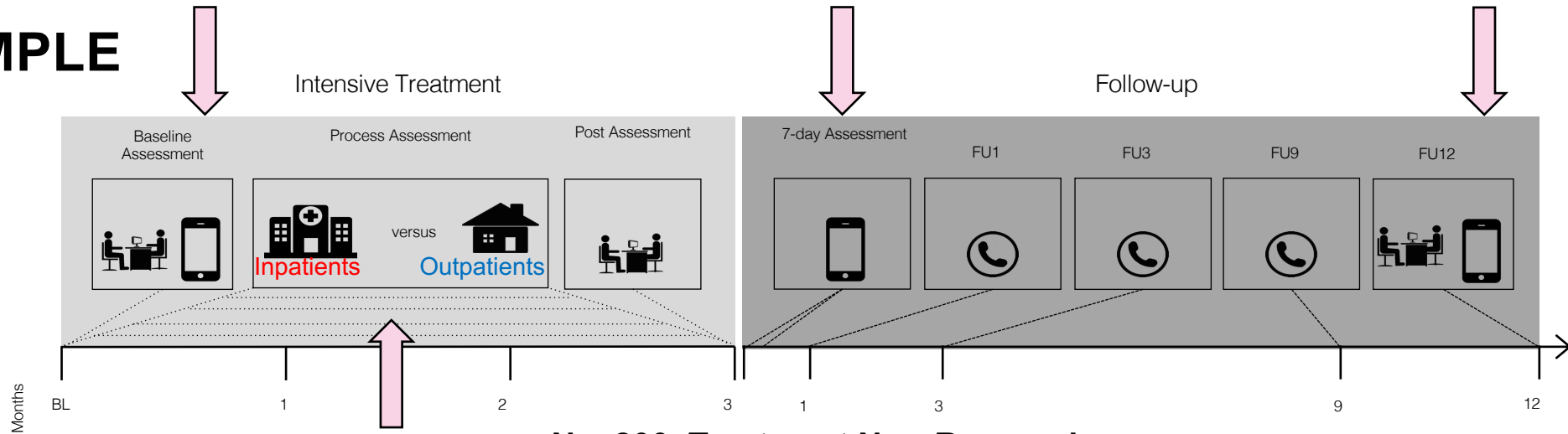
Choose Change:

An ACT longitudinal
effectiveness study

CHOOSE CHANGE:

**AN ACT
LONGITUDINAL
EFFECTIVENESS
STUDY**

SAMPLE



- **N = 200, Treatment Non-Responders**
 - n = 108 Inpatient
 - n = 92 Outpatient

Therapist
Driven
Decisions –
Not
Manualized!

- **Transdiagnostic**

Depression – 29.5%
Anxiety – 39.4 %
OCD – 20.2 %
Somatoform – 4.1 %

- **Comorbidity:**

1 – 36.5%
2 – 20.2%
3+ - 12.4%

- **Chronic Suffering**

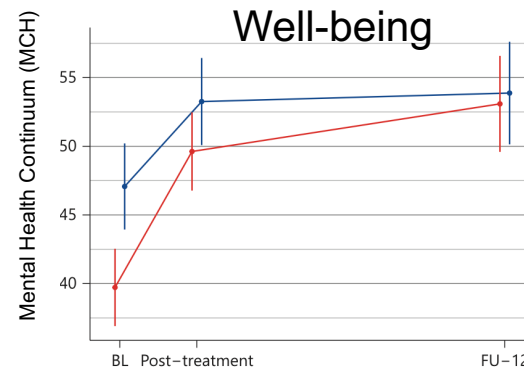
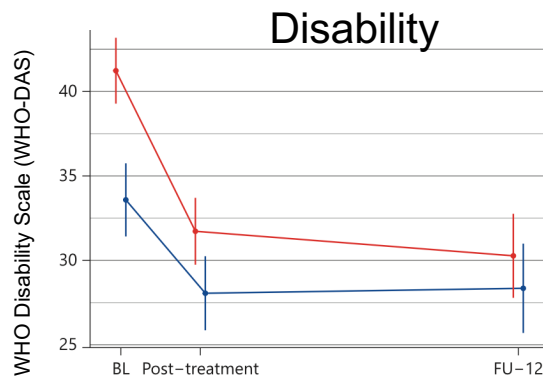
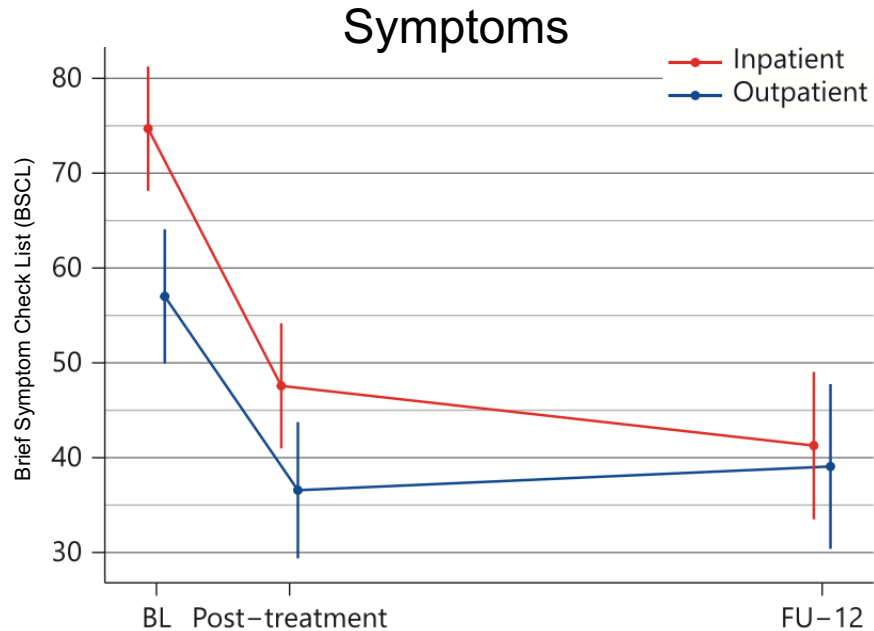
Previous Treatment History:

Courses of Psychotherapy – 1.9 yrs
Courses of Pharmacology – 1.4 yrs

Duration of Previous TxS – 3.9 yrs

Latency since Complaint began –
12.7 yrs

MAIN OUTCOMES

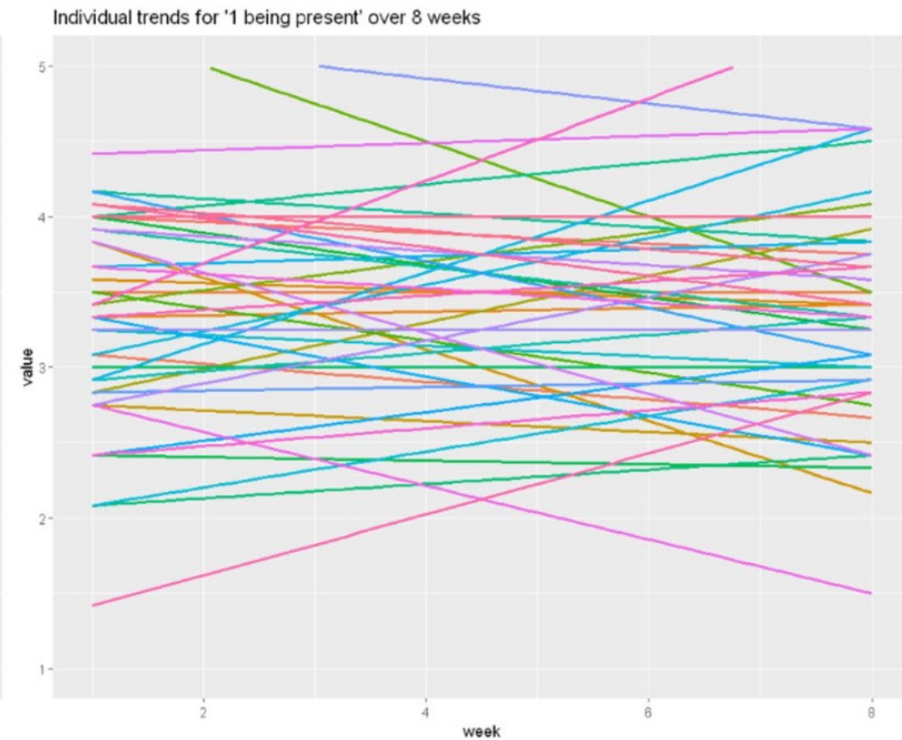
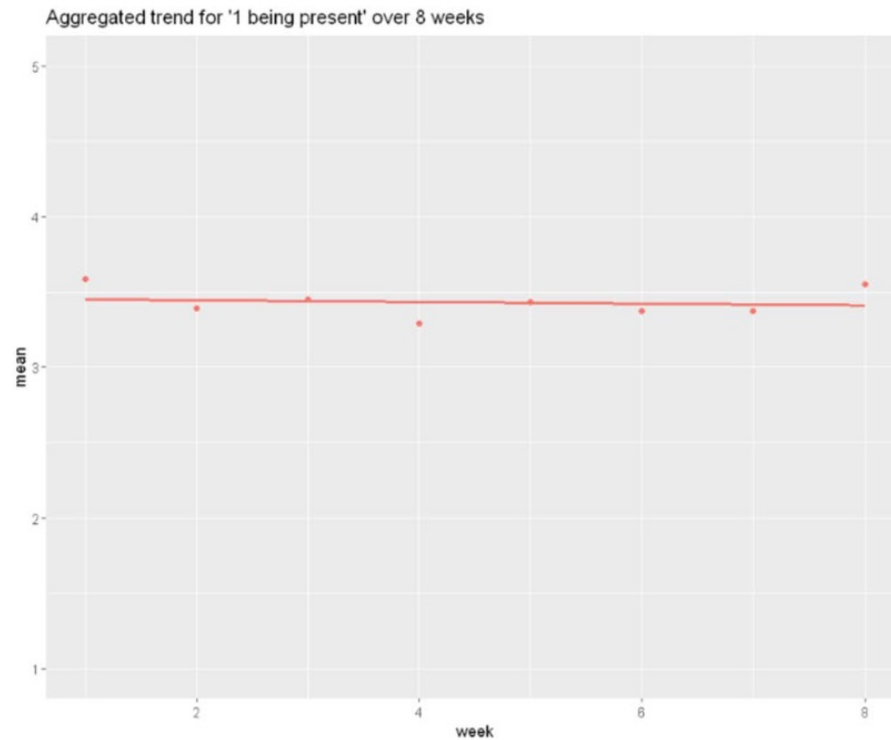


- Large, Significant Change
- Stable through one year follow-up

- Response Rates
- 80% - any improvement
- 47% - Reliable Change Index
- 4% - Reliable Deterioration

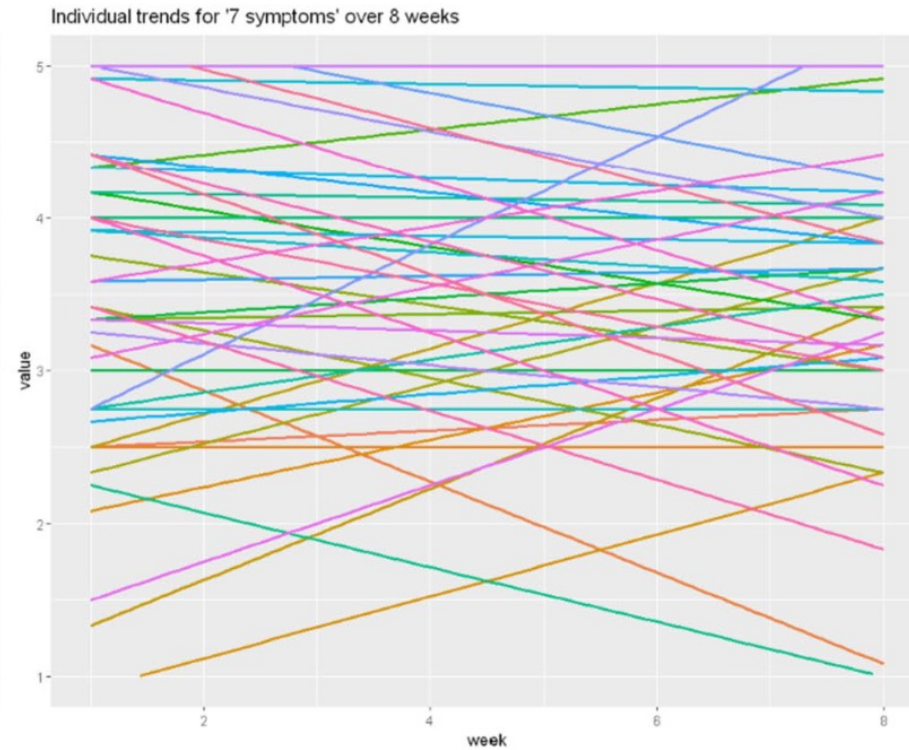
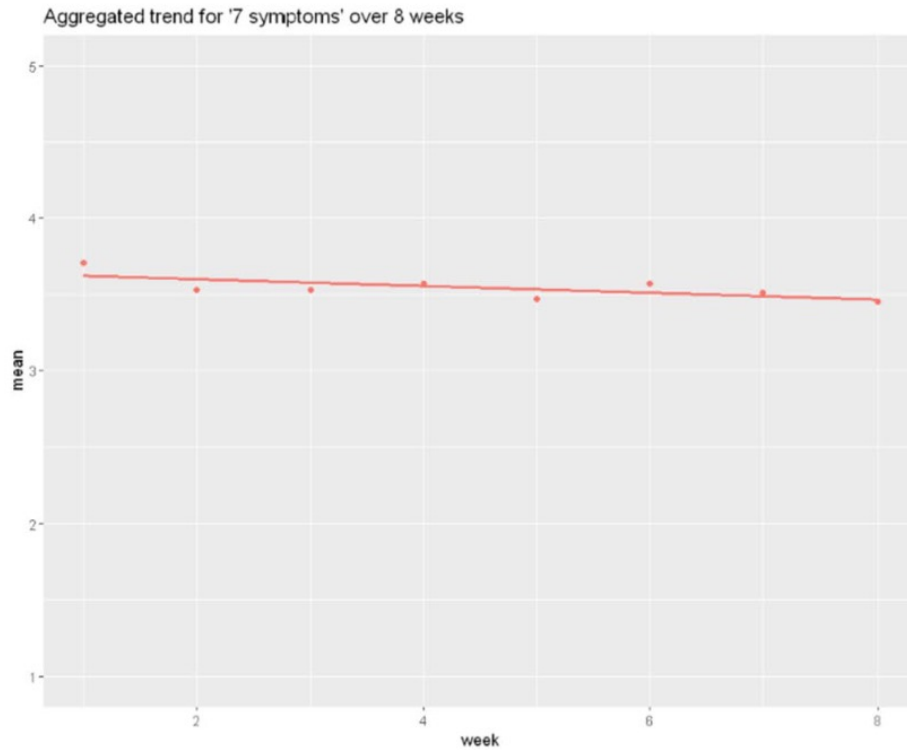
AVERAGE ISN'T ALWAYS ENOUGH

Aggregate vs. Individual Change: Mindfulness

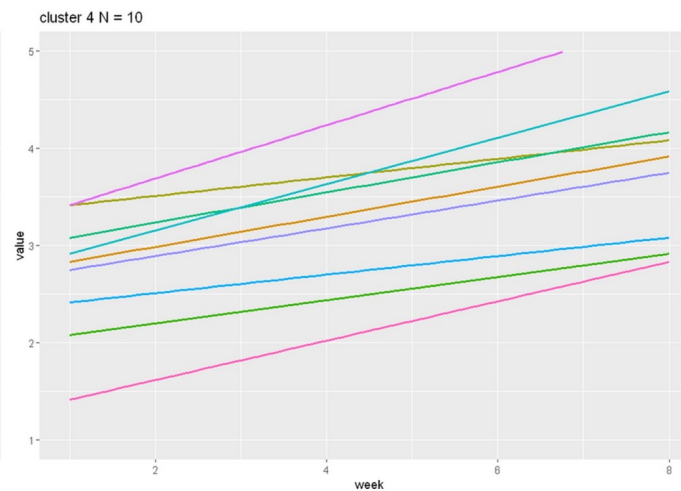
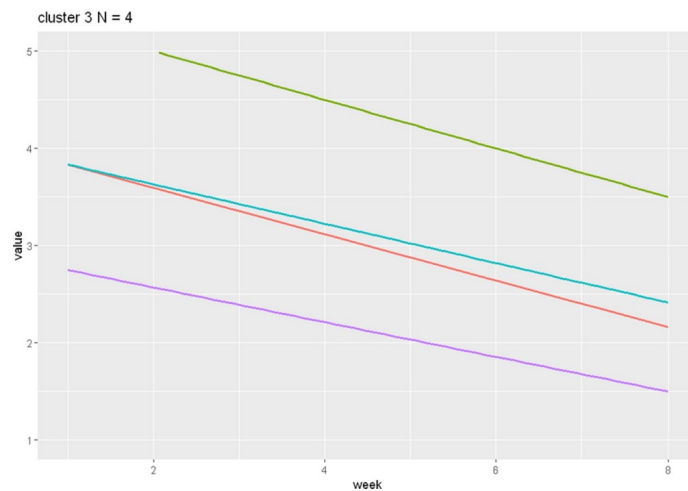
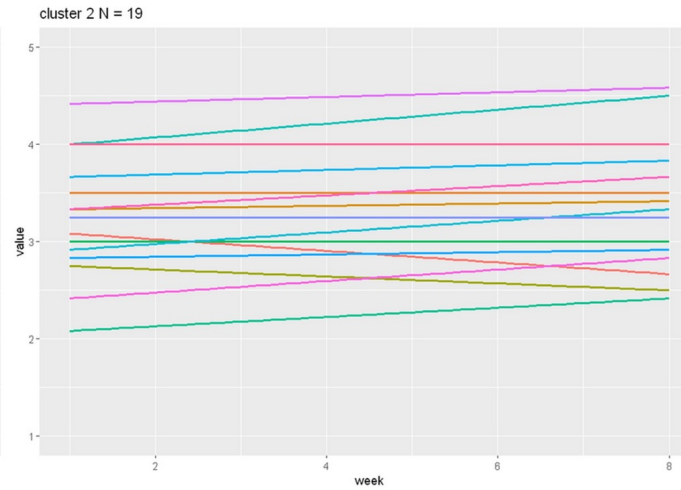
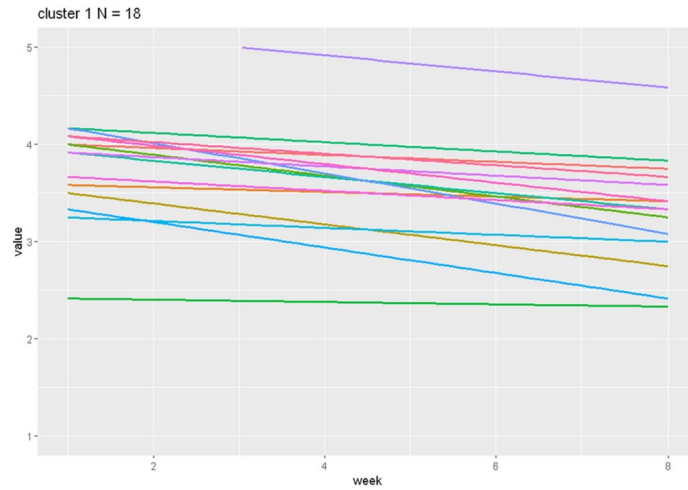


AVERAGE ISN'T ALWAYS GOOD ENOUGH

Aggregate vs. Individual Change: Symptoms



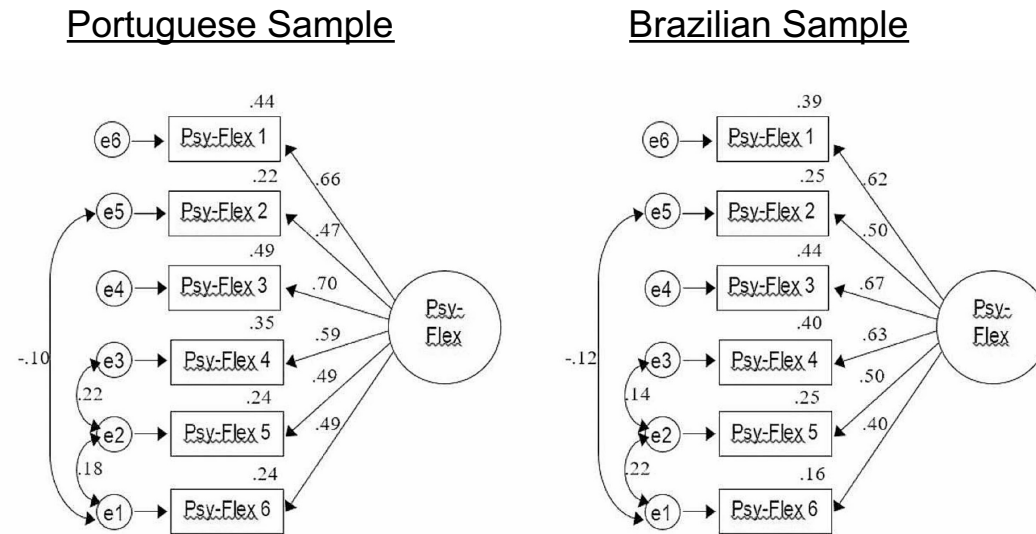
AVERAGE ISN'T ALWAYS GOOD ENOUGH



PSY-FLEX MEASURE OF PSYCHOLOGICAL FLEXIBILITY

Context Sensitive & Change Sensitive

One-Factor Structure, with excellent reliability

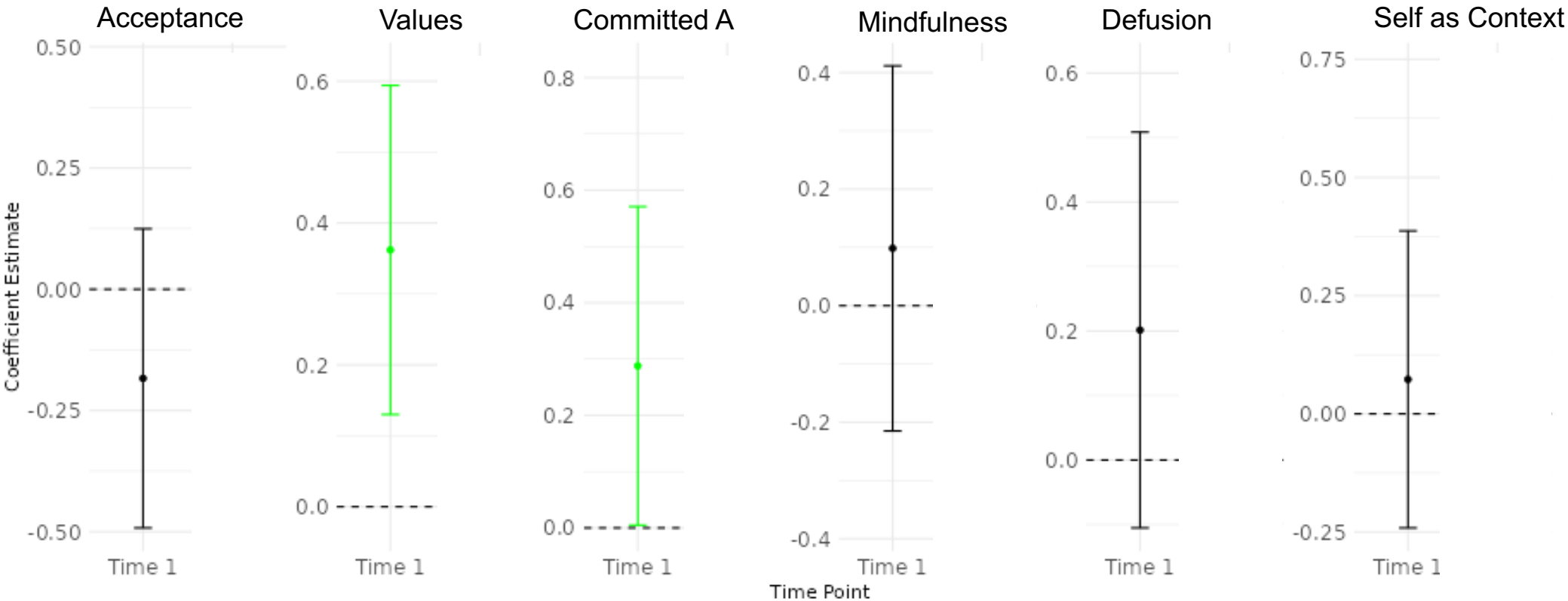


AND THE INDIVIDUAL LEVEL CONTAINS CLINICALLY IMPORTANT INFORMATION

Overall, psychological flexibility positively impacts well-being (pooled effect 0.4)

AND THE INDIVIDUAL LEVEL CONTAINS CLINICALLY IMPORTANT INFORMATION

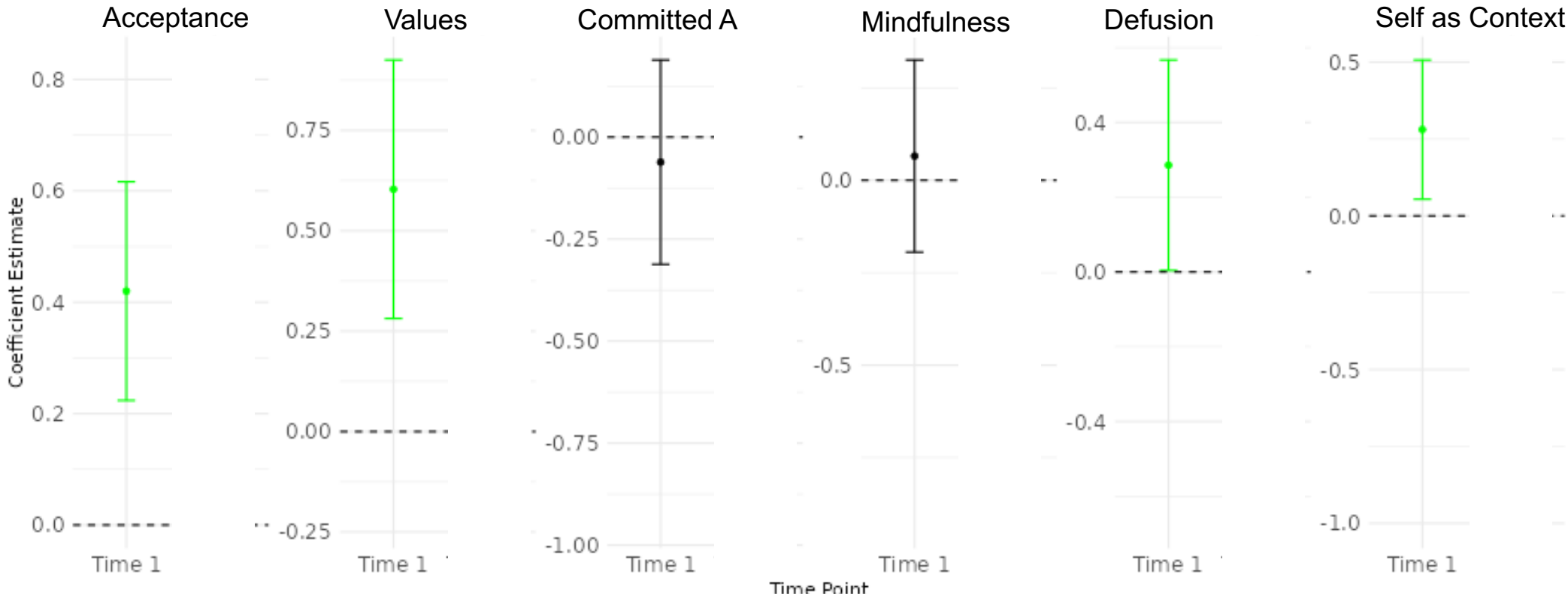
ISABELLA



Note: Green indicates a positive effect on well-being, red a negative effect, and black non-significant effect.

AND THE INDIVIDUAL LEVEL CONTAINS CLINICALLY IMPORTANT INFORMATION

MIGUEL

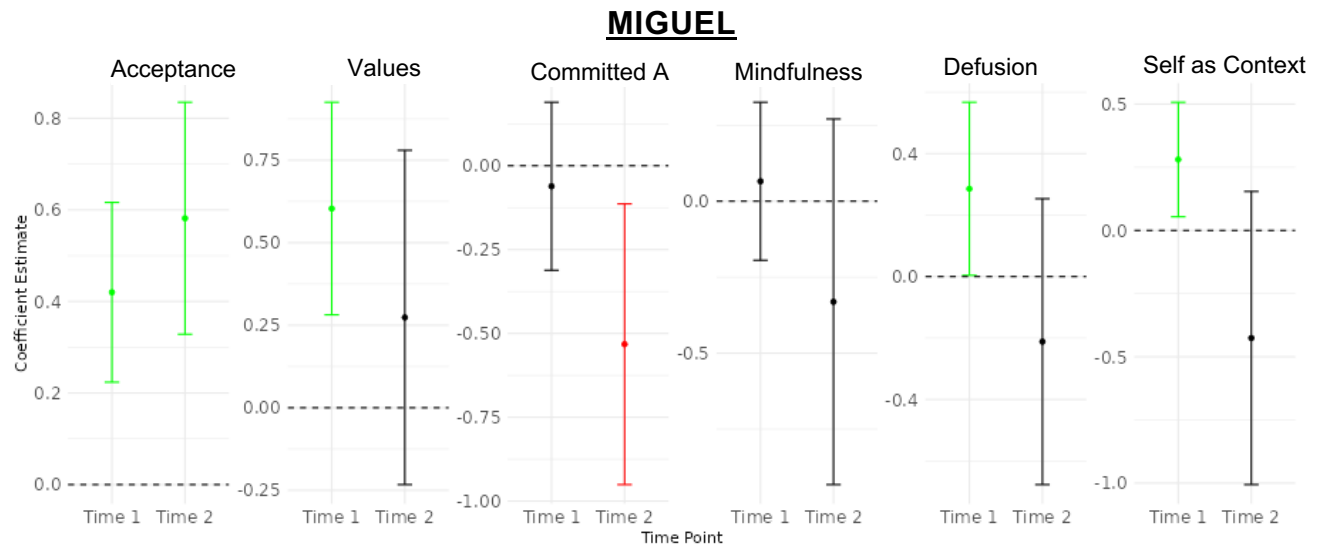
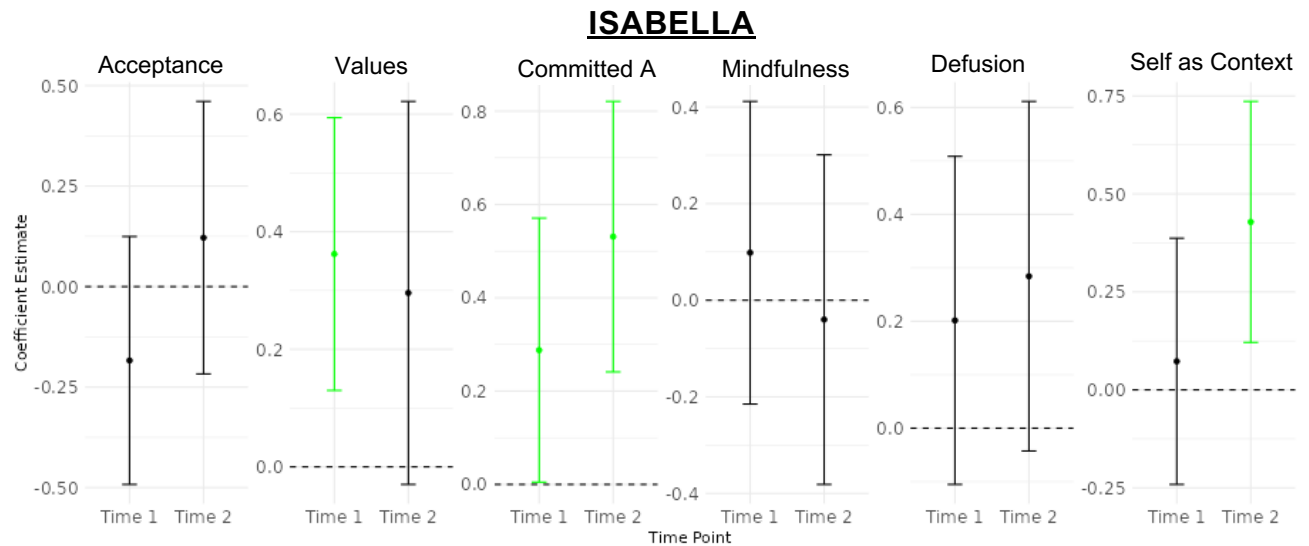


Note: Green indicates a positive effect on well-being, red a negative effect, and black non-significant effect.

PSYCHOLOGICAL
FLEXIBILITY ISN'T ONE
THING!

...OR THE SAME
ACROSS INDIVIDUALS

...OR EVEN THE SAME
OVER TIME WITHIN
INDIVIDUALS



1. PSYCHOTHERAPY



Challenges

-33%

-On Average

Possibilities

-ACT/PF

-Within Person
Analyses

General population

(or fractions thereof: e.g. sex, age)

Epidemiological approaches allow a **representative** description and thus complete clinical descriptions **without biases** such as severity, help-seeking and, treatment effects

Persons with (e.g. depressive) Symptoms

Persons with (e.g. MDE) Syndromes

Untreated cases with Disorders (e.g., MDD)

Treated patients

- Primary care
- MH-specialists

Clinical
research
samples

WHAT/ WHO
IS THE BASIS
OF OUR
CURRENT
KNOWLEDGE?

2. The World Outside our Clinics



2. The World Outside our Clinics

**IS A THERAPEUTIC TARGET
(PSYCHOLOGICAL FLEXIBILITY)
RELEVANT IN THE GENERAL
POPULATION?**

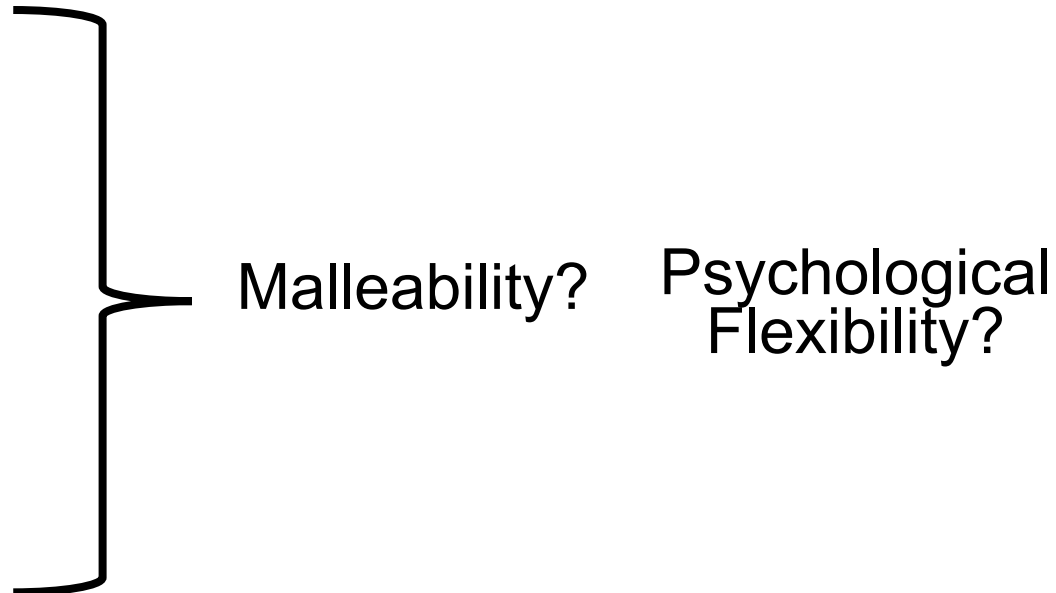
**AN EPIDEMIOLOGICAL/ PUBLIC
HEALTH APPROACH**



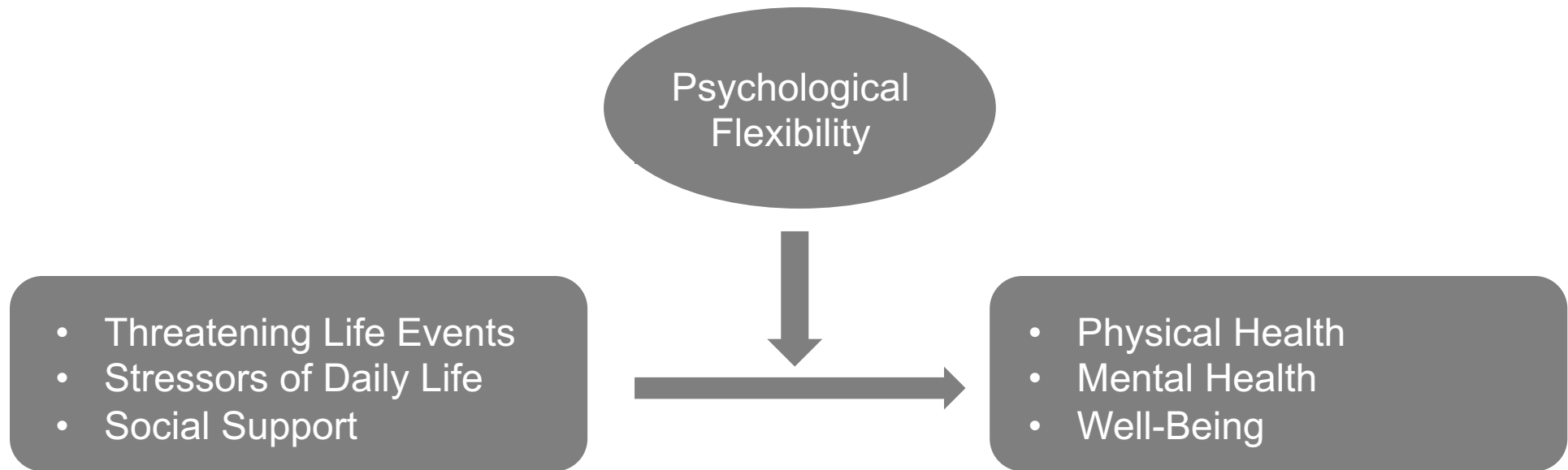
RELATION TO RISK & RESILIENCE

- Mental Health Problems
 - Large Burdon - Wittchen et al., 2010
 - Individual Suffering
 - Economic Loss
- Mental Health Problems Associated with Increased Physical Health -
Kessler et al., 2003

- Known Risk Factors
 - Stressful Life Events
 - Daily Stress
 - Low Social Support
- Known Resilience Factors
 - Social Economic Status
 - Intellectual Functioning
 - Positive Emotions



DOES PSYCHOLOGICAL FLEXIBILITY MODERATE KNOWN RELATIONSHIPS IN GENERAL POPULATION?



SPECIFIECS OF THE STUDY

REPRESENTATIVE FOR SWISS POPULATION

Age, Sex, Employment, & Urbanicity

- N = 1035 participants
- Age 18-74 (mean 45.4yrs)
- Sex
 - 50.3% female
- Employment Status
 - 65.9% Employed/ Training
- Marital Status
 - 33.8% Single
 - 54.0% Married/Life Partner
 - 09.2% Divorced
 - 01.9% Widowed

OUTCOMES

Construct	Measure
Physical Health	Various Behavioral Indices
Mental Health	Depression, Anxiety, Stress Scale - Lovibond
Well-Being	Mental Health Continuum - Keyes Satisfaction with Life Scale - Diener

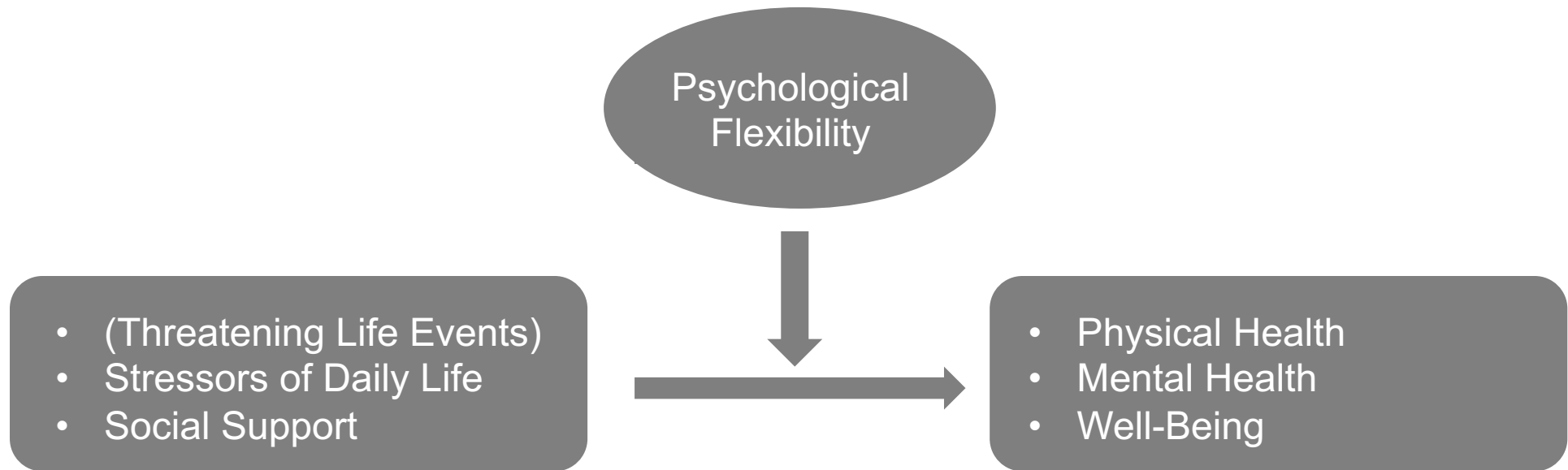
MODERATING ROLE OF PSYCHOLOGICAL FLEXIBILITY

	Physical Health				Psychological Health				Well-being			
	Overall Health	Physician Visits	Sick Days	Health Disability	Overall Psych Health	Stress	Depression	Anxiety	Life Satisfaction	Emot. Wellbeing	Social Wellbeing	Psychol Wellbeing
Threating Life Events												
Daily Stress						N/A						
Social Support												

MODERATING ROLE OF PSYCHOLOGICAL FLEXIBILITY

	Physical Health				Psychological Health				Well-being			
	Overall Health	Physician Visits	Sick Days	Health Disability	Overall Psych Health	Stress	Depression	Anxiety	Life Satisfaction	Emot. Wellbeing	Social Wellbeing	Psychol Wellbeing
Threating Life Events												
Daily Stress						N/A						
Social Support												

DOES PSYCHOLOGICAL FLEXIBILITY MODERATE KNOWN RELATIONSHIPS IN THE GENERAL POPULATION?



TAKE AWAY MESSAGE

- PF **consistently** & logically moderates relationship between known risk/resilience factors and
 - Physical Health (especially impairment)
 - Mental health
 - Well-being
 - Predicted **dose response** pattern (low, medium, high PF)
 - Suggests protective factor of high PF in general population
 - Suggests targeted subgroup interventions
 - Malleable!
- ➔ A Meaningful Public Health Target?!



AMONG COMMON RISK & RESILIENCE FACTORS

Not Predictive of Mental Health

Age
Gender
Lockdown Variables
Marital Status
Employment Status
Living Situation
Children
Family Function
Mindfulness

Predictive

Social Support

Educational Level

Psychological Flexibility

SOCIAL FUNCTIONS

N = 177 Patients

N = 297 Community Members

Same Average Size of Meaningful Relationships

Same Average (High) Quality of Meaningful Relationships

BOTH...

...patients and community members report a well-functioning network

...benefit from relationships

But how social relations relate to symptoms and well-being differs...

SOCIAL FUNCTIONS

Confidant



Sexual Partner



Go to when sad



Support



Go to for fun



Complain



Advice



Gossip



Comfort



Go to when happy



167-1

2014-2

Pretreatment ----- 12 weeks of therapy ----- Post-treatment

167-1

2002-14

Pretreatment

Post-treatment

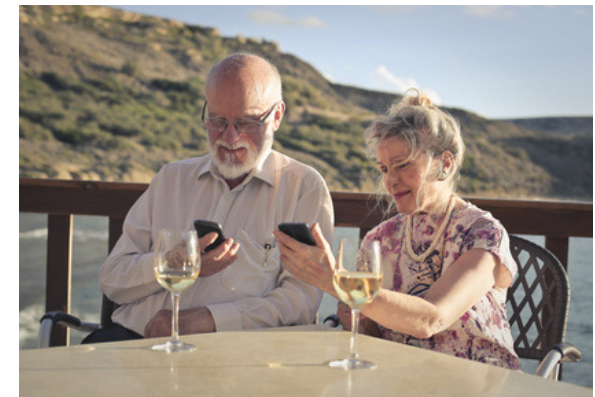
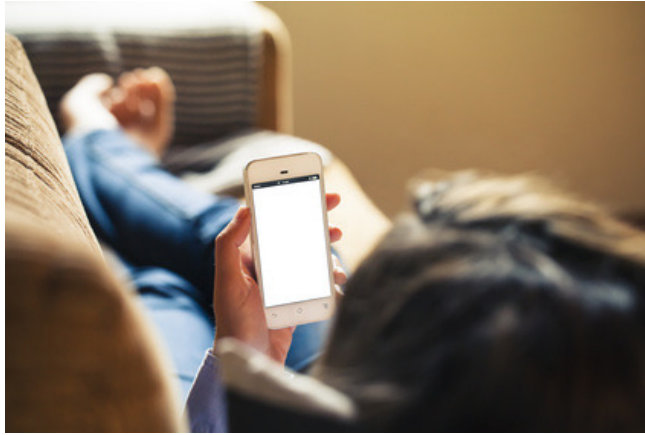
3. THE WORLD OUTSIDE OUR CLINICS – DAILY LIFE



Attention to how and when we ask questions.

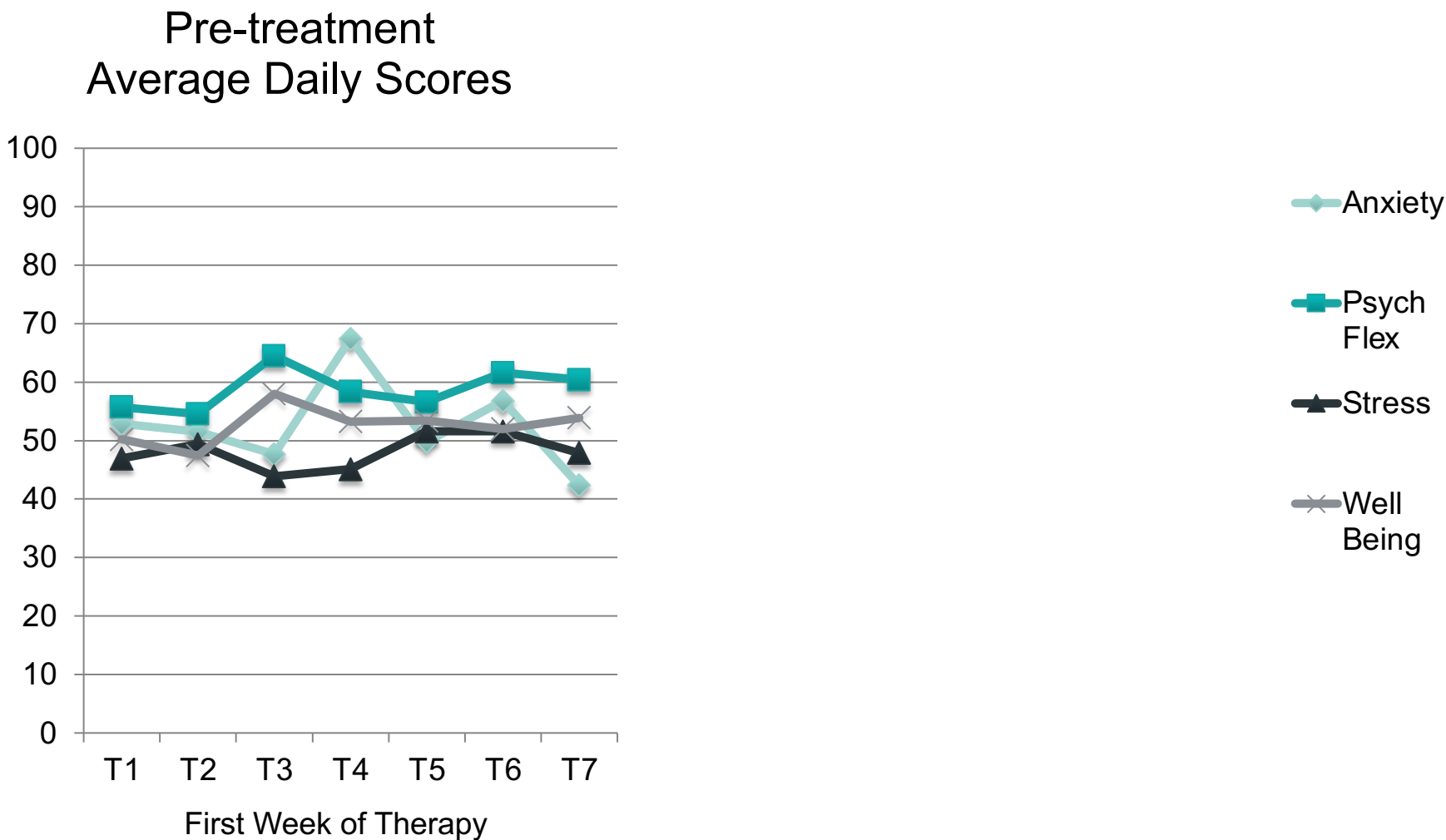
What can we learn about daily life – and does it matter?

ASSESS BEHAVIOR IN CONTEXT!

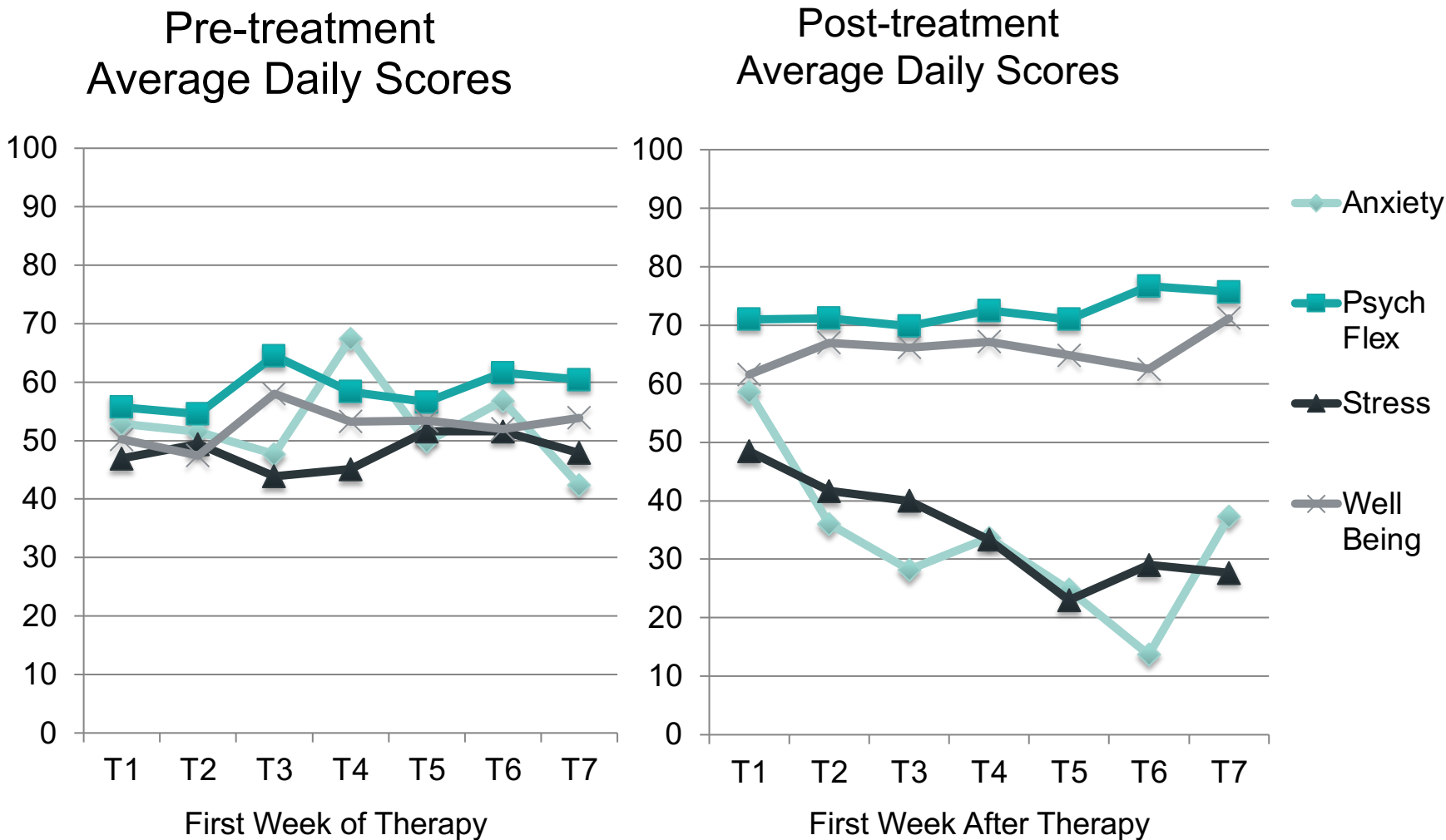


WHEN USING QUESTIONNAIRES, PEOPLE OVERESTIMATE SYMPTOMS AND IMPORTANCE OF PERCEIVED CAUSAL FACTORS WHEN COMPARED TO ESM

AN ALTERNATIVE WAY TO MEASURE CHANGE



AN ALTERNATIVE WAY TO MEASURE CHANGE



MEASURE EXPERIENCE!

Stress is „bad for us“

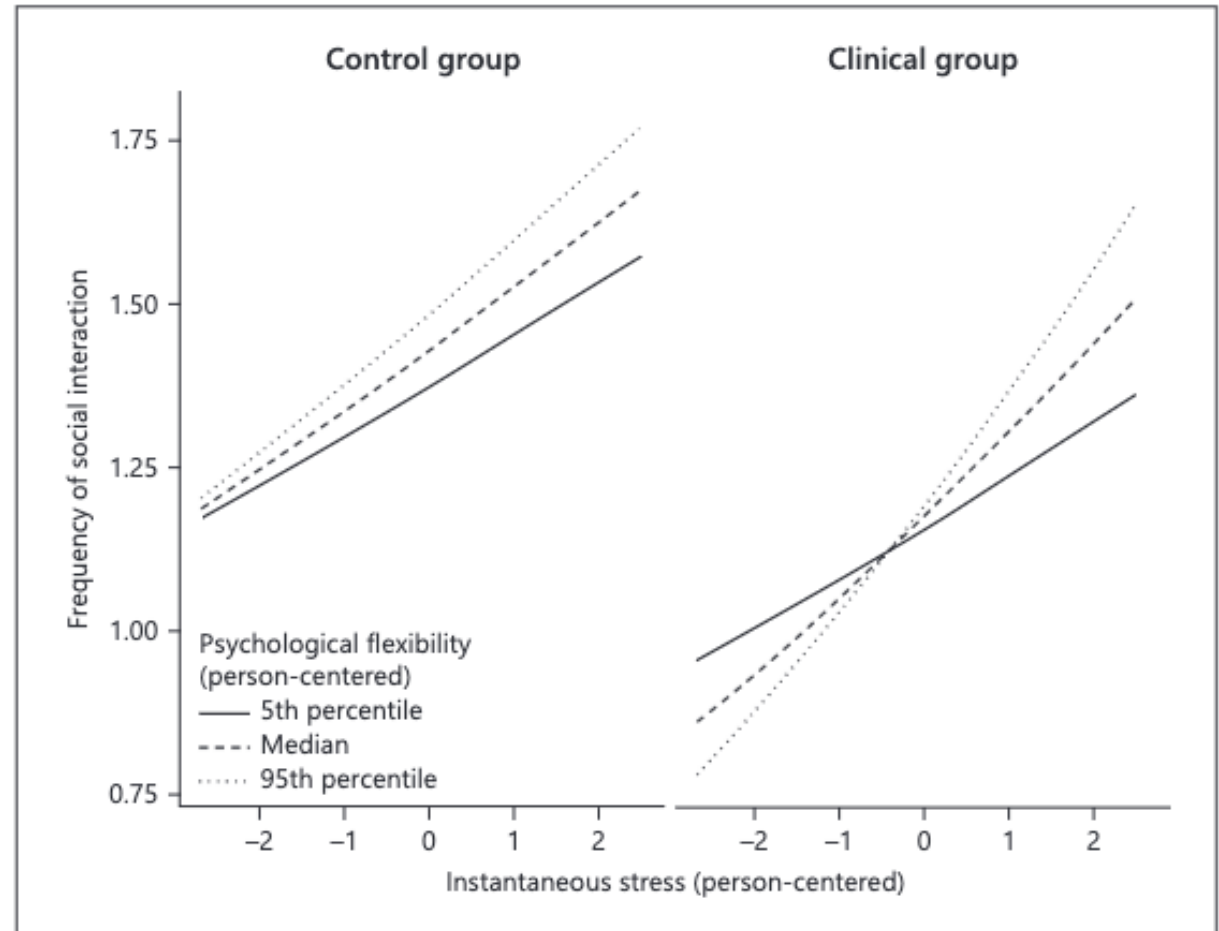
Social Interaction is „good for us“

Negative relationship

But that is a cross-sectional hypothesis!

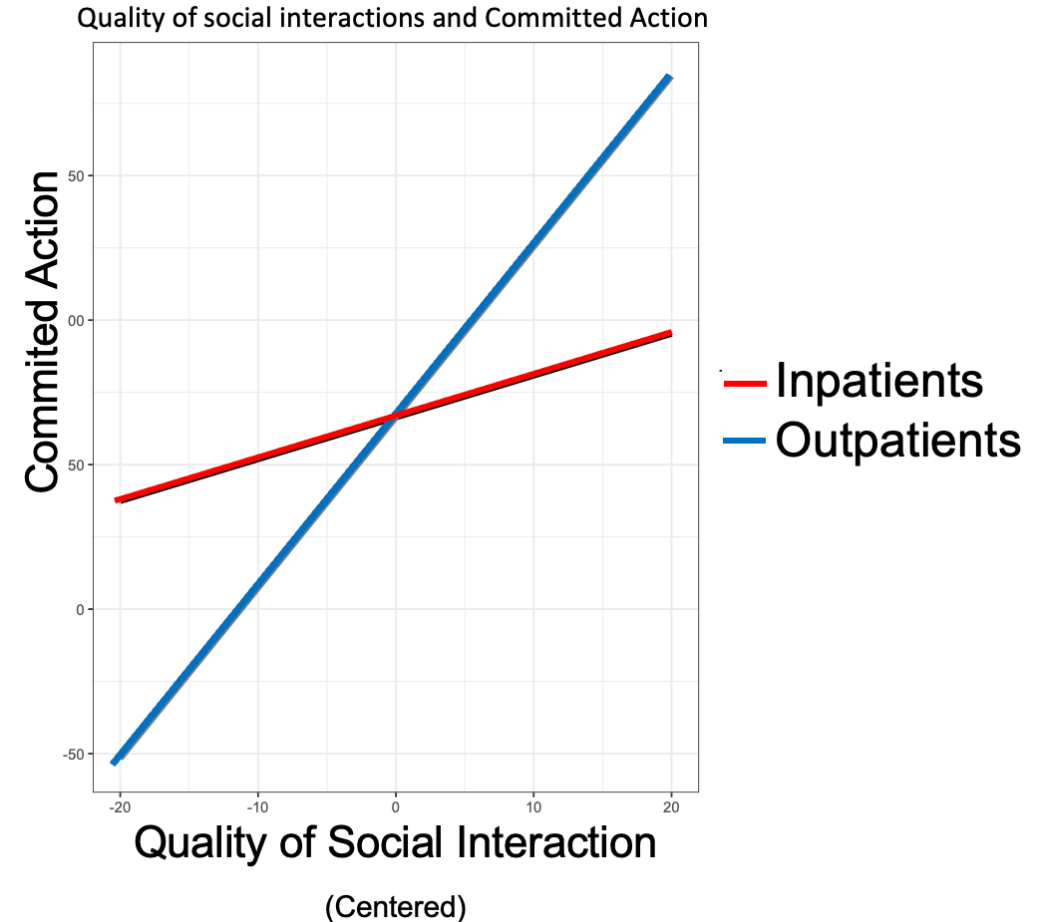
Momentary Experience tells us
something different!

Positive relationship
moderated by
Psychological Flexibility



HOW ARE INTERVENTIONS ACTUALLY IMPLEMENTED? UNDERSTANDING INTERVENTIONS IN EVERYDAY LIFE USING ESM

HIGHER QUALITY
SOCIAL
INTERACTIONS
HELP PATIENTS
FOLLOW
THROUGH!



HOW DO PATIENTS MOVE THROUGH LIFE AND DOES THIS IMPACT OUTCOMES?

EXAMINING PROCESSES VIA SPATIOTEMPORAL MOVEMENT



Participants carried a GPS-enabled smartphone for one week at the beginning of treatment; GPS Signals were logged every 5 seconds



Algorithms were applied to establish spatiotemporal clusters



Symptomatology and Wellbeing were assessed

SPONTANEOUSLY CHOSEN MOVEMENT

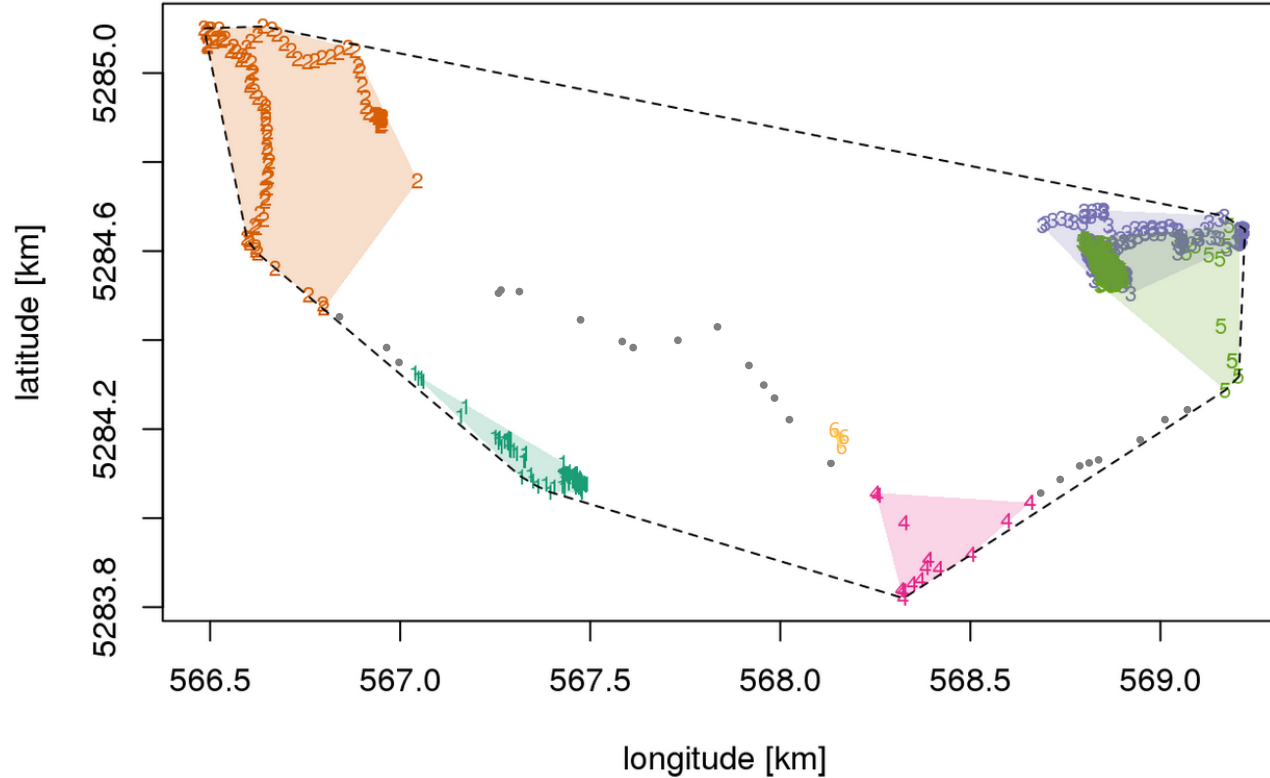


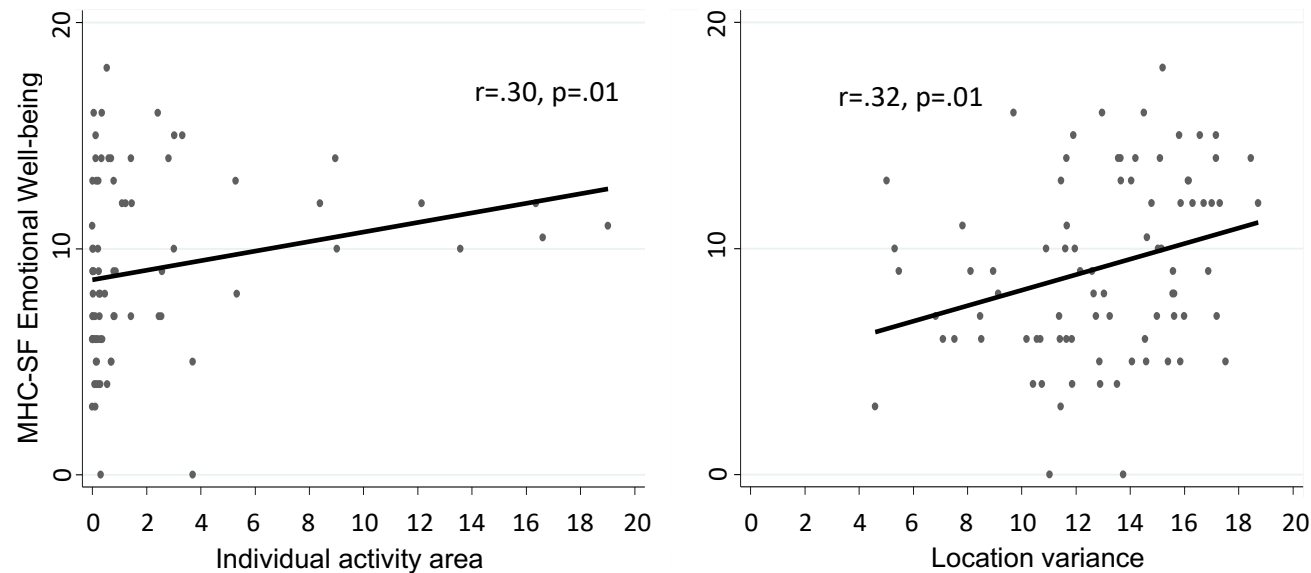
Figure 1. Spatiotemporal activity pattern of a selected patient during one day.

The ST-DBSCAN algorithm estimated six clusters in this case. Numbers denote GPS signals of a specific cluster in temporal order of recording (1 = first cluster, 6 = last cluster recorded throughout the day).

Color-shaded areas refer to the hulls around individual clusters. The broken line denotes the hull boundary around all GPS signals recorded during the entire day. Grey dots denote GPS signals allocated to "in transit" destinations.

1=turquoise, 2=brown, 3=violet, 4=red (carmine), 5=green, 6=yellow

MOVEMENT RELATES TO WELL-BEING, BUT NOT SYMPTOMS

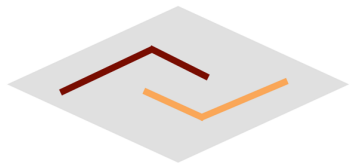


**Relationship between Wellbeing & Individual activity area (left) and Location variance (right).
This relationship was the same for Psychological Flexibility and Movement.**

4. CAN AN INTERVENTION KERNEL IMPACT HOW WE TREAT EACH OTHER?



PF OUTSIDE THE CLINIC: STUDY AIM



You & Me:

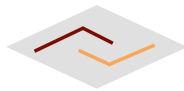
Psychological
Flexibility &
Well-Being

- Does PF in dyads impact
 - Well-Being
 - Prosociality
 - Relationship Closeness
- Cooperation key factor in human development and **SUCCESS** (Hayes & Sanford, 2014)
- Are These Relationships “Dose” Dependent
 - Group level of PF
- Is PF a key “kernel”?

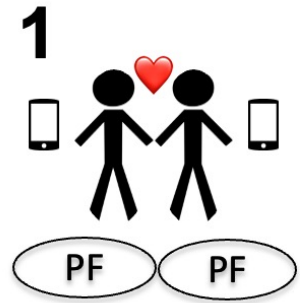
PF OUTSIDE THE CLINIC: STUDY AIM



- 90 Couples (180 Individuals)
- Age matched
 - Average: 33.1 years
 - Range: 19 – 75 years
- Length of relationship
 - Average: 8.2 years
 - Range: 1 – 44 years



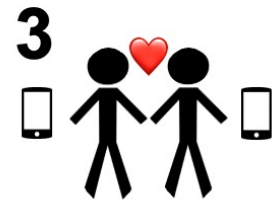
STUDY: YOU & ME – PROCEDURE



Lab

Baseline

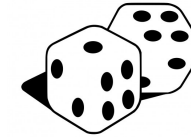
- Questionnaires
- Interview
- Micro-Intervention



Lab

Post

- Questionnaires
- Economic Game



Everyday
Context

STUDY: YOU & ME



STUDY: YOU & ME

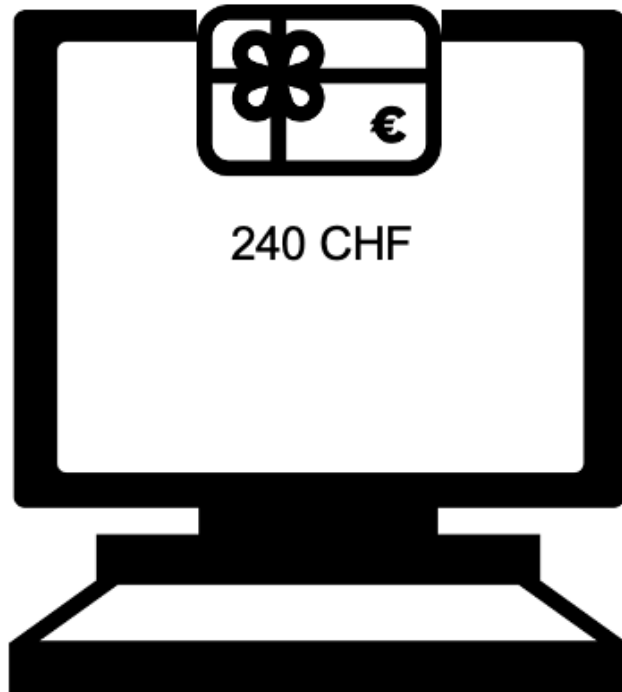
**What is the
secret of your
relationship?**

But we also
accept each
others' space!

We have a lot in
common, for
example we both
like to travel, do
sports and ...



DICTATOR GAME – AN EXPERIMENTAL TEST OF PROSOCIALITY



How much do you want to
give to your partner?

DICTATOR GAME

Experimental Test of Prosociality & Selfishness

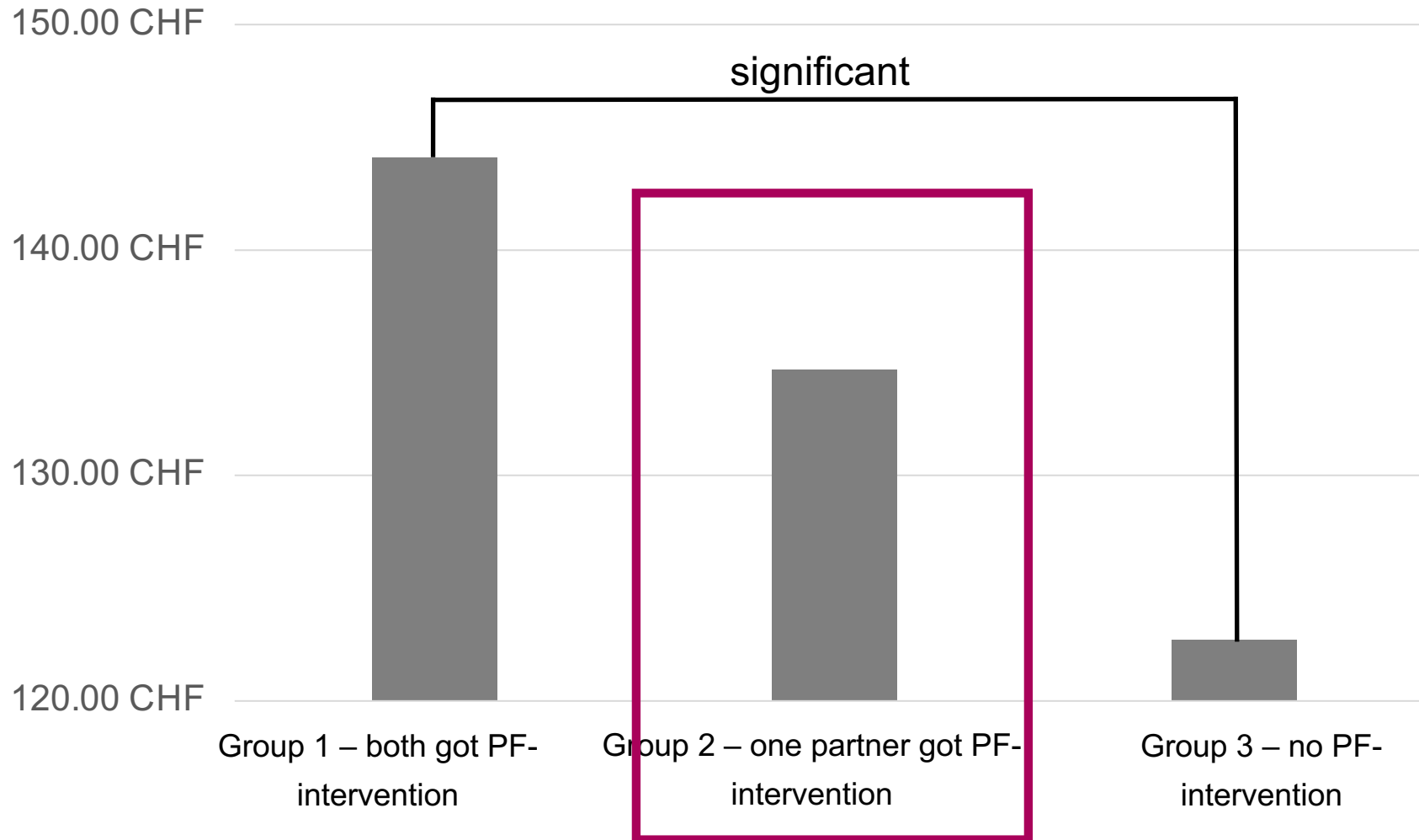
- Players decide how to distribute a fixed amount of money to herself & recipient
- Strangers – with no previous or subsequent contact
- Homo Economicus Prediction
 - Rational Response: Me:100% - You: 0%
- Modal amount
 - Me: 70% - You: 30%
 - Some dictators leave nothing
 - Some up to 50%

GIFT CERTIFICATE EXAMPLES

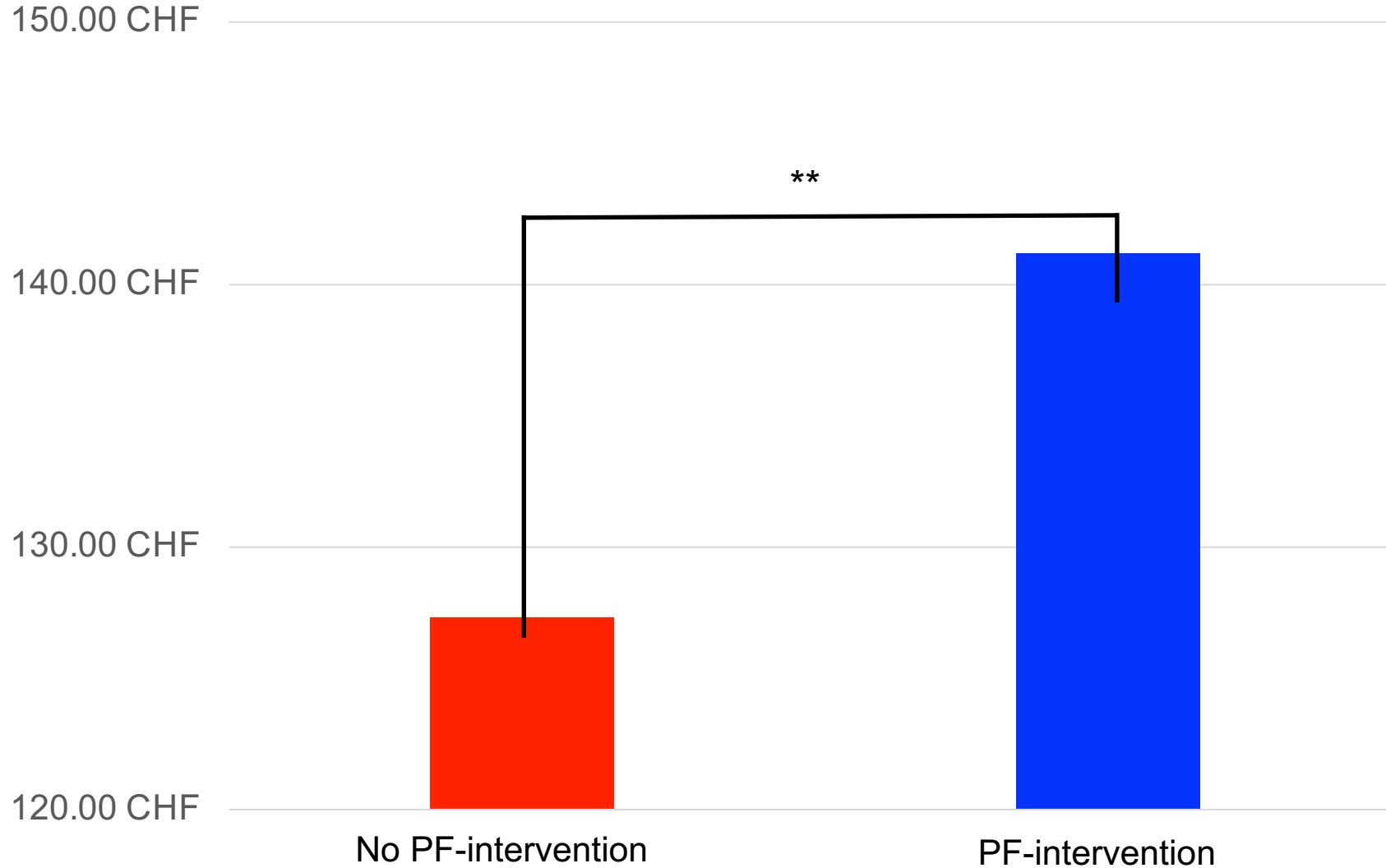


STUDY YOU & ME: RESULTS DICTATOR GAME

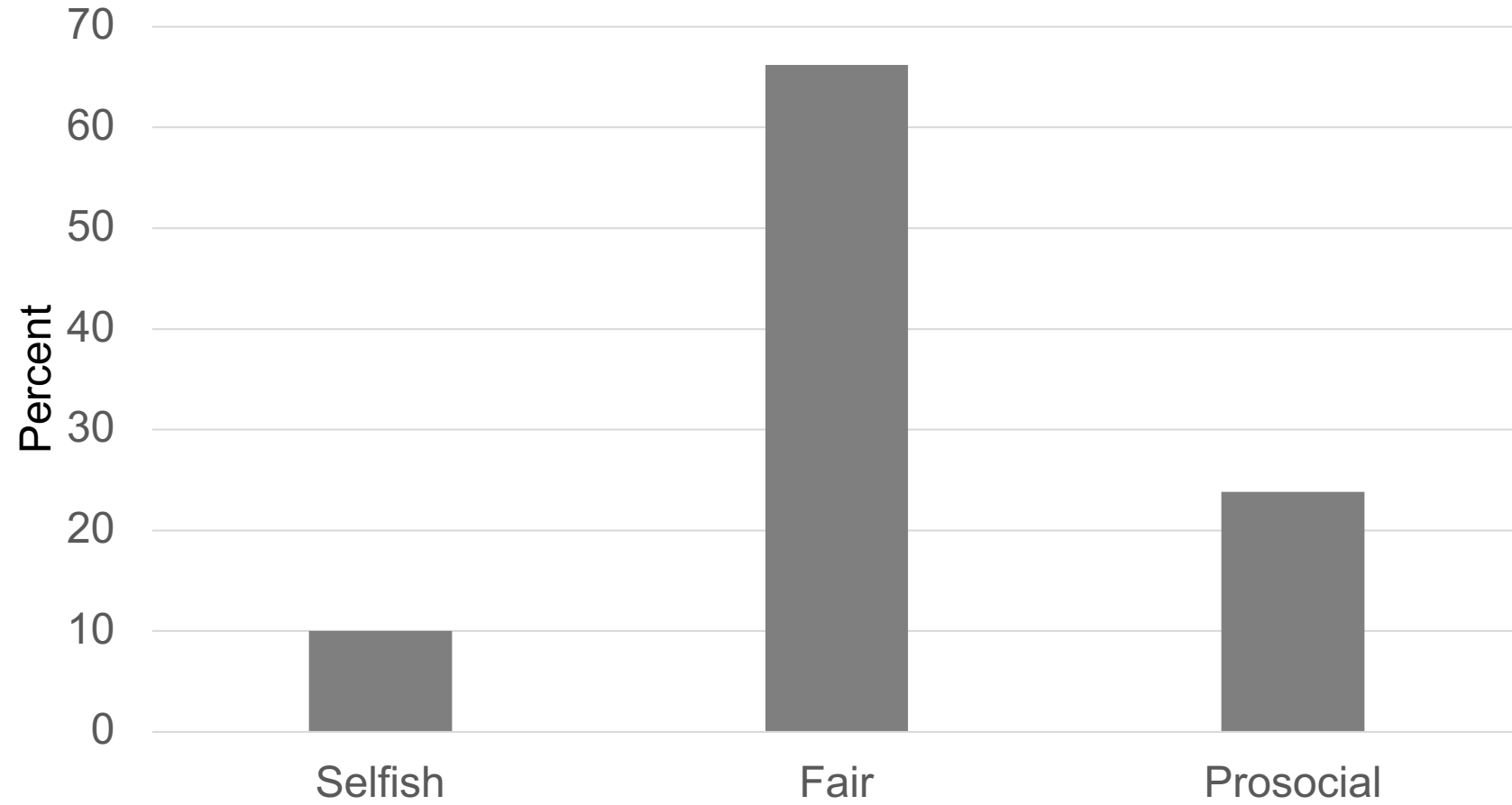
Dictator Game



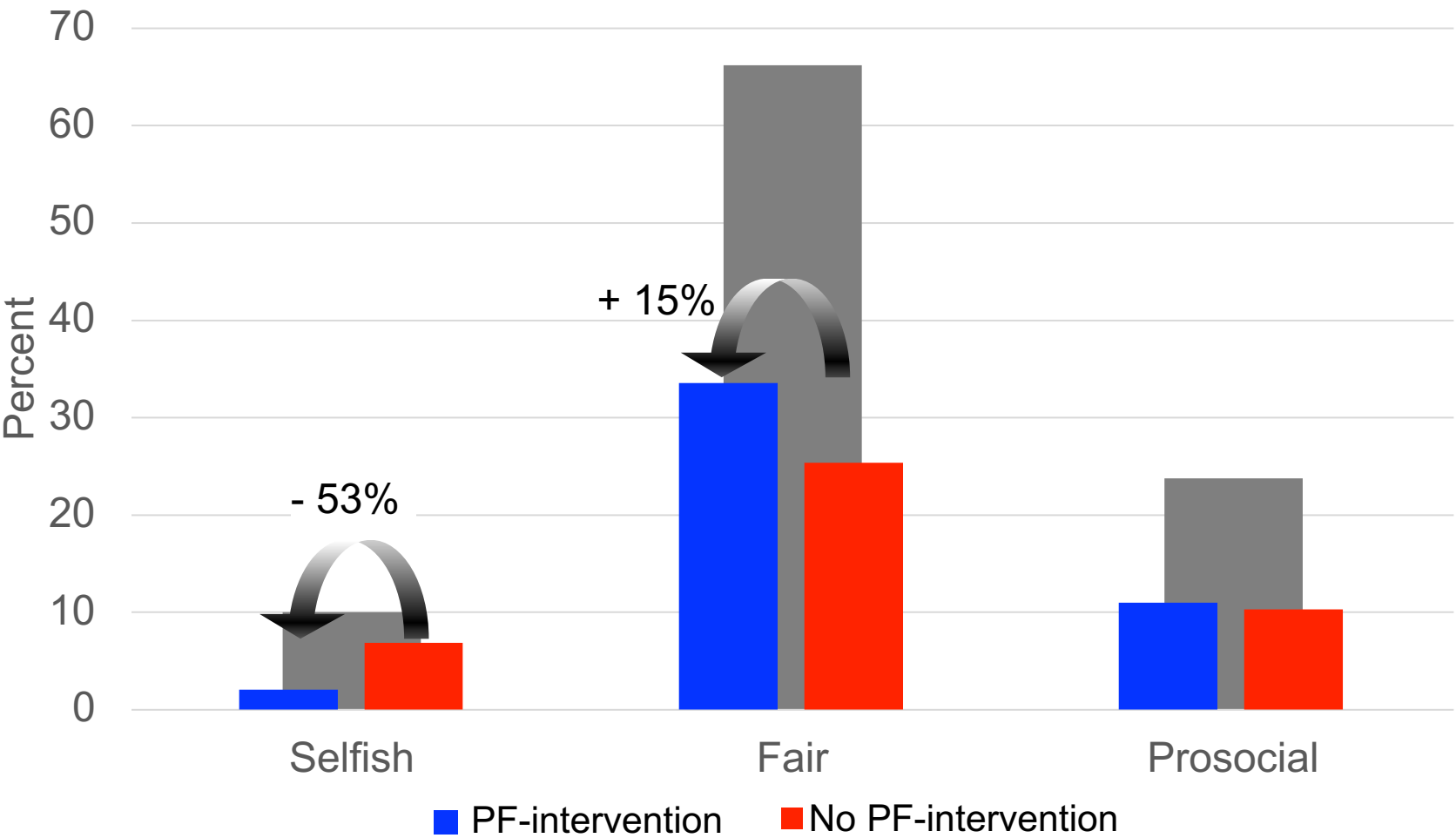
STUDY YOU & ME: RESULTS DICTATOR GAME



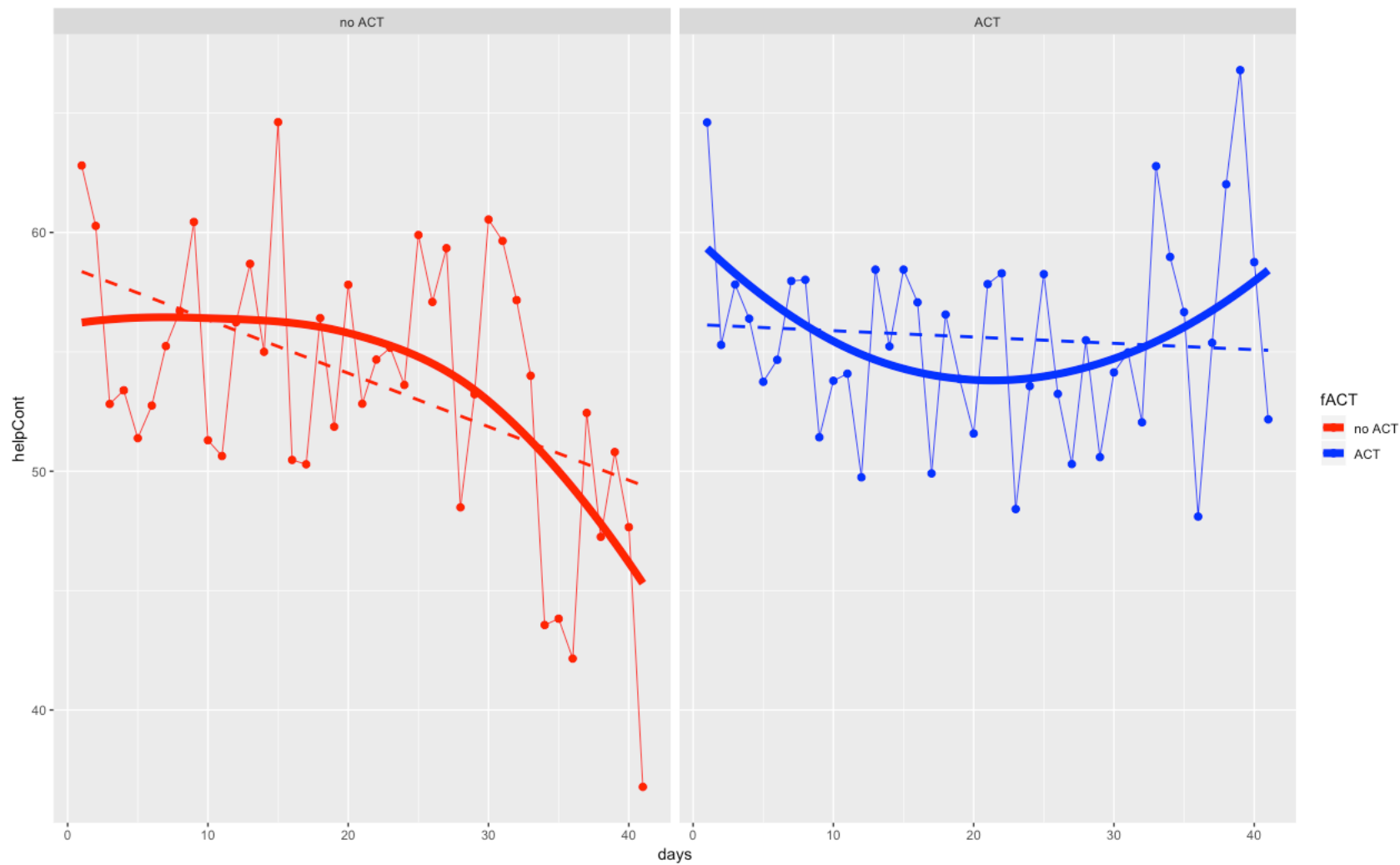
STUDY YOU & ME: RESULTS DICTATOR GAME



STUDY YOU & ME: RESULTS DICTATOR GAME



HOW MUCH DID YOU SUPPORT YOUR PARTNER?





THROUGH THICK AND THIN –
A RANDOMIZED CONTROLLED TRIAL TO
EVALUATE THE ROLE OF FRIENDSHIP
AND PSYCHOLOGICAL FLEXIBILITY
AFTER BEING OSTRACIZED

ELISA
HALLER

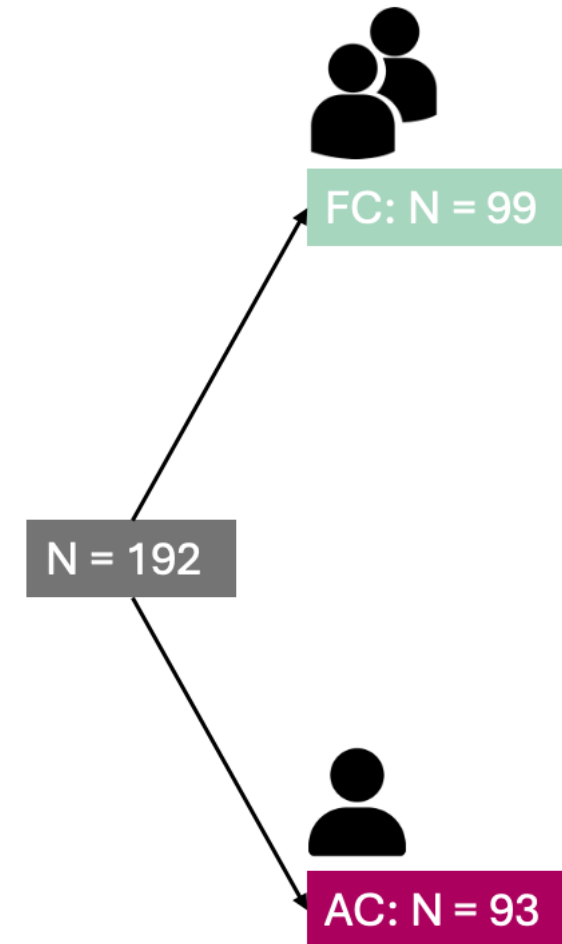
CLARA
BONGARTZ

ANGELINA
ZEUGIN

FABIO
COVIELLO

STUDY SAMPLE

- N = 192 participants
- Age: mean = 24.8 (SD = 8.04)
- Sex: female = 147 (76.57%), male = 43 (22.40%), non-conforming = 2 (1.04%)
- Employment Status:
 - Student: 114 (75.00%)
- Marital Status:
 - In a relationship: 72 (37.50%)
 - Married: 3 (1.56%)
 - Single: 110 (57.29%)
 - No detail: 7 (3.65%)



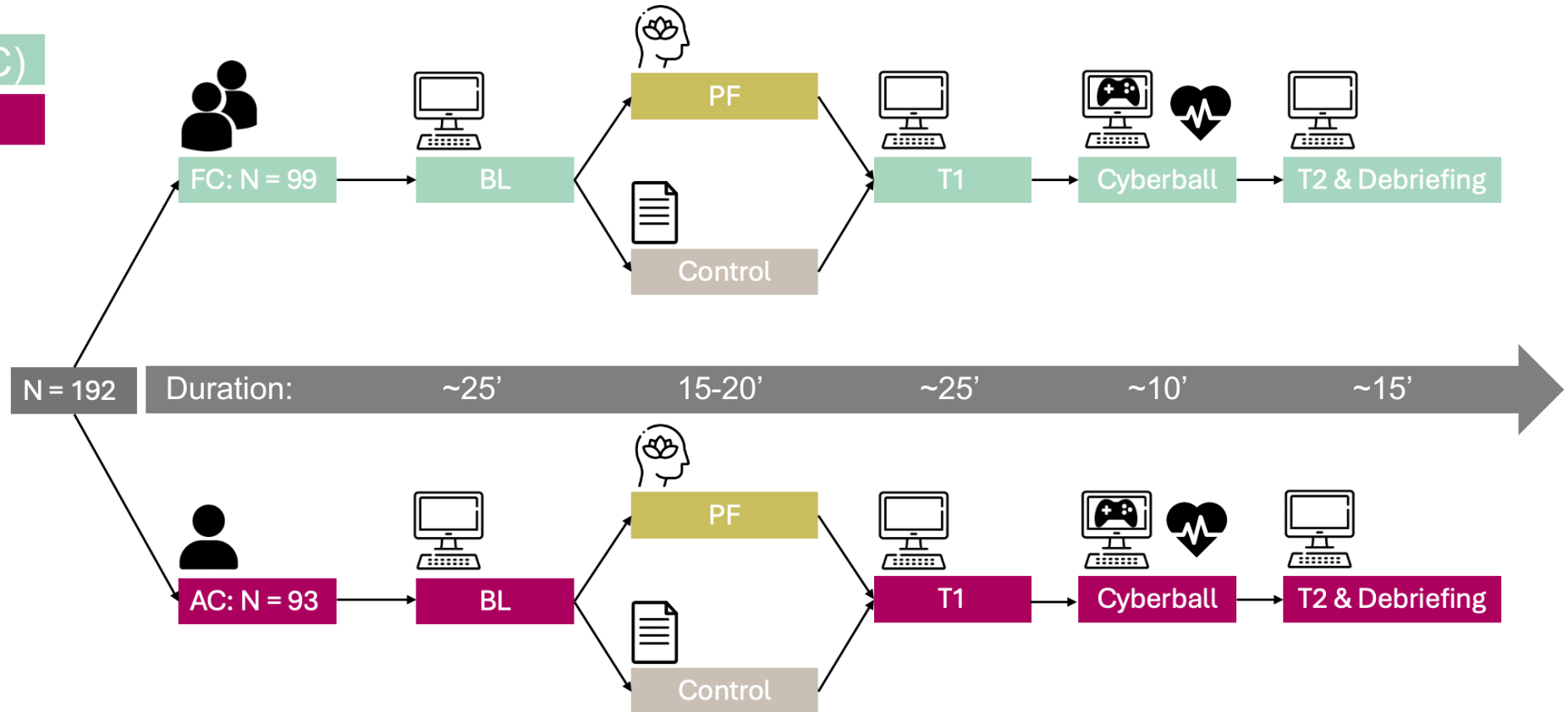
STUDY FLOW

Condition:

- Friends (FC)
- Alone (AC)

Group:

- PF
- Control



CYBERBALL



“Stranger I”



“Friend / Stranger II”



Participant

BEING OSTRACIZED HURTS!

“Although I could imagine that the Cyberball game doesn’t reflect reality, I realize how the feeling of being excluded affects my current emotions, actions and thinking.”

“Once again, I was the fifth wheel on the wagon.”

“I felt hopeful but also disappointed.”

“You can play on your own. I do not even want to fight for attention or the ball. Bye!!”

“Being excluded hurts.”

...even if Cyberball is already familiar, ostracism distress is felt (e.g. Davidson et al., 2019; Waldeck, D., Tyndall, et al., *JCBS*, 2017; Waldeck, Bissell, Tyndall, *JCBS*, 2020).

BEING OSTRACIZED HURTS!

Threat of losing your tribe is of evolutionary importance. Which is why it hurts!

And...

...PF does NOT reduce the negative emotions nor enhance positive emotions

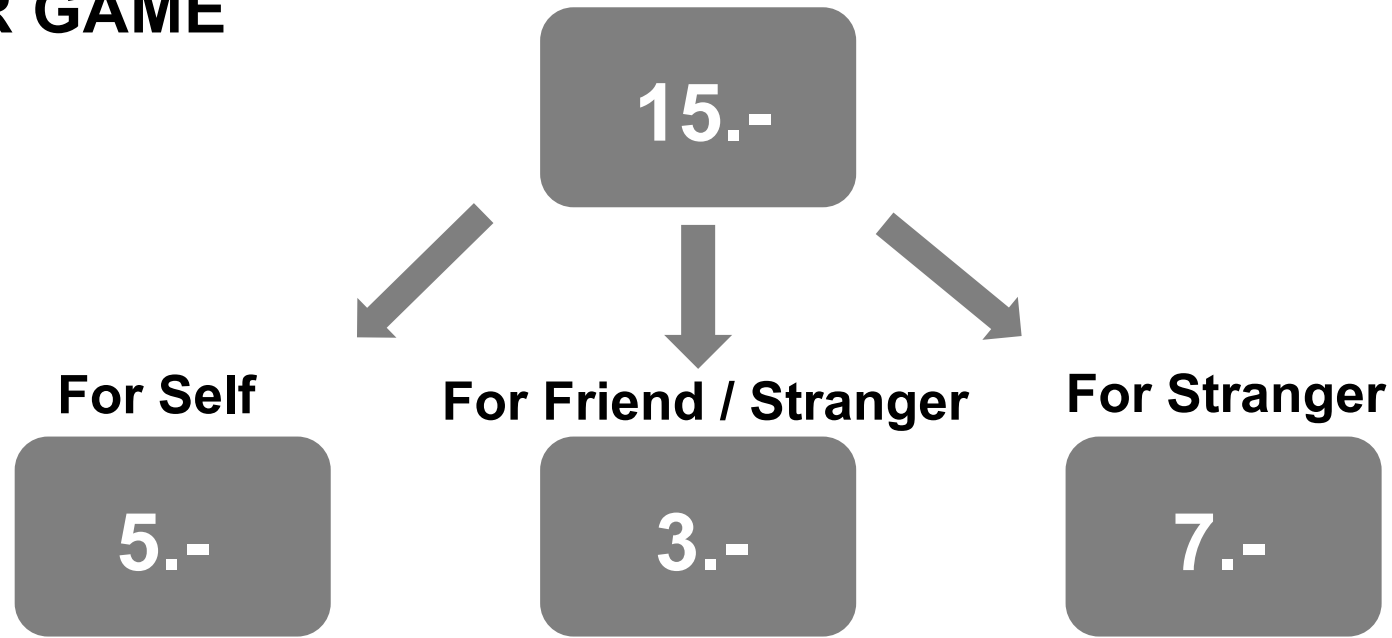
... a Friend does NOT reduce the negative emotions nor enhance positive emotions

BEING OSTRACIZED HURTS! AND...

...there are various ways of dealing with difficult emotions!

Revenge!

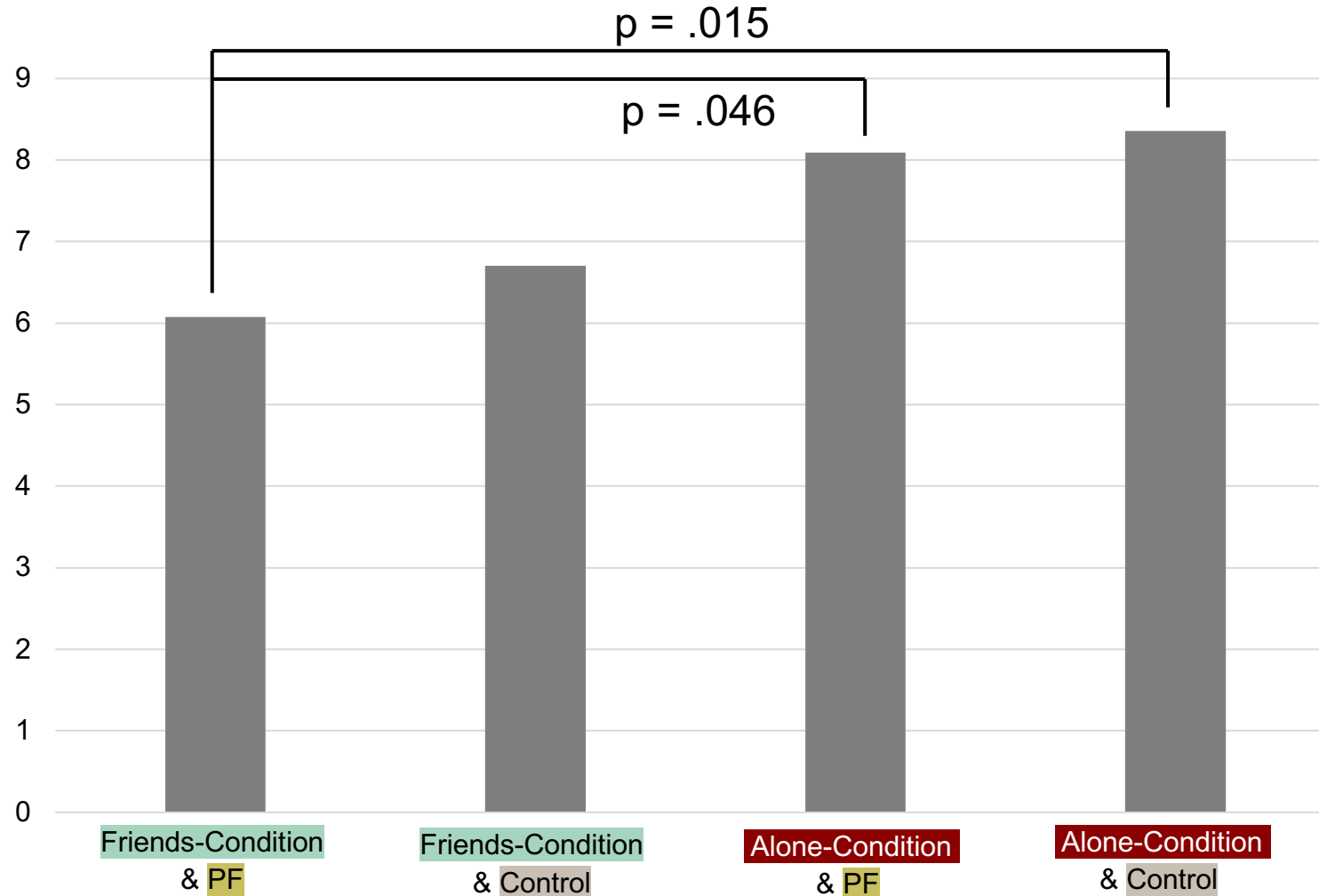
DICTATOR GAME



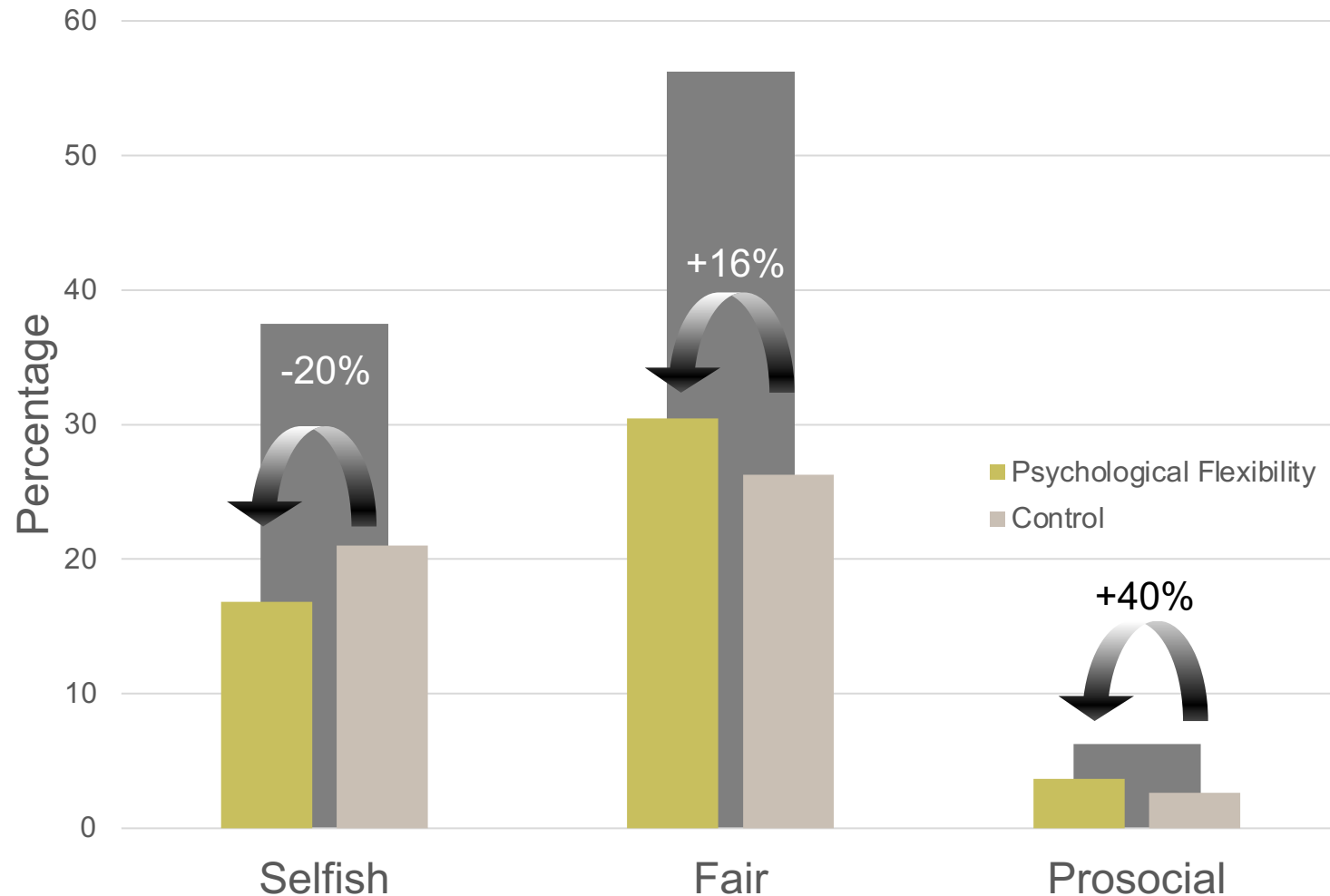
- **Prosocial:** Gave themselves 4 or less or gave themselves less than another person
 - **Fair:** Gave all participants & themselves 5.- each
 - **Selfish:** Gave themselves 8.- or more + the case where they gave themselves 7 and the others each 4
-
- Two cases were not clear: Self 6.-; Friend 6.-; Stranger 3.- => selfish

DICTATOR GAME – RESULTS: FRIENDS MATTER!

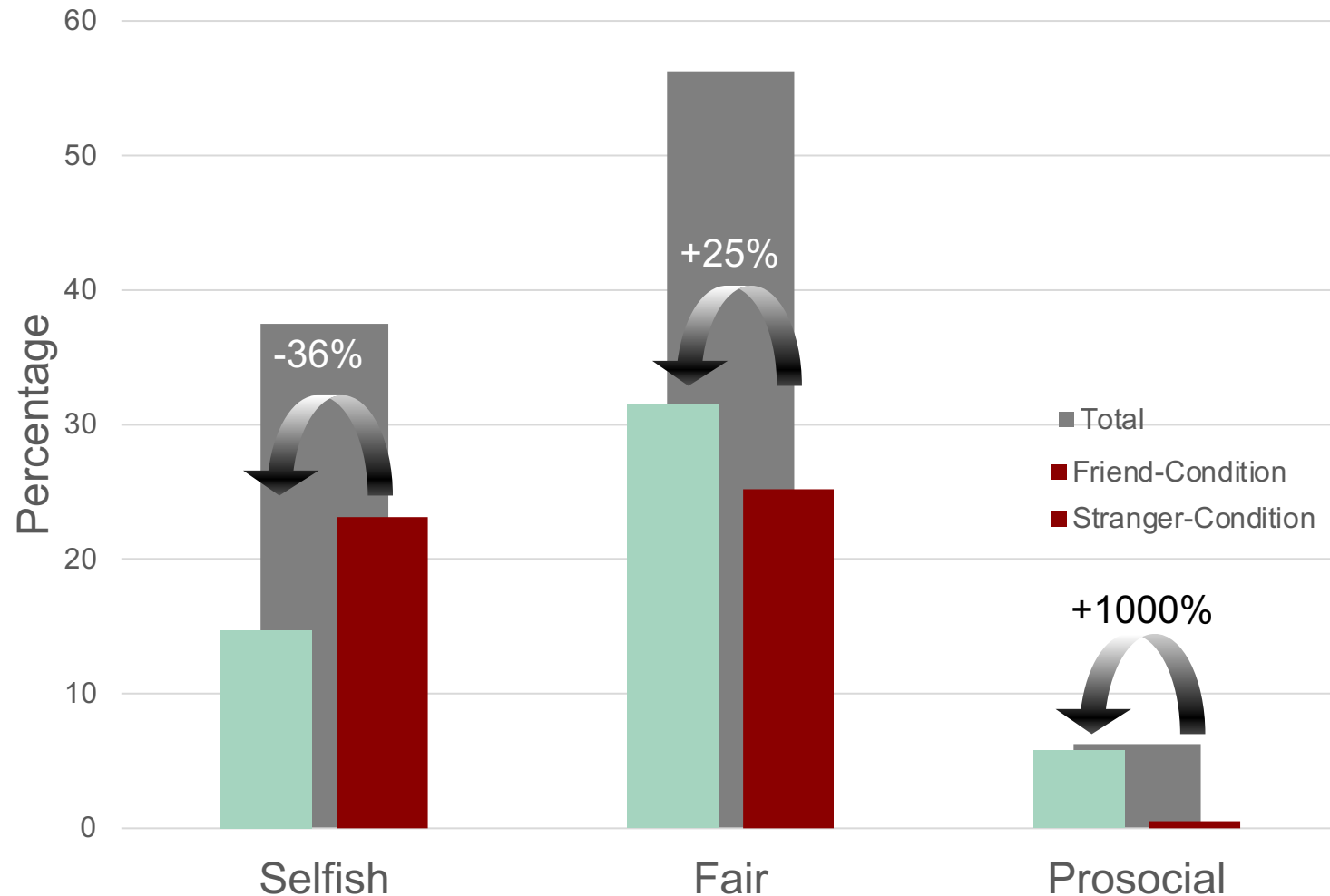
- How much did the participants give themselves?



DICTATOR GAME – RESULTS INTERVENTION VS. CONTROL



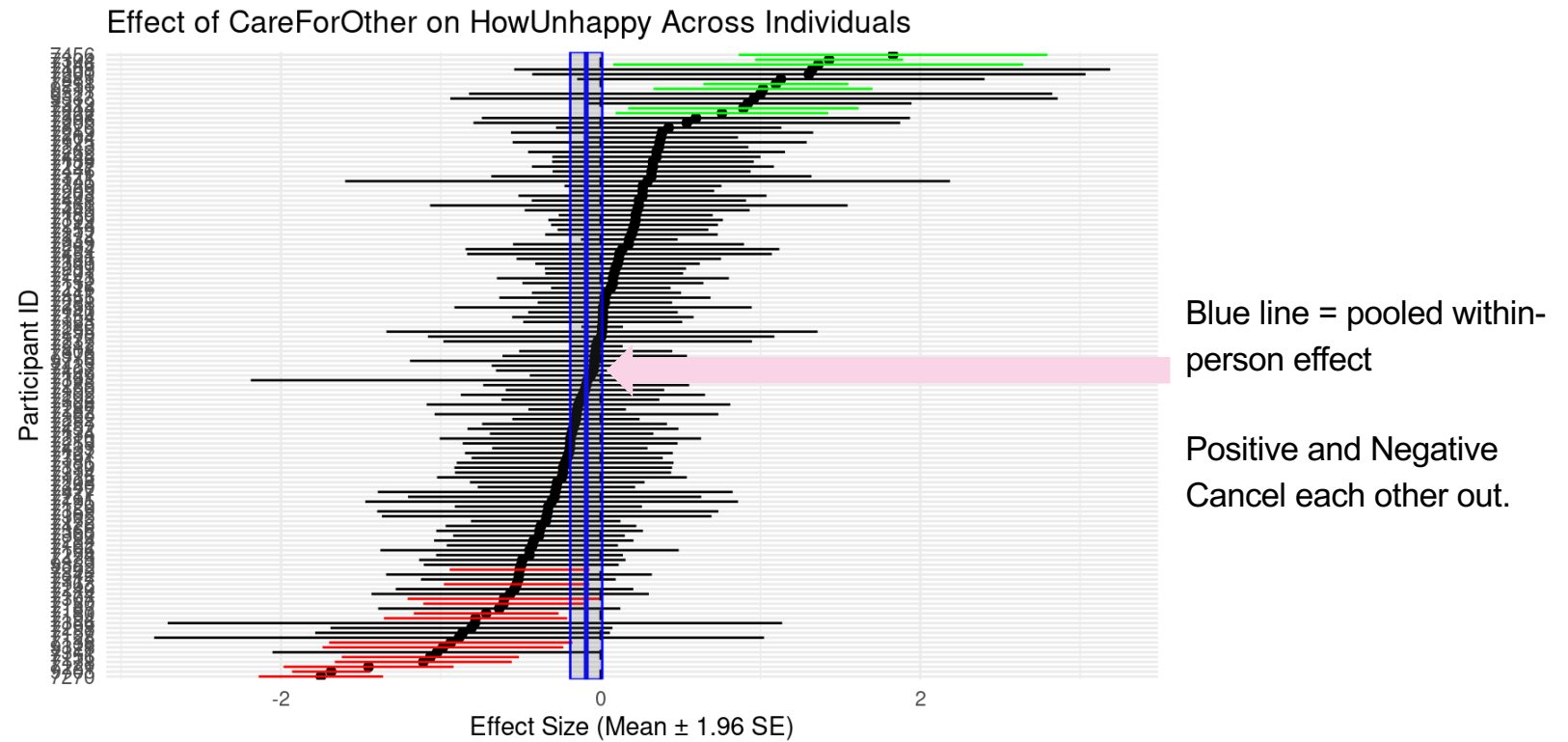
DICTATOR GAME – RESULTS FRIENDS VS. STRANGERS



IN THE FACE OF (PRIMAL) PAIN AND THREAT

Can we maintain our humanity?

BUT, AND ONCE AGAIN, IT (THE PROCESSES) DEPENDS



Note: Green values indicate caring is associated with more unhappiness.
Red values indicate the caring is associated with more happiness.
Blue line and shaded area represent the meta-analyzed mean and 95% CI.

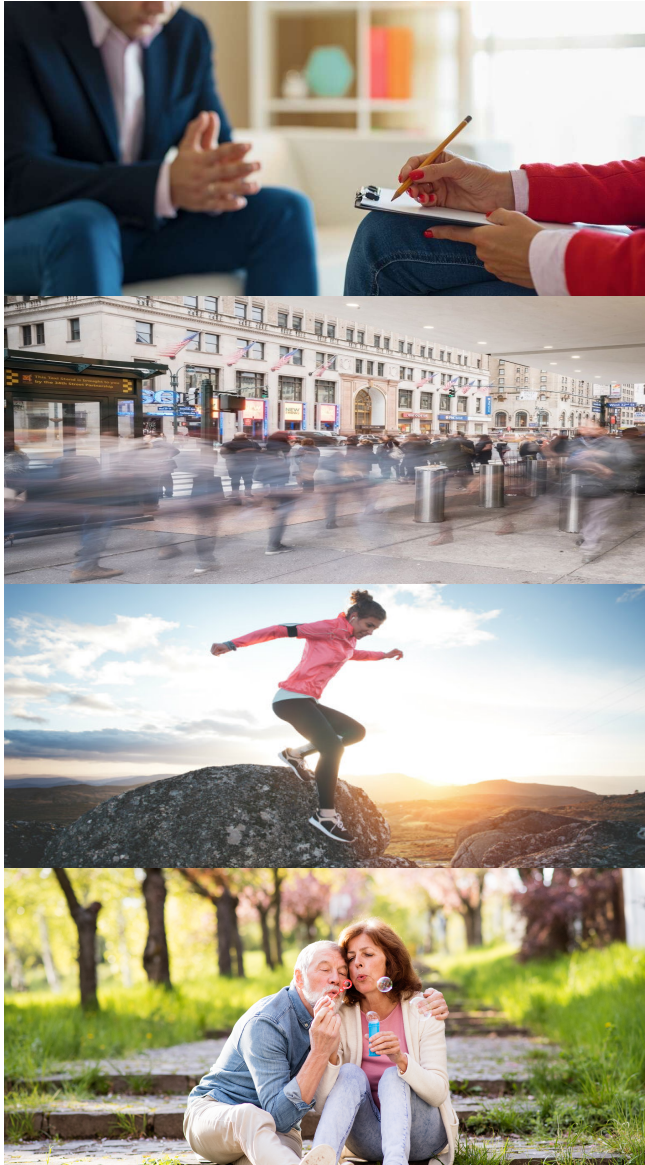
SUMMARY

We have important successes, on average, but not for everyone. Emerging technologies may help us better personalize interventions.

Addressing this requires attention to our targets and methods.

Our clients' lives transcend many contexts. Examining this offers new & clinically useful insights.

Psychological Flexibility is malleable and salient. And the importance of friends and community can not be overstated.



ISSUES OF MY HEART

Community

Psychological
Flexibility

UNIVERSITÄT
LUZERN

LUCERNE



ACKNOWLEDGEMENTS

Lab Members

Elisa Haller, Marcia Rinner, Jeanette Villanueva, Charles Benoy, Victoria Block, Eveline Frey, Sonja Borner, Fiona Pfister, Noemi Walder, Fabio Coviello, Clara Bongartz, Albiona Kiska, Juliana Forster, Angelina Zeugin, Elena Pauli, Raphael Most, Doreen Eckardt, Linda Knellwolf, Vanessa Aeschbach, Johannes Massell, Marc Bohny, Nicolas Scharowski, Ruben Meyer, Larissa Landolt, Matthias Brunner, Stefanie Litschi, Joé Miller, Lukas Bosse, Moritz Mücke, Carla Preuss, Michelle Wülsener, Matthias Nadler, Lionel Sutter, Hendrik Haag, Uta Bieber, Sophia Prix, Laura Takushi, Jessica Marcacci, Alexander Meyer, Yannick Schulz, Emina Ricciardi, Amanda Holzer, Michèle Gisler, Florin d'Auhourd'hui, Joye Geisselhardt, Vincent Ochs, Rebekka Staub, Fides Roos, Anna-Sophia Wallach, Vanessa Leutwyler, Nadine Jeker, Milan Brupbacher, Victoria Jorda, Melanie Uhlmann, Can Tekin

Collaborators

Jeanette Villanueva & Jan Martz (Zurich – SING), Roselind Lieb, Andrea Meyer, Patrizia Hofer, Jens Gaab, Isabell Schumann, Klaus Bader, Thorsten Mikoteit, Christian Imboden (Solothurn), Martin Hatzinger (Solothurn), Michael Waadt (München), Rainer Sonntag (Olpe), Jürgen Hoyer (Dresden), Hans-Ulrich Wittchen (Dresden), Jens Klotsche, Nina Romanczuk-Seiferth (Berlin), Stefan Hofmann (Marburg), Alexander Gerlach (Köln), Jutta Mata (Mannheim), Charles Benoy (Luxembourg), Yuen Yu Chong (Hong Kong), Cristóbal Hernández Contreras (Chile), Gökçen Aydın (Turkey), Maria Karekla (Cyprus), Giovambattista Presti (Italy), David Dias Neto (Portugal), Louise McHugh (Ireland), Joseph Ciarrochi, Baljinder Sahdra (Australia), Michael Twohig, Michael Levin, Joe Himle, Georg Eifert, Steve Hayes (USA)

Grants



FONDS NATIONAL SUISSE
SCHWEIZERISCHER NATIONALFONDS
FONDO NAZIONALE SVIZZERO
SWISS NATIONAL SCIENCE FOUNDATION



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

State Secretariat for Education,
Research and Innovation SERI



Bundesministerium
für Bildung
und Forschung



**THANK YOU FOR
YOUR ATTENTION.**