Scuola universitaria professionale della Svizzera italiana
Dipartimento economia aziendale, sanità e sociale

SUPSI

SSPH+ SWISS SCHOOL OF PUBLIC HEALTH

SAMW ASSM

Happiness, health and mental wealth

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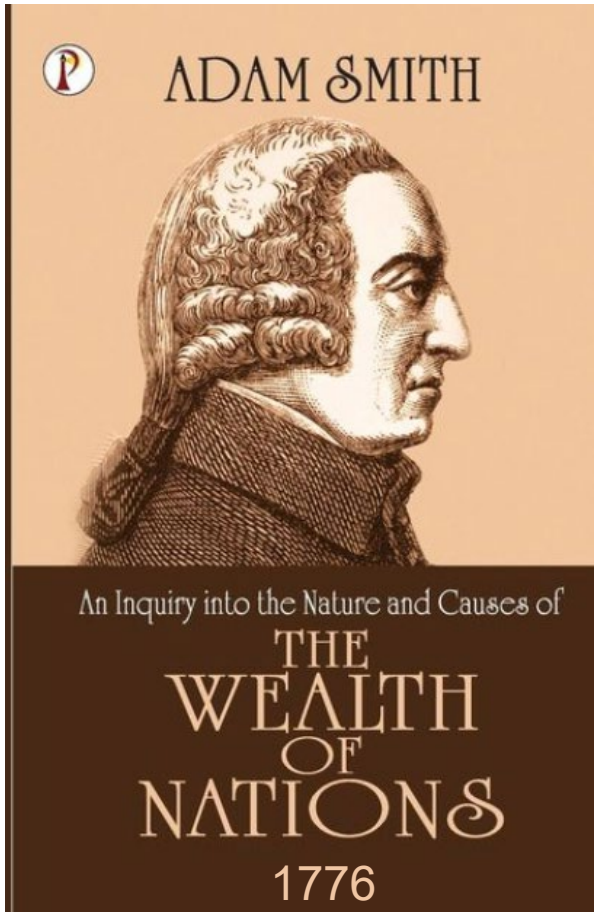
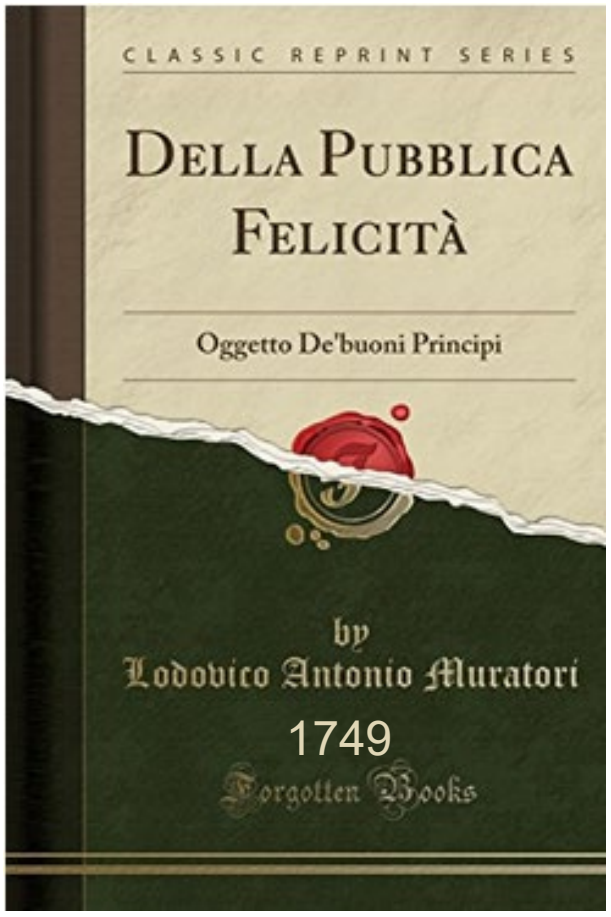
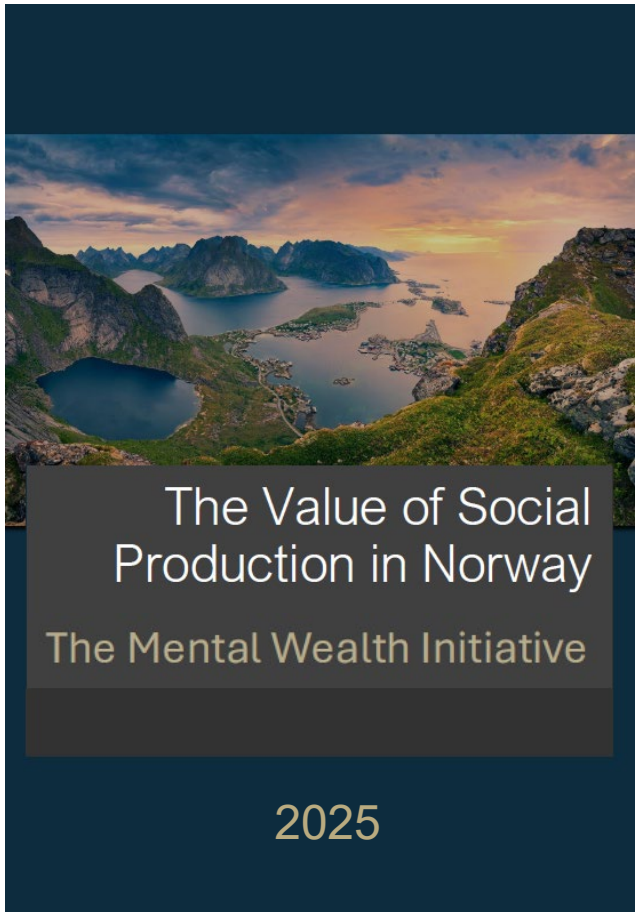
SSPH+ Academic Director
Board Member of the Swiss Academy of Medical Sciences

Three approaches to well-being and prosperity





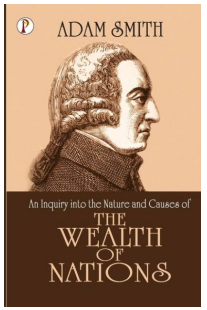


I. WEALTH OF NATIONS (GDP)

II. PUBLIC HAPPINESS

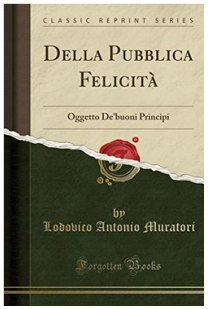
III. MENTAL WEALTH OF NATIONS

I. Wealth of Nations



- **Utilitarianism**: «Nature has placed mankind under the governance of two sovereign masters, pain and pleasure (…) pleasure is the only good, and pain, without exception, the only evil» [Bentham, 1780].
- **Wealth**: «*The stream of goods and services that a nation produces each year*» (GDP).
- Human beings often pursue **intermediate goals** that are instrumental in achieving their **ultimate goals**.
- GDP/wealth of nations is a **universal goal**, because it enables people to better pursue any other goal.

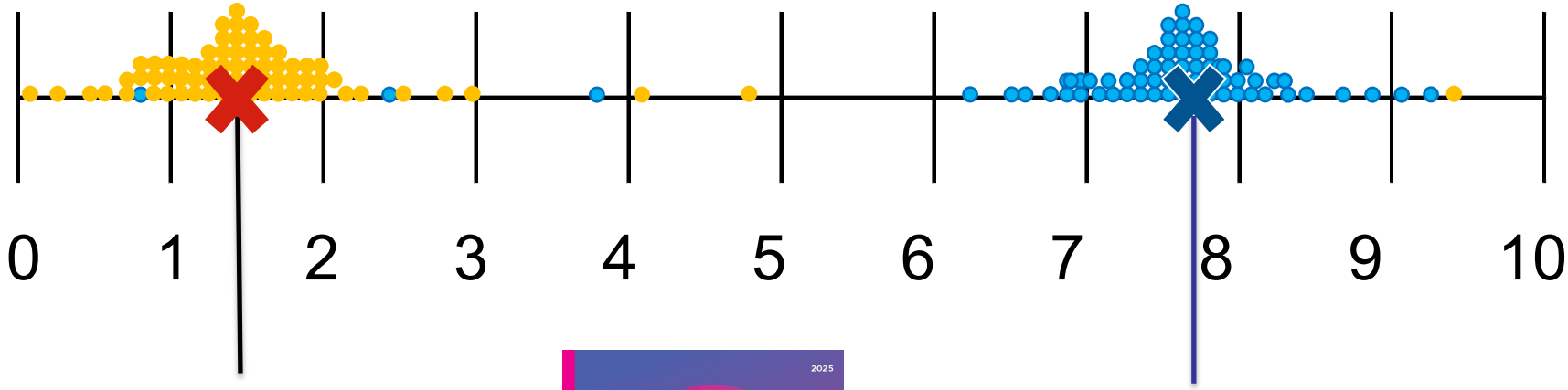
II. Happiness measured through the Cantril (self-anchoring) scale



On which step of the ladder (between 0 and 10) would you say you personally feel to stand today?

Minimum happiness

Maximum happiness



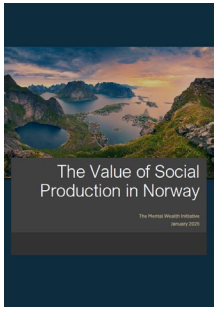
1.364

7.736

147. (147-147) Afghanistan (1.364)

1. (1-1) Finland (7.736)

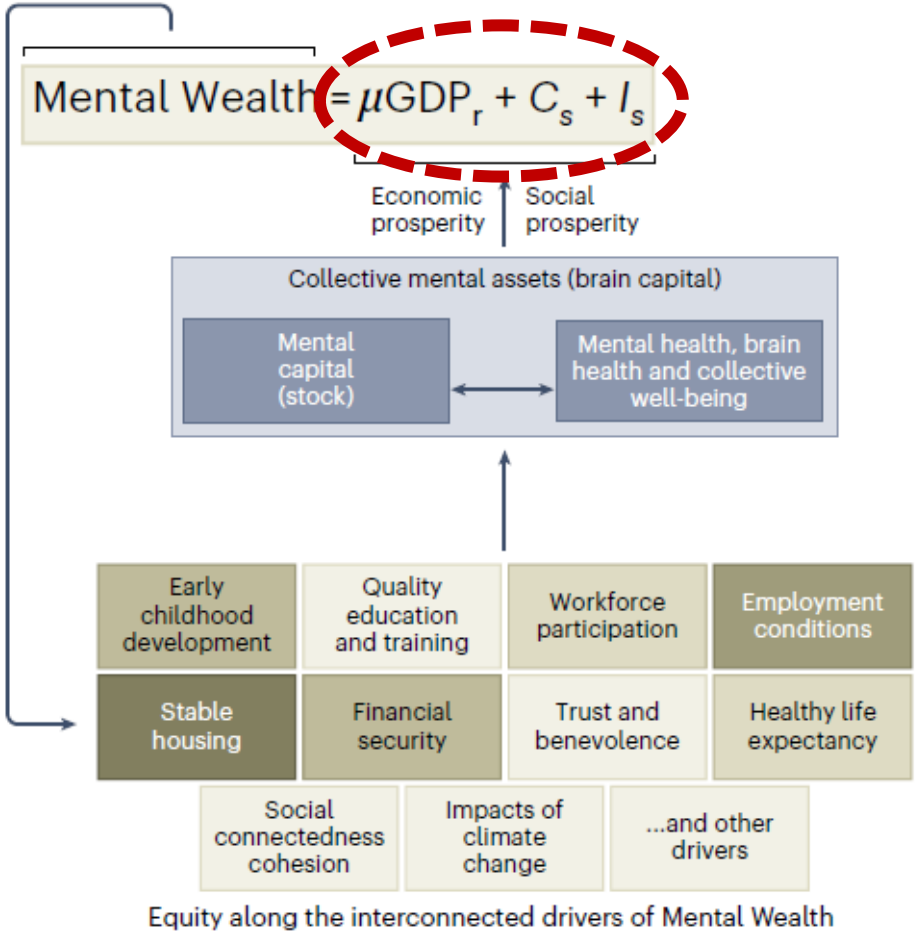
III. Mental Wealth of Nations



nature mental health

Perspective https://doi.org/10.1038/s44220-023-00044-w

Estimating the Mental Wealth of nations: valuing social production and investment



Equity along the interconnected drivers of Mental Wealth

GDP_r: *Real* Gross Domestic Product

C_s: Social consumption

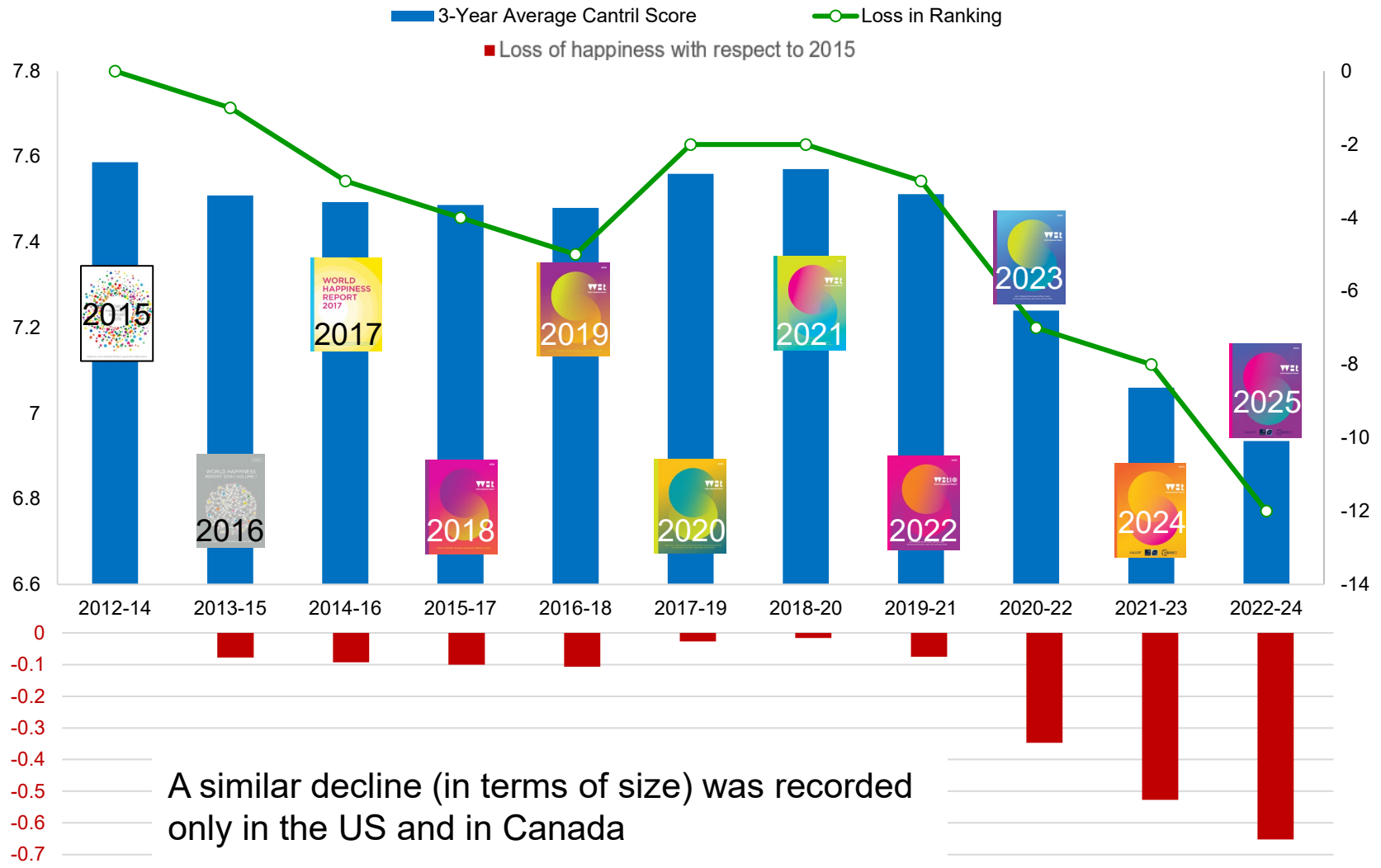
I_s: Investments in the social capital infrastructure

A touch of chauvinism
(ranking 2015, based on data collected in the period 2012-14)

"Maybe it's the chocolate. Or its reputation for neutrality. Or how much it's known for investing in the health, education and employment of its people. Whatever the reason, Switzerland is the world's happiest place, according to an analysis of more than 150 countries."

(WHR 2015)

A decade marked by declining happiness in Switzerland



Topic 1: Happiness as polysemic concept

Distinction between :

1. **Happiness – life satisfaction** (cognitive evaluation, Cantril)
2. **Emotional (hedonic) well-being**, positive and negative affects
3. **Eudaimonic happiness,** i.e. human flourishing according to the Aristotelian tradition

Evidence that Life satisfaction and hedonic happiness have different correlates

Income and education → more closely related to life evaluation

Health, care giving, and loneliness [relational goods] are relatively stronger predictors of daily emotions.

(Kahneman e Deaton, 2010).

PNAS

High income improves evaluation of life but not emotional well-being

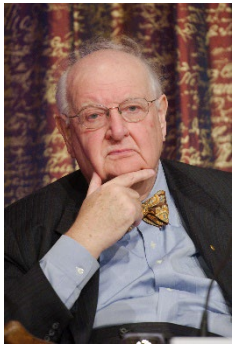
Daniel Kahneman[1] and Angus Deaton

Center for Health and Well-being, Princeton University, Princeton, NJ 08544

Contributed by Daniel Kahneman, August 4, 2010 (sent for review July 4, 2010)

Recent research has begun to distinguish two aspects of subjective well-being. Emotional well-being refers to the emotional quality of an individual's everyday experience—the frequency and intensity of ex-

best possible life for you." We find that emotional well-be
life evaluation have different correlates in the circumsta
people's lives. In particular, we observe striking difference

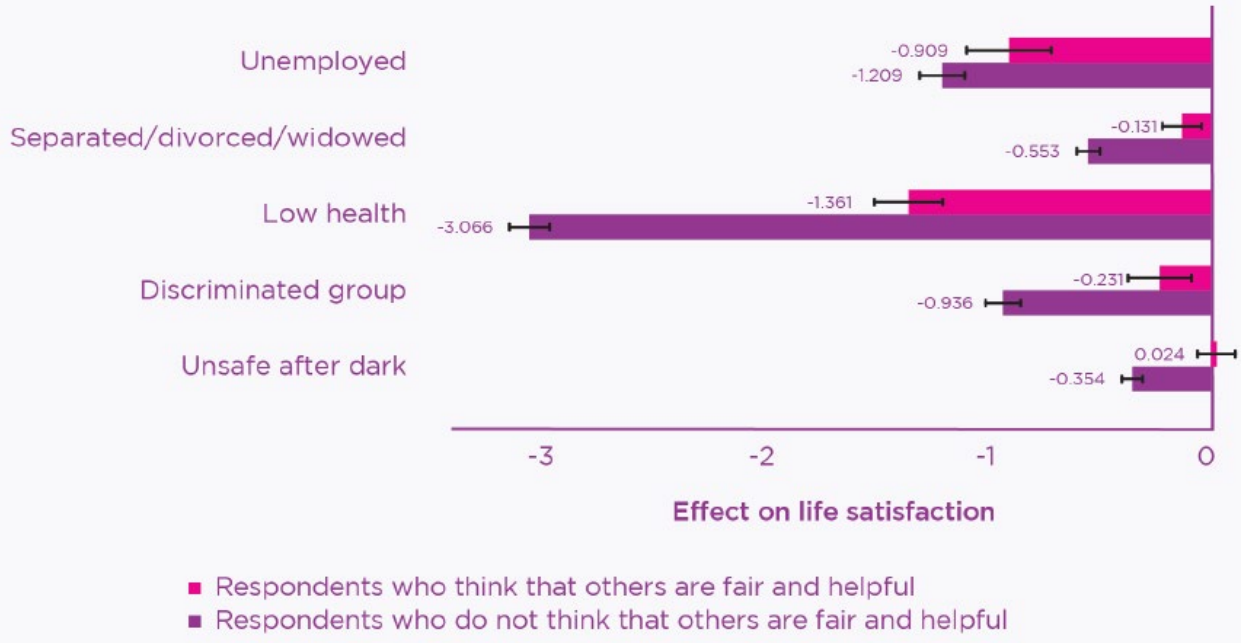


Topic 2: the impact of social capital (and relational goods) on happiness

Social capital and positive relationships with others have a significant impact on happiness.

People who have a positive perception of others (they think that others are fair and willing to help) suffer less (in terms of reduced happiness) when faced with adverse events (**protective effect of social capital**)

Figure 2.6: The protective effects of positive perceptions
European Social Survey (2002–2022)



Commensality (meal sharing, dining alone)

Figure 3.15: Meal sharing and life evaluation in the United States
ATUS (2010, 2012, 2013, 2021)

Source: De Neve et al, WHR2025

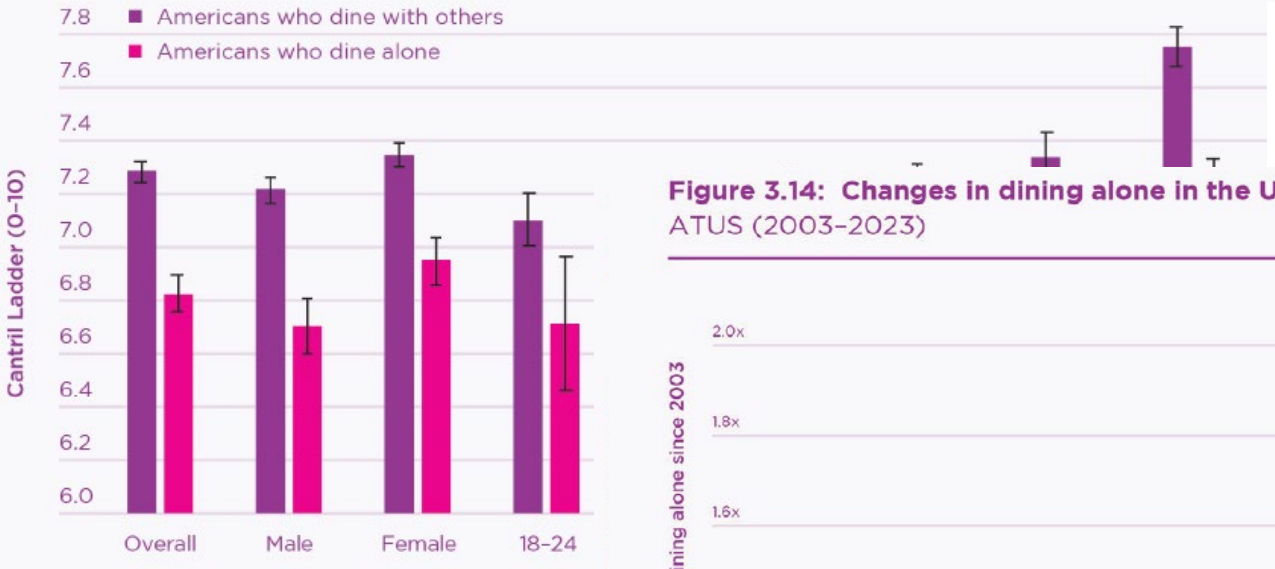
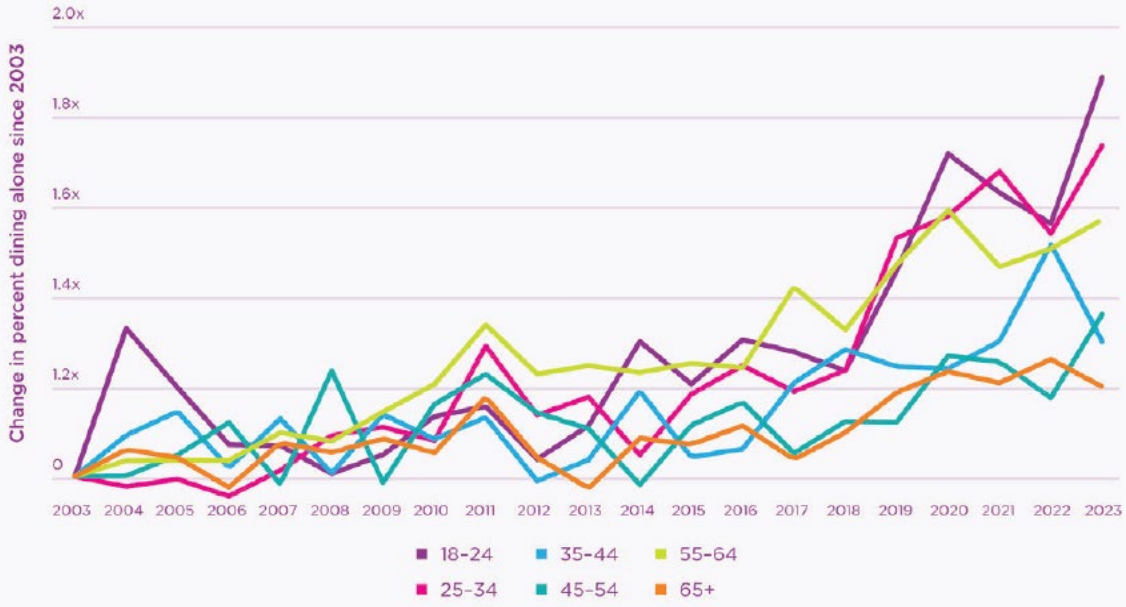


Figure 3.14: Changes in dining alone in the United States by age
ATUS (2003–2023)

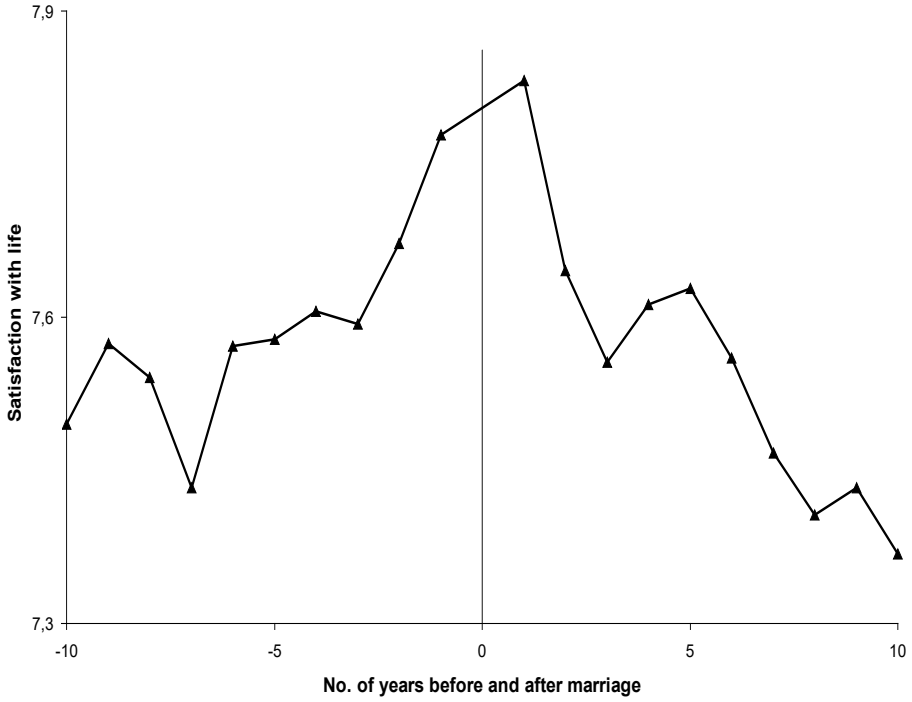


Topic 3: Adaptation effect: the interaction between genes and the environment

- Various studies (Frey and Stutzer, 2005; Clark et al., 2008; Piper, 2013) have shown that humans can **adapt** almost completely to positive and negative events.
- This is referred to as a "**treadmill effect**" which, in the medium term, brings the individual's level of happiness back to its starting point, as if **genetic endowment** would determine an individual set point in terms of happiness.

Evidence on the adaptation effect

MARRIAGE



DIVORCE / WIDOWHOOD

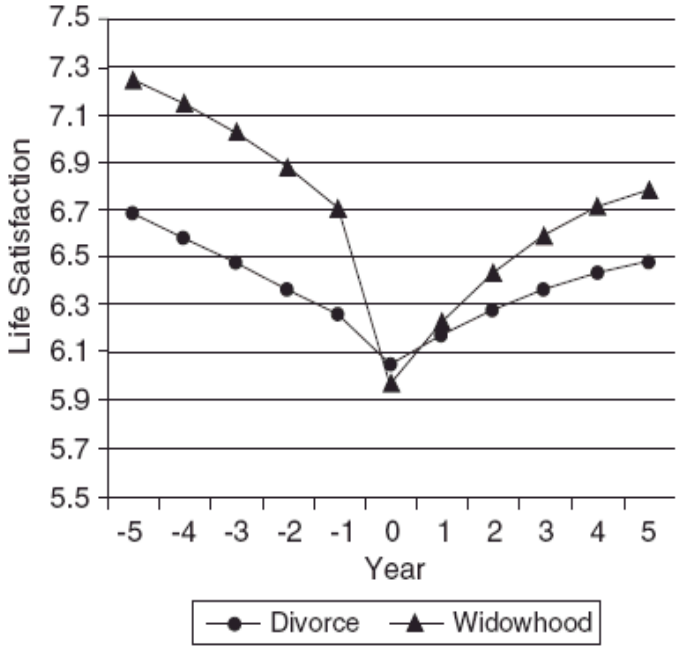
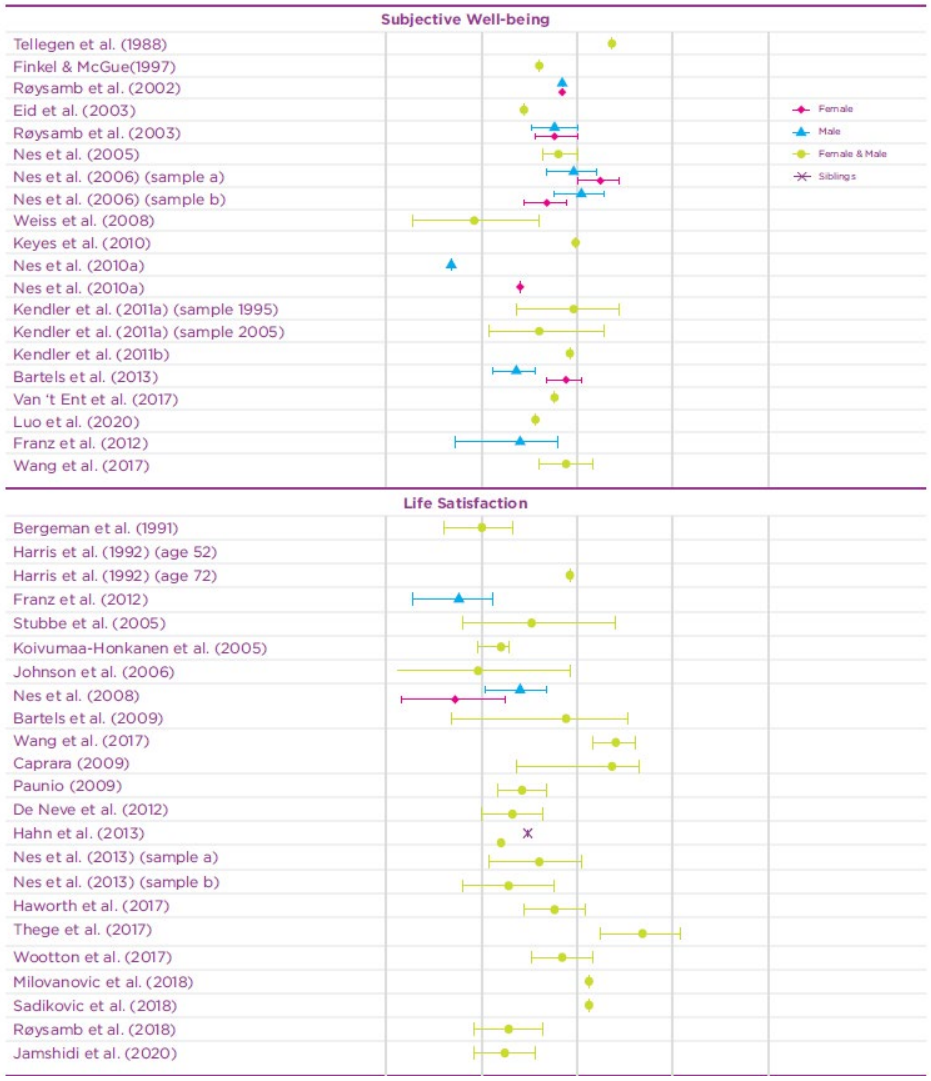


Fig. 4. Satisfaction with life across the 5 years before and after a divorce or the death of a spouse.

Source: Frey e Stutzer (2005)

Evidence of the impact of genes on happiness

Figure 5.1: Overview of twin-based heritability estimates of well-being



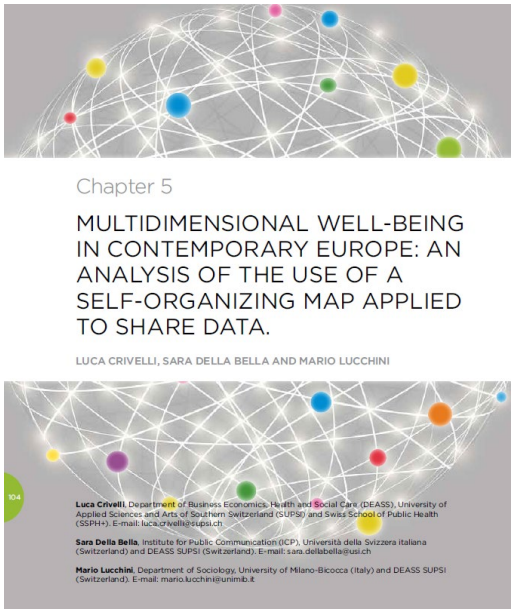
Source: Bartels et al, WHR2022

Heritability:
0.27-0.67

Use of databases on **twins** (*homozygous and dizygotic*), raised together or in different families, to determine genetic and environmental influences on the phenotypic variance of happiness

Personal contribution to topic 1

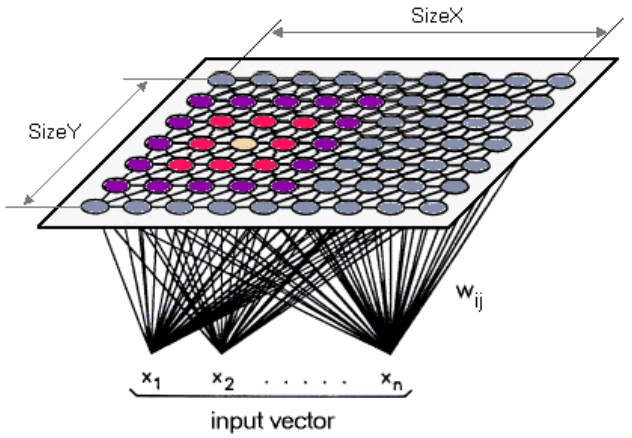
- **Goal**: determine (while preserving multidimensionality) whether the Cantril scale, positive and negative affects represent different constructs or overlapping ones.
- **Data**: SHARE (approx. 50'000 observations and 38 different well-being indicators).
- **Methods**: SOM (unsupervised artificial neural network → clustering-and-projection" technique).



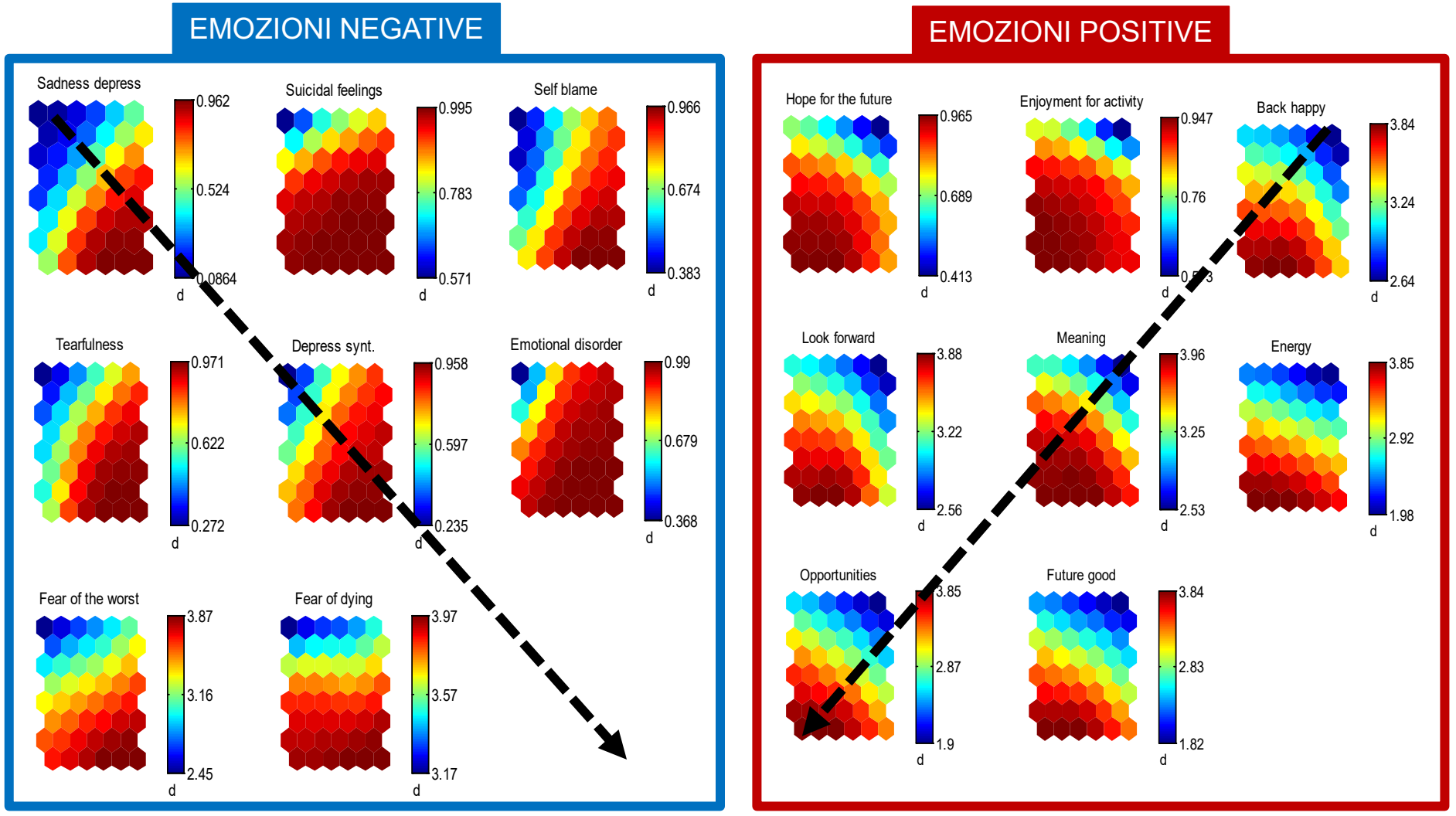
Chapter 5

MULTIDIMENSIONAL WELL-BEING IN CONTEMPORARY EUROPE: AN ANALYSIS OF THE USE OF A SELF-ORGANIZING MAP APPLIED TO SHARE DATA.

LUCA CRIVELLI, SARA DELLA BELLA AND MARIO LUCCHINI

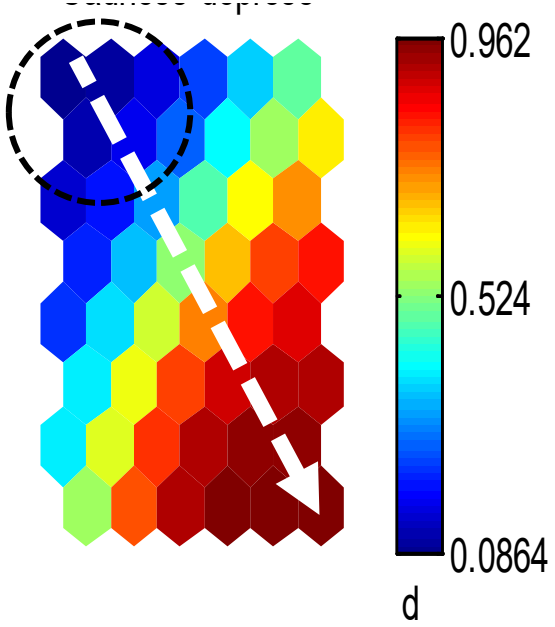


Personal contribution to topic 1 (continued)

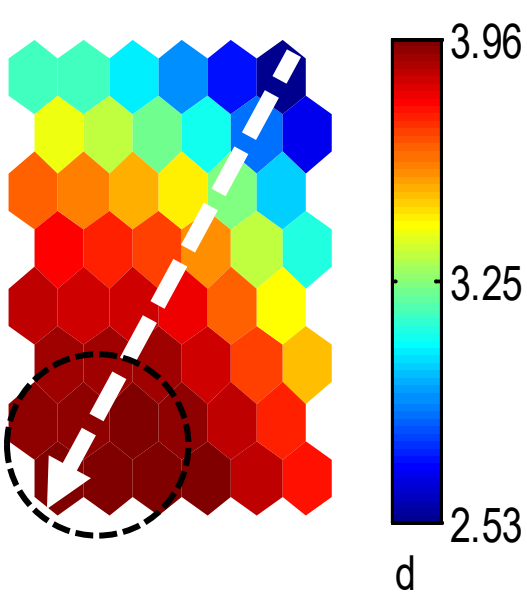


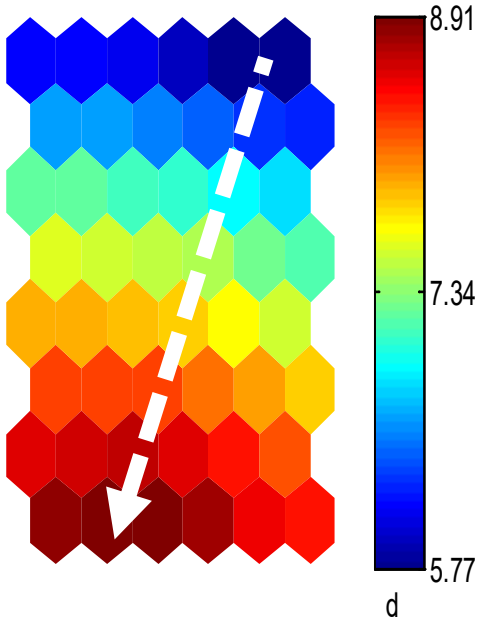
Personal contribution to topic 1 (continued)

EXAMPLE OF
NEGATIVE EMOTION



EXAMPLE OF
POSITIVE EMOTION





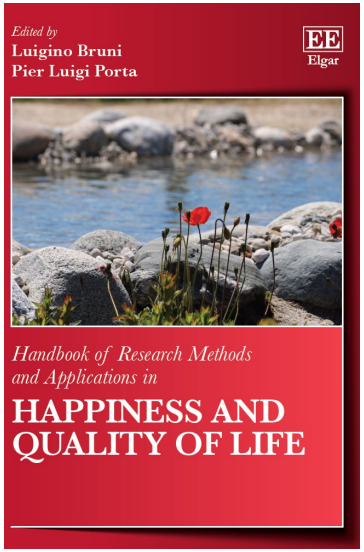
DEPRESSION / SADNESS
Have you been sad or depressed in the past month?
By sad and depressed, we mean feeling miserable (0=Yes, 1=No)

MY LIFE HAS MEANING
How often do you feel that your life has meaning?
(1=Never, 2=Rarely, 3=Sometimes, 4=Always)

HAPPINESS
How satisfied are you with your life? (Cantril scale from 0 to 10)

Personal contribution to topic 3

- **Goal**: Using behavioral genetics, estimate the relative weight of the genetic component in determining happiness.
- **Data**: Italian Multipurpose Household Survey 2010-2012 (5,015 households of 4 persons [2 parents and 2 children] → 20,060 observations).
- **Peculiarity**: Use of family data (rather than twins). Estimation of an ACE model (Rabe- Hesketh et al., 2008).
- **Methods**: variance and covariance decomposition.



9. Genetic and environmental contributions to life satisfaction
Mario Lucchini, Sara Della Bella and Luca Crivelli

1 INTRODUCTION

Since the debate on *eudaimonia* among the Greek philosophers, happiness has been a key topic of investigation in Western societies. While in the past it was mainly the domain of the study of philosophy, in recent decades social and behavioural scientists have made important contributions to the comprehension of the nature and causes of subjective well-being (SWB).

Today the study of happiness, and more generally of SWB, is an interdisciplinary field in which social scientists converse with neuroscientists and behavioural geneticists. Starting from different theoretical and methodological traditions, each discipline provides a piece of knowledge that is crucial to the explanation of the substantial puzzle surrounding the determinants of SWB.

On the one hand, in the past forty years of research, sociologists and economists have mainly focused on the external determinants (or exogenous factors) of SWB and have shown that age, gender, marriage, education, occupational status, income, social support and religiosity are all significantly correlated to SWB. However, the proportion of variance in SWB that is explained by these exogenic factors appears to be rather limited. Moreover, it seems that changes in these variables don't yield long-lasting changes in the SWB components (Layard, 2005; Diener and Lucas, 1999).

On the other hand, many empirical studies in the field of behavioural genetics and psychology have stressed the crucial role played by endogenic factors (personality traits, coping efforts and genetic dispositions) in the etiology of SWB. Indeed, psychological states (especially personality traits such as neuroticism and extraversion) and a variety of seemingly environmental characteristics that are strongly (or at least moderately) associated with SWB appear to be highly heritable, meaning that they are likely to be affected by genetic factors as well as by social processes (and not exclusively by the latter, as some social scientists still believe) (cf. Plomin et al.,

Personal contribution to topic 3 (continued)

Table 9.2 Maximum likelihood estimates and their standard error from three mixed models of life satisfaction

	Coef.	Std. Err.	P > z	[95% conf.	Int.]
Age	−0.001	0.001	0.304	−0.003	0.001
Age 2/100	0.066	0.005	0.000	0.055	0.077
Age 3/10000	−0.206	0.021	0.000	−0.248	−0.163
Gender					
Male (ref.cat.)					
Female	0.002	0.021	0.941	−0.039	0.042
Waves					
w.2010 (ref.cat.)					
w.2011	−0.008	0.034	0.821	−0.073	0.058
w.2012	−0.425	0.034	0.000	−0.492	−0.358
Constant	7.196	0.030	0.000	7.138	7.255
Random-effects					
sd(A)	1.039	0.016		1.008	1.071
sd(C)	0.585	0.024		0.539	0.635
sd(E)	0.991	0.015		0.962	1.021
Heritability	0.449	0.012	0.000	0.425	0.473
Shared environment	0.142	0.012	0.000	0.120	0.165
Unique environment	0.409	0.013	0.000	0.383	0.434

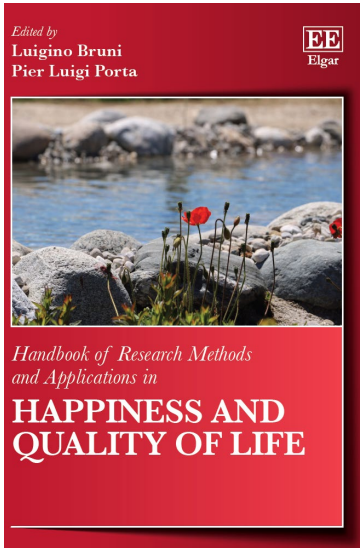
Genes determine 45% of the phenotypic variance of happiness.

$$h^2 = \frac{\hat{\sigma}_A^2}{\hat{\sigma}_A^2 + \hat{\sigma}_C^2 + \hat{\sigma}_E^2}$$

Since this is a share, the more inclusion and equal opportunity policies mitigate the impact of the shared and unique environment, the higher the heritability becomes.

Personal contribution to topic 3 (continued)

- **Goal**: a) Assess whether the adaptation effect also occurs with respect to health status, controlling for unobserved individual heterogeneity; b) Analyze whether happiness is autoregressive (i.e. *path-dependent*).
- **Data**: Swiss Household Panel 2004-2012 (~7000 individuals / 9 waves → ~35'000 observations)
- **Peculiarity**: to objectively assess health status: creation of an index based on 13 items (*first principal component*).
- **Method**: fixed effects (FE) and dynamic panel models (GMM)



17. Happiness and health
Luca Crivelli, Sara Della Bella and Mario Lucchini

1 INTRODUCTION

Studies concerning the determinants of subjective well-being (SWB), conducted in several countries and based on different datasets and methods, have all shown that health is one of the strongest predictors of individual happiness (Angner et al., 2013; Dolan et al., 2008; Graham et al., 2004; Graham, 2008; Yang, 2008). A reduction in health (especially when it is measured with self-assessed physical and mental health) is in general associated with a significant reduction in SWB (Angner et al., 2013; Dolan et al., 2008; Veenhoven, 2008).

However, existing studies have not yet completely clarified whether the relationship between health and SWB is a truly causal one. Three main aspects need to be managed in order to properly answer this question (see section 3): (1) the issue of finding a reliable measurement for health; (2) the problem of reverse causality; and (3) the matter of confounding, due to the limited control of many possible unobserved variables (Dolan et al., 2008; Graham, 2008; Veenhoven, 2008). Panel data and appropriate econometric models might help in addressing all these issues.

Another open question concerns the dynamic nature of SWB and its relationship with health. The past SWB might significantly affect the current level of happiness, that is SWB might be autoregressive or, using other terminology, there might be state-dependency in SWB (Bottan and Truglia, 2010; Piper, 2013).

Finally, the health effect on SWB might be decomposed in a contemporaneous (short-term) and a long-lasting effect. The magnitude of the two components might depend on the indicators used to measure the attained level of health. Despite the widely accepted theory of *hedonic treadmill*, which argues that people are able to adapt quickly to several (good and bad) life circumstances, in some cases this adaptation needs a long period of time. Moreover, there are events which are more difficult to adapt to. It is known, for instance, that individuals are able to adapt to both positive life events (like marriage, an increase in income and wealth or winning a lottery) and negative life events (such as divorce, widowhood and some

Personal contribution to topic 3 (continued)

Table 17.2 Life satisfaction of Swiss people: fixed effects regression model (observations 35281, number of individuals 6960)

Satisfaction with life in general	Coef.	Std. Err.	P > t
Health index (bad health)	−0.205***	0.013	0.000
Lagged Health index (bad health)	−0.029**	0.013	0.023
Health index squared	−0.073***	0.010	0.000
Lagged Death of closely related person: yes	−0.015	0.014	0.289
Termination of close relationship: yes	−0.147***	0.031	0.000
Lagged Termination of close relationship: yes	−0.027	0.029	0.347
Conflicts with/among related persons: yes	−0.193***	0.026	0.000
Lagged Conflicts with/among related persons: yes	−0.057**	0.024	0.017
Physical activity	0.040**	0.018	0.025
Lagged Physical activity	0.016	0.017	0.369

Table 17.3 Life satisfaction of Swiss people: GMM dynamic panel analysis (observations 28 102; number of individuals 6439)

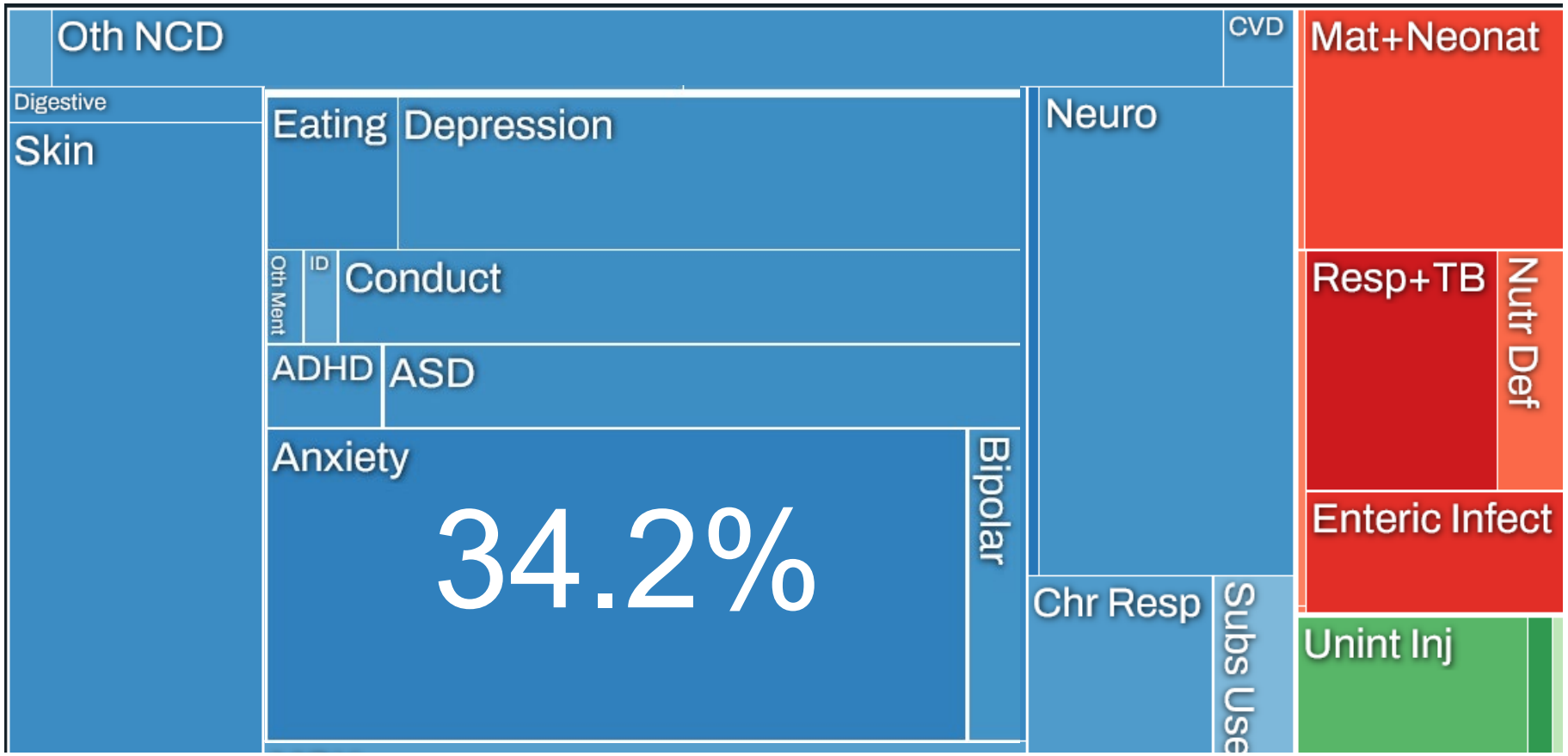
	Coef.	Std.Err.	P > z
Lagged Life satisfaction	0.100***	0.015	0.000
Health index (bad health)	−0.470**	0.222	0.034
chi2(85)=94.75	Pr > z=0.220		
Number of instruments	=100		

Notes:
Robust standard errors in parentheses; significance levels: ***p<0.01; **p<0.05; *p<0.1.
Estimates include (but don't show) wave dummies.

1. Health problems have a lasting effect on happiness (along with relational conflicts).
2. Happiness at time t also depends on happiness at time t-1 (there is a general inertial effect in addition to the specific effect of health and conflicts).
3. Angner et al (2013), Dolan et al. (2008) show that adaptation is weaker for chronic disorders associated with stigma, such as mental health.

Conclusion

Years lived with disabilities (Young people in Switzerland, 2021)



Mental illness can also kill. People with depression or anxiety disorders die on average 5 years earlier than other people (GHPR 2018).

Prevention and treatment of psychiatric disorders are extraordinarily cost-effective

Chapter 3

Mental Illness Destroys Happiness And Is Costless To Treat

Richard Layard
Founder-Director of the Centre for Economic Performance at the London School of Economics, and currently Co-Director of the Centre's Well-being research programme

GHPR, 2018

Mental illness is one of the main causes of unhappiness in the world. It produces nearly as much of the misery that exists as poverty does, and more than is caused by physical illness.

Acknowledgements

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- Sara Della Bella, DEASS SUPSI
- Mario Lucchini, Università Milano-Bicocca