Facilitating Motivation, Performance and Wellbeing

Research and Interventions Using Self-Determination Theory

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SDT Basic Research Areas

Intrinsic Motivation

Extrinsic Motivation and Its Internalization

Individual Differences in Motivation

Well Being and Basic Psychological Needs

Culture and Gender: Universal versus Culturally Specific Needs

Aspirations and Life Goals

Energy and Vitality

Mindfulness

Dual Process: Congruence of Conscious and Non-Conscious

Nature and the Impact of Natural Environments on Wellness

Self-Determination Theory

SDT Applied Research

Psychotherapy Motivation

Educational Practice and School Reform

Organizational Behavior and Human Performance

Health Care: Motivation and Adherence

Exercise and Physical Activity Motivation

Sport Motivation and Performance

Religious Internalization and Motivation

Environmental Footprints and Consumer Behaviors

Virtual Environments and Video Games

Violence, Causes and Prevention

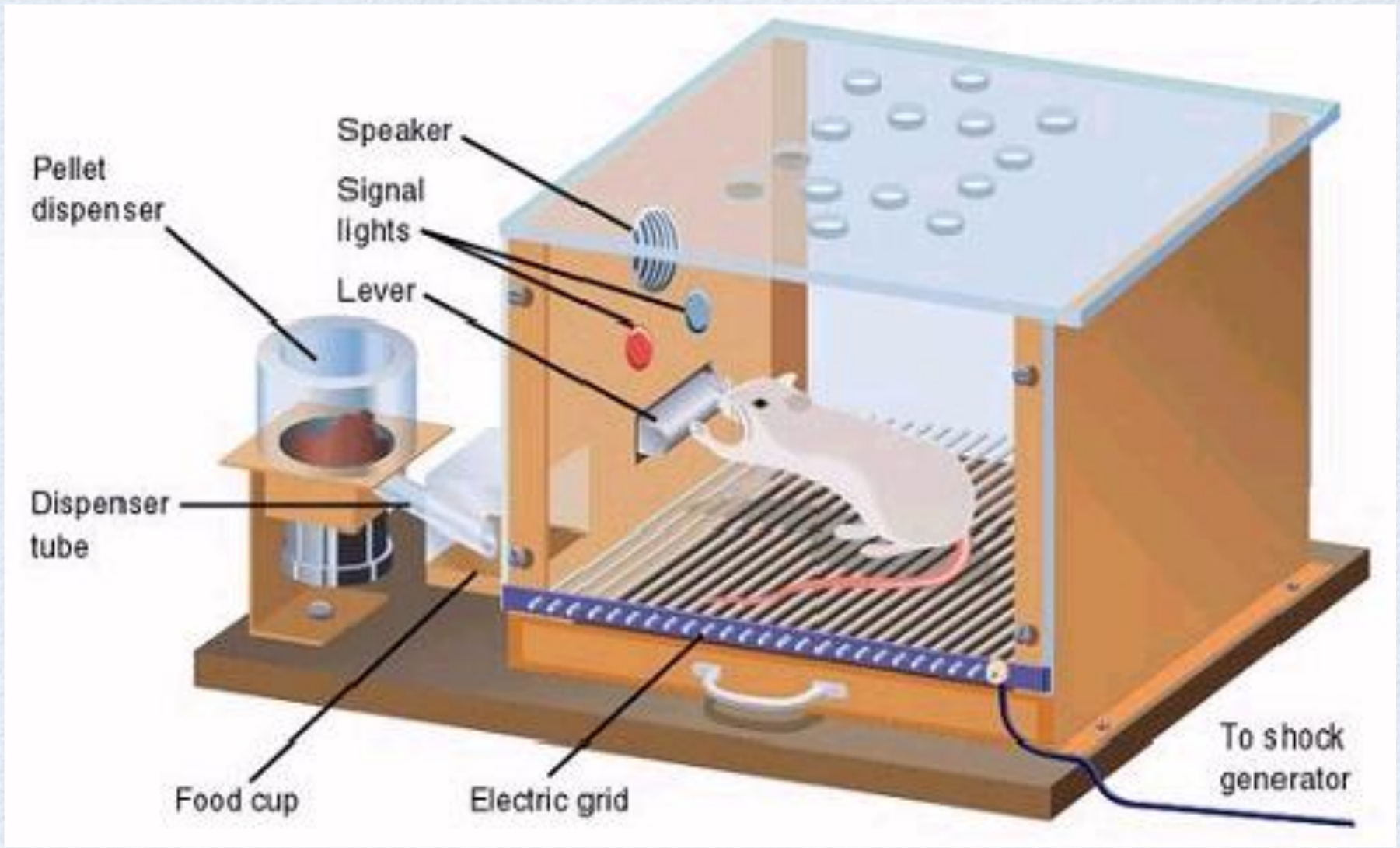
Self-Determination Theory

Motivation

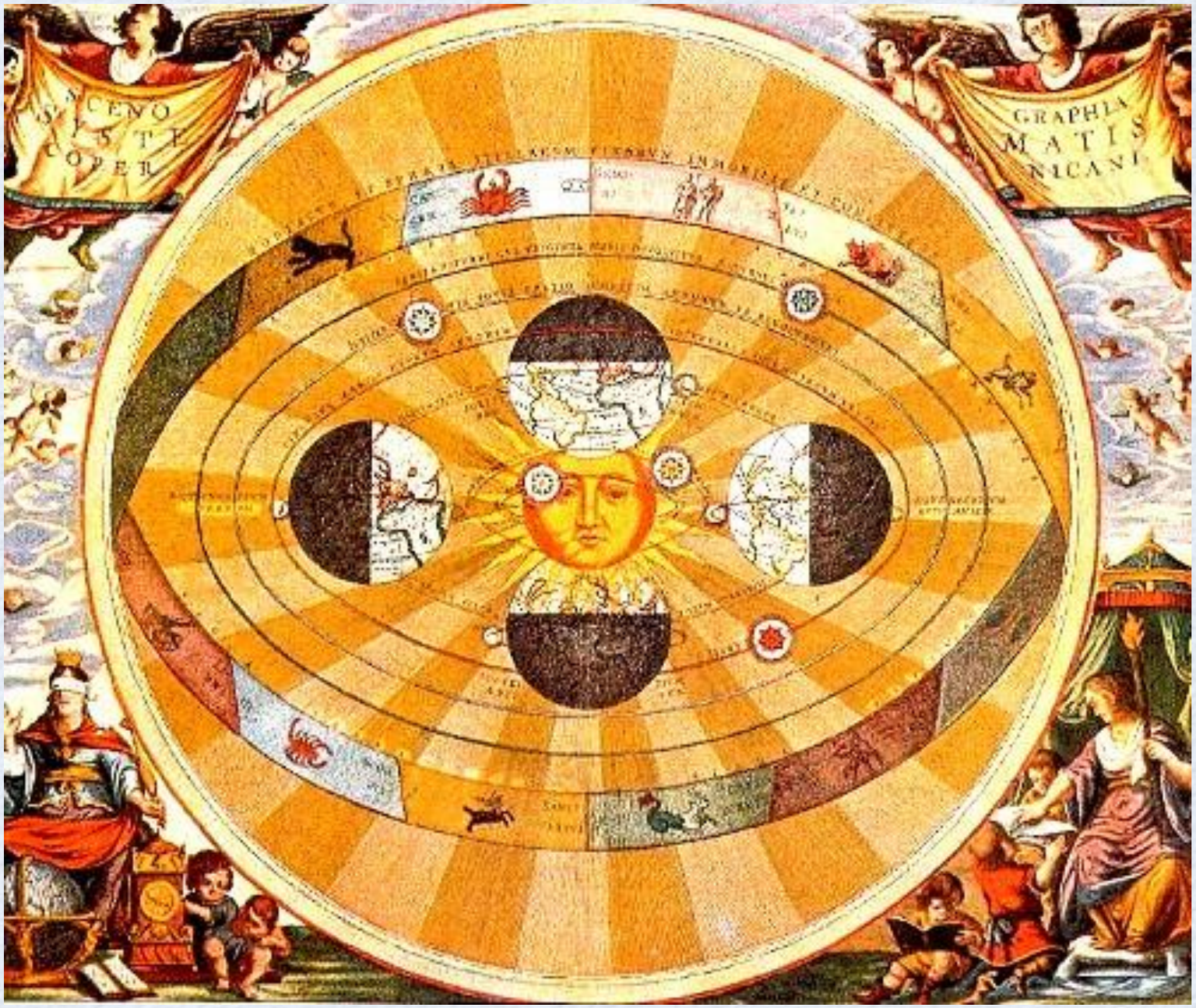
To be moved to action

Self-Determination Theory

The Classical Model



The Copernican Turn in Motivational Thinking



Self-Determination Theory

Out of the Box: People Have Choices

Self-Determination Theory

The study of motivation is more about
why they choose what they do,
and what will sustain them on that path...

Self-Determination Theory

The Importance of Volitional Behavior

Multiple ways to facilitate (and undermine) volition—

- Intrinsic motivation (interest)
- Internalized motivation (value)

Self-Determination Theory

Need: Something essential to a living entity's growth, integrity and well being

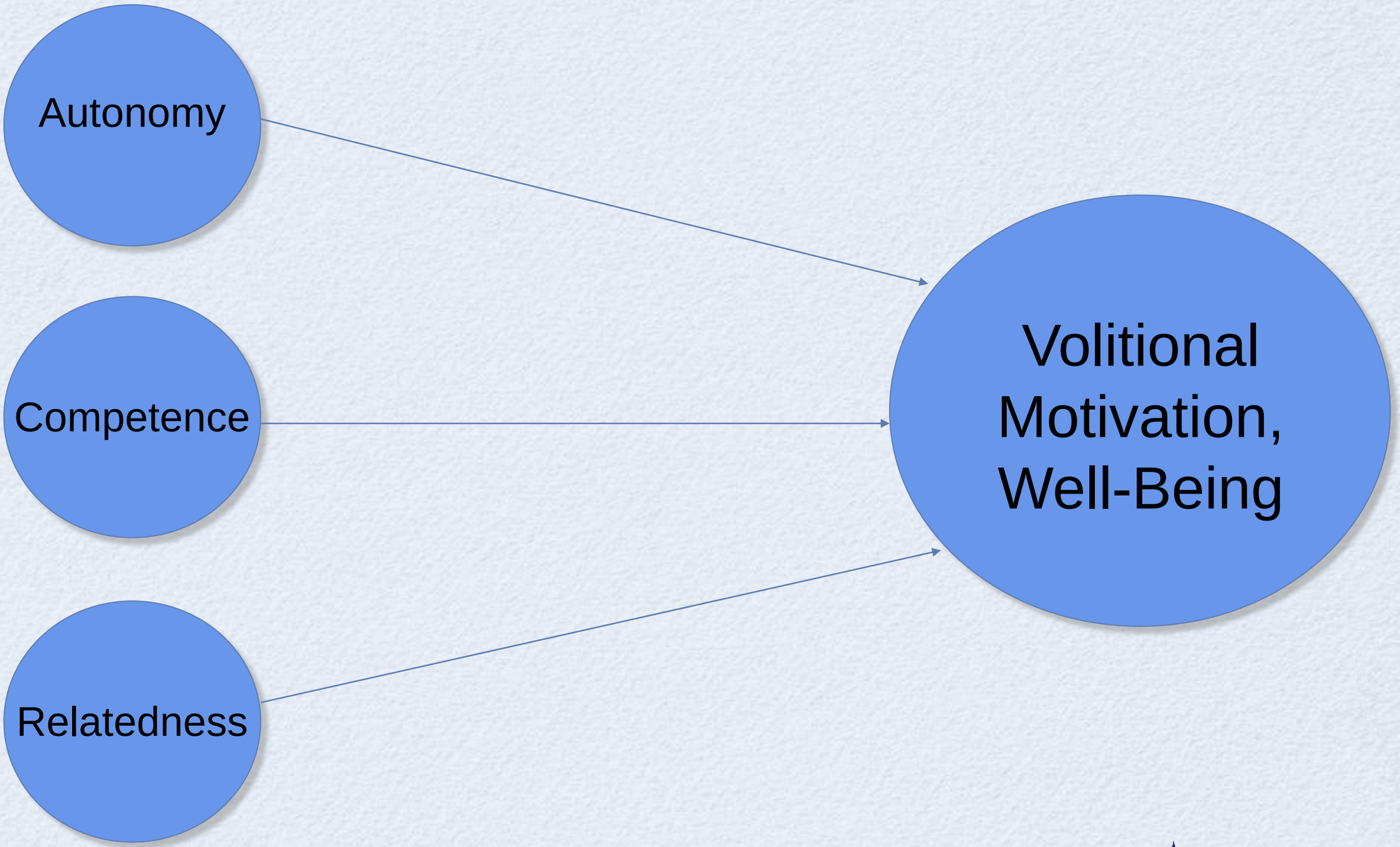
- when deprived of needs, entity shows evidence of stagnation, degradation or harm
- when satisfied, evidence of thriving

Basic Psychological Needs: Essential for psychological growth, integrity and wellness

- natural rather than acquired
- universal rather than culturally specific
- not necessarily consciously valued or pursued

Self-Determination Theory

Basic Psychological Needs Underlying Volitional Motivation and Well Being



Self-Determination Theory

SDT Three Basic Needs

Autonomy ➡ Behavior is in accord with abiding values and interests; actions are self-endorsed; congruence between implicit and explicit motives

Competence ➡ Sense of effectance & competence in one's context

Relatedness ➡ Feeling cared for, connected to, sense of belonging with others

Self-Determination Theory

What autonomy is not

- It is not independence
- It is not about individualism or being “self-interested”
- It does not require an absence of external inputs or demands, but rather an endorsement of them if followed

Today's Discussion

What helps people stay motivated and "volitionally" engaged?

What conditions and practices facilitate these processes?

Open discussion of clinical and consulting practices

Self-Determination Theory

What is intrinsic motivation?

- IM is doing something because of the inherent satisfactions the activity yields
- Children's play is a prototype of intrinsic motivation
- IM continues across the lifespan as an important impetus to learning and revitalization

Self-Determination Theory

Factors Associated with the Facilitation of Intrinsic Motivation

Autonomy
(supports for volition, IPLOC)

Competence
(Optimal Challenge; Positive Feedback)

Intrinsic Motivation

Relatedness
(Security of Attachment)

Self-Determination Theory

Conditions that <u>Facilitate</u> Intrinsic Motivation

<u>Autonomy-Relevant</u>

- Absence of Pressure
- Goal Choice
- Strategy Choice
- Task Involvement
- Promotion of Task Interest

<u>Competence-Relevant</u>

- Optimal Challenge
- Pos. Feedback
- Informational Rewards

<u>Relatedness-Relevant</u>

- Empathy
- Warmth
- Security

Conditions that <u>Undermine</u> Intrinsic Motivation

<u>Autonomy-Relevant</u>

- Pressure toward Outcomes
- Punishment contingencies
- Goal Imposition
- Deadlines
- Controlling rewards
- Ego-involvement
- Surveillance

<u>Competence-Relevant</u>

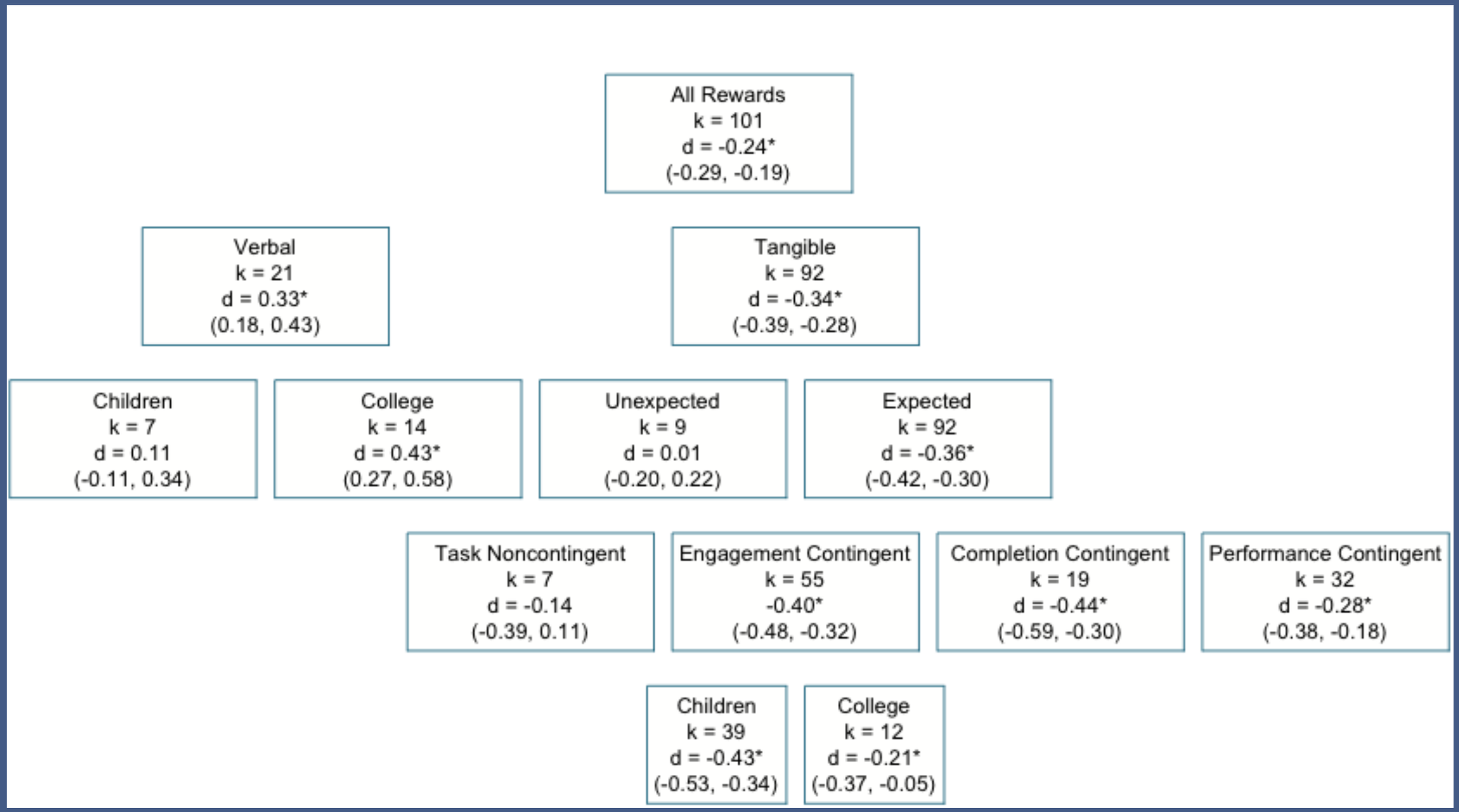
- Non-Optimal Challenges
- Negative Feedback

<u>Relatedness-Relevant</u>

- “Cold” Interactions
- Lack of Positive Involvement

Self-Determination Theory

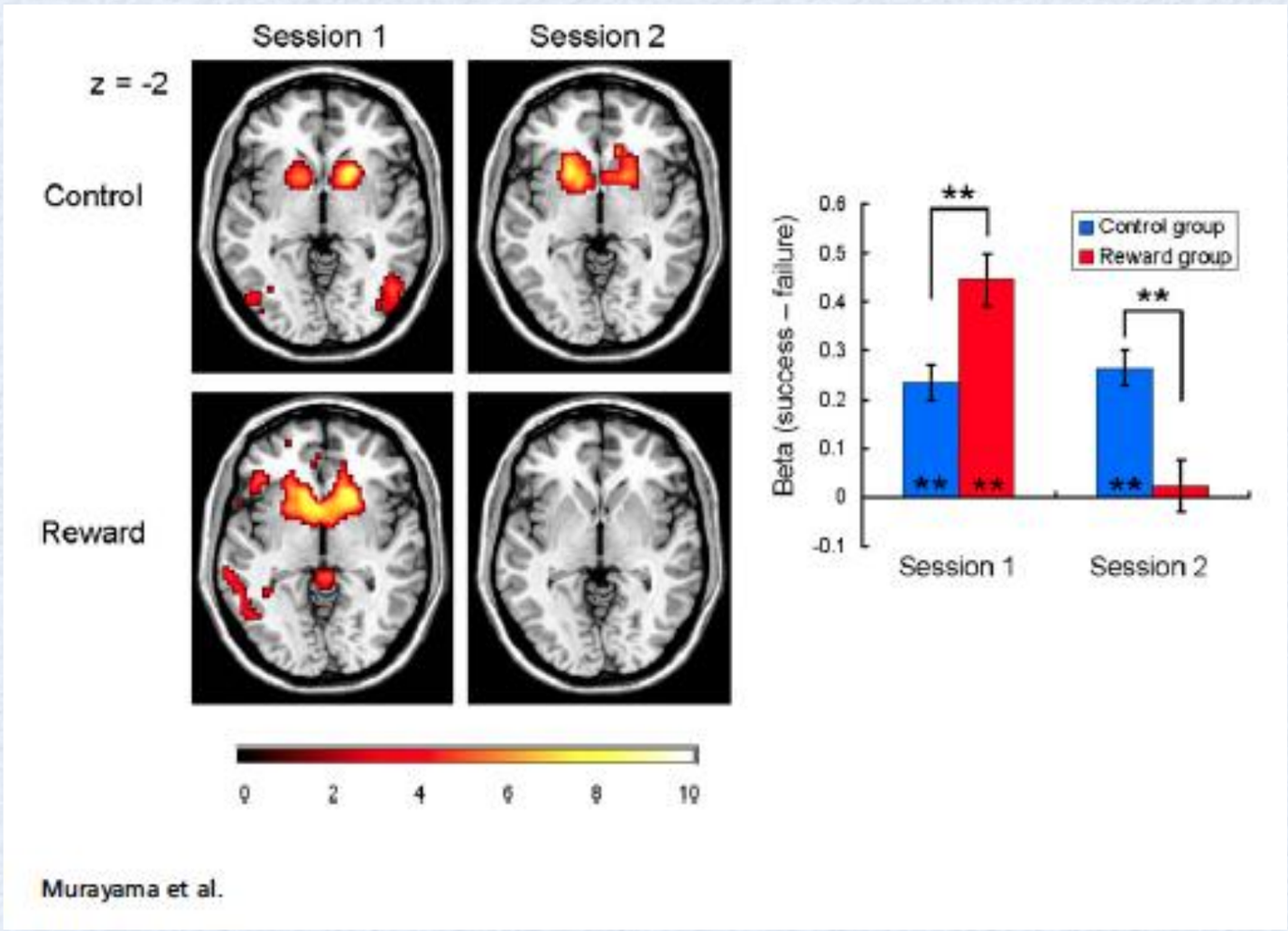
Effects of Rewards on Free-Choice Behavior



Deci, E. L., Koestner, R., & Ryan, R.M. (1999). *Psychological Bulletin, 125,* 627-668.

Self-Determination Theory

The Undermining Effect: Deactivation of Bilateral Striatum as a Function of Rewards in Subsequent Performance



Murayama et al.

Right LPFC Changes During Reward and Post-Reward Sessions

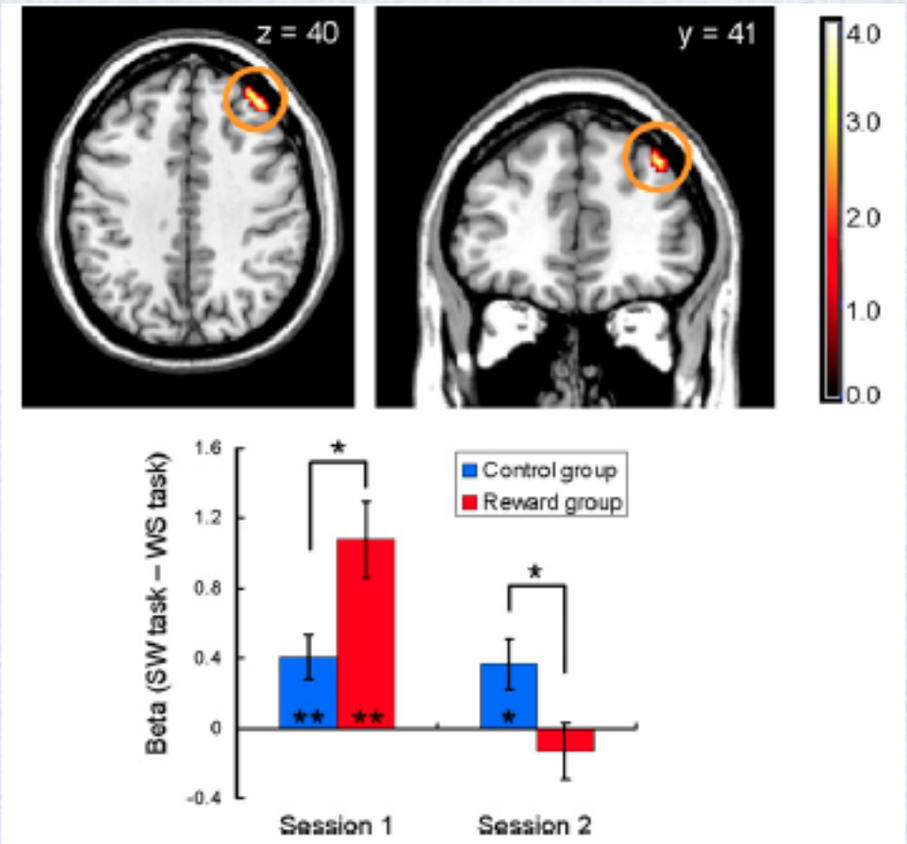


Fig. 4. Right LPFC activation (peak at 39, 41, 40) detected in the session-by-group interaction during the task cue period ($P < 0.05$, small-volume-corrected; image is shown at $P < 0.001$, uncorrected for display). Neural responses are displayed in transaxial and coronal formats. The bar plot represents mean contrast values and SEs for each session/group. During the first session, the LPFC in the reward group showed significantly larger activation than that in the control group (two-sample $t_{26} = 2.62$, $P < 0.05$). However, the activation became significantly smaller in the reward group than in the control group during the second session (two-sample $t_{26} = 2.27$, $P < 0.05$).

Relations of Teachers' Orientations (autonomy-supportive vs. controlling) to Students' Intrinsic Motivation and Perceived Competence

	Teachers' Autonomy Support
Intrinsic Motivation	
Preference for Challenge	.41***
Curiosity	.56***
Mastery attempts	.37***
Perceived Competence	
Cognitive competence	.29***
Global competence (self-worth)	.36***

Self-Determination Theory

SEM Relating Autonomy Support/Control to Need Satisfaction and Outcomes in Athletes

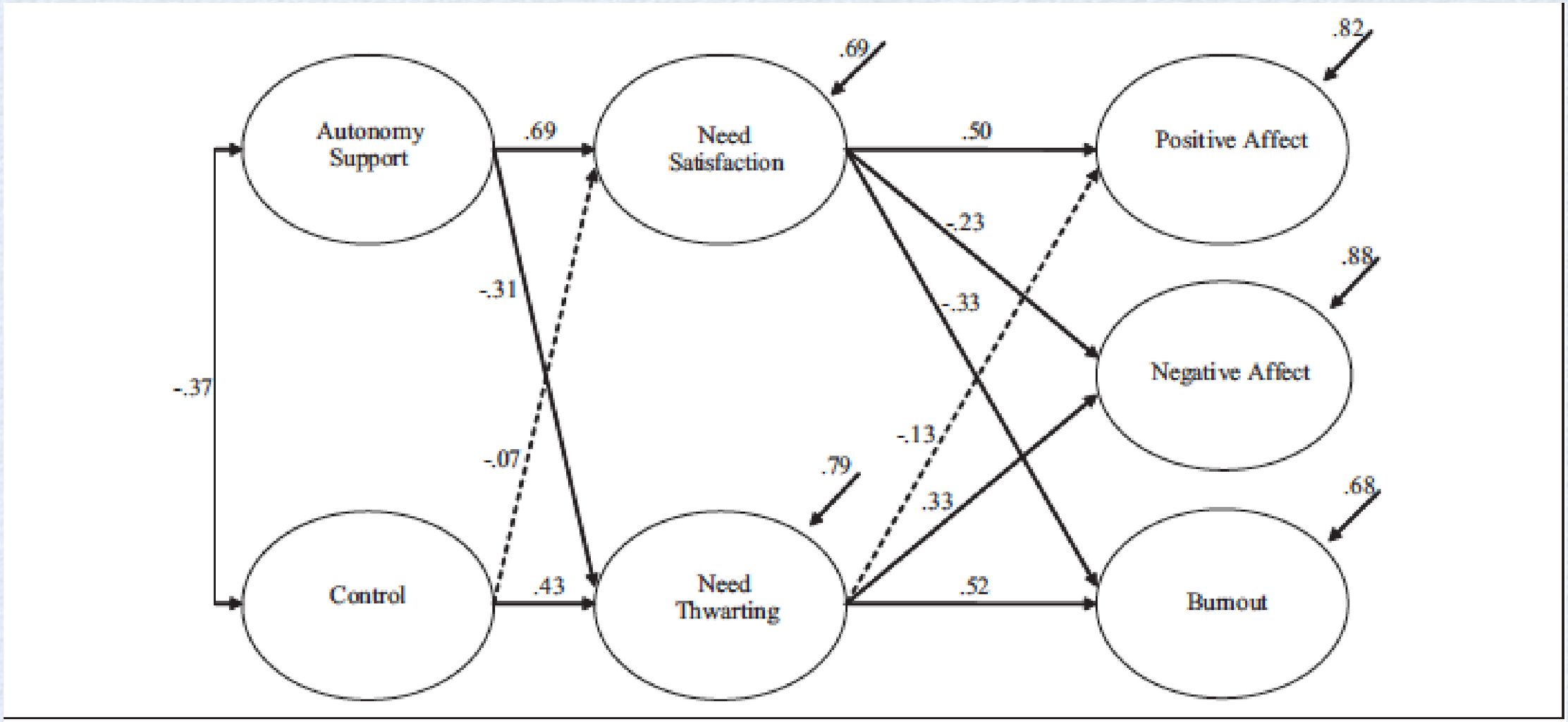


Figure 2. Latent variable modeling predicting positive affect, negative affect, and burnout symptoms (Study 2)
Dotted lines represent nonsignificant parameters. Item indicators are not presented for presentation simplicity purposes. Correlations between disturbance terms were need satisfaction–need thwarting = –.20, positive affect–burnout = –.30, negative affect–burnout = .46.

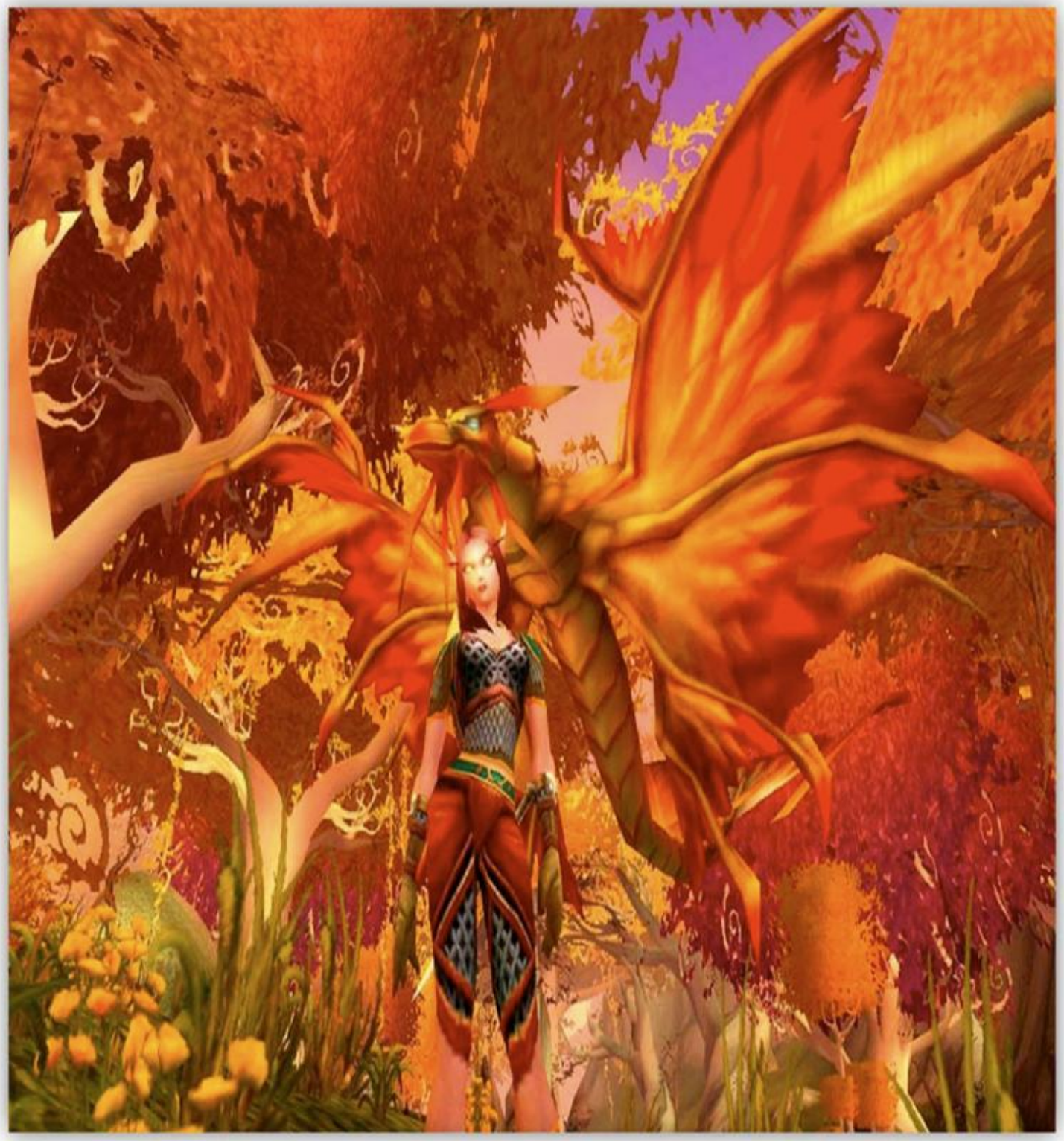
“PAPA” Project
(Duda et al., in progress)

Self-Determination Theory

- Video games are typically sustained by intrinsic motivation
- In fact, few get extrinsic rewards for engagement, most “pay” to play

Motivation for Multiplayer Online Role-Playing Games

We did a longitudinal analysis of in-game psychological need satisfaction & engagement and persistence in World of Warcraft over 8 months



Self-Determination Theory

Correlations and Simultaneous Regressions of Initial Enjoyment and Need Satisfaction on Outcomes 8-Months Later

Zero-Order Correlations and Simultaneous Regressions of Need Satisfaction and Enjoyment on Outcomes 8 Months Later

	Correlations		Betas	
	Need Satisfaction	Enjoyment	Need Satisfaction	Enjoyment
Still Playing Game	.41**	.19	.42**	.02
Worth the Price	.54**	.37*	.47**	.14
Will Recommend to Others	.61**	.53**	.46**	.30^{+}
"This Game Rocks!"	.56**	.46**	.45**	.24

N = 31. *p < .05. ** p < .01. $^{+}$ p < .10.

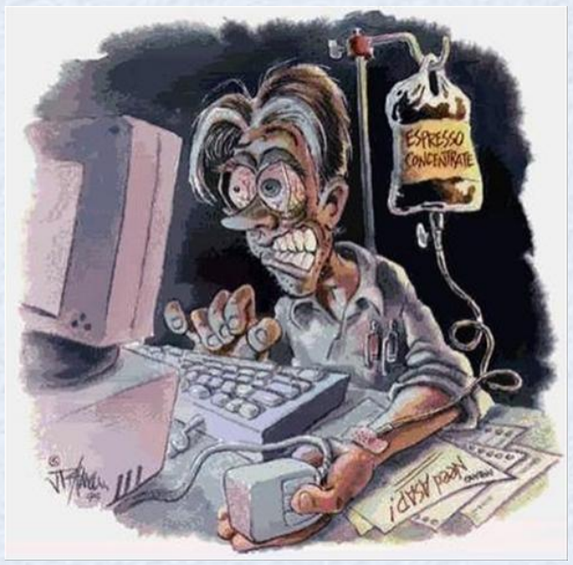
Self-Determination Theory

Risk factors for VG overuse

Most do not get “addicted”, just enjoy games

Yet approximately 1/10 are serious overusers

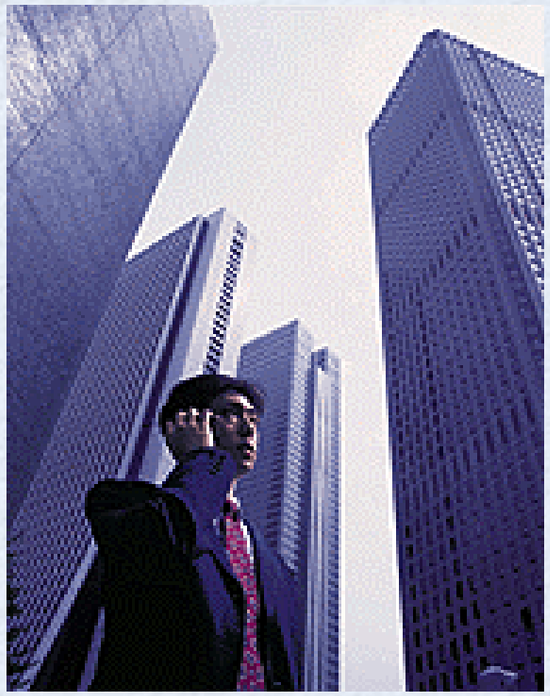
The “need density” hypothesis:
High density of NS in games, paired with low density in everyday life = risk for overuse



Self-Determination Theory

Intrinsic Motivation: To act for the inherent satisfactions of activity

Extrinsic Motivation: To act in order to obtain or achieve some separable outcome



Ryan, R.M., & Deci, E. L. (2000). Intrinsic and extrinsic motivation: Classic definitions and new directions. *Contemporary Educational Psychology, 25,* 54-67.

Self-Determination Theory

Intrinsic & Extrinsic Motivation

REGULATORY STYLES:

Amotivation	Extrinsic motivation				Intrinsic motivation
	External regulation	Introjection	Identification	Integration	
ASSOCIATED PROCESSES:					
Perceived non-contingency Low perceived competence Non-relevance Non-intentionality	**Salience of extrinsic rewards or punishments Compliance/ Reactance**	**Ego Involvement Focus on approval from self and others**	**Conscious valuing of activity Self-endorsement of goals**	**Hierarchical synthesis of goals Congruence**	**Interest & Enjoyment Inherent satisfaction**
PERCEIVED LOCUS OF CAUSALITY:					
Impersonal	**External**	**Somewhat External**	**Somewhat Internal**	**Internal**	**Internal**

From: Ryan & Deci (2000)

Self-Determination Theory

Correlations between Motives and Japanese Students' Goals, Values, & Learning Strategies

Subscales	External	Introjected	Identified	Intrinsic
Goal Orientation				
Learning Orientation	.15**	.37***	.58***	.62***
Performance Orientation	.28***	.50***	.33***	.16**
Work-Avoidance	.19***	-.02	-.37***	-.42***
Value of school	-.02	.24***	.49***	.58***
Learning Strategies				
Deep Process	-.04	.27***	.54***	.56***
Surface Process	.38***	.40***	.16**	.13*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; Yamauchi & Tanaka (1998)

Predicting Engagement & Emotions from Relative Autonomy

Engagement Variable	Predictor Variable	*ß*	*t*
Persisting	SAT	0.14	1.02
	Autonomy	0.70	3.54**
Curiosity	SAT	-0.16	-0.99
	Autonomy	1.86	8.31**
Participating	SAT	0.10	1.47
	Autonomy	0.31	3.22*
Anxiety	SAT	-0.10	-1.26
	Autonomy	-0.87	-7.99**
Boredom	SAT	-0.01	-0.07
	Autonomy	-1.03	-6.52**
Anger	SAT	0.12	0.91
	Autonomy	-0.93	-5.22**

* $p < .01$; ** $p < .001$

Self-Determination Theory

Multiple Regressions Predicting Grades From Achievement Tests and Student's Autonomy

	Predictor Variable	*df*	R^2	*f*	ß	*t* *
Math	SAT				0.42	4.89***
	Autonomy				0.42	3.48***
	Model	2,165	.22	22.96***		
Language Arts	SAT				0.36	3.90***
	Autonomy				0.47	3.73***
	Model	2,165	.19	18.87***		
Social Studies	SAT				0.30	3.14**
	Autonomy				0.54	4.17***
	Model	2,159	.18	17.28***		

* $p < .05$; ** $p < .01$; *** $p < .001$

Self-Determination Theory

Correlations of motivational constructs and Total Moderate-Intensity Exercise per ACSM/AHA guidelines	
External Regulation	-.18
Introjected Regulation	.22
Identified Regulation	.45***
Intrinsic Motivation	.34*
Controlled Motivation	.05
Autonomous Motivation	.42**

Self-Determination Theory

Motivation for Medication Adherence

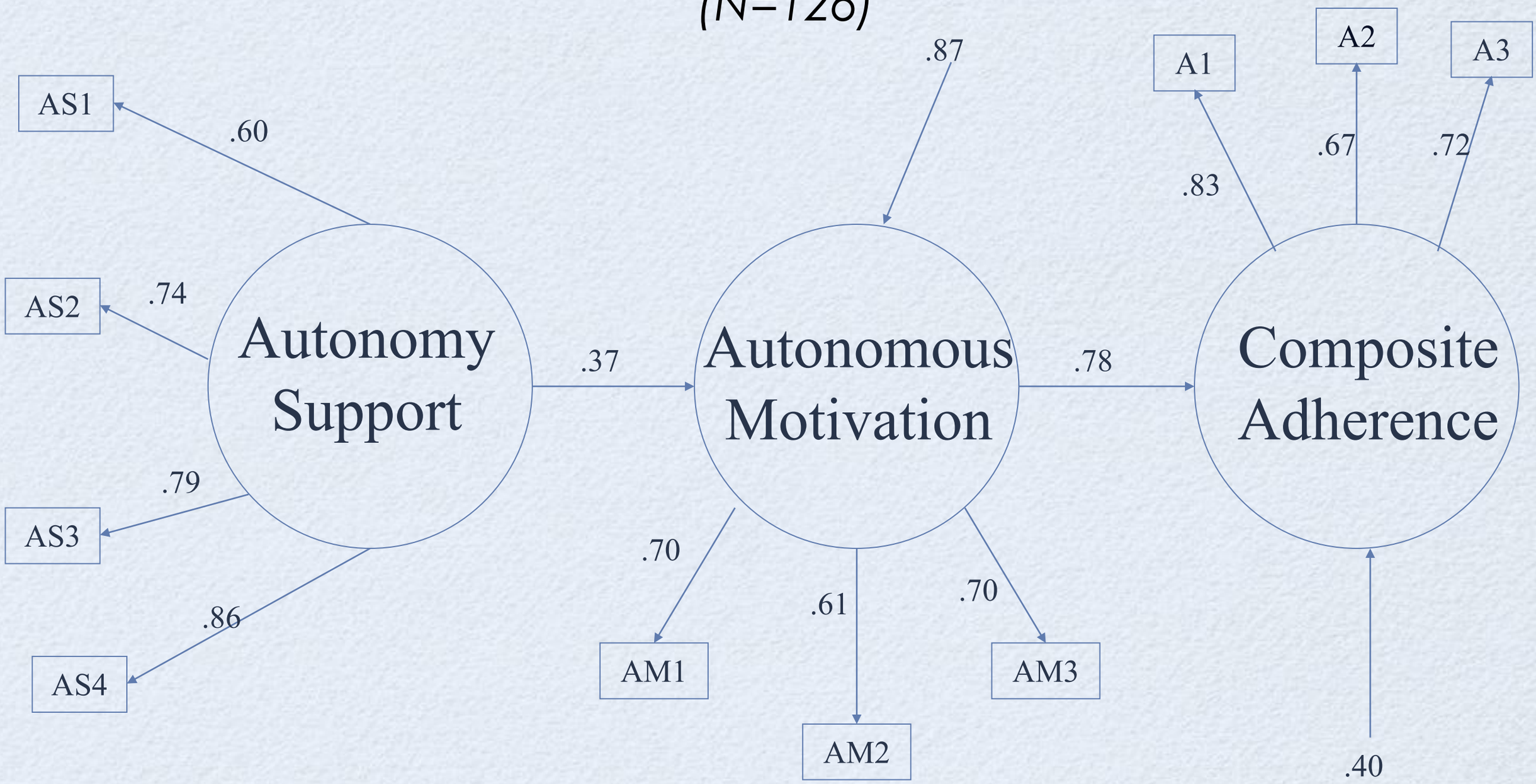
	2 Day Pill Count	14 Day Count	Self-Rpt.	Composite Adherence
Autonomy Support (HCCQ)	.24**	.17*	.03	.18*
Controlled Regulation	-.05	-.10	-.13	-.11
Autonomous Regulation	.41***	.52***	.57***	.59***

+ $p < .10$, * $p < .05$, *** $p < .001$

Self-Determination Theory

Autonomy and Medication Adherence

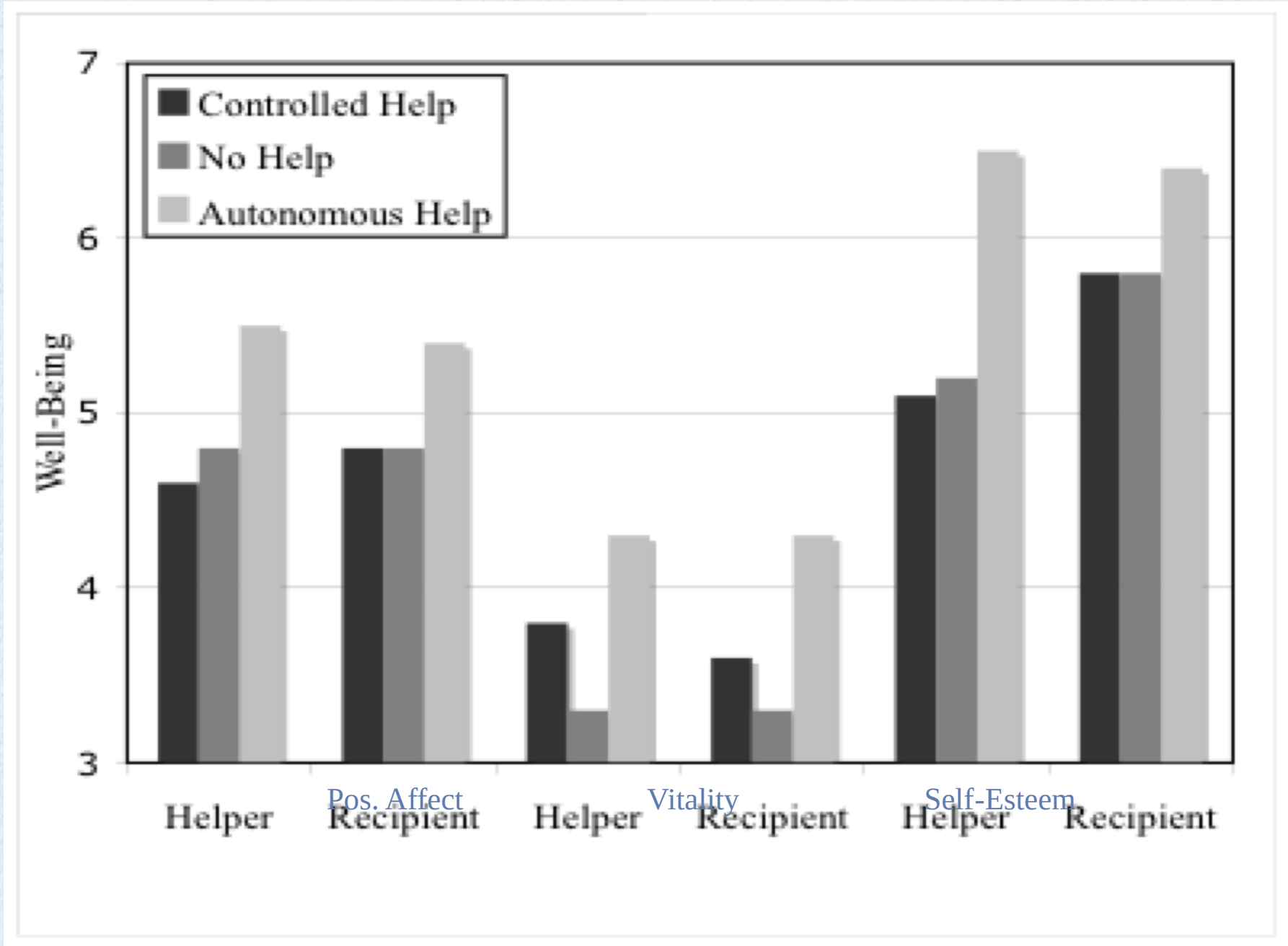
(N=126)



From Williams, Rodin, Ryan, Grolnick, and Deci, Health Psychology, 1998

Self-Determination Theory

Effects of Motivation for Helping on Wellbeing for Both Helper and Recipient



From Weinstein & Ryan, 2010, *JPSP*

Self-Determination Theory

Outcomes Associated With More Autonomous Motivation

Greater persistence

More interest/enjoyment

Better mental health and well-being

Better physical health

These functional effects are apparent:

- Across the Life Span
- Across Genders
- Across SES
- Across Cultures

Self-Determination Theory

Factors Associated with Greater Relative Autonomy of Extrinsically Motivated Regulations and Values

Autonomy Support

Minimal External Pressure
Provision of Maximal Choice
Internal Frame Reference Shared

Competence Support

Optimal Challenge
Dev. Appropriate Demands
Relevant Feedback

Relatedness

Warmth, Involvement
Conveyance of Belongingness

Internalization & Integration

Self-Determination Theory

Autonomy-Supportive Environments

Provide a rationale for requested behavior

Minimize use of controlling language/rewards

Understand the other's frame of reference, especially when obstacles occur

Provide choices/opportunities for action

Self-Determination Theory

Competence-Supportive Environments

- Design activities so that mastery is the predominant experience
- Structure provides scaffolding for active development
- Feedback is informational rather than controlling
- Praise focuses on effort and specific accomplishments; not ability or comparisons

Self-Determination Theory

Relatedness-Supportive Environments

- Convey respect for the individual
- Individual feels valued and significant
- Care and concern when facing challenges
- Warmth
- “My coach (boss, teacher) likes me”

Self-Determination Theory

Estimated Latent Constructs' Means and Variances for U.S. (N=116) and Russian (N=120) High School Samples

	U.S.		Russia		Difference Tests	
Latent Constructs	Mean	Variance	Mean	Variance	t	p
Parent A-S*	0.0	1.00	-.41	.90	-2.97	p<.01
Teacher A-S*	0.0	1.00	-.54	.71	-4.18	p<.001
Self-Actualization	0.0	1.00	-1.27	.48	-6.59	p<.001
Self-Esteem	0.0	1.00	-.42	.81	-3.15	p<.01
Depression	0.0	1.00	-.25	.85	1.93	p<.10
Life Satisfaction	0.0	1.00	-.57	.79	-4.21	p<.001

*A-S = Autonomy Support

Correlations Between Parent and Teacher Autonomy Support and Academic Self-Regulation in U. S. and Russian Schools

	U.S.		Russian	
	Parent A-S	Teacher A-S	Parent A-S	Teacher A-S
External Regulation	-.21*	-.25*	-.26*	-.28*
Introjected Regulation	.06	.03	.15	.08
Identified Regulation	.38**	.36**	.47**	.43**
Intrinsic Motivation	.14	.60**	.16	.48**

(Chirkov & Ryan, 2001)

Correlations Between Parent and Teacher AutonomySupport and Well-Being in U. S. and Russian High School Students

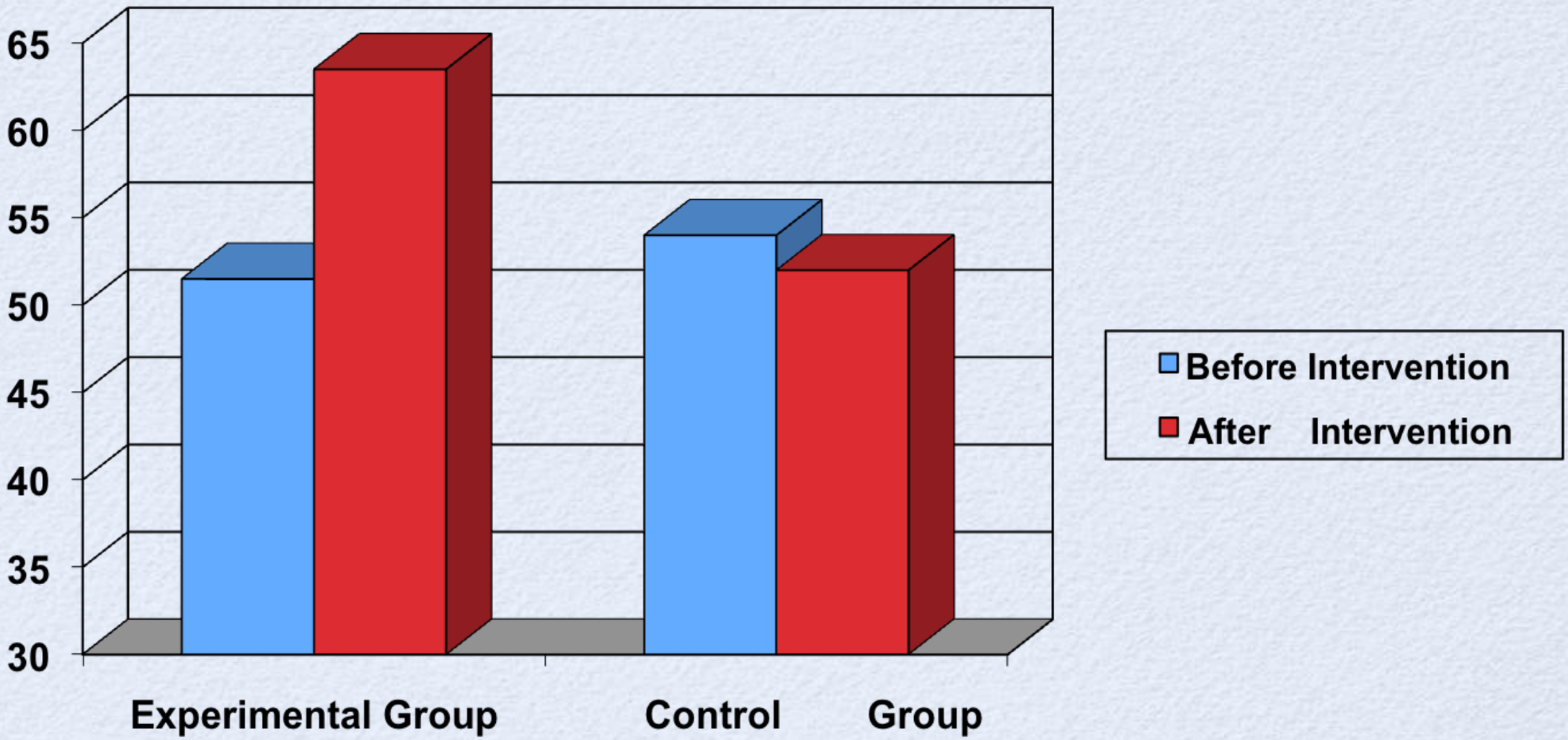
	U.S.		Russian	
	Parent A-S	Teacher A-S	Parent A-S	Teacher A-S
Self-Actualization	.35**	.33**	.39**	.20*
Self-Esteem	.40**	.18	.54**	.21*
Depressive Symptoms	-.09	-.14	-.48**	.08
Life-Satisfaction	.49**	.34**	.50**	.36**

Manager Autonomy Support in a Fortune 500 Company

Trust in Corporation	.72**
Feel Stressed	-.61*
Satisfaction	
Quality of Feedback	.57*
Opportunity for Inputs	.71**
Job Security	.60*
Potential for Advancement	.53*
General Satisfaction	.69**

Self-Determination Theory

Managers' Autonomy Support in Experimental and Control Branches Before and After Intervention



Radiation of Treatment:
Overall Positive Effects on Employees

The company found that our intervention:

Increased Employee Trust in Corporation

Increased Employee Job Satisfaction

Enhanced Satisfaction with Current Pay

Self-Determination Theory

Motivation and Weight Loss In a Clinical Population

- Morbidly obese patients in a 6-month diet program
- Evaluating "coach" support—autonomy supportive versus controlling

- Outcomes
  - Attendance
  - 6 month BMI (Body Mass Index)
  - 23 month BMI Follow-up

Self-Determination Theory

Correlations between Autonomy Support, Time 2 Motivation and Weight Loss at 6 and 23 Months

	Attendance	Change in BMI (6 mo.)	Change in BMI (23 mo.)
Autonomy Support	.53***	.22*	.35**
Autonomous Self-Regulation	.34**	.21*	.39**
Controlled Regulation	-.02	.16	-.03

* $p < .05$, ** $p < .01$, *** $p < .001$

1st Smoker's Health Intervention

- > 1000 patients recruited to participate in a study of smoker's health
- Approximately 6/10 did not want to quit, and had no intention
- Well below county average in income and education
- Participants were randomized into Intervention and Community Care control groups
- Intervention group offered opportunity to explore cessation with counselor, and/or dietary change arms

Self-Determination Theory

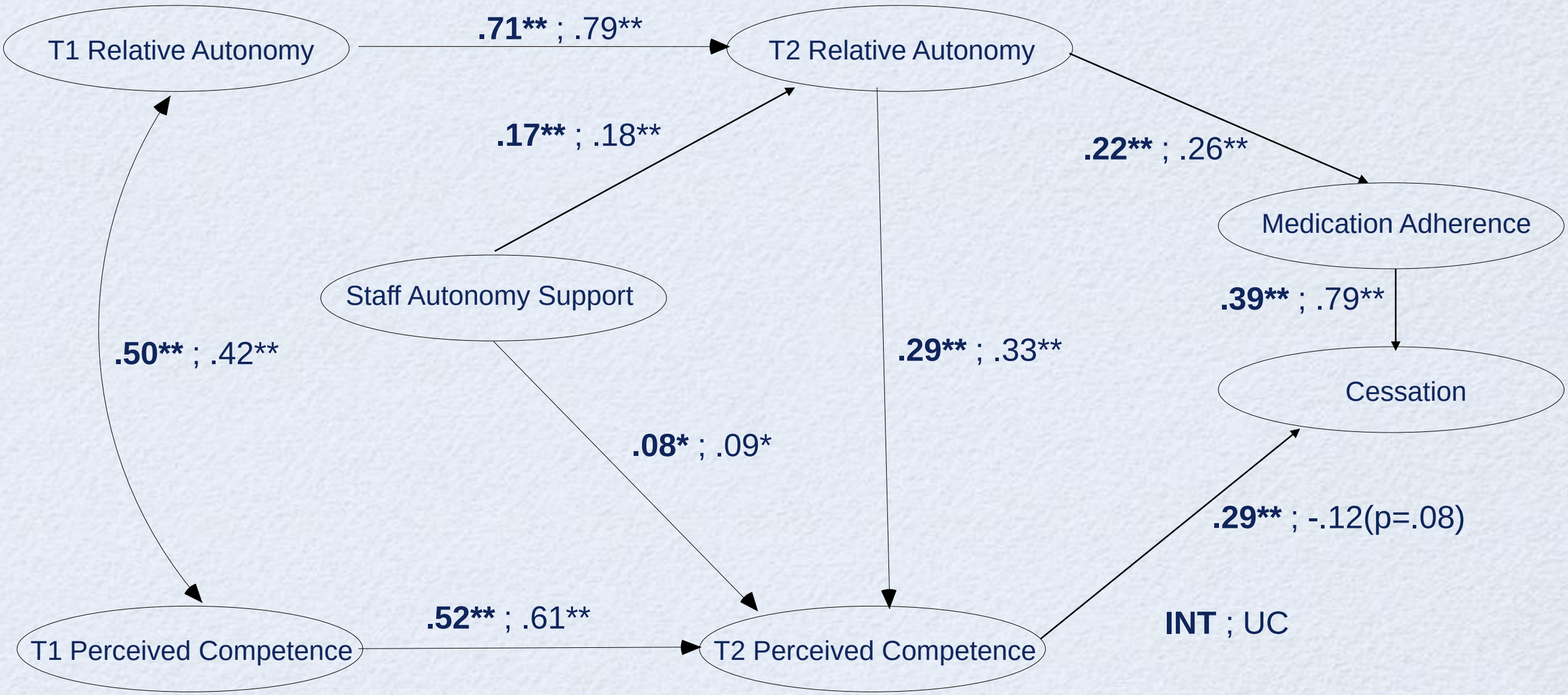
The Intervention

The clinical endpoint of the intervention was to facilitate patients making a clear choice about whether she wanted to change or not.

If the patient wanted to stop smoking or change diet then the clinician provided competence training on how to reach that goal.

Self-Determination Theory

Intervention Research: Smoker's Health Study
6 Month Outcomes



CFI = .93; IFI = .93; RMSEA = .06 (Williams et al., 2006)

Self-Determination Model for Health

Autonomy Supportive vs. Controlling Health Care Climate

Individual Differences In Motivational Orientation

Intrinsic vs. Extrinsic Values

Autonomy

Competence

Relatedness

Mental Health
Depression
Somatization
Anxiety
Quality of life
Vitality

Physical Health
*Not Smoking
*Physical Activity
*Weight Loss
*Diabetes
*Med. Adherence
*Healthy Diet
*Dental Health

Self-Determination Theory

To summarize:

People vary in the relative autonomy, or degree of internalization of extrinsic goals and values

Internalization is facilitated when important others (parents, teachers, leaders, professionals, etc) actively provide support for autonomy, competence and relatedness

The result is greater persistence over time, and higher quality behavior and experience, improved performance

Implications for Practice

Supporting autonomous motivation entails:

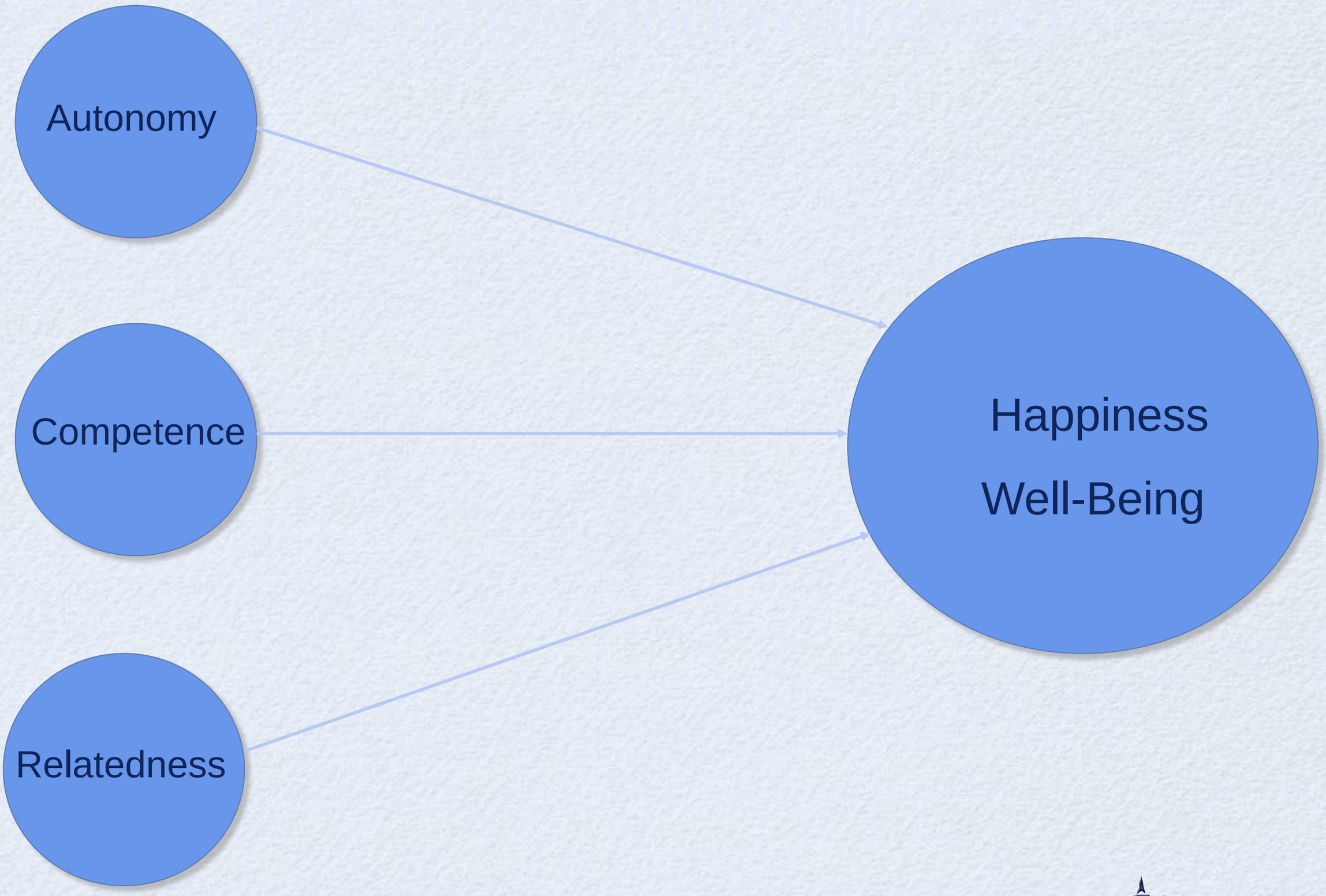
- Eliciting perspectives (listen)
- Acknowledging content and affect
- Providing effective options and choices
- Provide meaningful rationale for behaviors
- Providing structure/scaffolding for goals and learning
- Showing concern and relatedness especially when obstacles occur
- Minimizing controlling communications and reward; remaining informational

Self-Determination Theory

what about happiness and well-being?

Self-Determination Theory

Basic Psychological Needs Theory
Motivation and Well-being



Self-Determination Theory

Within-Country Correlations of Basic Need Satisfaction with Subjective Well-being

Country (n)	**US (n = 195)**	**Russia (n = 159)**	**Korea (n = 111)**	**Turkey (n = 94)**
Basic Need Satisfaction	.72**	.60**	.62**	.71**

Self-Determination Theory

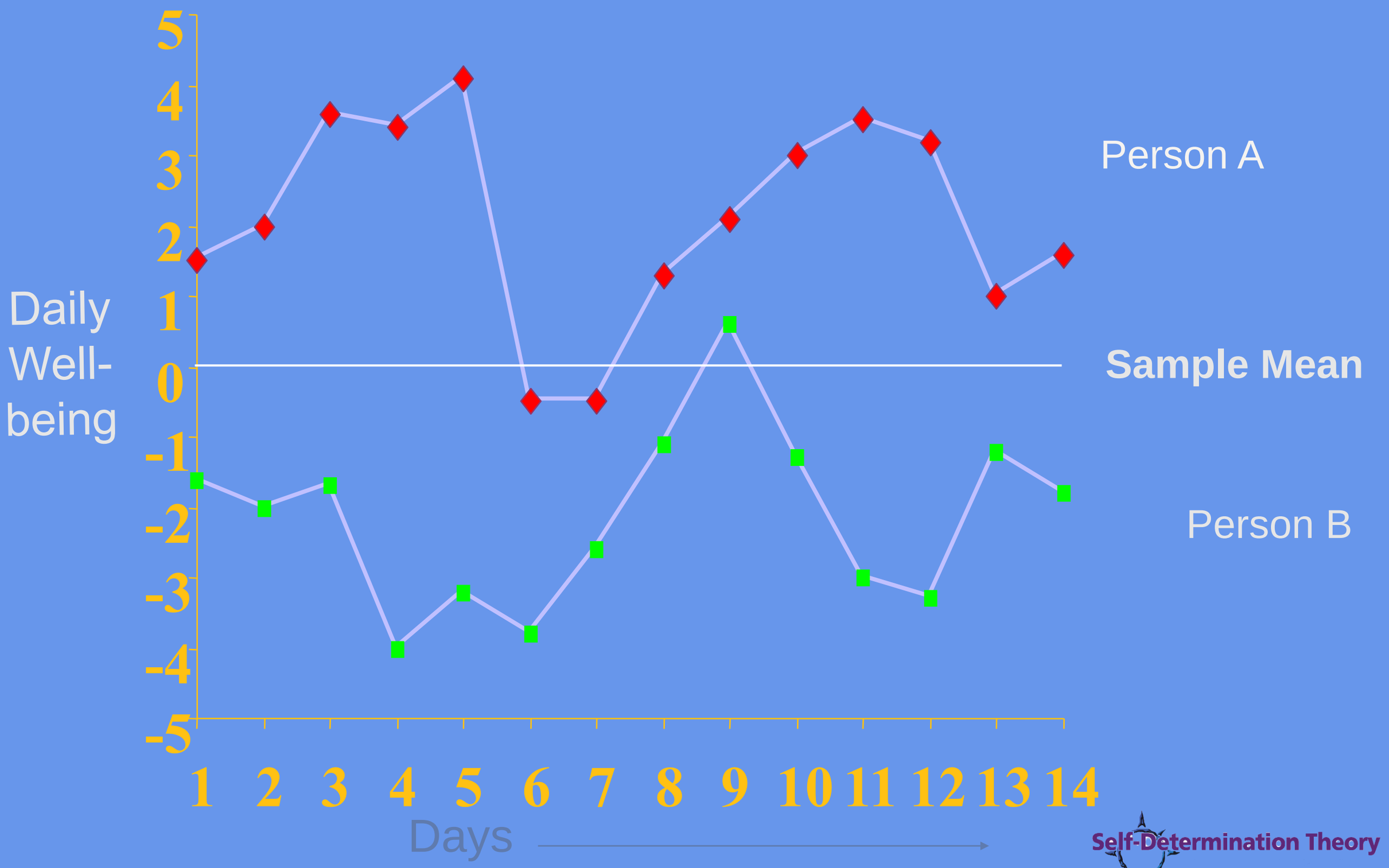
Zero-order correlations of factors predicting positive and negative affect across the globe

Predictor Variable	Positive Affect	Negative Affect
Log Household Income	.17	-.09
Relative Income	.11	-.11
GDP (National Wealth)	.10	-.03
Basic Needs Unmet	-.16	.19
Basic Psychological Needs	.45	-.28
Luxury Possessions	.11	-.05

From Diener, Ng, et al., 2010, *JPSP*

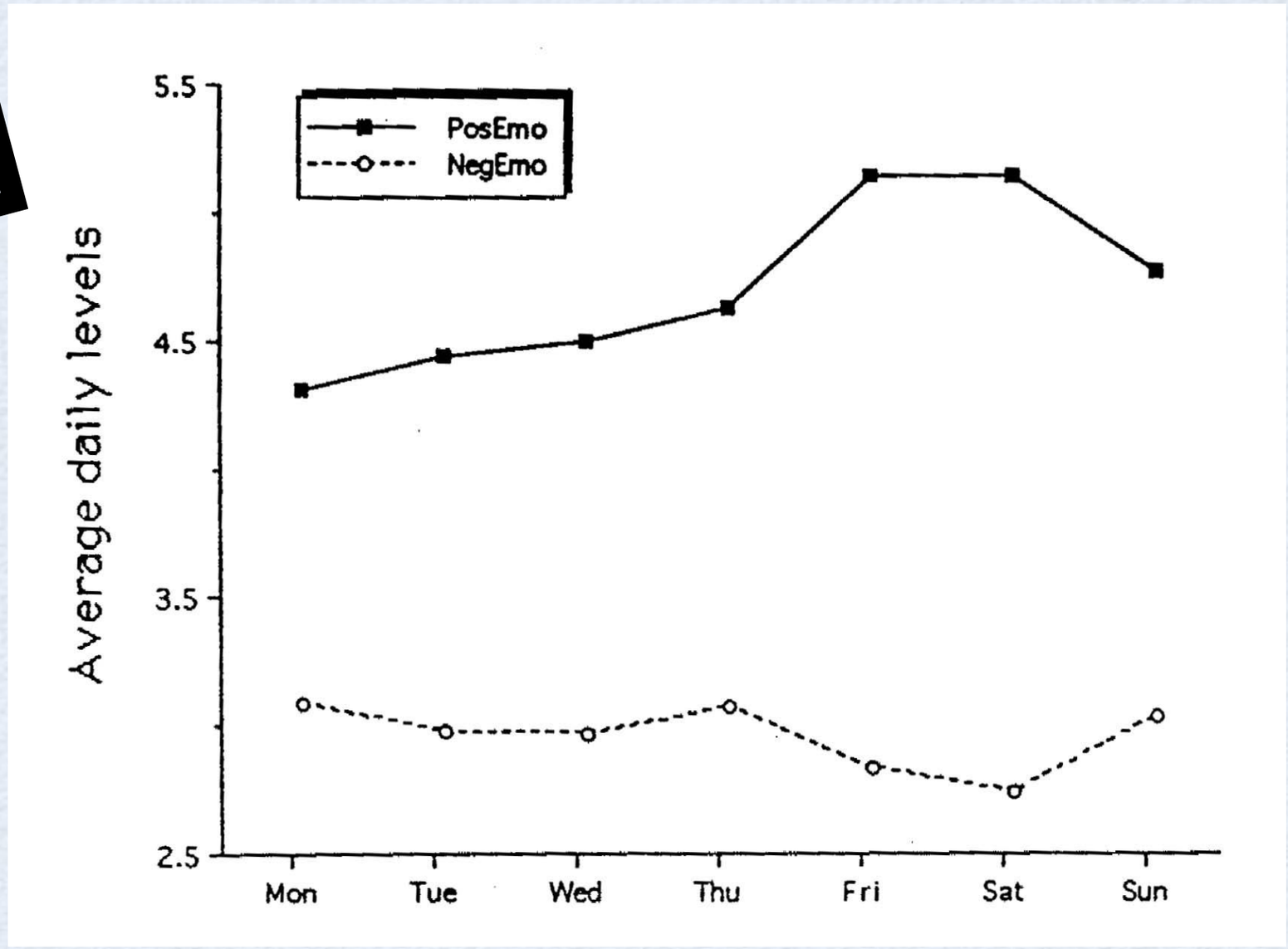
Self-Determination Theory

Within-person effects: Daily fluctuations



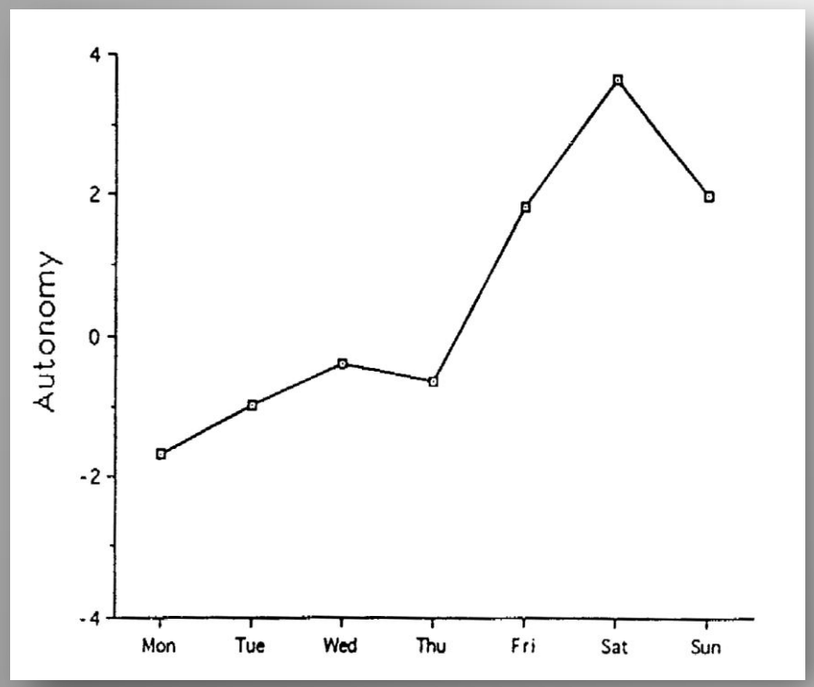
Self-Determination Theory

Positive and Negative Affect on the Days of the Week

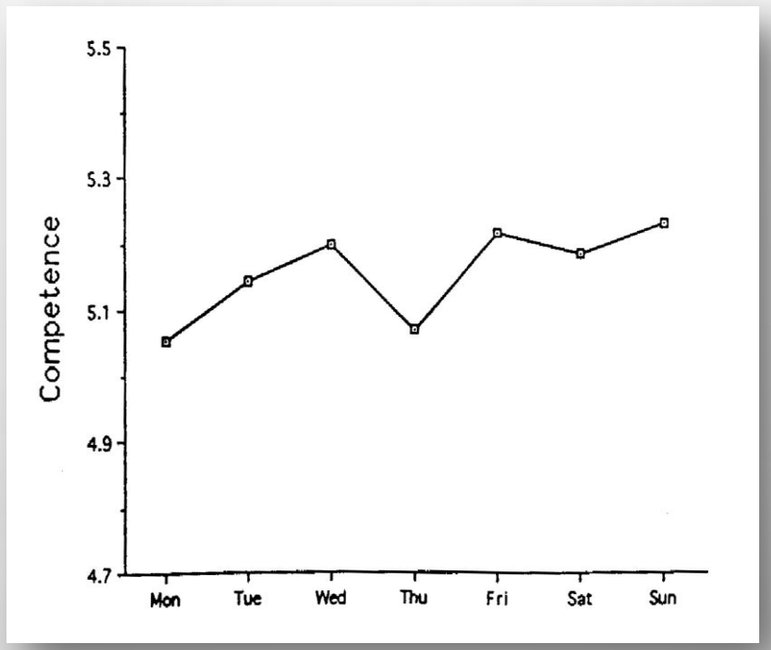


Need Satisfaction on Days of the Week

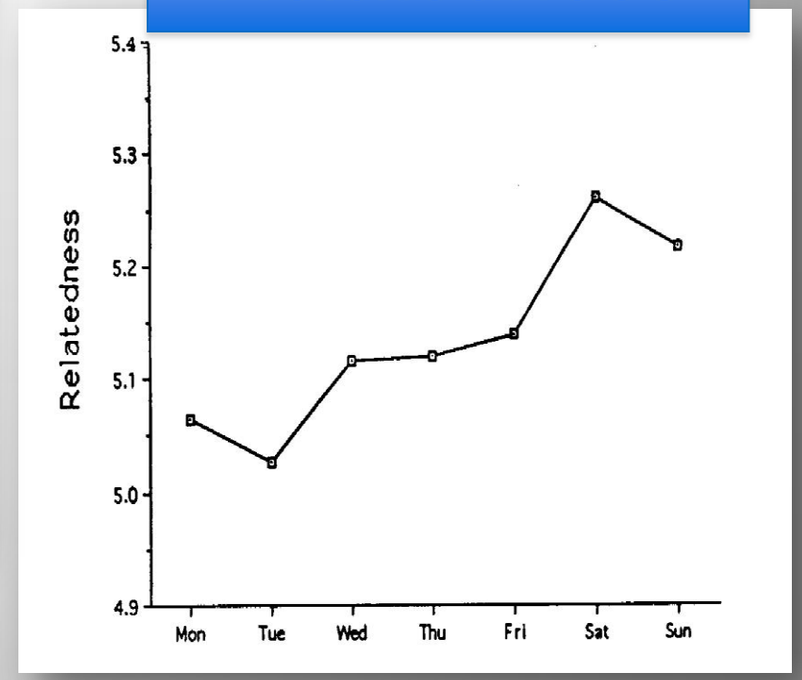
Autonomy



Competence



Relatedness



Self-Determination Theory

Adult Working Sample

Predicting Experience Level Well-Being from Experience-Level Need Satisfaction

	Positive Affect		Negative Affect		Vitality		Phys. Symptoms	
Need Satisfaction	*B*	*t*	*B*	*t*	*B*	*t*	*B*	*t*
Autonomy	.95	22.29**	-.03	-10.66**	.04	8.74**	-.01	-5.24**
Relatedness	.20	11.69**	-.06	-8.38**	.08	7.21**	-.02	-2.74*
Competence	.21	7.65**	-.18	-10.37**	.06	3.14*	-.02	-1.26

Note. Group-mean centering was used for all predictors. *B*s are unstandardized.
* $p < .01$. ** $p < .001$.

Ryan, Bernstein & Brown, 2010, *JSCP*

Self-Determination Theory

Relations of Weekend Effect to Need Satisfaction

	Autonomy		Relatedness		Competence	
	B	*t*	*B*	*t*	*B*	*t*
Weekend Contrast	1.08	4.86**	.38	7.37**	.02	.33
Work Contrast	3.44	9.66**	.84	9.62**	.12	2.30*

Note. Weekend represents Friday afternoons through Sunday mornings. Group-mean centering was used for all predictors.
All *B*s are unstandardized.
[a]0 = weekday experience; 1 = weekend day experience. [b]0 = work experience; 1 = non-work experience.
* $p < .01$. ** $p < .001$.

Self-Determination Theory

www.selfdeterminationtheory.org

Thank You

Self-Determination Theory

Life Goals and Happiness

Self-Determination Theory

Intrinsic and Extrinsic Life Goals

Intrinsic goals: attainment relatively directly yields Basic Need Satisfaction (e.g. goal of having intimate relationships satisfies relatedness)

Extrinsic goals: attainment is at best indirectly related to Basic Need Satisfaction, and may even interfere with it (e.g., goal of being rich or famous may interfere with relatedness)

Self-Determination Theory

Not all life goals are created equal

See Ryan, Kasser, Sheldon & Deci, 1996

Self-Determination Theory

Higher Order Factor Analyses of Life Goal Importance Ratings, Urban Adult Sample

	Factor 1	Factor 2
Personal Growth	**.77**	.20
Affiliation/Relatedness	**.76**	.19
Community	**.76**	-.21
Physical Health	**.60**	.18
Social Recognition	.18	**.75**
Image/Appearance	.10	**.76**
Material Success	.02	**.87**

From: Kasser & Ryan, 1996

Relations of Intrinsic and Extrinsic Goal Importance to Well-Being (Urban Adult Sample)

	Relative Goal Importance	
	Intrinsic	Extrinsic
Self-Actualization	.40***	-.52***
Vitality	.46***	-.60***
Depression	-.35**	.29*
Physical Symptoms	-.35**	.46**

Scores control for overall goal importance, entered at step 1 yielding standardized regression coefficient

Self-Determination Theory

Across groups, the same general pattern:

Russian, German, Korean, Israeli, Belgian, British, Nigerian, Brazilian, Icelander, …..even Canadian samples

Teenagers, Parents, Adult Workers, Retired Workers….

Business, Education, Sport, Law and Medical Students….

Self-Determination Theory

Predicting Psychological Wellbing and Death Attitudes from Attainment of Intrinsic and Extrinsic Goals in Older Adults

	Well-being	**Depressive Symptoms**	**Ego-Integrity**
Goal attainment			
Intrinsic goal attainment	**.45*** **	**-.31*** **	**.44*** **
Extrinsic goal attainment	.07	.07	**-.16***
	Despair	**Death Acceptance**	**Death Anxiety**
Goal attainment			
Intrinsic goal attainment	**-.30*** **	**.22***	**-.21***
Extrinsic goal attainment	**.20***	**-.20***	.07

Note: *p<.05; **p<.01; ***P<.001. N=213
Controls for demographics

Self-Determination Theory

Autonomy and Awareness

Awareness is the ground of autonomous functioning; lack of awareness makes one vulnerable to being controlled or non-self-regulated

Mindfulness: open and receptive awareness of what is occurring in the present moment (Brown & Ryan, 2003, JPSP)

Self-Determination Theory

Mindfulness as a Predictor of Day-to-Day Autonomous Behavior

Sample 2 Results: Multilevel Modeling

Predictor	Day-to-Day Autonomy Unstandardized estimate
Gender	-0.98
Time of day	0.53****
Day of study	-0.03
Weekly cyclicity	-0.51***
Autocorrelation	0.02
Trait mindfulness	1.08**
State mindfulness	1.59****

** $p < .01$ *** $p < .001$ **** $p < .0001$

From Brown & Ryan (2003), *JPSP*

Self-Determination Theory

Mindfulness Moderates the Relations of Implicit and Explicit Measures

IAT assessed affect compared with self reports of affect. r=.16, ns. Mindfulness moderates this relation

From Brown & Ryan, 2003, JPSP

Self-Determination Theory

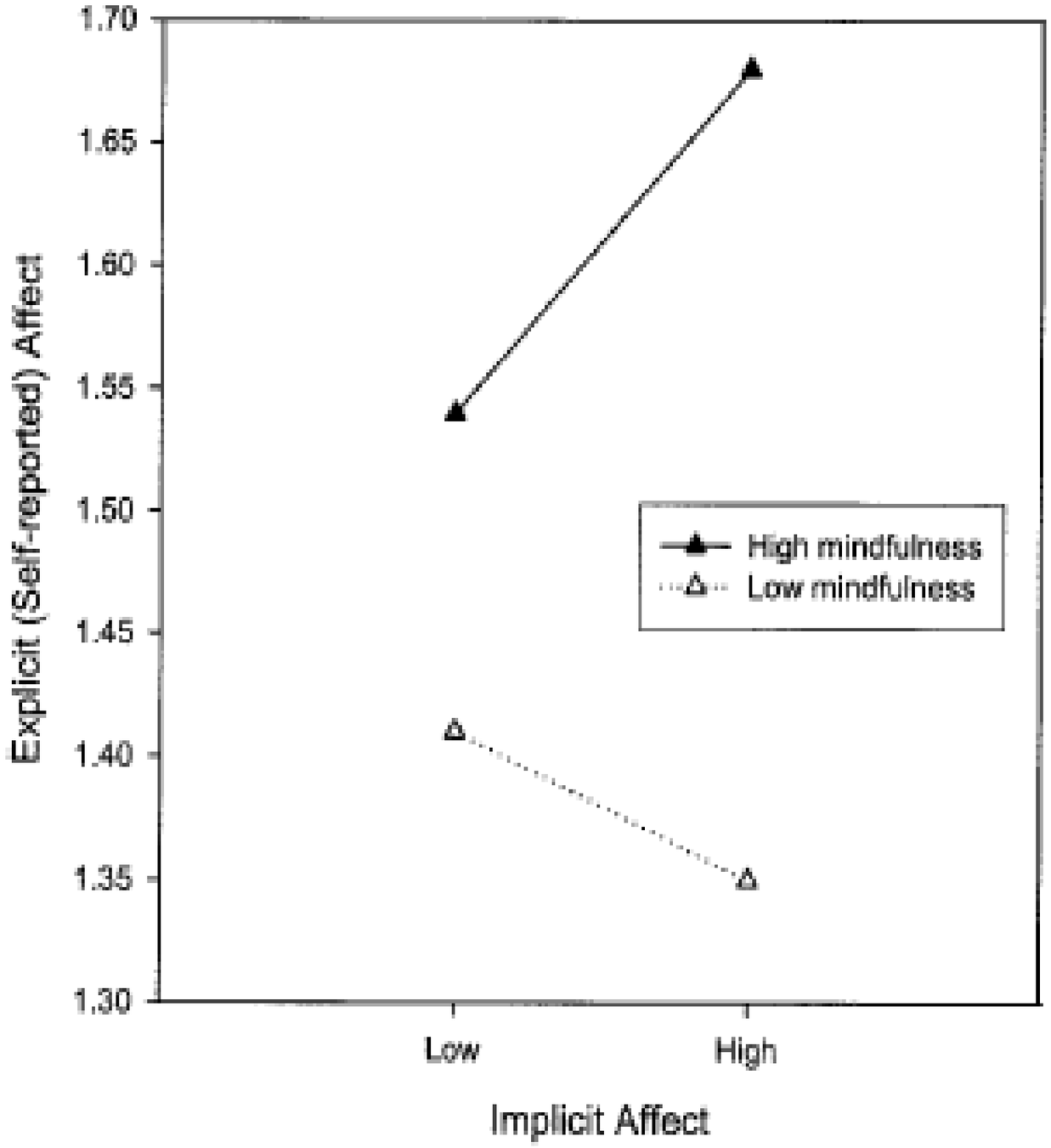


Figure 1. Moderation effect of Mindful Attention Awareness Scale mindfulness on the relation between implicit and explicit affect valence. High and low values are 1 standard deviation above and below the mean, respectively.