

Autonomy and Control in Human Behavior: Research From Self-Determination Theory

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SDT Basic Research Areas

- Intrinsic Motivation**
- Internalization**
- Individual Differences in Motivation**
- Well Being and Eudaimonia**
- Culture and Gender**
- Intrinsic and Extrinsic Life Goals**
- Energy and Vitality**
- Mindfulness and Self-regulation**
- Nature Exposure and Wellness**



SDT Applied Research

- Psychotherapy Motivation**
- Educational Practice and Reform**
- Health Care: Behavior and Adherence**
- Exercise and Physical Activity**
- Sport Motivation and Performance**
- Organizational Behavior and Performance**
- Religious Internalization and Motivation**
- Environmental Footprints and Consumer Behaviors**
- Virtual Environments and Video Games**



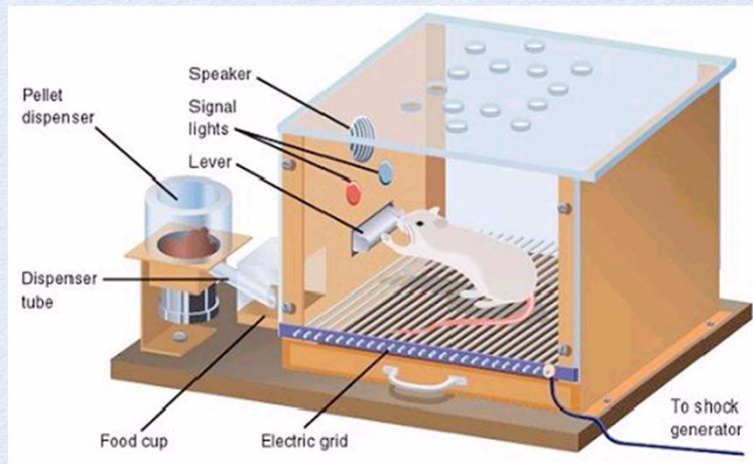
A Bird's Eye View



Motivation

To be moved to action

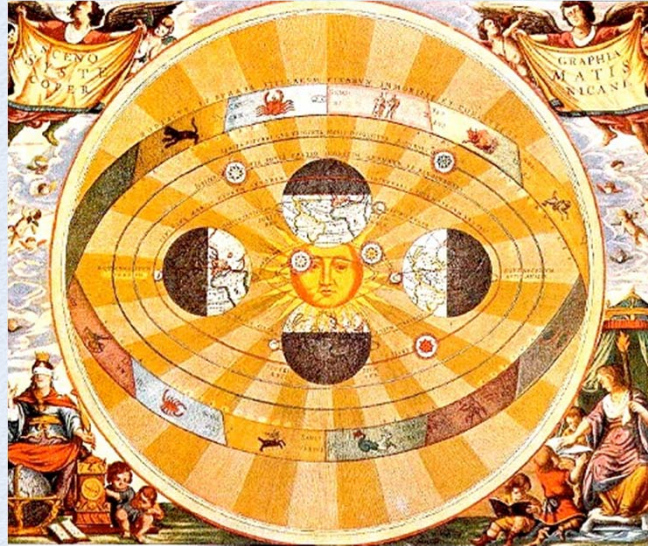
The Classical Model



People Have Choices



The Copernican Turn in Motivational Thinking



The study of motivation today is more about why people choose what they do, and what sustains (or fails to sustain) them on that path...



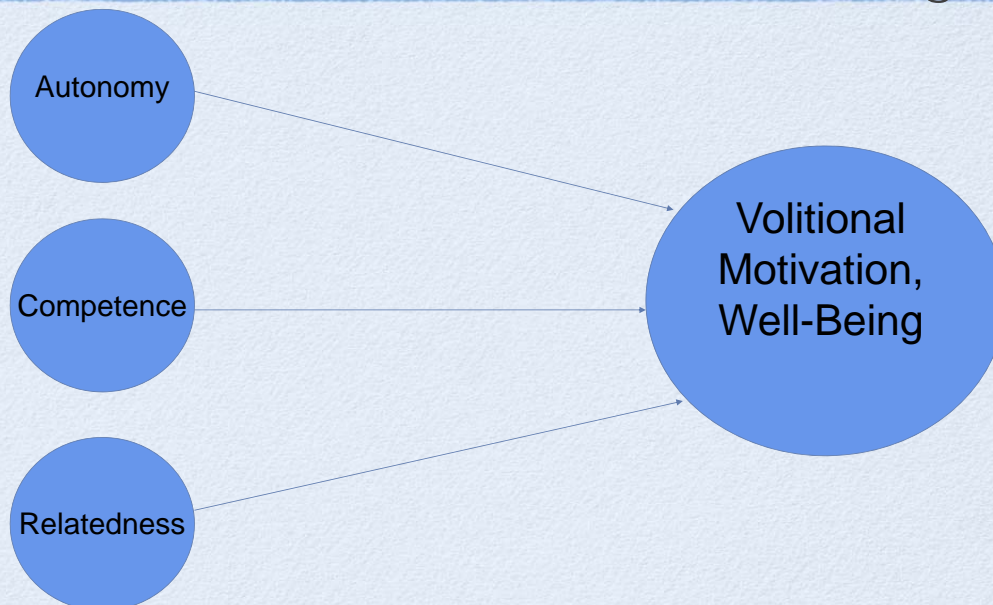
The Importance of Volitional Behavior

Multiple ways to facilitate (and undermine) volition—

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



Basic Psychological Needs Underlying Volitional Motivation and Well Being



Need:

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

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

Basic Psychological Needs:

Satisfaction is essential for psychological growth, integrity and wellness

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



SDT's Three Basic Needs

- | | | |
|-------------|---|---|
| Autonomy | ➔ | Behavior in accord with abiding values and interests; actions are self-endorsed; opposite is heteronomy, not dependence |
| Competence | ➔ | Sense of effectance & competence in one's context |
| Relatedness | ➔ | Feeling cared for, connected to, sense of belonging with others |

What autonomy is not

- It is not independence or individualism
- It does not require an absence of external inputs, expectations, or demands, but rather an endorsement of them if followed
- It is not about separateness or selfishness

What is intrinsic motivation?



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



Intrinsic Motivation and Learning



- Most learning is by nature intrinsically motivated; it is a deeply evolved basis of cognitive growth
- Learning through interested activity results in true assimilation, and deeper understanding
- Sadly, there is a well documented trend of decreasing intrinsic motivation as children are exposed to traditional schooling

“a great deal of mentation, at all developmental levels, is intrinsically rather than extrinsically motivated”



Factors Associated with the Facilitation of Intrinsic Motivation

Autonomy
(supports for volition, IPLOC)

Competence
(Optimal Challenge;
Positive Feedback)

Intrinsic Motivation

Relatedness
(Security of Attachment)

Conditions that Facilitate Intrinsic Motivation

Autonomy-Relevant

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

Competence-Relevant

- Optimal Challenge
- Pos. Feedback
- Informational Rewards

Relatedness-Relevant

- Empathy
- Warmth
- Security of Attachment

Conditions that Undermine Intrinsic Motivation

Autonomy-Relevant

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

Competence-Relevant

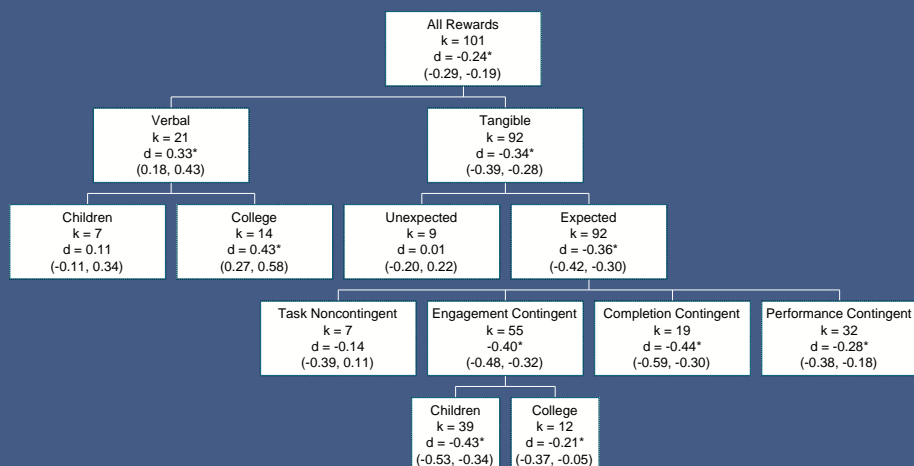
- Non-Optimal Challenges
- Negative Feedback

Relatedness-Relevant

- “Cold” Interactions
- Lack of Positive Involvement



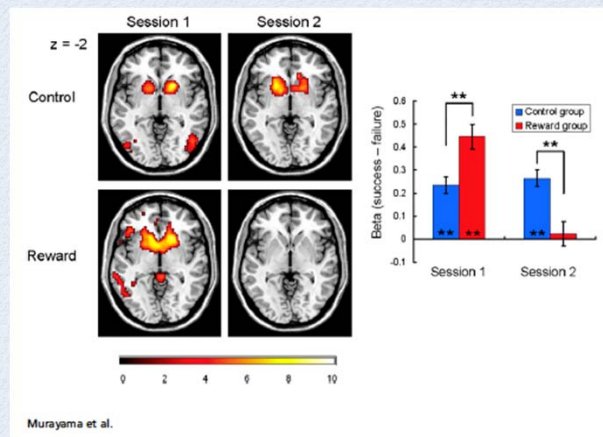
Effects of Rewards on Free-Choice Behavior



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



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



Right LPFC Changes During Reward and Post-Reward Sessions

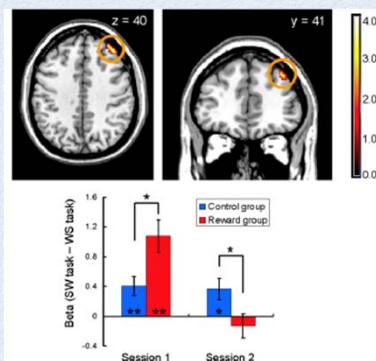


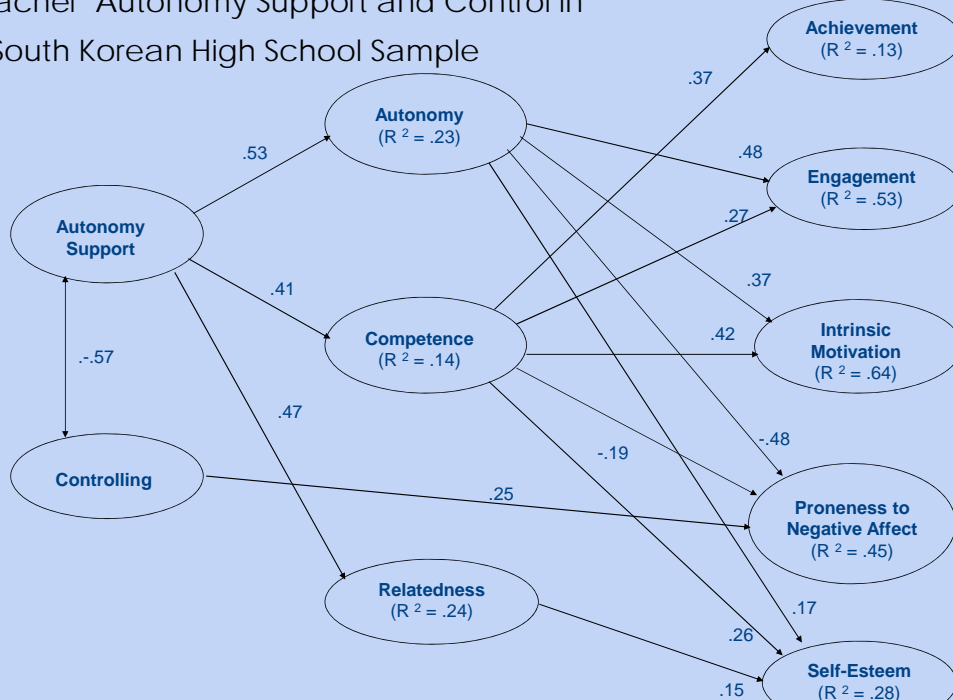
Fig. 4. Right LPFC activation (peak at 39, 41, 40) detected in the session-by-group interaction during the task cue period ($P < 0.05$, small-volume-corrected; image is shown at $P < 0.001$, uncorrected for display). Neural responses are displayed in transaxial and coronal formats. The bar plot represents 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 $t_{34} = 2.62$, $P < 0.05$). However, the activation became significantly smaller in the reward group than in the control group during the second session (two-sample $t_{34} = 2.27$, $P < 0.05$).

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

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



Teacher Autonomy Support and Control in a South Korean High School Sample



Jang, Reeve, Ryan, & Kim, 2009, *Journal of Educational Psychology*



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

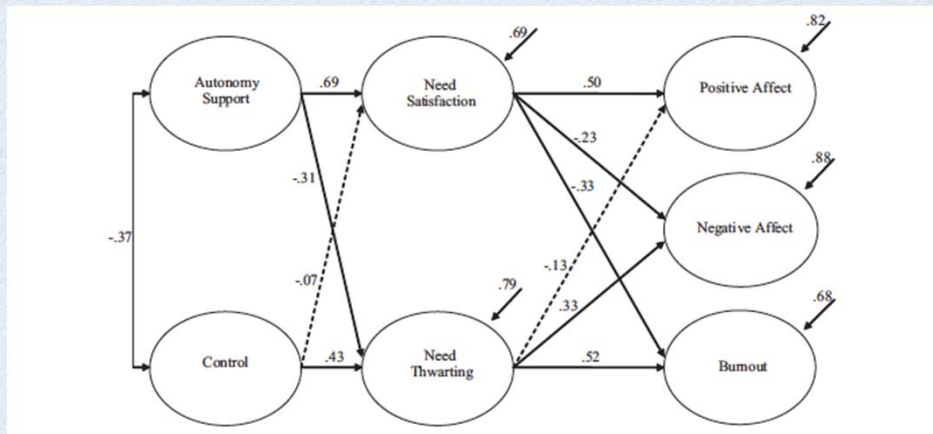


Figure 2. Latent variable modeling predicting positive affect, negative affect, and burnout symptoms (Study 2)
 Dotted lines represent nonsignificant parameters. Item indicators are not presented for presentation simplicity purposes. Correlations between disturbance terms were need satisfaction–need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

Secretory Immunoglobulin A (S-IgA) as Predicted by Need Thwarting Prior to Training Session

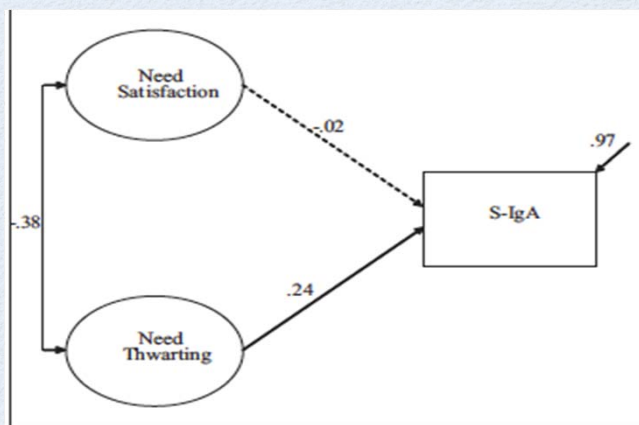
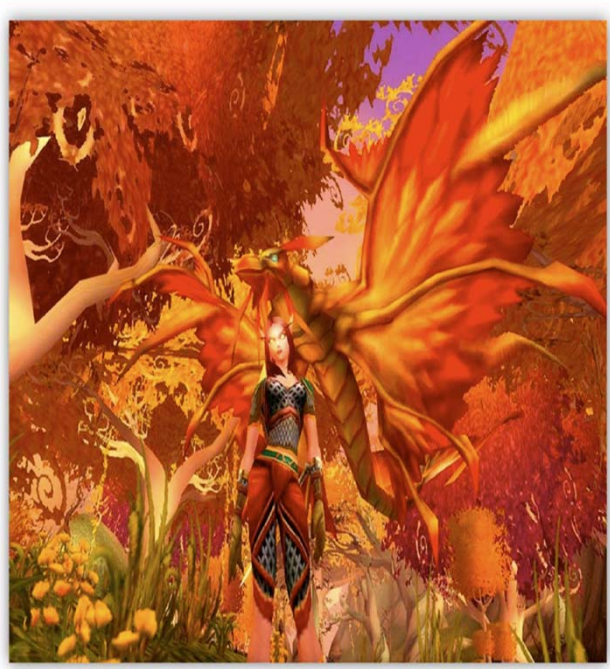


Figure 3. Latent variable modeling predicting levels of S-IgA (Study 2)
 Dotted lines represent nonsignificant parameters. Secretory immunoglobulin A (S-IgA) was an observed variable. Item indicators for the two need factors are not presented for presentation simplicity purposes.

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

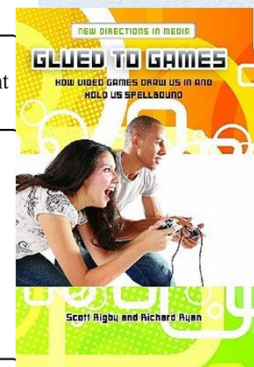


Correlations and Simultaneous Regressions of Initial Enjoyment and Need Satisfaction on Outcomes 8-Months Later

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.



See Rigby & Ryan (2011)



Intrinsic Motivation: To act for the inherent satisfactions of activity

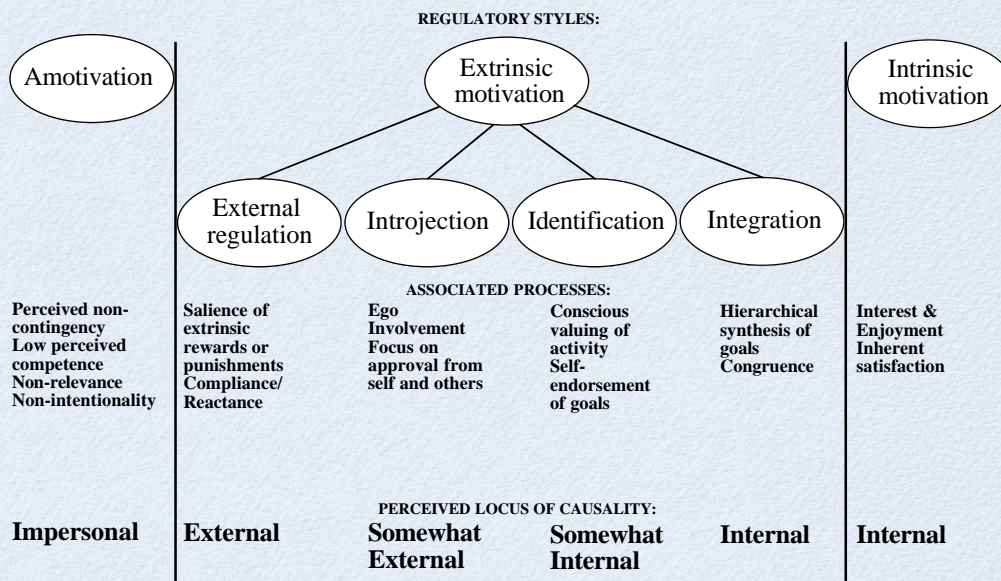
Extrinsic Motivation: To act in order to obtain or achieve some separable outcome



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



Intrinsic & Extrinsic Motivation



From: Ryan & Deci (2000)



Correlations Among ASRQ Subscales for 3 Diverse Elementary School Samples

Sample	External	Introjected	Identified	Intrinsic
Urban (n=112)				
Introjected	.34***			
Identified	.10	.53***		
Intrinsic	.04	.17	.46***	
Rural (n=450)				
Introjected	.54***			
Identified	.30***	.56***		
Intrinsic	.02	.25***	.47***	
Suburban (n=156)				
Introjected	.35***			
Identified	-.13	.46***		
Intrinsic	-.30***	.07	.51***	

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



Correlations Among Autonomy Subscales in Japanese Elementary Students

Subscales	External	Introjected	Identified	Intrinsic
External	----			
Introjected	.62***	----		
Identified	.26***	.50***	----	
Intrinsic	.08	.35***	.68***	----

Note. *** $p < .001$

From: Yamauchi & Tanaka (1998)



Correlations between Self-Regulation Styles and Academic 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 Orientation	.19***	-.02	-.37***	-.42***
Value of learning and 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)



Rural Chinese Children's School Motivation Related to Autonomous and Controlled Motivation

Beta-coefficients of multiple regression analyses with autonomous motivation, controlled motivation, and their interaction as predictors of classroom self-perceptions ($N = 195$).

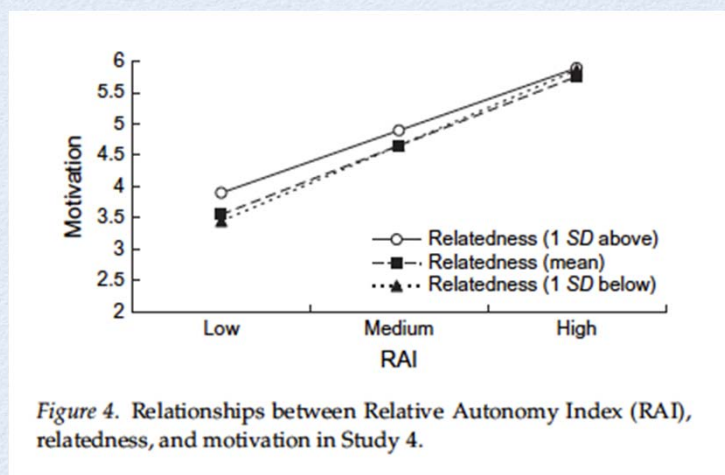
	Autonomous motivation	Controlled motivation	Interaction	R^2	F	p
Interest	.60**	-.16*	-.04	.36***	35.54	.000
Perceived competence	.58***	.18**	.06	.39***	41.75	.000
Perceived choice	.38***	-.30***	-.05	.20***	13.59	.000

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

One hundred and ninety-five children in grades 4, 5, and 6 (mean age = 11.95 years, ranging from 9 to 15 years old; 47.7% female) were recruited from different public elementary schools from four rural areas in Mainland China. Their parents were mostly farmers, migrant workers, tradesmen, or homemakers. Parents' education level was variable, but most had not completed middle school. Grandparents raised some of the children.



Chinese 5th Grader's Relative Autonomy and Their School Engagement



From Bao & Lam (2008), DP



Exercise motivation and engagement in objectively assessed bouts of moderate intensity exercise behavior

Table 1 Bivariate Correlations Among the Study Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11
Gender (1)	—	—	—										
BMI/WC (2)	—	—	-.22	—									
Intrinsic motivation (3)	3.19	.66	-.28*	-.13	—								
Identified regulation (4)	3.19	.76	-.24	.00	.74***	—							
Introjected regulation (5)	1.33	.23	.02	.07	.30*	.45**	—						
External regulation (6)	1.19	.55	.32*	-.06	-.20	-.08	.28*	—					
Autonomous motivation (7)	3.20	.65	-.27	-.07	.94***	.93***	.38**	.12	—				
Controlled motivation (8)	1.21	.56	.17	.03	.10	.29*	.88***	.68***	.21	—			
Total moderate-intensity exercise ≥ 10 min (9)	150.75	128.42	-.49***	.16	.39**	.48***	.18	-.24	.47***	-.03	—		
Total moderate-intensity exercise ≥ 20 min (10)	100.46	107.39	-.38**	.23	.38**	.41**	.13	-.17	.42**	-.02	.92**	—	
Total moderate-intensity exercise ACSM/AHA guidelines (11)	128.23	127.68	-.50***	.24	.34*	.45***	.22	-.18	.42**	.05	.95**	.91**	—

Note. Square-root-transformed data were used in the correlation analyses but nontransformed mean and SD values are presented.

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

Standage, M., et al.. (2008). *Journal of Sport and Exercise Psychology*, 30, 337-352.

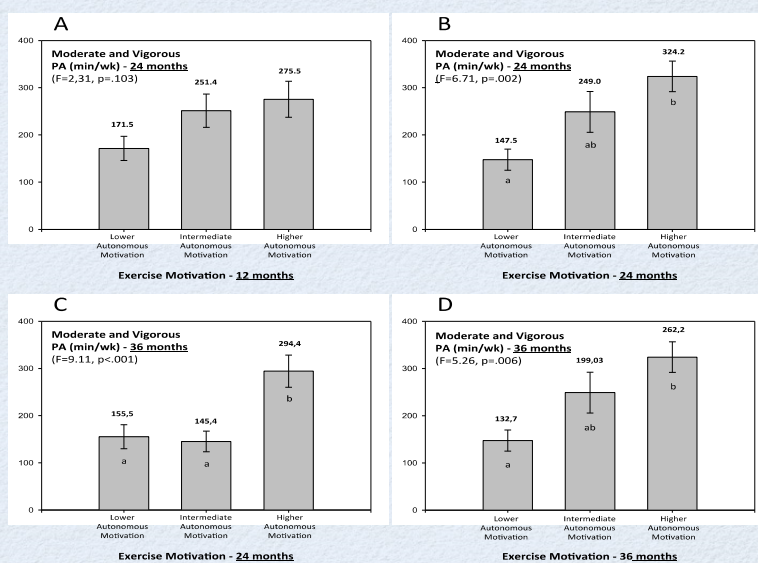


Correlations of motivational constructs and Total Moderate-Intensity Exercise per ACSM/AHA guidelines

External Regulation	-.18
Introjected Regulation	.22
Identified Regulation	.45***
Intrinsic Motivation	.34*
Controlled Motivation	.05
Autonomous Motivation	.42**



Prospective and Concurrent Effects of Low, Medium, and High Autonomous Motivation on Physical Activity Over Time in Portuguese Women



Religious Orientation with Mental Health Outcomes in a Protestant Church Sample

	CRIS	
	Identification	Introjection
Anxiety	-.39*	.55**
Depression	-.33*	.60**
Somatization	-.21*	.10
Social Dysfunction	-.27*	.32*
GHQ Total	-.37*	.54**
Global Self-Esteem	.28**	-.50**
Identity Integration	.43**	-.39*
Self-Actualization	.33**	-.49**

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

Self-Determination Theory



Self-Determination Theory

Interaction of Autonomy and Amount of Giving On Wellbeing Outcomes

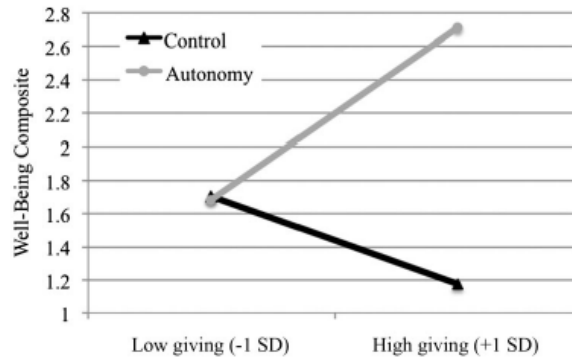
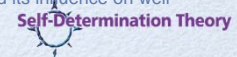


Figure 2. Study 2 interacting effects of motivation by amount of helping predicting the well-being composite (positive affect, vitality, and self-esteem).

Weinstein & Ryan (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *JPSP*.



“Should Help”, “Your choice”, and No-Help Experimental Conditions on Wellbeing Outcomes for Helper and Recipient

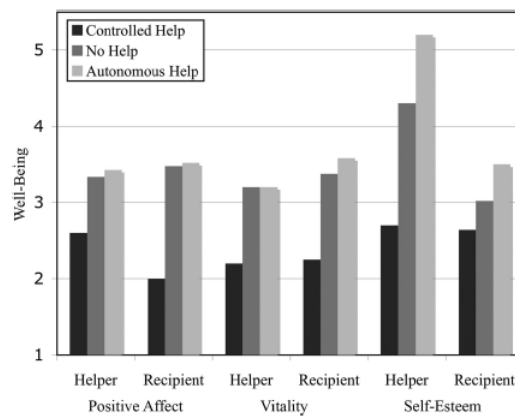
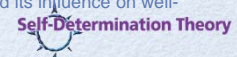


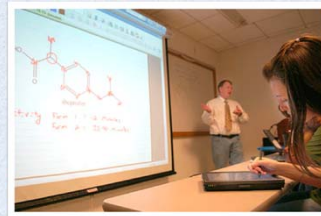
Figure 4. Study 4 analysis of variance results for controlled helping, not helping, and autonomous helping on helpers' and recipients' positive affect, vitality, and self-esteem.

Weinstein & Ryan. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *JPSP*.

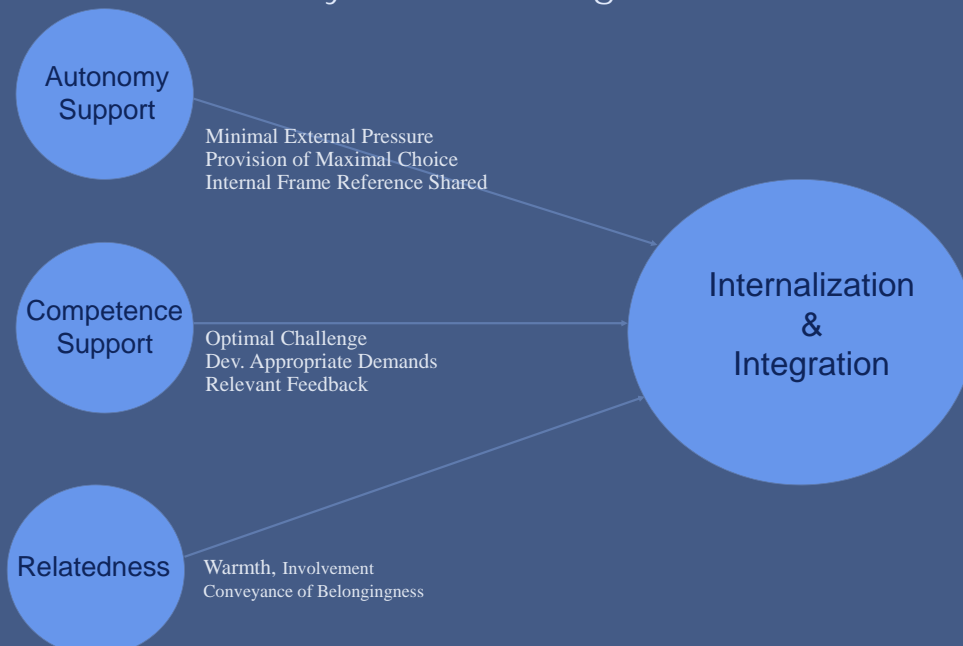


Differences Associated With Greater Internalization

- Greater persistence
 - Greater performance
 - Greater Creativity
 - Greater interest/enjoyment in acting
 - Greater Implicit/Explicit Congruence
 - Greater well-being
-
- Support for autonomy has important functional effects
 - Across Subject Matters
 - Across development
 - Across Cultures



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



Autonomy-Supportive Environments

- Understand the other' s perspective
- Encourage self-initiation & reflection
- Offer meaningful choices
- Provide a rationale for requested behavior
- Minimize use of controlling language/rewards



Competence-Supportive Environments

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



Relatedness-Supportive Environments

- Convey respect for the person
- Allow individuals to feel valued and significant
- Offer care and concern when facing challenges, failure or setbacks, rather than criticism and pressure
- Involve Warmth and Positive Regard

- “My teacher likes me”



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

Latent Constructs	U.S.		Russia		Difference Tests	
	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

Relations Between Parent and Teacher Autonomy Support and Self-Regulation in U. S. and Russian High School Students

	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)

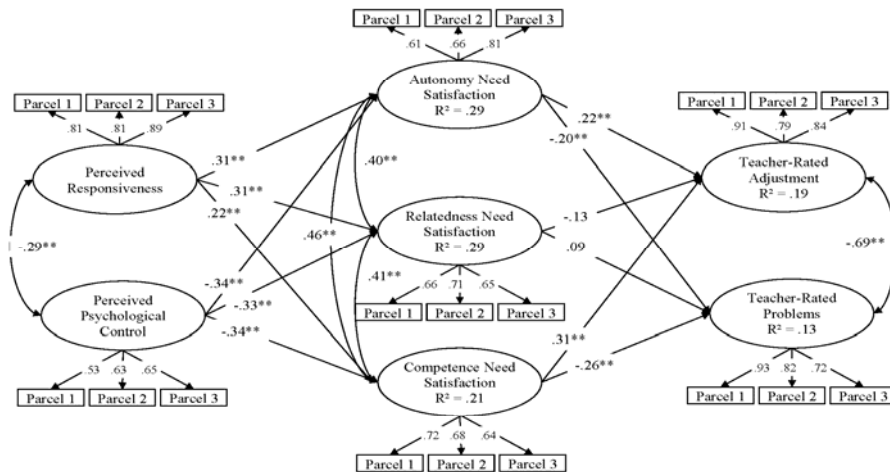


Relations Between Parent and Teacher Autonomy Support and Well-Being in U. S. and Russian High School Students

	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**



Effects of perceived parental control and responsiveness on Jordanian adolescents' need satisfaction and teacher rated outcomes



From: Ahmad et al., 2012

Parent's Conditional Regard: Subtle Control

- People give attention and affection based on the recipients' doing as the givers want.
- Negative Effects of Parental Conditional Regard:
 - Introjected regulation
 - Fleeting satisfaction after success
 - Guilt and shame after failure
 - Contingent self-esteem
- It turns the needs for autonomy and relatedness against each other.

Correlations of Parental Conditional Regard with Feelings of Parental Disapproval and Resentment toward Parents

	Feelings of Rejection by parent	Feelings of Resentment toward parent
<u>Mom</u>		
Academic	.38**	.51**
Sport	.38**	.40**
<u>Dad</u>		
Academic	.53**	.32**
Sport	.34**	.32**

Assor, Roth, & Deci, 2004

A Cross-Cultural Perspective: Data Collection in 23 Countries



Inspiring Teachers: The Same Everywhere

Students wrote narratives about their **most recent, most motivating**, and **most de-motivating** teachers

In EVERY sample, **autonomy-support** and **relatedness** emerged as the most frequent and salient characteristics, along with enthusiasm and energy

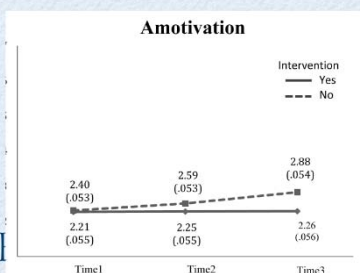
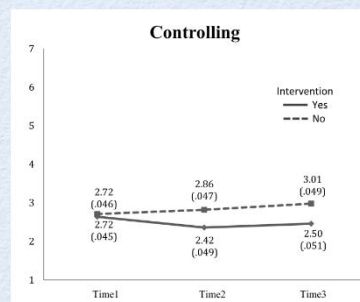
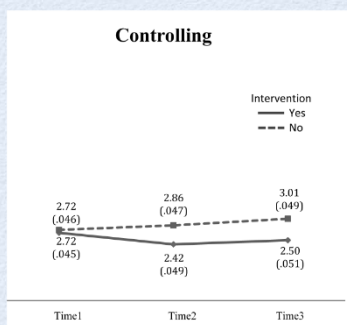
In NO sample did rewards, grade focus, rigor or control emerge as positive factors. In most samples (though not all) grade focus was associated with de-motivating teachers.



Niemiec, et al., 2013



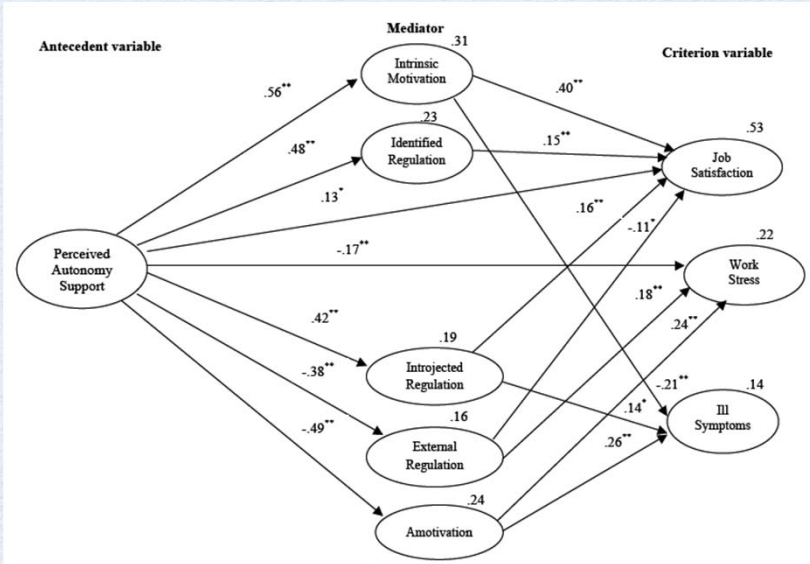
Autonomy Support Can Be Enhanced Through Training: Example of Intervention With Korean PE Teachers



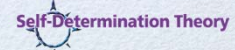
Significantly better student:
Engagement
Skill development
Achievement



Autonomy Support and the Mediating Role of Work Motivation for Well-Being: Testing Self-Determination Theory in a Chinese Work Organization



From Nie, Chua, Yeung & Ryan (under review)



Pressure From Above and Below Affects Teachers' Autonomy

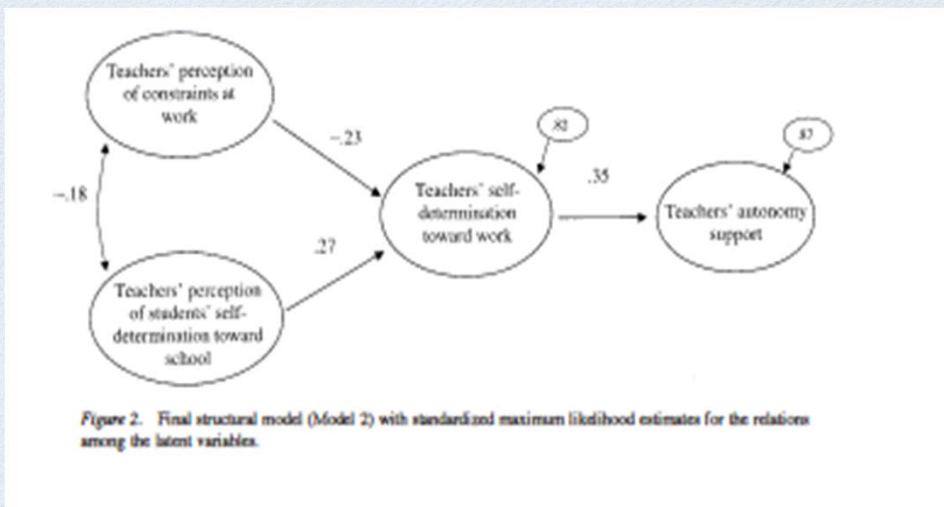


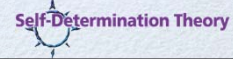
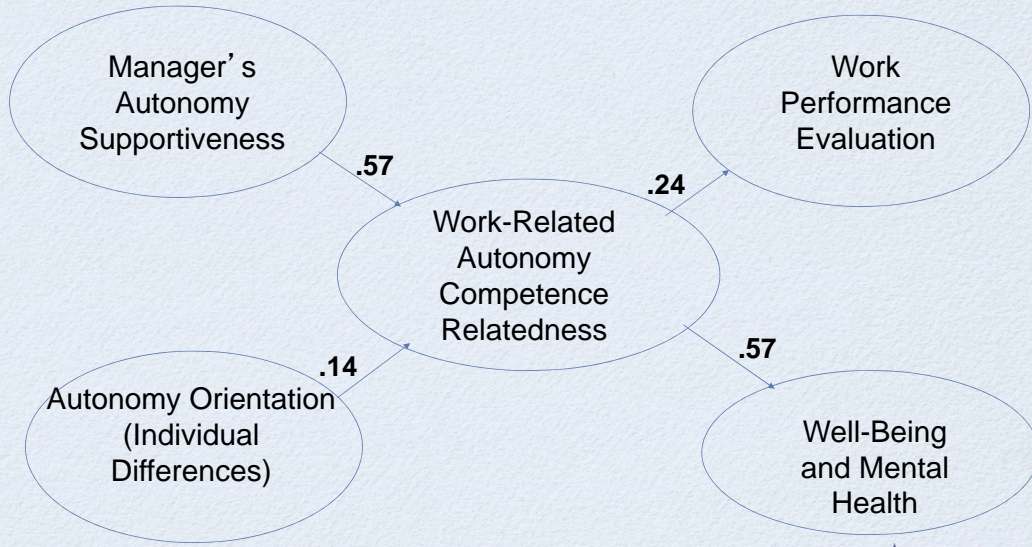
Figure 2. Final structural model (Model 2) with standardized maximum likelihood estimates for the relations among the latent variables.



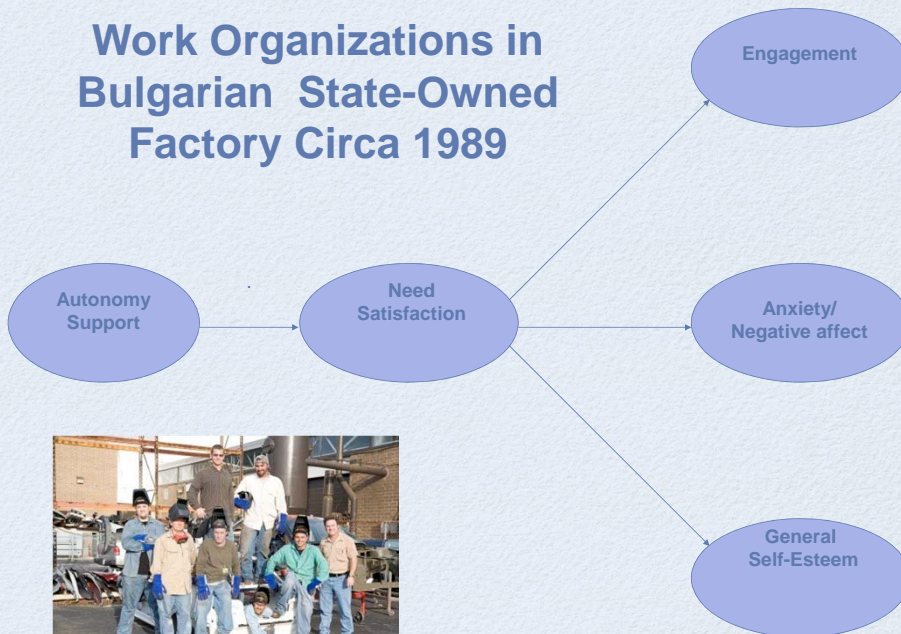
Pelletier, Levesque & Legault, 2002, JESP



Motivation of Wall Street brokers:
 Even here it is not all about \$
 (N=495; Beard, Deci & Ryan, 2004)



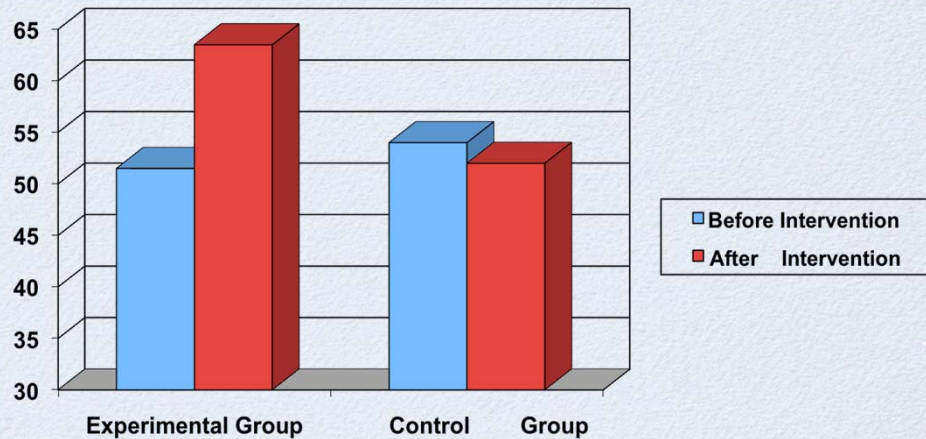
Work Organizations in
 Bulgarian State-Owned
 Factory Circa 1989



Deci, Ryan, et al., 2001, PSPB



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

Motivation for Medication Adherence

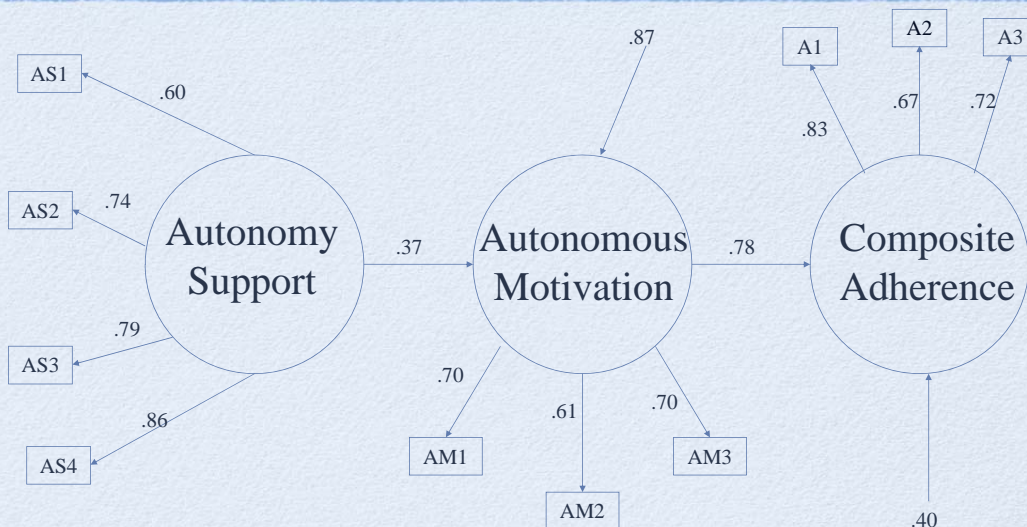
	2 Day Pill Count	14 Day Count	Self- Rpt.	Composite Adherence
Autonomy Support (HCCQ)	.24**	.17*	.03	.18*
Autonomous Regulation	.41***	.52***	.57***	.59***

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



Autonomy and Medication Adherence

($N=126$ patients on oral medications)



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



Successful Randomized Clinical Trials in Physical Health Using SDT's Autonomy Supportive Techniques

- Smoking
- Physical Activity
- Weight Loss
- Diabetes
- Medication Adherence
 - Healthy Diet
 - Dental Hygiene

But what about
happiness and well-
being?



Basic Psychological Needs Underlying Motivation and Well Being



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**

Association of Individual Psychological Need Satisfactions and Composite Wellbeing in 4 Countries

	Autonomy	Relatedness	Competence
US	.42**	.40**	.20*
China	.44**	.27**	.31**
Peru	.24**	.29**	.31**
Belgium	.37**	.36**	.33**

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

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Autonomy

HOME > EXPLORE > INDICATORS

Indicators

- Overall well-being
- Personal well-being
 - EMOTIONAL WELL-BEING
 - POSITIVE FEELINGS
 - ABSENCE OF NEGATIVE FEELINGS
 - SATISFYING LIFE
 - VITALITY
- RESILIENCE AND SELF-ESTEEM
 - SELF-ESTEEM
 - OPTIMISM
 - RESILIENCE
- Social well-being
 - SUPPORTIVE RELATIONSHIPS
 - TRUST AND BELONGING
- Other
 - WELL-BEING AT WORK

Ukraine: 4.52

Key: 0.0 4.0 7.0 10.0

Explanation of values →

Filters

All genders

About the filters →

Your score

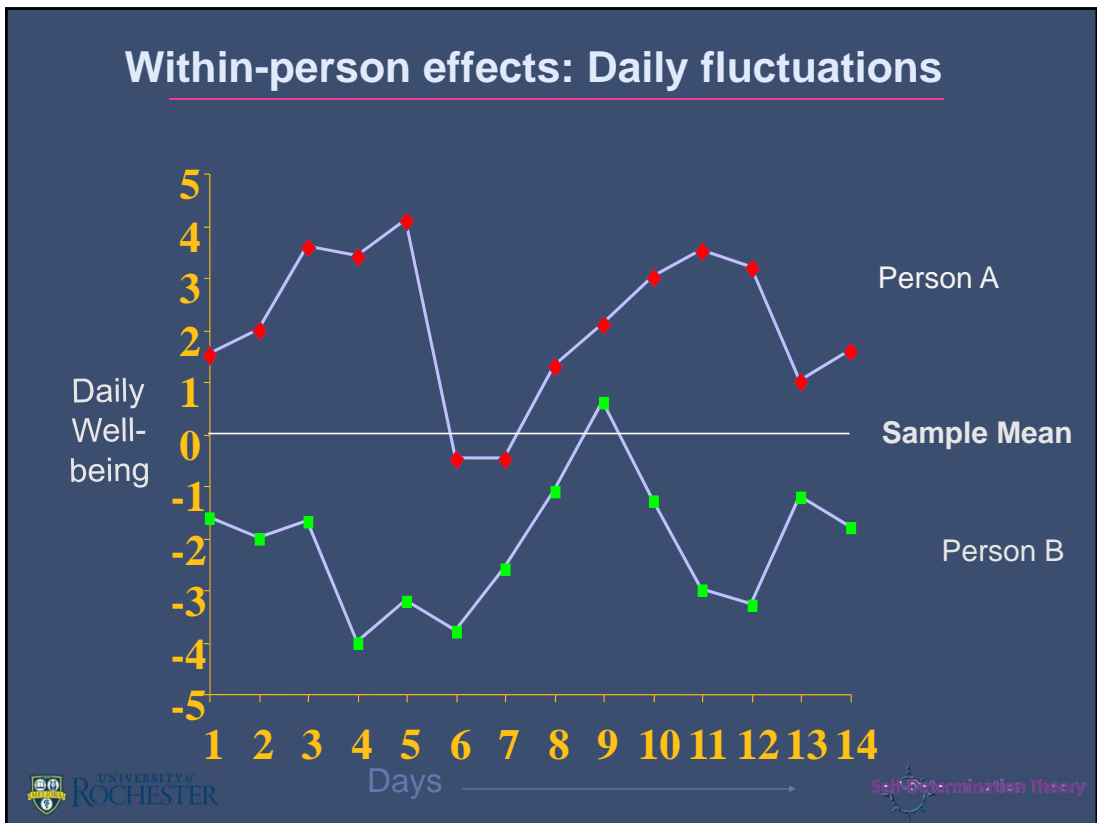
Take our well-being survey to see how you compare.

Find out more

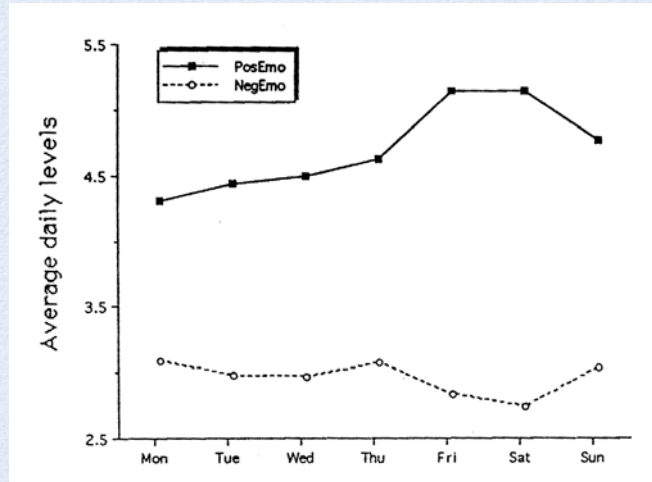
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Self-Determination Theory

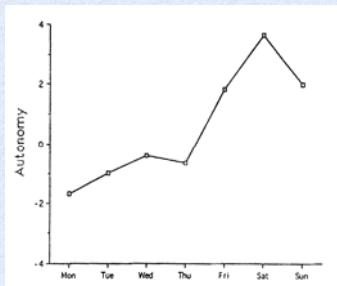


Positive and Negative Affect on the Days of the Week

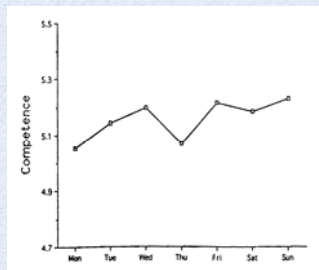


Need Satisfaction on Days of the Week

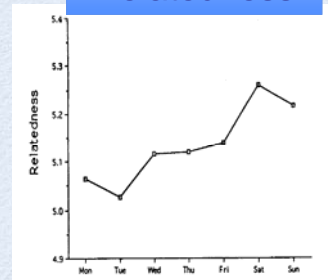
Autonomy



Competence



Relatedness



Adult Working Sample in USA

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

Need Satisfaction	Positive Affect		Negative Affect		Vitality		Phys. Symptoms	
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>
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*



Satisfaction of Psychological Needs on Weekdays vs. Weekends

	Autonomy		Relatedness		Competence	
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>
Weekend Contrast ^a	1.08	4.86***	.38	7.37***	.02	.33

Note. Weekend represents Friday evening through Sunday afternoon. *B*s are unstandardized.
* $p < .05$. *** $p < .001$.

Ryan, Bernstein & Brown, 2010, *JSCP*



Autonomy Matters

Behavior experienced as autonomous is more congruent, persistent and effective

Autonomous actions are associated with great wellness; controlling environments undermine wellness

Autonomy is facilitated by need-supportive environments

In short, the issue of autonomy versus control has manifold functional and wellness consequences.



Thank You!

www.selfdeterminationtheory.org



Selected Items Reflecting Cultural Orientations *

- **Horizontal Individualism**

- To cultivate a personal identity, independent of others.
- To depend on oneself rather than on others.
- To behave in a direct and forthright manner when having discussions with people.

- **Horizontal Collectivism**

- To maintain harmony within any group that one belongs to.
- To consult close friends and get their ideas before making a decision.
- To help a relative (within your means), if the relative has financial problems.

- **Vertical Individualism**

- To strive to do one's job better than others.
- To express the idea that without competition, it is impossible to have a good society.
- To work hard in situations involving competition with others.

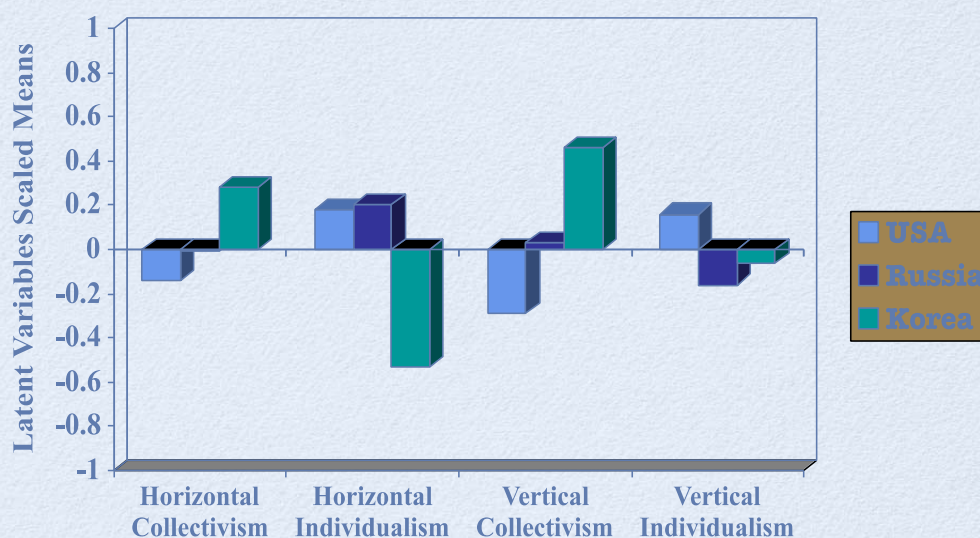
- **Vertical Collectivism**

- To sacrifice an activity that one enjoys very much if one's family did not approve of it.
- To respect decisions made by one's group/collective.
- To teach children to place duty before pleasure.

* Items based upon Singelis et al. (1995); Triandis & Gelfand (1998).



Comparison of Scaled Latent Variables Means for Perceived Cultural Practices



Within-Sample Regressions of Well-Being Composite onto Relative Autonomy for Cultural Practices

Relative Autonomy of:	S. Korea (N=111)		Russia (N=159)		Turkey (N=94)		U.S. (N=195)	
	<i>B</i>	<i>b</i>	<i>B</i>	<i>b</i>	<i>B</i>	<i>b</i>	<i>B</i>	<i>b</i>
Horizontal Individualism	.37	.28**	.16	.17**	.32	.37**	.24	.22**
Horizontal Collectivism	.26	.23**	.17	.18**	.30	.38**	.23	.21**
Vertical Individualism	.28	.28**	.17	.18**	.30	.38**	.23	.21**
Vertical Collectivism	.24	.25**	.20	.24**	.33	.42**	.15	.15*

From Chirkov, Ryan, Kim & Kaplan, 2003, *JPSP*



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*)

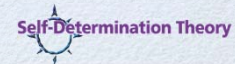
Mindfulness as a Predictor of Day-to-Day Autonomous Behavior

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 cyclicality	-0.51***
Autocorrelation	0.02
Trait mindfulness	1.08**
State mindfulness	1.59****

From Brown & Ryan
(2003), *JPSP*

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



Autonomy Support Represents a Significant Treatment Factor Across Methods

Odds ratio = 1.95 (those 1 SD above mean for A-S show 2x the benefit; 4x those 1 SD below mean)

More autonomous motivation was significantly associated with symptom improvement

Autonomy support more predictive of positive outcomes than therapeutic alliance

Means at pretreatment and posttreatment

Variable/group	Pretreatment		Posttreatment	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
HRSD				
IPT	18.53	3.87	9.00	6.66
CBT	17.58	3.42	6.08	4.69
PHT-CM	18.62	3.61	4.17	4.76
Total sample	18.20	3.62	6.42	5.69
BDI-II				
IPT	30.50	8.88	14.20	9.54
CBT	28.81	8.06	9.67	9.72
PHT-CM	29.69	8.32	7.06	7.53
Total sample	29.61	8.34	10.30	9.40

Note. Sample sizes for the three groups were as follows: IPT, $n = 30$; CBT, $n = 36$; PHT-CM, $n = 29$. Means and standard deviations are based on raw (untransformed) scores on the HRSD and BDI-II. HRSD = 17-item Hamilton Rating Scale for Depression; BDI-II = Beck Depression Inventory II; IPT = interpersonal therapy; CBT = cognitive-behavior therapy; PHT-CM = pharm-



Relations of autonomy-support to therapeutic alliance and treatment motivation in patients being treated for depression

Autonomy support is more than merely connecting and cooperating

Zuroff, D.C. Koestner, R.,
Moskowitz, D. S., McBride, C.,
Bagby, M., & Marshall, M.
(2007)

	Therapeutic Alliance	Perceived Autonomy Support
Autonomy-Support	.44***	-----
Relative Autonomy	.28*	.40***

