

How ways of pursuing well-being relate to physiological, facial and self-reported reactions to emotional pictures



Keith Pearce

Supervisor: Dr. Veronika Huta

University of Ottawa

Overview

- Ways of pursuing well-being
- Previous research on physiology & well-being pursuits
- Current study
 - Purpose, hypotheses, methods, results, conclusions

Main Ways of Pursuing Well-being

Hedonic Orientation

Pleasure, enjoyment, satisfaction

Comfort, ease

Eudaimonic Orientation

Authenticity, autonomy, Excellence, virtue,

Growth, self-actualization, maturity

Meaning, bigger picture, purpose

Extrinsic Orientation

Money, material possessions, wealth

Power

Status, prestige

Image, popularity



Ryan & Deci (2001)

Huta & Waterman (2014)

Eudaimonia & Hedonia & Physiology

- EUD WB & left prefrontal activation (Urry et al., 2004)
- ventral striatum activation: ↓ depressive symptoms for EUD decisions, ↑ depressive symptoms for HED rewards (Telzer, Fuligni, Lieberman, & Galvan, 2014)
- EUD & down-regulation of stress-related genes (Fredrickson et al., 2013)
- Health: longevity, ↓ risk of cog impairment, ↓ inflammation (Ryff, 2013)

Eudaimonia, Hedonia & Concern for Others

- EUD

- WB of close others (Huta et al., 2012)
- self-report prosocial behaviours & empathy (Pearce, Huta & Voloaca, in preparation)

- HED

- Less to prosocial behaviours
- no relation to empathy
- NA in relatives (Huta et al., 2012)



Study 1

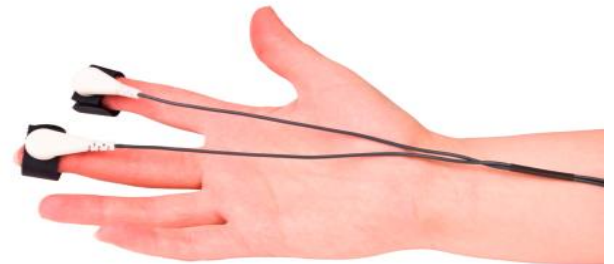
- Purpose: self-report emotions to pictures (POS & NEG humans, animals, nature)

Study 2

- Purpose: EUD & HED & self-report emotional responses, heart rate, skin conductance, & facial expressions to pictures

Skin Conductance/Electrodermal Activity

- Sweat glands on palm
- Index of anxiety or arousal (Eisenberg & Fabes, 1990)
- Empathic persons show greater SCR (Blair, 1999; Mehrabian, Young & Sato, 1988)
- Increase to POS & NEG pictures (Bradley & Lang, 2000) & fear/phobias (Ohman & Soares, 1993)



Heart Rate



- Increase may be associated with distress
(Eisenberg & Fabes 1990)
- Empathic persons show greater HR (Mehrabian, Young & Sato, 1988)
- Decrease in HR to film clips (e.g. sadness), possibly an orienting response or empathy
(Kreibig et al., 2007; Tsai et al. 2000)

Hypotheses

Reactions to Negative Images

	Eudaimonia	Hedonia
Self-Report Affect Valence	- (NEG rxn)	0
Skin Conductance	+	0
Heart Rate	+ (if stressed) or – (if orienting response)	0
Facial Expressions	- (NEG rxn)	0

Positive Pictures were exploratory

The HEMA (Hedonic and Eudaimonic Motives for Activities)

- To what degree do you typically approach your activities with each of the following intentions, whether or not you actually achieve your aim?
 - Seeking enjoyment
 - Seeking pleasure
 - Seeking fun
 - Seeking relaxation
 - Seeking to take it easy
 - (Seeking to have things comfortable)

 - Seeking to develop a skill, learn, or gain insight into something
 - Seeking to pursue excellence or a personal ideal
 - Seeking to use the best in yourself
 - Seeking to do what you believe in
 - (Seeking to contribute to others or the world)

Extrinsic Values

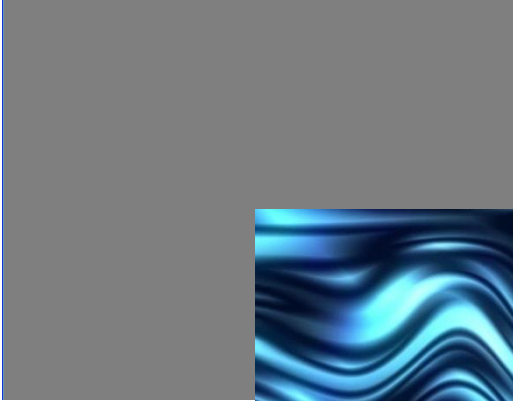
Please rate each of the following values as a guiding principle in your life, using the 9-point scale ranging from –1 (opposed to my value)s, 0 (not important), to 7 (extremely important).

-Social power: control over others, dominance

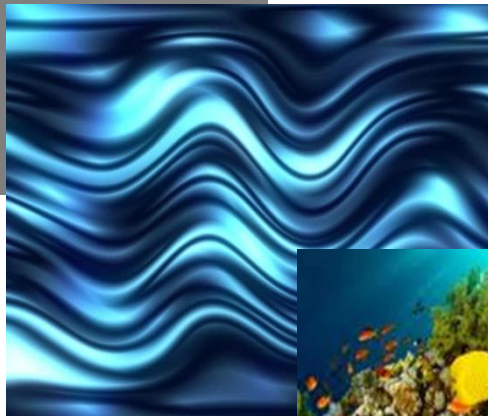
-Wealth: material possessions, money

Methodology

Baseline 3 Mins



Wave screen 15 secs



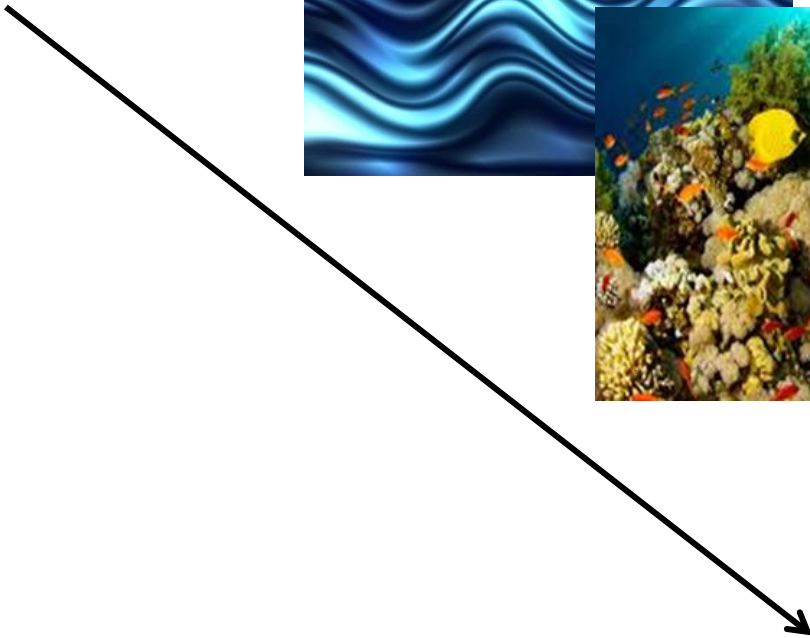
Picture 15 Secs



Rate how the picture
made you feel?

Happy
Upset
Excited
Angry....

Rating Screen 1 min



Examples of Images Used

SAMPLE IMAGES

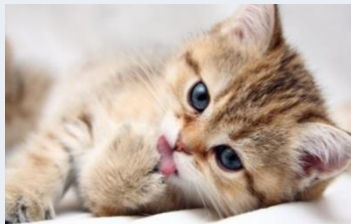
HAPPY/HEALTHY

SUFFERING/DEGRADED

People



Animals



Nature



Analyses

- Self-report: emotional valence
- Heart Rate: beats/min
- Skin conductance:
 - Skin conductance level: general level of SC during picture viewing
 - Skin conductance response (SCR): rapid change in SC in response to pictures (magnitude)

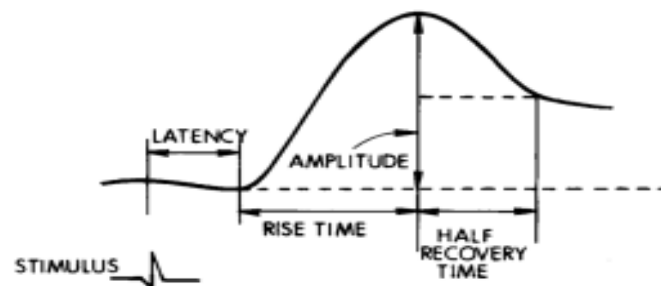


Figure 5. Graphical representation of principal EDA components.

- Facial Expressions: -4 to 4 rating scale

Self-reported Affect Valence

	Eudaimonia	Hedonia	Extrinsic Values (Power, Wealth)
Trait affect valence:			
Study 1	.21**	.16**	-.01
Study 2	.18*	.07	-.11
State affect valence (controlling for trait):			
To positive images			
Study 1	.11*	.12*	-.04
Study 2	.30**	.09	.03
To negative images			
Study 1	-.15**	-.03	.01
Study 2	-.20*	-.10	.02
Visual Ratings (Study 2)			
Attractive/Pretty (positive images)	.11	.17*	.01
Revolting/Gross (negative images)	.12	.16*	.01

* p < .05, ** p < .01

Affect items were:

- Happy, excited, warmed, soothed, uplifted
- Upset, sad, angry, hurt, horrified, frustrated, disgusted

Pearce, Huta, Voloaca, & Braaten
(in preparation)

Study 1 n = 415, Study 2 n = 141

Skin Conductance (SC)

	Eudaimonia	Hedonia	Extrinsic Values (Power, Wealth)
Trait SC Level (typical degree of stress)	-.21**	-.20*	.02
State SC Level (controlling for trait SC):			
To positive images	-.02	-.08*	-.01
To negative images	.03	-.02	-.02
Skin Conductance Response (SCR, magnitude)			
To positive images	-.02	-.01	-.24**
To negative images	-.15	-.08	-.17*
Delay of SCR (time it took to react)			
To positive images	-.17*	.03	.10
To negative images	.08	-.07	.04

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

Pearce, Huta, Voloaca, & Braaten (in preparation)

Study 2 n = 135 for trait SCR, 95 for state SC controlling for trait, 138 for state SCR

Heart Rate (HR)

	Eudaimonia	Hedonia	Extrinsic Values (Power, Wealth)
Trait HR	.14†	.08	-.27**
State HR (controlling for trait HR):			
To positive images	.03	.01	.01
To negative images	-.00	-.01	-.01
State HR (difference from HR during wave screen before image onset):			
To positive images	.09	-.02	-.06
To negative images	.15†	-.07	.03

† $p < .10$, * $p < .05$, ** $p < .01$

Trait HR: typical degree of engagement, or performance anxiety?

State HR controlling for trait HR: how the image affected the participant

State HR difference from HR during greyscreen before image: whether participant engaged with the image

Pearce, Huta, Voloaca, & Braaten (in preparation)

Study 2 $n = 132$ for trait HR, 116 for state HR controlling for trait, 118 for state HR difference from image onset

Body Language and Facial Expression (Hidden Video Camera)

	Eudaimonia	Hedonia	Extrinsic Values (Power, Wealth)
Trait emotion valence (as judged from facial expression)	.03	.08	.05
State engagement (as judged from body language)			
To positive images	.13	-.10	-.11
To negative images	.10	-.19*	-.16†
State emotion valence (as judged from facial expression)			
To positive images	.07	-.09	-.04
To negative images	.02	.06	.04

† $p < .10$, * $p < .05$, ** $p < .01$

Pearce, Huta, Voloaca, & Braaten (in preparation)

Interclass correlation Valence = .92

Interclass correlation engagement = .74

Conclusions

- Self-Report
 - EUD related to caring to both POS & NEG images
 - HED less strongly related to emotional rxns
 - EXT no rxns
- Skin Conductance
 - HED numb to POS images
 - EXT numb to POS & NEG images
- Heart Rate
 - EUD higher trait
 - EXT lower trait
- Facial Expressions
 - HED & EXT less engaged

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