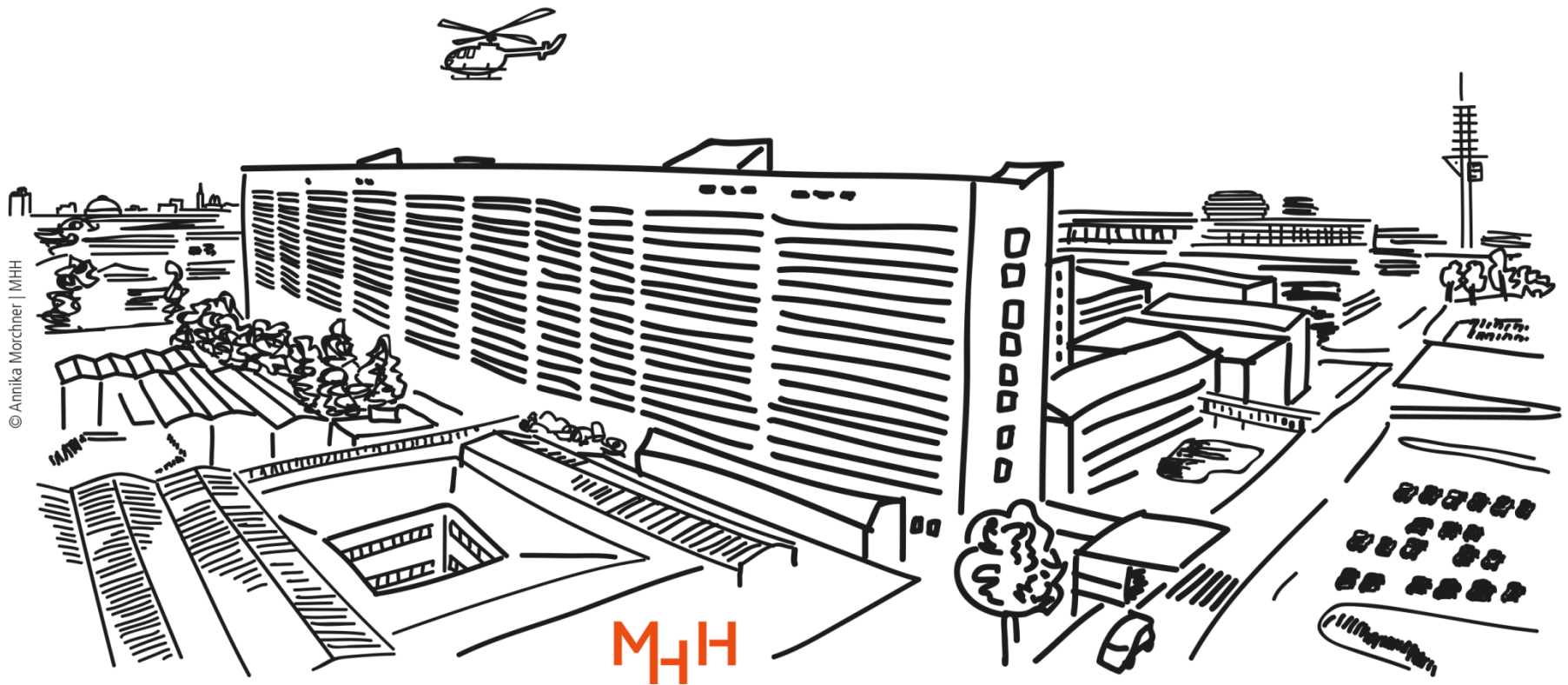


# Hannover Medical School



© Annika Morchner | MHH



# Sexual Violence and the Neurobiological Correlates of Pedophilia and Child Sexual Offending

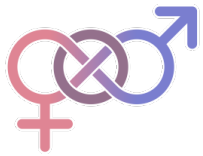
**SPEAKER: JONAS KNEER**

**Department of Clinical Psychology and Sexual Medicine.**

# OUTLINE

- Sexuality
- Sexual Violence
- Research in Pedophilia and CSO
- Prevention of Sexual Violence





# Human Sexuality

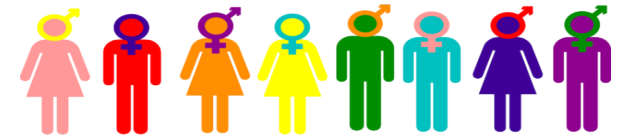
*“Sexuality is a state of being, a way of experiencing and giving pleasure to ourselves and others. It has the potential to be a powerful and positive force that deepens intimate connections. It can also be a source of great pain.”*

(<http://www.ourbodiesourselves.org>)



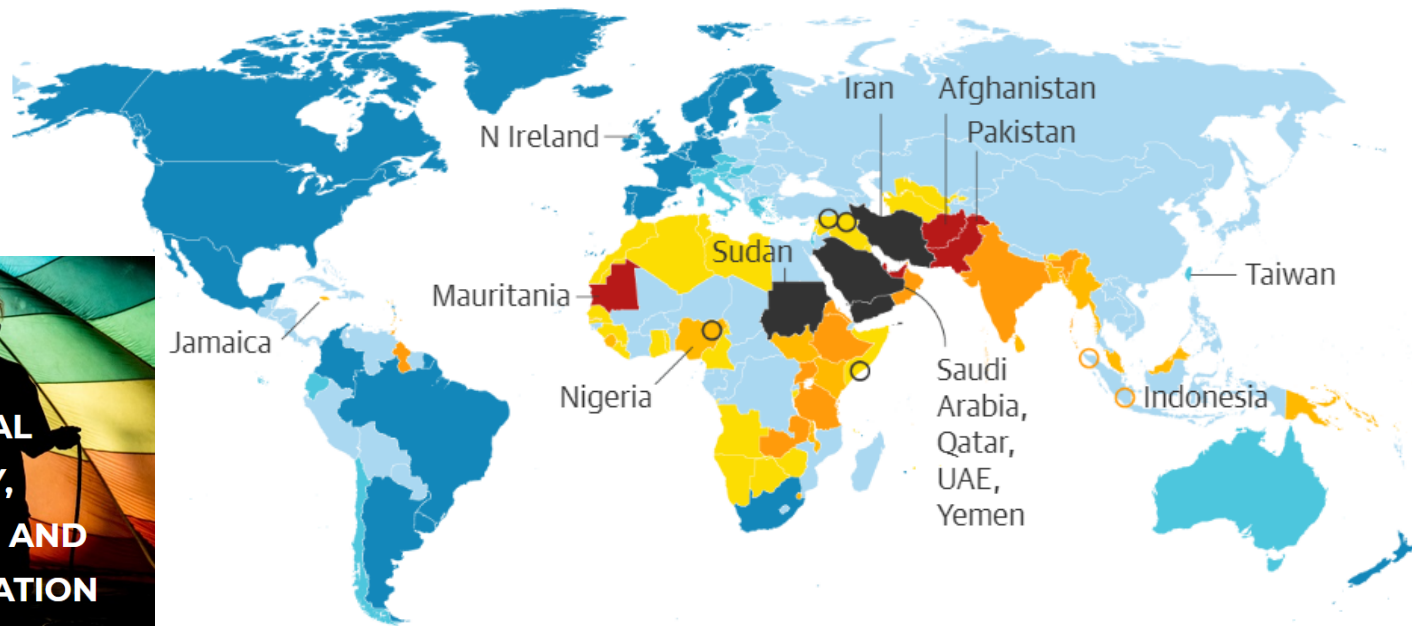


# Human Sexuality II

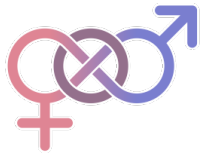


- No penalising law
- Recognises civil union
- Recognises marriage

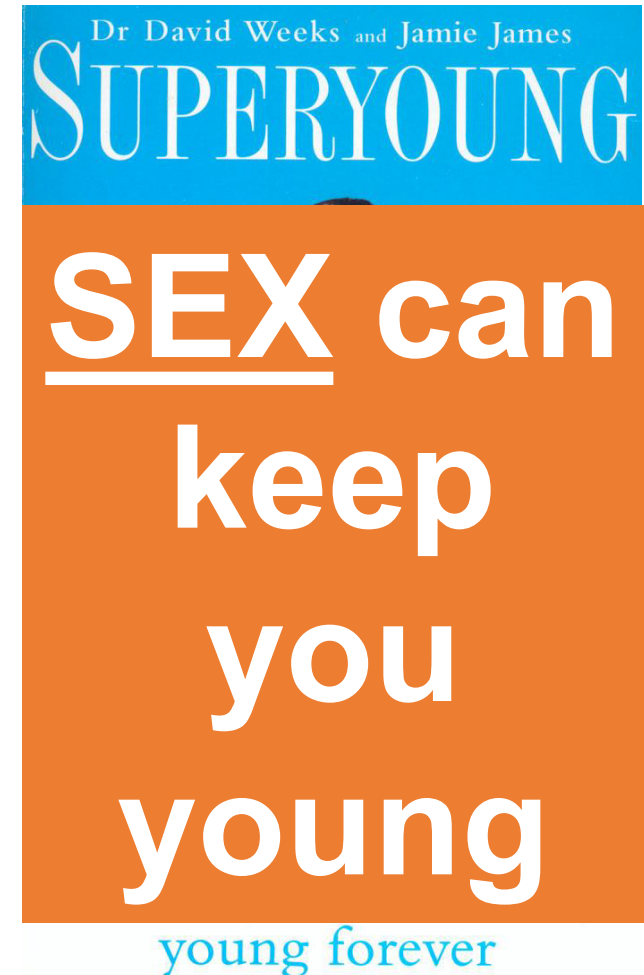
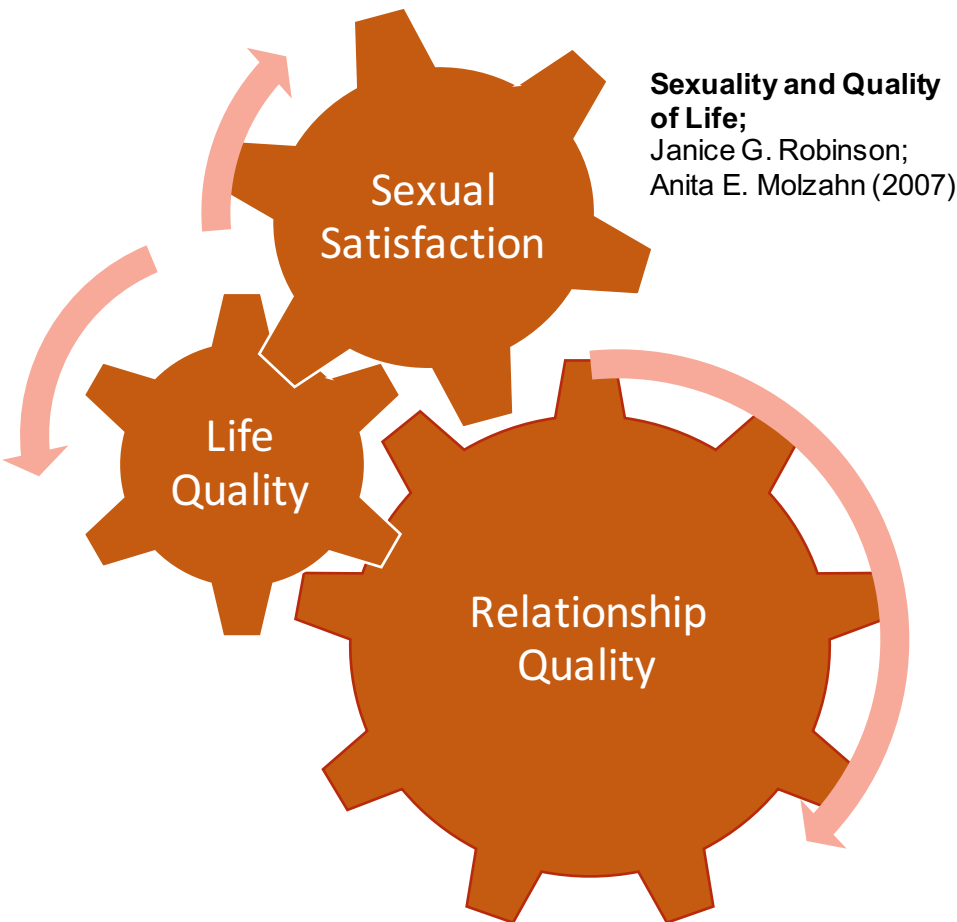
- Homosexuality is criminalised - 0-7 year sentence
- 8-14 years   ■ 15 years to life   ○ 15 years to life in some areas
- Death penalty   ○ Death penalty in part of country
- Death penalty but not applied



It remained the case that there is no country in the world where LGBT people are safe from discrimination, stigmatisation or violence” (Aengus Carroll, ILGA) .



# Human Sexuality



*Superyoung. The proven way to stay young forever* (Weeks, D. J. & James, J., 1998)  
*Secrets of the Superyoung: The Scientific reasons some people look ten years younger than they really are – and how you can, too.* (Weeks, D. J. & James, J. 1999)

# What is sexual violence?

“Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion, by any person **regardless of their relationship** to the victim, in any setting, including but not limited to home and work.”

**WHO** (Krug et al., 2002).

**Unwanted touching**  
*Sexual assault*  
Exhibitionism  
Sexual coercion  
Voyeurism

Sexual harassment

## Any type of sexual contact

- with someone who **cannot** consent, such as someone who is underage/under the age of consent (as defined by state laws), has an intellectual disability, or is passed out (such as from drugs or alcohol) or unable to respond (such as from sleeping).
- with someone who **does not** consent

<http://www.wyomentalhealth.org/>

# Long-Term Effects of Sexual Violence

## **Of women who are raped:**

- Approximately 70% experience moderate to severe distress.<sup>1</sup>
- 33% contemplate suicide. 13% attempt suicide.<sup>2</sup>
- 94% experience symptoms of PTSD (within two weeks) 30% still suffer 9 months after .<sup>3</sup>

1.J. R. T. Davidson & E. B. Foa (Eds.) Posttraumatic Stress Disorder: DSM-IV and Beyond. American Psychiatric Press: Washington, DC. (pp. 23-36).

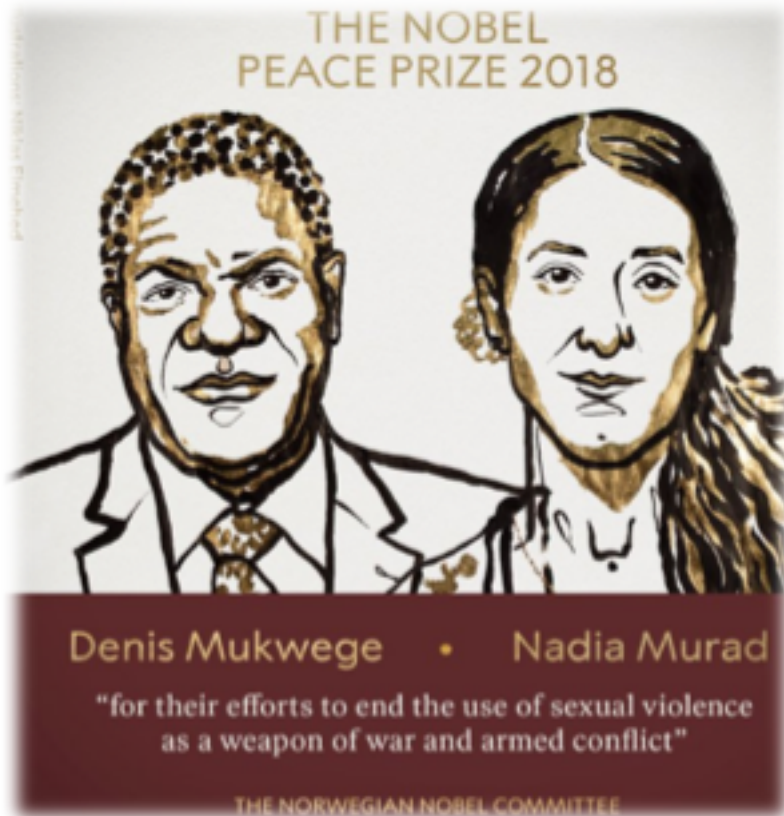
2.DG Kilpatrick, CN Edumuds, AK Seymour. Rape in America: A Report to the Nation. Arlington, VA: National Victim Center and Medical University of South Carolina (1992).

3.Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, Socio-emotional Impact of Violent Crime (2014).

<https://www.rainn.org/statistics/victims-sexual-violence>



# Working in the Field of SV Prevention



# Where does Sexual Violence Happen?



# Prevalence of Sexual Violence: Child Sexual Offending

- The global prevalence of child sexual abuse: 19.7% for females and 7.9% for males under an age of 18. (Pereda, 2009)
- 12,7% (18% girls, 7,6% boys). (Stoltenborgh, 2011)
- 11 % of females reported a history of severe sexual abuse compared with 4% males. (Ontario, Canada: MacMillan, 1997)
- 10% of men and 22% of women had experienced sexual child abuse. (Data from Quebec collected in 2006)



# Prevalence of Sexual Violence:

## Sexual Violence Against Adults



In the U.S.,

- 36.3% of women and 17.1% of men experienced some form of **contact sexual violence** (SV) during their lifetime.
- About 50% of women and 25% of men have experienced **some form of sexual violence** during their lifetime.

Smith et al. (2017) The national intimate Partner survey and sexual violence survey.

- Estimated 19.3% of women and 1.7% of men **have been raped** during their lifetimes.
- The Majority of sexual assault victims **is under 30**

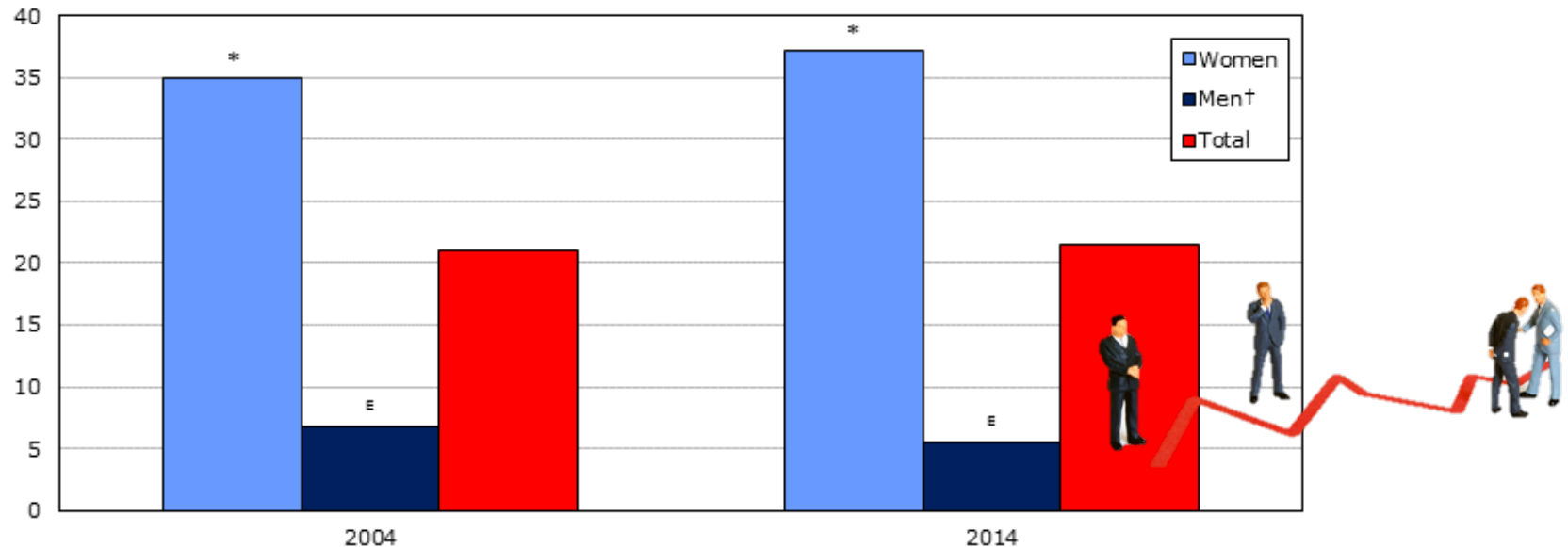
Peterson et al. 2017; Lifetime Economic Burden of Rape Among U.S. Adults





# Prevalence of sexual assaults (Canada)

- **1 in 3 women in Canada** will experience sexual assault at some point over the course of their lives (Government of Ontario, 2011)



- Women self-reported 553,000 sexual assaults.<sup>1</sup>
- sexual assault is one of the top five most common violent offences committed against women in Canada (Sinha, 2013)

<sup>1</sup><https://www150.statcan.gc.ca/n1/pub/85-002-x/2017001/article/14842-eng.htm>



# Estimated Costs of Sexual Violence

Canadians collectively spend **\$7.4 billion** to deal with the aftermath of **spousal violence alone**.

**Each year** in Canada, the collective financial impact for women who experience SV is **\$3.4 billion** in medical costs, lost productivity, and intangible costs like pain and suffering.

<https://www.canadianwomen.org/the-facts/sexual-assault-harassment/#easy-footnote-bottom-20-109>

## COSTS OF CHILD SEX ABUSE PER CRIMINAL VICTIMIZATION

CATEGORY	COST PER VICTIM
Productivity	\$ 2,100
Medical Care / Ambulance	490
Mental Health Care	5,800
Police	56
Victim Social Services	1,100
$\Sigma$ = Tangible Losses	9,500
Quality of Life: Intangible Losses	89,800
$\Sigma$ = Total Losses	99,000

*Note.* Adapted from Miller, Cohen, & Wiersma (1996); figures in 1993 U.S. dollars

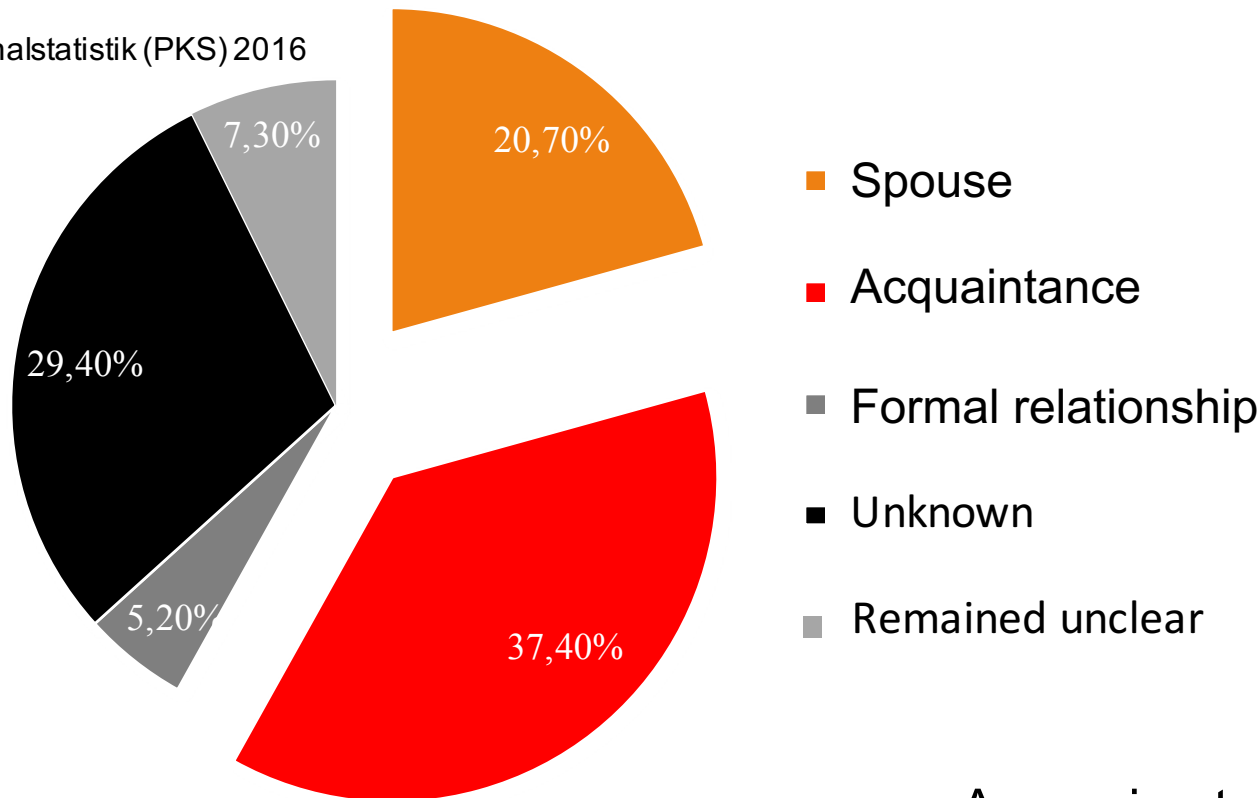
Lifetime cost per victim of nonfatal **child maltreatment** in the USA: **\$210,000**

Fang et al. 2012

# Victim and Offender Relationship in SV

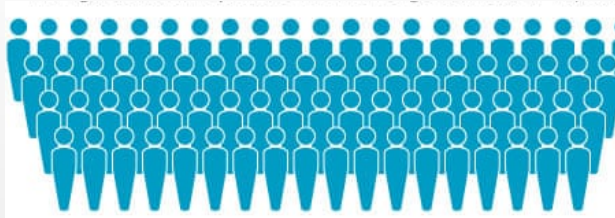
(Germany)

Polizeiliche Kriminalstatistik (PKS) 2016



Approximately **7 out of 10** **sexual assaults** are committed by someone known to the victim.

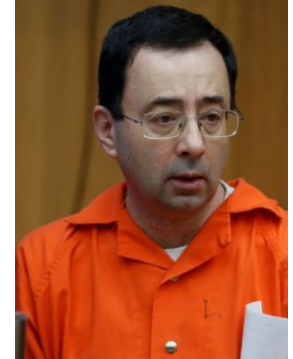
# Who are the Perpetrators



# 100



# 1





# Who are the Perpetrators



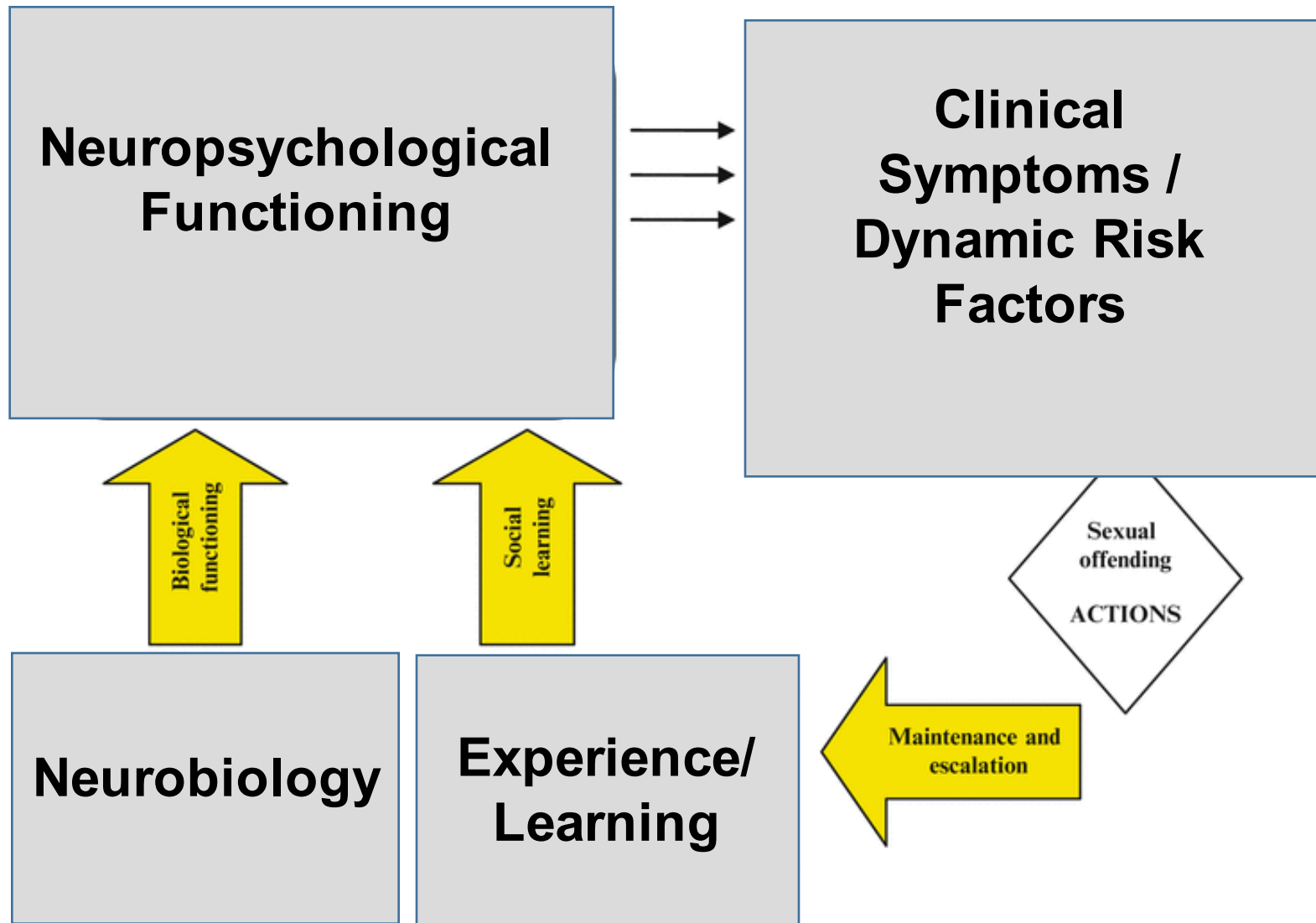
- Estimated 9 out of 10 perpetrators offend again
- Neither the reports to the police nor the resulting convictions are representative
- we have no information about the people in the dark field (not reported to the police)
- They are not facing court or maybe any negative consequence at all



# Summary of Sexual Violence I

- SV affects a worrisome number of people, but it is less common than sexual abuse of minors.
- Sexual violence can have **serious long term consequences**
- Even though adult males are victims of numerous sexual assaults, they are victimized less often than women.
- **Adults of all ages** are victims of SV. Adults under the age of 25 are most commonly affected by SV.
- Compared to minors, adults seem to be victimized by strangers more often than by assaults family members.
- **Most sexual assaults** against adults are committed by **acquaintances**.
- Only estimated 5% - 10 % of sexual assaults are reported to police in 2014.

# The ITSO (Ward & Beech, 2006)



# CASE I: Mr. Y

## Neuropsychological Functioning

## Clinical Symptoms / Risk factors

Neurobiology

Experience/  
Learning /

Deviant sexual arousal  
Low self-esteem  
Sex as coping strategy  
Lack of adequate coping strategies  
Deficits in emotion regulation

Adverse childhood experiences  
Having a partner with a young daughter

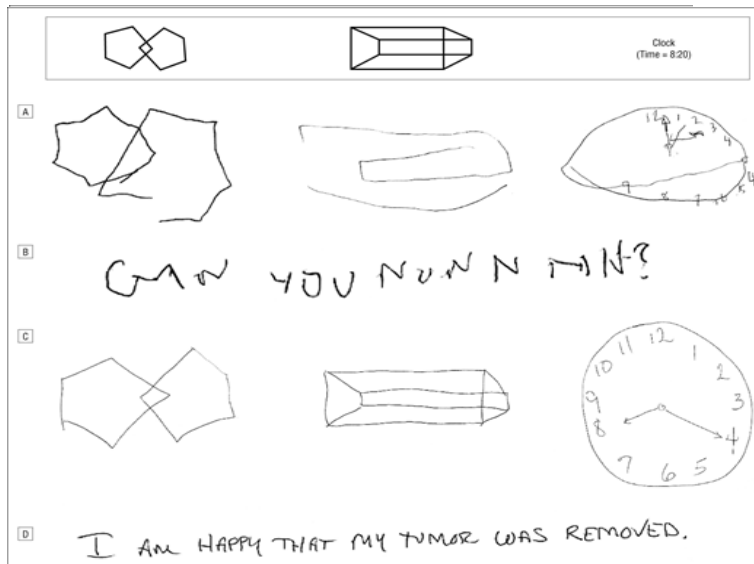
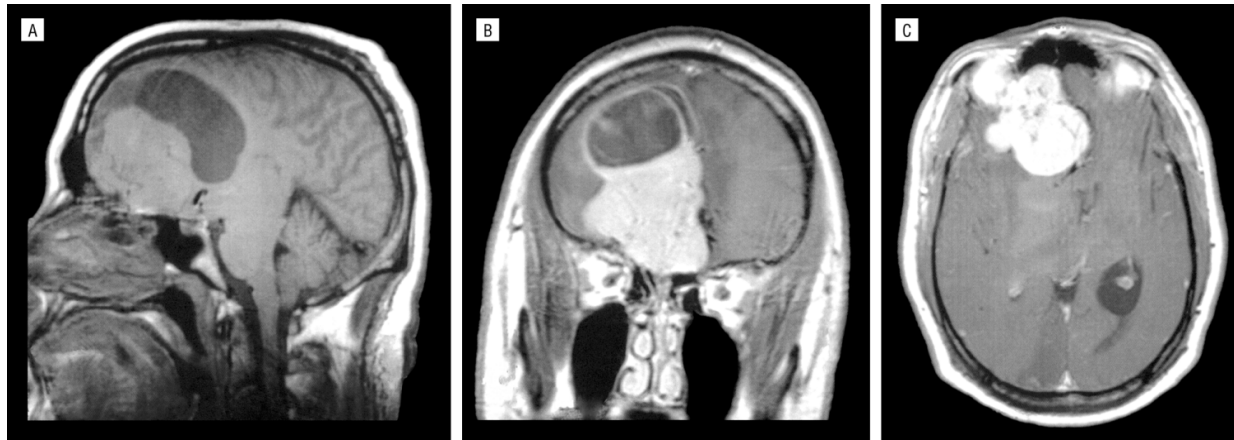
Sexual  
offending  
ACTIONS

Maintenance and  
escalation

**No negative consequences for offensive behavior**



# CASE II: Mr. Z (Burns & Swerdlow, 2000)



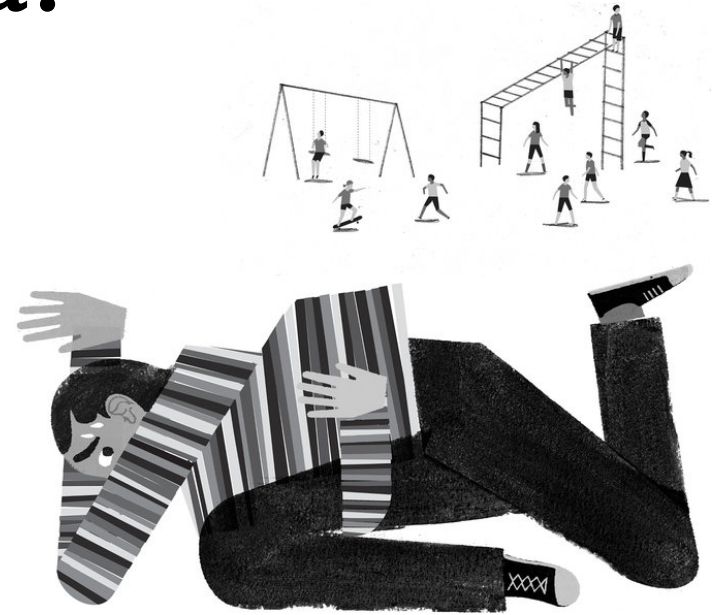
Orbitofrontal abnormalities lead to poor impulse control, altered sexual behavior, and sociopathy.

marked constructional apraxia, and agraphia.

The behavioral symptoms and constructional deficits, including agraphia, resolved following tumor resection.

# Why should we Study and Treat Pedophilia?

Pedophilia: A Disorder ?  
Definitely Not a Crime



One cannot choose to not be a pedophile, but one can choose to not be a child molester”  
*Dr. James Cantor, professor University of Toronto and a leading expert on pedophilia*

# Definition of Pedophilic Disorder According to DSM-V

- **A** Over a period of at least 6 months, recurrent, intense sexually arousing **fantasies, sexual urges or behaviors involving sexual activity with a prepubescent child** or children (generally age 13 years or younger)
- **B** The person has **acted** on these sexual urges, or the sexual urges or fantasies cause marked **distress** or impairment in social, occupational, or other important areas of functioning
- **C** The person is at least age 16 years and at least five years older than the children in Criterion A or Criterion B

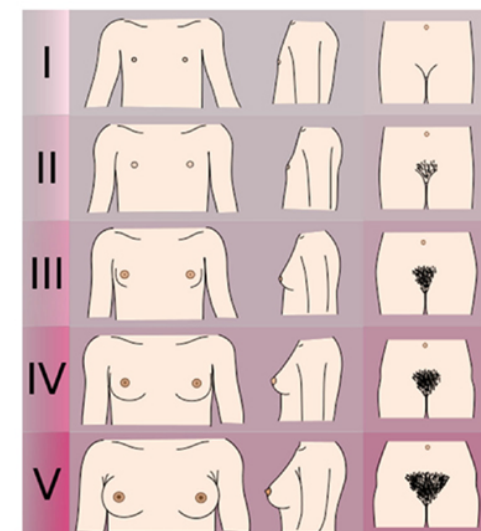
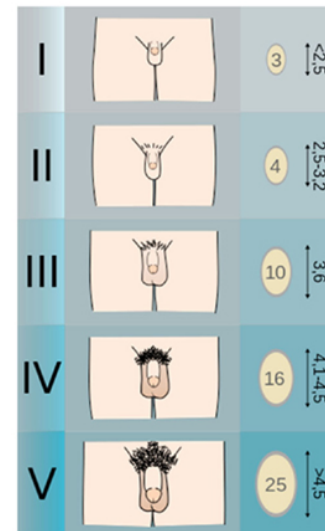
Tanner Stage of Preferred Partner:



Pedophilia

Hebephilia

Teleiophilia



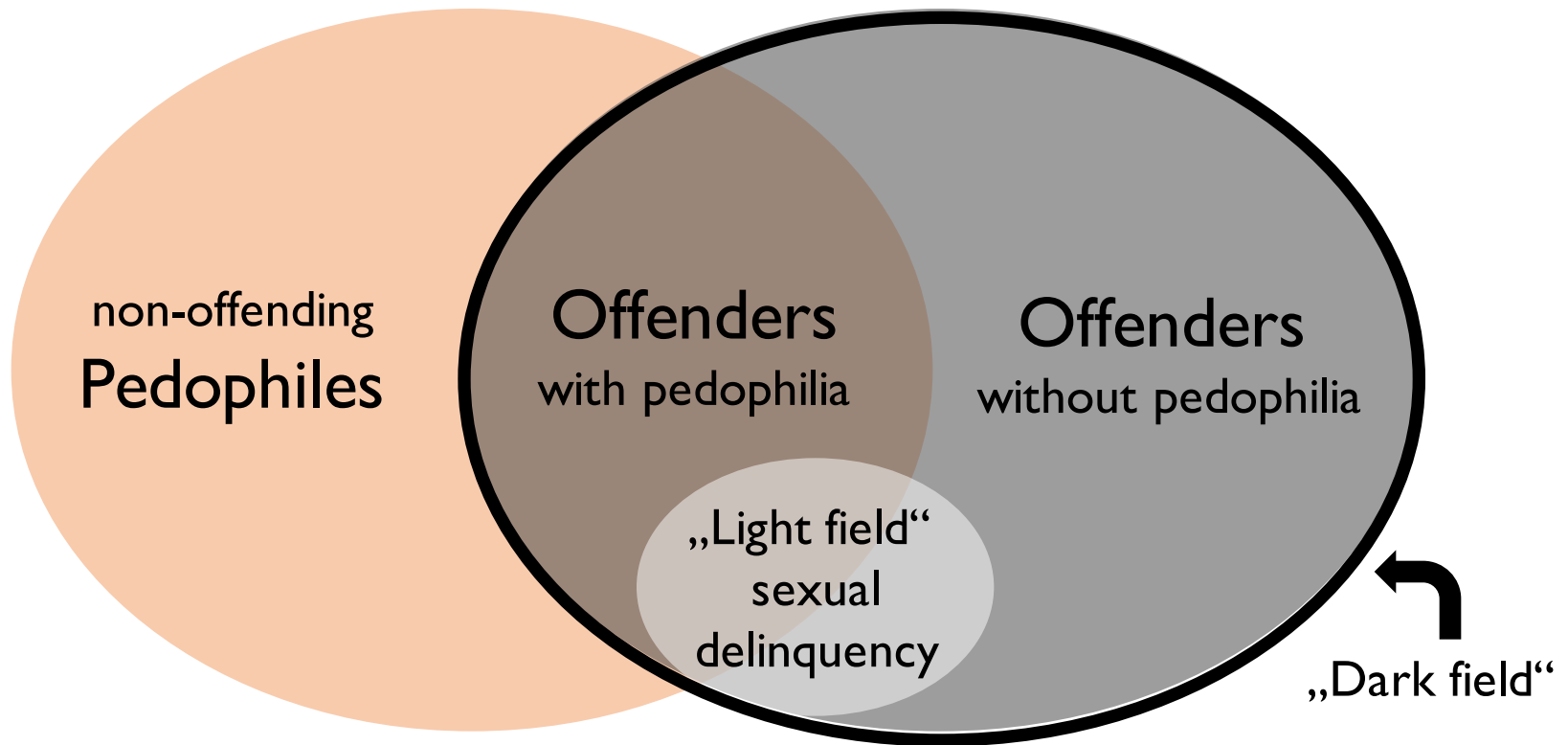
sexual preference is more a fate than a choice

# Pedophilia ≠ Child Sexual Offending

Disorder of sexual  
preference

Pedophilia/Hebephilia  
exclusive & non-exclusive type

Sexual conduct disorder  
child sexual offending



# Insights Gained so far in Pedophilia Research ...

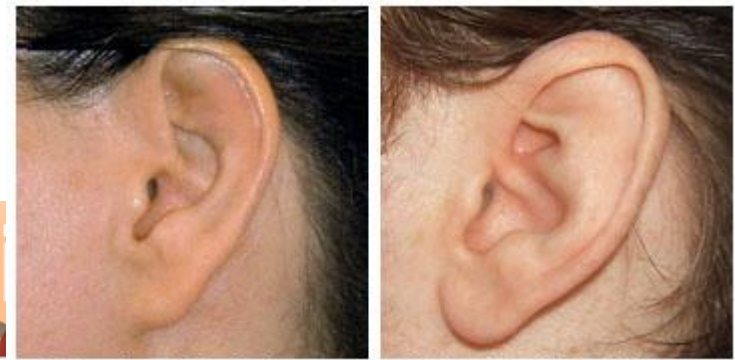
MailOnline

Home | News | U.S. | Sport | TV&Showbiz | Australia | Femail | Health | **Science** | Mor

Latest Headlines | **Science** | Pictures | Discounts

## Can scientists spot a pedophile? Study claims they are more likely to have physical deformities and be left-handed

- It also found pedophiles were more likely to have non-detached earlobes
- Other physical irregularities include mishappen ears and being short
- These can develop due to baby's exposure to alcohol or drugs in the womb
- Scientists suggest pedophiles can be identified before they commit a crime



Attached Earlobes

Detached Earlobes



Dyshniku, F., Murray, M.E., Fazio, R.L. et al. Arch Sex Behav (2015) 44: 2151. <https://doi.org/10.1007/s10508-015-0564-7>

# Differences in Child Sexual Offending:


Alterations of intelligence, handedness and prefrontal function?

## General Dysfunction

- Lower overall IQ Kruger & Schiffer 2011, Cantor et al 2005, Blanchard et al. 2007
- Higher frequency of left-handedness Cantor et al. 2004, 2006 Blanchard et al 2007
- Lower levels of academic achievement Cantor et al. 2006
- Lower job capacity Kruger & Schiffer 2011, Suchy et al 2009

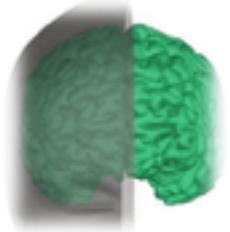
## Specific cognitive dysfunctions

- Verbal word fluency Langevin et al 1989
- Verbal and spatial working memory Cantor et al 2004
- Verbal learning and word fluency Joyal et al 2007
- Emotion recognition & empathy Gery et al 2009
- Attention Kafka & Hennen 2002
- Executive functioning Kruger & Schiffer, 2011,, Suchy et al 2009, 2011

- 
- Research has been done on CSO.
  - Different confounders should be considered.



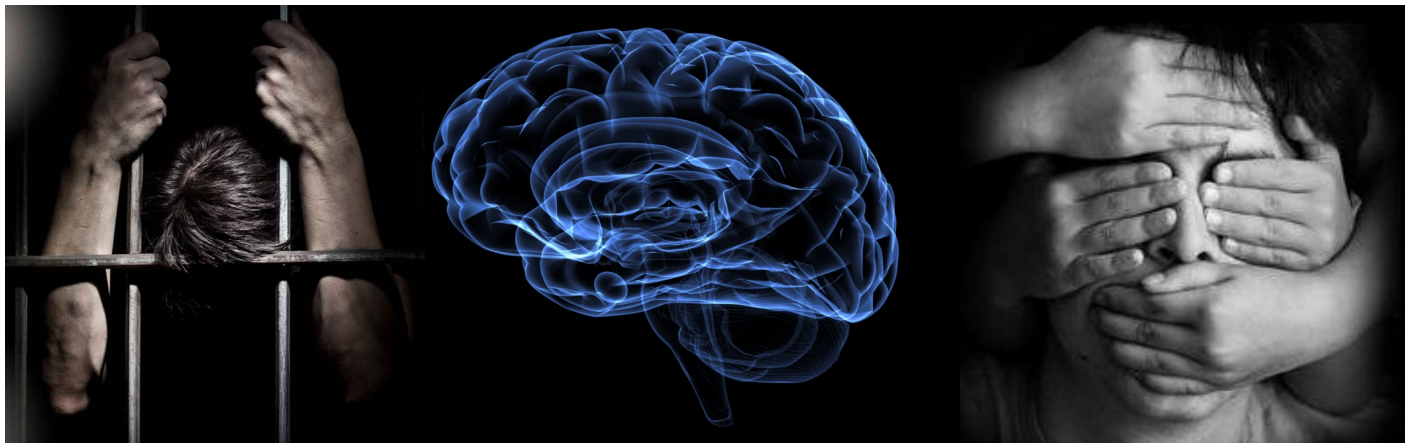
# The NeMUP-Project



Neural Mechanisms Underlying Pedophilia and Sexual Offending Against Children

Decoding the neural basis of pedophilia and child sexual offending

Clinical, neuropsychological and (epi-) genetic alterations in pedophilia and child sexual offending



# NeMUP Common Trunk Approach

(Neuro-) Psychology	Structural MRI	Functional MRI	Imaging Genetics & Epigenetics	Endocrinology
Psychopathology SCID-I & II, BIS	Grey Matter Volume, Density	Resting State	SNP & VNTR analyses	Associations with Imaging, Genetics und Psychology e.g. testosterone
Sexual Assessment VT, SIS/SES, CTQ, paraphilias	White Matter Microstructural Integrity, Structural connectivity	fMRI-based assessment of pedophilia	Promoter methylations	
Empathy / Theory of Mind MET, SPF-IRI		Executive Functions Go/No-Go		
Cognitive Performance WAIS, CANTAB				

# Aims of the NeMUP Study

1. Characterization according to sexual preference and offense status (2x2 factorial design) (n > 400)
2. Understanding clinical, neural, genetic and hormonal mechanisms of pedophilia (P) and child sexual offending (CSO)
3. Evaluating effects of psychotherapy and pharmacotherapy
4. Improving screening, diagnosis, prevention & treatment

		sexual preference	
		pedophilic	teleiophilic
offender	no	P-CSO	HC
	yes	P+CSO	CSO-P

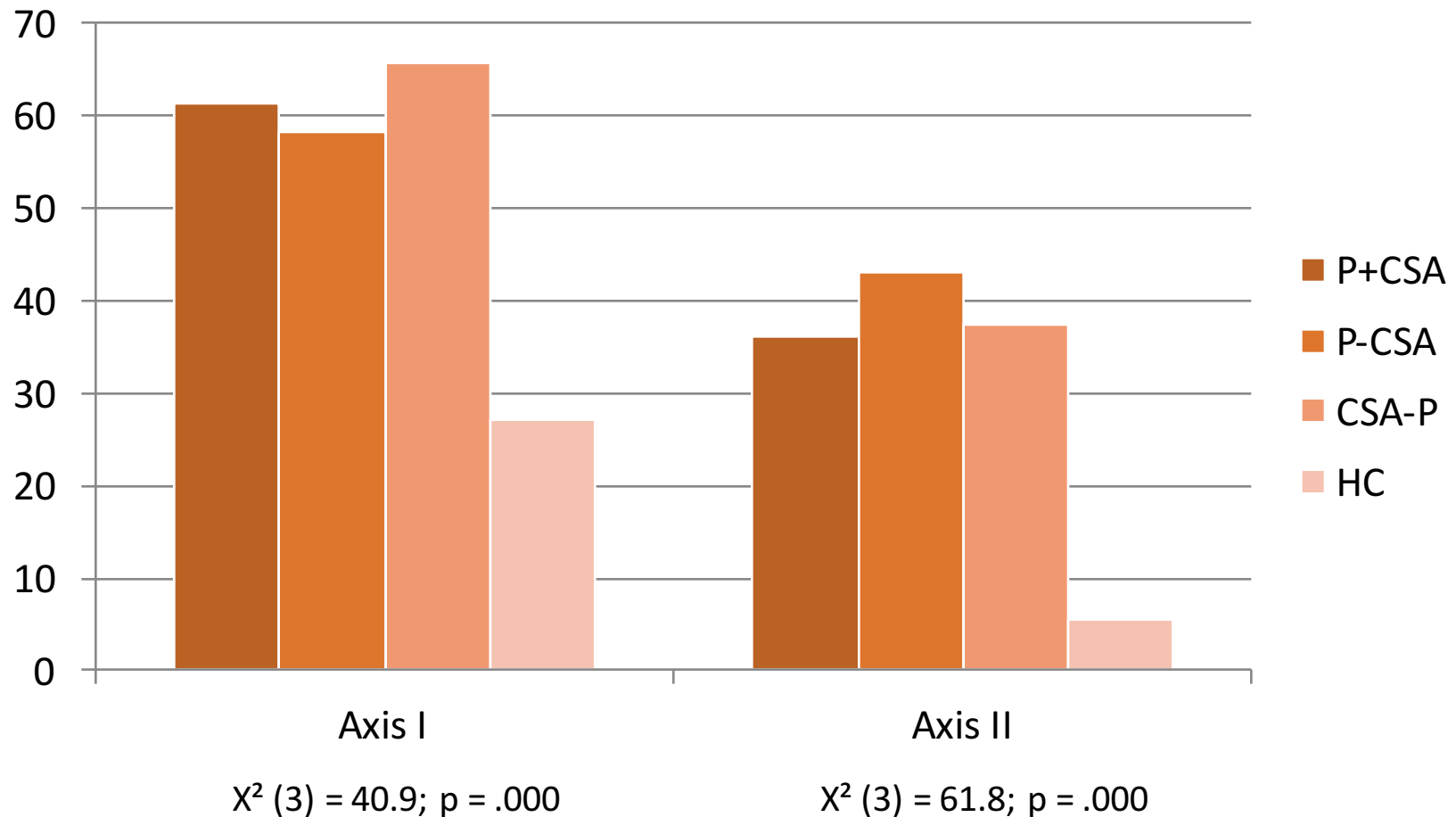
# Characteristics Associated with Offense Status

## age, intelligence, education & own experience of child sexual abuse

Groups (N=342)	P+CSO (83)	P-CSO (79)	CSO-P (32)	HC (148)	Statistic
Age	40.0 (9.6)	34.6 (9.7)	43.3 (12.8)	33.6 (9.9)	$H(3) = 34.0; p = .000$
Educational level (0-5)	2.87 (1.17)	3.68 (0.94)	2.41 (1.10)	3.82 (0.90)	$H(3) = 99.276; p = .000$
Total intelligence score WAIS	99.00 (18.75)	106.8 (17.53)	90.94 (15.00)	105.15 (18.75)	$H(3) = 25.011; p = .000$
Vocabulary	8.90 (3.31)	10.99 (2.98)	8.32 (2.50)	10.84 (3.27)	$H(3) = 35.887; p = .000$
Similarities	8.84 (3.04)	10.28 (2.94)	7.68 (2.99)	9.94 (3.04)	$H(3) = 22.311; p = .000$
SPF-IRI empathetic concern	14.49 (2.91)	14.07 (3.24)	16.00 (3.05)	13.82 (2.37)	$H(3) = 20.333; p = .000$
CTQ sexual abuse	8.29 (5.15)	6.70 (3.55)	10.07 (5.77)	5.37 (1.29)	$H(3) = 76.578; p = .000$
Mean later. index EHI (SD)	65.74 (5.53)	61.44 (6.35)	76.25 (8.60)	65.84 (4.64)	$H(3) = 7.225; p = .064$

*Note: All data given as M(SD).*

# There are no Types of Pedophiles or Offenders – but Comorbidities



# Multiple Regression

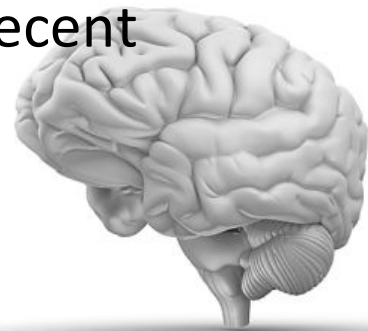
## Classification Quality

Group	Relevant Variables	Sensitivity	Specificity	Overall Acc.	R <sup>2</sup>
<b>P+CSO, P-CSO vs. HC, CSO, P</b>	<b>Increased Sexual desire, voyeurism, CTQ, SIS, SES</b>	<b>66%</b>	<b>74%</b>	<b>68%</b>	<b>23%</b>
<b>P+CSO vs. P-CSO</b>	<b>AGE, Education, CTQ, sexual sadism</b>	<b>74%</b>	<b>74%</b>	<b>74%</b>	<b>37%</b>
<b>P+CSO, CSO-P vs. HC, P-CSO</b>	<b>BIS, CTQ, AGE</b>	<b>71%</b>	<b>77%</b>	<b>76%</b>	<b>33%</b>



# I Conclusion: Clinical Characteristics

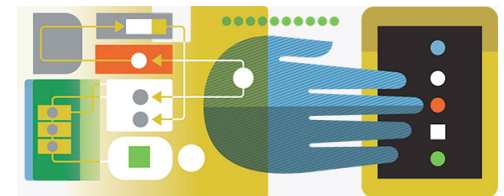
1. All experimental groups showed increased rates of axis 1 and axis 2 disorders
2. Findings on psychiatric comorbidities, cluster C personality disorders, and impulsiveness not clearly traceable to only one of the two factors in question
3. Adverse childhood experience where higher in P+CSO and CSO-P than in P-CSO
4. Findings regarding lower levels of education and intelligence, and higher levels of own experience of childhood sexual abuse rather stand in contrast to recent findings



# Neuropsychology

## Cantab Test battery

1. **Pedophilia** is not associated with EF deficiencies. **Offense status** however is associated with a greater degree of **impulsivity** as evidenced by greater error rates and faster response times on tasks measuring response **inhibition** performance
2. Differential **age-performance-associations** revealed that pedophiles become more impulsive when getting older whereas teleiophiles (normal controls) show the opposite pattern
3. However, no across-the-board deficits in executive function!



# Neurobiological Correlates of Pedophilia

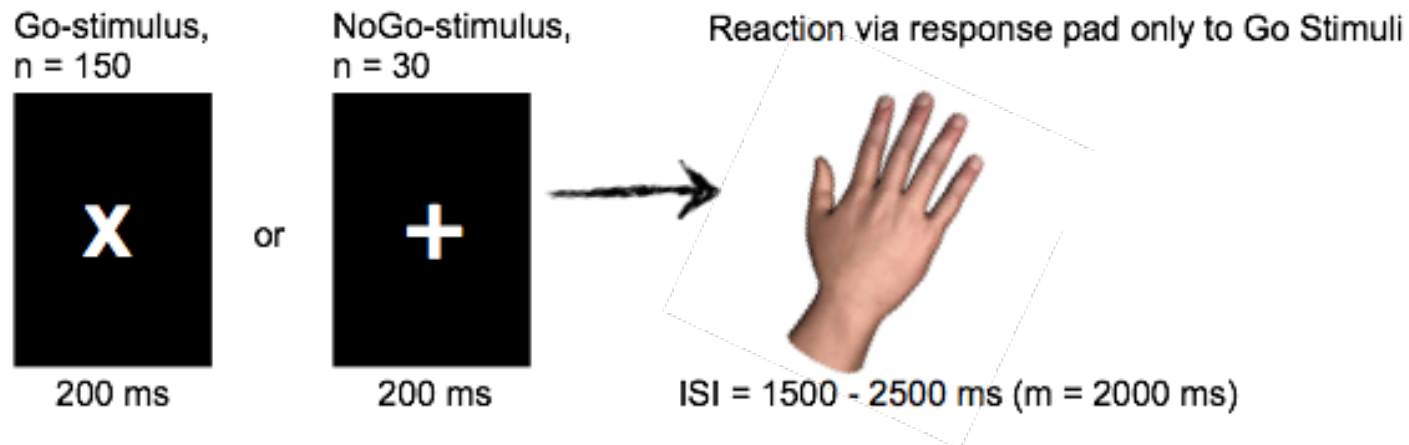
## Insights gained so far...

- Results are still scarce and inconsistent because of the assessment of mixed groups of sexual offenders (for an overview see Mohnke et al., 2014; Tenbergen et al., 2015; Fabian, 2012)
- There is some converging evidence for a smaller amygdala volume in pedophiles (Mohnke *et al.*, 2014) but everything else is just speculation and remains unclear.
- There is no evidence that brain damage actually causes genuine sexual deviancy (Fabian, 2012)



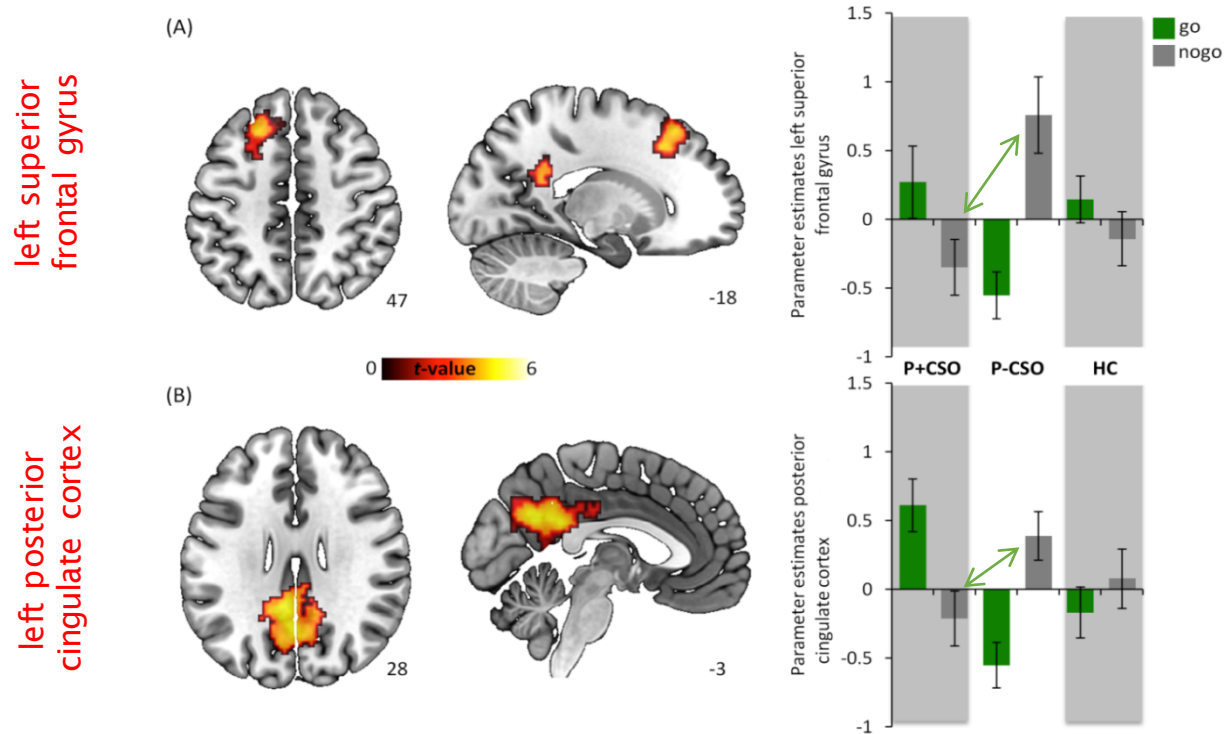
# Go/NoGo fMRI: Background

- Response inhibition = ability to inhibit a pre-planned action
- Pedophiles who committed CSO yielded decreased executive functioning performance in general (Suchy et al., 2009; Eastvold et al., 2011)
- CSO but not pedophilia has been found to be associated with deficits in response inhibition (Schiffer & Vonlaufen, 2011; Eastvold et al., 2011, Joyal et al., 2014; Turner, 2018)



# Inhibition during fMRI

## Go/Nogo Paradigm: Superior inhibition in non-offending pedophiles



whole-brain analysis: all regions significant at  $p < .05$  FWE corrected for display purposes: voxellevel:  $p < .001$  uncorrected, clusterlevel:  $p < .05$  FWE corrected

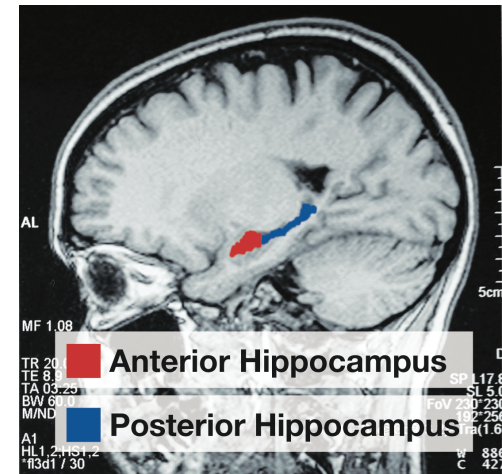
- Improved inhibitory control abilities (self-control) in P-CSO as compared to both other groups, indicated by reduced amount of commission errors
- P-CSO might deploy a neural compensatory mechanism involving the PCC facilitating efficient cognitive functioning

# MRI Analysis of Gray Matter

- The grey matter serves to process information in the brain.
- Grey matter contains most of the brain's neuronal cell bodies.
- The grey matter includes regions of the brain involved in muscle control, sensory perception such as seeing and hearing, memory, emotions (Amygdala), decision making (PFC), and self-control (PFC).

## London taxi drivers study:

The results provide evidence for structural differences between the hippocampi of London taxi drivers and control participants, therefore suggesting that extensive practice with spatial navigation affects the hippocampus (Maguire, 2000).





# Brain Imaging on Child Sexual Offending

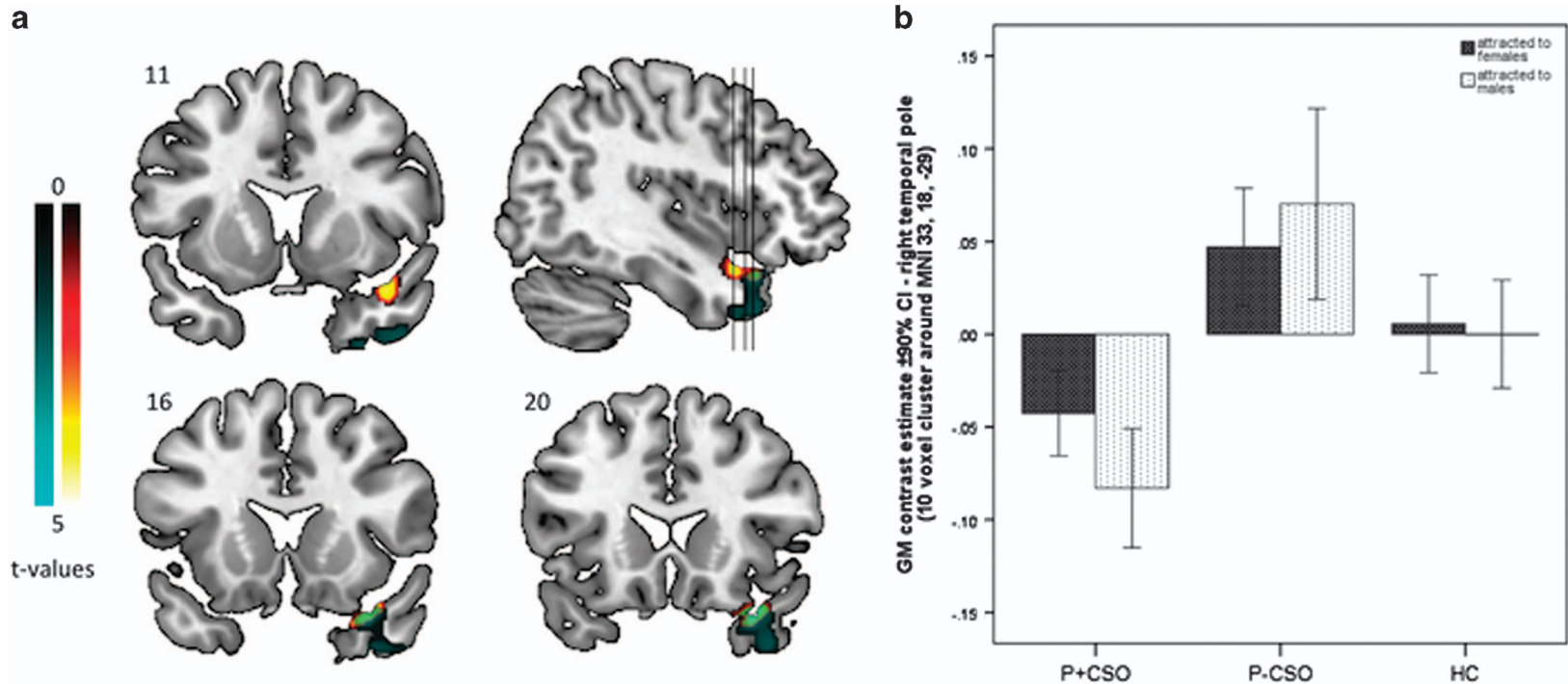
	CASES	CONTROLS	VOLUME REDUCTIONS
Schiltz et al. (2007)	15 CSO (inpatient)	15	Amygdala R, Hypothalamus L/R, Innominate substance L/R, Striae terminalis L/R, Septal region R
Schiffer et al. (2007)	18 CSO (inpatient)	24	Cerebellum L/R, Inferior frontal gyrus L/R, Cingulate L/R, Posterior Cingulate L, Insula L/R, Precuneus L/R, Parahippocampal gyrus L/R, Superior temporal gyrus L/R, <del>Medial temporal gyrus R, Putamen L/R,</del> (Amygdala L/R in unpublished ROI analysis)
Cantor et al. (2008)	44 CSO (outpatient) (pedo- & hebephilia)	53 NSO (outpatient)	Superior fronto-occipital fasciculus L, Arcuate fasciculus R
Cantor & Blanchard (2012)	19 CSO pedophilia 49 CSO hebephilia	47 NSO (outpatient)	Bilateral temporal & parietal
Poeppel et al. (2013)	9 CSO (inpatient)	11 NSO (inpatient)	Amygdala R
Gerwinn et al. (2015)	12 CSO (outpatient) 12 Non-CSO (outpatient)	32	---
Cantor et al. (2015)	24 CSO (outpatient)	32	Elevated fractional anisotropy in left-hemispheric cluster comprising internal/external capsules, corona radiata, inferior fronto-occipital fasciculus, anterior thalamic radiation

No findings using DTI

see Mohnke et al. (2014) for a review

# Alterations in Grey Matter

associated with offender status but not with pedophilia per se

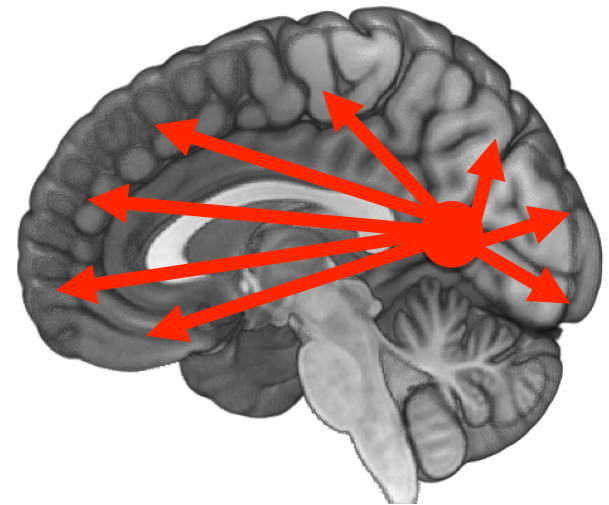


CSO+P show lower volume in the temporal pole. Regression analysis show that a reduced volume in the dmPFC and ACC are associated with a higher risk of reoffending.

# Restingstate fMRI: Background

## Functional Connectivity Analysis

- Analysis of the spontaneous low-frequency fluctuations ( $<0.1$  Hz) of the resting brain
- Enables to analyze interactions between brain regions
- No specific demands for subjects (no task)
- Analysis methods : **functional connectivity** -> correlation between a given seed region and the rest of the brain



## Limbic network

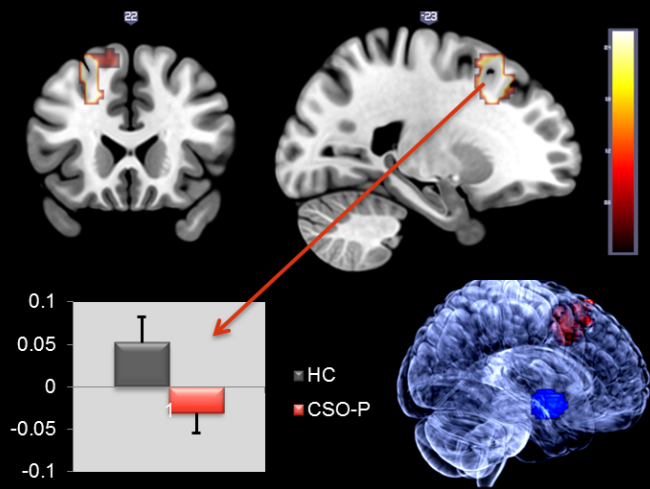
## Default mode network

## Limbic network

HC > CSO-P (FWE .05)

Seed ROI = PCC

= left amygdala



HC > P+CSO

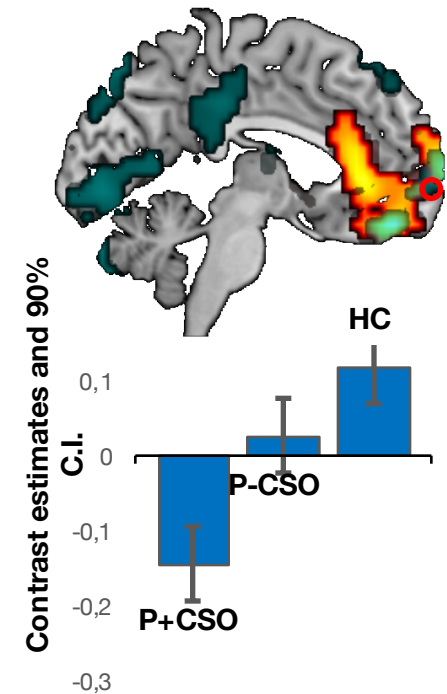
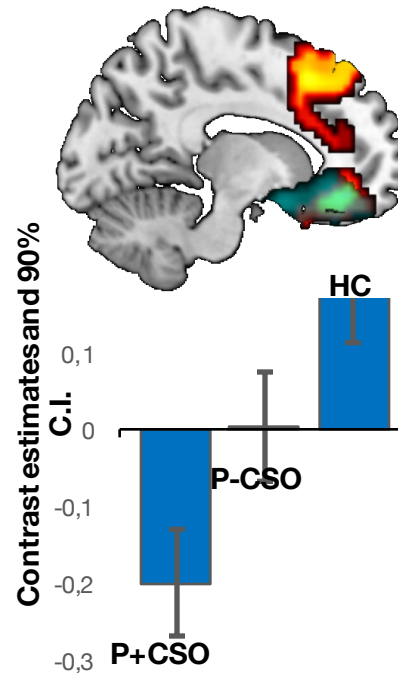
t-value

P-CSA > P+CSO

t-value

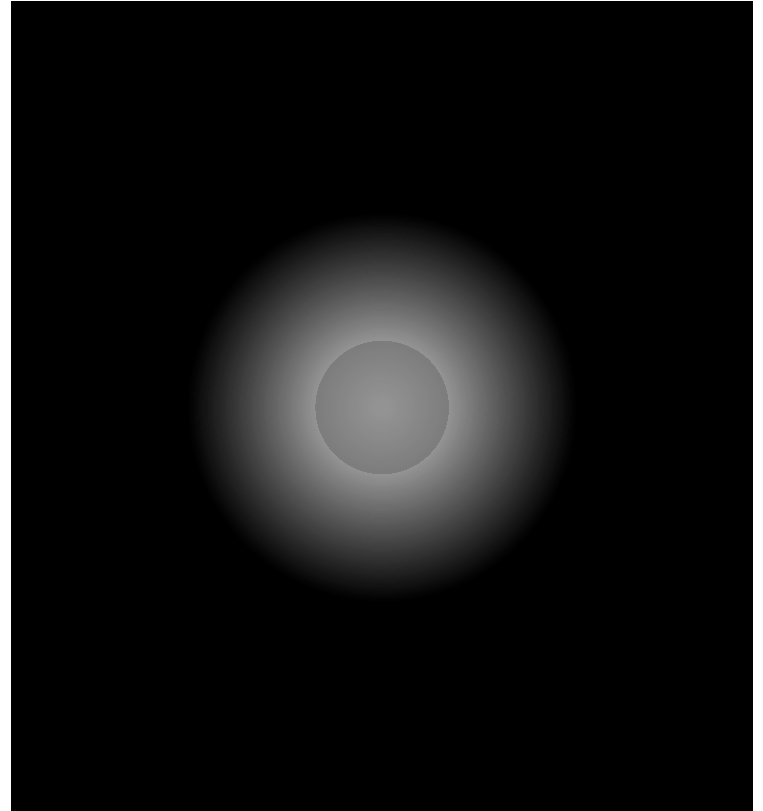
Kneer et al. 2018

Kärgel et al. 2015



# Differences between light- and darkfield

- **Less victims**
- **Higher age**



# Limitations

- possible sample effects: Self-identified pedophiles
- with a motivation to participate in research
- most of the subjects already received treatment
- effects of Psychiatric comorbidities and incarceration are possible
- Correlation is not causation!



# Conclusion / Implications

- The most of the effects seem to be more offence than pedophilia related – actions speak louder than the mere sexual preference.
- Neurobiological correlates of pedophilia itself are very difficult to identify
- We could not see any global deficits. Not in pedophilia and neither in sexual offending.

Results indicate the need for new neurobehavioral theories on pedophilia and CSO and may be potentially useful for treatment and prevention that aim to reduce the risk of (re)offending in pedophilia.

**... further research is necessary**

## Inside the brain of a paedophile: MRI scans reveal how child molesters may be wired differently

- Paedophiles who don't abuse kids have greater self-control than molesters
- Researchers say there are differences in the brains of those who attack
- This showed up as activity in a certain part of the brain during MRI scans
- Knowledge could help prevent dangerous paedophiles from offending

Kärgel C, Massau C, Kneer J., et al. Evidence for superior neurobiological and behavioral inhibitory control abilities in non-offending as compared to offending pedophiles. Hum Brain Mapp 2017;38:1092-1104.

# The German Criminal Code: A Basis for Research and Prevention

- There is no mandatory child abuse reporting law in Germany
- Therapist-client confidentiality is guaranteed unless there is evidence of an imminent risk of a child sexual abuse occurring, associated with the risk of homicide

Pedophiles are most likely to abuse when they are most desperate and feel they have nothing to lose.

*Dr. James Cantor, a professor at the University of Toronto  
and a leading expert on pedophilia*

# Do you like children in ways you shouldn't?



don't  
offend.

there is help -  
free of charge  
and confidential

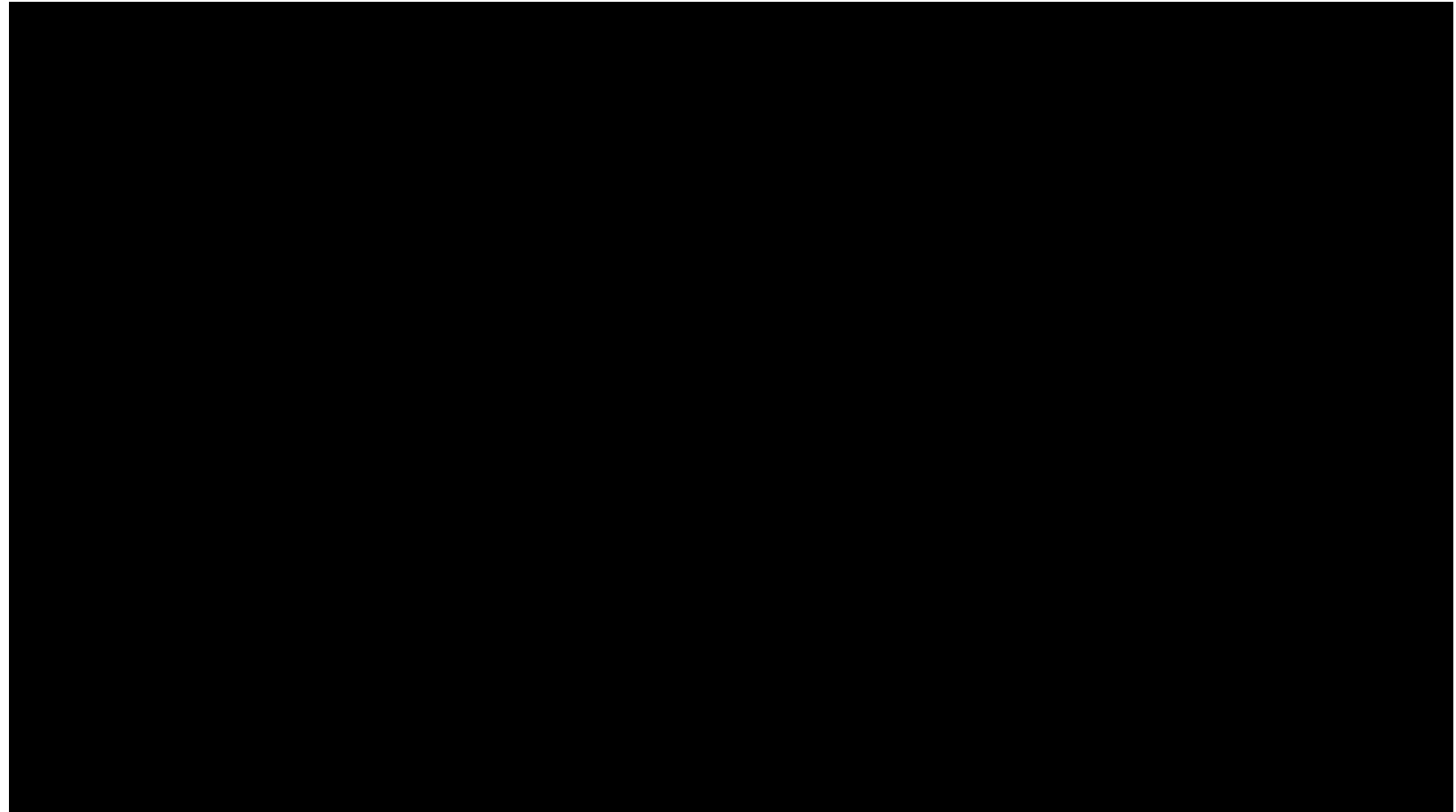


<http://dont-offend.org/>

# Don't Offend Spot I

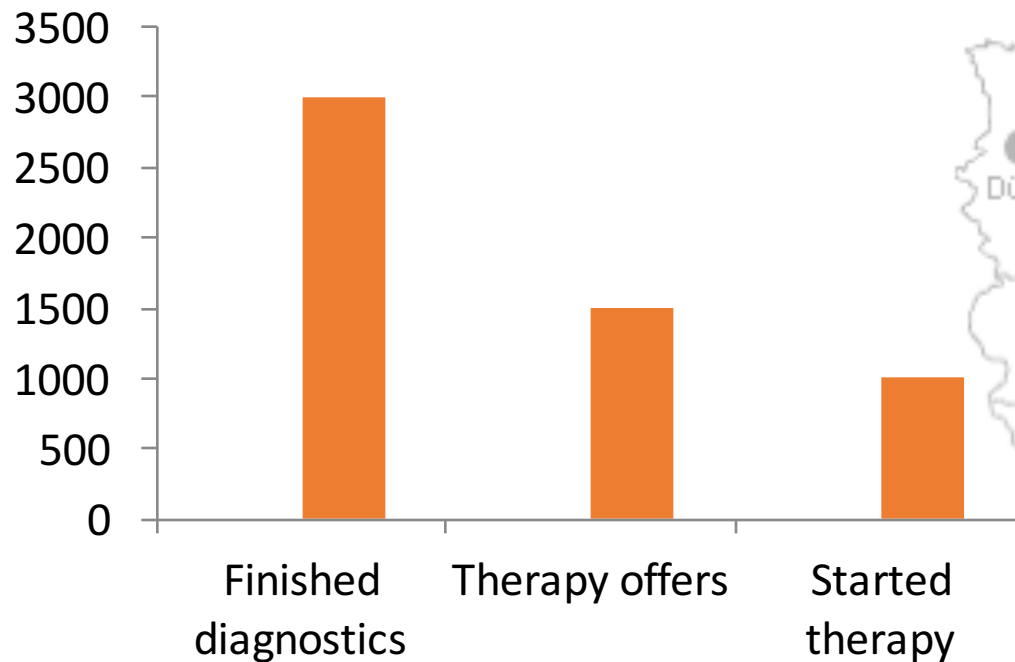


# Don't Offend Spot II



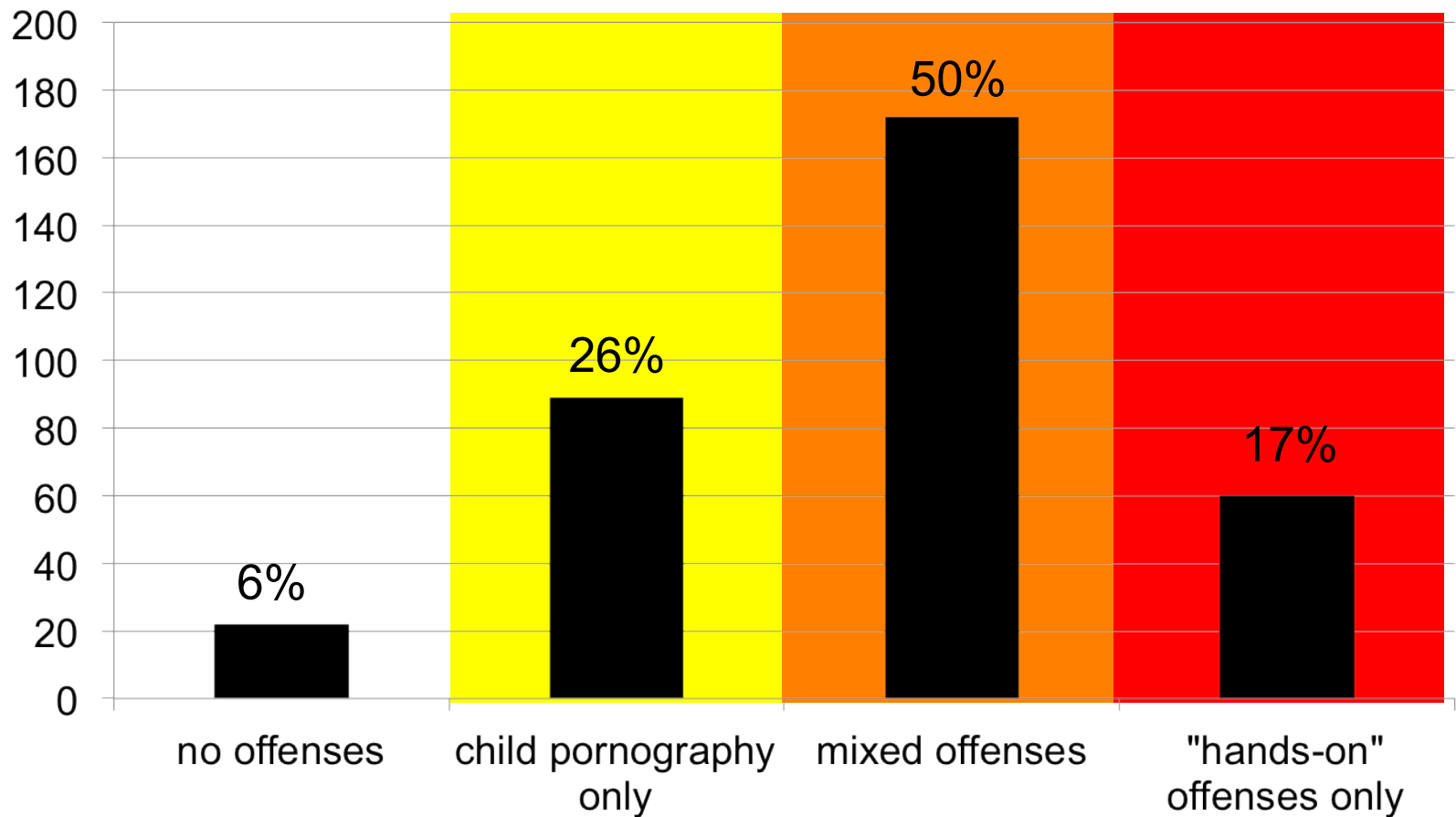
# Project participants since 2005

More than 10.000 Contacts





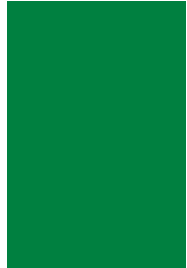
# Offenses among “don’t offense”- participants (n=343 Berlin site)



04/2012

# What can we do against CSO?

## 3-pillars-model



**Make children strong!**



**Don't offend!**



**Treat victims optimally!**

# Reduction of Risk factors, therapy in the don't offend project

## Psychotherapy

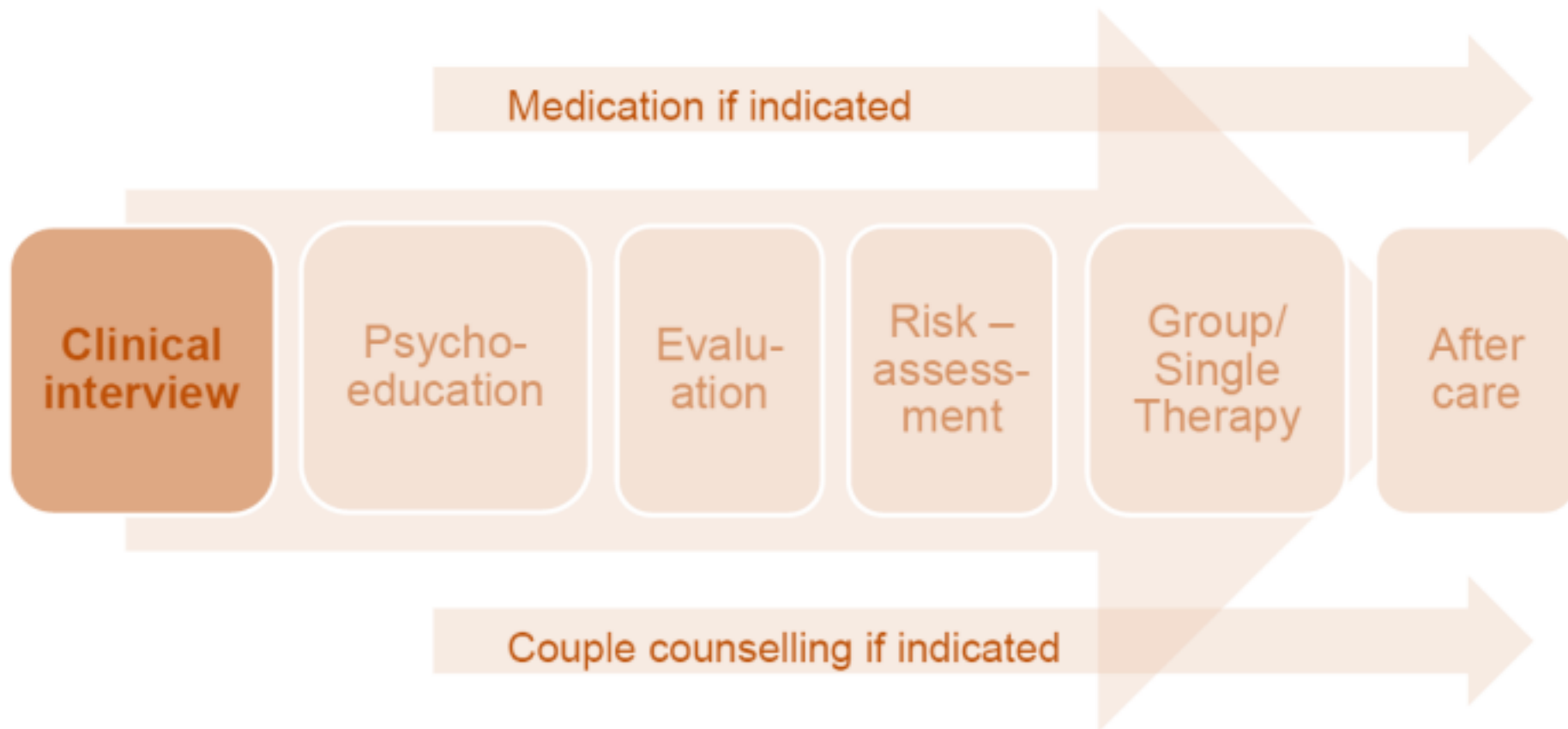
Integration /  
acceptance of  
sexual preference

development  
of self-regulation skills  
and behavioral control

## Pharmacotherapy



# Treatment Setting





Do  
you  
want  
more  
than  
she  
does ?



[praevention-sexueller-gewalt.de](http://praevention-sexueller-gewalt.de)

Since 4/2017

# THE PROCESS OF OUR THERAPEUTIC WORK



# OUR THERAPEUTIC WORK



- Focus on Cognitive Behavioral Therapy
- Working on Risk Factors
- Treatment also of nonsexual topics such as co-morbid mental disorders
- Using techniques from programs for convicted sexual offenders (e.g. SOETP, GLM)



“Would it upset you if I said I’m not bothered if your heart is not in it?”

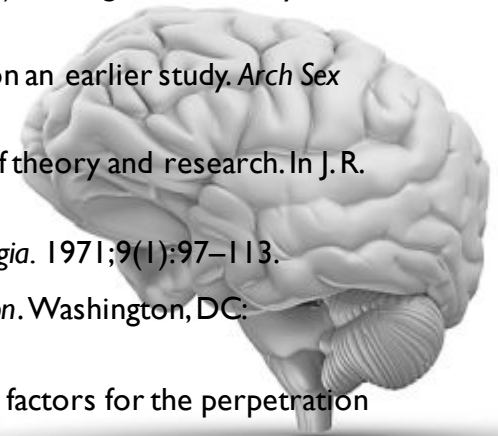
→ **BUT** more heterogenic group of patients

[couplesgrow.com/main/wp-content/uploads/2016/10/sex-therapy-101seriesrron1048\\_hi-copy.jpg](http://couplesgrow.com/main/wp-content/uploads/2016/10/sex-therapy-101seriesrron1048_hi-copy.jpg)



# References

- Aster, M., Neubauer, A., Horn, R. (2009). *Wechsler Intelligenztest für Erwachsene WIE. Deutschsprachige Bearbeitung und Adaptation des WAIS-III von David Wechsler* (2., korrigierte Auflage). Frankfurt am Main, Germany: Pearson Assessment & Information GmbH.
- Beier, K. M., Ahlers, C. J., Goecker, D., Neutze, J., Mundt, I. A., Hupp, E., et al. (2009). Can pedophiles be reached for primary prevention of child sexual abuse? First results of the Berlin Prevention Project Dunkelfeld (PPD). *Journal of Forensic Psychiatry & Psychology*, 20(6), 851–67.
- Bernstein, D., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report*. San Antonio, TX: The Psychological Corporation.
- Blanchard, R., Christensen, B. K., Strong, S. M., Cantor, J. M., Kuban, M. E. Klassen, P. E., et al. (2002). Retrospective self-reports of childhood accidents causing unconsciousness in phallometrically diagnosed pedophiles. *Arch Sex Behav*, 31(6), 511–26.
- Blanchard, R., Kolla, N. J., Cantor, J. M., Klassen, P. E., Dickey, R., Kuban, M. E., et al. (2007). IQ, handedness, and pedophilia in adult male patients stratified by referral source. *Sex Abuse*, 19(3), 285–309.
- Cantor, J. M., Blanchard, R., Christensen, B. K., Dickey, R. Klassen, P. E., Beckstead, A. L., et al. (2004). Intelligence, memory, and handedness in pedophilia. *Neuropsychology*, 18(1), 3–14.
- Freund K, Kuban M. The basis of the abused abuser theory of pedophilia: a further elaboration on an earlier study. *Arch Sex Behav*. 1994;23(5):553–63.
- Garland, R., Dougher, M. (1990). The abused/abuser hypothesis of child abuse: A critical review of theory and research. In J. R. Feierman (Ed), *Pedophilia: biosocial dimensions* (pp. 488-509). New York, NY: Springer-Verlag.
- Oldfield RC. The assessment and analysis of handedness: the Edinburgh inventory. *Neuropsychologia*. 1971;9(1):97–113.
- Seto, M. C. (2008). *Pedophilia and sexual offending against children: theory, assessment, and intervention*. Washington, DC: American Psychological Association.
- Whitaker, D. J., Le, B., Karl Hanson, R., Baker, C. K., Baker, C. K., McMahon, P. M., et al. (2008). Risk factors for the perpetration of child sexual abuse: a review and meta-analysis. *Child Abuse Negl*, 32(5), 529–48.



**THANK YOU  
FOR YOUR ATTENTION**

**MERCI BEAUCOUP**

#52212042



Email: [kneer.jonas@mh-hannover.de](mailto:kneer.jonas@mh-hannover.de)