

Autism and attachment

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Programme

- About autism spectrum disorders
- Timeline of autism?
- Is there a *core symptom* of autism?
- Where do attachment and autism meet?
- Literature
- Consequences
- Conclusion



Autism: the concept

- Disorder in the development, rather than ‘a childhood disorder’
- Autism as a chameleon: environment and age
- Normal next to halted development
- Three domains:
 - Reciprocal social interactions
 - (non-)verbal language
 - Stereotyped behaviour and restricted pattern of interests (flexibility)
- This concept tells us what we **see**, not what autism **is**



Short history



Leo Kanner (John Hopkins, Baltimore, 1943)

- Clinical description of children with: '*autistic disturbances of affective contact*' (Bleuler)
 1. Biological predisposition for a limited psychological attunement to the social world.
 2. Communication problems
 3. Resistance to change
- Kanner emphasized the developmental perspective
- 1978: first definition by Sir Michael Rutter

Short history

Hans Asperger (Vienna, 1944)

- Described children with difficult social integration despite adequate cognitive and verbal skills.



1. Limited nonverbal communication
2. Idiosyncratic verbal communication
3. Social maladaptive and special interests
4. Intellectualization of affect
5. Clumsiness
6. Behavioural problems
7. Sometimes unnoticed in childhood
8. Familial and gender patterns

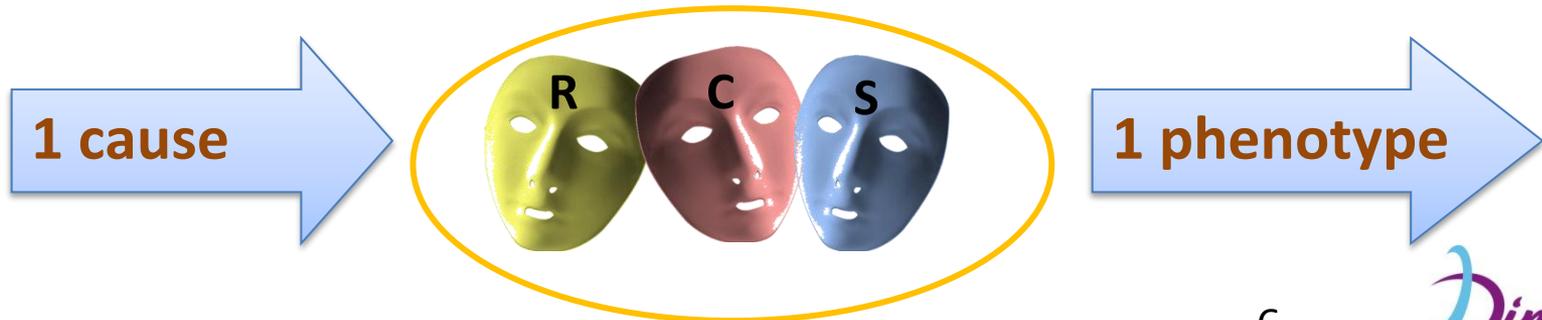
Short history

Classification in time:

DSM III -> DSM III R (axis II) -> DSM IV (TR) -> DSM 5

Autistic triad

- Epidemiological evidence for symptom cluster (Camberwell study, Wing and Gould 1979)
 - S: Reciprocal social interaction
 - C: Communication
 - R: restricted and repetitive behaviour



Epidemiology

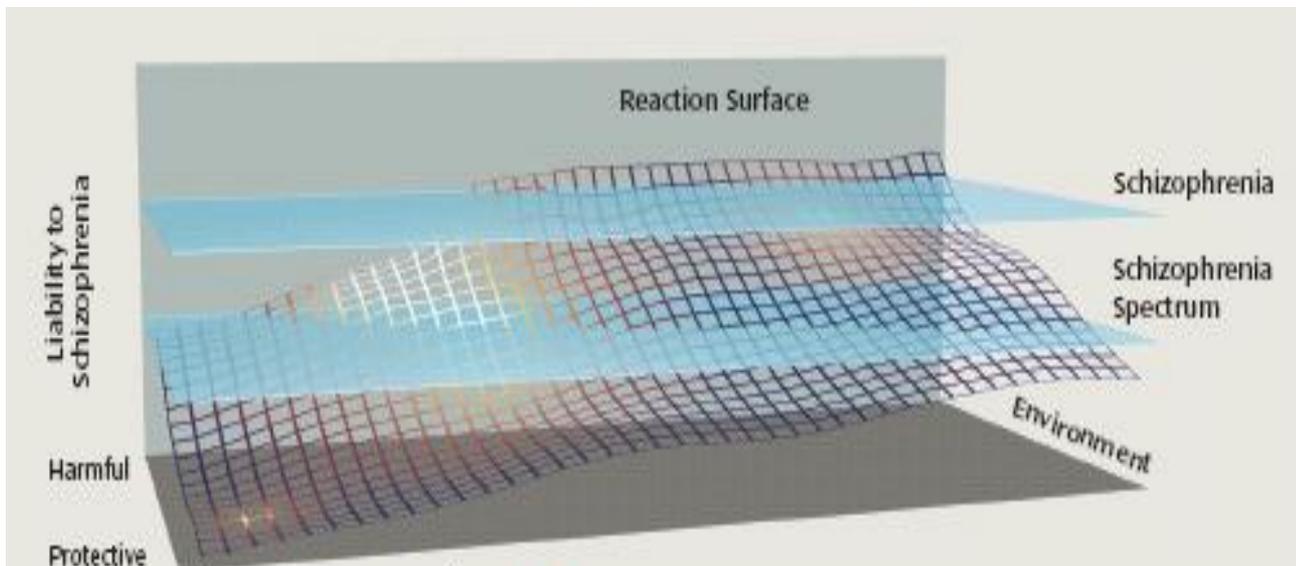
Prevalence of autism in the population

- Prevalence depends on the type of research, the sampling method, and the definitions used
- Prevalence 0.7/10,000 – 60/10,000 (Fombonne, 2004)
- Recent: 100/10,000 (1%=schizofrenia) (Brugha, 2011)
- Male : female = 4.3 : 1 (low IQ = 2 : 1) (Lai et al., 2011)
- Social class is not a determinant (Schopler et al. 1979)
- Immigration: RR 4-10 Afro-Carib mothers (Keen 2010)

Epidemiology

reasons for increase in prevalence

- Broader definition
- Increased complexity of society
- Medicalization
- Increased media attention common knowledge
- Shift from **lesion** to **proneness** model



Epidemiology



- Misleading explanations for autism:
 - Wakefield (1998): increase is a result of the introduction of the triple-vaccin measles-rubella-mumps. No evidence for this claim in many follow-up studies (Taylor e. a. 1999; Madsen 2002).

**“Wakefield’s article linking MMR vaccine and autism was fraudulent
Clear evidence of falsification of data should now
close the door on this damaging vaccine scare....”**

BMJ 8 januari 2011

Definitions of autism at different explanatory levels



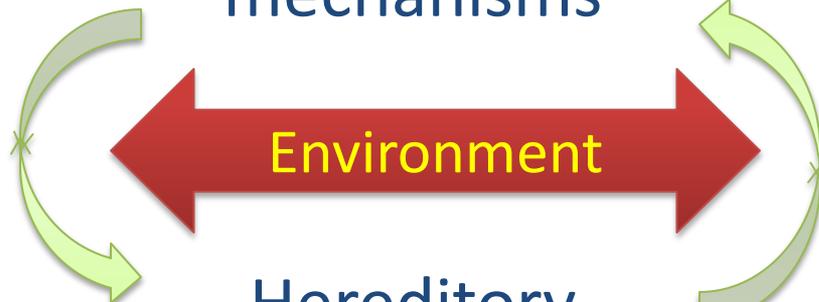
Observable behaviour and
conscious experience

phenotype



underlying
mechanisms

endophenotype



Hereditary
factors

genotype



Autism at a phenotypical level



- DSM-5:
 - Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays
 - Restricted, repetitive patterns of behavior, interests, or activities, including hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment
- Heterogeneous presentation: autistic *spectrum*
- Intra-individual changes over time
- Little knowledge of autism in adults

Autism: knowing is listening



From endophenotype to phenotype

- “Symptoms (phenotype) are adaptations to underlying (endophenotype) problems”

endophenotype

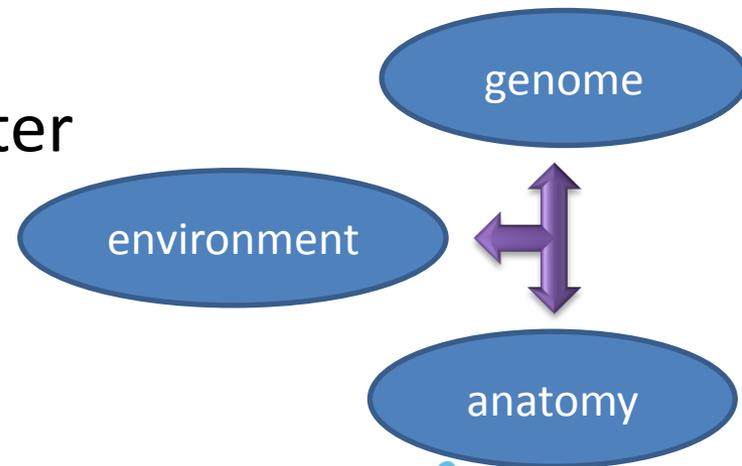


- examples:
 - Stereotyped behaviour
 - To restrict overstimulation caused by inefficient signal processing
 - Restricted social reciprocity
 - Limited innate social salience attribution



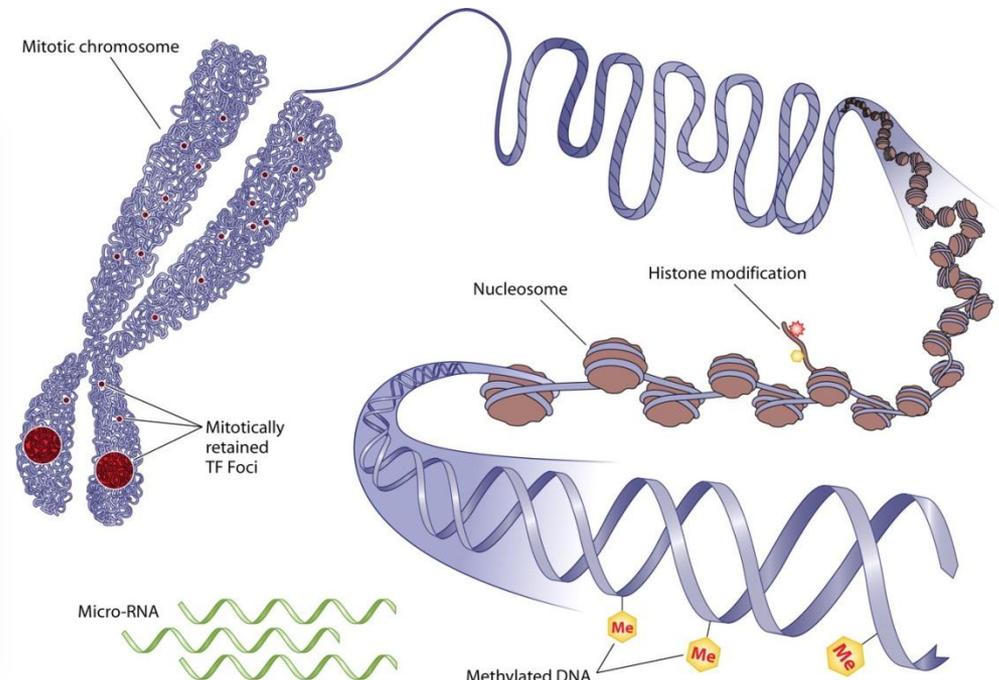
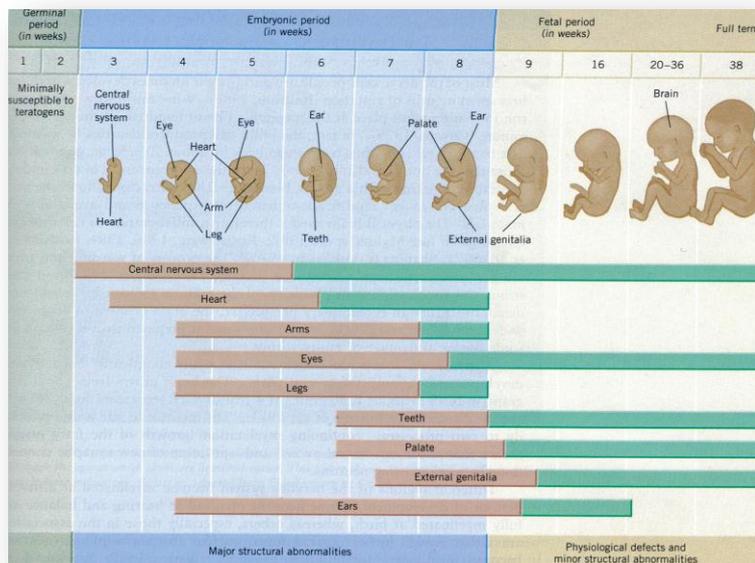
Autism: endophenotypical level

- Neuropsychology
 - Executive function problems (Luna 2007)
 - Attention (Minshew 1997, Tsatsanis 2005)
 - Processing speed (Spek 2008)
- Pathophysiology
 - Brain formation in 2nd trimester
 - Continuous reciprocity
 - Effect of delayed (frontal) development



Autism: genotypical level

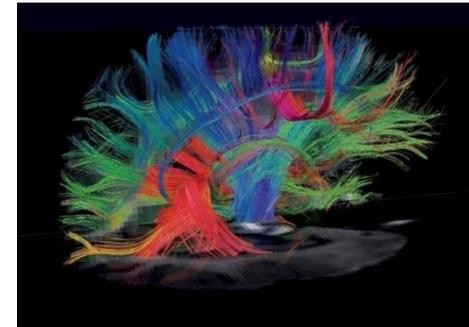
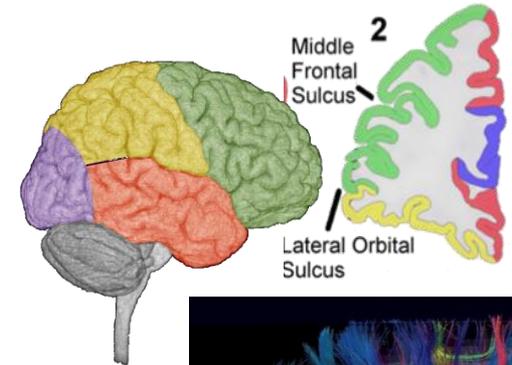
- Between 75% and 90% heritability
- Gene-environment interaction: epigenetics



Early correlates of autism

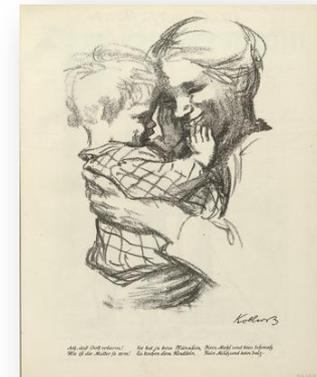
1. Anatomical-functional level:

- Early brain changes
 - 68% more neurons
 - Errors in neural differentiation
 - Errors in migration of neurons
- Connectivity problems



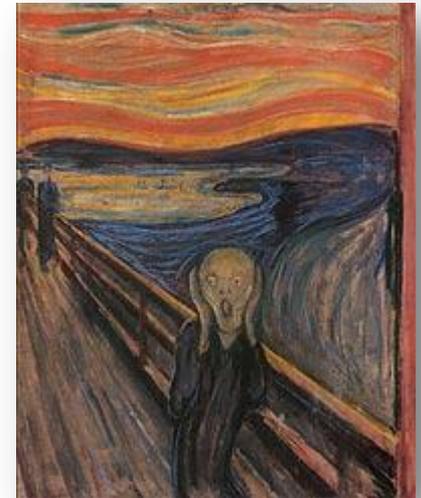
2. Innate survival level

- Less preference for biological motion
- Less attention to social salient stimuli



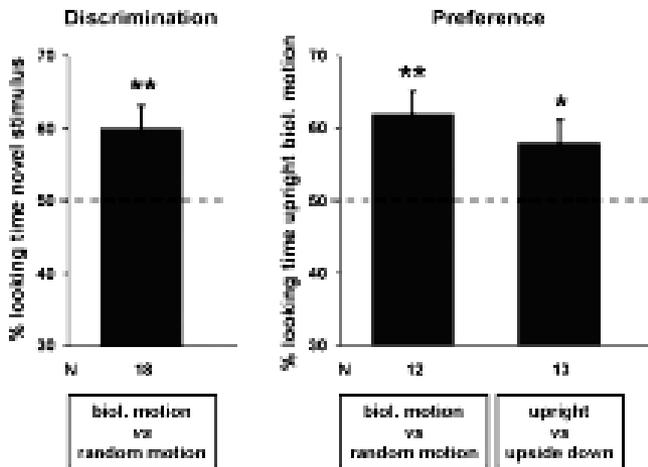
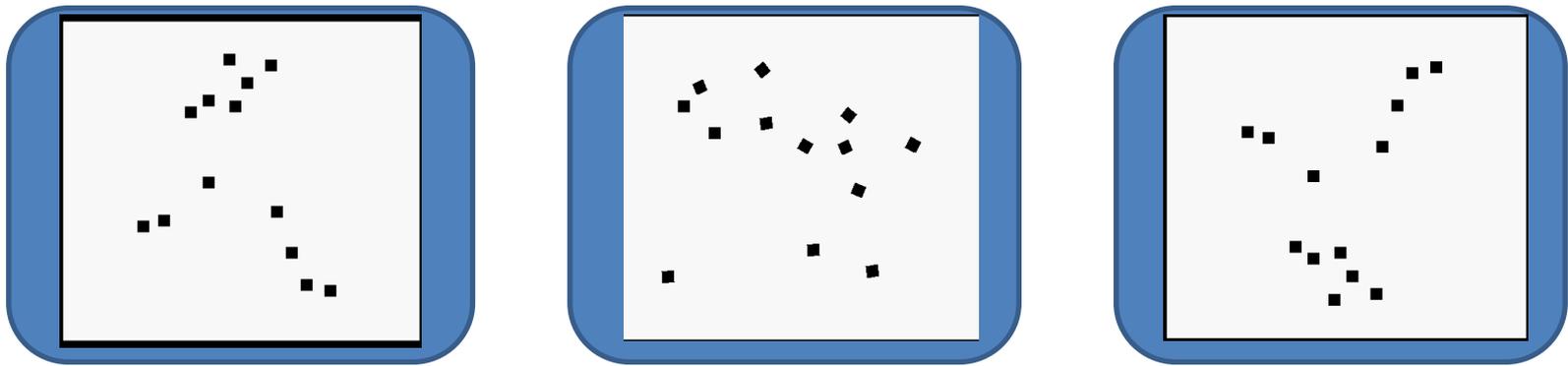
1. Anatomical-functional level

- Other pathways -> compensation by reasoning, arranging and matching
- Limited generalization skills
- Rapid overstimulation
- Affective–cognitive dissociation
- Symptoms as results of underlying problems



2. Normal innate survival level

biological salience (inborn intersubjectivity)



- Children from 1 day old prefer biological movement
- Other mammals show similar preference, also species aspecific

Normal primary intersubjectivity

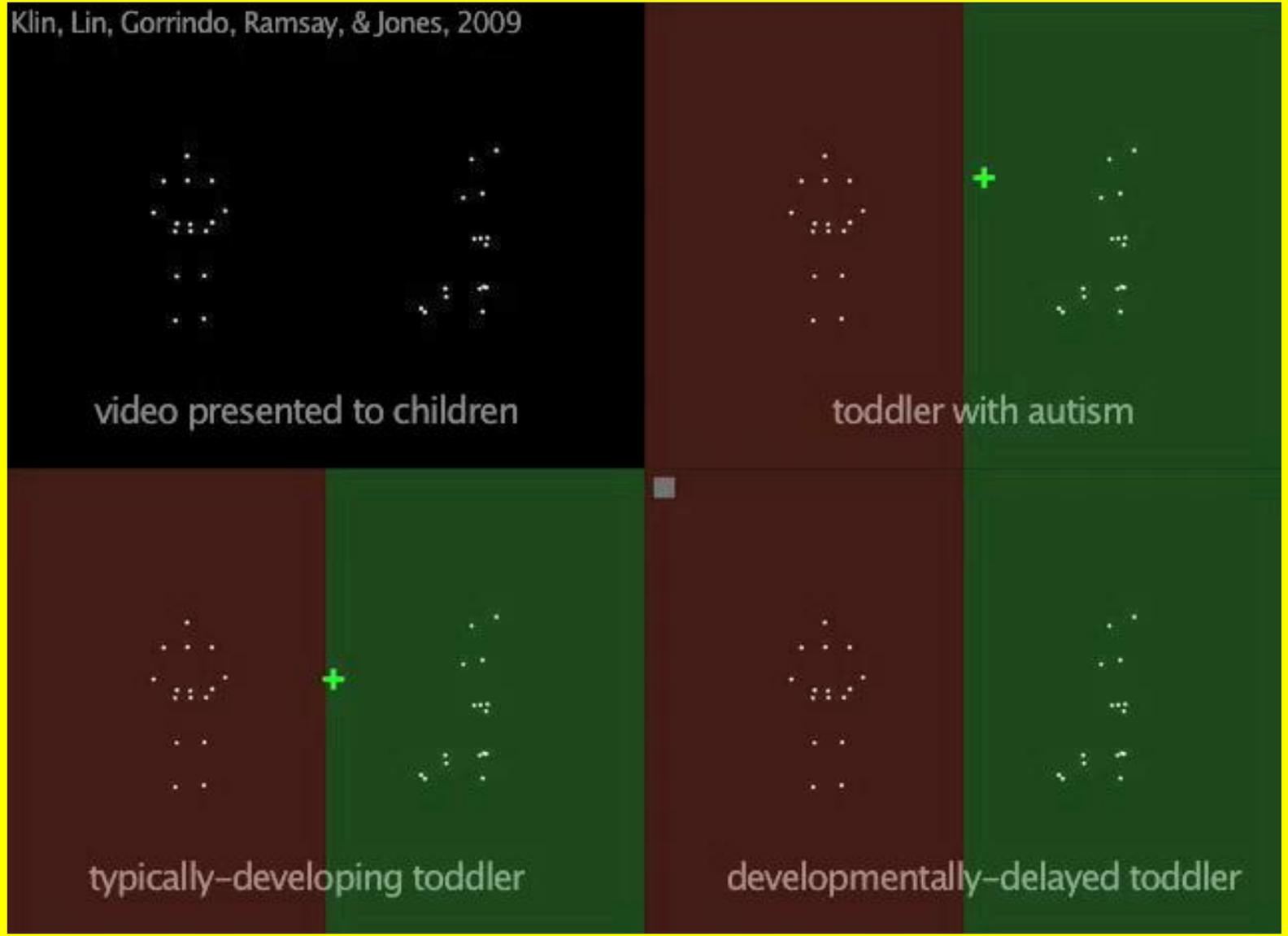
active role of the child in the *still face* experiment



Biological orientation in autism (2-year olds)

Image and sound without physical contingency

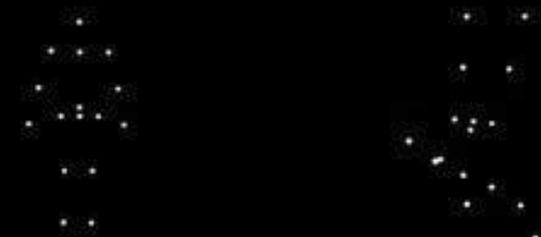
Klin, Lin, Gorrindo, Ramsay, & Jones, 2009



Biological orientation in autism (2-year olds)

Image and sound with a physical contingency

Klin, Lin, Gorrindo, Ramsay, & Jones, 2009



video presented to children



toddler with autism

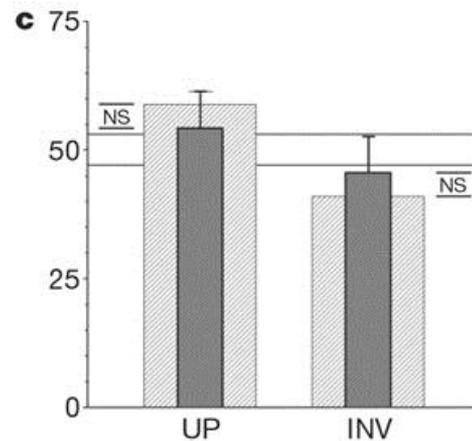
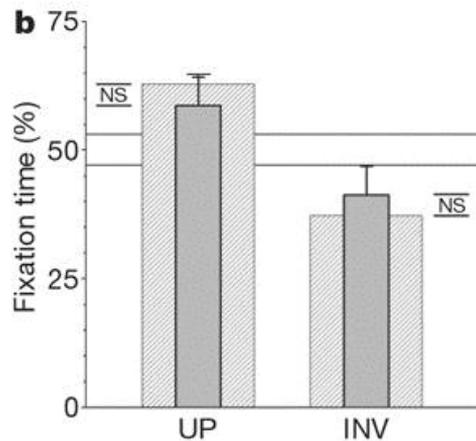
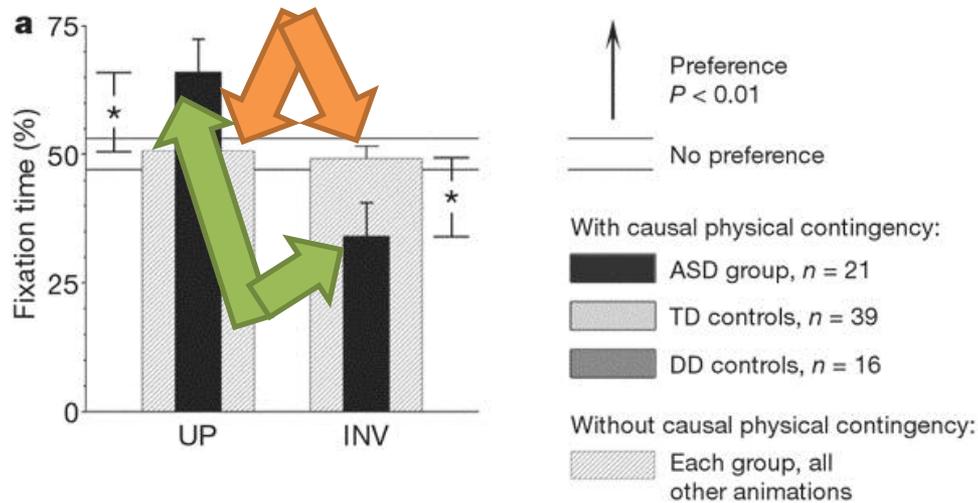


typically-developing toddler



developmentally-delayed toddler

In autism: limited social orientation

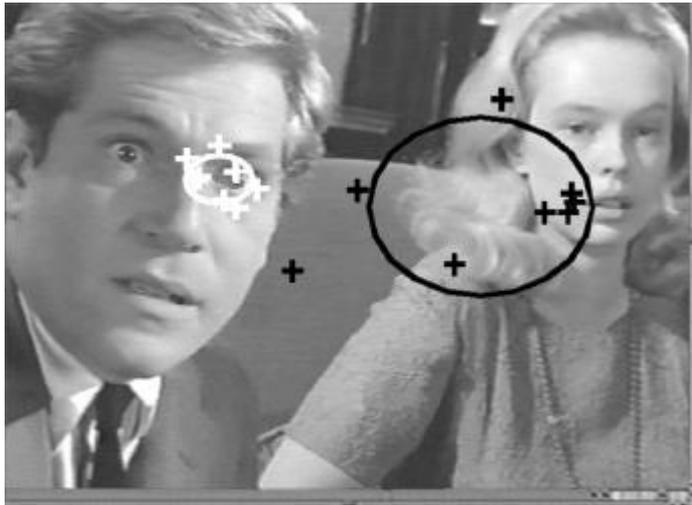


The limitation in social orientation is a red thread through the life of a person with ASD

The enactive mind, or from actions to cognition: lessons from autism

Ami Klin*, Warren Jones, Robert Schultz and Fred Volkmar

Phil. Trans. R. Soc. Lond. B (2003) 358, 345–360



Autism and relationships



Attachment

- Babies are destined to take part in social interaction (*Bowlby 1955*)
- Insecurity : protest ➡ dispair ➡ detachment
- Aim : not the mother but the physical state
- Attachment has a biological base
- Attachment as affect regulation (*Sroufe 1966*)
- “The attachment relationship between child and carer is the cumulative result of experiences of the child in the first year of life” (*Ainsworth, 1979*)

Attachment : determinant of interpersonal relationship

- Secure attachment as child -> later:
 - Resilience , social orientation, empathy, self respect
- Adult states of mind with respect to attachment predicts childhood categories in Strange Situation (SS)
 - Secure-autonomous (F) predicts secure SS behaviour,
 - Dismissing (D) predicts avoidant (A) SS behaviour
 - Preoccupied (E) predicts resistant/ambivalent SS behaviour
- Determining factor in process is whether the child is seen as an intentional being:
 - “my child has feelings, expectations and thoughts”
- Abuse explains much, but not everything

Resistant / ambivalent attachment

- Meta-analysis 2,000 mother-child pairs:
 - 14% average income, 24% low income group
- Risk:
 - Abuse and neglect (Carlson et al.1989)
 - Depressed mother (Lyons-Ruth et al. 1990)
 - Unresolved grief / abuse (van IJzendoorn 1995)
- Resistant / ambivalent children are less competent in conflict management

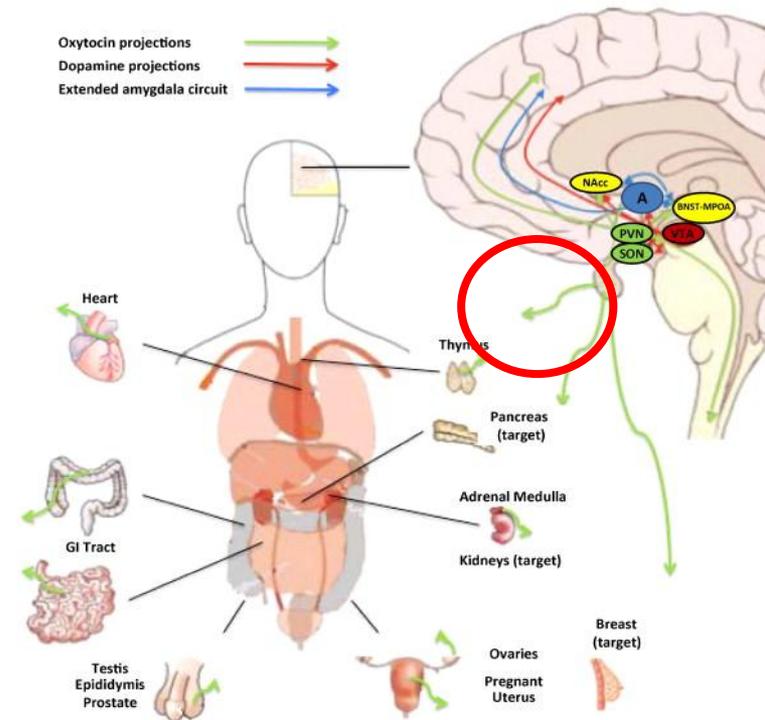
Social recognition and 'bonding'

- Complex social behaviour relies on recognition
- Many animals recognise by smell
- Mother-child bond and partner-bond
- 'Smell memory': bulbus olfactorius
- Oxytocine en vasopressine play a role
- Early stress: negative effect on HPA-axis and immune respons.



Bulbus olfactorius: bonding and oxytocine

- Vasopressine and oxytocine modulate social behaviour
- Bulbus olfactorius: 'social memory'
 - Bonding - oxytocine
 - Rejection - vasopressine
- Reality is more complicated:
 - Oxytocine enhances contact with trusted persons, but prevents contact with others
- Oxytocine and autism is 'hot'
 - Short term effect of oxytocin spray is not spectacular
 - Long term effect is unknown or adverse



Attachment and autism - literature

- Autism and attachment: a meta-analytic review, Rutgers et al. (2004)
 - 10 studies, total 287 children with autism (ASD)
 - Fewer secure attachments than in other children
 - Attachment security correlated to ASD symptoms and IQ



Attachment and autism - literature

- Children with ASD distinguish between parents and others and react similarly to parent leaving (Buitelaar, 1995)
- Secure attachment is established later; association between attachment and age (Rogers, 1993)
- Fewer attachment problems in higher IQ range (Rogers, 1991)
- Adults with ASD are in majority securely attached (Taylor et al., 2008)

Parental Sensitivity and Attachment in Children With Autism Spectrum Disorder: Comparison With Children With Mental Retardation, With Language Delays, and With Typical Development

Van IJzendoorn et al. (2007)

- 55 toddlers (ASD, MR, LD, TD) and parents
 - Parents of children with ASD equally sensitive as parents of children without ASD
 - ASD children showed more attachment disorganization and less child involvement
 - More sensitive parents had more secure children, but only in group without ASD
 - Less ASD symptoms predicted more secure attachment.

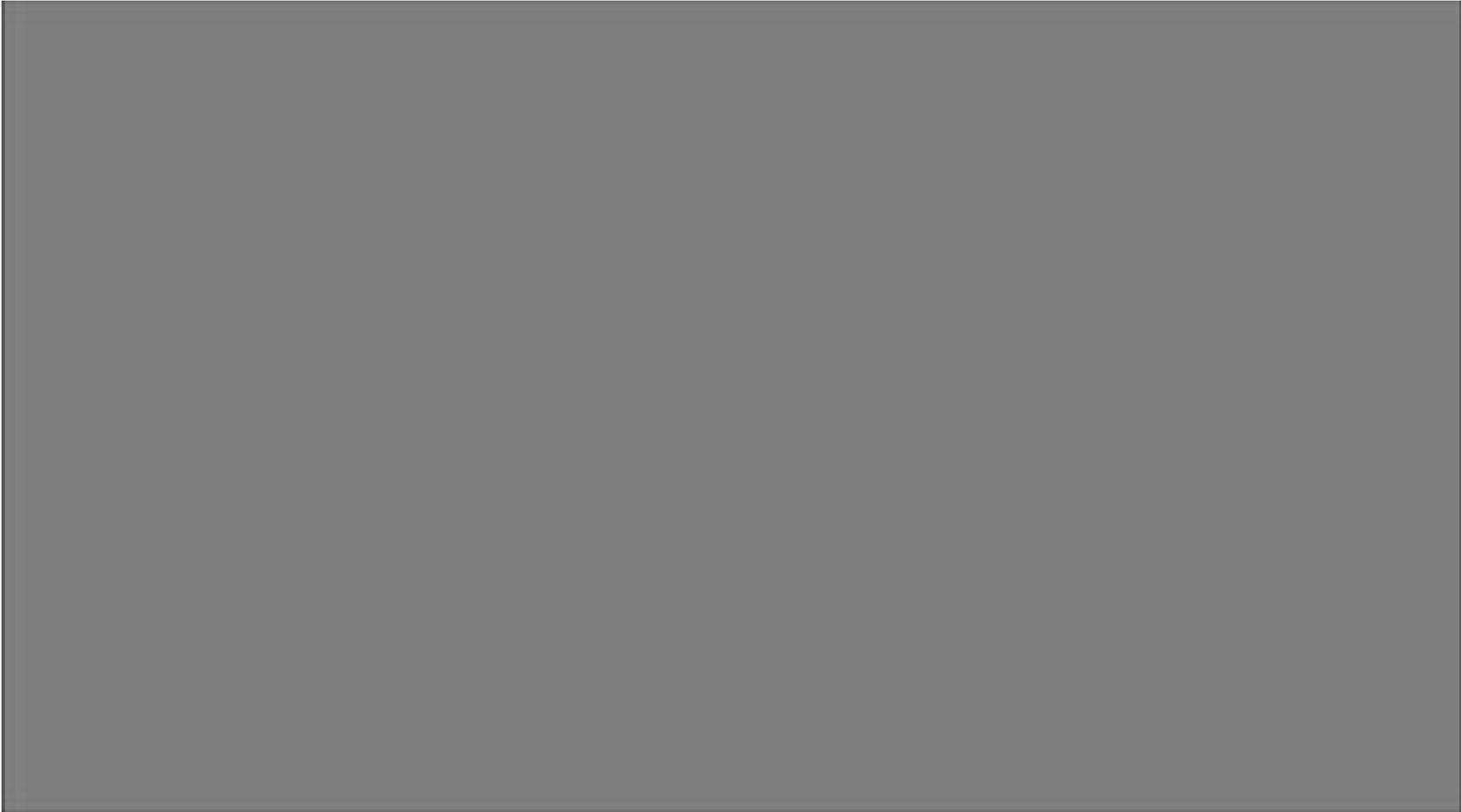
Attachment and autism

a model: learning to understand the world

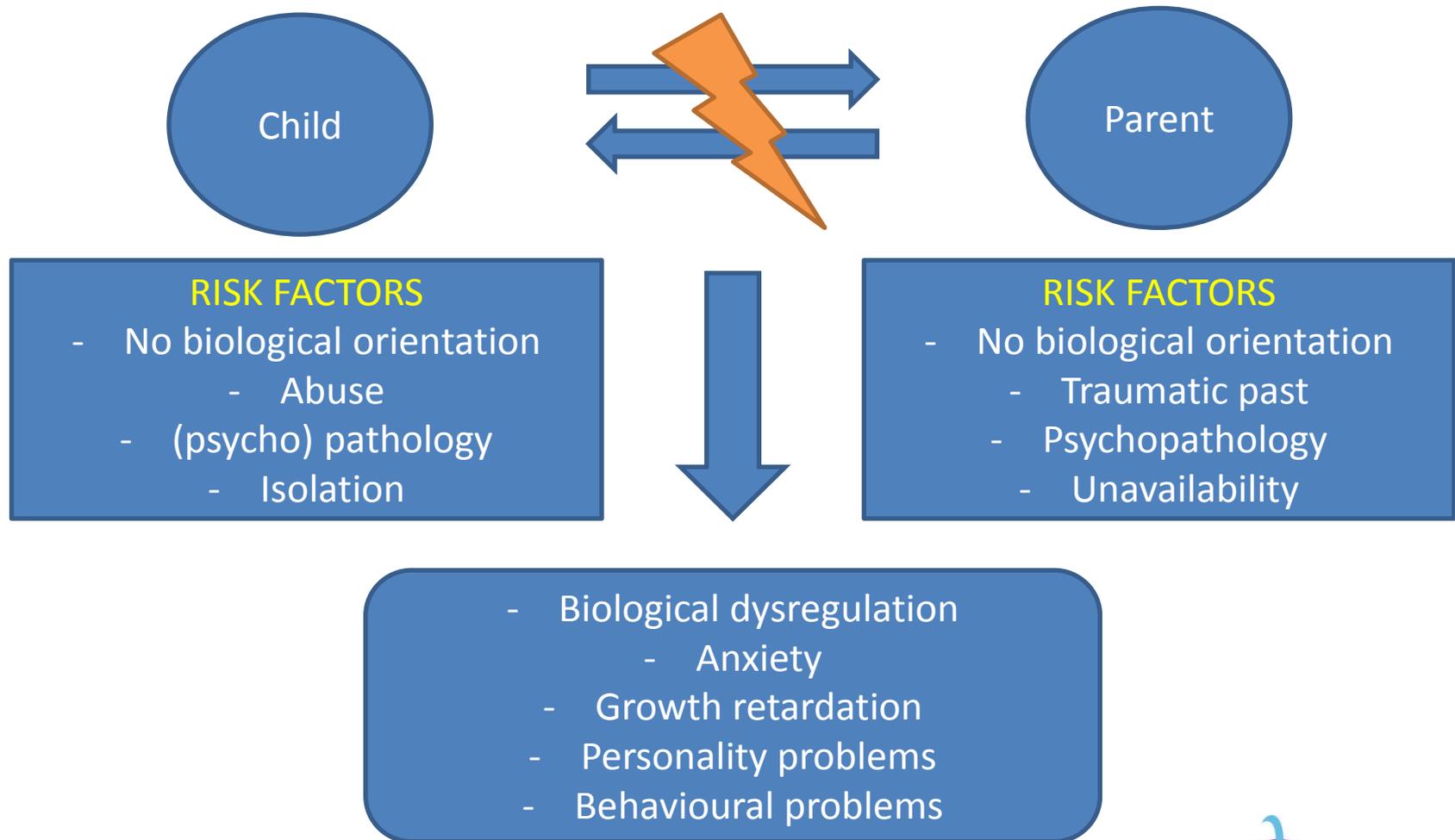


- **Autism**: when the child or parent forms a risk for secure attachment
- **Insecure attachment**: when a parent-factor forms a risk for autistic proneness becoming manifest

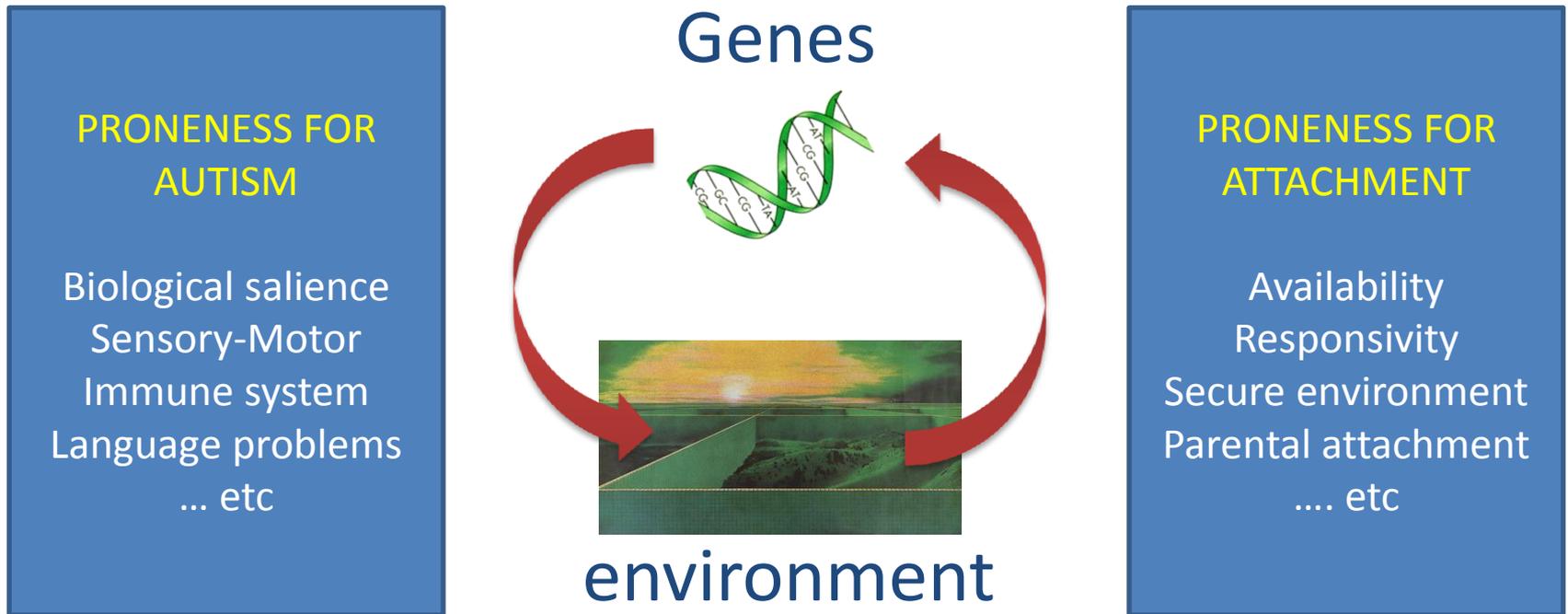
They call me hyperactive



Attachment at risk



Reciprocity: attachment and autism



Conclusions

- Autism is a risk for developing secure attachment
- Insecure attachment is a risk for autism
- Children with autism can be securely attached
- Both attachment and autism concern early regulation of affect and have a pervasive influence on further development
- Conceptual challenges: autism and attachment
- More research is necessary to understand the relationship between autism and attachment

QUESTIONS

DISCUSSION



Videomaterial and references

- DVD serie 'autisme een leven lang' Dutch Association for Autism (www.autisme.nl)
- Temple Grandin:
<http://www.youtube.com/watch?v=YeWks6cgJ-k>
- Video material Cutting Edge, Channel 4
- Biological movement Simion:
<http://www.pnas.org/content/suppl/2007/12/26/0707021105.DC1>
- Klin: 2 year olds orient to physical contingencies:
<http://www.nature.com/nature/journal/v459/n7244/supinfo/nature07868.html>