The social determinants of psychosis

Richard Bentall

1: Is *schizophrenia* a genetic disorder?

Axiom or hypothesis?

Throughout the history of psychiatry, the idea that schizophrenia and related conditions are genetic diseases has been treated as an axiom, rather than a hypothesis.

For example, Rosenthal & Quinn (1977) investigated the Genain quadruplets apparently concordant for SZ. Given pseudonyms Nora, Ira, Myra and Hester.

- Genain = dreadful gene!
- Nora, Ira, Myra, Hester = NIMH!

Axiom or hypothesis?

Father often drank to excess, was described as unstable and paranoid. It seems likely that he sexually abused some of his daughters, as the investigators report that,

"He chose Nora as his favourite, at times fondling her breasts and being intrusive when she was in the bathroom".

"Iris and Hester engaged in mutual masturbation and the parents, horrified, agreed with an attending physician to have both girls circumcised and their hands tied to their beds for thirty nights. Nora and Myra were not allowed to visit their sisters and 'couldn't understand the whole situation'. Three of the girls completed high school; Hester did not. Her parents kept her at home in her senior year and she cried a great deal."

80% heritability?

There are genetic factors involved – for example a child of a parent with schizophrenia has a 10 percent greater chance than other children of developing the illness. Estimated heritability is 80% - that is, genetic factors contribute 80% to the cause(s) of schizophrenia.

What does 80% heritable mean?

• Heritability is often misunderstood to be a gene/environment causation ratio, because it is defined as the percentage of the variance in a trait that is attributable to genes (which looks like a G/E ratio) =

$$\frac{\text{variance with genes}}{\text{variance with genes + variance with environment}}$$

- It is a statement about populations, not people.

- An additive model is typically assumed: that high levels of heritability preclude environmental influences (i.e. variance due to genes + variance due to environment = 100%)

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If variance in the environment is low, heritability will always be high: *If everyone smokes 20 cigarettes a day, the heritability of lung cancer will approach 100% (but the cause will still be smoking)!*

Turkheimer et al (2003), in a large twin study, found that 60% of variance in IQ in impoverished environment is attributable to shared environmental effects with close to zero genetic effects. The reverse was true in middle class families.

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Heritability is inflated if genes cause exposure to particular environments: ***The heritability of lung cancer will be high if genes make us want to smoke, but if smoking causes the lung cancer.***

Dickins & Flynn (2001) – in an analysis of heritability of intelligence - have formally shown that high heritability estimates can mask strong environmental effects if there are GxE correlations, which seems likely in the case of psychosis.

Non-specific inheritance?

Lichtenstein, Yip. Bijork, Pawitan, Cannon, Sullivan & Hultman (2009) - linked multigeneration registers containing information on all children and parents in Sweden with hospital discharge registers - 2 million familes with 9 million participants!

- **36,000 schizophrenia and 40,000 bipolar patients**

	Relation to proband	Risk for schizophrenia when proband has schizophrenia		Risk for bipolar disorder when proband has bipolar disorder		Risk for schizophrenia when proband has bipolar disorder		Risk for bipolar disorder when proband has schizophrenia	
		RR	95% CI	RR	95% CI	RR	95% CI	RR	95% CI
Biological relationships									
Parent	Offspring	9·9	8·5–11·6	6·4	5·9–7·1	2·4	2·1–2·6	5·2	4·4–6·2
Sibling	Sibling	9·0	8·1–9·9	7·9	7·1–8·8	3·9	3·4–4·4	3·7	3·2–4·2
Sibling	Maternal half-sibling	3·6	2·3–5·5	4·5	2·7–7·4	1·4	0·7–2·6	1·2	0·6–2·4
Sibling	Paternal half-sibling	2·7	1·9–3·8	2·4	1·4–4·1	1·6	1·0–2·7	2·2	1·3–3·8
Adoptive relationships									
Biological parent	Adopted away offspring*	13·7	6·1–30·8	4·3	2·0–9·5	4·5	1·8–10·9	6·0	2·3–15·2
Sibling	Adopted away biological sibling	7·6	0·7–87·8	..	..	3·9	0·2–63·3	5·0	0·3–79·9
Adoptive parent	Adoptee	..	..	1·3	0·5–3·6	1·5	0·7–3·5	..	..
Sibling	Non-biological sibling	1·3	0·1–15·1	..	..	..	..	2·0	0·1–37·8

RR=relative risk. *Adopted children whose biological parents have disease.

Table 2: **Recurrence risks for schizophrenia and bipolar disorders**

Similar findings have been recently reported in a meta-analysis of patient studies recently reported by Zavos et al. (2014)

Many genes with very small effects?

International Schizophrenia Consortium (2009)

Relaxed statistical rules to identify genes with very modest associations with schizophrenia (more than 1000, usually associated with an increased risk of < .02%). Created sum scores for polygenic association:

- **Accounted for about 30% of the variance in liability to schizophrenia and a similar liability to bipolar disorder**

More recent studies link 'schizophrenia' genes to bipolar disorder, depression, autism, and intellectual disabilities (Owen, 2012).

There are no genes for schizophrenia! What appears to be inherited is a general risk of psychiatric disorder.

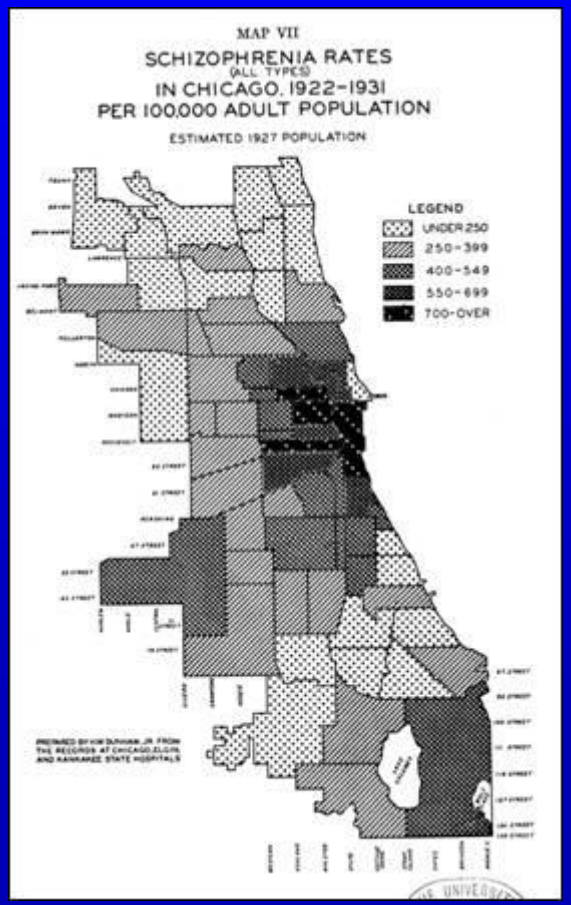
2: Social risk factors for psychosis

A wide range of social and environmental risk factors are associated with psychosis

- Urban environments
- Poverty, especially in childhood
- Inequality
- Migration
- Parental communication deviance
- Separation from parents at an early age
- Childhood sexual and physical abuse
- Bullying by peers

Psychosis and the city

Faris and Dunham's famous (1939) famous study of Chicago appeared to show that inner city environments are associated with a high risk of psychosis.



- Often attributed to 'downwards social drift'
- Pedersen & Mortensen (2001), in a survey of nearly 2 million Danish adults, found a dose-response relationship between exposure to an inner city environment < 15 years and risk of psychosis.
- Weiser et al. (2007): increase in risk due to urbanicity was 9 x greater in those with low cognitive function.

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Wilkinson & Pickett (2009) argue that inequality is more important than wealth.

- **This effect has been reported for psychosis (Boydell et al. 2004; Burns & Esterhuizen, 2008; Kirkbride et al. 2013)**

Psychosis and discrimination

Afro-Carribeans living in the UK have a high risk of paranoid and manic psychosis. Although this may partly be due to misdiagnosis and cultural insensitivity of white psychiatrists (Littlewood & Lipsedge, 1989). Recent studies have shown:

- Immigrants in other countries are affected - for example, Surinamese immigrants to Holland (Selten et al, 2000), Morocan immigrants to Holland (Velling et al. 2007) and East African immigrants to Sweden (Zolkowska et al, 2001).

- Immigrants living in white neighbourhoods are especially vulnerable (Boydell et al, 2001; Veling et al. 2008).

- Veling et al (2007) investigated perceived discrimination in Moroccan (high), Surinames (medium), Turkish (low) and European (very low) immigrants living in the Hague. Rates of psychosis varied accordingly.

Meta-analysis of childhood trauma data

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Schizophrenia Bulletin
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Childhood Adversities Increase the Risk of Psychosis: A Meta-analysis of Patient-Control, Prospective- and Cross-sectional Cohort Studies

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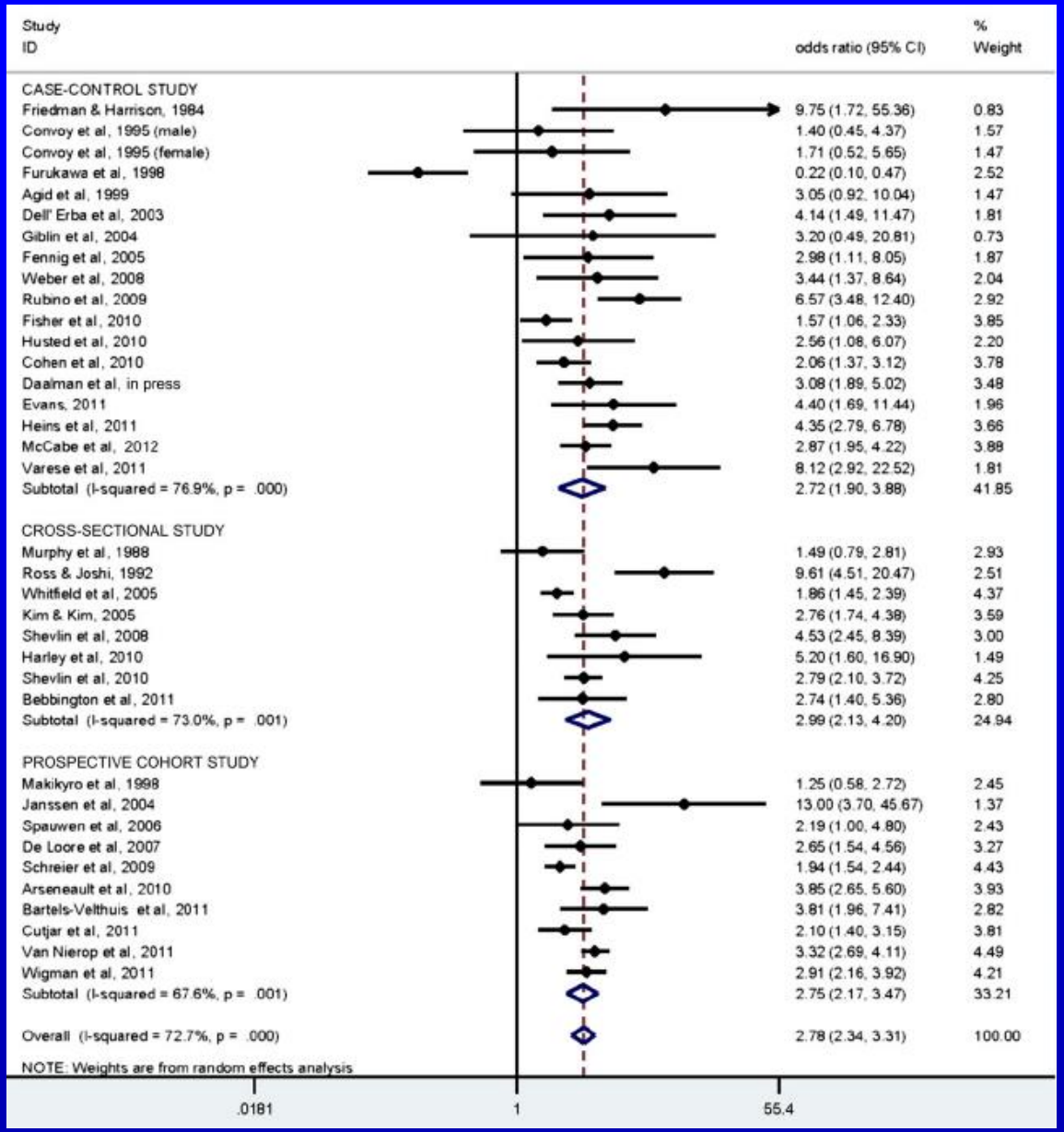
Initial database search found 27,572 hits- 763 remaining papers were examined for inclusion.

The analysis refers to studies focusing on EARLY adversity (exposure to trauma, bullying, parental death etc before the age of 18) and psychosis (both diagnostic and dimensional outcomes) with the following designs:

- epidemiological cross-sectional studies (8)
- prospective studies (and quasi prospective studies) (10)
- patient control studies (18)

Meta-analysis of childhood trauma data



Meta-analysis of childhood trauma data

We found a significant association between trauma and psychosis across all different research designs:

- patient-control studies: OR = 2.72
- epidemiological cross-sectional: OR = 2.99
- prospective: OR = 2.75

9/10 of the datasets investigated for dose-response relationships found them. In the case of cumulative trauma, odds ratios increased dramatically (e.g., in the National Comorbidity Survey, from 2.53 for 1 type of trauma to 53.26 for 5 types of trauma; Shevlin et al. 2007).

How big is the effect?

Khuder (2001) meta-analysed evidence on the relationship between smoking and specific kinds of lung cancer:

- For squamous cell carcinoma (highest risk) the ORs varied from 3.38 to 33.60 according to duration of smoking (1 – 40+ years).

The odds ratios observed in our meta-analysis are in the same general range!

How big is the effect?

Averaged across the studies, the population attributable risk (proportion of people who would not have become psychotic, had the risk factor not been present) was 33% (range 15% - 48%).

In the UK, this is about 160,000 people who either have been or will be diagnosed as suffering from schizophrenia or a related condition during their lifetime.

Or slightly more than the population of *Huddersfield* *.

*** A small city in the North of England.**

Meta-analysis on parental communication and psychosis (Sousa et al 2013)

110. Abandoned, abruptly ceased and uncorrected remarks – *"M: You know, what does it..I wanna look like that you know. So it wasn't..That's, I think that's what was sort of so err, hard."*

120. Unintelligible remarks – *"M: At the moment I feel like...'cause even, we had a doctors appointment yesterday morning and we still can't categorically say we know a lot about genetically what happens, what the baby's made off so I don't think many people know that you see."*

181. Contradictions, denials and retractions – *"M: That's all really, I'm just happy about it (...) M: I don't know how I feel."*

182. Ambiguous referents – *"M: I maybe don't allow myself as much of that as what maybe I should do because I'm always focussed on making sure everything's okay, you know."*

213. Tangential, inappropriate responses to questions or remarks – *"(...) Err, chest of drawers and we just need to get a little wardrobe and I've got like this lamp, a Winnie the pooh lamp, that plays music and stuff and you can get like a Winnie the Pooh thing to put over the cot and stuff, make it all dead nice. It doesn't have to be Winnie the Pooh but I thought Winnie the Pooh would be nice, plus [partner's name]'s mum gave us some Winnie the Pooh pictures for the walls so that's made us decide Winnie the Pooh."*

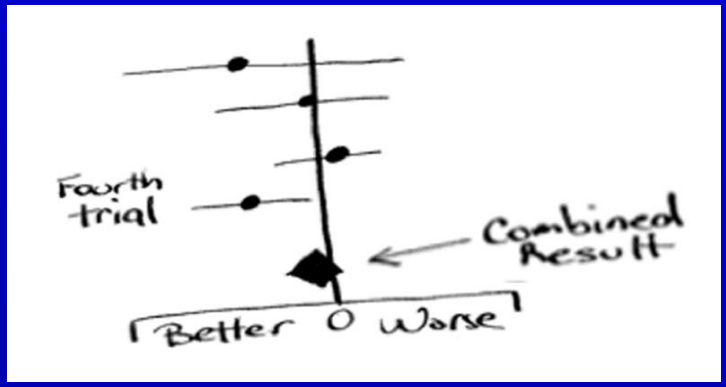
310. Odd word usage/odd sentence construction – *"M: I feel like quite protective over her even though she's not here already ."*

320 . Reiteration - *"M: I think I probably worry probably as a tendency more than probably most people would but then that's probably because I probably am aware of every eventuality."*

Meta-analysis on parental communication and psychosis (Sousa et al 2013)

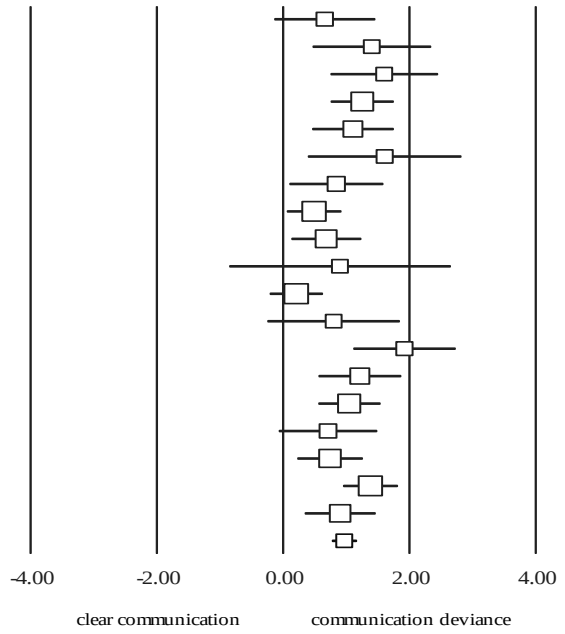
A total of 20 retrieved studies (n= 1753 parents), yielded a pooled *g* of large magnitude (0.97; 95% CI 0.76; 1.18). Subgroup and sensitivity analysis revealed that pooled effect-size was stable and unlikely to have been affected by the methodological features of the studies (Sousa et al. *Schizophrenia Bulletin*).

Subgroup analysis of parents' scores revealed that the difference between the two mean effect-sizes for mothers and fathers were statistically significant (Q[1]= 4.38; p<0.05) with mothers of psychotic offspring achieving a large and significant effect-size (*g*= 0.89; SE= 0.18; 95% CI [0.54; 1.24]; *z*= 4.99; *p*<0.001).



Meta-analysis on parental communication and psychosis (Sousa et al 2013)

Study name		Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
Asamow, Goldstein, & Ben-Meir, 1988	Projective	0.658	0.413	0.170	-0.151	1.468	1.595	0.110764
Behrens et al., 1968	Projective	1.406	0.484	0.234	0.458	2.353	2.907	0.003649
Docherty, 1993	Other	1.602	0.439	0.192	0.742	2.462	3.652	0.000260
Docherty & Gordinier, 1999	Other	1.253	0.259	0.067	0.745	1.760	4.840	0.000001
Glaser, 1976	Projective	1.105	0.334	0.111	0.451	1.759	3.312	0.000927
Goldstein, 1987	Projective	1.607	0.625	0.391	0.382	2.832	2.570	0.010158
Holte & Wichstrom, 1991	Projective	0.842	0.384	0.147	0.090	1.595	2.195	0.028175
Hirsch & Leff, 1971	Projective	0.490	0.225	0.051	0.050	0.931	2.181	0.029197
Johnston & Holzman, 1979	Projective	0.683	0.287	0.082	0.120	1.245	2.379	0.017339
Jones, 1977	Projective	0.900	0.900	0.810	-0.863	2.664	1.000	0.317125
Rund, 1986	Projective	0.209	0.219	0.048	-0.222	0.639	0.951	0.341825
Sass et al., 1984	Combined	0.800	0.540	0.291	-0.258	1.858	1.482	0.138237
Singer & Wynne, 1963	Projective	1.922	0.417	0.174	1.104	2.740	4.606	0.000004
Solana, 1988	Projective	1.215	0.338	0.115	0.552	1.878	3.590	0.000330
Wild et al., 1965	Other	1.048	0.255	0.065	0.549	1.548	4.112	0.000039
Wender et al., 1977	Projective	0.712	0.402	0.162	-0.077	1.500	1.769	0.076910
Wild, Shapiro & Goldenberg, 1975	Other	0.742	0.269	0.073	0.214	1.270	2.753	0.005902
Wynne, 1967	Projective	1.383	0.226	0.051	0.941	1.826	6.127	0.000000
Wynne, Singer & Toohey, 1978	Projective	0.904	0.291	0.085	0.333	1.474	3.106	0.001898
		0.970	0.105	0.011	0.763	1.176	9.202	0.000000



Reactions

Susser and Widom (2012):

Argue that the evidence is *too* consistent, and that this is likely to be because of reporting bias.

BUT

Fisher et al. (2011) found that patients reports of childhood experience did not change when their symptoms remitted, and were concordant with reports by other sources (sibs).

Reactions

Sideli et al. (2012):

"specificity of childhood abuse in psychotic disorders and, particularly, in schizophrenia has not been demonstrated…."

".the case cannot be regarded as proven. So far none of the studies reported indicate that childhood abuse is either sufficient or necessary to develop a psychotic disorder…."

"the possibility cannot be ruled out that a child destined to develop schizophrenia may show characteristics in childhood that increase the risk of abuse"

But is social adversity causal?

Austin Bradford Hill (1897-1991) proposed a series of criteria for inferring causality from epidemiological data (1965):

1. Strength of association
2. Consistency
3. Specificity
4. Temporal relationship
5. Biological gradient/dose-response
6. Plausibility in terms of mechanisms
7. Coherence
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3: Specific effects

Specificity of adversities for symptoms

Specific associations between specific kinds of adversity and specific kinds of symptoms have recently been explored in the 2007 Adult Psychiatric Morbidity survey (Bentall et al., 2012):

Table 2. Odds Ratios and Their Associated 95% CI for the Effects of Childhood Sexual Abuse, Victimization, Separation Variables and Total Adversity on AVHs and Paranoid Ideation

			Demographics adjusted	
	Paranoia	AVHs	Paranoia	AVHs
Gender			0.54* (0.30–0.98)	1.07 (0.58–1.97)
Age			0.96* (0.94–0.98)	0.99 (0.97–1.01)
Ethnicity			0.36* (0.17–0.75)	1.05 (0.31–3.54)
Education			1.05 (0.84–1.32)	0.98 (0.78–1.23)
Socioeconomic status			1.06 (0.87–1.31)	1.17 (0.91–1.53)
IQ			0.96* (0.94–0.99)	0.95* (0.92–0.98)
Rape	2.78 (0.93–8.28)	8.90* (1.86–42.44)	1.29 (0.38–4.41)	6.09* (1.38–26.89)
Sexual touch	1.30 (0.45–3.71)	1.22 (0.34–4.37)	1.31 (0.43–4.01)	1.68 (0.47–6.06)
Sexual talk	1.40 (0.54–3.61)	1.52 (0.58–4.01)	2.04 (0.72–5.80)	1.57 (0.50–4.95)
Physical abuse	8.52* (3.55–20.43)	4.79* (1.49–15.34)	5.99* (2.39–15.07)	3.82* (1.01–14.41)
Bullying	1.46 (0.81–2.63)	2.08 (0.99–4.37)	1.32 (0.71–2.46)	1.56 (0.71–3.43)
Institutional care	11.08* (3.26–37.62)	3.45 (0.50–23.72)	12.68* (3.56–45.11)	4.04 (0.74–21.92)
Local authority care	0.17* (0.03–0.80)	0.35* (0.04–3.45)	0.19 (0.04–1.00)	0.31 (0.03–3.02)
Number of adverse events				
1	3.33* (1.80–6.16)	2.32* (1.05–5.09)	3.70* (1.89–7.27)	2.43* (1.05–5.59)
2	7.49* (3.47–16.17)	10.80* (4.17–27.99)	7.33* (3.23–16.62)	9.14* (3.68–22.71)
3	9.92* (3.14–31.33)	27.42* (6.26–119.97)	5.65* (1.48–21.61)	17.64* (4.30–72.23)
4 or more	17.54* (2.93–104.89)	14.83* (2.80–78.55)	16.46* (2.71–99.77)	13.68* (2.33–80.27)

Note: AVH, auditory-verbal hallucinations. Adjusted demographic variables include sex, age, ethnicity, education, social class, and IQ.
*$p < .05$.

CSA-> hallucinations; disrupted attachment relationships -> paranoia.

Specificity of adversities for symptoms

We have replicated these associations in an analysis of data from the US National Comorbidity Study, N = 5,877 from the 48 coterminus states of the USA (Sitko, Sellwood & Bentall, 2014):

Tests of direct effects between adverse events and symptoms.

Adverse Childhood Event	Paranoia *B (SE)*	Hallucinations *B (SE)*	Depression *B (SE)*
Witness Injury/Killing	0.091 (.029)**	0.170 (.043)***	0.657 (.161)***
Rape	0.092 (.065)	0.396 (.110)***	0.961 (.321)**
Sexual Molestation	0.029 (.029)	0.240 (.058)***	1.144 (.192)***
Physical Attack/Assault	0.137 (.052)**	0.232 (.087)**	0.338 (.266)
Physical Abuse	0.168 (.067)*	0.227 (.085)**	0.934 (.247)***
Neglect	0.167 (.074)*	0.181 (.096)	0.681 (.302)*
Held Captive/Threaten Weapon	0.206 (.048)***	0.288 (.079)***	0.268 (.238)

Note. *B* = unstandardised *b* coefficients; *SE* = standard error

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

Specificity of adversities in UK prisoners

Shevlin, McAnee, Bentall & Murphy (in press)

Survey of Psychiatric Morbidity among Prisoners in England and Wales: 3142 prisoners from 131 prisons (88% completion; 1/8 male remand; 1/34 male sentenced; 1/3 female remand; 1/3 female sentenced prisoners).

Variables: age, ethnicity, cannabis use, alcohol history, List of Life Threatening Experiences (Brugha, Bebbington, Tennant & Hurry, 1985), prison-related traumas (threat of violence, actual violence, unwelcome sexual attention, forced sexual attention).

Psychosis Screening Questionnaire (PSQ: Bebbington & Nayani, 1985)

Specificity of adversities in UK prisoners

Odds Ratios (Confidence intervals) for Risk and Trauma Variables Predicting Psychotic Experiences.

	Paranoia only	Hallucinations only	Paranoia & Hallucinations
Sexual Abuse	1.20 (.89-1.62)	2.37 (1.38-4.09)*	2.80 (1.84-4.23)*
Bullying	1.99 (1.60-2.48)*	1.72 (1.07-2.77)*	2.42 (1.71-3.43)*
Violence at home	1.49 (1.20-1.86)*	1.09 (.68-1.76)	1.21 (.85-1.72)
In an institution as a child	1.38 (1.03-1.84)*	.84 (.43-1.61)	1.60 (1.02-2.50)*
Local authority care as a child	.97 (.72-1.30)	1.66 (.86-3.21)	.69 (.43-1.08)
Death of a parent or sibling	1.09 (.87-1.36)	1.13 (.70-1.84)	1.02 (.70-1.50)
Threatened with violence in prison	1.39 (1.08-1.78)*	1.11 (.63-1.94)	2.31 (1.60-3.36)*
Violence in prison	1.63 (1.20-2.22)*	1.90 (.91-3.62)	.91 (.55-1.49)
Unwelcome sexual attention in prison	.66 (.40-1.11)	.68 (.26-1.81)	.81 (.41-1.61)
Forced sexual attention in prison	.65 (.16-2.60)	.72 (.08-6.04)	1.77 (.51-6.12)

* Statistical significance $p < .05$. 95% confidence intervals in parenthesis. Reference group did not report any psychotic experiences

Neighbourhood effects

Association between neighbourhood index of multiple deprivation and symptoms in the 2007 Adult Psychiatric Morbidity survey (Wickham et al. 2014):

	Unstandardised		Standardised		
Index of Multiple Deprivation to:	ß	SE	ß	SE	Odds Ratio
Definitive Psychosis	.60*	.20	.41*	.12	1.8*
Probable Psychosis	.48**	.13	.34**	.08	1.6**
Depression	.27**	.06	.20**	.04	1.3**
Paranoia	.28**	.07	.20*	.05	1.3**
Hallucinations	.14	.10	.10	.08	1.1
Mania	.14	.12	.10	.09	1.2

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4: Plausible mechanisms? Attachment and paranoia

Mediation analysis

Conditions for mediation (Baron & Kenny, 1986):

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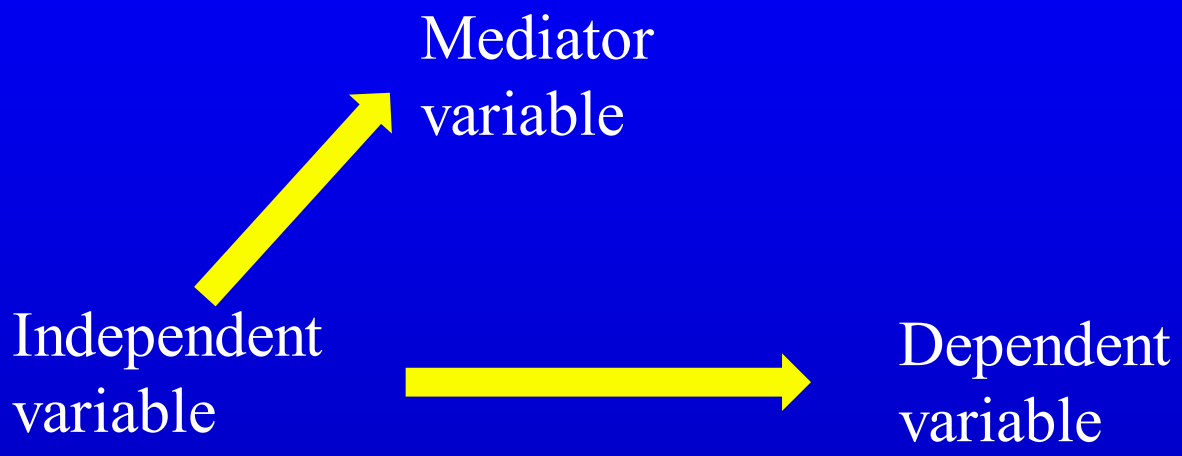

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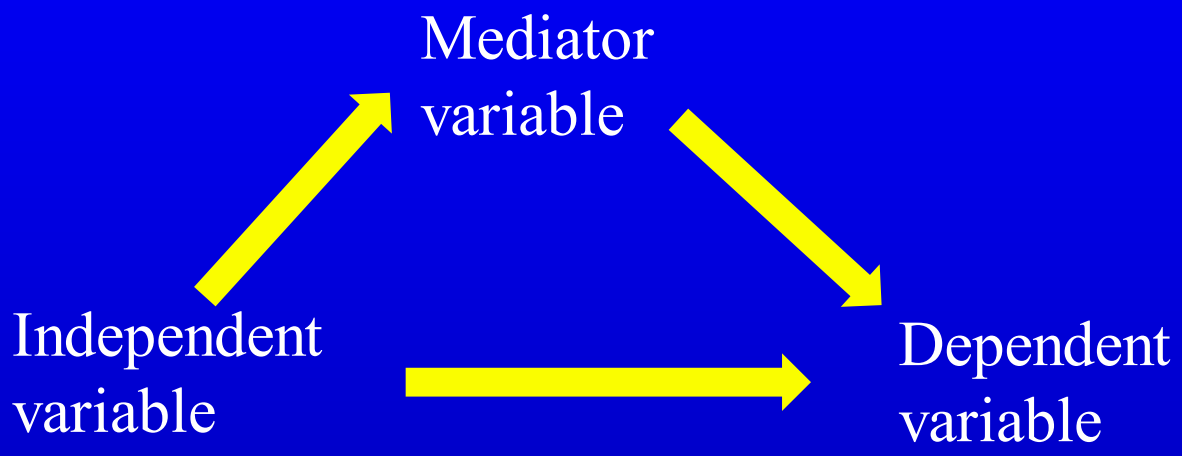

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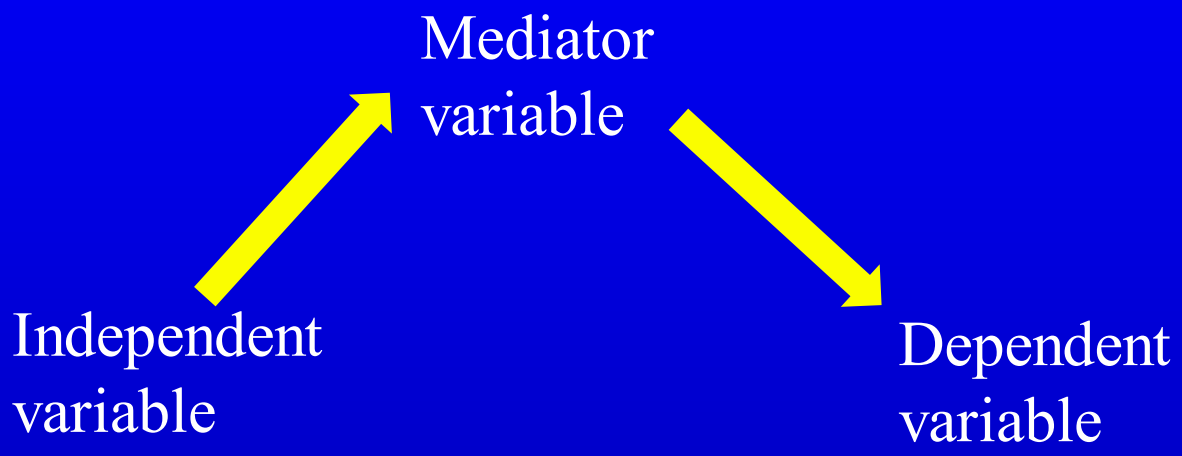
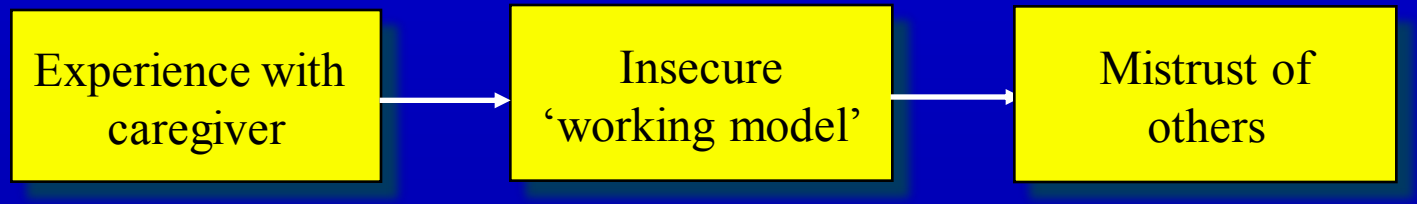


Attachment and paranoia

We have previously found that paranoia in adulthood is associated with being brought up in a children's home (Bentall et al. 2012; APMS2007) and experiences of parental neglect (Sitko et al. in press, NCS).

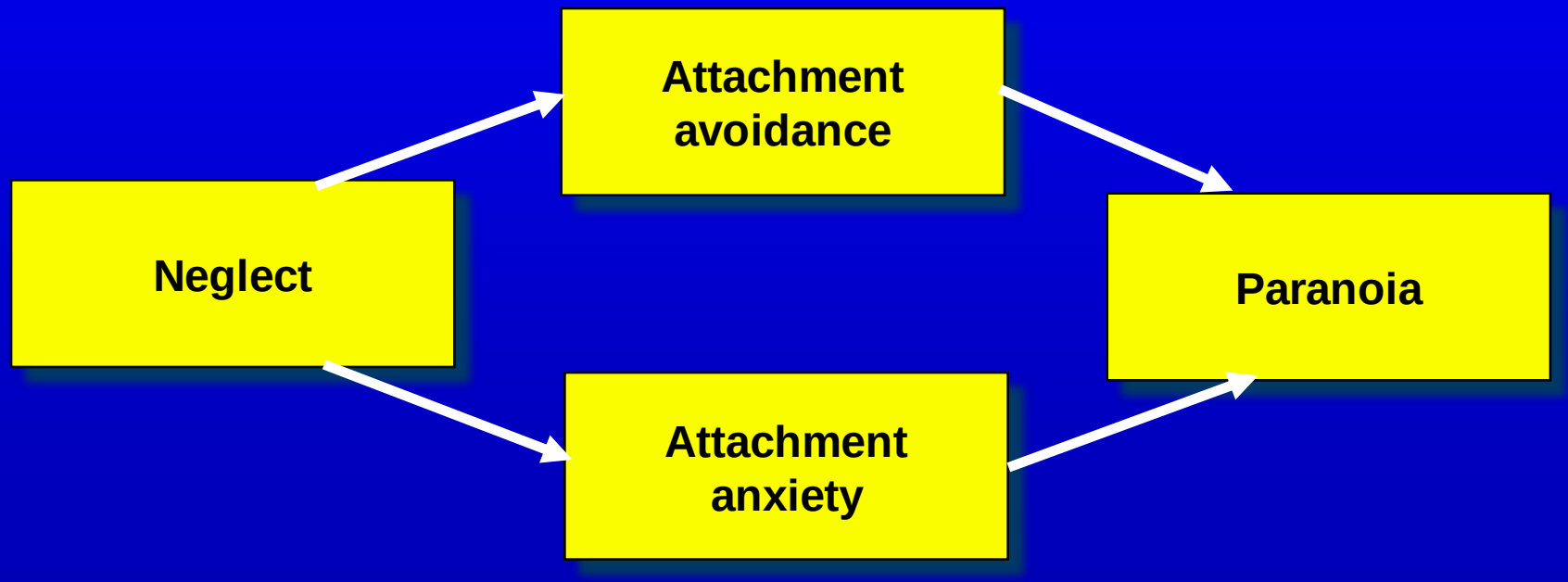
Other studies have reported that psychosis in adulthood is associated with early separation from parents (Morgan et al. 2007) and being the product of an unwanted pregnancy (Myhrman et al. 1996).

Could insecure attachment be a mediating mechanism?



Attachment style in an epidemiological sample

Attachment styles (secure, avoidant and anxious) were measured in the NCS. We found that insecure attachment fully mediated the relationship between childhood neglect and paranoia (Sitko, Sellwood & Bentall, 2014):



Is insecure attachment specifically associated with paranoia in patients? (Wickham et al. in press)

113 healthy controls

177 (123 male and 55 female) schizophrenia- spectrum patients:

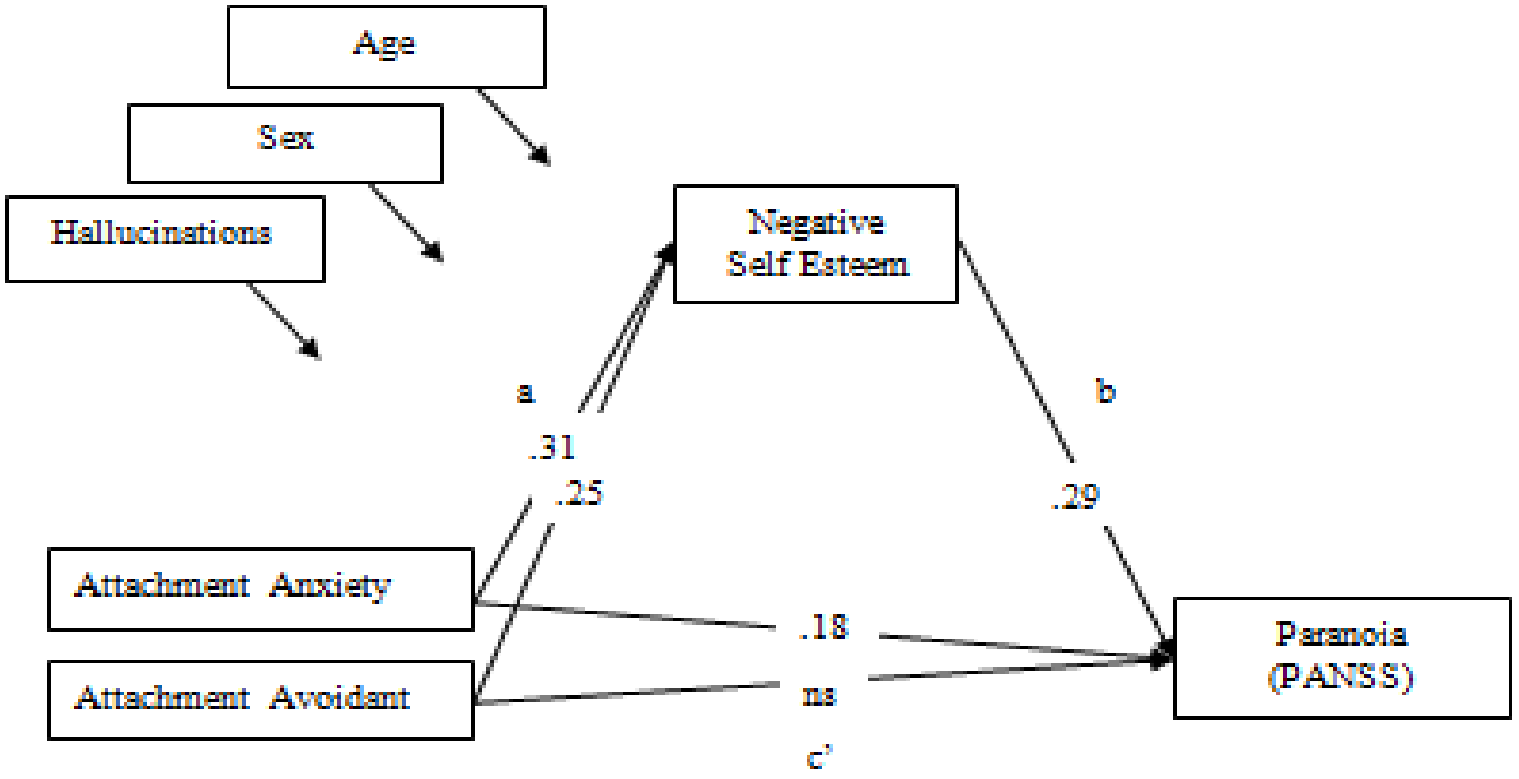
schizophrenia (*n*=123) schizoaffective disorder (*n*=17)

substance-induced psychosis (*n*=6) unspecified non-organic psychosis (*n*=15) acute and transient psychotic disorder (*n*=12) delusional disorder (*n*=4)

Assessments included Bartholomew and Horrowitz's Relationship (attachment) scale (of internal working models) and negative self-esteem (Nugent & Thomas, 1993).

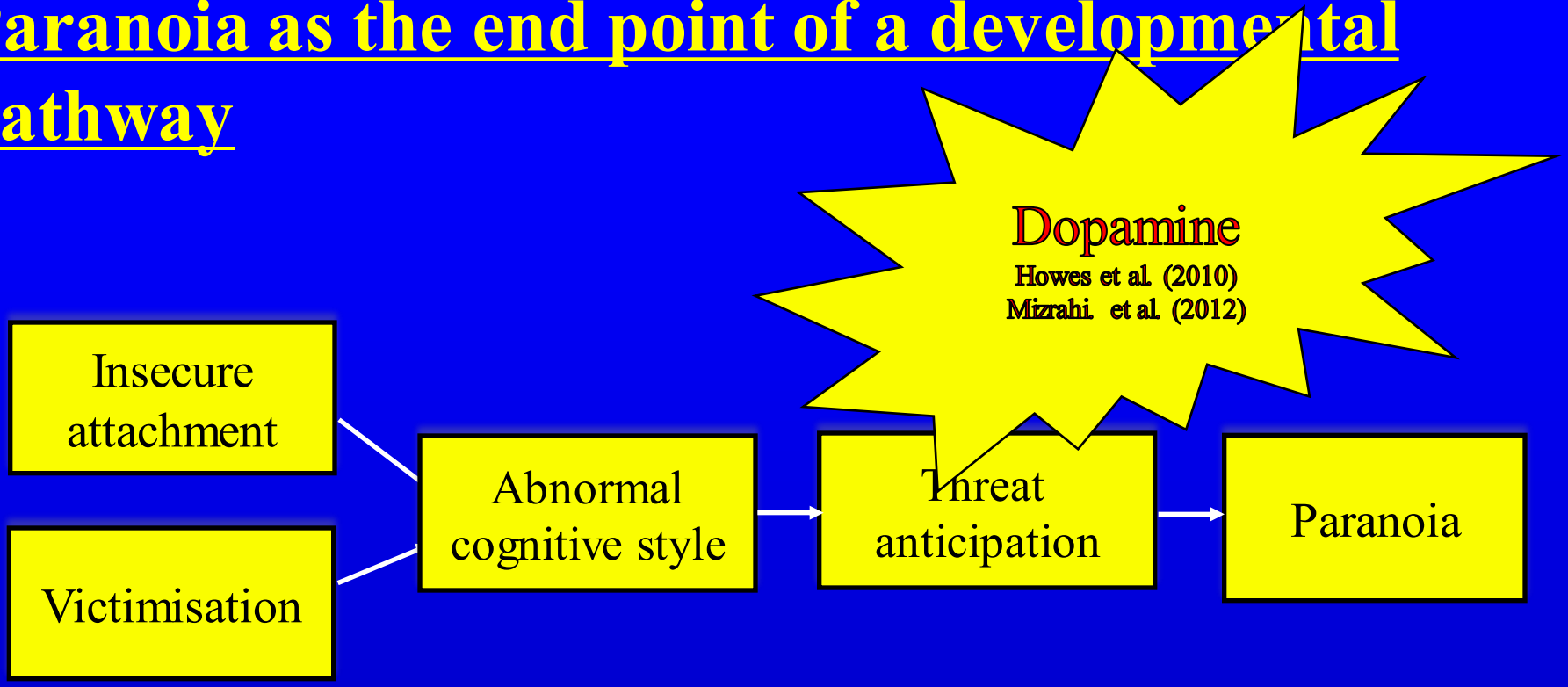
There was no relationship between attachment styles and hallucinations.

Attachment in psychotic patients (Wickham et al. in press)



Attachment Anxious – Negative self esteem – Paranoia, ß = .09, SE = .03, p = .003
Attachment Avoidant – Negative self esteem – Paranoia, ß = .07, SE = .03, p = .010

Paranoia as the end point of a developmental pathway



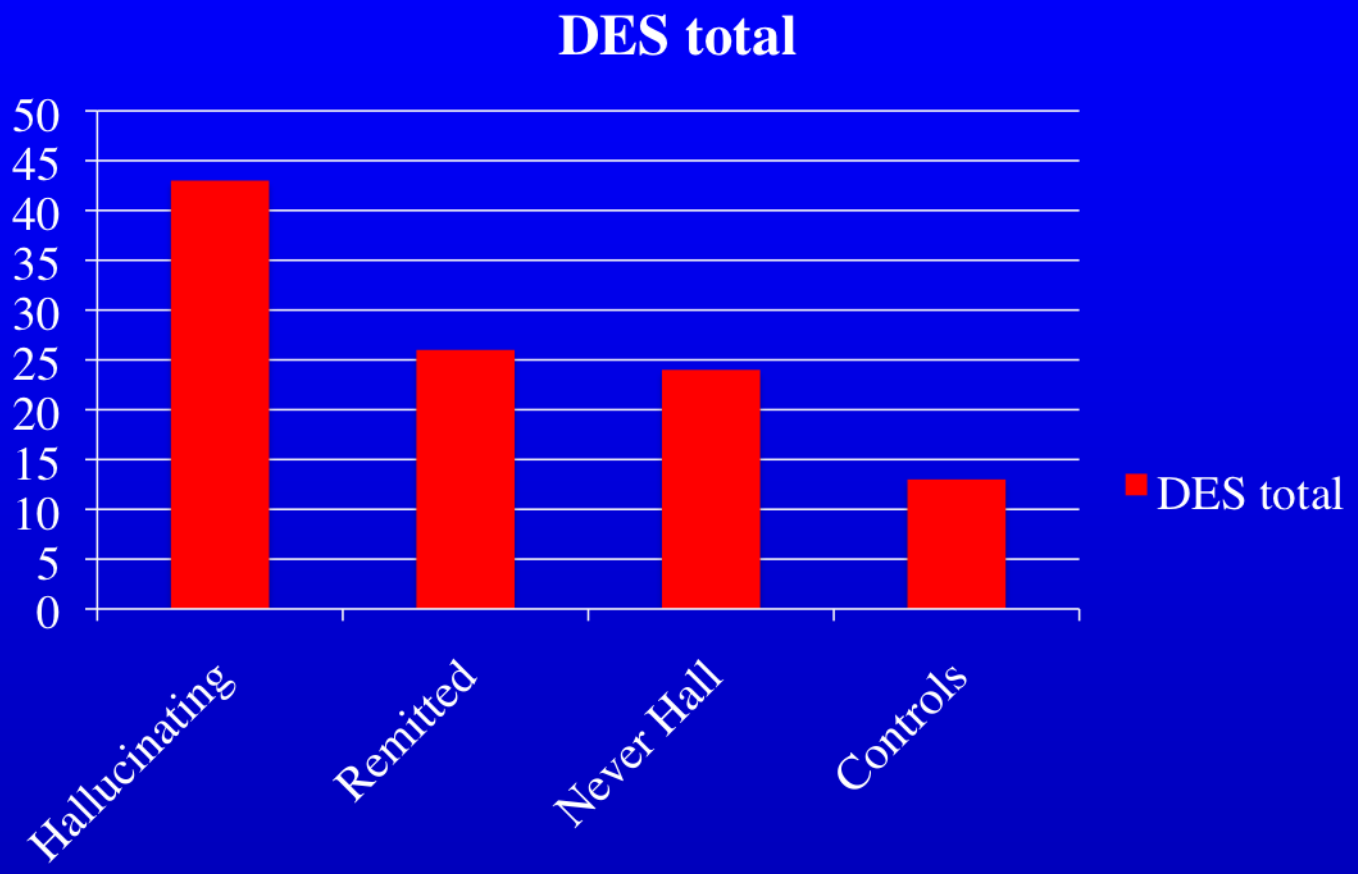
5: Plausible mechanisms? Dissociation and hallucinations

Varese & Bentall (2012)

46 patients with psychosis (15 with current hallucinations, 14 with remitted hallucinations, 17 never hallucinated) plus 20 controls.

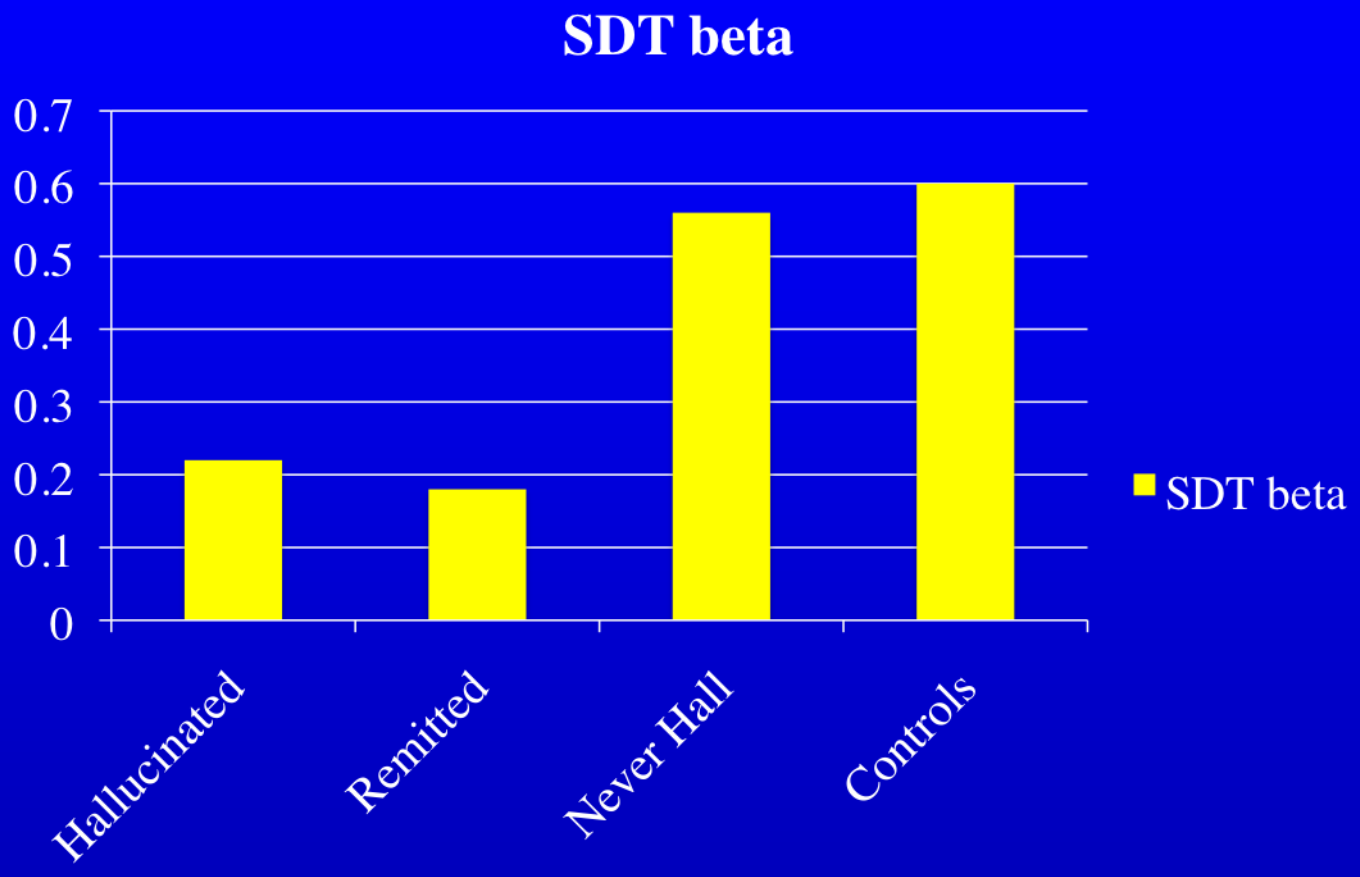
- Launay-Slade Hallucination Scale
- Dissociative Experiences Scale (Bernstein & Putman, 1986)
- Childhood Abuse and Trauma Scale (CATS; Sanders & Becker-Launsen, 1995)
- Signal detection task (Barkus et al. 2004; 8 minute version; measure of source monitoring, which we have shown is consistently impaired in relation to AVHs; Brookwell et al. 2013 meta-analysis)

Varese & Bentall (2012)



Hall > Remitted Hall = Never Hall > Controls

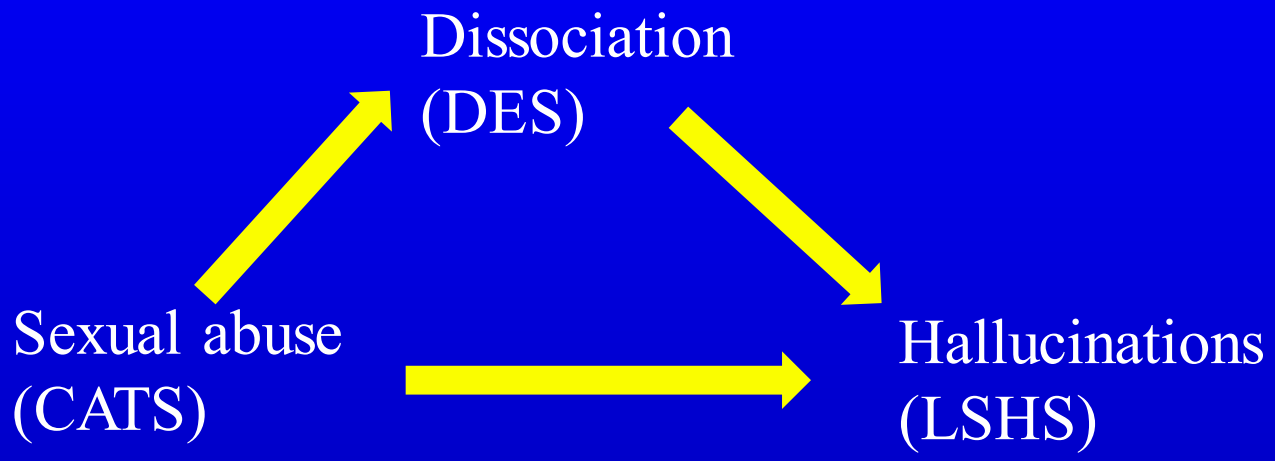
Varese & Bentall (2012)



Hall = Remitted Hall > Never Hall = Controls

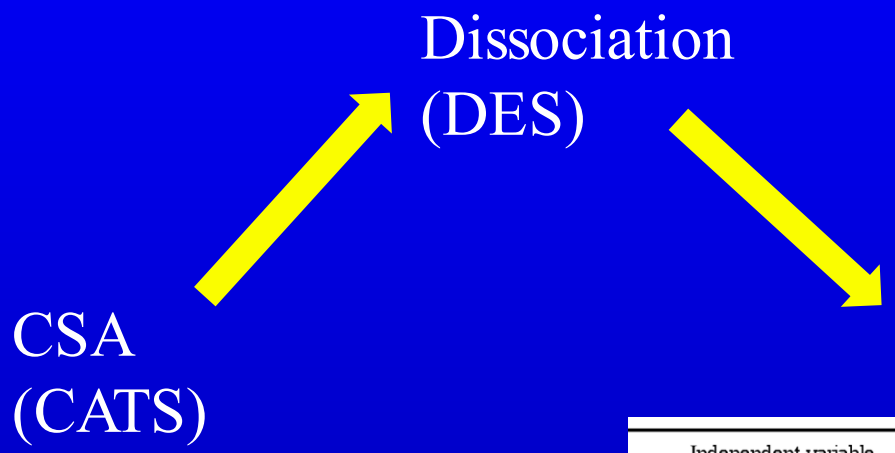
Varese & Bentall (2012): Mediational analysis

Conditions for mediation (Baron & Kenny, 1986):



Varese & Bentall (2012): Mediational analysis

Conditions for mediation (Baron & Kenny, 1986):



The mediational model works with history of hallucination, but the effect is less marked.

Independent variable	Indirect effect	Direct effect	Total effect
Analysis of the total sample			
CATS scores	0.12 [0.06, 0.19]	0.12 [0.02, 0.22]	0.24 [0.13, 0.35]
Sexual abuse	0.65 [0.24, 1.07]	0.58 [-0.02, 1.12]	1.23 [0.68, 1.76]
Physical abuse	0.56 [-0.06, 1.21]	0.45 [-0.26, 1.18]	1.00 [0.14, 1.92]
Neglect	0.26 [0.11, 0.42]	0.30 [0.09, 0.48]	0.56 [0.32, 0.78]
Emotional abuse	0.43 [0.17, 0.72]	0.36 [-0.05, 0.79]	0.79 [0.27, 1.32]
Analysis of the patients sample			
CATS scores	0.11 [0.06, 0.17]	0.15 [0.07, 0.24]	0.26 [0.17, 0.35]
Sexual abuse	0.57 [0.24, 0.97]	0.77 [0.27, 1.20]	1.33 [0.92, 1.77]
Physical abuse	0.19 [-0.47, 0.86]	0.01 [-0.80, 0.83]	0.21 [-0.83, 1.31]
Neglect	0.13 [-0.03, 0.28]	0.22 [-0.02, 0.42]	0.35 [0.05, 0.61]
Emotional abuse	0.24 [-0.02, 0.54]	0.26 [-0.21, 0.73]	0.49 [-0.10, 1.08]

Varese & Bentall (2012): Signal detection

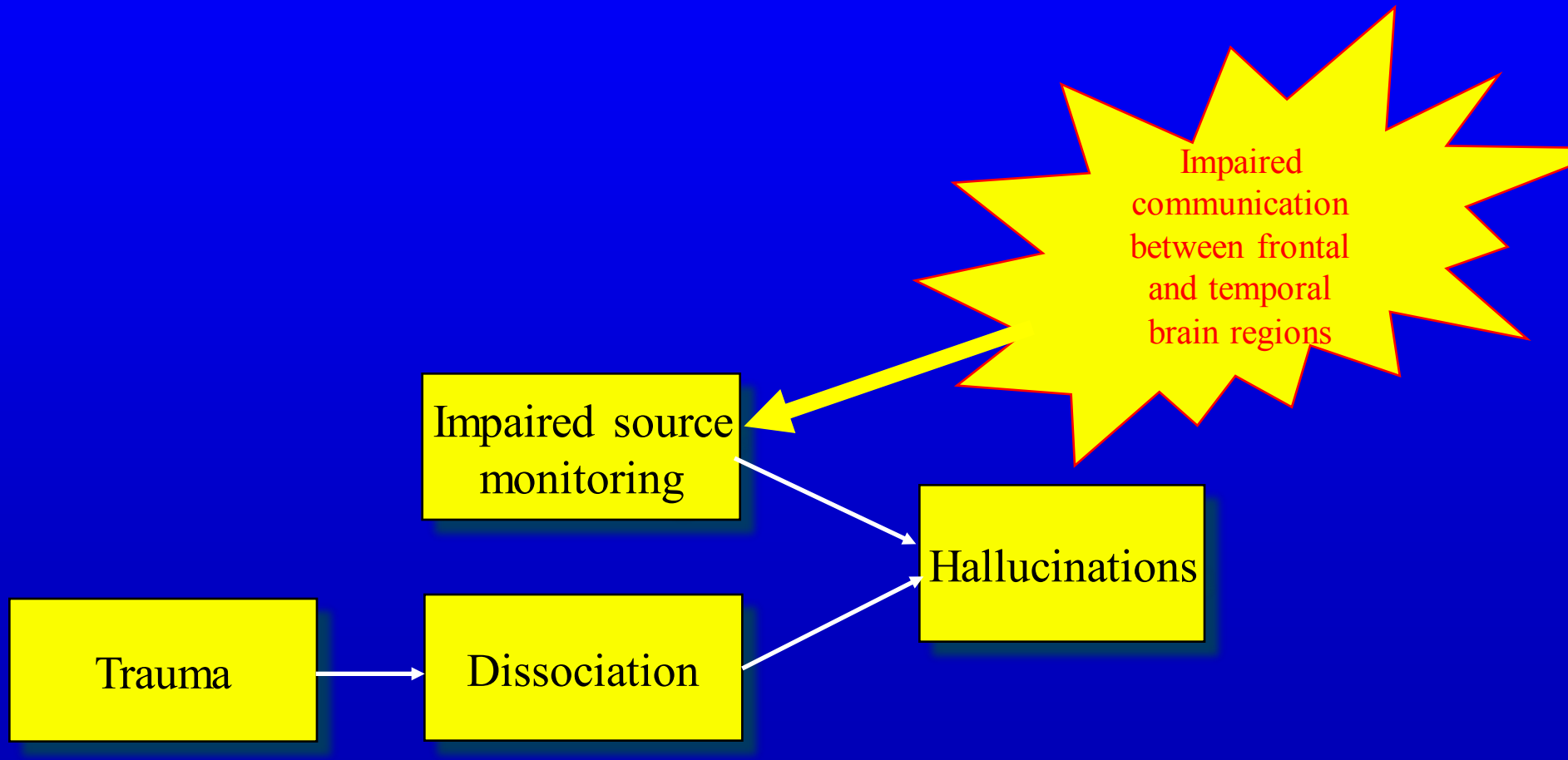
There was no evidence of mediation with respect to signal detection

- **No significant difference between high DES and low DES participants**

- **Hence, we think the effects of poor source monitoring and dissociation may be additive**

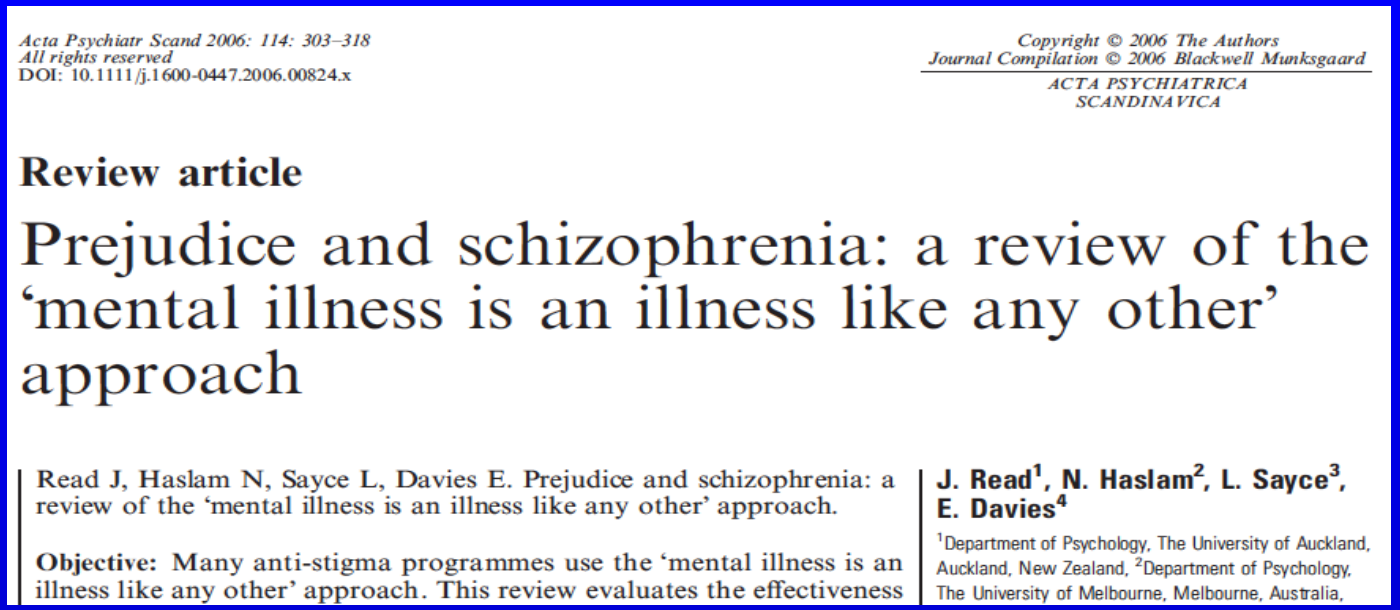
Almost identical findings have been reported in Spain by Perona-Garcelan et al. (2011, 2012)

Hallucinations as an end point of a developmental pathway



6: Conclusions and implications

For patients and families



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Review article

Prejudice and schizophrenia: a review of the 'mental illness is an illness like any other' approach

J. Read[1], N. Haslam[2], L. Sayce[3], E. Davies[4]

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Read J, Haslam N, Sayce L, Davies E. Prejudice and schizophrenia: a review of the 'mental illness is an illness like any other' approach.

Objective: Many anti-stigma programmes use the 'mental illness is an illness like any other' approach. This review evaluates the effectiveness

- **'Mental health literacy' campaigns typically emphasize the idea that 'schizophrenia' is an illness like any other illness – a genetically determined brain disease.**

- **In fact, both observational and experimental research shows that biogenic beliefs about mental illness are associated with *negative, more stigmatizing attitudes* towards the mentally ill.**

For patients and families

- **Patients often complain that the role of the experience in their difficulties is routinely ignored by psychiatric services.**
- **Slater (2004) informally replicated Rosenhan's (1970) famous 'being sane in insane places' experiment.**

> *"I was mislabelled but not locked up. Here's another thing that's different: every single medical professional was nice to me. Rosenhan and his confederates felt diminished by their diagnoses. I, for whatever reason, was treated with palpable kindness. One psychiatrist touched my arm. One psychiatrist said, "Look, I know it's scary for you, hearing a voice like that, but I really have a feeling that the Risperdal will take care of this."*

But she was only once asked a personal question (what was her religion?)!

For therapy

Is it possible that trauma-focused treatments will be effective in the treatment of patients with psychosis?

- **Mueser et a. (2008) have reported promising although modest effects of CBT trauma-based interventions for patients with comorbid psychosis and PTSD but many patients with a trauma history do not meet the criteria for PTSD.**

For public mental health

The prevalence of both common and severe psychiatric disorders has been increasing in the developed world (Whitaker, 2005). Maybe that's not surprising given the socioeconomic drivers of mental ill health:

- **Social inequality**
- **Job insecurity and unemployment, fuelled by austerity measures**
- **Isolation (low social capital)**
- **Migration**
- **Exposure to urban environments**

All these drivers are going in the wrong direction! And they are not going to fixed by mass psychopharmacology or psychotherapy!


"That's all Folks!"