



### Reducing harmful compliance with command hallucinations :results from the MRC COMMAND trial.

Max Birchwood





theguardian.com

#### Christina Edkins inquiry finds missed opportunities to prevent killing

Report makes 51 recommendations after homeless man with mental health issues stabbed schoolgirl in Birmingham last year



Christina Edkins. Photograph: PA

The report's findings include:

• Organisations failed to listen to and respond to carers and significant others consistently and adequately.

• The accessing and sharing of information between key agencies was ineffective.

• Organisations' informationrecording and storage were not robust enough to allow good management and care.

• Services need to be more proactive in making it easier for a person with mental health issues to engage with them.

The chair of the investigation panel, Dr Alison Reed, said: "Many different organisations are associated with this very sad and complex case. It is clear

#### **Steven Morris**

the conclusion of the panel that as Christina's death was directly related to [Simelane's] mental illness, it could have been prevented if his mental health needs had been identified and met."



Phillip Simelane. Photograph: PA

Christina, a bright pupil who hoped to become a nurse or carer, got on the number 9 bus in Birmingham city centre on the morning of 7 March last year and sat on the top deck. Simelane, wearing all the clothes he had for

- Why do individuals act on their delusions and others resist?
- What are the developmental pathways to harm to self or others?
- Why are there no interventions to reduce harm vs treating psychosis? Are they the same thing?
- Can we prevent such behaviour?

#### Cognitive behaviour therapy to prevent harmful compliance with command hallucinations (COMMAND): a randomised controlled trial

CrossMark

Max Birchwood, Maria Michail, Alan Meaden, Nicholas Tarrier, Shon Lewis, Til Wykes, Linda Davies, Graham Dunn, Emmanuelle Peters

#### Summary

Background Acting on command hallucinations in psychosis can have serious consequences for the individual and for other people and is a major cause of clinical and public concern. No evidence-based treatments are available to reduce this risk behaviour. We therefore tested our new cognitive therapy to challenge the perceived power of voices to inflict harm on the voice hearer if commands are not followed, thereby reducing the hearer's motivation to comply.

Methods In COMMAND, a single-blind, randomised controlled trial, eligible participants from three centres in the UK who had command hallucinations for at least 6 months leading to major episodes of harm to themselves or other people were assigned in a 1: 1 ratio to cognitive therapy for command hallucinations + treatment as usual versus just treatment as usual for 9 months. Only the raters were masked to treatment assignment. The primary outcome was harmful compliance. Analysis was by intention to treat. The trial is registered, number ISRCTN62304114.

Findings 98 (50%) of 197 participants were assigned to cognitive therapy for command hallucinations + treatment as usual and 99 (50%) to treatment as usual. At 18 months, 39 (46%) of 85 participants in the treatment as usual group fully complied with the voices compared with 22 (28%) of 79 in the cognitive therapy for command hallucinations + treatment as usual group (odds ratio 0.45, 95% CI 0.23-0.88, p=0.021). At 9 months the treatment effect was not significant (0.74, 0.40-1.39, p=0.353). However, the treatment by follow-up interaction was not significant and the treatment effect common to both follow-up points was 0.57 (0.33-0.98, p=0.042).

Interpretation This is the first trial to show a clinically meaningful reduction in risk behaviour associated with commanding voices. We will next determine if change in power was the mediator of change. Further more complex trials are needed to identify the most influential components of the treatment in reducing power and compliance.

Funding UK Medical Research Council and the National Institute for Health Research.

#### Lancet Psychiatry 2014; 1: 23-33

#### See Comment page 3

Division of Health and Wellbeing, Warwick Medical School, University of Warwick, Coventry, UK (Prof M Birchwood DSc); Institute of Mental Health, School of Nursing, Midwifery and Physiotherapy, Faculty of Medicine and Health Sciences. University of Nottingham, Nottingham, UK (M Michail PhD); School of Psychology, University of Birmingham, Birmingham, UK (A Meaden DClinPsy); Institute of Brain Behaviour and Mental Health, School of Medicine, University of Manchester, Manchester, UK (Prof S Lewis PhD); Institute of Population Health, University of Manchester, Manchester, UK (Prof G Dunn PhD. Prof L Davies PhD); and King's College London, Institute of Psychiatry, Department of Developer London IIV

**UK Daily Mail front page** June, 2007

A TOP City executive accused of a horrific attack on his toddler daughter may have a severe mental illness, it emerged last night.

Millionaire insurance boss Alberto Izaga was said to have 'flipped' for no obvious reason. He is alleged to have launched a sav-

#### By Gordon Rayner and Stephen Wright

age attack on two-year-old Yanire, punching and kicking her and hitting her head against a bedroom floor.

Yesterday, as Mr Izaga was sectioned under the Mental Health Act, friends said he claimed voices in his head told him to attack his daughter at their London home.

Doctors have warned that the little girl is unlikely to recover. Mr Izaga's wife Ligia, who tried despersiely to protect Yanire, is likely to face the fur-ther nightmare of being asked to per-mission to turn off her life support.

Spanish-born Mr Izaga, 36, is a top executive at the insurance giant Swiss Re. He had recently been promoted to its main UK board, with an annual salary of up to 2500,000.

"The pressure is enormous at that level,' a friend said last night. They all

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British Journal of Psychiatry (1994), 164, 190-201

#### The Omnipotence of Voices A Cognitive Approach to Auditory Hallucinations

PAUL CHADWICK and MAX BIRCHWOOD

We offer provisional support for a new cognitive approach to understanding and treating drugresistant auditory hallucinations in people with a diagnosis of schizophrenia. Study 1 emphasises the relevance of the cognitive model by detailing the behavioural, cognitive and affective responses to persistent voices in 26 patients, demonstrating that highly disparate relationships with voices - fear, reassurance, engagement and resistance - reflect vital differences in beliefs about the voices. All patients viewed their voices as omnipotent and omniscient. However, beliefs about the voice's identity and meaning led to voices being construed as either 'benevolent' or 'malevolent'. Patients provided cogent reasons (evidence) for these beliefs which were not always linked to voice content; indeed in 31% of cases beliefs were incongruous with content, as would be anticipated by a cognitive model. Without fail, voices believed to be malevolent provoked fear and were resisted and those perceived as benevolent were courted. However, in the case of imperative voices, the primary influence on whether commands were obeyed was the severity of the command. Study 2 illustrates how these core beliefs about voices may become a new target for treatment. We describe the application of an adapted version of cognitive therapy (CT) to the treatment of four patients' drug-resistant voices. Where patients were on medication, this was held constant while beliefs about the voices' omnipotence, identity, and purpose were systematically disputed and tested. Large and stable reductions in conviction in these beliefs were reported, and these were associated with reduced distress, increased adaptive behaviour, and, unexpectedly, a fall in voice activity. These changes were corroborated by the responsible psychiatrists. Collectively, the cases attest to the promise of CT as a treatment for auditory hallucinations.

- Why are voices so distressing?
- Why do voice hearers act upon vs resist them?

The cognitive model of voices: it's a (pernicious, imbalanced) interpersonal relationship

Perceived malevolent intent + Perceived power of voice to act on the intent = susceptibility to comply

Most clients do not want to comply but feel they have no choice





Contents lists available at ScienceDirect

#### Clinical Psychology Review



### Reviewing evidence for the cognitive model of auditory hallucinations: The relationship between cognitive voice appraisals and distress during psychosis

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#### ABSTRACT

Individuals who hear voices during psychosis may be vulnerable to increased distress. Cognitive models place emphasis on the role of subjective and cognitive appraisals of voices in influencing different emotional reactions. This paper systematically reviewed literature investigating the relationship between appraisals of voices and distress. The review included 26 studies, published between 1990 and 2008. Several types of appraisals were found to be linked to higher levels of distress in voice hearers, including voices appraised as malevolent, voices appraised as high in supremacy, voices appraised to have personal acquaintance with the individual, and attitudes of disapproval and rejection towards voices. However, results from cognitive therapy trials did not consistently report significant improvements in voice related distress post-intervention. One explanation for this finding is that mediating variables, such as social schemata, exist within the appraisaldistress relationship, variables which were not targeted in the cognitive therapy trials. Areas for future investigation may include developing a greater understanding of mediating variables, such as social schemata, within the appraisal–distress relationship, carrying out interventions aimed at addressing these mediating variables using randomized controlled trial designs, and understanding the relationship between positive affect and voice appraisals.

# Ecological validation of the cognitive model of voices

Psychological Medicine (2012), **42**, 1013–1023. © Cambridge University Press 2011 doi:10.1017/S0033291711001802

**ORIGINAL ARTICLE** 

### Appraisals, psychotic symptoms and affect in daily life

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# Are voice appraisals related to distress?

Dependent variables (Multi-level linear regressions)	Voice intensity ratings (range 2-7) (ß)	Power appraisals (ß)	Control appraisals (ß)
1. Negative affect	.07	.22*	.05
2. Symptom distress	.62*	.36*	.35*

#### \* = p < .001

Power appraisals are the only variable related to negative affect; Power, control and intensity all related to symptom distress

### **Command Hallucinations**

- Are common: 53% of all voices
- Cause high levels of distress
- 48% of stipulate harmful or dangerous actions
- 33% comply with CHs
- 33% 'appease' or show minor compliance but remain at risk of later compliance

Schizophrenia Research 147 (2013) 163-168



Contents lists available at SciVerse ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres



### Predicting compliance with command hallucinations: Anger, impulsivity and appraisals of voices' power and intent

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## Can we reduce harmful compliance with commanding voices?



Therapy developed by MB to test out the perceived power of the voice by examining evidence for:

- a) the omniscience of the voice,
- b) the apparent ability of the voice to predict the future and deliver on its threats and
- c) the voice hearer's perceived lack of control over voice activity.

### **COMMAND** trial

 MRC 2007-2011. £1.8M inc treatment costs
 Recruitment and trial infrastructure: Mental Health Research Network
 Sponsors: University of Birmingham
 TSC Chair: Elizabeth Kuipers DMEC chair: Andrew Gumley

#### **COMMAND** sites



### The team

Max Birchwood ► CI ► Trial Manager Maria Michail Site leads and co-PIs: Emmanuelle Peters, Til Wykes, Nick Tarrier, Shon Lewis. Trainers: Max Birchwood & Alan Meaden Nadine Keen, Rob Aston, ▶ Therapists: Karen Barton, Lindsay Rigby, Elaine Hunter, Sandra Bucci, Laura Weinberg. Graham Dunn Biostatistician ► Health Economist Linda Davies Qualitative analysis : Liz England

### Design

Pragmatic comparison of CT+TAU vs TAU
Single-blind, ITT
Follow-up at 9 and 18 months from randomisation
Powered by pilot trial (2004, BJ Psych)
Up to 20 sessions, within 9 month envelope.

**Birchwood, et al**. "A Multi-Centre, Randomised Controlled Trial of Cognitive Therapy to Prevent Harmful Compliance with Command Hallucinations." *BMC Psychiatry* 11, (2011).,

### Inclusion criteria

'Harmful' compliance within last 9 months
 Continuous voices for last 6 months and at inclusion

Schizophrenia spectrum

### Primary outcome

Presence of one or more episodes of full compliance within follow-up period.

### Voice Compliance Scale

- 1. Neither appeasing nor compliant
- 2. Symbolic appeasement
- 3. Appeasement i.e. preparatory acts
- Partial compliance, one severe command
   Full compliance, ≥ one severe command

*Method*: Identify target behaviours based on previous 6 months + assess against this

*Sources:* Client and at least one other (case manager;relative/friend; hostel worker)

*Reliability :* Kappa= 0.78 (3 judges)

#### Antipsychotic medication.

All prescribed antipsychotic medication at baseline and 18months was recorded and converted to daily dose of Olanzapine equivalents, using the tables from the International Consensus Study of Antipsychotic Dosing<sup>26</sup>

### The results

In peer review

Commands and prevalence	Examples	Compliance	Appeasement
Harm self (n=119)	"Cut yourself"	Drinking bleach, cutting, slashing wrists, not taking	Making superficial cuts; mentally rehear
		medication and consequently becoming unwell,	slashing wrists
		walking in front of cars	
	"Drink bleach"		
	"Don't take your medication"		
Harm others (n=34)	"Attack someone"	Punching, hitting and pushing people; hitting children; beating up partner	Threatening to harm/attack others; planning out how to execute the attack
	"Hurt your children"		
	"Smash him/her over the head"		
Kill self (n=42)	"Take an overdose and kill yourself"	Attempted suicide in response to commands by taking an overdose; tied an iron cord around neck;	Collecting tablets and mentally rehearsi taking an overdose; visualizing and plan
		jumping in front of cars	committing suicide by jumping off a bric
	"Jump off the bridge"		
	"Commit suicide"		
Kill others (n=11)	"Stab your flatmate/sister"	Attempting to strangle a woman; attacked and grabbed his doctor by the throat	Mentally rehearsing kill others; threater kill others; buying a knife or axe and pla to kill someone
	"Kill your husband/wife with a knife"		
	"Strangle him"		
Destroy property (n=5)	"Burn down the flat"	Knocked things off the shelves of a shop; hit the door of a car; smashed things in the house	Mentally rehearsing buying petrol and setting fire to the flat
	"Smash the windows"	door of a car, sinastica anings in the house	setting me to the nat
	"Trash it, destroy it"		
Anti-social behaviour (n=9)	"Start a fight"	Shouting and swearing at other people; starting arguments with strangers/family	Respond to voices by saying "I will do it
	"Shout at them"		
Major social transgressions (n=14)	"Steal from a shop"	Stealing from shops; running naked in the street	Mentally rehearsing and planning how t steal from a shop
	"Rob these people"		
Day to day instructions (n=26)	"Eat/Don't eat"	Eat excessively/abstain from eating; not washing; not sleeping	Respond to voices by skipping some me appeasement by reassuring the voices t "I will do it later"
	"Don't wash"		
Threats (n=11)	"We are out to get you"	Setting self on fire; taking an overdose	Tie a rope around the neck and squeeze hard but then release
	"We will kill you"		·

#### Table 2. Voice commands, compliance and appeasement behaviour. Participants may have experienced more than one command.





### Consent, completion and follow-up

27/242 (11%) declined consent
83.5% completed the intervention
164/197 (83.2%) completed 18 month follow-up

#### Primary outcome: compliance to 18 months

# TAU CTCH+TAU 46% 28%

Odds ratio = 0.45 (95% confidence interval 0.23 to 0.88, p=0.021)

The estimate of the treatment effect common to both follow-up points was 0.57 (95% confidence interval 0.33 to 0.98, p=0.042)

#### Power of voices.

As with compliance, the treatment by time interaction was non-significant and we therefore report the effect of treatment that was common to the two follow-up times. For the VPD total the estimated treatment effect (adjusted mean outcome for the CBT group minus the corresponding mean for the controls) common to both time points was -1.819, 95% confidence interval, -3.457 to -0.181, p=0.03. For the VPD power differential item, the estimated treatment effect common to both time points was -0.52, (95% confidence interval, -0.849 to -0.185), p=0.002.

### Secondary and other outcomes

- Decline over time in both groups for PSYRATS distress, PANSS and depression/suicidal thnking (moderate effect size)
- No difference between groups in secondary outcomes at 18 month. Over 90% still hearing voices at follow-up, with same content
- High dose of Olanzapine equivalents 25.79 mg , including 28% receiving over 30mg/day. No change over time or diff between groups.

### Power as mediator of change?

#### 1. Baseline predictors of compliance.

### SUMMARY OF SIGNIFICANT EFFECTS (MOST SIGNIFICANT AT THE TOP)

BAVQ_OMN_BL	1.162835	.0625599	2.80	0.005	1.046463	1.292148	
BAVQ MAL BL	1.122031	.0509074	2.54	0.011	1.026562	1.226379	
CTQ_PH_AB	1.075583	.0316745	2.47	0.013	1.01526	1.139491	
CTQ_EM_AB	1.070611	.0298716	2.45	0.014	1.013636	1.130788	
CDSSBL	1.074172	.0315827	2.43	0.015	1.014021	1.137891	
VPDtotal_BL	1.099381	.0434456	2.40	0.017	1.017443	1.187917	
BSI_BL	1.045815	.0198582	2.36	0.018	1.00761	1.08547	
PSYRATS BL total							
	1.105033	.0469528	2.35	0.019	1.016735	1.201	
CTQ_EM_NEGL	1.065056	.0297298	2.26	0.024	1.008352	1.124949	
PKQ_BL	1.14062	.0664577	2.26	0.024	1.017528	1.278604	
Panss_pSubtotal_BL							
1	1.073939	.0379519	2.02	0.044	1.002072	1.150959	

Predictors of compliance:

BAVQ omnipotence, Voice power, childhood emotional and physical abuse

comp2	Odds Ratio	Std. Err.	Z	P> z	[95% Conf.	Interval]
treat	.4669009	.1641209	-2.17	0.030	.2344325	.9298901
_ICentre_2	.4419637	.197811	-1.82	0.068	.1838281	1.06258
ICentre 3	.4727166	.1910978	-1.85	0.064	.2140419	1.044006
BAVQ OMN BL	1.152059	.0624776	2.61	0.009	1.035888	1.281257
Panss pSubtotal BL	1.062934	.03849	1.69	0.092	.9901099	1.141114
	.0548342	.0575666	-2.77	0.006	.0070054	.4292084

#### **Backwards elimination (manually)**

All variables deleted except treat, Centre and BAVQ\_OMN\_BL.

Best predictors of compliance: BAVQ omnipotence and CBT 2. Mediation analysis.

When compliance is modelled as a categorical outcome in a probit analysis the coefficient of voice power is 0.77 (95% CI 0.50 to 1.04, p<0.001) which indicates an average marginal effect of 0.21, a 21% increase in risk of compliance with each point increase in VPD power (95% CI 0.16 to 0.26).

Mediation analysis conducted by Dr. Clare Flach

### Conclusions

- CBTp (CTCH) can substantially reduce further harmful compliance in those at high risk
- We don't know how effective it might be for the population of CHs
- Unclear whether power is only mediator
- High threshold on primary outcome means that it's likely to be valid (v visible behaviour etc)
- While cost-effectiveness analyses not yet conducted, nor more efficient delivery evaluated etc, the nature of the problem suggests it should be widely implmented.

### John Percival (1838) the first cognitive therapist in psychosis





Percival, John. A Narrative of the Treatment Experienced by a Gentleman, During a state of Mental Derangement; Designed to Explain the Causes and Nature of Insanity, and to Expose the Injudicious Conduct Pursued Towards Many Unfortunate Sufferers Under That Calamity. 2 vols. London: Effingham Wilson, 1838 and 1840. (A mad people's history of madness. Dale Petersen, Ed. Pittsburgh, PA, University of Pittsburgh Press, 1982) John Percival wrote a lengthy account of his experience of madness.

John Percival was one of twelve children of Spencer Percival the only English prime minister to have been assassinated....

When 27 he started seeing visions and hearing voices that told him to do strange things. His behaviour became so erratic that a 'lunatic doctor' was called who strapped him to his bed and gave him broth and medicine.... "Those voices commanded me to do, and made me believe a number of false and terrible things.

I threw myself out of bed - I tried to twist my neck, - I struggled with my keepers. When I came to Dr Fox's I threw myself over a style, absolutely head over heels, wrestled with the keepers to get a violent fall, asked them to strangle me, endeavoured to suffocate myself on my pillow, &c., threw myself flat on my face down steep slopes

... and upon the gravel walk, called after people as my mother, brothers, and sisters, and cried out a number of sentences, usually in verse, as I heard them prompted to me - in short for a whole year I scarcely uttered a syllable, or did a single act but from inspiration"

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### The cognitive therapy

...but this last was not till after repeated experiments of other kinds had proved to me that I might be deluded.

For I was cured at last, and only cured of each of these delusions respecting throwing myself about, &c. &c., by the experience that the promises and threats attendant upon each of them were false. When I had fairly performed what I was commanded, and found that I remained as I was, I desisted from trying it ...

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