



Transportability of parenting interventions across countries: How effective and why? A systematic review

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*Special thanks to: Knut Sundell, Swedish Board of
Health & Welfare*



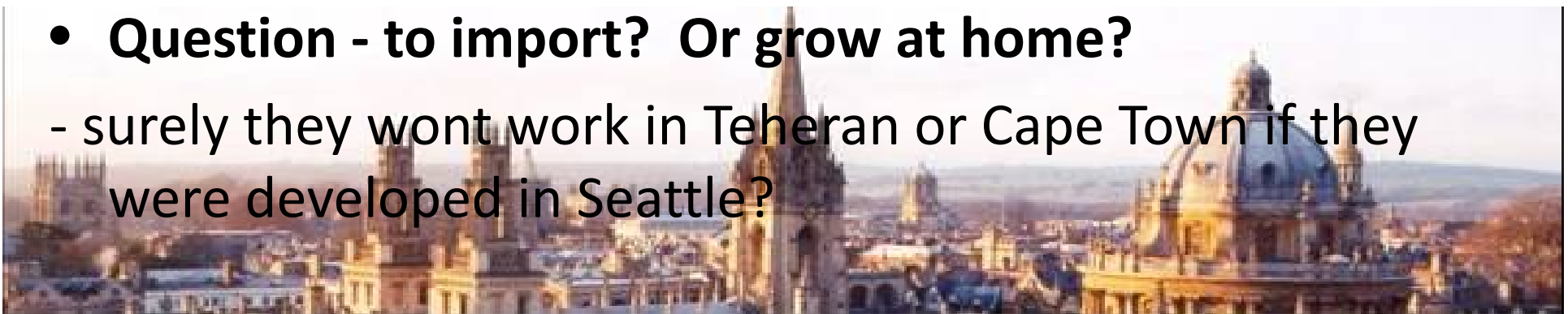
Background and justification 1



- Why parenting interventions? Strong evidence effective from developmental & experimental studies
- But rigorous trials and widespread implementation occurs in just a few rich countries
- Rising global concern re youth & family violence, child dev.
- Global policy response: recommend or implement parenting interventions to reduce violence & enhance children's life chances (WHO, UN, many govts worldwide)

- **Question - to import? Or grow at home?**

- surely they wont work in Teheran or Cape Town if they were developed in Seattle?



Background and justification 2



- Low & Middle Income Countries? Our systematic review found 12 RCTs of parenting interventions in LMICs: many transported; none had strong evidence of effects in origin country (Knerr, Gardner, Cluver, 2013, *Prevention Science*)
- High income countries: Evidence from RCTs shows many egs of successful ‘transportation’ (eg US to UK, Norway)
- But - some notable failures (eg RCTs of MultiSystemic Therapy, MST, US-to-Sweden, to Canada; Sundell, 2012, Littell 2006; Triple P Zurich + raises questions about overall effectiveness?).



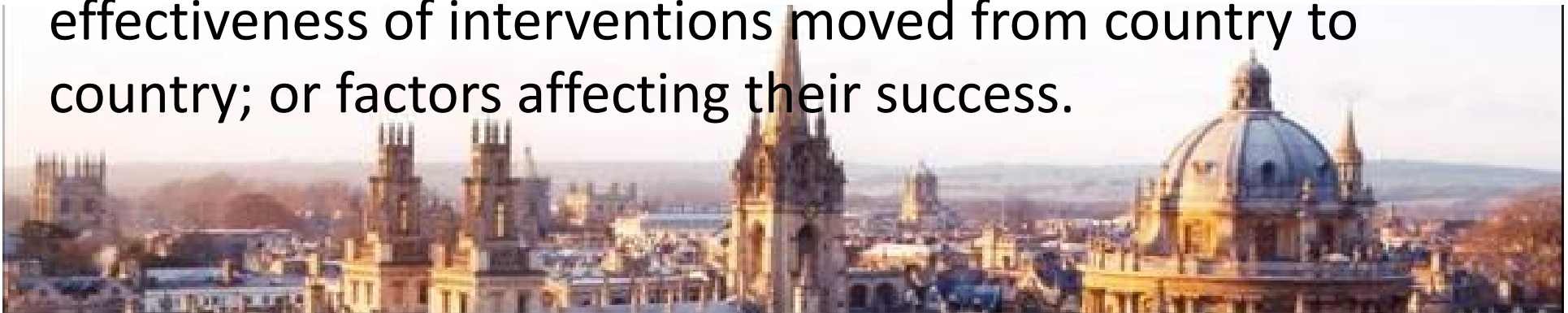
Key questions:



How transportable are evidence-based parenting interventions? Under what conditions? To invent or import?

Many possible ways to address these questions, much literature on frameworks for adapting interventions across cultures (eg Castro 2007; Sundell & Ferrer-Wreder (2012) & for transferring evidence (Bonell et al; Burchett et al (2011, 2012), Wang et al. (2005)

But no systematic review attempting to quantify effectiveness of interventions moved from country to country; or factors affecting their success.



Which factors affect transportability of interventions between countries?



First, consider key factors influencing effects in **any** trial:

- Quality and type of intervention (prior evidence of effects)
- Implementation factors: (eg fidelity, 'efficacy' setting etc)
- Risk of bias in study design (RCT, blindness, ITT, attrition, etc)
- Developer control; conflicts of interest (Eisner, 2009)
- Nature of comparison group - nothing? services as usual??

(NB program vs design factors here, at level of trial; next slide at level of country)



Second, consider factors that are especially relevant to ‘transported’ trials...

- Theory underlying intervention: are the problem & its risk & protective factors similar in the ‘origin’ and ‘transported-to’ countries? (e.g. harsh parenting)
- Cultural similarity of parenting
Cultural context (e.g. region: ‘western’ vs ‘non-western’; traditional vs. secular; survival vs self-expression – use data from World Values Survey)
- Extent to which intervention is specially adapted for new culture, formally or informally (*Castro, 2010; Kumpfer 2002*) -- or --
- Flexibility of the intervention (i.e. is adaptation built in at family level? *Webster Stratton, 2010; IY vs PCIT*)
- Policy & service-delivery context (macro/micro): fit, capacity, resources (*Sundell & Ferrer Wreder, 2012*), including context for comparator groups (TAU; *Sundell et al, 2008*); family and child poverty policy regimes

Focused research questions for systematic review



Q1. Are evidence-based parenting interventions effective for reducing child problem behaviour (age 3-10) when transported to countries other than those in which they were developed and tested?
(-- indicated prevention & treatment trials)

Q2. Which factors influence successful transportation or otherwise across countries?

-- measure cultural & policy regime factors at country level



Systematic review: 2-stage method



Stage 1:

Identified list of evidence-based parenting programs by searching high quality systematic reviews & recent RCTs

Programs that have been:

- tested in at least one RCT in ‘origin’ country
- effective for reducing conduct problems, effect size ≥ 0.5

Identified 20 ‘evidence-based’ programmes

14 from USA, 2 Australia, 1 each Canada, Germany, Sweden, UK



Systematic review: 2-stage method

Stage 2: Searched for trials of these programmes replicated in a different country

Criteria:

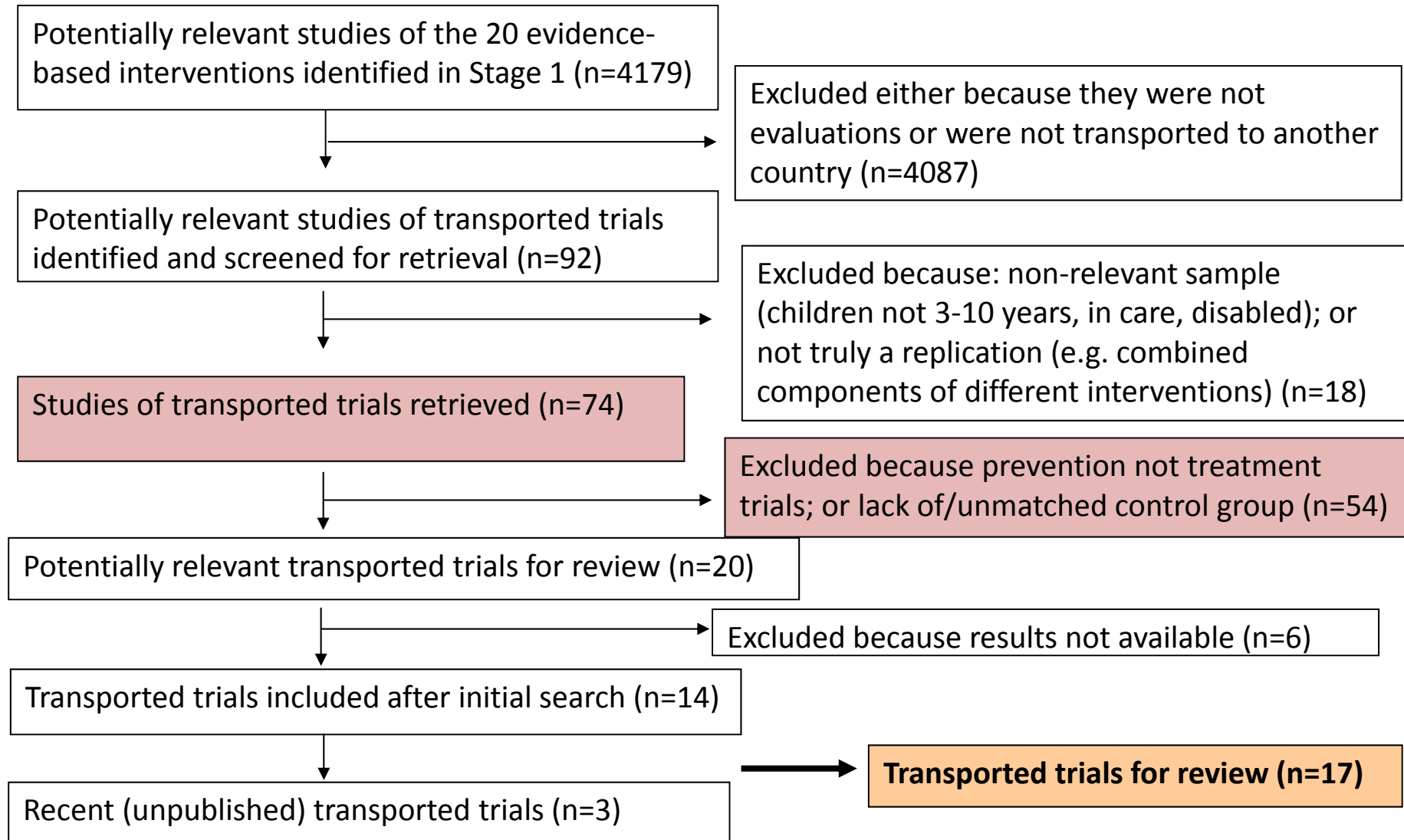
- tested in RCT, or non-randomised trial, well-matched groups
- aimed at reducing conduct problems in **kids 3-10, with identified conduct problems** (ie, by referred or cut-off score)
- Databases: usual + grey lit, LILACS, Global Health, hand-searching, extensive correspondence

Followed Cochrane handbook methods:

Applied inclusion criteria, appraised study quality, coded risk of bias, examined heterogeneity, conducted meta-analysis...

Results Stage 2

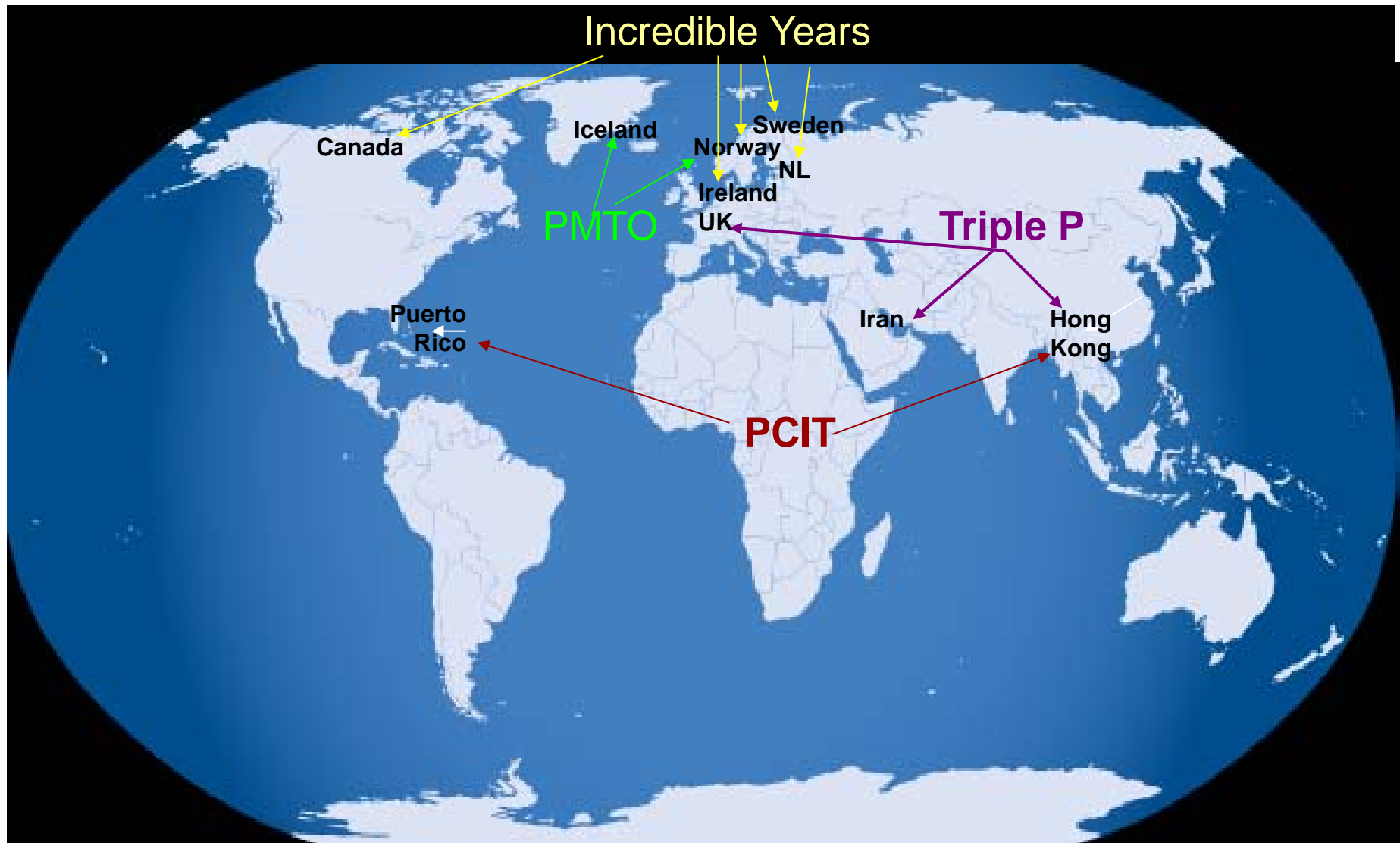
Flow chart: trials of E-B programmes replicated outside of origin country



The 17 'transported' trials test one of the following four programmes

Programme	Origin	Can be delivered to:
Incredible Years (IY)	Seattle, USA	Groups
Triple P (TP)	Brisbane, Australia	Groups or individual families
Parent Management Training Oregon (PMTO)	Oregon, USA	Groups or individual families
Parent-Child Interaction Therapy (PCIT)	Florida, USA	Individual families

Results stage 2: 17 trials- which programs, transported from US & Australia, to which countries?



Results Q1: Effect sizes in ‘transported’ trials for parent-reported child conduct problems

1558 parent-child dyads, 17 trials (14 RCT, 3 non-RCT), 10 countries

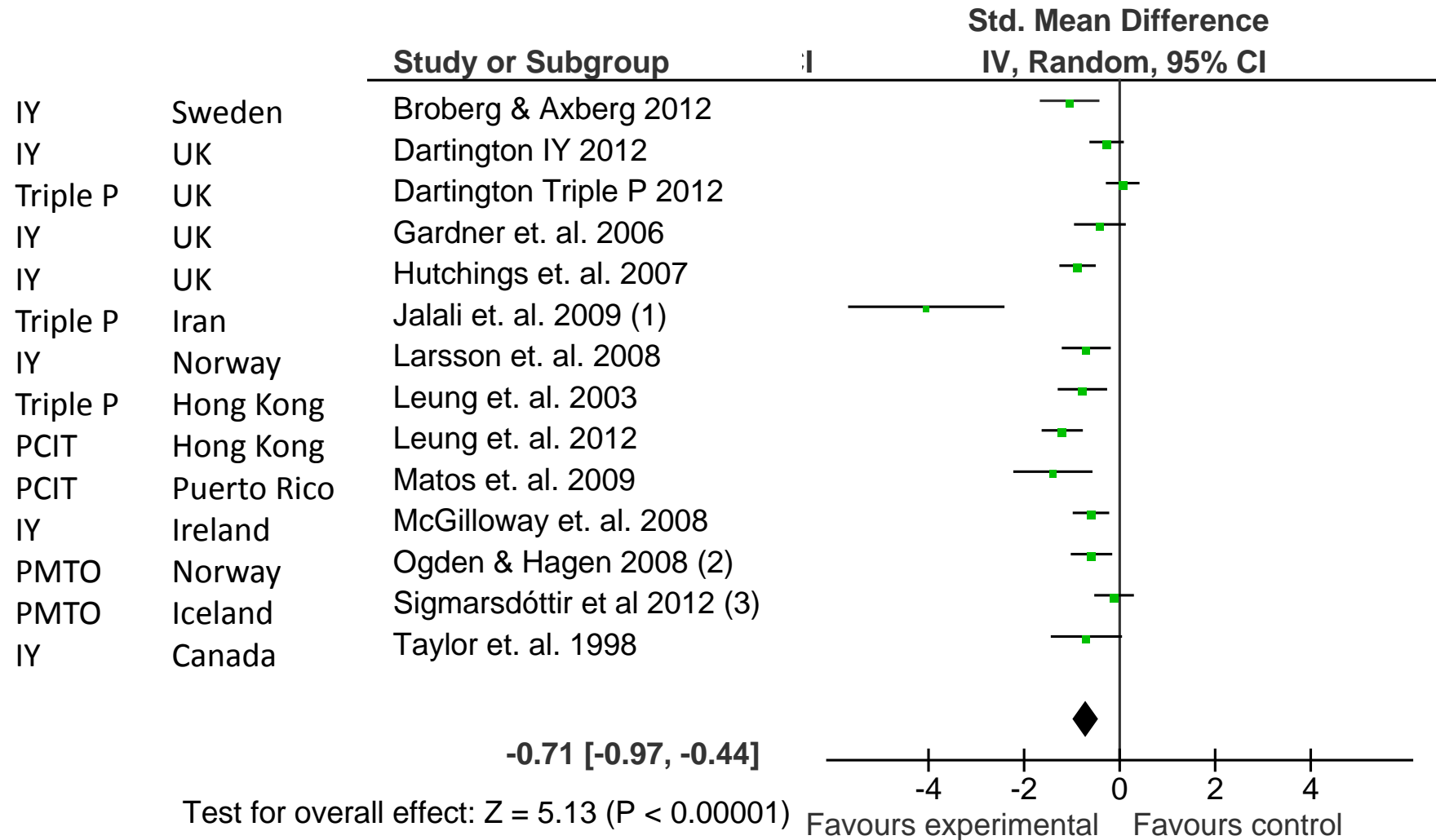
Incredible Years		PCIT		Triple P		PMTO	
<i>Trial country</i>	<i>ES</i>	<i>Trial country</i>	<i>ES</i>	<i>Trial country</i>	<i>ES</i>	<i>Trial country</i>	<i>ES</i>
UK: 2006 Oxford 2007 Wales 2001 London 2012 Birmingham	0.4 0.9 0.05* 0.4	Hong Kong: 2009 2012	2.5 2.1	Hong Kong 2003	0.8	Iceland	0.1
Norway	0.6	Puerto Rico	1.4	Iran	4.0	Norway	0.7
Sweden	1.05			UK 2012 – Birmingham	0.0		
Ireland	0.6	<ul style="list-style-type: none"> • Most in Anglo/North European countries (‘Western’/cold) 4 in other regions (Asia, Caribbean, Middle East). • All but 2 trials ‘independent’, defined as: developer is not a co-author (exceptions: Triple P HK; PMTO Iceland) 					
Canada	0.7						
Netherlands	0.12						

Effect sizes reflect change scores, and based on outcomes measured using Eyberg or CBCL questionnaires

*Primary outcome in this study was parent interview, ES for post-test scores 0.7 (Scott 2001)

Q1: Effect sizes for RCTs of parent training

14 RCTs, n=1258, significant large weighted mean effects ($d=0.71$, $I^2=79\%$)



Q2: Sub-group analyses to explain effect size differences:

1) Do effect sizes vary by characteristics of the intervention or samples?

Found no significant differences in effect sizes based on the following variables, coded **at level of each trial**:

- SES, parent education level, child age
- # of implementation fidelity measures used
- Intervention type & format (brand; delivery)
- Staffing qualifications and training
- Nature of comparison group (TAU, wait list)

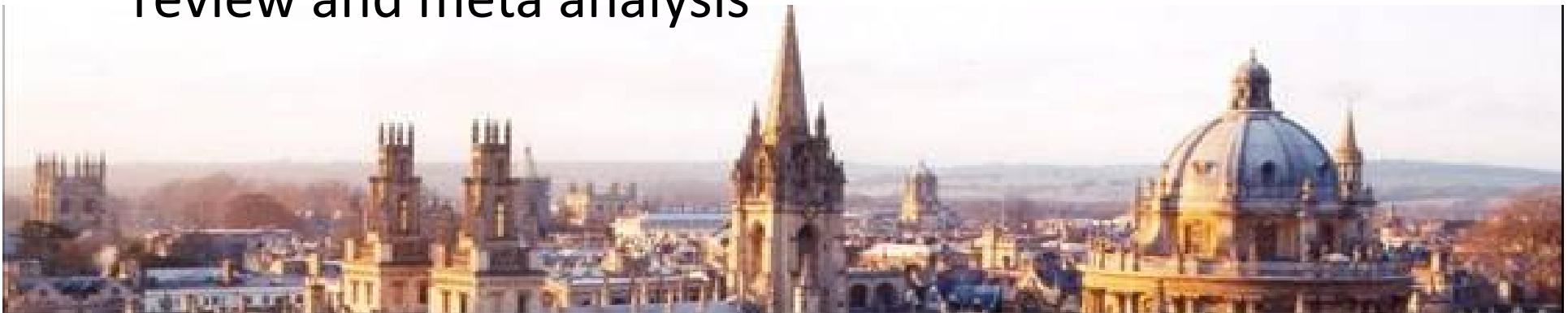
Ethnicity of participants could not be assessed due to limited data

Sub-group analyses to explain effect size differences:



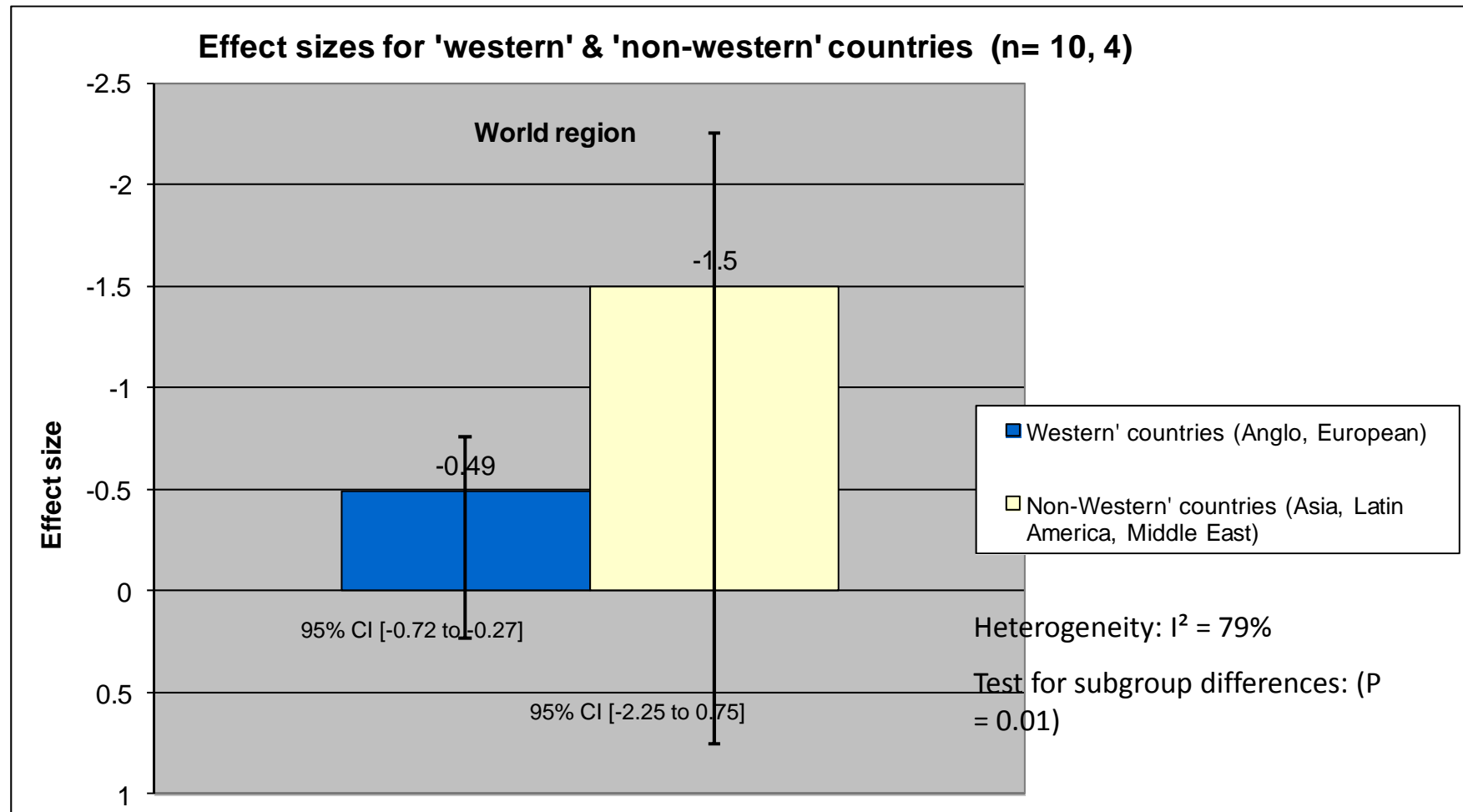
2) Do effect sizes vary by country-level factors?

- How can we meaningfully compare cultures/contexts?
- Sub-group analyses performed on measures of cultural / country differences – eg using World Values Survey
- Can also compare descriptively with the origin countries - USA or Australia - although not included in review and meta analysis



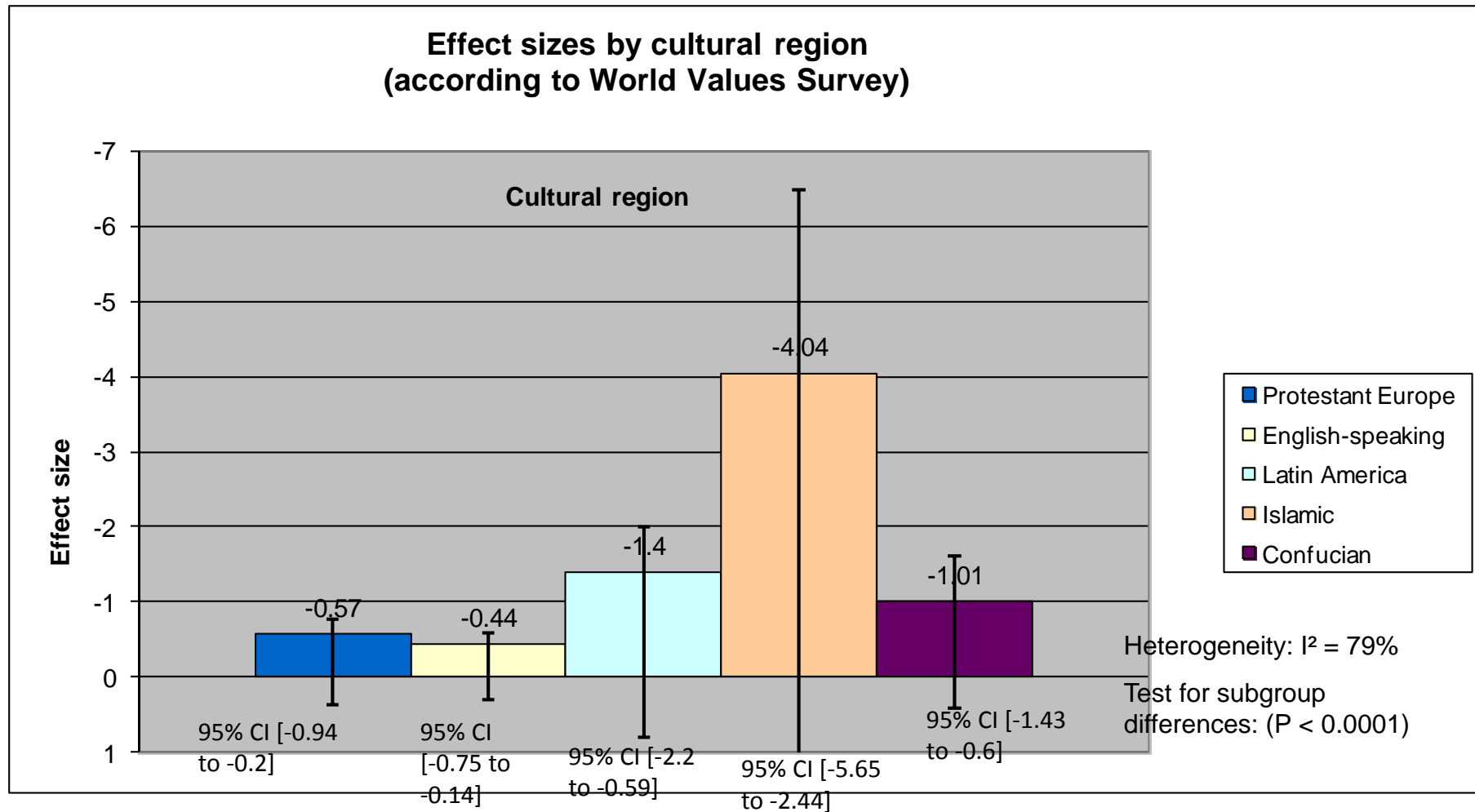
Do effects differ by country/culture?

(Same data as previous slide, but in graphical form)

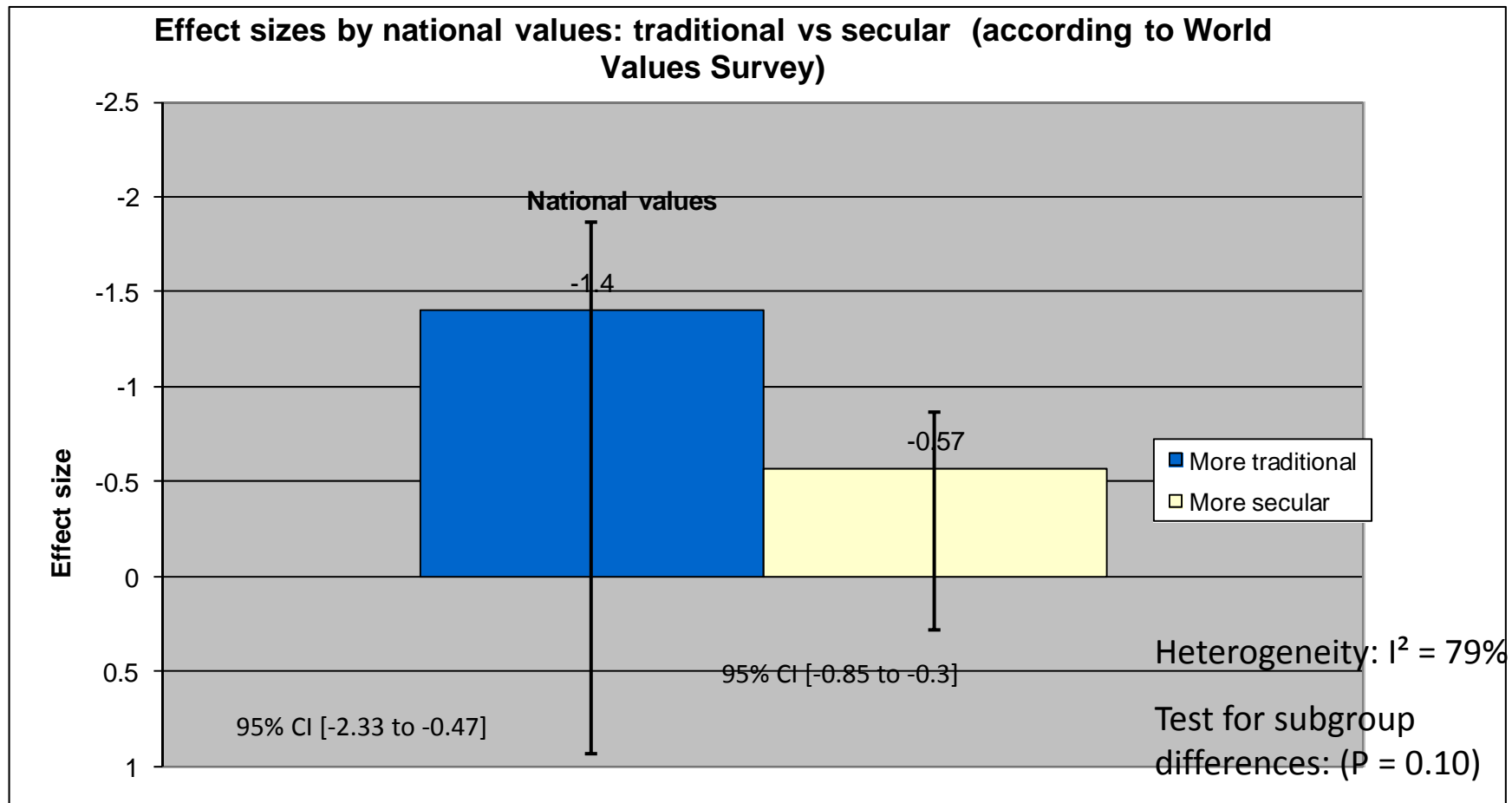


All interventions developed in 'western' countries (USA, Australia)

Do effects differ by cultural region?

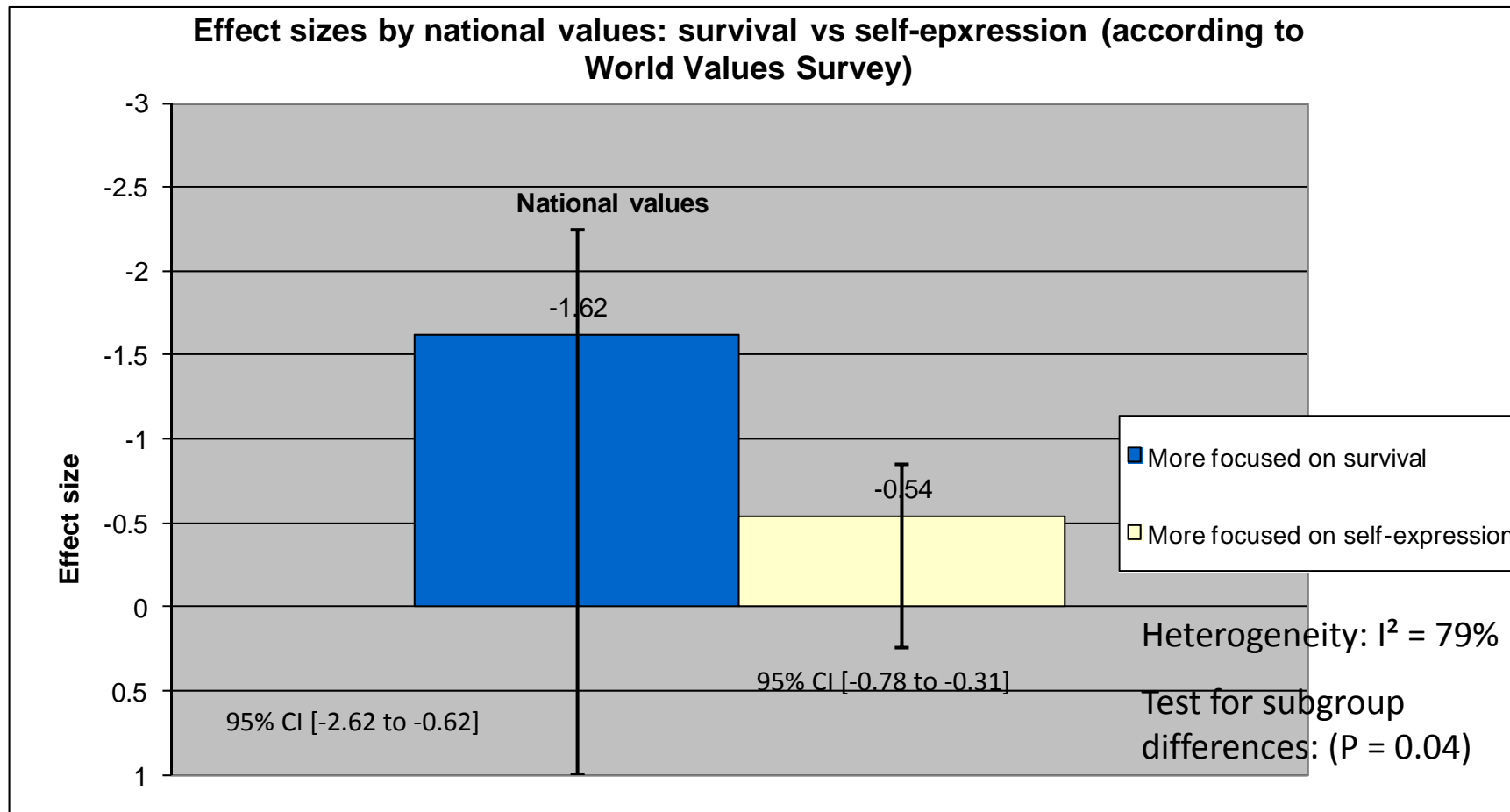


Do effect sizes differ if values are more traditional vs more secular?



Ireland, Canada, Puerto Rico, Iran 'traditional'. Interventions developed in traditional USA, medium Australia.

Do effect sizes differ if citizens are more focused on survival vs self expression?

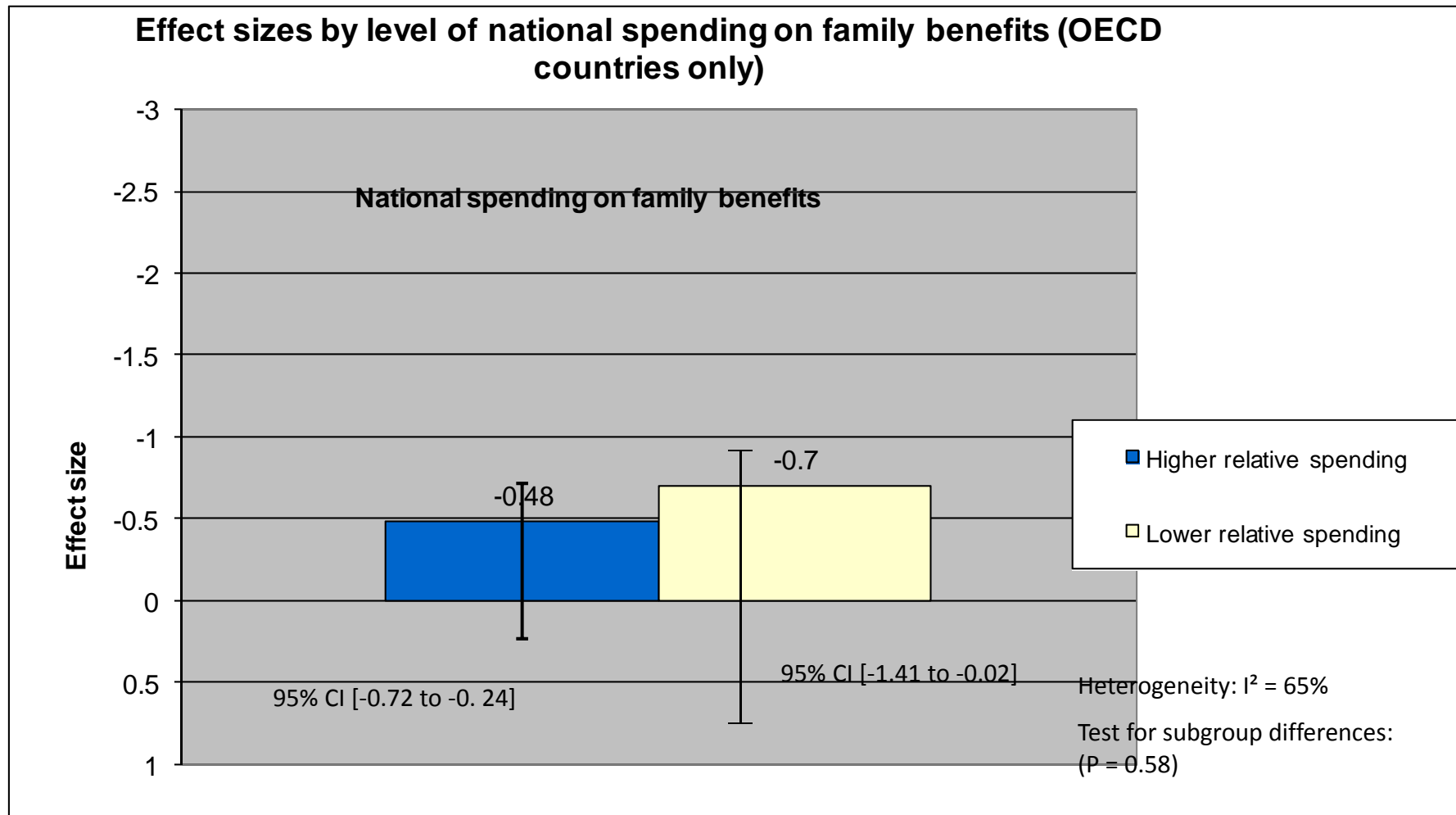


*Interventions developed in countries with high 'self-expression' focus (US, Australia).
Iran, HK low on self-expression*

Do effect sizes differ based on national family policies?

- No differences in effect sizes for countries with:
 - High vs. low public spending on family benefits (% of GDP, rank among OECD countries)
 - Number of weeks parental paid leave
 - % of children living in poverty (UNICEF; 'Western' countries only)
- The analysed trials were testing interventions which originated in USA, where:
 - spending on family benefits among lowest in OECD
 - zero weeks of guaranteed parental paid leave

Do effect sizes differ according to national spending on family benefits?



Summary of results: Question 1

- Found 17 transported trials of evidence-based parenting interventions for children with conduct problems in 10 countries
- Strong effect sizes overall in the transported countries, especially in RCTs: weighted mean ES = 0.71
- Broadly similar ES to those found in origin country and where developer much more often involved

Programme	Average ES in origin country (estimate)
IY	0.41 – 0.83
Triple P	0.63 – 0.77
PCIT	0.88
PMTO	0.43

Summary of results: Question 2

- Sub group analyses found no sig. effects of key trial level factors (eg, SES, child age, # fidelity measures, intervention brand)
 - Country level cultural dimensions:
 - Stronger effects in ‘non-western’ countries with more traditional values and lower levels of development
 - Programs work well in countries with different values re. family life (both among diverse range of transported-to countries, and between transported-to and origin countries).
 - Country level economic & family policy: no sig differences
- Striking that despite huge differences in cultural, policy economic context, successful ‘transportation’ was not only possible, but effects were no smaller (& often larger) where these country differences were greater.**

Limitations of review

- Much caution needed: 17 trials, but high heterogeneity; thus for many comparisons, power is low
- Some 'outlier' studies, mostly small, with high or unknown risk of bias; how best to deal with these?
- Used policy regimes, WVS to classify country-level characteristics - are there better ways?
- Thus, we see hypothesis testing as exploratory
- Strengths:
 - first systematic attempt to address this question
 - clear well-defined question and rigorous methods
 - could see results as presenting optimistic, counter-intuitive picture?
 - paves way for other reviews -which intervention to do next?

Questions for exploration

Why do these interventions work across cultures, despite wide differences in values?

If we take a programme to a new country or culture, will it need adapting/altering?

- Mixed results from other studies in literature; need more direct comparisons of adapted and non-adapted versions
- Perhaps adaptation is not needed as much as we might expect? Why not?

e.g. many parents' goals & wishes for their children are universal; same true for children's learning principles?

Information about extent of adaptation limited in studies
– but appeared to be little formal extensive adaptation



More questions to explore...

- Transportability and need for adaptation also depend on the program?
- Many are quite culturally flexible, eg Family Check Up, Incredible Years:
 - developed & tested in multi-cultural settings - open to a range of family traditions & values.
 - strong focus on parents defining own goals, generating parenting principles & testing own solutions; staff training rewards adaptation to clients' own situation
 - Also, local professionals adapt naturally;
 - where programs are not very flexible, perhaps didactic approaches are suited to some cultural contexts? Effects were very strong with less 'flexible' program, PCIT.

- Thank you!



Spare slides



References to included studies 1



Incredible Years n= 9

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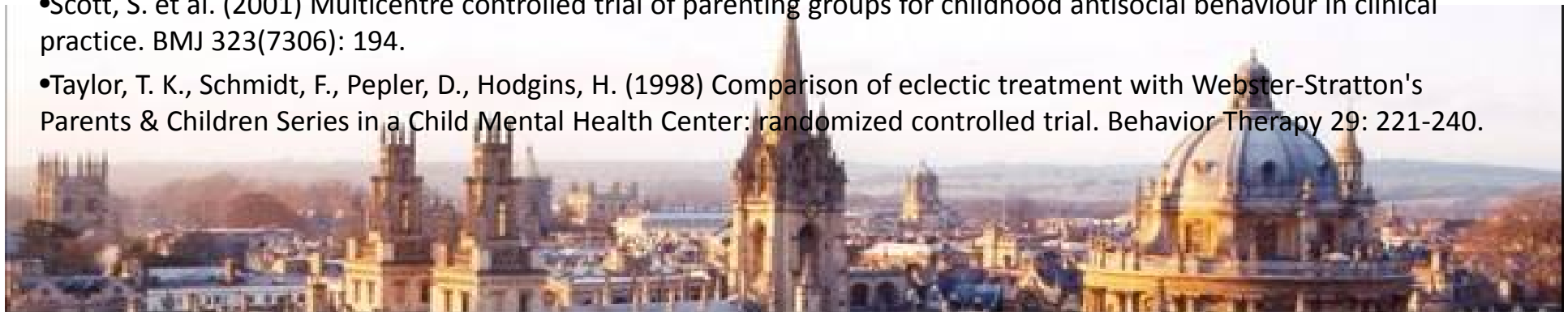
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References to included studies 2



Triple P n=3

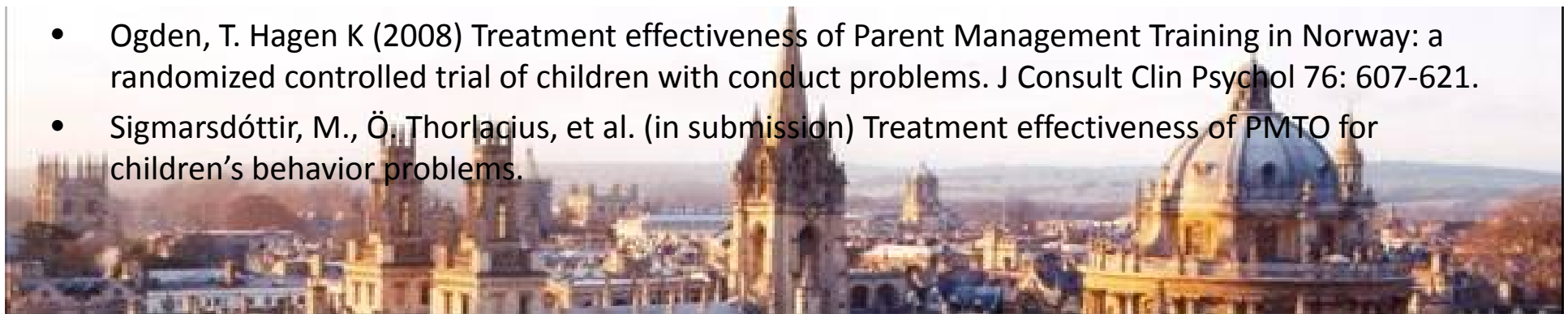
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- Jalali, M., M. R. Shaeeri, et al. (2009) The Effects of Triple P-Positive Parenting Program on 7-10 Year old Children with Oppositional Defiant Disorder (ODD). Daneshvar Raftar 1(34): 29-38.
- Leung, C., M. R. Sanders, Leung S et al. (2003) An outcome evaluation of the implementation of the Triple P-Positive Parenting Program in Hong Kong. Fam Process 42(4): 531-544.

PCIT n=3

- Leung, C., Tsang, S. et al. (2009) Effectiveness of Parent—Child Interaction Therapy (PCIT) Among Chinese Families. Research on Social Work Practice 19(3): 304-313.
- Leung, C. & S. Tsang (2012) Parent-Child Interaction Therapy (PCIT) Service in Hong Kong: An efficacy and effectiveness study report. Hong Kong, Tung Wah Group of Hospitals.
- Matos, M., Bauermeister, et al. (2009) Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: pilot efficacy study. Fam Process 48 232-252

PMTO n=2

- Ogden, T. Hagen K (2008) Treatment effectiveness of Parent Management Training in Norway: a randomized controlled trial of children with conduct problems. J Consult Clin Psychol 76: 607-621.
- Sigmarisdóttir, M., Ö. Thorlacius, et al. (in submission) Treatment effectiveness of PMTO for children's behavior problems.



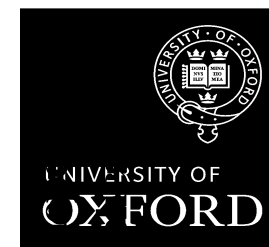
Risk of bias table for 14 RCTs

Adequate sequence
generation?

Allocation
concealment?

Blinding of
assessors?

Incomplete outcome
data addressed?



In re

Study

Country

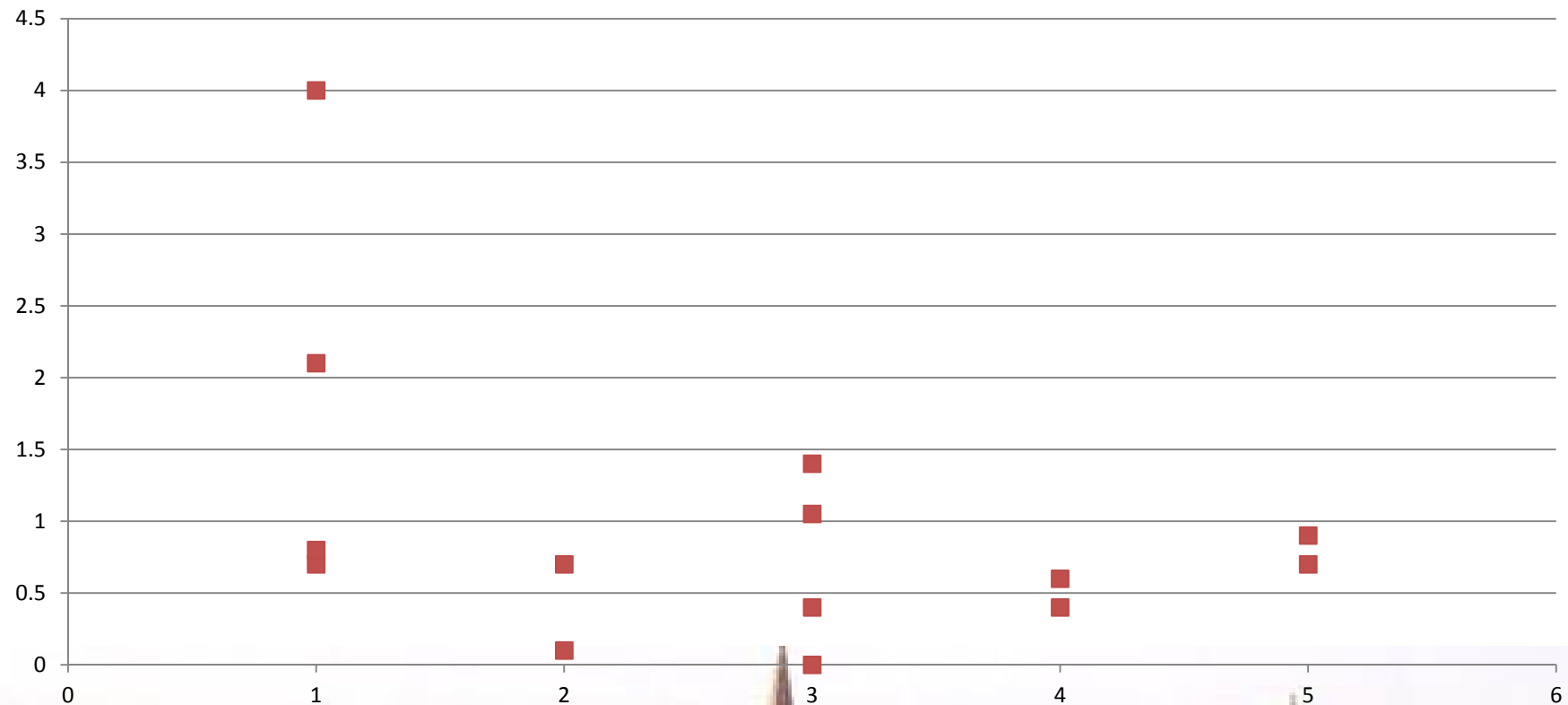
RANDOMISED TRIALS

Axberg & Broberg, 2012	Sweden	+	?	-	+	+
Dartington - IY, 2012	England	+	?	?	+	+
Dartington - Triple P, 2012	England	+	?	?	+	+
Gardner et al, 2006	England	+	+	+	?	+
Hutchings et al, 2007	Wales	+	+	+	+	+
Jalili et al, 2009	Iran	?	?	?	?	+
Larsson et al, 2008	Norway	?	?	?	-*	+
Leung et al, 2003	Hong Kong	?	?	?	+	-
Leung et al, 2012	Hong Kong	?	?	?	-	+
Matos et al, 2009	Puerto Rico	+	?	?	+	+
McGilloway et al, 2008	Ireland	+	+	+	-	+
Ogden et al, 2008	Norway	+	+	+	+	+
Sigmarsdóttir et al, 2013	Iceland	?	?	+	+	-
Taylor et al., 1998	Canada	?	?	+	?	+

Risk of Bias by Effect Size:

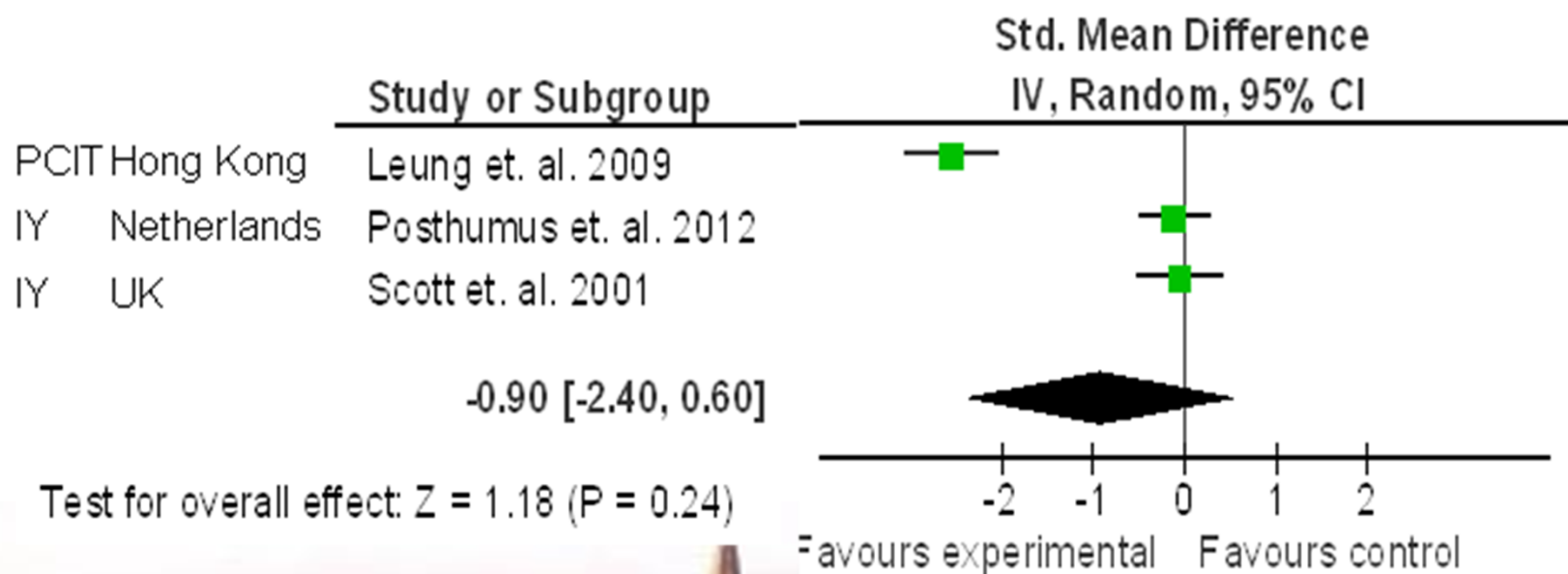
Horiz axis: higher number = lower risk of bias (score = number of +’s in risk of bias table, poss range 0-5). Vertical axis = trial effect size.

N =14; $r=-.41$ (if remove big outlier, $r= -.30$, if remove 2 outliers, $r=.08$)

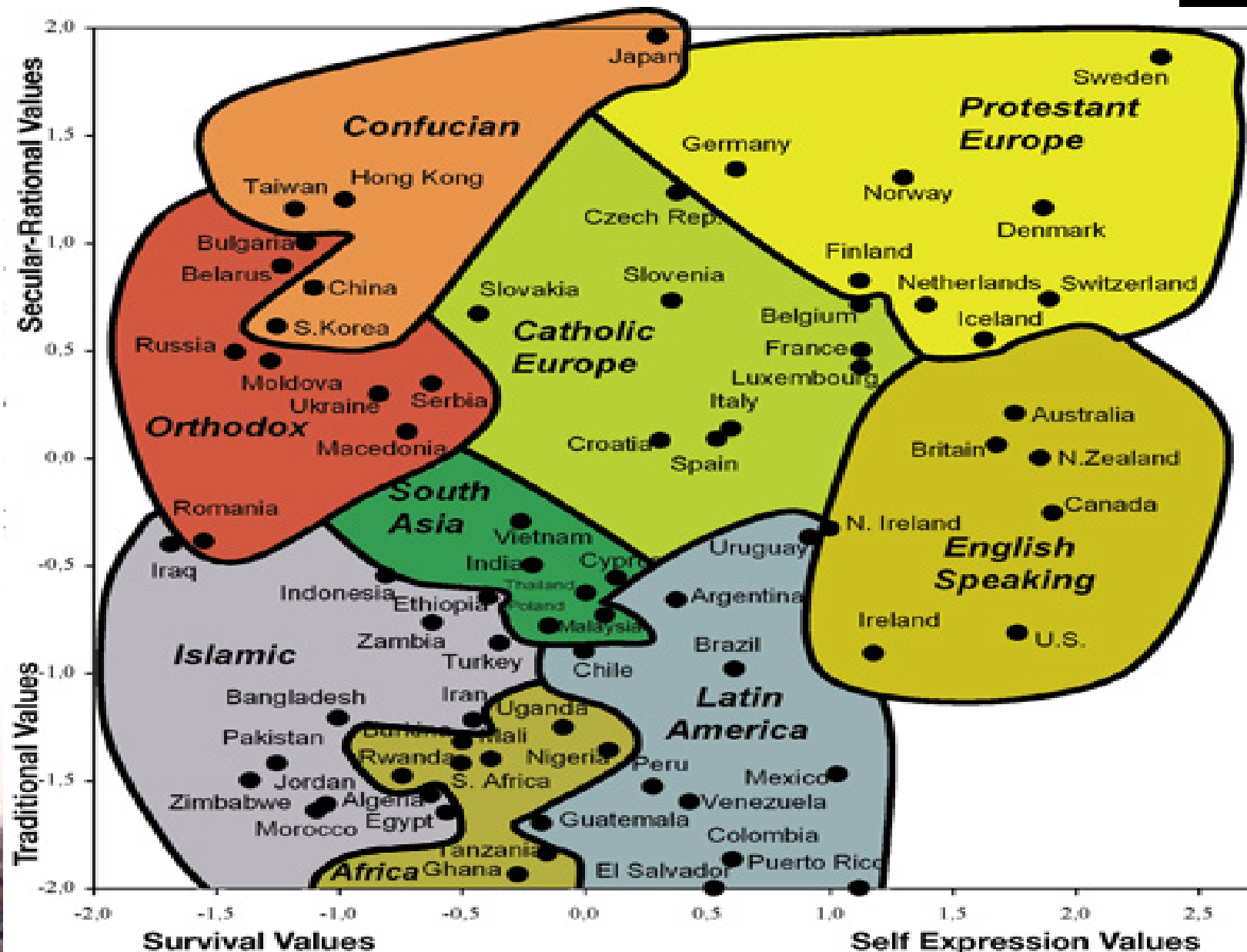


Effect sizes for non-randomised trials

3 non-randomised studies, $n=300$, **non-significant** large effects
($d=0.90$) of parent training (heterogeneity, I^2 97%)



World values survey map



Subgroup analyses 2:

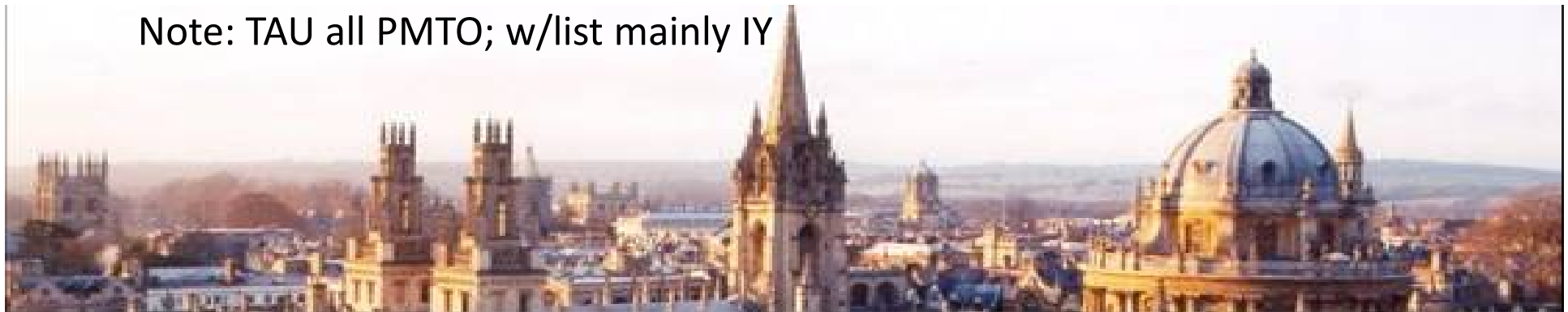
Nature of comparison group



Control condition	# trials (N)	Mean effect size
Wait list	8 (620)	0.76 (p=.00)
Treatment as usual	2 (199)	0.35 (ns)

No significant differences in mean effect size (RCTs) by whether the comparison group was wait-list or treatment as usual

Note: TAU all PMTO; w/list mainly IY



% of children in relative poverty, UNICEF data



Range 4.7% (Iceland) to 13.3% (Canada),
4% - 9% = 'lower child poverty' Iceland Norway
Sweden Ireland

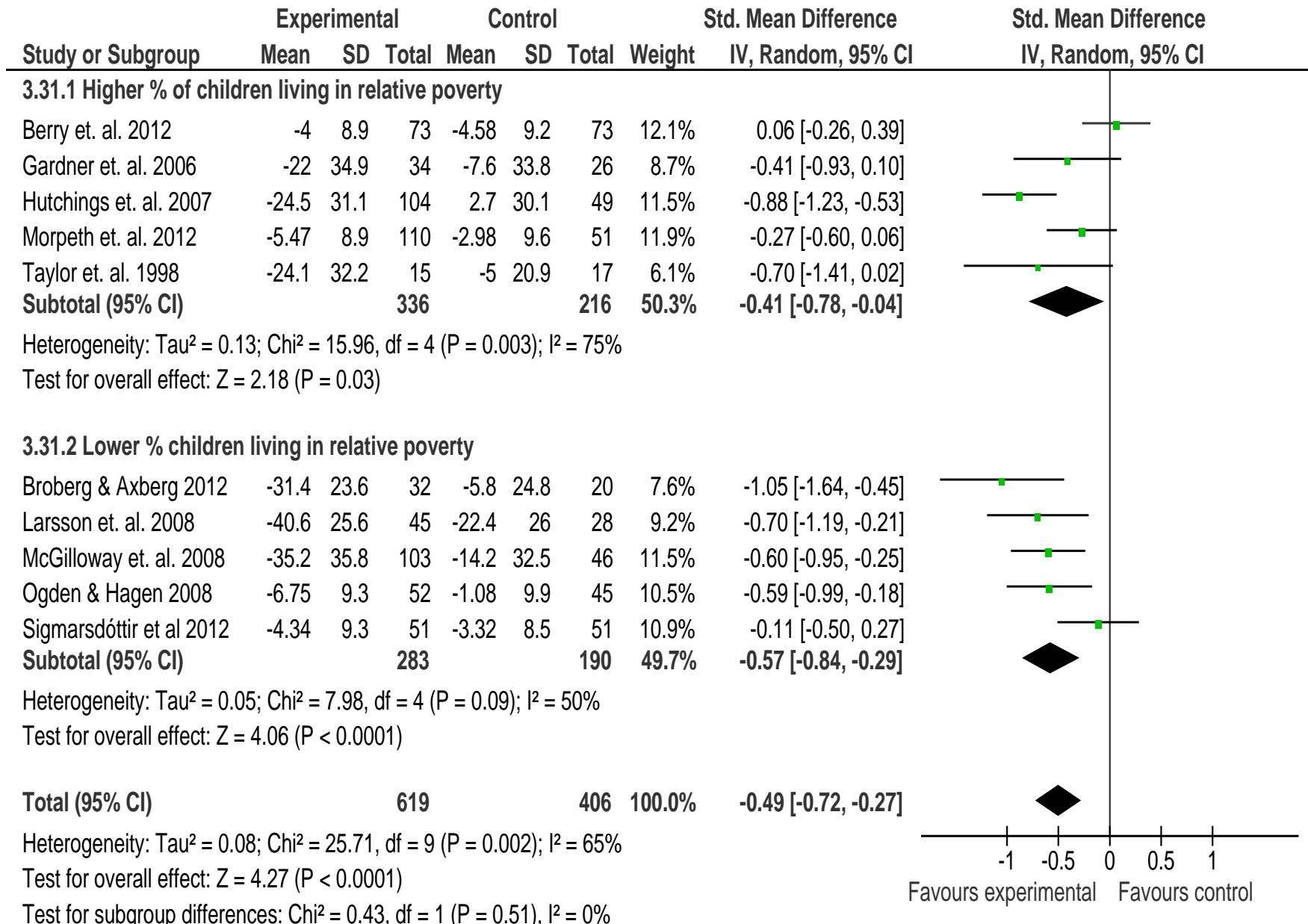
9% - 14% as higher – UK, Canada (also US, Aust)

- Ireland 8.4%, next closest UK 12%,
- Origin countries: US 23%, Australia 11%

http://www.unicef-irc.org/publications/pdf/rc10_eng.pdf



high vs low child poverty rates



Average effect sizes based on Hofstede scores



For parenting programmes developed in competitive, individualistic societies (US, Australia), sub-group analyses showed that:

In societies which are ...	Including ...	The average effect size was ...
More collectivist	Hong Kong Iran	2.3 (ns)
More individualistic	Northern Europe	0.70 (p=.000)
More masculine (competitive)	HK, UK, Iran, Canada	0.86 (p=.000)
More feminine (cooperative)	Norway Sweden	0.72 (p=.000)

No data available for Iceland, Puerto Rico

Do effects differ by culture/country?

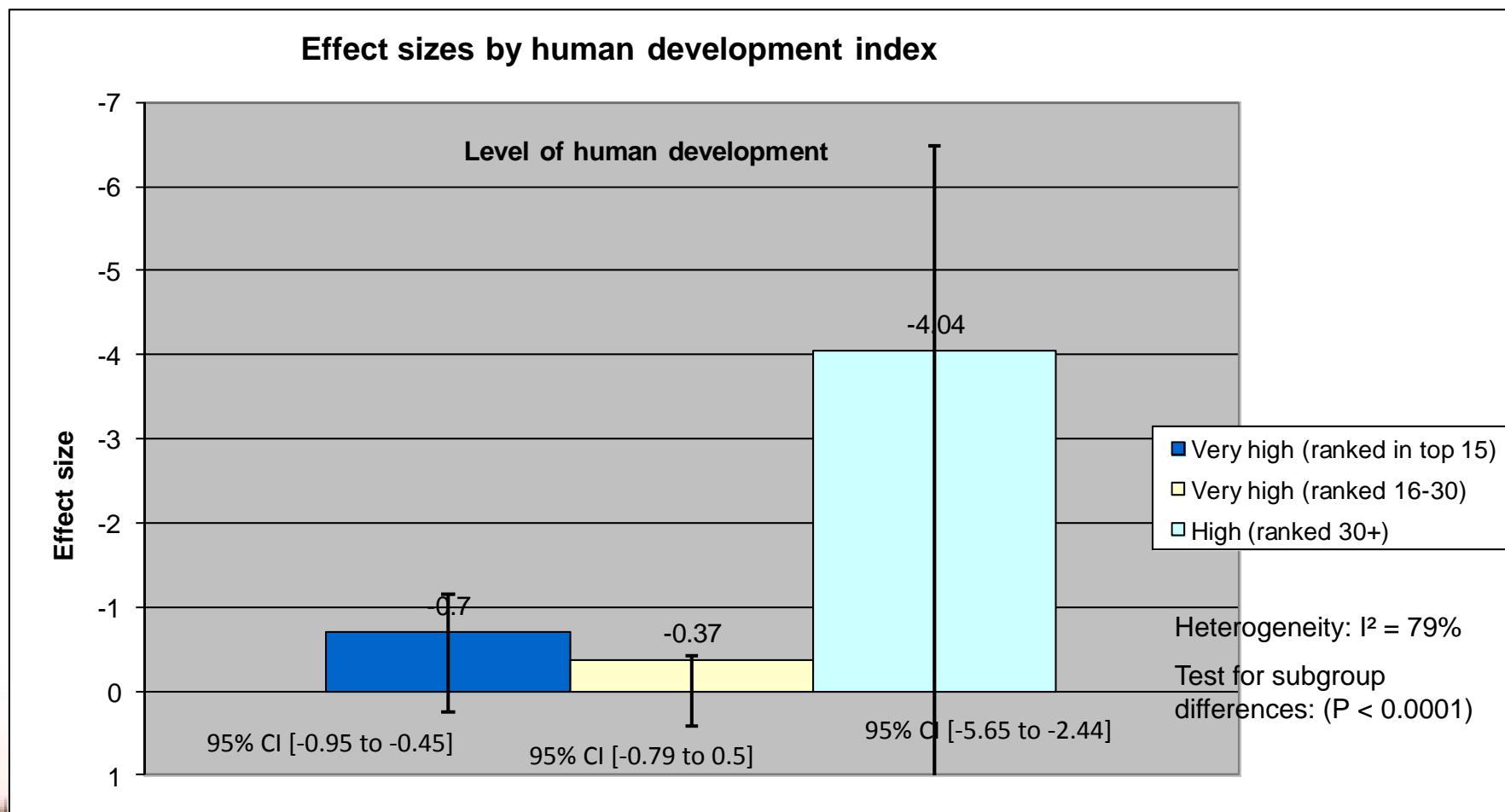


Statistically significant differences in effect sizes of studies by region, but difficult to draw conclusions (RCTs only)

Country/regional group	# trials (N)	Mean effect size (sig)
'Western' or Anglo/European countries (Europe & N. America)	10 (1025)	0.49 ($p < 0.0001$), $I^2 = 38\%$
Asia (Hong Kong), Latin America (Puerto Rico) and Middle East (Iran)	4 (233)	1.5 ($p < 0.0001$) $I^2 = 87\%$



Do effects differ by level of human development?



All interventions were developed in countries ranked in the Very high (top 15) category (USA, Australia)

Thinking ahead to implications of study.....



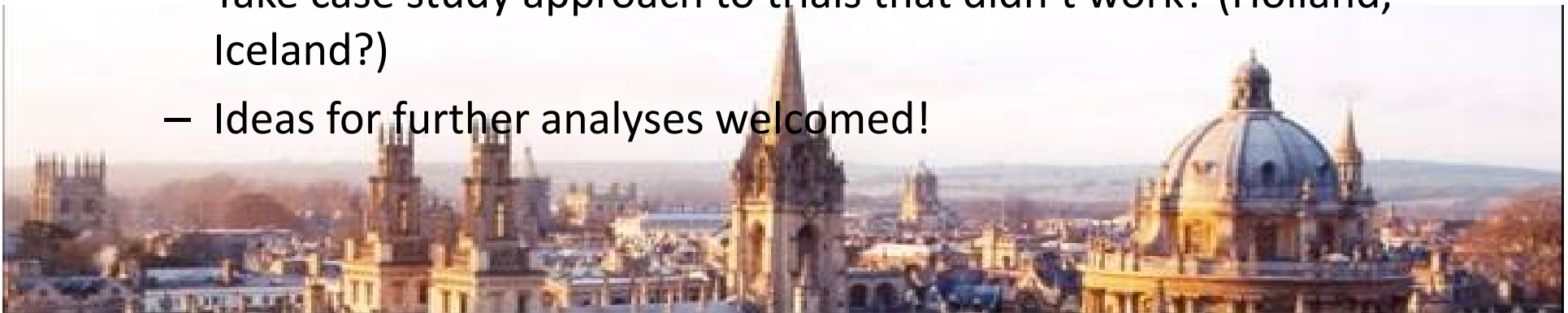
- Here picking one discrete question; implications potentially wider than parenting interventions
- Apply methods to other problems, interventions? Link future studies to form suite? Universal prevention; teen delinquency response..
- Factors that affect transferability of evidence across contexts might differ hugely by type of intervention. (what would you expect for your area?)
- Implications for understanding cultural, country, context differences in intervention response and implementation success; comparative approaches?



Findings worth exploring further



- Programmes developed in very individualistic, ‘secular’ societies (USA, Australia) seem to work as well in cooperative Scandinavia & *better* in more ‘traditional’ Asia
- Programmes seemed to work as well in countries in very different regions of the world, with different comparison conditions, family policy regimes & levels of child poverty
- Possibilities:
 - Need to link to literature on frameworks for transportability
 - Take case study approach to trials that didn’t work? (Holland, Iceland?)
 - Ideas for further analyses welcomed!



- Maybe other interventions much more context bound? (Youth justice? Alcohol interventions?)

Does their effectiveness evidence transfer across countries?

Other potential pools of trials?

.. But parenting surely most context and culture bound?

