

Rectifying the 'quantitative deficit' in social science. A modest proposal!




THE UNIVERSITY
OF AUCKLAND

NEW ZEALAND

Te Whare Wānanga o Tāmaki Makaurau

Peter Davis and colleagues
COMPASS Research Centre [www.compass.auckland.ac.nz]

Public Seminar, VUW
Institute of Policy Studies
Friday 12 November 2010

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What I am NOT saying is

- + All social science disciplines are equally afflicted by this “deficit”
 - *Psychology, Economics, Management (?) seem to be OK*
- + There is nobody with quantitative skills in any department
 - *There are notable exceptions, but this is the case in some departments*
- + Quantitative skills must displace qualitative ones
 - *I feel that students need both sets of skills – they should be “ambidextrous”!*
- + Students should do courses taught by statisticians
 - *This would scare them off and they would miss the substantive issues*

What I AM saying is

- + We are nearing the point where graduates lack crucial skills
- + Our disciplines are in danger of becoming one-dimensional
- + Unless we take this seriously, others will gladly take the work!



- Crisis in social science QM – John MacInnes
 - ⊕ A view from the United Kingdom

- QM teaching and learning – Louise Corti
 - ⊕ A UK response from the Economic & Social Data Service (ESDS)

- Our response at Auckland
 - ⊕ Using existing data sets
 - ⊕ **Five** hands-on lab sessions (SPSS)
 - ⊕ Student case studies with substantive content

- Where to from here?

The crisis in social science QM

The [substantive course] lecturers never mention anything about stats in our lectures at all. They don't relate any of it, that's not their job to relate stats.

Student comment, Southampton Pilot Project focus group

I've got a bit of a block against it. But it's not hostility, it's just I don't feel all that wonderfully competent in that area myself.

Staff comment, Southampton Pilot Project focus group

John MacInnes

University of Edinburgh

Key Weaknesses

Fragile teaching base (10-15% of staff in best depts, *much* lower overall)

Absence of quantitative evidence and analysis in non 'methods' options

Insufficient curriculum time in specialist QM options

Insufficient attention to **secondary analysis** and **sourcing data**

Damning comments in **Int'l Benchmarking Review**

Little attention to '**falsifiability**' in qualitative methodology

Results

Marginalization of quantitative approach in general

Polarization between small, highly skilled, busy group and majority with few or no skills

Polarization of QM courses delivered with/out conviction?

Student '**resistance**' to quantitative work (?)

Unacceptably **low graduate skills in QM**

Zero graduate *confidence* in **applying** QM skills

Abysmal average staff knowledge & use of QM

Priorities for support

More staff with basic QM skills (workshops)

Develop QM teaching network

Placements & prizes for secondary data analysis

Management of *existing* web resources

Appropriate new resources

Roll out pilots *with commitment to curriculum change*

ESDS QM teaching and learning materials

Louise Corti
RSS, 27 October 2010



The Economic and Social Data Service

- UK's national onestop data portal for accessing an extensive range of key economic and social data
- offers support for the reuse of data across the research, learning and teaching communities
- sponsored by the ESRC and JISC as core infrastructure
- Partners: UK Data Archive, CCSR, MIMAS and ISER, all having QM data expertise

Use of our data by students

- we know few students use advanced quantitative methods in their dissertations despite being taught the skills
- applicants for 'data' jobs often claim they can use SPSS, but when asked the difference between a variable and value label..they haven't a clue!
- in the UK lots of rich survey data are available, but confidence in handling data independently is lacking

Supporting ESRC's QM aims

- help rectify skills deficit in quantitative research methods across social sciences. BUT also applies to qualitative data skills!
- students must spend more time analysing data than collecting them. Not just in methods courses but in substantive subjects too
- ESDS has been refocusing some of its efforts to help the teaching & learning data communities confront data literacy
- our introductory resources can meet the needs of school students through to life long learners
- and we can help promote secondary analysis and re-use as a method
- we deem core data management skills to be essential, even if they seem 'mundane'

“Quantitative Deficit” – UK contributions



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 Any questions at this stage?



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Data service functions



NZSSDS
Social Science Data Service

- Preserving and making available research data sets & metadata
- Promoting 'Enhanced Publications' and related knowledge products
- Hosting teaching data subsets and associated workbooks



NZSSDS

Social Science Data Service

Preserving and making available
research data sets & metadata

Data holdings



NZSSDS
Social Science Data Service

- Almost 50 data sets archived including
 - New Zealand Election Study data (1987–2005, soon to add 2008) – Professor Jack Vowles
 - International Social Survey Programme data, New Zealand (1991–2007) – Professor Philip Gendall
 - World Internet Project for New Zealand (2007) – Professor Allan Bell
 - Health data sets (adverse events, oral health care, primary care, sexual health) – Professor Peter Davis



NZSSDS
Social Science Data Service

**Hosting teaching data subsets and
associated workbooks**

Teaching resources



NZSSDS
Social Science Data Service

- Why are these needed?
 - Shortage of quantitative skills among social scientists
 - Resources are expensive / time consuming to produce
 - Part of COMPASS contribution to social science community
- What are they?
 - Teaching workbooks
 - Teaching datasets

Teaching resources



NZSSDS
Social Science Data Service

- Teaching workbooks
 - Two produce so far
 - > ISSP – gender roles module
 - > NZES - analysis of election data
 - May be in the pipeline
 - > MOJ Crime and Victimization Survey
- Teaching datasets
 - Two being produced
 - > ISSP
 - > NZES

'Quantitative' Sociology

A story in five lab sessions

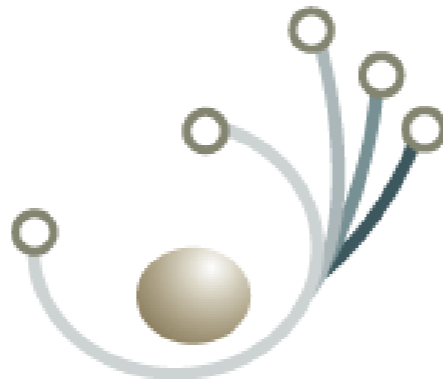
Martin von Randow



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NZSSDS

Social Science Data Service

Overview

- Taught as quantitative stream of SOCIOL 701;
also available standalone as SOCSCRES 702
- Computer-assisted learning – lab session after lecture, every second week
- Aimed to introduce social sciences students to quantitative research and data analysis
- Built up a suite of analysis skills in SPSS/PASW

Data

- We made use of survey data held on our own New Zealand Social Science Data Service
 - Students accessed metadata; downloaded and explored SPSS data files
- International Social Survey Programme (ISSP)
 - One survey per year with rotating topics; 1991–2009 now on NZSSDS, used in labs & for assignments
 - Topics including: Family & Gender Roles; Religion; Social Networks; Citizenship; Leisure Time & Sports

Progress

- We used SPSS/PASW software in teaching for its user-friendly menu-driven workflow
 - Analysis skills were built up over time
 - › Coding & recoding variables
 - › Sorting & filtering data
 - › Producing one-way frequency tables
 - › Producing cross-tabulations
 - › Producing correlations & similar
 - › Performing linear regression & binomial
- Manipulating
- Exploring
- Analysing

Learning

- Observing differences teaching students in statistics (ST) vs in social sciences (SS)
 - ST: students interested in techniques;
SS: students interested in topics
 - ST: data for assessment set up with 'things to find' to best show off techniques;
SS: data for assessment can be open – students will find interesting things for themselves

“Quantitative Deficit” – Auckland response



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❑ Any questions at this stage?

Friendship & Friendship?

An Analysis of Gender-Specific Concepts of 'Friendship' and 'Close Friends'

Annika Richterich

Social Networks II: Data Set

Phil Gendall 2001:

International Social Survey Programme, New Zealand.

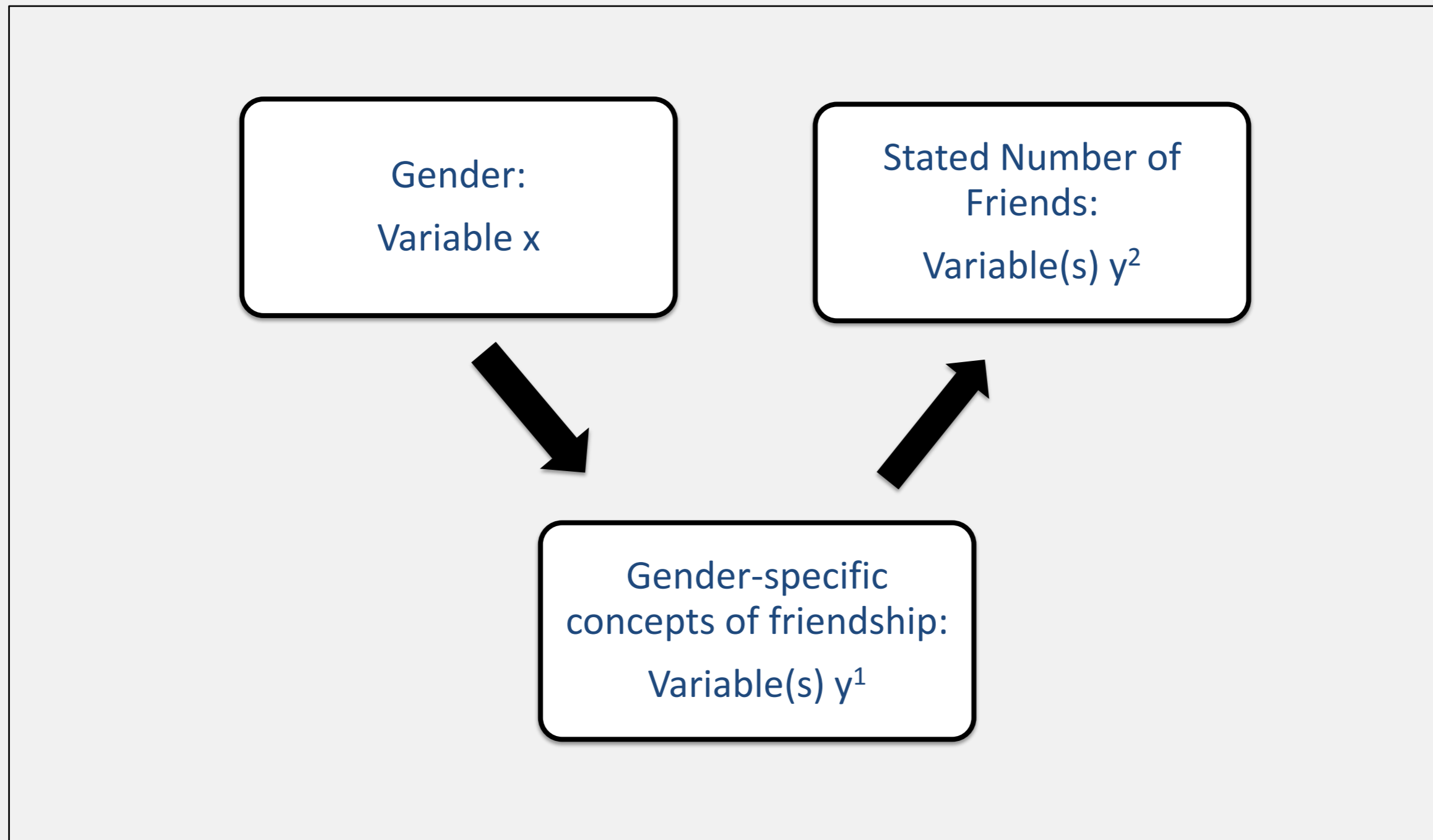
Social Networks II.

Auckland: New Zealand Social Science Data Service,
The University of Auckland.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	487	42.5	42.6	42.6
	Female	657	57.3	57.4	100.0
	Total	1144	99.8	100.0	
Missing	NA, refused	2	.2		
Total		1146	100.0		

Table: Gender distribution in the data set of the *Social Networks II*-study for New Zealand

Social Networks II: Report



Attitudes toward Immigration in New Zealand



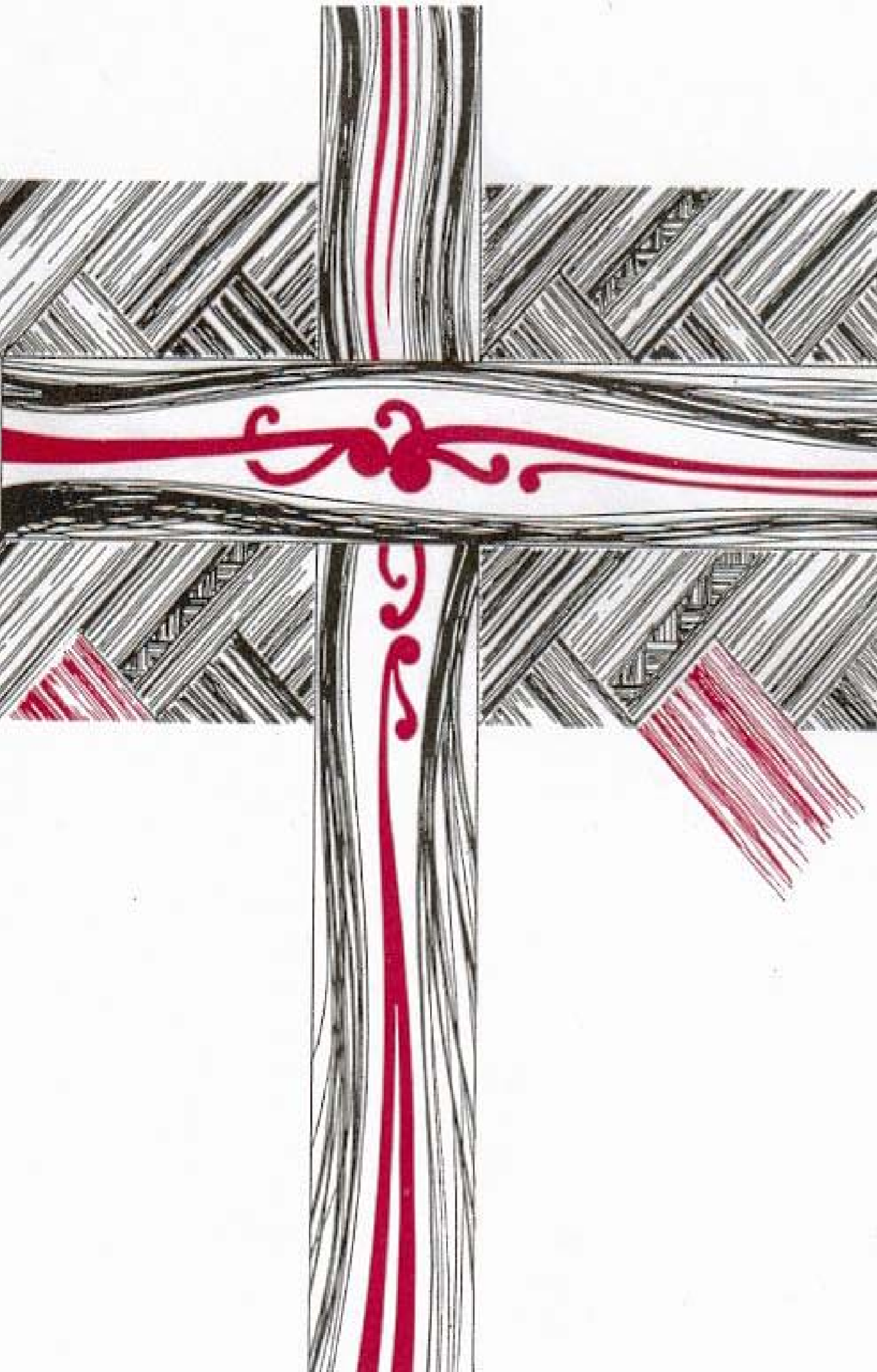
**Ben
Gilmore**

ISSP 2003: National Identity II

- Sample selected from NZ Electoral Role.
- Sample size of 1038 (Response rate of 47%).
- Dataset broadly representative of New Zealand population over 18.
- Slightly higher percentage of females than total population.
- Slightly lower percentage of under 30s than total population.
- Dataset unweighted as testing indicated results consistent with representative population.
- New Zealand specific questions relating to immigration missing from dataset.

Immigration Attitudes Scale

	Frequency	Percent
Extremely Anti-Immigration	90	9.9
Anti-Immigration	231	25.4
Neutral	148	16.2
Pro-Immigration	309	33.9
Extremely Pro-Immigration	133	14.6
Total	911	100



Is New Zealand still 'Godzone?'

Renee Jaine
University of Auckland

Introduction

- **Is God dead?**
- **Trends from other developed nations**
 - Britain
 - 43% believe in Personal God in 1940/50s
 - 31% believe in Personal God in 1990s
 - US
 - 5-8% had no religious affiliation in 1980s
 - 16% had no religious affiliation in 2007
- **Believers are more 'liberal'**
 - About Judgement Day
 - About Heaven and Hell
 - About homosexuality



Hypotheses

Religiosity – over time

- That fewer NZers will identify with a religion or believe in God
- That those who identify with a religion will describe themselves as less religious

Religious & moral beliefs – comparatively & over time

- That compared with the non-religious, religious people are
 - more likely to believe in Heaven, Hell and religious miracles
 - more likely to think that homosexual sex & sex before marriage are wrong
- But that religious people's beliefs will be weakening with time

Link between moral beliefs and view of God

- That people who view God as a judge are more likely to think that homosexual sex and sex before marriage are wrong

Methods

Data source

- Secondary data taken from International Social Survey Programme
 - 1991 and 1998 – survey focus = religion and religious beliefs
 - Methodology – cross-sectional self-complete survey

Sample

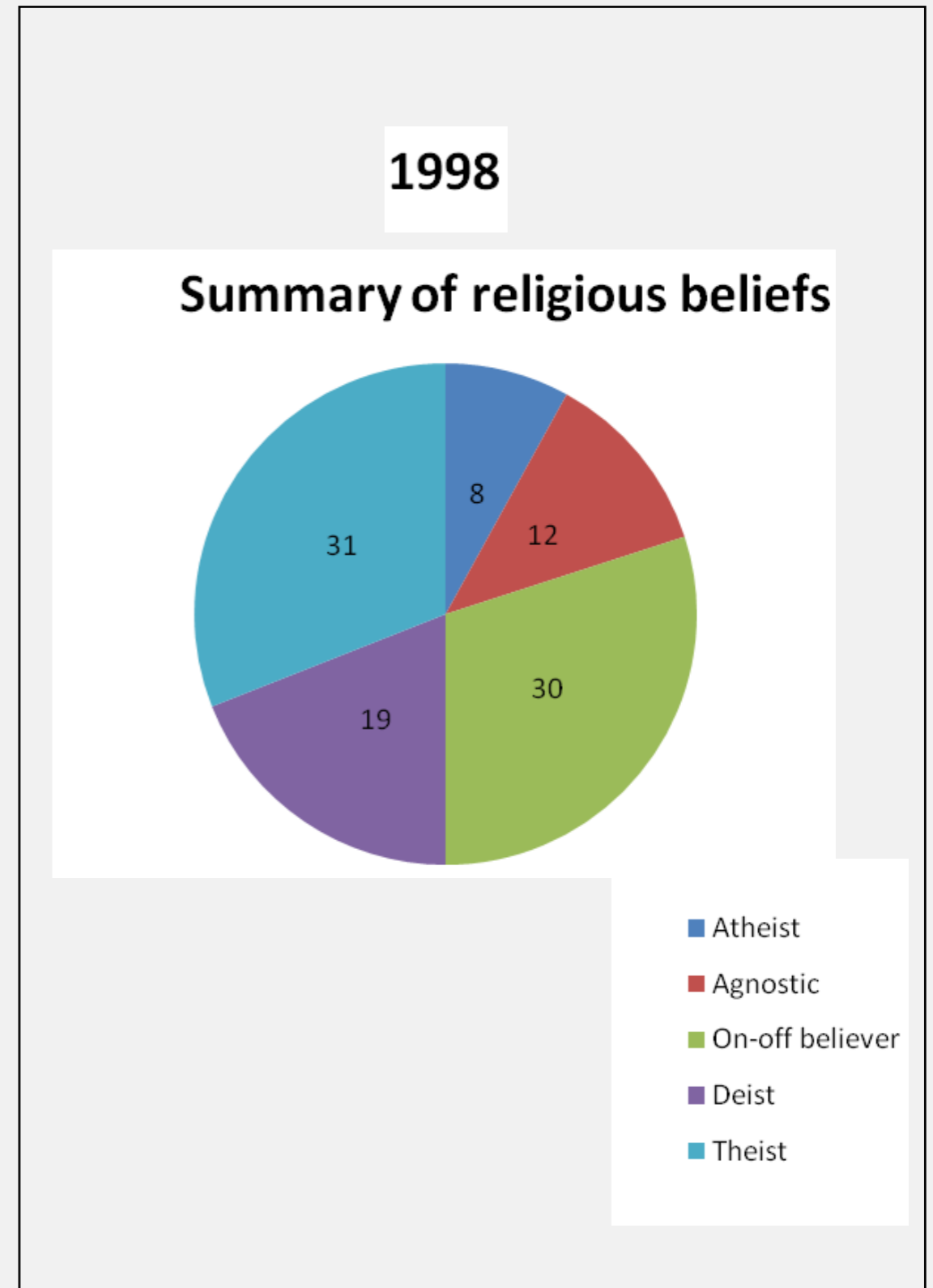
- Targeting New Zealanders 18+ years
- Electoral roll as sampling frame
- Stratified random sample generated from 97 NZ electorates
- 1991 – Response rate of 60% in 1991
- 1998 – No data

Key variable

- Religious / neutral / not religious

How has belief in God changed over time?

Type of religious belief (% of sample)	1991 (%)	1998 (%)
Atheist	8	8
Agnostic	12	12
On-off believer	33	30
Deist	18	19
Theist	29	31
Total	100	100



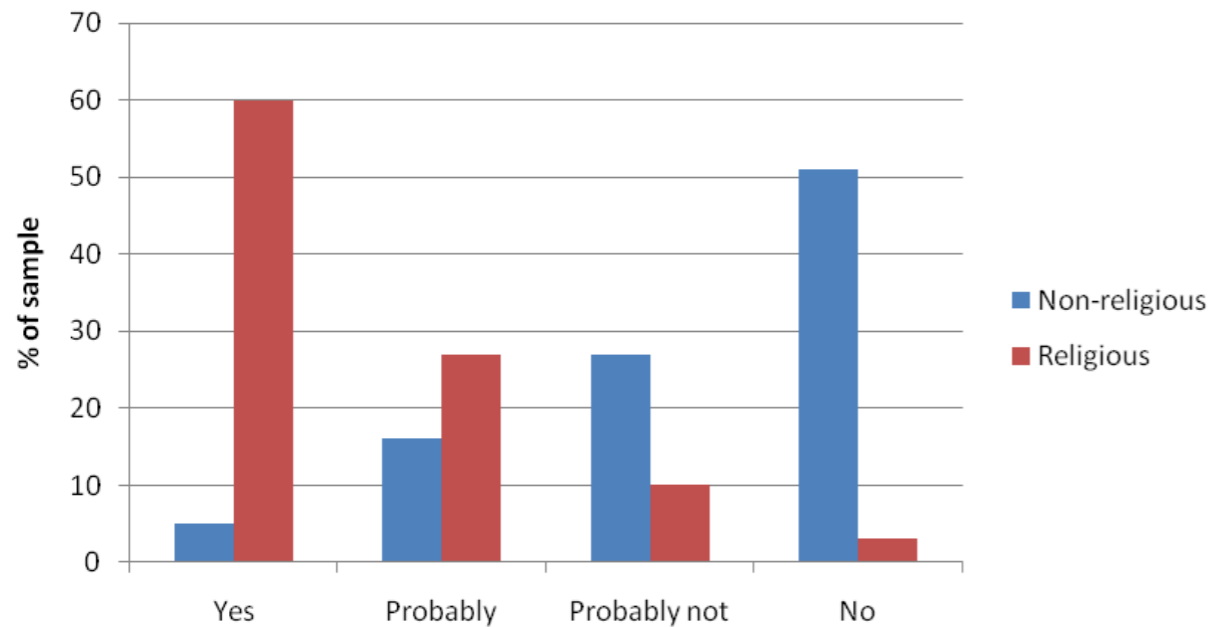
How has 'religiosity' changed over time?

How religious are you?	1991	1998	Change
Not religious	27	26	-1
Neutral	34	31	-3
Religious	39	43	+4
Total	100	100	

Religious beliefs - a comparison

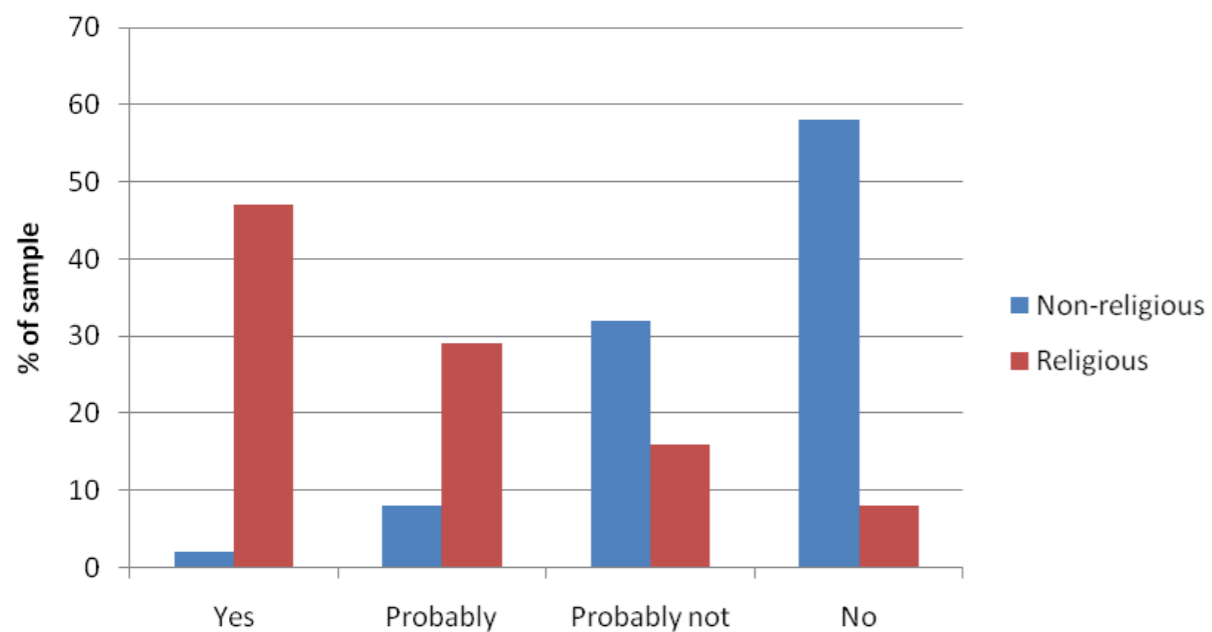
Do you believe in Heaven?

Religious vs non-religious people: 1998



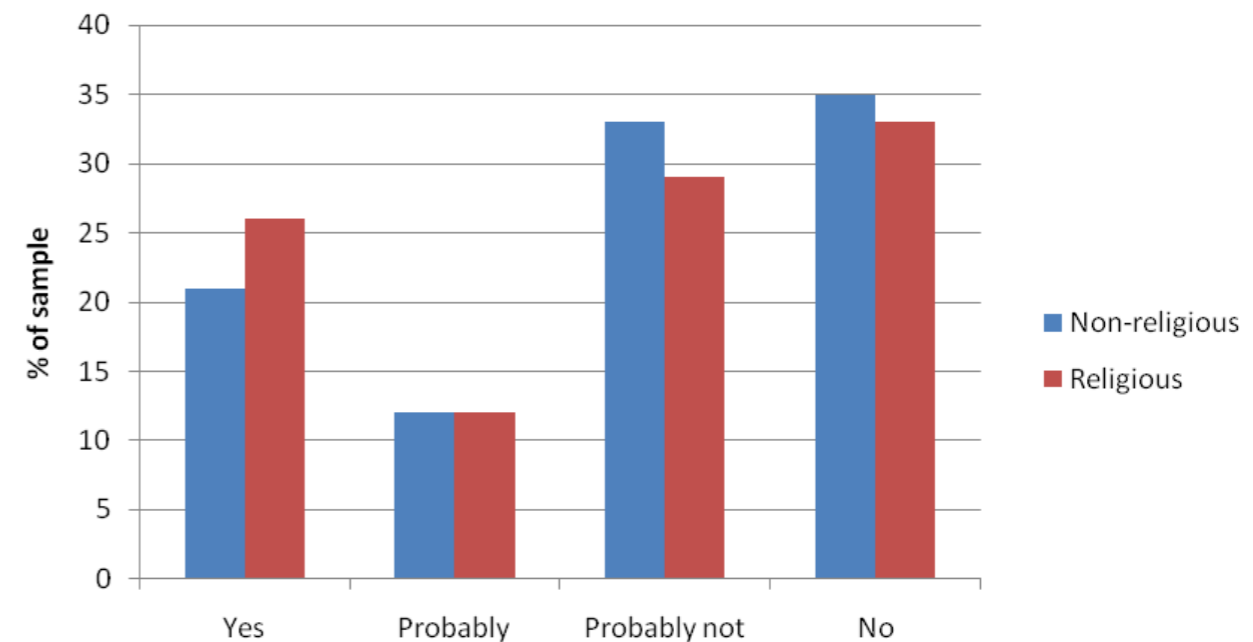
Do you believe in religious miracles?

Religious vs non-religious people: 1998



Do you believe in Hell?

Religious vs non-religious people: 1998



Interpretation & conclusion

Is New Zealand becoming more secular?

- NZers more likely to believe in God
- More religious in general
- 'On-off' believers in 1991 = new believers in 1998
- Possible explanations

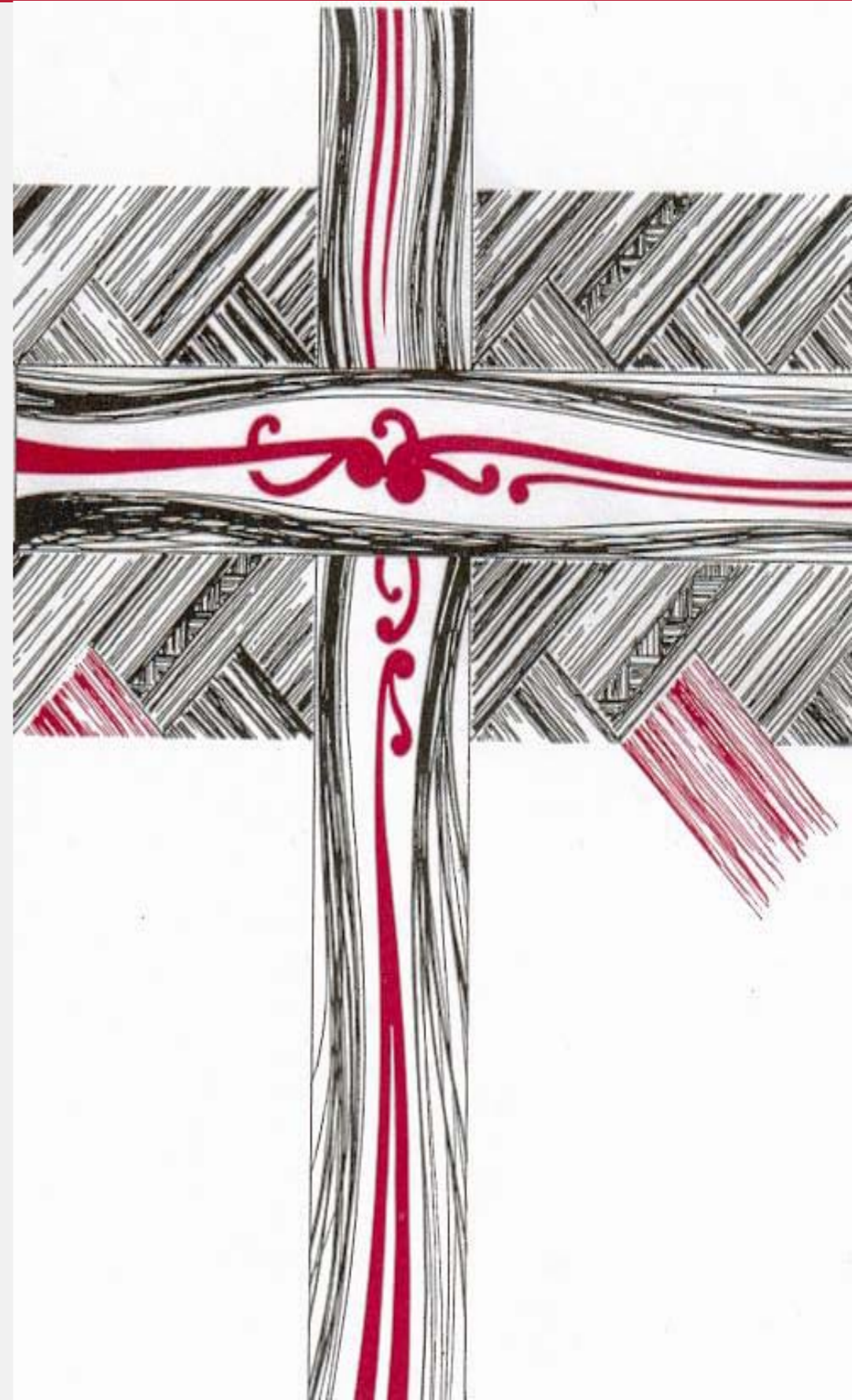
Are religious people becoming more liberal?

- Belief in Heaven, Hell, religious miracles – inconsistent
- Stick to the 'soft side'?
- Between '91 and '98 – increase in belief in Hell
- Possible explanations

- Attitudes towards homosexual sex and sex-before-marriage
- Difficult to test – non-response issues
- 10% of religious people more accepting of homosexual sex
- Possible explanations

Is view of God related to views on sex?

- Positive but insignificant correlation
- Possible explanations



A Modest Proposal! Some Principles



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- ❑ Accept that there is a problem - for our disciplines
- ❑ Accept that our students should be methodologically “ambidextrous”
- ❑ Accept that a big part of the problem is students never exercising analytical skills with real data
- ❑ Look at ways in which students can be exposed to quantitative methods - without turning them off
- ❑ Cooperate across disciplines and institutions

A Modest Proposal! Some Suggestions



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- ❑ Joint and pooled block-course teaching in quantitative (and qualitative) research methods.
- ❑ Use KAREN network to pool teaching time and resources around the country in real-time contact hours.
- ❑ Work together on agreed curricular content and delivery at senior undergraduate and post-graduate levels
- ❑ Annual prize for best thesis using quantitative techniques.
- ❑ Use quantitative studies to illustrate substantive courses⁴²

New Zealand Social Statistics Short Courses - Feb 7th-18th 2011, School of Govt, Wellington

Week One - 7th–11th February 2011

- **INTRODUCTION TO STATISTICS**
Dr Stephanie Budgett, *Department of Statistics, The University of Auckland*
- **QUALITATIVE RESEARCH TECHNIQUES**
Dr Delwyn Goodrick, *Program Evaluation Consultant*
- **CASE STUDY RESEARCH**
Professor Helen Simons, *Professor of Education and Evaluation, University of Southampton, UK*
- **INTRODUCTION TO STRUCTURAL TO STRUCTURAL EQUATION MODELLING USING AMOS**
Associate Professor Everarda Cunningham, *Swinburne University of Technology, Melbourne*
- **APPLIED COMPUTER-ASSISTED QUALITATIVE DATA ANALYSIS USING NVivo**
Dr Leonie Daws, *Principal Consultant, Kihī Consultancies*
- **INTRODUCTION TO SURVEY DESIGN**
Dr Gordon Emmerson, *Honorary Fellow, Victoria University, Melbourne*

Week Two - 14th–18th February 2011

- **INTERMEDIATE STATISTICS**
Dr Wayne Stewart, *Department of Statistics, The University of Auckland*
- **INTRODUCTION TO PROGRAM EVALUATION**
Dr Delwyn Goodrick, *Program Evaluation Consultant*
- **FUNDAMENTALS OF MULTIPLE REGRESSION**
Dr Gordon Emmerson, *Honorary Fellow, Victoria University, Melbourne*
- **DATA ANALYSIS IN SPSS**
Associate Professor Brian Phillips, *Swinburne University of Technology, Melbourne*
- **ADVANCED STRUCTURAL EQUATION MODELLING USING Mplus –**
Associate Professor Everarda Cunningham, *Swinburne University of Technology, Melbourne*
- **LONGITUDINAL DATA ANALYSIS**
Dr Gary Marks, *Australian Council for Educational Research*

FOR MORE INFORMATION AND/OR TO ENROL, PLEASE VISIT

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