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Edited by Raymond Nairn, Phillipa Pehi, Roseanne Black, and Waikaremoana Waitoki

2012 Editorial

During 2012 the Society published three issues of the *Journal*, which have included thirteen manuscript and two book reviews. The issues have been a little slimmer than 2011, which saw a bumper crop on the coat-tails of PBRF and the Supplementary Issue on Earthquake: Response and Recovery. However, we have not compromised on quality.

I am grateful to Simon Adamson for his work as Guest Editor on the *Psychology and Addictions Special Section* which appeared in issue 2. I think we had both been expecting a greater response to the call for papers on this topic given the significant media coverage on the dangers of excessive substance use, and the significant advertising spend promoting the benefits of moderate substance use! We may test these waters again in the future.

The *Journal* is set for a full 2013 with nearly 20 general manuscripts at various stages of preparation. We will also have a large Special Section on Counselling Psychology (Guest Editor: Rhoda Scherman). We should applaud those researchers, scholars, practitioners, and friends who write about psychology in Aotearoa/New Zealand and choose to keep it 'homegrown'. In these pages we can often read manuscripts that are so unashamedly 'local' that they would not easily fit within mainstream international journals, they are NZ Made, Tried and Tested. All the authors who are published in the *Journal* make a valuable contribution to the development of a New Zealand Psychology.

The manuscripts that you will read in the *Journal* are not solely the product of their authors; they are also shaped and nurtured by the efforts of the reviewers who volunteer their time and talents to support their colleagues. I apologise if I omit anyone from the following list, but to the best of my knowledge the following have contributed to reviewing manuscripts published in 2012.

Reviewers of articles published in 2012:

Maria Bellringer
Paula Brough
Stuart Carr
Helene Cooper-Thomas
Cate Curtis
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Ross Flett
Clare-Ann Fortune
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Brian Haig
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Ian Lambie
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Paul Therly

I also wish to acknowledge the *Journal's* excellent Editorial Board and Book Review Editor for their skill and support. Finally, thanks to the office staff, especially Donna and Debra, who work diligently behind the scenes to manage processes and people. Without the reviewers and editorial team the *Journal* would not appear.

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Piloting an Evidence-Based Group Treatment Programme for High Risk Sex Offenders with Intellectual Disability in the New Zealand Setting

Joseph Allan Sakdalan and Vicki Collier

Regional Forensic Psychiatry Service, Waitemata District Health Board Auckland

Background

There is a paucity of research on the effectiveness of sex offender treatment programmes particularly with sex offenders with intellectual disability (ID). There is a lack of concerted effort to develop evidenced-based sex offender treatment programmes for individuals with ID in New Zealand (NZ). This study aimed to run a pilot study on the use of an adapted sex offender treatment programme for individuals with ID in NZ who have been found to be at high risk of sexual recidivism and are placed in secure settings.

Method

A multiple case study design was used to assess the viability of an adapted sex offender treatment programme which was developed for forensic clients with intellectual disability who were placed in a secure facility and were assessed to be at high risk of sexual recidivism. This adapted programme was based on a community-based ID sex offender treatment programme developed in the UK. The three participants considered in this study were assessed for risk of sexual recidivism, sexual knowledge, victim empathy and cognitive distortions and attitudes to condone and/or support sex offences prior to attending the programme, upon completion and at one-year follow up. The SAFE-ID was a seven-month pilot programme which was largely guided by the SOTSEC-ID treatment manual. In addition, it incorporated an adapted dialectic behaviour therapy (DBT) coping skills training developed by the authors to teach the participants behavioural coping skills to deal with emotional dysregulation, poor frustration tolerance and poor social skills.

Results

The study result showed that the three participants demonstrated a marked improvement in sexual knowledge and victim empathy as well as a marked reduction in cognitive distortions and attitudes that condone and/or support sex offences after completing the programme. Furthermore, there was a noted decrease in the dynamic risk factors after completion of the programme and at one-year follow up. Two of the participants who were residing in a secure facility were reported by staff to show a marked reduction in inappropriate and/or sexually abusive behaviours and other problematic behaviours. The participant, who was under a community secure order, came off his order a year after completing the programme.

Conclusions

This pilot study indicated that the SAFE-ID programme showed promise as a potentially viable treatment programme for ID sex offenders who carry a high risk of sexual offending within a secure setting. However, caution should be taken as only three case studies were involved. There is a need to validate the effectiveness of this programme with larger sample size, longer follow-up period and a randomised controlled trial. Further research on the use of DBT in the treatment of sex offenders with ID is recommended.

A plethora of methodological difficulties has made it problematic to determine the true prevalence of sex offenders with an intellectual disability (ID) in most developed countries (Lindsay, 2002). A wide range of methodological problems have been

identified including inappropriate samples, variable inclusion criteria and determination of ID, and diversions provided by the court to this group for their “challenging behaviours” (e.g., Lindsay, 2002; New South Wales Law Reform Commission, 1996, etc.).

Several researchers have argued that there is a high prevalence with estimates of up to 21% to 50% of offenders with ID who have committed sexual offences (Gross, 1985; Walker & McCabe, 1973). On the other hand, more conservative studies have estimated that around 3% to

4% (Hayes, 1991; Swanson & Garwick, 1990). Notwithstanding, it is difficult to rely on these estimates because of the severe limitations of current research. In New Zealand (NZ), research on the incidence and prevalence of sex offenders with ID in NZ is virtually non-existent.

There is paucity of research on evidenced-based sex offender treatment programmes for individuals with ID. Most of the existing programmes in developed countries (e.g. US, UK, Australia and NZ) are largely adapted versions of mainstream sex offender treatment programmes (SOTP) (Marshall et al., 1991). These programmes are mostly cognitive-behaviourally based which generally involves addressing issues around cognitive distortions that support or condone sex offences. These ID-specific sex offender treatment programmes involved the use of simplified concepts, visual imagery, frequent repetition and rehearsal, and assistance with generalisation of skills across different settings (Lambrick & Glaser, 2004). Research literature on the effectiveness of these programmes have been intermittent and majority of them had small sample designs (e.g., Garrett, 2006; Craig et al., 2006, Lindsay & Smith, 1998, etc.). Lindsay and his colleagues (2006) employed a community cognitive behaviour therapy (CBT)-based sex offender treatment programme which recruited 29 sex offenders with ID with a history of sexual recidivism. The study showed a significant harm reduction of 70% after these participants completed the group. Murphy and colleagues (SOTSEC-ID, 2010) carried out a study on the effectiveness of the Sex Offender Treatment Services Collaborative – Intellectual Disabilities (SOTSEC-ID) programme in the UK which recruited 46 men with ID who had sexually abusive behaviours. The programme consisted of different modules that include (1) human relations and sexual education; (2) cognitive model; (3) sex offending model; (4) victim empathy; and (5) relapse prevention. The study findings showed a significant increase in sexual knowledge and victim empathy as well as reduction in cognitive distortions and attitudes that condone or support sex offences. Treatment gains were

maintained on six-month follow up and only four men (9%) engaged in further sexually abusive behaviours.

In NZ, there has not been any concerted effort to evaluate the effectiveness of evidence-based sex offender treatment programmes for individuals with ID. Existing programmes include the Adapted Te Piriti Sex Offender Treatment Programme, which is a CBT-based programme developed by the Department of Corrections specifically for child sex offenders who are currently service their prison sentence and were diagnosed with ID. On the other hand, WellStop Inc., which is a non-governmental organisation (NGO) which provides community-based sex offender treatment programmes, offers a specialist programme for youth and adults with intellectual disabilities. WellStop Inc. employs the Good Way model which is a strength-based programme that makes use of a more narrative approach and which also incorporates relapse prevention (Ayland & West, 2007). Ayland and West (2006) reported that their programme has been relatively successful; however, recidivism rates have not been formally evaluated.

The authors have not encountered any systematic published studies on the effectiveness of these adapted programmes targeting ID sex offenders to date. Furthermore, the authors recognise the difficulties of carrying out studies with sample sizes sufficient for the application of inferential statistics, due to limited numbers of potential participants in clinical and custodial settings in NZ.

The enactment of the Intellectual Disability (Compulsory Care and Rehabilitation) Act 2003 (IDCCR Act 2003) in NZ in October 2004 highlighted the need to provide rehabilitation to individuals with ID who come into contact with the criminal justice system (Ministry of Health, 2004). Therefore, there is a pressing need to develop an evidence-based sex offender treatment programme for individuals with ID who have been charged with a sexual offence and are under a legal order.

The aim of this pilot study is to assess the viability of an adapted SOTSEC-ID programme with sex offenders with ID who pose high risk

of sexual recidivism and are placed in a secure setting in Auckland, NZ. The authors consider this study as an initial attempt to modify the SOTSEC-ID programme for its use in a forensic ID inpatient setting.

Method

Design

The authors employed a multiple case study design to assess the effectiveness of the adapted SOTSEC-ID programme with a group of high-risk sex offenders with ID admitted in secure settings. A multiple case study design was deemed appropriate in this case given that there are very few numbers of high-risk offenders with intellectual disability placed at secure ID facilities across NZ particularly in the Auckland and Northland regions. A case study design can be considered one of the most flexible research designs because it allows the researcher to retain the holistic characteristics of real-life events while investigating empirical events (Yin, 1984). In this study, a multiple case study design provided the researchers with the opportunity to examine individual cases and discuss in the detail the participant's journey and experience going through the programme and their individual progress and learnings.

The participants in this study were recruited from the group of participants who attended a pilot programme. Of the five participants who attended the group, two participants were recruited from a hospital secure ID facility and one participant was recruited from a community secure residential ID facility. The participants were recruited for this study as they were assessed to be at high risk of sexual recidivism.

Description of the Programme

The SAFE-ID programme was largely based on the SOTSEC-ID (2010), which is a community based ID sex offender treatment programme developed in the UK. The SAFE-ID programme was developed by the ID Offender Liaison Service (IDOLS) team, which is a specialist team within the Regional Forensic Psychiatry Service, Auckland, New Zealand, that attends to forensic clients with intellectual disability within the Auckland and Northland Regions. The programme

was developed in collaboration with SAFE, which is an NGO that provides community-based sex offender treatment programmes in the Auckland region. This programme maintained some fidelity to the SOTSEC-ID by running the same set of modules and using their core assessment measures. The modules included: (1) Human Relations and Sex Education; (2) the Cognitive Model; (3) Sexual offending model based on the Finkelhor model (Finkelhor, 1984); (4) General Empathy and Victim Empathy; and (5) Relapse Prevention. In addition, it incorporated an adapted Dialectical Behavior Therapy (DBT) groups coping skills programme developed by the authors (Sakdalan et al., 2010). The adapted DBT group coping skills training programme was incorporated to provide the participants with behavioural coping skills to effectively manage emotional dysregulation, poor frustration tolerance and poor interpersonal effectiveness skills. These coping skills are particularly useful in helping these participants deal with negative emotion that may arise when they discuss their sex offending and their personal histories. In addition, the therapists used the concept of 'Wise Mind-Risky Mind'. The Wise Mind-Risky Mind dialectical construct was used to assist the participants and the therapists use a common language, which could capture and validate their experiential difficulties of having risky thoughts, feelings and behaviours as well as their abilities to effectively manage their risk of sexual re-offending (Sakdalan & Gupta, 2012).

The SAFE-ID was a seven-month programme that consisted of two-hour weekly sessions. In addition, each participant received one-hour weekly individual psychotherapy that was mainly geared to reinforce learning from the group and process issues that were inappropriate to address in the group. Arrangement was made such that there was at least one male and one female therapist in the session as per SOTSEC-ID protocol. There were five therapists involved in the programme. The therapists were registered clinical psychologists, two nurses and an occupational therapist. The clinical psychologists in the team have extensive clinical experience in the assessment

and treatment of sex offenders while the other therapists have experience running skills-based group programmes. Some caregivers were required to be present in all the sessions due to the participants' need for high levels of supervision. Two of the participants required 1:1 close supervision due to their levels of risk.

Participants

Three participants considered in this study were under a secure order (two under hospital secure and one under community secure) under the IDCCR Act 2003. The authors consulted the Knowledge Centre, Waitemata District Health Board Research Committee, Auckland, New Zealand, and were informed it was sufficient for the researchers to obtain consent from the participants and that approval from an ethics committee was not required. Notwithstanding, consent was obtained from the participants and/or their welfare guardians to participate in the study. The participants and welfare guardians (where applicable) were provided with information about the study which included measures to protect confidentiality, duty of care, and an agreement that the participants would not be identified in any published research. The researchers explained these issues to the participants and/or welfare guardian. The participants and/or welfare guardian were encouraged to ask any questions or clarify any issues before they signed the consent form.

Measures

The participants were assessed using a standard set of outcome measures at the start of the group to provide baseline then were re-assessed after they had completed the programme. In addition, they were re-assessed on one-year follow up. The outcome measures used in this study were based on the measures recommended by the SOTSEC-ID group except for the Assessment of Sexual Knowledge (ASK) and the Sexual Violence Risk – 20 (SVR-20). The outcome measures were used to assess participant's progress within each module (e.g. Assessment of Sexual Knowledge used to assess learning in the Sex Education Module). These included:

1. Sexual Violence Risk – 20 (SVR-20) - The SVR-20 is a 20-item

checklist that was developed to improve the accuracy of assessments for the risk of future sexual violence. The authors used the adapted SVR-20 version developed by Boer (2010) and his colleagues specifically for assessing risk of sexual recidivism with sex offenders with ID. The Psychopathy item was not scored. Higher scores indicate higher level of risk; however, clinical judgement is required to arrive at a final decision.

2. Assessment of Sexual Knowledge (ASK) (Butler, Leighton, & Galea, 2003). - The Assessment of Sexual Knowledge (ASK) is a new test that aims to provide workers within disability services and other health professionals with a tool to assess the sexual knowledge and attitudes of people with an ID. Scores range from 0 to 248. High scores indicate higher levels of sexual knowledge.

3. Adapted Sex Offender Self-Appraisal Scale (SOTSEC-ID, 2010) - The SOSAS was adapted from the Sex Offence Attitude Scale and has been used in the SOTSEC-ID group to assess cognitive distortions related to sex offending. Scores range from 19 to 95. High scores indicate higher levels of cognitive distortions that condone sex offending.

4. Questionnaire attitudes Consistent with Sex Offending (QACSO) (Lindsay et al., 2000) - The QACSO has been used to assess the participants' attitudes that condone sex offences. Scores range from 0 to 174. A high QACSO score suggests greater cognitive distortions/attitudes towards sex offending.

5. Victim Empathy Scale (VES) (Beckett et al., 1994) - The VES consists of 30 questions and statements rated on a four-point Likert Scale. The modified version used for people with ID was used. Scores range from 0 to 84. High scores reflect low victim empathy.

Results

The unit psychologist who was not a therapist in the group was in charge of assessing the participants' level of risk. The SVR-20 was administered pre, post and at one-year follow-up to assess risk of sexual recidivism (see Table 1). These participants carried dynamic risk factors

Table 1. SVR-20 Scores pre-, during and one- year follow up

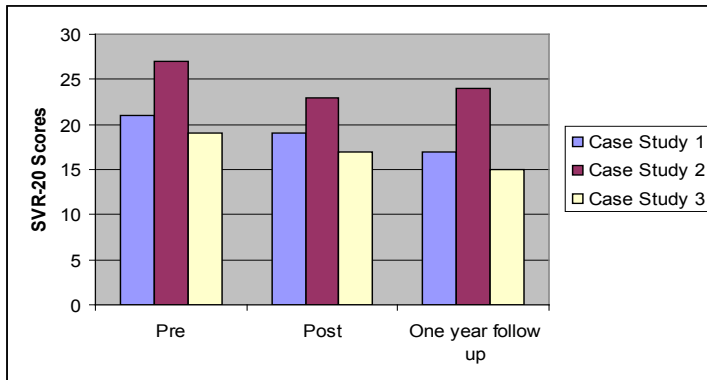


Table 2. Assessment of Sexual Knowledge Scores

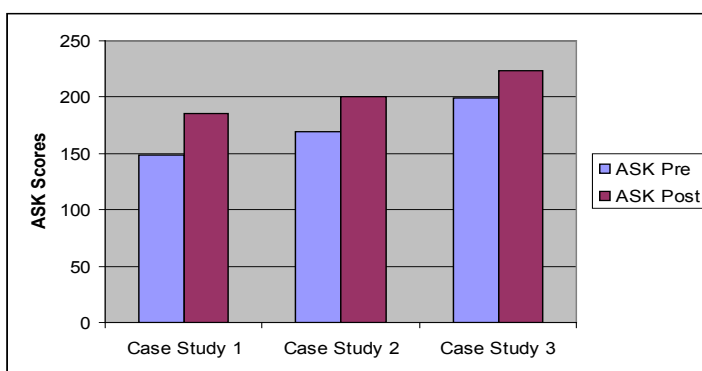


Table 3. Result of QACSO, VES, and SOSAS

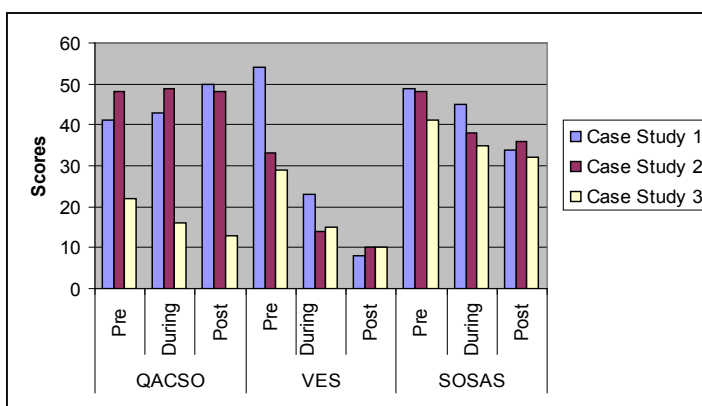
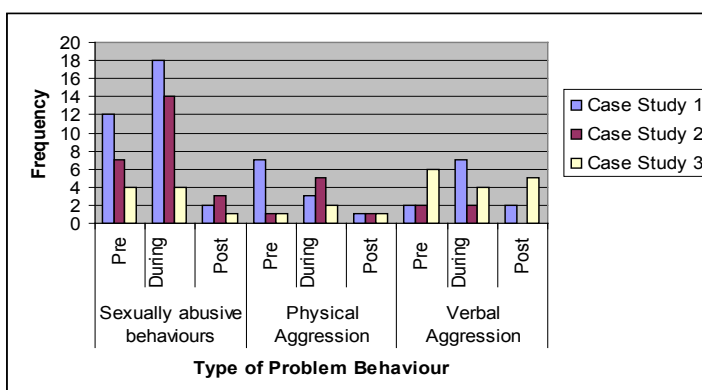


Table 4. Reported Incidents



(i.e. attitude that condone sex offences, realistic plans, negative attitude toward intervention, extreme minimisation of offences, etc.) that contributed to their high levels of risk. Overall, it can be noted that there was a decrease in SVR-20 scores upon completion of the group and at one-year follow up.

The authors tabulated the SAFE-ID pre- and post-assessment results on the three participants (see Tables 2 and 3). These results will be discussed in conjunction with the different case studies. Overall, there was a marked improvement across all measures (i.e. sexual knowledge, victim empathy and a reduction in cognitive distortions and attitudes that support or condone sex offences). Treatment gains were maintained after one-year follow-up. The ASK instrument was not re-administered as the authors post-assessment result on all participants showed high levels of sexual knowledge and clinical assessment from the inpatient psychologist showed that this issue did not relate to their risks of re-offending.

In addition, the authors collected information regarding incidents through the staff clinical notes and incident reporting for the three participants, six months prior, during the group, and six months after completing the group (see Table 3). The incidents collected did not only include sexually abusive behaviours but also other problematic behaviours (i.e. physical and verbal assault, absconding, etc.). There is a marked increase in sexually abusive behaviours when the participants were attending the group which may be attributed to their need to address their sex offending issues in the group. Reported incidents of physical and verbal aggression at six-month follow up decreased to pre-group levels. On the other hand, reported incidents of sexually abusive behaviours markedly decreased after completion of the group. Feedback from participants indicated that they have used the coping skills that they have learned to effectively manage their general and sex offending behaviours as mentioned above.

Case Study 1

Case study 1 is a mid-30's male of European and Maori descent. He has been diagnosed mild to moderate ID.

He had a lengthy history of paraphilic and antisocial behaviours resulting in numerous prior sexual offences, general and violent offences. His index offence was indecent assault of an adult female. He was found unfit to stand trial and was placed under a secure care order and was admitted to a forensic ID secure facility. He was assessed to be at high risk of sexual recidivism. In addition, he scored high on the Psychopathy Checklist – Screening Version (PCL-SV).

Prior to attending the group, pre-assessment findings (see Table 2) showed that he had limited sexual knowledge, high levels of cognitive distortions (i.e. blaming, minimisation) and attitudes that condone sex offences (i.e. rape attitudes towards women, stalking and sexual harassment). Furthermore, he had low victim empathy and he scored high on risk of sexual recidivism.

He was initially hesitant to join the group; however, he decided to attend the sessions with on-going support and encouragement from the staff. As the sessions progressed, he became more open to participating in the group; however, his level of engagement remained variable. He gradually stepped up and became more forthcoming with sharing his experiences (including disclosure of his own abuse) and even spoke about his index offence voluntarily and was appropriate with the information that he shared with the group. He also learned appropriate social skills and started to self-initiate and volunteer to help with the group activities. He completed the programme without missing any sessions.

After completing the group, staff reported that he appeared to have improved insight into sexually abusive behaviours particularly stalking and sexual abusive behaviours towards female staff. There was reported increased engagement with staff and actively disclosing concerns around risky thoughts and behaviours as they occur were reported. Overall improved pro-social behaviours and general emotional regulation were observed.

The post-assessment findings showed marked improvement in sexual knowledge and victim empathy (see Table 2). There was also a marked reduction in cognitive distortion

and attitudes towards sex offences. He managed to maintain his gains across all measures on one-year follow-up. Furthermore, there was a marked reduction in inappropriate and/or sexually abusive behaviours, and physical and verbally abusive behaviours (see Table 3).

Case Study 2

Case study 2 was a mid-20's male participant of European descent. He has been diagnosed with mild ID and had a historical diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). This participant had an extensive history of involvement with special education and mainstream ID services and history of challenging and antisocial behaviours. His index offences were indecent assault of two pre-pubescent girls. He was found unfit to stand trial and was placed in an ID forensic secure facility following an assessment which found him to be at high risk of sexual recidivism.

Prior to attending the group, he exhibited severe sexual dysregulation and often resorted to verbal and physical aggression when he became frustrated. The staff reported that there was a strong association between negative emotions (i.e. anger, anxiety, etc.) and sexually aroused states. Pre-assessment findings showed that he had limited sexual knowledge, low victim empathy and high levels of cognitive distortions (i.e. blaming, minimisation) and attitudes that condone sex offences (i.e. rape attitudes towards women, stalking and sexual harassment).

During the group sessions, he was able to engage in discussions about sex education when previously he could not even cope with talking about sex. As the weeks progressed, he managed to learn how to accept challenge by the therapists and other group participants. He also started to appropriately challenge other participants on their behaviours in the group in a mature respectful manner. He later disclosed his 'life story' including his index offence.

The staff reported that he exhibited a marked decrease in frequency of masturbation and decreased sexual excitability. Furthermore, it was reported that he became more mature in his interaction with staff and more open and

honest in talking about his difficulties. Improved emotional regulation and frustration tolerance was also reported and no incidents were reported leading to progression to supervised leaves from secure unit. He reportedly continued to attend individual therapy and has seemed to be insightful of his need to continue addressing his sex offending issues in treatment.

The post-assessment findings showed marked improvement in sexual knowledge and victim empathy. There was also a marked reduction in cognitive distortion and attitudes towards sex offences. He managed to maintain his gains across all measures on one-year follow-up (see Table 2). There was also a marked reduction in inappropriate and/or sexually abusive behaviours. Furthermore, there was also a reduction in physical and verbally aggressive behaviours (see Table 3).

Case Study 3

Case study 3 is a mid-30's male of European descent. He has an extensive history of antisocial behaviours and drug problems. He was charged with sex offences against two prepubescent girls. He was found fit to stand trial and was placed under a community secure order. He was placed in an ID community secure facility due to his level of risk.

Pre-assessment findings (see Table 2) showed that he held some attitudes that condone or support dating abuse. Interestingly, he did not endorse items that support sex offences against children. The SOSAS scores showed that he exhibited cognitive distortions specifically that of minimisation and denial. His VES score indicated that he had moderate to high victim empathy. The ASK result showed that he had good knowledge of body parts, relationships and legal issue, men's sexual health, however, he demonstrated limited knowledge in the area of women's sexual health.

At the start of the group, he was somewhat reluctant to engage in a sex offending specific treatment group. He expressed his sense that he did not see the need to revisit these issues as he felt that he had already addressed them in individual therapy which he did for a year. During the first part of the group, he seemed to be 'talking the talk' and that

he was relative supportive of the other group members. He seemed fairly aware of the fundamental treatment goals of taking responsibility for one's offending and had good knowledge of coping skills which he appears to have learnt from his individual sessions. As the group progressed, some of his difficulties became more apparent, as he struggled with his circumstances of being under a care order and the limitations that it imposes on him. During treatment, his staff reported an incident where he was caught taking pictures of female teenagers in public. This was addressed with him in treatment and his service provider. In time, he seemed to move to a fuller acceptance that this relapse is his responsibility and to move away from blaming the system for his actions.

The post-assessment results showed improvement across most measures (see Table 3). It showed marked improvement in sexual knowledge and victim empathy. He continued to exhibit cognitive distortions particularly that of denial and minimisation. He maintained his gains across all measures on one-year follow-up. Furthermore, his risk of sexual recidivism further decreased after one-year follow-up. Overall, he appeared to have benefited from the programme. He attended another SAFE-ID programme after a year. He recently came off his care order and that preparation was being made for his transition back in to the community.

Conclusions

The case studies showed that all three participants markedly improved across all outcome measures after completion of the group. Furthermore, it can be noted that they generally maintained their gains after one-year follow-up. There was also marked reduction in incidents with all participants not only for sexually abusive and/or inappropriate sexual behaviours but for other problematic behaviours such as physical and verbal aggression. This finding may indicate that the incorporation of the adapted DBT coping skills training might have helped address issues around other challenging and/or offending behaviours.

The issues and challenges for the therapists include: (1) not having

much opportunity to do staff training and supervision; (2) limited time to do an in-depth analysis of safety and risk issues due to the compressed nature of the pilot programme; (3) some sessions are more didactic in nature; (4) too many facilitators running different parts of the programme; and (5) inclusion of key caregivers due to legal restrictions.

Overall, the pilot study showed that the SAFE-ID programme showed promise as a potentially viable treatment programme for high-risk sex offenders with ID who are placed in a secure facility within the NZ setting. Furthermore, this study also showed that a short, intensive sex offender treatment programme with specific treatment targets can be effective in decreasing the risk of sexual recidivism. The study findings appear to be comparable with the UK SOTSEC-ID programme however, caution should be taken as only three case studies were involved.

Limitations and clinical implications of the study

This study is a preliminary attempt to assess the viability of an adapted ID sex offender treatment programme with high-risk ID offenders placed in secure settings. Given that the study made use of a multiple case study design, the study findings are largely tentative and the results are not generalisable. The researchers are committed to carrying out further research on the effectiveness of this programme. There is a need to validate the effectiveness of this programme with larger sample size, longer follow up period and a randomised controlled trial. Furthermore, there is a need to lengthen the programme to at least one year so that it would be more in line with standard SOTP programmes which usually run for a minimum of a year and the provision for clients to repeat the programme as necessary. The authors recommend the need for these participants to also receive individual therapy in conjunction with attending the programme given the level of identified risk with these individuals. Further research on the use of DBT in the treatment of sex offenders with ID is recommended. It is also important to take into consideration that the SAFE-ID programme is an adapted

SOTSEC-ID programme. The main difference was the incorporation of DBT concepts and skills given that the SAFE-ID programme catered to high risk sex offenders with intellectual disability who had serious problems with emotional dysregulation and poor frustration tolerance. Given this consideration it would be difficult to make direct comparisons between the two programmes. Notwithstanding, both programmes that employed a more cognitive-behavioural approach making use of more simplified concepts and visual materials seemed to work well with this client group. Further, research is needed to explore the different components of the programme which might be associated with the observed change.

Authors Note

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Effects of Employee Governance and Operational Control on Psychological Ownership and Perceived Justice

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Two kinds of employee control, governance control in which employees have similar control to shareholders in the direction of the organisation, and operational control in which they have control over the way they work, were investigated in four scenario studies. Study 1 found that greater levels of formal governance control enhanced psychological ownership, perceived justice, organizational commitment and satisfaction. Study 2 found that psychological ownership, perceived justice, organizational commitment and satisfaction increased with increased levels of both governance and operational control, and the effects of the two forms of control were largely independent. In Study 3, higher proportions of at-risk income produced greater feelings of ownership and higher ratings of the importance of governance and operational control but decreases in perceived justice. Study 4 showed that increased operational control, governance control and proportion of at-risk income all enhanced psychological ownership and justice. However, this study also showed low levels of perceived justice where there was governance control without an at-risk income component. Overall, having both governance and operational control appears to produce the best outcomes in terms of psychological ownership and perceived justice.

This paper examines how psychological ownership by employees of an organisation and their perceptions of justice might be affected by the actual control they have over the organisation and the extent to which their remuneration depends on the organisation's performance. The term psychological ownership is frequently used to describe employees' feelings and beliefs that the organisations they work for are in some sense theirs. Psychological ownership is normally distinguished both from legal ownership and from the control over operational decisions that is normally exercised by management (e.g. Pierce, Kostova, & Dirks, 2003; Pierce & Rodgers, 2004). Moreover, psychological ownership itself is probably a complex rather than a simple construct. For example, Pierce, Kostova and Dirks (2001) distinguish routes by which psychological ownership emerges in individuals; controlling the target, knowledge of the target, and investing in the target.

Pierce and Jussila (2010) distinguish individual and collective psychological ownership. In individual ownership the individual feels that (s)he has a stake in the target; collective psychological ownership implies that the individuals feel as though they are part of a team.

As the common recommendation to "work like you own the company" suggests, there is widespread belief that employees will work harder and smarter and be happier if they feel in some way that they own the organisation. Indeed, there is evidence that enhanced performance is associated with greater psychological ownership (Brown & Crossley, 2008; Van Dyne & Pierce, 2004), and that job satisfaction and organisational commitment increase with psychological ownership (Avey, Avolio, Crossley, & Luthans, 2009; Mayhew, Ashkanasy, Bramble, & Gardiner, 2007). On the other hand, psychological ownership may not always be a positive force. It is possible,

for example, that greater psychological ownership might lead to greater resistance to organisational change or information hoarding (Pierce & Jussila, 2010).

In the present paper psychological ownership was a dependent rather than an independent variable in the scenario studies. However, two of the studies (1 and 2) included independent measures of the satisfaction and commitment that the respondents might feel under different ownership regimes, with the expectation that organisational arrangements that increase psychological ownership might also increase satisfaction and commitment. Additionally, in all four studies respondents were asked how just or fair they perceived the different organisational arrangements to be. Perceived justice is important in its own right (e.g. Singer, 1997). One aspect of it, organizational justice, describes the perceived fairness of treatment received from an organization by both individuals and by groups (Aryee, Budhwar & Chen, 2002; Chi & Han, 2008). Chi and Han's (2008) research indicated that organisational variables affect perceived justice in much the same way as they affect psychological ownership.

Important variables in our four scenario studies were the degree of governance control, the degree of operational control, and what proportion of the employee's income was variable (determined by the organisation's performance) rather than fixed. Governance control means that employees have at least some of the same formal rights as shareholders of the company, and thus are in some sense legal (as opposed to psychological) owners. Operational control is the extent

to which the employee has control over the actual job operations that he or she is involved in.

One common method of providing both legal ownership and governance control to employees is through employee share ownership (cf. Dow, 2003; Hansmann, 1996). Here, individual employees own some but usually not all the shares in their employing organisation. Such ownership may be either direct (each worker has a personal share-holding) or indirect, in which a trust will own the shares (Kruse & Blasi, 1998). The voting rights associated with the shares may be held by the trustee or passed onto the member employees (Culpepper, Gamble & Blubaugh, 2004; Kruse & Blasi, 1998).

There has been substantial growth in the prevalence of employee share ownership in the United States since the mid 1970s where it has become the predominant form of employee ownership (National Centre for Employee Ownership, 2010). This growth has been encouraged by the potential to provide a financial benefit to employees; and at same time improve employee attitudes, behaviours, worker-management cooperation, in part because of the development of psychological ownership (Kruse & Blasi, 1998; Pierce & Rodgers, 2004; Pierce, Rubinfeld, & Morgan, 1999; Poutsma, de Nijs, & Poole, 2003). Another approach to governance control has been taken by the German process of co-determination (*Mitbestimmung*). Under German industrial law it is compulsory that employees have a large minority representation on the boards of large firms. Reviews of the consequences have often been positive (Fitzroy & Kraft, 2005; Smith, 1991).

However, the simple implementation of a formal employee ownership scheme neither guarantees a positive change in employee attitudes and behaviours, nor necessarily results in automatic improvements in productivity or financial performance (e.g. Blasi, Conte, & Kruse, 1996; Faleye, Mehrotra, & Morck, 2005; Kruse & Blasi, 1998). For example, several researchers have attributed poorer financial performance in employee owned organisations to problems arising from collective decision making and the

rather mixed preferences employees show for organisational outcomes (for example, workers may want to minimise redundancies) compared to the more single-minded preferences of investors (e.g.: Dow, 2003; Dow & Putterman, 1999; Hansmann, 1996).

Such considerations indicate that it might be worthwhile to develop psychological ownership by other means than governance control. In particular, psychological ownership might be enhanced through greater operational control. For example, O'Driscoll, Pierce, and Coghlan (2006) showed that the employee's affective, motivational, and behavioural responses are more positive when the work environment is characterised by low levels of structure and where there is the opportunity to exercise personal control. There are various sources of personal control in the workplace. This paper concentrated on participation in decision making. Where goal setting, planning, operation, and human resource decisions are made by senior managers and passed down the hierarchy, little decisional control remains at the job level (Pierce, O'Driscoll, & Coghlan, 2004). In comparison, participative management practices allow employee decisional input into issues relevant to the context of their jobs, thus providing the job holder with greater operational control (Pierce et al., 2004).

An important question is whether operational control can produce comparable levels of psychological ownership to governance control, and aspects of this question are addressed in Studies 2, 3 and 4 below. In many employee ownership situations, a proportion of the employee's total return from the work is dependent on the profits made by the organization. Study 3 investigated whether the importance of governance and operational control were affected by the proportion of an employee's income that was at risk. The expectation was that both governance and operational control would be seen as more important when this proportion was increased, but it is not clear which type of control would be most affected. In Study 4 governance control, operational control and proportion of at-risk income were manipulated and the effects on psychological ownership

and perceived justice assessed.

All four studies were scenario studies. In each study respondents read a number of different scenarios describing different organisational arrangements and they were asked how they would react under different organisational arrangements. Clearly, such a methodology has both an advantage and a disadvantage. The advantage is that one can gain some insight into how people would react to a variety of situations that they may not have experienced or, indeed, had much opportunity to experience. The disadvantage is that people may not be able to describe how they would actually feel or behave under these conditions. Some amelioration of this disadvantage was obtained by recruiting both worker and student respondents in three of the studies. The logic is that if people's responses to the scenarios are closely tied to their actual real-life experiences then the students and workers will respond differently, as the workers will have had more of these experiences. Obtaining a fairly similar pattern of responses suggests such experience may be of lesser importance.

The different studies addressed different, although related, specific issues, and these are presented before each study. To summarise, an important basic motivation behind all the studies was to investigate whether some of the apparent benefits of governance control, such as psychological ownership, perceived justice or job satisfaction, might also be obtained through governance control. That is, do governance control and operational control have interchangeable effects?

Study 1

Study 1 investigated the perceived consequences of increasing degrees of governance control of the organization, ranging from simple employment (with no ownership) to a scenario in which employees held shares with full shareholder voting rights. The expectation was that psychological ownership would be enhanced as governance control increased. Indeed, it would be odd if it were not. It was also hypothesised that satisfaction, commitment and perceived justice would be enhanced with greater governance control.

Method

Participants. There were 19 male and 19 female workers or students. Ages ranged from 20 years to 59 years with a mean age of 31.6 years. All participants were volunteers, were tested independently, and returned the completed questionnaire in an envelope (to ensure anonymity). There were 12 male and 8 female workers, with a mean age of 38.3 years, and 7 male and 11 female students, with a mean age of 24.2 ($SD = 5.6$) years. The students were recruited individually on campus, the workers individually from a number of different locations. The working sub-sample was asked for their occupation. The responses were varied: administrator, builder, company director (2), contractor, customer service administrator, dentist, driver, early childhood teacher, forklift driver, IT administrator, postal assistant, quantity surveyor, research assistant, salesperson, self-employed trader, solicitor, technician, tour coordinator, and transport. We did not ask for details of their current or past employment. Piloting indicated that few workers had experienced governance control.

Measures. Printed questionnaires were used. Each questionnaire consisted of 4 scenarios followed by four questions. Each scenario represented a particular type of employment situation. Participants first read a standard coversheet and instructions for the questionnaire, and were then presented four scenarios (one per page). The order of the scenarios within each questionnaire was randomised.

The four scenarios were:

(1) Employment scenario. The employment scenario depicted a situation where employees did not have shares in the company, control over the

company or information regarding the performance of the company.

(2) Share Trust scenario. An allocation of company shares was held in trust for each employee. Employee-owners had no control over the company through shares held in trust, nor information about the performance of the company, but did have an equity stake through direct claim on the value of the shares and dividends paid.

(3) Representative Control scenario. Employees held shares personally, but elected a representative to vote on company decisions on their behalf. Employee-owners thus had representative control of the company, an equity stake and possible dividends, and information regarding the performance of the company.

(4) Direct Control scenario. Individual employees held shares and full share-holder rights. Employee-owners had direct control over the company through full voting rights, as well as share equity, possible dividends, and information.

The same four questions were asked after each scenario. The questions concerned: (1) Justice, "Considering the information given in the scenario above, how just, or fair, do you believe that this type of employment arrangement is to workers in the company?" (2) Commitment, "Considering the information given in the scenario above, how committed do you believe you would feel towards the company, its goals, and its ongoing success if you were a worker here?" (3) Ownership, "Considering the information given in the scenario above, how would you rate your belief that you personally owned some of this company, i.e. would you see yourself as an owner

of the company?" (4) Satisfaction, "How satisfactory would you find the employment situation described in the scenario above if you were a worker in this company?" Participants recorded responses to each of the four questions on a 7 point rating scale, 1 indicated the lowest level of the dependent variable, 4 a neutral point, and 7 the highest level of the dependent variable. (For more detail on the wording used for Studies 1 to 3, see Fraser, 2010.)

Results and Discussion

Average ratings for each measure on each scenario are shown in Table 1. Separate one-way repeated measures analyses of variance comparing ratings across the four scenarios showed significant effects for the justice measure ($F(3, 111) = 22.79, p < 0.001$, Partial $\eta^2 = 0.38$), commitment ($F(3, 111) = 28.49, p < 0.001, \eta^2 = 0.44$), perceived ownership ($F(3, 111) = 61.30, p < 0.001; \eta^2 = 0.62$), and satisfaction ($F(3, 111) = 25.45, p < 0.001, \eta^2 = 0.41$). As Table 1 shows, more control enhanced all the measures, but the effect was strongest for perceived ownership. Note that, in this study at least, the perceived ownership variable functions to some extent both as a manipulation check and as a check that our measure of psychological ownership worked appropriately. It would be disconcerting if the respondents did not register greater psychological ownership as governance control increased.

A 4 (scenario) \times 2 (gender) split-plot analysis of variance was performed for each dependent measure to investigate possible interactions. One significant interaction was found on the satisfaction measure between scenario and gender ($F(3, 108) = 3.01, p < 0.05$). The effect size here was small, $\eta^2 = 0.08$. Overall, women found the employment scenario less satisfactory than men did, and the direct control scenario more satisfactory. Similar 4 (scenario) \times 2 (worker v student subsample) analyses of variance on the four dependent measures found no significant scenario \times subsample interactions.

Table 2 shows correlations between the dependent variables. Psychological ownership has moderate to weak correlations with the other variables, perhaps in part because (as Table 1 shows) it was also the most strongly

Table 1. Mean Rating Scores with Standard Deviations across Scenarios in Study 1

Scenario	Employment		Share Trust		Representative Control		Direct Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Justice	4.4	1.5	4.5	1.4	5.5	1.3	6.3	1.1
2. Commitment	4.1	1.3	5.0	1.1	5.6	1.1	6.2	1.0
3. Ownership	2.2	1.8	3.7	1.4	4.8	1.2	5.9	1.2
4. Satisfaction	4.2	1.3	4.7	1.1	5.3	1.1	6.0	1.1

Table 2. Pearson Correlations between the four Dependent Variables in Study 1

	Justice	Commitment	Ownership
Commitment	.75*	-	
Ownership	.05	.32	-
Satisfaction	.72*	.80*	.33*

Note. $p < .05$, two-tailed

affected by the manipulation.

Study 2

Study 1 established that, as suggested by previous research, greater governance control was seen as producing enhanced psychological ownership and also increased satisfaction, perceived justice and commitment. Study 2 investigated the effect of having either operational control or governance control on the same dependent variables. The previous research indicates that all four dependent variables would be enhanced by either operational or governance control, but it is not clear which type of control would produce a greater effect. Nor does the previous research clearly indicate whether the effects would be independent and thus additive, or whether some interactive effect might be produced.

Method

Participants and procedure. There were 55 participants in total, 31 male and 24 female. There were 29 workers and 26 students. Ages ranged from 18 years to 65 years with a mean age of 31.5 years. Similar procedures were used to Study 1, and a similar range of worker occupations recorded.

Questionnaire. The study used a 2 (governance control versus no control)

$\times 2$ (operational control versus no control) within-subjects design. Thus, each participant was presented with four scenarios, and in different orders for each participant. The same dependent measures were used as in Study 1.

All four scenarios were preceded by an introduction which described three roles in a hypothetical organisation, worker, manager, and shareholder, and described the decision-making responsibilities of each role. The introduction also said that all workers also owned shares in the organisation.

The key passage of the operational control scenarios read (with bold as in the questionnaire): **“In this company workers also actively participate with the managers in decision making about the overall operation of the company.** This means that workers are not just responsible for the tasks that are a part of their jobs, they are also involved in work related decisions that would traditionally be the sole responsibility of a manager. **Through this involvement in managerial decision making, workers are able to share their work-related knowledge, help to improve the performance of the company, and provide a better workplace benefiting everyone in the company.** This is known as participative management and is intended to encourage an open

and cooperative relationship between management and workers by including workers in some company decision making.”

The key phrase in the no operational control conditions read: **“Workers such as you are not involved in making the types of operational or strategic decisions made by managers.”**

The corresponding passage for governance control present scenarios read: “In this company major decisions must gain the approval of the company’s shareholders as they have a right to vote to approve or disapprove these decisions. **The shares owned by workers in the company are the same as the shares owned by the other shareholders so the workers are also involved in this process of approving major decisions.** Workers therefore also have some control over the company the same as the other shareholders. The purpose of the workers’ shares is to provide the financial benefits of share ownership to workers, and as a consequence of this arrangement the workers’ shares also provide them with some control over the company.”

The no governance control conditions contained a key phrase that read: **“Workers like you are not included in this process of voting on major company decisions, even though you also own shares in the company.”**

Results and Discussion

Table 3 shows results obtained from the study. Analyses of variance (2×2 with repeated measures on both governance and operational control) showed justice was rated more highly when both operational ($F(1, 54) = 24.24, p < 0.001, \eta^2 = 0.31$) and governance control were present ($F(1, 54) = 42.81, p < 0.001, \eta^2 = 0.44$). There was no significant ($p < .05$) interaction. Similarly, commitment was scored more highly when there was operational ($F(1, 54) = 21.58, p < 0.001, \eta^2 = 0.29$) and governance control ($F(1, 54) = 66.84, p < 0.001, \eta^2 = 0.55$), and there was no interactive effect. Perceived ownership was also rated higher when operational ($F(1, 54) = 15.37, p < 0.001, \eta^2 = 0.22$) and governance control were present ($F(1, 54) = 100.31, p < 0.001, \eta^2 = 0.65$). However, there was

Table 3. Mean Rating Scores with Standard Deviations across Scenarios in Study 2

Scenario	No Worker Control		Operational Control Only		Governance Control Only		Operational & Governance Control	
	M	SD	M	SD	M	SD	M	SD
1. Justice	4.5	1.4	5.1	1.2	5.3	1.3	6.2	1.0
2. Commitment	4.4	1.3	5.1	1.0	5.7	1.1	6.3	0.8
3. Ownership	2.7	1.5	3.5	1.4	4.8	1.7	5.1	1.6
4. Satisfaction	4.3	1.3	5.3	0.9	5.5	1.1	6.1	0.9

a small, significant interactive effect of the two kinds of control ($F(1, 54) = 4.88, p < 0.05, \eta^2 = 0.08$): As the table shows, the interactive effect of the two sorts of control on psychological ownership was slightly less than the two independent effects added together. Finally, satisfaction increased with both operational ($F(1, 54) = 29.64, p < 0.001, \eta^2 = 0.35$) and governance control ($F(1, 54) = 48.88, p < 0.001, \eta^2 = 0.48$), and there was no interactive effect.

Including gender in the analyses of variance produced no significant interactive effects, but a $2 \times 2 \times 2$ analysis of variance of the psychological ownership measure with governance control, operational control, and subsample as factors (the first two repeated measures, the last between subjects) found a significant two-way interaction between governance control and subsample ($F(1, 53) = 4.81, p < 0.05, \eta^2 = 0.08$) with feelings of ownership for students lower than for workers when there was no governance control, while feelings of ownership for students increased to a higher level than for workers when governance control was present.

The study showed that both operational and governance control affected respondents' ratings of all the measures. However, governance control generally had more effect than operational control. This conclusion is reached both from comparisons of the η^2 values for all the measures and from examining the means in Table 3. The finding that both variables had significant effects, coupled with the lack of a significant interactive effect for all but the perceived ownership measure, indicates that the two sorts of control

may produce their effects in rather different, independent ways. Thus, the effects do not appear to substitute for one another; neither is there any evidence for synergistic effects.

Study 3

If employees take part in some kind of profit-sharing arrangement (for example, if they own shares in the firm), then some of their income will depend on the profits made by the firm, and thus be at risk rather than fixed. Study 3 investigated the effects of varying the proportion of a worker's income that was fixed rather than profit-dependent on the rated importance of having operational and governance. Thus, whereas in previous studies operational and governance control were manipulated as independent variables, here their rated importance comprised dependent variables. The study also assessed whether feelings of ownership and justice changed under the same conditions.

Method

Participants and procedure. There were 20 male and 20 female participants, all workers, with an age range from 19 to 66 years ($M = 36.8$), completed questionnaires. Similar recruitment procedures were used and a similar range of occupations recorded. Students were not recruited because Studies 1 and 2 had found little difference between workers and students.

Questionnaire. Four scenarios were presented to each respondent in randomised order. The scenarios were described as employment, low risk, medium risk, and high risk. Four dependent measures, all rated on

7-point rating scales, were used. The first two dependent variables were importance of governance control ("In this situation how important would it be to you to be able to vote for or against major company decisions suggested by management? Voting would enable you to have some governance control over the company."), and importance of operational control ("In this situation how important would it be to you to be able to participate with management in decision making surrounding the daily operation of the company? Participating in work related decisions would give you some operational control over the company"). The remaining two dependent variables were justice and perceived ownership, measured as in Study 1.

The employment scenario depicted a typical employment relationship where employees received a fixed weekly salary with no at-risk component. Employees did not own any shares in the employing company. The three risk scenarios presented employee ownership situations where employees also owned company shares. In the low-risk scenario, employee-owners experienced a low level of risk on the income they received with (on average) 75% being fixed and 25% variable based on any dividend paid on their shareholding; in the medium-risk scenario they received returns that were on average 50% fixed and 50% based on any dividend paid on their shareholding, and in the high-risk scenario the corresponding proportions were 25% and 75%. For all risky scenarios, respondents were told that "when the company is performing at an average level this combination of payments

Table 4. Mean Rating Scores with Standard Deviations across the Scenarios in Study 3

Scenario	Employment		Low Risk		Medium Risk		High Risk	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Importance of Governance Control	3.1	1.7	5.3	1.1	6.2	0.8	6.5	0.8
2. Importance of Operational Control	3.4	1.8	5.2	1.1	6.1	0.8	6.4	0.8
3. Justice	5.0	1.6	4.7	1.3	4.6	1.4	4.2	1.7
4. Ownership	1.6	1.2	4.6	1.6	5.3	1.5	5.6	1.4

will provide you with a fair wage for the work you do. If the company is performing well your income will be higher, but if it is performing poorly your income will be less.”

Results and Discussion

Results from Study 3 are shown in Table 4. A one-way repeated measures analysis of variance with level of at-risk income as the independent variable was carried out with all four dependent variables. The rated importance of both governance ($F(3, 117) = 95.40, p < 0.001, \eta^2 = 0.71$) and operational ($F(3, 117) = 53.54, p < 0.001, \eta^2 = 0.58$) control increased significantly with the riskiness of worker income, as did feelings of ownership in the scenario ($F(3, 117) = 99.50, p < 0.001, \eta^2 = 0.72$). However, perceived justice showed a small but statistically significant decrease as the riskiness of the income increased ($F(3, 117) = 3.11, p < 0.05, \eta^2 = 0.07$). Analyses of variance that included gender as well as scenario as factors found no significant interactions for any of the four variables.

The results show that the importance of having both governance and operational control increased as the percentage of at risk income increased. Examination of the means in Table 4 and the partial η^2 values suggests that this consideration is more important for governance than operational control but the difference is not large.

Study 4

Study 3 showed that when the percentage of at-risk income increased, both governance and operational control were thought more important but perceived justice decreased. The combination of these findings is a little difficult to interpret. For example, it could be that the respondents believed that having at-risk income was in itself unjust. If this is true, it would be an argument against many forms of governance (and perhaps operational) control. Alternatively, it could be that respondents felt that it was unjust to have at-risk income when there was little control, operational or governance. Both explanations seem compatible with the results of Study 3. To disentangle them, Study 4 manipulated both at-risk income and the two different types of control as independent variables. Governance and operational control were manipulated as in Study 2 and riskiness of income (using the no risk and 50% at-risk income levels of Study 3) added. Partly to keep the size of the questionnaire small and partly because of earlier results, only two dependent variables, perceived ownership and perceived justice, were included.

Method

Participants. Thirty-nine people, 19 male and 20 female, completed the study. Eleven of them were students, the remainder were employed. The average age of the sample was 33.0 years, with a range from 17 to 60. Recruitment procedures were similar to those used earlier, except that all the students were recruited from a single 400-level

psychology class.

Questionnaire. Four scenarios closely based on the four used in Study 2 and varying the presence or absence of governance and operational control each occupied a page and were randomly ordered. Following the descriptions of the control in that scenario, the respondent was told, firstly, to consider that he or she was on a fixed weekly salary and then asked the justice and ownership questions, and, secondly, to consider being in a situation where 50% of the pay was fixed, and the other 50 % could vary. The wording of these conditions was similar to that used in Study 3. The previously used justice and ownership questions were then asked.

Results and Discussion

Results from the study are shown in Table 5, and their statistical significance was assessed using 2 (governance control) \times 2 (operational control) \times 2 (income risk) repeated measures analyses of variance on the psychological ownership and justice measures. Overall, the respondents rated employment to be more just when there was more income risk ($F(1, 38) = 10.1, p < .01; \eta^2 = .21$), operational control was present ($F(1, 38) = 8.37, p < .01; \eta^2 = .18$), and there was no governance control ($F(1, 38) = 7.12, p < .05; \eta^2 = .16$). However, as examination of the table indicates, interpretation of these main effects is considerably qualified by the substantial interactive effect of income risk and governance control ($F(1, 38) = 22.29, p < .001; \eta^2 = .37$): The combination of having governance control without an at-risk income

Table 5. Mean Rating Scores with Standard Deviations across the Scenarios in Study 4

Scenario	No Worker Control		Operational Control Only		Governance Control Only		Operational & Governance Control	
	M	SD	M	SD	M	SD	M	SD
Justice Measure								
Employment income only	5.0	1.7	5.0	1.3	3.3	1.8	4.0	1.5
50% at risk income	4.7	1.4	5.0	1.4	4.3	1.6	5.3	1.4
Ownership Measure								
Employment income only	2.5	1.6	3.1	1.7	2.9	1.8	3.5	1.9
50% at risk income	4.2	1.7	4.5	2.0	4.5	1.6	5.0	1.8

component was not seen to be very just. The combination of having governance but not operational control was also not seen as particularly just, although this interactive effect was appreciably smaller ($F(1, 38) = 5.62, p < .05; \eta^2 = .13$). There were no other significant interactions. As in previous analyses, possible interactions with gender and working status were tested for, but none were found.

Feelings of ownership were enhanced when there was an at-risk income component ($F(1, 38) = 60.1, p < .001; \eta^2 = .61$), when there was operational control ($F(1, 38) = 11.0, p < .01; \eta^2 = .22$), and when there was governance control ($F(1, 38) = 7.28, p < .05; \eta^2 = .16$). No combination of these variables had a significant interactive effect. Including gender produced one significant interaction: Women reported slightly greater ownership than men when there was an at-risk income component, and slightly less when there was not ($F(1,37) = 5.99, p < .05; \eta^2 = .14$). Inclusion of worker status produced no significant interactions.

General Discussion

Study 1 found that participants rated organisational commitment, organisational justice, satisfaction, and psychological ownership higher with increasing levels of governance control. The result is in line with many previous findings that increasing employee ownership produces positive organisational attitudes (Chi & Han, 2008; Mayhew et al., 2007; Pierce et al., 1991; Pierce et al., 2003; Pierce & Rodgers, 2004; Van Dyne & Pierce, 2004; Wagner et al., 2003).

Study 2 suggested that both governance and operational control are psychologically beneficial in terms of the four measures used. However, the effects of governance control were somewhat stronger in this study. More important, perhaps, the lack of a significant interactive effect of the two forms of control on three of the measures and only a small effect on the fourth measure indicate that the effects of the two types of control are substantially independent of each other. Thus, the two forms of control appear to be neither substitutable nor synergistic.

Study 3 showed that both governance and operational control are seen as more important when the at-risk component proportion of the worker's income increases. Feelings of ownership also increase markedly. On the other hand, the perceived justice of the arrangements declines slightly. It was not clear from this study whether the last result came about because some respondents saw the possibility of workers having an unpredictable income over which they had very little control at all (for example, general economic conditions). However, the significant interactive effect of governance control and having an at-risk income component in Study 4 helps to resolve the issue. These participants saw governance control as more just when there was an at-risk income component than when there was not. Risk and governance responsibility thus were seen as belonging together. The psychological ownership results from Study 4 were somewhat simpler as there were no interactive effects. In decreasing order of importance, feelings of ownership were enhanced by having an at-risk income component, operational control, and governance control.

A number of the results indicate that perceived justice and psychological ownership do not always go hand in hand. For example, there was no correlation between the two in Study 1, and they were differently affected by the proportion of at-risk income in Study 3. The effects of combinations of governance control and proportion of at-risk income were different on the two variables in Study 4. Overall, measures that enhance psychological ownership are not necessarily seen as more just.

Interactive effects of gender were investigated in all the studies, and interactive effects of whether or not the participant was actually in employment in Studies 1, 2 and 4. Few significant interactive effects were found and those found were small in comparison to the effects of the manipulated variables. In particular, increased employment experience (of the worker compared to the student subsamples) did not produce different patterns of results, a finding that suggests our scenario studies might have some real-world validity.

Nonetheless, a limitation of

the present research is that it was conducted entirely with imagined scenarios. Scenario studies such as these should be regarded as suggestive of real-world outcomes rather than solid demonstrations of them. Real-world working environments, after all, are affected by far more variables than are presented in our scenarios. A related limitation is that the effects of different worker experiences with governance and operational control were not investigated. Their omission from these studies reflects, firstly, the difficulty in finding workers with much experience of governance control, and, secondly, the difficulty of defining a single measure of operational control that would hold over a variety of occupations. Studies which questioned respondents from particular firms and occupations could be conducted to fill these gaps. In sum, the present results provide motivation to examine and compare variations of governance and operational control in real-life settings, despite the inevitable confounding of variables that occur in such settings.

Overall, the results from our four studies suggest that both governance and operational control enhance psychological ownership and have reasonably sized effects on commitment, perceived justice and satisfaction. The two types of control appear to have largely independent effects. That is, the two types of control do not appear to substitute for each other or provide any synergistic interaction. The implication then is that an organisation might do well to see if it can offer both forms of control. Our respondents saw the combination of governance control and at-risk income as just. It is thus important that control, particularly governance control, is offered if employee compensation contains a substantial at-risk component.

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The Mini-IPIP6: Item Response Theory analysis of a short measure of the big-six factors of personality in New Zealand

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This paper is the second in a series documenting and validating the Mini-IPIP6 for use in New Zealand. The Mini-IPIP6 is a public domain short-form personality instrument which provides four-item markers of the six broad-bandwidth dimensions of personality: Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness to Experience and Honesty-Humility. This study reports results from an Item Response Theory analysis of the Mini-IPIP6 in a nationally representative New Zealand sample ($N = 5,576$). A series of unidimensional graded item response models indicated that the Mini-IPIP6 provided well distributed estimates of each of the six dimensions of personality across the latent trait range and centered on the population mean. These findings indicate that the Mini-IPIP6 provides a reasonably precise measure of the major dimensions of personality, given the scale's brevity. Discrimination and difficulty parameter estimates for the Mini-IPIP6 in the New Zealand population are presented, along with Test Information Functions for each personality dimension. A copy of the Mini-IPIP6 is included.

There are a vast number of self-report personality measures available. Generally speaking, these measures are based on the assumption that "... individuals are characterized by stable, distinctive, and highly meaningful patterns of variability in their actions, thoughts, and feelings across different types of situations. These *if... then...* situation-behavior relationships provide a kind of 'behavioral signature of personality' that identifies the individual and maps on to the impressions formed by observers about what they are like" (Mischel, 2004, p. 8). This quote provides a good working definition of personality. The aim of the many available personality measures should be then to provide a method for measuring individual differences in these distinct and highly meaningful patterns of variation, differences in other words, across people in their personality traits.

This study is the second in a series of manuscripts validating a short-form six-factor self-report measure of the six major dimensions of personality for use in the New Zealand context. This measure is known as the Mini-IPIP6 (Sibley et al., 2011). The scale extends the previous five-factor Mini-IPIP inventory initially developed by Donnellan, Oswald, Baird, and Lucas

(2006). In this paper I present an analysis of the item discrimination and difficulty parameters for the Mini-IPIP6 using Item Response Theory (Samejima, 1969). As I outline below, unlike classical psychometric assessment, Item Response Theory examines the extent to which a set of items provide well-distributed measurement precision *across different levels of the latent trait they measure*. This study provides, for the first time, a detailed assessment of the response parameters for a public domain short-form measure of personality validated for use in New Zealand. To do so I analyse Mini-IPIP6 scores from the first wave of the New Zealand Attitudes and Values Study. This is a nationally representative longitudinal study of around 6000 New Zealanders.

What is Personality?

Previous research has typically identified five distinct factors, or broad clusters of related traits and behavioural tendencies, which constitute distinct latent dimensions of personality. These five broad-bandwidth dimensions of personality were synthesized and organized into a general framework by Goldberg (1981) who coined the term 'Big-Five' (see also Goldberg, 1990). This Big-Five model of personality

contains the following factors: (1) Extraversion, (2) Agreeableness, (3) Conscientiousness, (4) Neuroticism, and (5) Openness to Experience. More recently, Ashton and Lee (2001, 2007, 2009) have made a compelling argument for an extended 'Big-Six' model of personality which adds an additional dimension to the mix: (6) Honesty-Humility. A descriptive summary of the core content and example traits for these different dimensions of personality is presented in Table 1.

Following from the general definition of personality by Mischel (2004) with which I began this manuscript; these six dimensions of personality reflect six distinct and 'highly meaningful patterns of variability in people's actions, thoughts, and feelings.' Why these six dimensions specifically? Evolutionary theory suggests that what we refer to as personality should reflect variation in behavioural systems or ways of acting that were equally adaptive for our species in different ecological niches (MacDonald, 1995, 1998; Nettle, 2006). Personality should reflect those traits in our species where it was sometimes the individuals high in the trait that had an adaptive advantage, but equally often in other situations, it was individuals low in the trait that had an adaptive advantage. Overall therefore, the traits had balanced selection pressures and this resulted in species-wide variation being maintained (Penke, Denissen, & Miller, 2007).

When we talk about personality, this is what we should be aiming to measure: traits which vary across people because such species-wide variation itself is the feature that has been selected for in evolution (Buss, 1991; Denissen & Penke, 2008). To give one example of the logic of defining personality as species-wide variation in behavioural systems resulting from balanced selection pressure, Ashton and Lee (2007) argued

Table 1. Interpretation of each Mini-IPIP6 factor, including example traits, and likely adaptive benefit and costs resulting from high levels of each personality dimension. This table is taken from Table 3 of Ashton and Lee (2007, p. 156) with minor adaptations by Sibley et al. (2011) reinterpreting Neuroticism and Agreeableness within a Big-Five framework. (Ashton and Lee (2007) originally developed this framework for describing their HEXACO model of personality structure).

Factor	Interpretation	Example Traits	Likely adaptive benefits of high levels (in-evolutionary-history)	Likely costs of high level (in-evolutionary-history)
Extraversion	Engagement in social endeavours	Sociability, leadership, exhibition	Social gains (friends, mates, allies)	Energy and time; risks from social environment
Agreeableness	Ingroup co-operation and tolerance; reciprocal altruism in HEXACO model	Tolerance, forgiveness, (low) quarrelsomeness	Gains from cooperation, primarily with ingroup (mutual help and non-aggression)	Losses due to increased risk of exploitation in short-term exchange
Conscientiousness	Engagement in task-related endeavours	Diligence, organization, attention to detail	Material gains (improved use of resources), reduced risk	Energy and time; risks from social environment
Neuroticism (low Emotional Stability)	Monitoring of inclusionary status and attachment relations; kin altruism in HEXACO model.	Anxiety, insecurity, (low) calmness	Maintenance of attachment relations; survival of kin in HEXACO model	Loss of potential gains associated with risks to attachment relations.
Openness to Experience	Engagement in ideas-related endeavours	Curiosity, imaginativeness, (low) need for cognitive closure and (low) need for certainty	Material and social gains (resulting from discovery)	Energy and time; risks from social and natural environment
Honesty-Humility	Reciprocal altruism (fairness)	Fairness, sincerity, (low) entitlement and (low) narcissism	Gains from co-operation (mutual help and non-aggression)	Loss of potential gains that would result from the exploitation of others (and in particular outgroup members)

that a high level of Conscientiousness should have been beneficial for our ancestors to the extent that it led to material gains and the improved use of available resources. However, a high level of Conscientiousness would also have caused the individual to expend time and energy in planning and organization, which would have come at the expense of other activities and may not always have been necessary in order to maximize gains.

A high level of Conscientiousness may have also led to increased social risks to the extent that others could free-ride or exploit outcomes resulting from planning and organization by the individual in question (e.g., food stores). In environments where expending energy in long-term planning and attention to detail were necessary to maximize gains, people high in Conscientiousness should have prospered. However, in environments where long-term planning did not yield any additional benefits, people low in Conscientiousness would have had an adaptive advantage because they would not have expended unnecessary energy or time on such endeavors and would have instead maximized immediate gains without longer-term associated costs. These trade-offs were presumably balanced across ecological niches (Penke et al., 2007), and this is why we see variation in this trait across people. We call this variation personality.

The Mini-IPIP6 Measure of Personality

There are a number of excellent (valid and reliable) public domain measures of personality available. These include (to name but a few), 50-item and 100-item instruments based on the International Personality Item Pool (IPIP; Goldberg, 1999), the 44-item Big Five Inventory (BFI; John & Srivastava, 1999), the 50-item Five Individual Reaction Norms Inventory (FIRNI; Denissen & Penke, 2008), the 100-item Big Five Aspects Scale (BFAS; De Young, Quilty & Peterson, 2007), and the 60- and 100-item HEXACO (Ashton & Lee, 2009). There are also a number of copyright personality inventories, the most well-known of which is possibly the NEO-PI-R (Costa & McCrae, 1992). I recommend the use of one of the many excellent public

domain instruments (see Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006, for further discussion of the benefits of personality measures in the public domain).

Given their length, the various instruments listed above may not always be appropriate, however. In some research designs, where space is limited or there are constraints on interview time, a shorter measure of personality using a small select set of marker items for each personality dimension is needed. The Five-Factor Mini-IPIP is one such measure. The Mini-IPIP is a short-form public domain personality instrument initially developed by Donnellan et al. (2006) to assess the five broad-bandwidth dimensions of personality identified in the Big-Five framework (see also Gosling, Rentfrow & Swann, 2003, for an even shorter measure). One strength of this short-form measure is that the items were selected from the IPIP. The IPIP is a large-scale collaborative effort to develop a comprehensive system and set of items for personality measurement in the public domain (Goldberg, 1999).

Sibley et al. (2011) extended Donnellan et al.'s (2006) original Five-Factor Mini-IPIP to also include marker items for the sixth dimension of personality identified by Ashton and Lee (2007) in their Six-Factor (HEXACO) model of personality structure. Following Donnellan et al. (2011), Sibley et al. referred to this revised scale as the Mini-IPIP6. The Mini-IPIP6 is useful because it provides a way to briefly index the five dimensions of personality identified in the Five-Factor or Big-Five framework, *while also indexing* the sixth dimension of personality; reflecting HEXACO Honesty-Humility without altering the operationalization of the existing factors.

The six-factor HEXACO scale developed by Ashton and Lee (2009) is an excellent measure of personality. However, the HEXACO redefines many of the original Big-Five factors as rotational variants of their more traditional Big-Five counterparts, primarily Agreeableness and Neuroticism. This makes comparison across studies measuring Agreeableness

within a Big-Five framework with studies assessing this dimension in a HEXACO framework quite tricky (see for example, Sibley, Harding, Perry, Asbrock, & Duckitt, 2010). The Mini-IPIP6, in contrast, retains Donnellan et al.'s (2006) short (four-item markers) of the original Five-Factor model and simply adds four marker items that load on a sixth rotated factor *without changing the existing structure*. The Mini-IPIP6 therefore provides a useful adaptation in specific research 'niches' where one wants the balance of retaining markers within a five-factor personality model, but also the flexibility to index the additional Honesty-Humility personality dimension identified by Ashton and Lee (2007).

Sibley et al. (2011) validated the Mini-IPIP6 using Exploratory and Confirmatory Factor Analyses. In their original presentation of the Mini-IPIP6, they showed that the 24 items reliably fit a six-factor solution, with each four-item set loading on their hypothesized personality factor. These results provided good evidence for a six-factor model of personality indexed by the Mini-IPIP6. Sibley et al. (2011) also provided formal construct definitions for each of the six dimensions of personality, and these are presented in Table 1. In addition, Sibley et al. (2011) described a series of regression models showing that each of the Mini-IPIP6 dimensions predicted unique variance in concurrent criterion outcomes. For instance, the Mini-IPIP6 measure of Extraversion predicted how much time people spent socializing with their friends, whereas the Mini-IPIP6 measure of Conscientiousness predicted how much time people spent doing housework. These are exactly the type of outcomes that these different dimensions of personality should predict.

In sum, Sibley et al. (2011) provided good evidence validating the Mini-IPIP6. However, the psychometric analyses reported by Sibley et al. (2011) were based on a classical test theory framework (Exploratory and Confirmatory Factor Analysis) and do not tell us anything about the extent to which the Mini-IPIP6 items vary in their level of precision across the latent trait range. This is what Item Response Theory allows us to assess.

Item Response Theory

Item Response Theory is a general method for modelling the precision (or reliability) of a set of items across different levels of a latent trait. For example, in education, an ‘easy’ test might reliably differentiate ‘very poor’ students from everyone else, but be less reliable in differentiating ‘excellent’ students from everyone else. Similarly, the Mini-IPIP6 measure of Extraversion might be better (i.e., more precise) at differentiating between people who are low in Extraversion from everyone else, relative to how accurate it is at differentiating between people high in Extraversion relative to others.

A reasonably even level of measurement precision is extremely important for a number of reasons. Skew in measurement precision means that a scale might be more reliable when measuring variability at the low level of a trait relative to variability at the high level of the trait. This can lead to biased estimates of the trait depending on a person’s latent trait level. Such bias can also lead to inaccurate conclusions about the stability of the trait across time, as it might appear that people who are low in a trait change less in that trait over time, whereas people high in the trait may (spuriously) seem to change more in their trait level. Rather than reflecting genuine differential change, if measurement precision is uneven, this could simply be due to less reliable measures across time at a given trait level and hence more variability in the measure. This could make it look like people have changed more at one trait level relative to another.

So how does Item Response Theory actually work? To model the precision of a scale across the trait range, we need to know about two distinct parameters of each item. These are item difficulty and item discrimination. Stated formally, the logic behind a two-parameter logistic item response model (2PLM; Birnbaum, 1968) can be summarized as follows:

$$(1.0) P_j(\theta_i) = 1 / (1 + \exp(-\alpha_j(\theta_i - \beta_j)))$$

This equation states that the probability that a given individual (j) with a given level of trait θ will have a level of that trait defined by one aspect of the person (their true trait

level), and two aspects of the way it is measured (or item parameters). These two parameters are item difficulty (β_j) and item discrimination (α_j). In this model, trait levels can be thought of as reflecting a standardized (z-scored) range, with a Mean of 0 and Standard Deviation of 1.

Item difficulty reflects the level of the trait that a person would need to have a 1 in 2 (50%) chance of scoring in the positive direction on the item. For example, a person with the sample mean level of a trait ($\theta = 0$), would have a 50% chance of scoring in the positive (high trait) direction on an item with a difficulty value of 0. Similarly, a person with a trait level one unit above the mean ($\theta = 1$), would have a 50% chance of scoring in the positive (high trait) direction on an item with a difficulty value of 1.

What this means is that items that have higher difficulty values tend to be endorsed by fewer individuals (i.e., only those with higher levels of the trait). The term difficulty in this context arises from the fact that Item Response Theory tended to be used originally to model performance in educational assessments, where only students with a high latent academic ability would be likely to get a positive (correct) score on more difficult test items.

When examining ratings of Likert items, Item Response Theory provides a series of discrimination values in sequence for the set of (ordered) possible responses. That is, the lowest score, for example 1 versus any other score from 2-7; a score of 1 or 2 versus any other higher score from 3-7, and so on. With a 7-point Likert scale, there are therefore six item difficulty parameters, which reflect the following contrasts:

$$(2.0) \begin{aligned} \beta_1 &= 1 \text{ v } 234567 \\ \beta_2 &= 12 \text{ v } 34567 \\ \beta_3 &= 123 \text{ v } 4567 \\ \beta_4 &= 1234 \text{ v } 567 \\ \beta_5 &= 12345 \text{ v } 67 \\ \beta_6 &= 123456 \text{ v } 7 \end{aligned}$$

Item discrimination, in contrast, reflects that ability of an item to differentiate between people with similar levels of the trait. Critically,

an item’s ability to differentiate between people is most precise at trait ranges corresponding to the item difficulty parameter. For example, imagine we have two items, one with a discrimination parameter of 1.0 and a difficulty of -1.0, the other also with a discrimination parameter of 1.0 but a difficulty parameter of 1.0. Both items are equally able to differentiate between individuals, but at different regions of the trait range.

The first item in this example would be better at differentiating between people with low levels of the trait, while the latter item would be better at differentiating between people with high levels of the trait. Conversely, the higher difficulty item would perform poorly when used to differentiate people at the low end of the trait range (people low on the trait are all fairly likely to get this ‘hard’ item ‘wrong’), and the low difficulty item would perform poorly for differentiating between people at the high end of the trait range (people high on the trait would all be fairly likely to get this ‘easy’ item ‘correct’).

The difficulty and discrimination parameters can be combined to provide item Test Information Functions. By combining these functions, we can estimate the level of precision (i.e., reliability) of the entire scale across the entire trait range. You can get a good idea of how these parameters are combined to provide test information (I) by looking at the following equation:

$$(3.0) I_j(\theta) = \alpha_j^2 \times P_j(\theta_i) \times (1 - P_j(\theta_i))$$

In this equation, α_j^2 is the squared item discrimination parameter for the j th item, and $P_j(\theta_i)$ is the probability of endorsing item j for individuals with a given (i) level of trait θ . A Test Information Function that looked like a bell curve centered on a score of $\theta = 0$ would indicate that the scale provided the most information about participants who were near the average level of the trait, but provided progressively less information about people at the high or low extremes of the trait range.

Item Response Theory thus provides information that is quite distinct from that provided by classical test theory. Cronbach’s alpha, for

example, provides information on how well the items in a scale ‘hang together’ or inter-correlate, in the sense that they seem to be measuring the same thing. A Test Information Function, in contrast, provides information about the level of precision of a scale when assessing people with different levels of an underlying trait (see Hambleton & Jones, 1993, for discussion).

The desired shape of the Test Information Function, of course, depends upon the theoretical nature and expected prevalence of the trait in the population. For instance, in educational assessment, the ideal should be to develop tests that provide a high level of information across all levels of the trait range, say from 2 Standard Deviations below the mean, to 2 Standard Deviations above the mean, to give a very rough example. As such, we would hope that a ‘good’ test in this area would be relatively high and flat rather than bell-shaped. Similarly, research on Maori identity shows that the Houkamau and Sibley’s (2010) multi-dimensional model of Maori identity provides reasonably well distributed test information across different levels of latent identification (Sibley & Houkamau, in press). This indicates that the measure provides a similar level of accuracy in differentiating between people with latent trait scores across a range of different levels of those scores (i.e., it reliably assesses both those highly identified, but also those with a low level of ethnic identity).

Well-designed personality instruments should also provide relatively high and flat Test Information Functions. That is, such measures should aim to differentiate between people equally across all levels of possible personality, rather than say, accurately differentiating between those low versus moderate or high on a trait, but being less accurate at differentiating between those moderate versus high. In contrast, the Test Information Function for a clinical measure of psychological health or distress should look quite different in a general population sample. Here we would reasonably expect that the Test Information Function would be skewed toward high values of θ , say for example, $\theta > 1$ (keeping in mind that 1 represents 1 Standard Deviation

unit). A function of this type would indicate that the test provided detailed information differentiating between people with high versus very high levels of the trait in question, but did not differentiate that well between people with low or moderate scores. This is exactly the type of function observed, for instance, in Item Response Analyses of the Kessler-6 screening scale for non-specific psychological distress in general population samples (Kessler et al., 2002; Krynen, Osborne, Duck & Sibley, 2012).

Overview of the Present Study

The present study assessed the item response parameters of the Mini-IPIP6 in a nationally representative New Zealand sample. This is the second in a series of studies aiming to provide comprehensive psychometric information validating this public domain inventory for use in the New Zealand context. In the first study in this series my colleagues and I showed that the Mini-IPIP had a reliable six-factor structure with excellent convergent and discriminant validity (Sibley et al., 2011). Here I document item response parameters (discrimination and difficulty parameters as in Equations 1.0 and 2.0) and Test Information Functions for the four items that comprise each of the six Mini-IPIP6 subscales. This assesses the extent to which the scale reliably assesses the various dimensions of personality across different levels of the latent trait range. I expected that the Mini-IPIP6 would provide relatively even Test Information Functions distributed around the average estimated level of each latent trait, and extending ideally to ± 2 Standard Deviation units.

Method

Sampling procedure

The NZAVS-2009 questionnaire was posted to 40,500 participants from the 2009 NZ electoral roll. The publicly available version of the roll contained 2,986,546 registered voters. This represented all citizens over 18 years of age who were eligible to vote regardless of whether or not they chose to vote, barring people who had their contact details removed due to specific case-by-case concerns about privacy. In sum, roughly 1.36% of all people

registered to vote in New Zealand were contacted and invited to participate. The NZAVS-2009 sampled a total of 6,518 participants. The overall response rate (adjusting for address accuracy of the electoral roll and including anonymous responses) was 16.6%.

Participant details

Complete responses to all 24 Mini-IPIP6 items were provided by 5,576 participants (85% of the sample; 3298 women, 2278 men). Of those providing complete data, 72% were New Zealand European ($n = 4,036$), 16% of the sample were Māori ($n = 915$), 4% were of Pacific Nations ancestry ($n = 222$), 5% were of Asian ancestry ($n = 254$) and 3% were coded as ‘other’ ($n=149$). Participants’ mean age was 47.02 ($SD = 15.52$). This is the same dataset which Sibley et al. (2011) analysed in their original factor analysis of the Mini-IPIP6.

Materials

Administration of the Mini-IPIP6 is described in Sibley et al. (2011). The 24 items in the scale were rated on a 7-point scale following the standard IPIP format developed by Goldberg (1999). This format asks participants to rate how well each statement describes them personally from 1 (very inaccurate) to 7 (very accurate). A copy of the Mini-IPIP6 inventory is presented in the Appendix.

Results

Overview of analytic strategy

I conducted a series of graded item response models examining response parameters for the items assessing each of the six Mini-IPIP6 factors separately. Analyses were conducted using Mplus version 6.11 with numerical integration (Muthén & Muthén, 2009). These analyses estimated item response parameters for each Mini-IPIP6 factor separately due to processing constraints, as Item Response Theory with numerical integration is computationally intensive by modern standards.

Item Response Analysis of the Mini-IPIP6

The item response models estimated two types of item parameter: an item discrimination parameter (α) and a series of item difficulty parameters (β_1

- β_6) representing each set of ordered contrasts between different response options on the 7-point IPIP ordinal scale (see Equations 1.0 and 2.0). Discrimination and difficulty parameters for the Mini-IPIP6 are presented in Table 2.

As shown in Table 2, discrimination parameters for the Mini-IPIP6 items were all reasonably comparable, with values on or close to 1.0. This indicates that the Mini-IPIP6 items were all fairly comparable in providing similar levels of discrimination at their particular difficulty level. Difficulty parameters for the Mini-IPIP6 items were around -1.0 to -2.0 for the β_1 parameter at the low trait end, which represented the likelihood of responding in the negatively keyed direction (a low trait score of 1 versus 234567). Difficulty parameters for β_6 , in contrast, were around 1.0 to 2.0 for most items. This parameter represented the likelihood of responding in the positively keyed direction (a high trait score of 7 versus 123456; see Equation 2.0). This suggests a reasonable spread of item difficulty across the trait range.

Test Information Functions for the six Mini-IPIP6 subscales are presented in Figure 1. These functions are based on the entire sample, and can thus be considered reasonably representative of the New Zealand population. These functions are graphed for θ values ranging from -3.0 to 3.0. This represents a broad range of values that should encompass the majority of the trait range in the New Zealand population.

As shown in Figure 1, the Test Information Functions for the Mini-IPIP6 indicated that the six personality measures provided the most information for θ values close to a score of 0. This indicates that the Mini-IPIP6 provided the most precise information about each latent trait for values close to the population mean. Moreover, the test information functions were reasonably flat for values of θ ranging from -1.0 to 1.0.

These results suggest that across the population as a whole, the Mini-IPIP6 seems to provide reasonably precise short-form measures of each of the six major broad-bandwidth dimensions of personality across a fairly broad range of each latent trait centered on average or mean levels of each trait. This is exactly

what the Mini-IPIP6 is intended to provide, as it was developed as a general measure of personality that should be most precise in the normal trait range.

Discussion

In a recent article comparing various personality inventories, Grucza and Goldberg (2007) made the seemingly provocative statement that "Among the competing products developed by psychologists, perhaps the most important are their assessment instruments. Unfortunately, in psychology we have no Consumers Union to test competing claims and to compare these products on their overall effectiveness." (p. 167). I agree with this assessment and think it is important that we as a field continue to develop and evaluate freely available methods for assessing the constructs we seek to measure.

The purpose of the current manuscript was to apply recent advances in psychometric assessment to evaluate the measurement properties of a short-form personality inventory based on the IPIP format for use in the New Zealand context. This short-form measure, the Mini-IPIP6, is publicly available, and a copy is included in the appendix. The Mini-IPIP6 is based on the original Five-Factor Mini-IPIP developed by Donnellan et al. (2006), who in turn selected items from the IPIP developed by Goldberg (1999). The Mini-IPIP6 builds upon this earlier work by also including items that load on the distinct sixth 'Honesty-Humility' factor not indexed in earlier Five-Factor models. This is the second in a series of papers documenting the various properties and characteristics of the Mini-IPIP6 within the New Zealand population (see Sibley et al., 2011, for the first). In these papers, I hope to provide detailed and transparent information about the scale, its strengths, and its weaknesses, for the assessment of personality in the New Zealand context.

Results from a series of unidimensional graded response models indicated that the Mini-IPIP6 provides reasonably well distributed estimates of each of the six dimensions of personality across each latent trait range. Moreover, the Mini-IPIP6 scales were most precise when measuring

levels of each personality trait that were close to the population average. This is entirely as expected, given that the scales were designed to assess variation in the typical trait range, rather than, in contrast, variation at the extremes of a trait range as might be the case for a measure of depression or clinical anxiety (see for example Krynen et al., 2012).

Recommendations for scale scoring

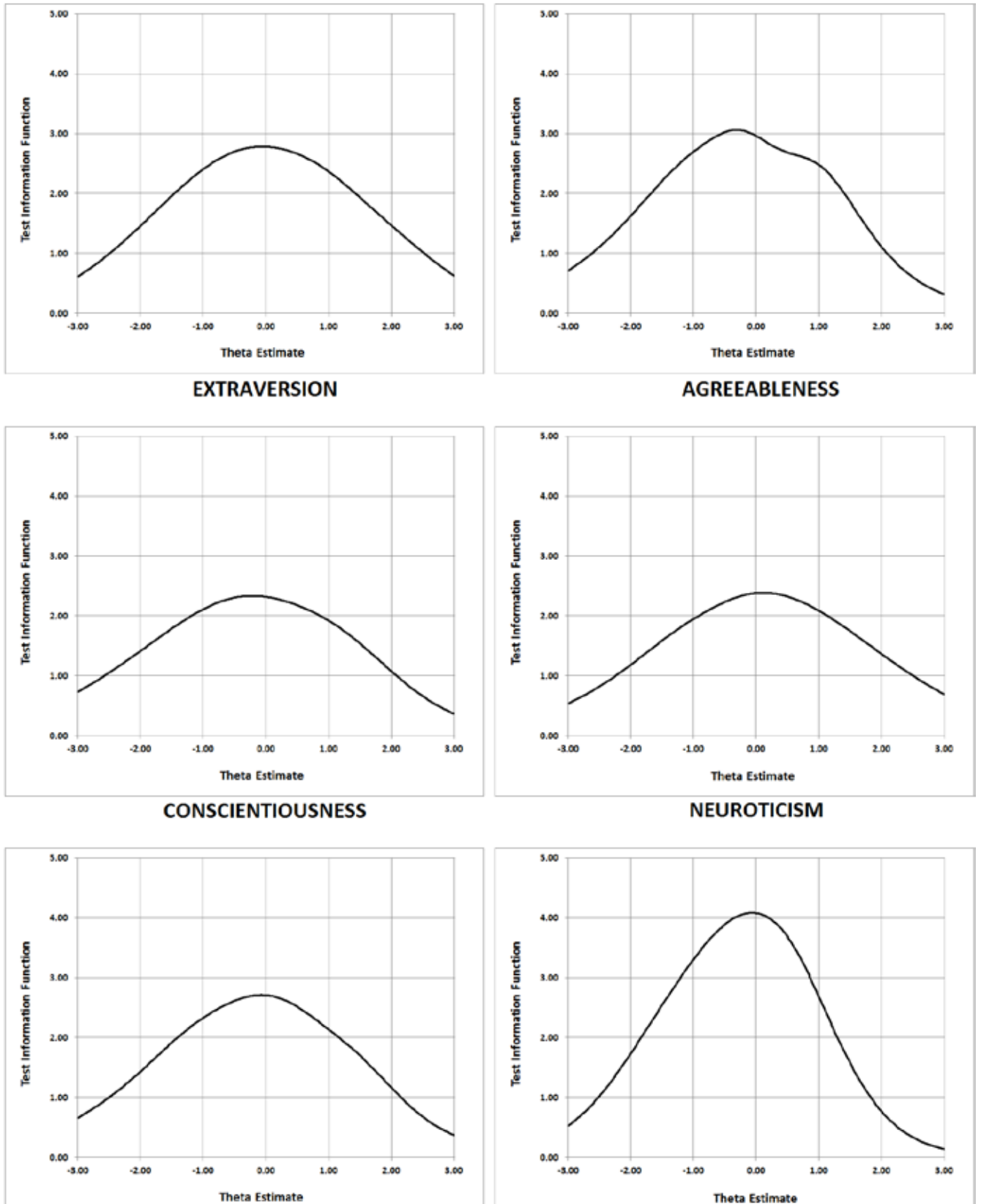
The Mini-IPIP6 can be scored using either a classical measurement model (by taking the average of scale items or estimating a latent variable in a structural equation model), or a more advanced IRT scoring method based on the parameters reported here. For the most part, the two scoring methods should generally yield similar results. For the majority of research on personality, Mini-IPIP6 scale scores can be calculated simply by first recoding the scale items worded in the opposing (low trait direction), and then taking the average score for the items in that subscale (i.e., summing the scores for the items in a given subscale, and then dividing that number by how many items there are in the subscale). This provides mean subscale scores, the method employed by Sibley et al. (2011) in their earlier work using the Mini-IPIP6. This scoring method should be appropriate for the majority of research focusing on assessing the extent to which different aspects of personality are linked to other outcomes of interest.

The difficulty and discrimination parameters reported in this paper could also be employed to score the Mini-IPIP6 using a more advanced IRT method. An IRT-weighted scoring procedure will be more reliable than simply creating a mean scale score as it is weighted based on item discrimination parameters and thus provides more reliable estimates for a given person depending upon their level of given personality trait. Those familiar with IRT could do this by applying the parameters reported here to scale people on the Mini-IPIP6 using one of the many available IRT scoring software packages. IRT-weighted Mini-IPIP6 scale scores will tend to be more precise at low and high levels of personality, but should be reasonably comparable to mean scale scores for the

Table 2. Discrimination (α) and difficulty ($\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$) parameter estimates for the Mini-IPIP6 based on a series of graded response models.

	Item Response Parameters						
	α	β_1	β_2	β_3	β_4	β_5	β_6
Extraversion							
Am the life of the party.	1.07	-1.85	-1.04	-.21	.89	1.98	2.76
Don't talk a lot.	.84	-2.82	-1.67	-.80	.10	.86	1.91
Keep in the background.	1.00	-2.51	-1.32	-.49	.45	1.23	2.44
Talk to a lot of different people at parties.	.92	-2.25	-1.27	-.54	.24	.97	1.96
Agreeableness							
Sympathize with others' feelings.	1.46	-3.19	-2.51	-1.86	-1.19	-.28	.99
Am not interested in other people's problems.	.66	-3.74	-2.51	-1.59	-.76	.22	1.76
Feel others' emotions.	1.12	-3.15	-2.36	-1.70	-.92	.03	1.37
Am not really interested in others.	.81	-3.77	-2.69	-1.94	-1.19	-.28	1.25
Conscientiousness							
Get chores done right away.	.90	-3.39	-2.13	-1.18	-.27	.57	1.64
Like order.	.85	-3.49	-2.72	-2.02	-1.06	-.20	1.12
Make a mess of things.	.77	-4.21	-2.93	-2.05	-1.07	-.18	1.38
Often forget to put things back in their proper place.	.94	-2.63	-1.73	-1.17	-.64	-.09	1.11
Neuroticism							
Have frequent mood swings.	1.13	-1.32	-.23	.36	1.04	1.72	2.53
Am relaxed most of the time.	.77	-2.24	-.70	.38	1.48	2.57	3.92
Get upset easily.	.90	-2.15	-.76	.05	.89	1.72	2.80
Seldom feel blue.	.65	-2.82	-1.01	-.19	.76	1.80	3.15
Openness to Experience							
Have a vivid imagination.	.54	-4.22	-2.68	-1.52	-.21	.94	2.47
Have difficulty understanding abstract ideas.	1.10	-2.70	-1.72	-1.00	-.17	.47	1.61
Do not have a good imagination.	.79	-3.45	-2.35	-1.56	-.85	-.11	1.13
Am not interested in abstract ideas.	1.24	-2.57	-1.71	-1.12	-.29	.41	1.43
Honesty-Humility							
Feel entitled to more of everything.	.91	-3.43	-2.67	-1.89	-1.10	-.42	.71
Deserve more things in life.	1.17	-2.32	-1.69	-1.08	-.33	.17	.99
Would like to be seen driving around in a very expensive car.	1.47	-1.92	-1.42	-.97	-.52	-.16	.48
Would get a lot of pleasure from owning expensive luxury goods.	1.16	-2.08	-1.30	-.71	-.12	.31	1.10

Figure 1. Test Information Functions for the Mini-IPIP6 (Big-Six) Factors of Personality in a representative New Zealand sample ($n = 5562$).



majority of people who fall in the middle of the trait range. IRT-weighted scoring may be particularly important when one wants to maximize measurement precision in a research design, such as when the conclusions may have important real-world implications for social policy. I strongly recommend IRT-weighted scoring for research designs where the aim is to select people based on an extreme low or high trait level, such as might be the case in some specific instances of personnel selection.

Conclusion

These findings indicate that the Mini-IPIP6 provides a brief measure of personality that is reasonably well distributed in precision across the latent trait range for each of the six major dimensions of personality. Taken together with the initial validation study conducted by Sibley et al. (2011), the Mini-IPIP6 appears to provide a valid and reliable short-form measure of the six major dimensions of personality in the New Zealand context. Certainly, it is the inventory for which the most transparent and detailed validation information in New Zealand is currently publicly available. I hope that the presentation and validation of this short-form and easily administered instrument will provide a foundation for future research on personality in New Zealand. Moreover, given its brevity and satisfactory psychometric properties, I hope that these results will help other researchers to make informed decisions about which of the many available personality inventories to include in their research. In this regard, I hope that the Mini-IPIP6 will be deemed useful in other large-scale population surveys of the New Zealand population. This might help us progress toward a standard, validated, public domain format for assessing and comparing the effects of personality on various outcomes across diverse settings and research designs in the New Zealand context.

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Appendix

The Mini-IPIP6

Instructions: This part of the questionnaire measures your personality. Please circle the number that best represents how accurately each statement describes you.

I...	Very Inaccurate					Very Accurate	
	↓						↓
1. Am the life of the party.	1	2	3	4	5	6	7
2. Sympathize with others' feelings.	1	2	3	4	5	6	7
3. Get chores done right away.	1	2	3	4	5	6	7
4. Have frequent mood swings.	1	2	3	4	5	6	7
5. Have a vivid imagination.	1	2	3	4	5	6	7
6. Feel entitled to more of everything.	1	2	3	4	5	6	7
7. Don't talk a lot.	1	2	3	4	5	6	7
8. Am not interested in other people's problems.	1	2	3	4	5	6	7
9. Have difficulty understanding abstract ideas.	1	2	3	4	5	6	7
10. Like order.	1	2	3	4	5	6	7
11. Make a mess of things.	1	2	3	4	5	6	7
12. Deserve more things in life.	1	2	3	4	5	6	7
13. Do not have a good imagination.	1	2	3	4	5	6	7
14. Feel others' emotions.	1	2	3	4	5	6	7
15. Am relaxed most of the time.	1	2	3	4	5	6	7
16. Get upset easily.	1	2	3	4	5	6	7
17. Seldom feel blue.	1	2	3	4	5	6	7
18. Would like to be seen driving around in a very expensive car.	1	2	3	4	5	6	7
19. Keep in the background.	1	2	3	4	5	6	7
20. Am not really interested in others.	1	2	3	4	5	6	7
21. Am not interested in abstract ideas.	1	2	3	4	5	6	7
22. Often forget to put things back in their proper place.	1	2	3	4	5	6	7
23. Talk to a lot of different people at parties.	1	2	3	4	5	6	7
24. Would get a lot of pleasure from owning expensive luxury goods.	1	2	3	4	5	6	7

Scoring instructions. First, reverse code the following items: 6, 7, 8, 9, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, and 24. Next, create an average score for the four items assessing each dimension of personality. Extraversion: 1, 7, 19 and 23. Agreeableness: 2, 8, 14 and 20. Conscientiousness: 3, 10, 11 and 22. Neuroticism: 4, 15, 16 and 17. Openness to Experience: 5, 9, 13 and 21. Honesty-Humility: 6, 12, 18 and 24. An SPSS data entry template and scoring syntax is available from the author upon request.

Book Reviews

Ka Tū, Ka Oho: Visions of a Bicultural Partnership in Psychology. Invited Keynotes: Revisiting the Past to Reset the Future.

Edited by Raymond Nairn, Phillipa Pehi, Roseanne Black, and Waikaremoana Waitoki

(Wellington: NZPsS. 317 pages. \$45.00 (NZPsS Members), \$68.00 (Non-Members) ISBN: 978-0-473-20665-9)

Reviews By:

Clive Banks

Ngati Porou and Pakeha.

Registered Clinical Psychologist: Ora Toa Mauriora.

NZCCP Fellow.

and

Ian M. Evans, PhD FRSNZ

Professor Emeritus

School of Psychology

Massey University, Wellington

Book Review Editor's Note:

Delegates at the 2012 Annual Conference of the NZPsS were given the opportunity to witness the release of what will surely become a landmark publication for the Society. *Ka Tū, Ka Oho* collects together and extends most of the Māori keynote conference presentations over the last two decades. In doing so it allows us both to relive and review the various lines 'drawn in the sand'. We are assisted in this reviewing process by the two excellent reviews published here. The first is provided by Clive Banks, a truly bi-cultural clinical practitioner and scholar. The second is provided by Ian Evans, now retired professor of psychology from Massey University, and long-time supporter of the search for a 'local' psychology for Aotearoa New Zealand.

Review by Clive Banks

I must confess that I am not a great reader of books related to our profession and am more often to be found with my nose stuck in a science fiction novel. However, the offer to review this publication was too good to refuse given the mana of the editors and contributors.

Ka Tū, Ka Oho contains 15 bicultural keynote addresses given to the New Zealand Psychological Society, at its annual conference, over the past 20 years. On its own this would be a considerable collection of accumulated wisdom, but the editors have greatly increased the value of this publication by interviewing the speakers and obtaining

their reflections on their thinking at the time of the keynote address, and now. These reflections were particularly useful as they gave the speakers an opportunity to expand on themes and arguments, as well as add fresh developments. The deeper I got into the book, the more it felt like being at the ultimate bicultural psychology dinner-party; all these interesting people throwing ideas around amongst peers.

The keynote presenters are from a range of ethnicities, cover diverse academic and professional backgrounds, and all have valuable experience and insight from working at the bicultural coal-face. So many theoretical perspectives are traversed that at times it felt like mental yoga, with my thinking being stretched in the nicest possible way. The book reinforces the idea that so often, what we see depends on where we stand. It takes an effort to imagine what we would see if we were standing somewhere different. This publication emphasises the importance of knowing where we stand professionally and culturally, as a starting point for seeing things from the perspective of others. It was also pointed out how this can assist us to find spaces in which to work successfully, across cultures.

The book is structured with some information about the editors and a foreword, followed by a general introduction. The keynotes are delivered in four sections. Section one addresses colonisation, its impacts on Māori and the development of our nation. Section two introduces keynotes that are more focussed on the importance of recognising different needs and how to respond to them. Section three looks at how solutions for Māori need to have foundations in mutual respect between psychology and Māori knowledge. Retaining and growing our strengths for mutual benefit. Section four contains keynotes that are more practice based. I found that there was overlap between the sections, but the non-chronological order worked well. The way the keynotes seemed to build on each other added momentum and interest to my reading.

I found the general introduction to be a little heavy going and dense but it did its job of setting the scene. I particularly enjoyed Ray Nairn's reflection on Professor Linda Tuhiwai Smith's kina metaphor. Determined to acquire the taste, he persisted for many years until:

*"The flavour was like a symphony.
The kina tasted sweet and briny.
There was a creamy texture too.
The parting flavour reminded
me of rosehips. I had acquired
the taste for kina. I persevered
simply because I wanted to know
what others experienced when
they ate kina. This is how it can
be for those seeking to work with
Māori"* (p. 21).

Hand on heart, I have never read psychological material that left me so hungry for more.

This publication succeeds in cutting across disciplines and ethnicity to deliver valuable, and at times touching, perspectives on bicultural partnership in psychology. It has affirmed for me that we in New Zealand are well positioned to become international powerhouses in modern psychology, if we seize the opportunities so tantalisingly displayed here. Buy this book and hop on the bus. At the very least, reading it will assist in reflecting on the "Diversity, Culture and the Treaty of Waitangi" competency component of the Continuing Competence Programme.

The following whakatauki (proverb) captures the opportunity here:

*Te manu e kai ana i te miro, nona te ngahere.
Te manu e kai ana i te matoranga, nona te ao.*

*The bird that eats of the miro, has the forest.
The bird who partakes of knowledge has access to the world.*

The contributors, editors and the NSCBI deserve congratulations for having the foresight to preserve and collate these keynotes. The follow-up interviews are the relish in the gourmet sandwich.

Clive Banks
Ngati Porou and Pakeha.
Registered Clinical Psychologist: Ora Toa Mauriora.
NZCCP Fellow.

Review by Ian Evans

The context for this powerful new book arises, as you can see by the subtitle, from past invited keynote addresses to the New Zealand Psychological Society's (NZPS) annual conferences, engaging issues relevant to Māori and psychology and the bicultural imperative in Aotearoa New Zealand. Not all of the speakers identify as Māori; four of the fifteen speakers recorded in this work do not, although all four have made outstanding contributions to the cultural conversation in professional psychology. However I was on the Society's Executive Committee when we decided that at least one of the conference keynotes every year must be delivered by a Māori scholar—a thoroughly well-intentioned affirmative action that fits uncomfortably well into the regrettable "us versus them" division. Nevertheless, these keynote addresses now exist, and the editors have done us a marvellous service by bringing them together in one volume. I attended all but three of the fifteen presentations and it is fascinating as well as informative to have them gathered in one place. Some have been published before, but in this collection there is for each address a unique follow-up interview with the author, asking him or her to reflect on the context of the talk, to revisit its message, and to suggest how it might be constituted differently today (2010). What an innovative way to reset the dialogue and keep it fresh.

Imagine how challenging it would have been at the time to craft any such address in the hope of informing without patronising, challenging without insulting, inspiring without offending a relatively homogeneous and largely self-satisfied audience? The passion and commitment of these keynote speakers is evident and the book provides a profound sense of encouragement, of movement, of gains achieved, however torpid they may appear to some. I would go so far as to say that this volume marks the coming of age of organised psychology in New Zealand. To quote Winston Churchill, we will look back on this publication as "the end of the beginning."

I assert this because it is possibly the first New Zealand book about psychology that could not just

as easily have been written in Britain, the USA, Canada, or Australia. This is about us, and our psychology, and our struggles to make the discipline accessible and relevant to all. It really should be required reading for every postgraduate psychology student in the country. Not because I agree with all the content, but because, as the end of the beginning, it throws down the gauntlet that results from embracing Te Tiriti o Waitangi—which we must do. It says so in our Code of Ethics. How much longer will our academic departments ape those of overseas, their staff publish only in obscure foreign journals and agonize about their H-index? We could at the stroke of a pen, change a lot of PBRF¹ scores by suggesting that at least one of every academic psychologist's Nominated Research Outputs has something relevant to illuminate the psychological diversity of te ao Aotearoa!

The editors, being less preposterous, have performed a skilful job of organising the presentations into four major themes, the first is that colonisation continues and affects all people. I would suggest that that is now well understood and accepted in our profession and so attention needs to turn to what psychology has to offer with respect to mitigating these negative effects. I did not do a formal count, but I had the impression that most contributors acknowledged that were they to present their talk today they might be less strident (Charles Waldegrave said "soften", Linda Tuhiwai Smith said "reflect") and more constructive. Yet simple solutions still elude us all, often entwined, as explained poetically and politically by Ngahuia Te Awakotuku, in policy and legislative controls.

One relatively straightforward solution is improving the demographics of our profession, commented on by a number of authors. There are some truths that I consider self-evident, and one is that attracting to the science and practice of psychology in Aotearoa New Zealand Māori scholars and participants in numbers no less than their proportion in the population must be achieved, and rapidly. While there are Māori

¹ Performance Based Research Funding, for which the Tertiary Education Commission rates the research productivity of all academic staff in New Zealand.

professors in academic departments of psychology, there are no Māori full professors of psychology. There are no Māori directors of clinical training programmes or other leading applied psychology programmes. This is despite the increasingly large number of Māori postgraduates with doctoral degrees. Yes, they will doubtless climb their way through the academic ranks and fill senior leadership positions in the future, but we have waited a long time just to get ourselves to this present modest position. No-one can talk with greater authority on these issues than Mason Durie, who not only challenged the profession in 1987, but has created such highly successful workforce development programmes as Te Rau Puawai, and the formation of the Māori academy, Manu Ao.

Durie touched with assurance on a much more complex issue, which is the relationship between conventional science and indigenous perspectives on the natural order. A number of the other authors struggled with this issue, with little success. Psychology's methods of discovery, thrashed out for well over a hundred years of powerful intellectual debate, cannot be summarily dismissed as some sort of Western plot to negate indigenous worldviews. Psychology as a discipline is large, multi-faceted, international, and most of what has the legitimated label psychology fits the empirical standards of a natural science and the holistic expectations of a social science. It can respect and study spiritual beliefs and religious faith, but it is neither spiritual nor based on faith. It has a debatable and constantly analysed philosophy of science and its methods are under regular scrutiny, but it is not a derivative of philosophy, dualistic mentalism, or any particular world view or constricting set of specific values. It can study attitudes, feelings, opinions, families, developmental abnormalities, consciousness, and social influence, but is not constrained by any of them. There is a vast domain of psychological knowledge in the world—it isn't privileged, anyone can access it with adequate preparation and training, and it is to my mind foolish to ignore it or to try to create a different version. Psychology as a discipline has *always* been aware of the importance of culture

in human society and functioning, ever since Wundt, the founder of modern experimental psychology, began to move into enquiring how culture enters into psychological processes.

One reason, I believe, these issues are handled less deftly in this book is because fewer than half the contributors are actually psychologists. A good example of some limitation in understanding can be seen when authors tried to address the problems surrounding mental health services and the extent to which, as few would deny, organised mental health fails the Māori community. It may be the case that psychology has failed to influence the mental health system in accordance with the intensive level of knowledge and understanding we have regarding causes and solutions to psychological distress, but the failure of the system itself are the failures of a totally incompatible medical model of problems and services. In her chapter, epidemiologist Joanne Baxter quotes figures on Māori mental health inequities, such as Māori rates of hospitalisation for schizophrenia being 3.5 times that of non-Māori. Despite quoting them, she deplores reading negative statistics about Māori, as do many of us, since, as Tim McCreanor emphasises so well in his contribution, the anti-Māori discourse in this country (the extent of which is extraordinary to those of us who did not grow up here) contributes to ongoing prejudice, antagonism, and just plain ignorance that are commonplace experiences for many Māori. But the high rate of hospitalisation for schizophrenia has nothing to do with psychology, whose knowledge base, were it to be truly implemented, would radically change psychiatric services, as John Read (2010) has articulated over and over again.

I found the frequent assumption that psychology is *primarily* an applied field and a helping profession disconcerting, because the really interesting discussions about the interface between kaupapa Māori research, cultural perspectives, and contemporary psychology take place around highly transparent research methods and ways of expanding our discipline's understanding of the human condition. It was not surprising to me

that the best informed chapters were all written by psychologists and were the final four papers of the final section, called *Practicing better*. I did not in this review want to pick out winners among the authors since it might imply losers, but the authors of this last section really do show us the way. Angus Macfarlane offers a creative model for blending conventional and Māori psychological themes, but not, as the editors comment, by “amalgamating (or assimilating) them into a singular ‘whole’...irrespective of culture” (p. 148). Averil Herbert describes in detail her research methods and findings that kept her empirical studies of effective parenting true to a Māori kaupapa. And Linda Nikora, in a prescient address now twelve years old, after giving some background to the NSCBI² and the Māori and Psychology Research Unit (MPRU) at Waikato, offers valuable advice to Māori students: “There are many different pathways through psychology that Māori have yet to explore. We need to know about all that psychology may have to offer” (p. 253).

I have to re-affirm that Linda Nikora, who is always so modest and self-effacing (maybe she takes seriously *kaore te kumara e korero mo tona ake reka!*) is the true hero of academic bicultural progress for both Māori and Pākehā students and staff. Her ability to stay positive and focused despite the glacial progress we are making has enabled the University of Waikato to become the only genuine academic leader in the effort to help us wake up and stand together in the future (*ka tū, ka oho*).

There are many other interesting discussions, all reflective and informative and would allow most non-Māori psychologists, both seasoned and those still in training, to have a greater understanding of the Māori vision and experience (*te ao Māori*, the theme of Section 3). However I am not assuming that only one side of the bicultural partnership needs enlightenment. What this book illustrates so well, and why it is so satisfying, is that it presents some of the fruits of Māori scholarship and thinking in a way that can be consumed by everyone. Perhaps this

² National Standing Committee on Bicultural Issues within the NZPsS.

is the genius of the young and old, Māori and Pākehā, North Island and South Island, editorial team. As Charles Waldegrave suggests (p. 119), the concept “cultural competence” might give us all a false sense of security, with cultural sensitivity or awareness being the desirable goal. This innovative and carefully presented volume can facilitate its attainment by all of us.

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Reference

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