

In Search of a Method to Predict Dropout from Alcohol Treatment Services.

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Author's Declaration

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Abstract

Dropout from alcohol treatment centres wastes resources and reduces the likelihood of clients receiving positive outcomes. O'Connor (Harper, 2000) developed a tool to predict dropout using Signal Detection methodology that involved raters identifying problem alcohol use as depicted in a number of vignettes; however the tool was too long and complicated for routine agency use. The main focus of this thesis is to develop O'Connor's tool by moving away from the Signal Detection methodology. Statistical examination of O'Connor's tool revealed that her conclusions were confounded by the emotional "feeling" of the vignettes. This finding enabled the original 60 vignettes to be reduced to 12 which were subsequently distributed to clients attending counselling for their alcohol use. Clients' discharge statuses were followed up three months later. The new, reduced tool did predict for discharge status – distinguishing between those who received a planned discharge and those "still attending" after three months (O'Connor's dropout group resembled the current study's still attending group). Further analysis demonstrated that the reduced tool predicted for alcohol consumption among participants who were not recruited through a counselling or treatment agency. Davies' (1997) Functional Discursive model was also examined to ascertain if discursive stage predicted for discharge status. Ultimately Davies' Functional Discursive model did not have the reliability necessary to be a robust predictor of dropout. In addition, it was concluded that the reduced version of O'Connor's tool retained the predictive capacity of O'Connor's original tool despite having been dramatically simplified. It is also concluded that research within agency settings is necessary to enhance the generalisability of

research findings and to maximise agency workers' understanding of the relevance of outcome research to their daily practice.

Chapter 1 : The Importance of Dropout

1.1: Introduction

This thesis is going to develop a usable, effective tool to predict dropout from alcohol treatment services. However, to appreciate the implications of this tool's development it is vital to appreciate the culture within which it is being developed. This is not just an issue of psychology or even medicine; substance misuse treatment in general, and alcohol treatment in particular, is a highly politicised issue. For that reason, the practical implications need to be understood not just in terms of improving the users' (and their families') lives but within the political (and economic) framework inside which alcohol services exists.

1.2: Costs of Alcohol Use

1.2.1: Personal Cost

The World Health Organisation (WHO) estimated that, in 2000, 1.8 million deaths were related to alcohol - 3.2% of all deaths worldwide (WHO, 2002). Additionally, the WHO rates excessive alcohol use as the third most significant risk factor for premature death and ill health in Europe, behind only smoking and raised blood pressure (WHO, 2005). Unlike smoking or alcohol use, high blood pressure is not a

volitional behaviour – and can also be a consequence of excessive smoking or alcohol use – so this is a confused conclusion but it does emphasise the ill health associated with excessive drinking.

In the UK, alcohol-related deaths were estimated to have risen by over 4% from 8,386 (12.9 per 100,000 population) in 2005 to 8,758 (13.4 per 100,000 population) in 2006 (Office for National Statistics, 2008). The Psychiatric Morbidity Survey (Singleton, Bumpstead, O'Brien, Lee, & Meltzer, 2000) sampled individuals aged 16 to 74 from 8,886 private households throughout England, Wales and Scotland to investigate psychiatric morbidity, including the prevalence of hazardous and dependent alcohol use¹. Using these measures, one quarter of the sample's drinking behaviour in the past year was assessed as hazardous (38% of all men and 15% of all women in the sample) and 7.4% were considered to be dependent on alcohol. Dependent alcohol consumption was most common among the young - 30% were aged under 25 (in comparison 21% of those consuming alcohol and 12% of those with no alcohol problem were under 25). Both the prevalence of hazardous drinking and that of dependency were found to decrease with age (both being most common in the under 25 age group). However, these results must be interpreted cautiously as all cases of severe dependency (prevalence was 1 per 1,000) were found among those aged 30 to 65 (Singleton, et al., 2000). Therefore the under 25s are routinely drinking very heavily but severe dependency is much rarer.

¹ Hazardous drinking is defined as: "an established pattern of drinking which brings the risk of physical and psychological harm." (Singleton, et al., 2000, p. 18) and was assessed as a score >8 on the Alcohol Use Disorder Test. The report fails to define alcohol dependency therefore it can be assumed to be what the Severity of Alcohol Dependence questionnaire measures as alcohol dependency.

Most recent figures from Scotland (York Health Economics Consortium, 2010) estimated that the total number of hazardous adult drinkers (i.e. consuming more than the recommended number of units a week for men or women (21 and 14 units respectively)) in 2007 was 1,047,080 – about a quarter of the Scottish population aged over 16. The number of harmful drinkers – defined as men consuming over 50 units a week and women consuming over 35 units a week – was estimated at 229,579 (5.43% of the total population of interest). Overall, approximately 30% of men and 20% of women aged over 16 drink hazardously, with 7% of men and 4% of women drinking harmfully (ibid).

From these studies – although it is unclear exactly how hazardous drinking is defined – a sizable proportion of society are drinking at a level that suggests it would cause them harm.

1.2.2: Economic Cost

As well as the human cost, the economic costs associated with alcohol use are substantial. Thavorncharoensap, Teerawattananon, Yothasamut, Lertpitakpong, & Chaikledkaew (2009) conducted an international systematic review examining the economic impact of alcohol consumption across countries from which systematic data was available. The total cost estimates (both the value of resources used and loss of resources attributable to – for example – early death, morbidity or reduced productivity) were corrected for 2007 \$US values, and the percentage of each country's GDP this represented was calculated to allow comparisons to be made

across countries (see Thavorncharoensap, et al., 2009 for full discussion of methodology used). Considering only those studies published after 2000, data were available from six countries (Canada, Germany, The Netherlands, Sweden, South Korea and Thailand) and suggested that the percentage of GDP ranged from 0.6% (The Netherlands) to 2.76 % (South Korea; *ibid*). While there were variations across the methodologies used in each study, and the assumptions made regarding the proportion of the diseases attributable to alcohol as well as the calculations included, these figures begin to highlight the size of the cost associated with alcohol misuse.

Harwood (2000) estimated that alcohol misuse and alcoholism cost the U.S. approximately \$185 billion in 1998, an average annual rise of 3.8% since 1992. More recent figures from the United Kingdom estimated that alcohol misuse accrued a cost of up to £20bn to English and Welsh societies combined in 2000/01 (Cabinet Office, 2003a), and the most recent Scottish figures estimate the overall societal cost of alcohol misuse as being between £2.5bn and £4.6bn (York Health Economics Consortium, 2010) – considerably increased from the 2006/07 estimate of around £2.25 billion (Scottish Government, 2008b). Using the midpoint estimate (around £3.5bn), and taking the estimate of 4,227,249 adults living in Scotland in 2007, this is equivalent to a payment of £827.96 from every adult living in Scotland to cover the associated costs of alcohol misuse² (York Health Economics Consortium, 2010). This overall costing reflects costs from healthcare³ (£267.8m), social care (£230.5m), crime (£727.1m), productive capacity of the Scottish economy (£865.7m) and wider social costs (£1,464.6m). As a consequence, reducing the prevalence of alcohol

² This figure was widely reported in the media as being £900 but an examination of raw data, using the mid-point estimate, generated a slightly more conservative figure of £827.90.

³ For ease of reference the midpoints are reported here.

misuse has been made key in national alcohol strategies (e.g. Department of Health, 2007).

1.3: Benefits of Alcohol Use

Although controversial, there are economic and social benefits associated with moderate alcohol consumption. Prohibiting alcohol would be devastating to sectors of the economy depending on it and also impact individuals for whom moderate alcohol consumption is an important, and positive, part of their recreation.

1.3.1: Economic Gains of Alcohol Use

For a balanced view, the revenue generated through alcohol use – and, specifically, excessive alcohol use - must be acknowledged. Undesirable alcohol consumption generates substantial revenue for governments with Australian research finding that underage drinking contributed approximately \$107 million Australian dollars to the government through taxation revenue (Doran, Shakeshaft, Hall, & Petrie, 2009). This revenue would be lost if under-age drinking was eliminated.

There are three sources of economic gains: (1) direct gains (defined, in this context, as Value Added Tax (VAT) revenue associated with alcohol sales and the duties paid on alcohol), (2) indirect gains (for example the tax revenue generated through VAT on staff tips associated with alcohol use, income tax on staff wages, corporation tax on businesses and National Insurance contributions) and (3) intangible gains which

would include the employment of individuals who might otherwise be unemployed and therefore supported by the state.

This figure is not calculated nationally (personal correspondence with Carly Gray, KAI Indirect Taxes, HMRC 26th January, 2010). Although this issue was raised in the National Harm Reduction Strategy consultation document, who recommended an increase in transparency regarding income generation (Department of Health, 2002), a review of the literature found no estimate for the income generated through alcohol use.

It is, however, possible to estimate the direct financial gains associated with alcohol by collating existing figures. The annual excise duty revenue associated with alcoholic beverages (in 2008/09) was valued at £8.47 billion (HM Revenue and Customs, 2010). Furthermore, household expenditure figures detail that expenditure on alcohol was £15.024 billion in 2008 (Office for National Statistics, 2009) – of which £2.661 billion can be estimated to have been recouped by the government through VAT⁴. This leads to revenue of £11.13 billion directly attributable to alcohol sales and is likely to be an underestimation as it was estimated that the total value of the UK's alcoholic drinks market is in excess of £30 billion (Cabinet Office, 2003b), although it is not clear from where this figure arose.

The indirect gains are harder to quantify. A report commissioned by The Brewers of Europe reported that, while around 15,000 people were directly employed in British

⁴ This was calculated on the assumption that all domestic expenditure on alcohol would include VAT which was subsequently reclaimed by the Government, using the pre-31st December 2008 level of VAT of 17.5%.

breweries, approximately 48,500 jobs were indirectly dependent on beer production and it induces over 333,000 jobs in the hospitality and retail sectors (Ernst & Young, 2009). At this time it is not possible to extrapolate from these figures to estimate the total number of people in alcohol-related employment – although it has been estimated that approximately 1 million jobs are related to alcohol use (Cabinet Office, 2003b). A major limitation in reliably assessing associated employment is that it involves different employment sectors - for example those involved with the supply of raw materials, manufacturing, packaging, designing and engineering the necessary equipment, distribution and advertisement (International Centre for Alcohol Policies, 2006). Considering only employment from licensed premises (clubs and public houses/wine bars) figures from the Office for National Statistics (2009) reported that, in 2006, over £4 billion was paid in employment costs – of which £307 million was paid in National Insurance and pension contributions. Additionally, these premises paid £721 million in taxes and levies (Office for National Statistics, 2009). It is apparent from these figures that the Government will receive substantial returns from all employment associated with alcohol consumption.

While it is not possible to reliably quantify the economic benefits of alcohol consumption due to limitations in the sensitivity of the available data – and it is therefore not possible to assess whether the income generated is greater than the associated costs - it is apparent that alcoholic beverage consumption is a behaviour upon which many jobs depend. Furthermore, it is a lucrative source of revenue and therefore prohibition is unlikely to be a realistic option for tackling the rising costs of alcohol misuse.

1.3.2: Health Benefits of Alcohol Use

The health benefits of moderate alcohol consumption are well documented. The most striking issue within this body of research is the disagreement regarding exactly what is meant by moderate drinking. Brodsky and Peele (1999) illustrated the variability of this concept, with research projects' definitions ranging between one and five drinks daily (the moderate consumption estimate for women was consistently lower than for men in all studies). Although light/moderate drinking is usually estimated as between one and two drinks daily (Agarwal, 2002; Brodsky & Peele, 1999) there are notable discrepancies within the literature, for example Finnish research by Halme and colleagues (2010) defined moderate drinking as between one and seven drinks a week.

Overall, research has indicated that moderate alcohol consumption is associated with health benefits – reducing the risk of cardiovascular disease (Thun, et al., 1997); coronary heart disease (Agarwal, 2002; Thun, et al., 1997); stroke (Agarwal, 2002; Hillbom, 1998; Reynolds, et al., 2003); mortality associated with ischaemic stroke (Patra, et al., 2010); general mortality in middle-aged and elderly populations (Lin, et al., 2005; Thun, et al., 1997); and is protective against cognitive decline in old age (Stampfer, Kang, Chen, Cherry, & Grodstein, 2005), dementia (Ruitenberg, et al., 2002) and Alzheimer's disease (Huang, Qiu, Winblad, & Fratiglioni, 2002) – although there are gender differences in the protective effects of moderate alcohol consumption (for example Hillbom, 1998; Thun, et al., 1997).

However, although the volume of literature is compelling, no evidence found supports the idea that moderate consumption of alcohol definitively causes better health. It may be that those individuals who eat a balanced diet, maintain a healthy weight, do not smoke and exercise are also moderate drinkers. This position is supported by Hansel and colleagues (2010) who found that the physical benefits associated with moderate alcohol consumption were due to consumers' life styles (they were of a higher social status, had better physical health and a lower general risk of cardiovascular health issues) rather than their alcohol consumption.

A review by Brodsky and Peele (1999) examined psychological, social and cognitive/ performance benefits associated with alcohol consumption. While moderate alcohol consumption was positively associated with these benefits, their review again revealed no concrete evidence that it caused these benefits. Those who consumed alcohol moderately had better mental health than abstainers or heavy drinkers, but it may be that their improved mental health caused moderate alcohol consumption rather than the converse (ibid). Additionally, while there are beneficial effects such as increased sociability and creativity, these are still present when participants erroneously believe that they have consumed alcohol indicating that expectancies and social learning are major influences (Brodsky & Peele, 1999).

1.4: Reducing Alcohol Misuse

Regardless of the associated benefits of moderate alcohol consumption, there is a need to target “problem alcohol use” – i.e. the alcohol consumption responsible for

the high economic and personal costs outlined in Section 1.2. Ideally this would focus on maintaining responsible drinking, thus retaining the economic and personal benefits of alcohol use. Reducing the costs associated with alcohol misuse must therefore be a primary goal for governments. For those drinkers whose consumption is so extreme that they would be termed as having an “alcohol problem” one approach to tackle this issue is through specialised alcohol treatment services.

1.4.1: Effectiveness of Treatment for Alcohol Misuse

Research suggests that treatment is effective in reducing alcohol misuse. Project Match was a large, U.S. based study investigating the effect of “matching” alcohol-misusing individuals to one of three treatments: Cognitive-Behavioural Coping Skills Therapy (CBT), Motivational Enhancement Therapy (MET) and Twelve-Step Facilitation Therapy (TSF; Project Match Research Group, 1993). At the time of development, Project Match was the most expensive alcohol treatment study ever funded (Velasquez, DiClemente, & Addy, 2000), costing \$27 million (Cutler & Fishbain, 2005), yet the project failed to show a difference between the three treatments in terms of matching and outcome, but improvement was found across all three conditions⁵. Follow-ups one year and three years post-intervention revealed few differences between the effectiveness of each treatment although TSF showed a slightly better outcome, especially among the abstinent participants (Project Match Research Group, 1998). Ultimately, of the 806 participants who were followed up three years post-intervention, almost 30% reported being abstinent for three months

⁵ A reanalysis by Connors, Carroll, DiClemente, Longabaugh and Donovan (1997) suggested that – among those clients who attended two or more treatment sessions - MET clients consumed more drinks per day and had a lower overall percentage of days abstinent than either TSF or CBT clients.

prior to the follow-up. Furthermore, those participants still drinking reported an increase in the number of days abstinent by about 150% in comparison to pre-intervention levels (ibid). Overall, Ludbrook and colleagues (2001) concluded that individuals who received treatment for alcohol misuse had a better outcome than those who did not – comparing the 56% to 60% abstinent or controlled drinking rates observed in Project Match to Babor's (1995, as cited in Raistrick, Hodgesson, & Ritson, 1999) assertion that a third of alcohol misusers spontaneously recover.

A similar study was conducted in the United Kingdom (the United Kingdom Alcohol Treatment Trial (UKATT)) which compared the effectiveness of two interventions: Motivational Enhancement Therapy (MET; Miller & Rollnick, 1991) and Social Behaviour and Network Therapy (SBNT; Copello, et al., 2001). Participants were followed-up three and twelve months post-project commencement (ibid) and, while there was no main effect for treatment, the mean self-reported Percentage of Days Abstinent (PDA) in a month improved from a baseline measure of 29.5% to 42.7% at three months and 43.1% at twelve months (Rist, Randall, Heather, & Mann, 2005). Additionally, the number of Drinks per Drinking Day (DDA) reported decreased from 26.8 units at baseline to 17.9 units (three month follow-up) and it was still improved at the twelve month follow-up at 19.2 units (ibid.). Overall, the UKATT figures show a general trend of decreasing alcohol use post-intervention – suggestive of an improved outcome. This observation is born out by Rist and colleagues' (2005) observation that 57.9% of participants who were followed up at 12 months reported their drinking as being either improved to some degree (this could be experiencing

non-problematic drinking, much improved drinking or somewhat improved drinking) or abstinent .

The findings from these two high profile studies are echoed in other research. Timko and colleagues (Timko, Moos, Finney, & Lesar, 2000) conducted an eight year follow up of 466 participants with alcohol problems who had not received treatment at baseline. Those who received any treatment (Alcoholics Anonymous and/or other) had better rates of abstinence at one year and eight year follow-up (ibid.).

Additionally, Soyka and Schmidt (2009) followed-up 67 alcoholism treatment clients two years post-treatment and found that 58% were abstinent and overall 79% had improved.

It must, however, be noted that while these studies suggest an improvement following treatment spontaneous remission does occur. Moos and Moos (2003) followed up a group of alcohol users who had received no treatment. After eight years, 50.4% of participants who had not received treatment were abstinent and only 32.6% reported having symptoms of alcohol dependence (Moos & Moos, 2003). It is, of course, possible that the clients who remain in treatment would change their alcohol use with or without treatment. If this was the case, then retention in treatment may not affect change but identifies those who would have altered their behaviour regardless. However, the levels of improvement noted in the aforementioned studies are greater than Moos' figures which suggest that treatment is effective.

1.4.2: Cost-Effectiveness of Treatment

On the assumption that treatment does work the cost-effectiveness of treatment relates to the difference between the cost of a course of treatment and the economic benefits of the consequences. Overall support for the cost-effectiveness of treatment was given by Ludbrook et al.'s (2001) independent review of the literature for the Scottish government that examined the cost-effectiveness of treatment for alcohol misuse. Examining brief interventions, detoxification (both inpatient and outpatient data) and relapse prevention services on an outpatient basis, they concluded that the literature supported these measures being cost-effective (ibid).

Additionally, the UKATT study also examined the cost-effectiveness of the treatments, taking into account both the client-associated costs (such as health, social and criminal justice service use cost and QALYS) and the therapeutic related costs (for example the training and supervision of the therapists, overheads of the building and secretarial staff, individual session costs; for the exact costing see UKATT Research Team, 2005a). The findings indicated that both MET and SBNT were cost-effective, saving approximately five times as much as they cost – although this is probably under-estimating the total saving as the study did not take into account the savings associated with reducing the impact of alcohol problems on families and friends (UKATT Research Team, 2005a). This suggests that for every five people who begin treatment, only one needs to have a successful outcome for treatment to be cost-effective overall.

In addition to the UKATT analysis, several studies have specifically examined the economic basis of treatment. McCollister & French's (2003) literature review examined the Net Economic Benefit (NEB) per client (i.e. the economic benefit per client minus the cost of treatment) for five studies detailing drug or alcohol "addiction" interventions. These studies differed in the substance treated and method of treatment delivery, but they universally endorsed the cost effectiveness of successful treatment. The estimated NEB ranged from \$586 for a cocaine intervention programme (Flynn, Kristiansen, Porto, & Hubbard, 1999) to \$344,092 for an inpatient programme for mentally ill chemical abusers (French, McCollister, Sacks, McKendrick, & De Leon, 2002)⁶.

1.5: The Problem of Dropout⁷

Within alcohol services, research has consistently illustrated that outcome is associated with retention in treatment. Baekeland and Lundall (1975) reported a positive relationship between retention and outcome in 13 studies examining alcohol inpatient and outpatient services although Baekeland and Lundall do warn that "treatment length or intensity and prognostic factors were confounded in both the inpatient and outpatient studies ... the issue of treatment length and outcome must

⁶ The economic impact on four areas was examined: costs associated with crime, health services use, unemployment and purchasing the substance of choice. Savings in the criminal justice system, public health care and productivity are obviously cost-effectiveness considerations but savings to the individual through not purchasing the substance of choice is more controversial. It would be expected that savings incurred through a reduction in substance abuse would be reflected indirectly through less crime, social care intervention and increased productivity. While McCollister and French accept that this may lead to double counting, they defend the inclusion of this factor on the grounds that it would "represent the foregone opportunity to use that money to buy other, less harmful good" (2003, p. 1650). This justification is curious as reducing spending on alcohol would decrease tax revenue on these goods so may amount to a loss of tax revenue for the government. The effect of a reduction in spending on drugs is less clear, due to the illicit nature of the transactions. For this reason, studies which used a reduction in substance use as an outcome measure will not be included in this synopsis of their review; this related to six studies (all of which had French as a co-author).

⁷ A condensed version of this literature review has previously been published in Newham, Russell and Davies (2010)

remain an open one” (Baekeland & Lundwall, 1975, p. 745). However, more recent research appears to support their findings.

Bottlender and Soyka (2005) examined clients three years after attending outpatient alcohol misuse services and found that the strongest predictors for relapse within three years was having dropped out of treatment. Specifically, dropouts were 6.5 times more likely to relapse in the three month immediately following treatment (ibid). Additionally, Moos and Moos (2003) followed up 473 “alcoholics” who had never received treatment before. They found that, in general, the length of time retained in treatment was related to a positive outcome in both the long- and short-term; specifically individuals who received 27 or more sessions of treatment did better than those who received fewer or none (ibid).

The evidence does suggest that treatment is cost-effective; however, policy focused on increasing access to treatment (e.g. Scottish Government, 2008a) is flawed. The logic behind the policy is obvious: treatment is cost-effective and therefore increasing the number of individuals in treatment will decrease the costs to society. This strategy neglects that these individuals must reduce their drinking to non-harmful levels or become abstinent. The act of offering treatment is not enough to provide a positive outcome - these individuals must be retained in treatment.

1.5.1: Extent of Alcohol Dropout

The issue of ambivalence, which can manifest itself as non-compliance with treatment, permeates medicine. English figures suggest that the average rate of missed appointments across all medical specialties for the second quarter of 2009 was 10.47% (Department of Health, 2009); however, within NHS psychiatric services, the missed appointment rate increases to 15.9% of the 17,211 appointments considered (Mitchell, Psych, & Selmes, 2007). Among alcohol and drug services 36.9% of alcohol and 25.3% of drug services' first appointments are missed, and 18.3% and 7.7% respectively of follow-up appointments missed; on average, 29.73% of appointments were missed across these examined appointments (ibid). Pal, Taberner, Readman and Jones (1998; cited by Jackson, Booth, McGuire, & Salmon, 2006) estimated that the NHS wastes £50 of resources for every missed appointment so the associated costs are high.

Attrition from treatment services is one expression of this ambivalence. A meta-analysis review of psychotherapeutic services found an average dropout rate of 47% (Wierzbicki & Pekarik, 1993). Stark (1992) carried out a review of the literature relating to substance misuse services. Stark surmised that, within the first month, approximately 50% of clients dropped out of substance abuse treatment and found evidence that 46% of potential clients to a hospital-based alcohol clinic failed to attend the first appointment and, of those who did attend, 44% did not return for a second appointment (Rees, Beech, & Hare, 1984). Additionally, up to 45% attrition was reported from a hospital-based alcohol treatment programme (Gordis, Dorph,

Sepe, & Smith, 1981). Only 28% of clients to alcohol services were reported as attending nine or more appointments (Leigh, Ogborne, & Cleland, 1984). These findings begin to suggest that the problem is endemic within treatment centres.

There are very few epidemiological studies examining dropout. Figures published in the US detailed treatment discharge figures for those individuals who reported alcohol as being their primary abused substance (n = 533,987; Substance Abuse and Mental Health Services Administration, 2008). Their findings indicated that 67% of individuals received a planned discharge, of which 84% had completed their treatment course while the remainder were transferred (ibid.). While these results indicate a higher retention level than would be expected based on Stark's review, it must be remembered that the US system differs substantially from the UK system in terms of funding. In fact, data published by the Welsh Assembly Government paint a more sobering picture with only 39.91% of clients who entered Welsh Assembly Government funded alcohol treatment services (comprising both voluntary and statutory sector agencies) obtaining a planned discharge (Welsh Assembly Government, 2008).

1.5.1.1: Newham, Russell and Davies (2010).

To contribute to this sparse literature, Newham and colleagues (2010) assessed the issue of dropout within Scottish alcohol treatment services. They requested alcohol services discharge status data from 21 Scottish Local Government Drug and Alcohol Action Teams (DAATs; local government bodies which coordinated drug and

alcohol services) and 63 alcohol treatment agencies. Ultimately 10 DAATs and three agencies responded, providing discharge data for part or all of the four year period (n=48,299). The findings indicated that, between 2004-08, only 46% of all entries into alcohol treatment services resulted in a planned discharge with 53% (n = 25,231) being unplanned discharges and 1% (688) discharges for a disciplinary reason. Although the picture improved from 42% of discharges being planned in 2004/05 to 52% in 2007/08, there was a wide inter-regional variation - for example the planned discharge rates ranged from 24% to 81% in 2007/08 (for the full article see Appendix A).

These figures highlight that dropout is a major issue within alcohol treatment service. Offering treatment to alcohol misusers who fail to complete therefore costs society doubly - (i) the cost of wasted treatment and lost resources and (ii) the criminal justice, social services and health expenditure costs associated with alcohol misuse. However, the implications of these findings for policy have not yet been acknowledged.

1.5.2: Factors Influencing Retention in Alcohol Services

Although over 30 years old, Baekeland and Lundwall's (1975) meta-review raises points that are still pertinent today. They found that studies consistently reported dropout being associated with a lower socioeconomic status, social isolation, poor motivation and poor attitude toward alcohol treatment. However, they noticed inconsistencies in the literature's findings that suggested the influence that these

factors exerted differed depending on, for example, whether the dropout was at the start of treatment or further into it.

Focusing specifically on retention within alcohol treatment, a myriad of variables have been suggested as important predictors. Clients' failure to commence alcohol misuse treatment has been examined by British researchers Booth and Bennett (2004). They identified older clients, those who lived closest to the treatment centre and those whose appointment was in the morning as being more likely to attend their first appointment (Booth & Bennett, 2004). In general, the literature supports poor retention in treatment being associated with being younger (Jackson, et al., 2006; Kavanagh, Sitharthan, & Sayer, 1996; Leigh, et al., 1984; Mammo & Weinbaum, 1993; Rabinowitz & Marjefsky, 1998); having limited social contact (Leigh, et al., 1984; Rabinowitz & Marjefsky, 1998); and being female (Mammo & Weinbaum, 1993). Employment status has also been examined with being unemployed (Rabinowitz & Marjefsky, 1998), an unskilled worker (Mammo & Weinbaum, 1993) or not in full-time employment (Noel, McCrady, Stout, & Fishernelson, 1987) highlighted as risk factors to unplanned discharge.

Other, non-demographical, features have been identified such as comorbidity of depression and clients not instigating contact with the agency (Noel, et al., 1987), a history of the client drinking alone (Rabinowitz & Marjefsky, 1998), and the length of time between assessment and treatment commencing (Jackson, et al., 2006). Finally, the client's own selection of a treatment programme can have an influence with Jackson and colleagues (2006) finding that those clients who chose an open

support programme rather than a more intensive programme were more likely to drop out.

Above all, the literature is undermined by a lack of agreement regarding risk factors, differing modalities of treatment and the diversity of countries from which research has arisen. Additionally, there is limited agreement regarding risk factors for dropout. These factors, therefore, do not lend themselves to an intervention aimed at retaining these individuals.

1.5.3: Implications of Identifying Those at Risk of Dropping Out

Identifying those at risk of dropping out is unpalatable due to concerns that such a tool would be used to limit access to treatment as refusing to help an individual who presents as desperately wanting treatment is difficult. Furthermore, anecdotal stories depicting the “hopeless case” with a long drinking history, who has been in and out of treatment programmes with no significant improvement but then made a miraculous recovery are common within the media and anecdotally within agencies themselves. These serve to support a culture of offering treatment indiscriminately to all who request it.

Empirically, the research suggests that traditional therapies offered do not offer the best value for money for those who leave early. Until reliable research has been carried out examining the benefits of an aborted treatment attempt, the dropout studies introduced in Section 1.5 suggest that excluding those at risk of dropping out

would increase the overall cost effectiveness of treatment. This would free resources that could then be directed towards those who would be most helped. However, excluding those at risk of dropping out would be myopic. While this tactic would result in short-term savings, these individuals would continue to be an economic burden on society. Additionally, it is likely that their costs to society would increase as their alcohol abuses would continue and their physical health deteriorate.

The benefit, therefore, of identifying clients at risk of dropping out is that a treatment plan could then be tailored to meet this group's specific needs. It is unclear exactly what format treatment would take⁸ but it may be that, for some individuals, a reduction in the physical consequences of their alcohol misuse is the most desirable outcome (which ultimately leads to their dropping out of alcohol treatment).

Tentative evidence exists in the drug and alcohol abuse literature to support this supposition. Pulford, Adams and Sheridan (2006) found that, of 22 clients interviewed regarding their reasons for dropping out, the majority (77%, 17) reported that their initial problem was resolved. Additionally, Coulson, Ng, Geertsema, Dodd, and Berk (2009) found that one of the reasons given by substance misusers for missed appointments was that they did not require the service any more. Although more focused research is needed before definite conclusions can be drawn, it may be that the clients' physical condition has improved and therefore the clients no longer required the service.

⁸ A Catch 22 (Heller, 1961) situation exists whereby effective treatments can not be established before a tool for predicting dropout is developed, but a tool for predicting dropout may be resisted by treatment providers as there is no alternative route for those individuals identified as being at risk of dropping out.

Fundamentally, forcing individuals who seriously misuse alcohol to “get help” for their issues is misguided if the only form of help is focused on sobriety or controlled drinking. This does not cater for those individuals who do not wish to cease excessive alcohol consumption⁹. A more useful definition of help would be one that views reducing harm as being the most pressing need for all alcohol misusers. While this would include sobriety and controlled drinking it would endorse reducing the physical and social harm associated with heavy drinking as a primary aim. In this way, the concept of gaining control over one’s drinking (the ultimate aim of alcohol treatment) can be extended to include gaining the control to consume alcohol less harmfully.

Although this challenges society’s idea about what recovery is, a version of this pragmatic approach is found in “wet” services. These are hostels and day-centres which permit drinking on the premises (Crane & Warnes, 2003) aimed at practically intervening with street drinkers who would otherwise not engage with alcohol misuse services. These agencies give these users access to medical services and a safe environment in which to consume alcohol. Furthermore, many of the centres also offer more general support – for example supporting the client in sustaining a tenancy and making contact with specialist agencies.

“Wet” services are perceived as the last hope for chronic alcohol misusers who are resistant to help or unable to stop drinking and are controversial both because there

⁹ This touches on the raging debating of the disease model of addiction versus the choice model of addiction. While that area is an entirely separate PhD and will not be addressed here, it is proposed that – regardless of which model is endorsed – individuals can and do cease abusing alcohol. At some point, a user has to make a choice about whether to recover – regardless of whether that recovery is total abstinence or a return to controlled drinking.

is resistance to not “treating” individuals with alcohol misuse issues (for example, a criticism of wet-units has been made as “there would be little chance of carrying out effective rehabilitation work with heavy drinkers” (Crane & Warnes, 2003, p. 9)) and there is also resistance from local residents in the areas where these centres are set up due to fears of violence and disorder associated with these individuals (Crane & Warnes, 2003).

As they currently function, wet centres serve street drinkers by providing them with somewhere safe to consume alcohol. If this model was expanded it is conceivable that a drop-in group where counselling is available on an ad-hoc basis, in conjunction with support to stabilise drinkers’ lives and reduce problems associated with tenancy and the criminal justice services, may be a pragmatic solution. Rather than focusing resources on appointments which this client group are unable to keep – and therefore fall out of service contact – perhaps a resource should be developed which is client-centred and aimed to meet the specific needs of this group rather than the needs of society to “cure”. This does not imply that, for the group of alcohol misusers who are identified as being likely to dropout of treatment, the ultimate aim of treatment is to maintain them as alcohol misusers. It would be hoped that a harm reduction approach would stabilise their lives and allow them to regain some control over their drinking which, in turn, would move them towards attending a more conventional treatment programme aimed at recovery. This concept of a stepped recovery (with one treatment leading to another) is in keeping with the stages associated by the Transtheoretical model (e.g. Prochaska, Diclemente, & Norcross, 1992) whereby treatment would be expected to be most beneficial if it was tailored to the specific

stage the client inhabited and designed to move them on in the model (Prochaska, 1991; Sutton, 1999). However, the benefit of this approach cannot be demonstrated until a methodology for identifying those at risk of dropping out of treatment can be found.

1.6: Predicting Dropout

It has been established that treatment can be a cost-effective mechanism to reduce the costs associated with alcohol misuse. Dropout from alcohol treatment, however, has also been shown to be a major issue. While outcome from alcohol misuse treatment does not seem to be related to any “matching” to treatment that has been attempted so far (c.f. Project Match and UKATT) it has been shown to be associated with staying in treatment (Baekeland & Lundwall, 1975; Bottlender & Soyka, 2005; Moos & Moos, 2003). It follows that preventing dropout from alcohol misuse treatment should be a major part of any policy that aims to reduce alcohol related costs by increasing access to treatment – not only would it ensure that scarce resources are being spent in the most effective manner but it would maximise the return on investment. A reliable, practical method for predicting dropout from alcohol misuse has, however, been elusive.

1.6.1: Previous Methods

Attempts have been made in a variety of behavioural change programmes (including substance misuse services) to predict dropout through a variety of constructs

measured by scales, for example novelty seeking (Helmus, Downey, Arfken, Henderson, & Schuster, 2001); self-rating of severity of withdrawal symptoms (Soyka, Zingg, Koller, & Kuefner, 2008); resistance to treatment (Britt, Knisely, Dawson, & Schnoll, 1995); therapeutic alliance (Cournoyer, Brochu, Landry, & Bergeron, 2007; Meier, Donmall, McElduff, Barrowclough, & Heller, 2006); interpersonal distress (Lovaglia & Matano, 1994)); insecure attachment (Berman, Kallmen, Barredal, & Lindqvist, 2008) and the Transtheoretical model (Derisley & Reynolds, 2000; Scott, 2004; Smith, Subich, & Kalodner, 1995).

1.6.1.1: Function of self-report.

These disparate methods have been used with varying degrees of success and no single methodology has been adopted by treatment agencies. That language must be understood as a tool used to achieve an aim was proposed by Wittgenstein (for example Fann, 1971; Hartnack, 1965). Wittgenstein challenged the assumption that a meaning was defined semantically; rather he proposed that the meaning was determined by the function of the sentence (Hartnack, 1965) and is therefore inescapably linked to social interactions/behaviours (Ribes-Inesta, 2006).

Diametrically opposed to the cognitivist view that an underlying, single truth can be accessed by asking the “right” questions, this does not imply that respondents “lie”; there are many “truths” but the one selected is motivated by context and intended action. This is epitomised by Wittgenstein’s statement, in relation to the meaning of language: “Don’t ask for the meaning, ask for the use” (Fann, 1971, p. 68).

It would therefore be proposed that scales measuring, for example, the severity of withdrawal symptoms do not objectively measure the “true” discomfort from withdrawal but instead elicit functional explanation patterns produced to achieve an aim (for example, proving that the respondent is a “real” alcoholic). If an individual wished to be accepted into treatment then he/she would make attributions about his/her alcohol use that will facilitate this and self-report accordingly. This suggests that there is no semantic relationship between which attributions are made and subsequent behaviour. However, this does not preclude there being an empirical relationship as a consistent pattern of discourse may be produced from which predictions about current and future behaviour may be made.

1.6.2: O’Connor’s (née Harper) Tool

Moving away from the traditional, self-report based assessments of dropout, O’Connor (Harper, 2000; O’Connor, Davies, Heffernan, & van Eijk, 2003) created vignettes depicting different, alcohol-using situations. The theoretical basis for this tool’s development came from Social Criterion theory, proposed by Davies and Best (1996, see Section 2.2.1 for a complete discussion). They suggested that self-report data depends on not just the context in which the question was answered but also on prompts contained within the question which gave participants “signals” regarding how to answer them. Drawing analogies from Green and Swets’ (1966) Signal Detection Theory, Davies and Best conceptualised self-report in terms of sensitivity and response bias. Within the alcohol misuse framework, therefore, when an individual attends a clinic for treatment their self-report is directed at achieving an

outcome (namely gaining access to treatment) and the prospective client aims to answer “correctly” – i.e. producing answers consistent with problematic alcohol use. Self-report is therefore dependent on the questions asked, the cues given and the respondent’s general tendency to report in one way. It is the respondent’s tendency to respond in one way or another that O’Connor attempted to quantify in her research.

O’Connor’s tool comprised sixty short stories (vignettes) depicting a protagonist using alcohol. Forty of the vignettes included an aspect of the DSM IV (American Psychiatric Association, 1994) criteria for either alcohol intoxication, dependence or abuse and the remaining twenty reflected non-hazardous alcohol use. Clients undergoing treatment for alcohol misuse were asked to read the vignettes and rate them for whether or not the alcohol use was problematic. These ratings were found to predict whether or not the clients would dropout of treatment; those who completed treatment identified the alcohol use as being more problematic than the dropout cohort.

1.6.2.1: Theoretical basis of O’Connor’s tool.

O’Connor’s methodology was borrowed from the Signal Detection (SD) paradigm. This paradigm will be introduced fully in Chapter 2 but it involves participants detecting whether or not a signal is present. In the current example the signal to be detected was whether the alcohol use being depicted in each vignette was problematic. Although most of the vignettes were based on the DSM-IV criteria, the stories were designed to be ambiguous regarding whether or not they represented

problem alcohol use. This ambiguity is a vital aspect of SD theory experiments as researchers are interested in decision making on the cusp of awareness (Green and Swets, 1966). Due to the lack of information presented in SD trials, an individual's tendency to say "yes, that's a signal" can be measured according to the amount of evidence required to report the presence of a signal (the participant's "response bias"). Participants who rated the vignettes as depicting problem alcohol use – i.e. had a laxer response bias scoring more false positives (saying that the vignettes showed a problem when they did not) – were found to complete treatment.

Ultimately, O'Connor's tool predicted dropouts. A discriminant analysis indicated that the tool correctly classified 77.4% of cases and it was superior in prediction to the brief Michigan Alcohol Screening Test (MAST; Pokorny, Kaplan, & Miller, 1972), Severity of Alcohol Dependence Questionnaire (SAD-Q; Stockwell, Murphy, & Hodgson, 1983) and Short Alcohol Dependence Data (SADD; Davidson & Raistrick, 1986) questionnaire. However, the associated calculations – and underlying structure – rendered it too complicated for use in the clinical population it was designed for. The most basic calculations involve:

1. Calculating the probability of saying "yes, signal" when there was a signal – $P(\text{HIT})$
2. Calculating the probability of saying "yes, signal" when there was no signal – $P(\text{FA})$
3. Possible correction if an individual got them all right or all wrong

4. Conducting a Z transformation of the P(HIT) and P(FA) scores – to ZH and ZF respectively
5. Calculated response bias = $-0.5 (ZH + ZF)$

Additionally, to ensure the tool had an underlying normal distribution, Z-transformed receiver operator curves were also plotted and the sensitivity of each participant plotted.

1.6.2.2: O'Connor's participants.

O'Connor's studies recruited clients who were undertaking intensive, outpatient treatment for their alcohol problems. They were all attending a hospital alcohol unit in Glasgow prior to their involvement in the formal treatment programme from which they were sampled and only those who demonstrated an alcohol level of zero were admitted to the study. The treatment programme comprised daily attendance at group therapy for 4 weeks and clients had to pass a daily breathalyser tests to indicate their sobriety. Completers were those clients who passed the daily breathalyser test and attended every day while dropouts were clients who were initially engaged in treatment and subsequently either failed to attend or failed to maintain sobriety.

1.6.2.3: Limitations of O'Connor's tool.

While Signal Detection theory is straightforward once it is understood, this would require advanced statistical training for the treatment facility staff. The calculations are not intuitive – with the link between the respondents' answers and the resulting scores not obvious - and would require a computer programme to simplify the calculations, which is not practical in a busy clinical situation. Furthermore, the time needed to administer the vignettes – as well as the associated comprehension level required of respondents – limit the everyday use of the potentially useful tool. Agency workers have specialist therapeutic skills but do not undergo research training and therefore asking them to use this tool – with the associated demands on their time - would not be acceptable as its utility would not be apparent. It is proposed that a suitable tool would be easily administered and interpreted – and its value supported by empirical evidence.

1.7: Generalisability of Research

The generalisability of O'Connor's findings was undermined by her choice of sample as there appear to have been important criteria for entrance into the treatment programme – although very little detail is given about this in her thesis. Tightly controlled research projects - with strict inclusion/exclusion criteria - reduce prospective sources of bias within the sample (i.e. maximise internal validity) but may compromise the generalisability of results (i.e. the external validity). This is a widely debated issue – for example, concerns about overly controlled trials have

been raised in the general medical field (Rothwell, 2005), psychotherapy (Goldfried & Wolfe, 1996) and alcohol research (Drummond, 1999). Wells (1999) even suggested that randomised clinical trials are of little benefit in policy making as policy decisions must be focused on results which generalise.

It is proposed that developing strategies outwith the population of interest is erroneous regardless of scientific rigor. Put simply, there is limited benefit in examining hand-picked clientele if these are not representative of those who attend treatment. The implications of this are drolly expressed by Goldfried and Wolfe: “our wish is that therapy interventions be based on psychotherapy research; our fear, however, is that they might” (1996, p. 1007). Their observations are not limited to the field of psychotherapy but can be expanded to include any behavioural programme – if the sample population group are not reflective of those who are actually attending then the conclusion made (and implemented) may be erroneous.

Moncrieff and Drummond (1998) found that between 4% and 92% of potential participants were excluded from the most influential alcohol studies on the basis of inclusion/exclusion criteria. More than 60% of those individuals presenting for treatment in Project Match did not meet the strict criteria (Drummond, 1999; Humphreys & Weisner, 2000). The inclusion/exclusion criteria of Project Match’s aftercare group detailed 18 separate criterion including no current dependence on drugs, not using drugs intravenously in the preceding six months, no planned involvement in another after care programme, a minimum reading level and active drinking in the three months prior to entry to inpatient treatment (Velasquez, et al.,

2000). Velasquez and colleagues (2000) examined the differences between clients who were included in Project Match from one of the aftercare settings (53% were ineligible for the study) and those who were excluded were significantly older, had fewer years of education and scored lower on the AUDIT.

The UKATT study's sample had a high level of non-participation among those screened for inclusion. Only 762 (27.5%) of the 2,768 clients considered for involvement were included in the final sample (UKATT Research Team, 2005b). Of the 2,006 excluded, 650 did not meet the entry criteria (23.5% of the total sample), 1,157 (41.8%) refused to take part and 105 (3.8%) dropped out before the trial entry interview ¹⁰(*ibid.*). It is probable that this decreased the generalisability of the conclusions made as the majority of presenting clients did not receive the treatment. The external validity is limited, therefore, as it cannot be assumed that those clients who entered the UKATT study were similar to those who failed the entry requirements, refused to take part or dropped out before the treatment entry interview. It is likely that these clients may have differed in their motivation for treatment or other factors.

Indicative of the extent of this problem, Humphreys and Weisner (2000) also examined differences between groups' features when common criteria for inclusion/exclusion in alcohol research were used (for example, exclusion due to drug dependence or social instability). Their findings revealed that implementing research criteria inflated the numbers of Caucasians included (while decreasing the

¹⁰ The remaining 94 who did not take part were either allocated to the training condition or withdrew their consent at the entry interview stage but the UKATT Research Team (2005b) did not give details how many were in each of these groups.

proportion of African-Americans) and excluded those with a higher income than those included. For exclusions based on co-existing drug dependency, medical problems or psychiatric/emotional issues, those not included in the samples had more drug, alcohol and psychiatric problems (ibid).

Humphrey and Weisner's (2000) data also utilised inclusion/exclusion criteria (namely the patients being over 18, English speaking and not suffering from delirium or a cognitive impairment) immediately excluding 6.6% of people attending the clinic. In this way, Humphrey and Weisner's study's sample is immediately non-representative of those attending their alcohol treatment programme as over 1 in 20 who attend for treatment are ineligible. Their subsequent analyses are therefore under-estimations of the percentage that would be excluded on each criterion, as – had those ineligible individuals been included - they may have been among those excluded on other grounds. With this in mind, from Humphrey's figures we can begin to appreciate the dangers of implementing strict inclusion/exclusion criteria. A summary of Humphreys' data focusing on proportions excluded is presented in Table 1.1 below, indicating that – for single exclusion/inclusions criteria – over 50% are excluded in 7 of the 16 comparisons they make. If generalisability is important in research (and I believe it is – RN) then excluding on the basis of any feature which rejects more than half of the prospective clients is questionable as these features might be characteristics which define this client group.

Table 1.1: Summary of Humphreys and Weisner’s (2000) data illustrating exclusion proportions when common criteria are used.

Exclusion Criterion	Operationalisation	Public Sector Patients number excluded (%)	Private Sector Patients number excluded (%)
Psychiatric/emotional problems	Any of the following: inpatient psychiatric treatment in the past year, current treatment with psychotropic medication, hallucinations not directly attributable to substance use in the past 30 days, serious thoughts of suicide not directly attributable to substance use in the past 30 days	103 (34.6%)	149 (50.5%)
Noncompliance/lack of motivation	Patient rating of treatment for current substance abuse problem less than “considerably important” on a 5- point Addiction Severity Index item	32 (10.7%)	22 (7.5%)
Medical problems	Addiction Severity Index medical composite problem score two or more standard deviations higher than the norm for the general population	67 (22.5%)	116 (39.3%)
Drug dependence	Three or more NIMH Diagnostic Interview Schedule drug dependence symptoms in past 30 days	165 (55.4%)	163 (55.3%)
Unsuccessful prior alcohol treatment	Treatment for substance abuse prior to current treatment episode	223 (74.8%)	170 (57.6%)
Residence distant from treatment facility	Residence outside of the county in which the treatment program was located	59 (19.8%)	150 (50.8%)
Social instability	Both unmarried and unemployed	216 (72.5%)	120 (40.7%)
Residential instability	Not living in a house or apartment at intake	131 (40%)	50 (16.9%)

1.8: Thesis Aims

The overarching aim of this thesis is to develop a usable method of predicting dropout from treatment. This will predominantly focus on developing O’Connor’s tool but the design of the experiments will allow another potential predictor to be examined. Drawing from the literature presented in Section 1.7, the following studies will utilise a methodology to recruit individuals who present at alcohol agencies for treatment “in the real world” rather than those “artificial” programmes affiliated to a University research project and therefore avoiding many of the problems associated with the generalisability from the experimental to the real world.

1.9: Plan of Work

1.9.1: Develop O'Connor's Tool

The underlying structure of the tool will be examined to explore if the tool is functioning in the way O'Connor devised. This will examine both potential confounders within the vignettes and investigate the explanation posited by O'Connor for how her vignettes functioned to discriminate between those who completed treatment and those who dropped out (c.f. Chapters 2, 9, 10, and 11).

In this way, O'Connor's tool will be developed from an academic curio to a tool with real clinical application that can be routinely used to assess an individual's risk of dropping out of treatment. This will be done by reducing the demand characteristics of the task to decrease (a) the time taken to administer the tool (c.f. Chapter 3) and (b) the complexity of the associated analyses while retaining the predictive powers of the tool (c.f. Chapters 4,6, and 7).

1.9.2: Predicting Discharge Status from Functional Discursive Model Stage.

Davies' (1997) Functional Discursive (FD) model makes predictions about present and future behaviours according to the attributions made by interviewees about their substance misuse. At present, these predictions relate to whether or not the alcohol use is problematic, where they are in their alcohol using careers and where they will

proceed to in the future. It is proposed that it may be possible to expand the FD model's predictions to develop an alternative approach to assess dropout through an interview which would complement the existing format of counselling sessions; Chapter 5 will address this.

Chapter 2 : The Effect of Emotional Tone on the Structure of O'Connor's Tool (Study 1).

2.1: Introduction

Using the Signal Detection (SD; Green & Swets, 1966) paradigm as the basis to the work, O'Connor devised a tool that predicted dropout (Harper, 2000; O'Connor, et al., 2003). As previously stated, O'Connor's tool correctly classified 77.4% of dropouts on a discriminant function analysis (Harper, 2000), outperforming the Michigan Alcohol Screening Test (MAST; Pokorny, et al., 1972), Severity of Alcohol Dependence Questionnaire (SAD-Q; Stockwell, et al., 1983) and Short Alcohol Dependence Data (SADD; Davidson & Raistrick, 1986) questionnaires as a predictor for attrition among O'Connor's participants (Harper, 2000).

However, while O'Connor's tool predicted dropout, the characteristics of the task – i.e. the length and complexity of the tool – rendered it unsuitable for routine use within agency settings. To address this, it is first necessary to understand the structure of O'Connor's tool in order to retain the underlying predictive components. Raters were required to assess whether the vignettes represented problem alcohol use; however, in this chapter it is proposed that this was confounded by the overall “feel” of the vignettes – i.e. whether they were generally positive or negative.

2.1.1: Signal Detection Theory

In order to fully understand O'Connor's technique, and the subsequent findings, it is necessary to have a rudimentary knowledge of SD theory. The SD methodology gives an indication of an observer's ability to make a correct decision rather than an incorrect one (their *sensitivity*) while also taking into account the observer's general tendency to favour one decision over another regardless of evidence (their *response bias* – McNicol (1972)). Vital to this is that the available information must have a level of ambiguity – it is this ambiguity that allows individual differences in response biases to be measured. The ambiguity means that all available information must be interpreted and that detection can be influenced by different factors – for example motivation to detect a signal, previous experiences, attitudes and internal noise (McNicol, 1972). If there was no ambiguity then there would be very little variation between participants, with all participants being near perfect in their detection and therefore the stimuli presented in an SD trial are on the cusp of what can be perceived. Their presentation will not provoke the same verbal report in successive trials. For this reason, hundreds of trials are used in traditional SD experiments.

A concrete example of an SD task is a hearing test. As the tone's pitch gets higher or lower – while the amplitude is kept constant - the detector has to report whether or not there is a tone (the signal). There are four potential conclusions from their detection: HIT¹¹ (correctly reporting “signal” when there was a tone); CORRECT

¹¹ As is customary within SD literature, small capitals will be used to indicate the overt responses.

REJECTION (correctly reporting “no signal” when no tone was present); MISS (incorrectly reporting “no signal” when there was a tone); and FALSE ALARM (incorrectly reporting “signal” when there was no tone). By using tones on or near the threshold of hearing, an individual’s tendency to say “yes, signal” (their *response bias*) can be manipulated by altering their motivation to report a signal. For example, if a monetary reward was offered for every tone correctly identified (and no punishment for an incorrectly identified tone) then an individual would have a high rate of HITS (saying “signal” when there was a signal) but also a high rate of FALSE ALARMS (saying “signal” when no signal) – this would be a lax response bias. Equally, if there was a punishment for any incorrect detections then this observation would be reversed. It is therefore assumed that an individual’s motivation affects their response bias and conventionally in SD trials this is manipulated by offering monetary rewards or costs. Participants’ motivations will also alter due to their circumstances, situations and general response bias (McNicol, 1972). In addition to this, it is possible to manipulate the level of ambiguity present in the stimuli in SD trials by altering the “strength” of the signal. Using the hearing test analogy, an increase in signal strength would be effected by increasing the amplitude of the signal. As the strength increases then there is more information for the detector to process before making a decision therefore the level of ambiguity decreases.

The detector’s possible responses to the presence or absence of a stimulus are presented in the matrix below (Figure 2.1). It is apparent that there are only two degrees of freedom as FALSE ALARMS and CORRECT REJECTIONS are reciprocals, as

are HITS and MISSES – i.e. only two observations are needed to complete the stimulus-response matrix.

		RESPONSE ALTERNATIVE	
		Signal (S)	Noise (N)
STIMULUS ALTERNATIVE	Signal present (s)	$P (S/s)$ HIT	$P (N/s)$ MISS
	Noise only (n)	$P (S/n)$ FALSE ALARM	$P (N/n)$ CORRECT REJECTION

Figure 2.1: The stimulus-response matrix of the yes-no procedure (Green & Swets, 1966, p34)

The matrix presented in Figure 2.1 also details the calculation performed to get the probabilities (P) of HIT and FALSE ALARM. From these, it is possible to calculate, among other things, an individual’s response bias – i.e. their overall tendency to say “yes, signal” (the necessary calculations are outlined in Section 1.6.2.1).

2.2: Application of SD theory within Social Psychology

The SD paradigm has been extensively used within social psychology (for example research into social phobias (Coles & Heimberg, 2005; Perez-Lopez & Woody, 2001); social observation (Gendolla & Richter, 2006); autism (Li, Lin, Chang, & Hung, 2004; Sanchez-Marin & Padilla-Medina, 2008); sexual coercion (Farris, Treat, Viken, & McFall, 2008; Treat, McFall, Viken, & Kruschke, 2001) and schizophrenia (Tsoi, Lee, Gee, et al., 2008; Tsoi, Lee, Khokhar, et al., 2008; Vercammen, de Haan, & Aleman, 2008)). Although widely varying, all of these experiments required the

detection of a signal but this could be an emotion (Tsoi, Lee, Khokhar, et al., 2008), sound (Vercammen, et al., 2008), apostrophes (Gendolla & Richter, 2006), numbers (Li, et al., 2004), characteristic of a picture (Sanchez-Marin & Padilla-Medina, 2008), aspects of women (Treat, et al., 2001), humour (Tsoi, Lee, Gee, et al., 2008) or a previously seen face (Coles & Heimberg, 2005; Perez-Lopez & Woody, 2001).

2.2.1: Social Criterion Theory (Davies & Best, 1996)

Davies and Best (1996) developed SD theory's application within social psychology by applying SD theory directly to language. The resulting theory - Social Criterion (SC) theory – attempts to explain self-report using the Signal Detection paradigm and concepts, specifically response bias and signal strength. It is proposed that self-reported information can only be understood when the social motivations of both the respondent and the researcher are taken into account. These motivations are, in turn, influenced by the context in which self-report is given and the function the self-report is to perform.

In SD theory, the response bias (the evidence required before a participant reports “yes, signal”) could be manipulated by altering the rewards/costs associated with their responses. Analogous to this, in SC theory self-report is viewed as being determined by the awards/costs associated with a response pattern (Davies & Best, 1996). This view is in line with the functionality of language (c.f. Section 1.6.1.1). An assessment of the awards/costs of a situation would allow a decision to be made regarding the desired outcome and the language used is a tool to achieve that aim –

for example, if it is functional to present oneself as a helpless addict then discourse will be provided in that vein.

A novel aspect of SC theory is the focus on the researcher. Analogous to signal strength within SD theory, the researcher's choice of methodology is proposed to determine the signal strength provided to the respondent regarding which answers are expected of them. To illustrate this point, Davies (1997) cited unpublished work by Shibli (1992; cited in Davies, 1997) who found that drug users reported a mean of seven events when asked an open ended question but identified 49 events on average when selecting from a list. Although Davies did not report what the events were, in SC terms the addition of prompts delivered through a list served to increase the signal strength.

Additionally, it is proposed that signal strength can also be altered by context. Davies and Baker (1987) found that a university-based interviewer received responses consistent with heavier use, greater expenditure, more withdrawal symptoms, longer use time and a deeper level of addiction than an interviewer who was a known ex-drug user. Interpreting these findings using SC theory, Davies (1997) suggests that this is indicative of an increasingly lax criterion of addiction adopted in an interview with a suit-wearing psychologist – i.e. the participants agreed to more of the symptoms of addiction within an interview with a “professional”. Therefore the differences between the interviews – it was argued - were due to the “response criterion” of the individual, rather than there being a “true” answer.

2.2.2 O'Connor's Technique (Harper, 2000; O'Connor, et al., 2003)

The development of O'Connor's tool grew from SC and SD theories. Early studies indicated that, using monetary incentives, it was not possible to alter respondents' response biases (Harper, 2000) but she examined the manipulation of response biases due to a desired outcome (i.e. recovery from alcohol misuse).

O'Connor's technique (Harper, 2000; O'Connor, et al., 2003) required participants to detect signals, as in SD trials. The signal was either the inclusion of the DSM-IV criteria for (i) alcohol dependency or abuse, or (ii) intoxication in a series of vignettes. Ultimately, O'Connor's vignettes had two different strengths of signals – high strength and low strength – and a noise condition (where no signal was present)¹². To simplify discussion of the three different types of vignettes O'Connor created, signal strength will be seen as having three levels: high, low and noise – although it is recognised that the noise vignettes were designed to emit no signals.

The signal strengths, and where they originated from, are detailed in Table 2.1 below.

¹² As shall be discussed presently, the low signal vignettes were sometimes treated as containing signal and at other times treated as containing no signals.

Table 2.1: Signal Strengths and their corresponding DSM-IV Criteria (Harper, 2000, p. 216)

Signal Strength	DSM IV Criteria
High	Alcohol Abuse and Dependence
Low	Alcohol Intoxication
Noise	None

The only “true” signals were the high signal vignettes as they depicted scenes of alcohol abuse or dependency. The low signals depicted intoxication and the noise vignettes depicted non-problematic drinking; however, as the strength of a signal increases the amount of information available also increases and therefore the low signal vignettes would be seen as displaying more potential signals than the noise vignettes.

Using combinations of these vignettes O’Connor’s overall finding was that individuals who completed treatment had a laxer response bias than those who dropped out – i.e. they were motivated to identify more vignettes as being indicative of “problem alcohol use”, and therefore reporting more FALSE ALARMS than the dropout group.

In line with the opinion that language serves a function, self-report is not proposed to be veridical and therefore it can be concluded that rating in this way served a function for those clients. It may, of course, be that this group “saw” more problem alcohol use as they are “alcoholics”, more motivated in treatment or more sensitive

to the warning signs of problem alcohol use; however, objective evidence to support this does not exist within the literature.

2.2.3: O'Connor's Conclusions

There were three comparisons made to ascertain the HIT and FALSE ALARM rates: (1) High signal strength (signal) vs. Low signal strength (noise); (2) High signal strength (signal) vs. Noise (noise); and (3) Low signal strength (signal) vs. Noise (noise). Due to the large number of vignettes (60) O'Connor opted to reduce the total number of vignettes in her final tool by discarding one of the three signal strengths (i.e. high signal, low signal or noise) of vignettes. Objectively, the comparison between noise and high signal yielded the highest alpha level in terms of differences in response bias scores between completers and non-completers. However, O'Connor chose to retain the high and low signal strength vignettes as these were the most ambiguous vignettes and were therefore felt to be closest to traditional SD theory.

2.2.4: Problems with O'Connor's Tool

1. O'Connor's final tool retained 40 vignettes (the high and low signal strength groups) on the basis of a theoretical stance rather than the empirical evidence. Because this thesis adopts an empirical rather than theoretical approach it was decided to include all three signal strengths in a new study in order to select items empirically to retain the predictive power of the tool.

2. SD theory necessitated the use of calculations that were prohibitively complicated.
3. The task's demand characteristics (the required concentration level to complete the task of rating 40 – 60 vignettes and the time taken to rate the vignettes (in excess of an hour; Harper, 2000; Newham, 2007)) were too great for the population group for which this tool was designed.
4. The time taken to administer the task was too long for its routine use within typical alcohol agency settings.

2.3: Deconstructing O'Connor's Vignettes

2.3.1.: Emotional Tone

From examining O'Connor's 60 vignettes (see Harper, 2000) it is apparent that the emotional tone of the vignettes was not controlled for. When these vignettes were designed, O'Connor indicated that she controlled for gender, employment status and length within the vignettes (Harper, 2000); however, the situations depicted vary with some being generally positive situations (Figure 2.2) and others being generally negative (Figure 2.3).

Marge was at her best friend's wedding. It was a very big affair and loads of Marge's friends were there. She was having a great time catching up with them all and drinking pints of lager. The bar was free which made the occasion even better.

Figure 2.2: An example of a noise vignette with a positive emotional tone.

Tom worked for British Airways as a pilot. It was his weekend off and he was spending it with his girlfriend Sophie, who was an airhostess. They had decided to have a romantic mini-break together in Barcelona because it was not often that they both had a whole weekend off at the same time. So far they had not seen much of the sights though because on the first afternoon they had decided to stay in the hotel and drink a jug of sangria on the balcony. At first they had really good fun but in the last hour they had begun to argue. Neither of them was quite sure what they were arguing about anymore. And they were both slurring their words, which made it even harder to work out what each other was talking about.

Figure 2.3: An example of a low signal strength vignette with a negative emotional tone.

Due to the ambiguous nature of the vignettes it is permissible to presume that individuals would rate them for problem alcohol use based on all the information available to them. This is in line with Tversky & Kahneman's (1974) availability bias whereby the subjective probability of an event occurring (in this case the likelihood of alcohol use being problematic) is related to personal experience with the incident. Considering Figure 2.2, this situation can be interpreted as positive unless your experiences with a free bar have been negative. Decisions are based, therefore, on not just the deliberately included signals (or lack there of) but also any other information that may be gleaned from the vignettes. This blurs conclusions made regarding the decision making processes. It may be that the differences in response bias observed in O'Connor's research were not due to the signals deliberately included in the vignettes but rather the emotional tone of the vignettes – i.e. that participants were coding the ambiguous vignettes according to the context of the vignettes rather than the actual dependency content. This is important as the underlying assumption of O'Connor's method was that aspects of the DSM-IV

criteria for alcohol dependency and intoxication acted as different strengths of the signal.

Therefore O'Connor's task was interpreted as the ability to recognise the signals mediated by an individual's tendency to recognise such behaviour as problematic. It may be that the vignettes' problem alcohol use ratings were actually mediated by how positive or negative the stories were. This implies that the difference between those who drop out and those who stay might have been due to differences in whether they saw the vignettes as depicting a positive or negative situation.

Equating a generally positive story with non-problematic use and a negative story with problematic use would be a useful heuristic to reduce the cognitive load when decision making (c.f. cognitive miser; Fiske, 1993). Equally, however, our interpretation of an event is influenced by our experiences of that situation; therefore for some individuals a more useful heuristic, for example, would be that all depictions of alcohol use are negative as this has been their most recent experience. From this stance, O'Connor's studies could be reinterpreted as individuals who have planned discharges have experienced alcohol use most negatively.

B. T. Jones and McMahon (1994) found that holding negative beliefs regarding the outcome from alcohol use was predictive of abstinence at three months post-treatment. Although outcome is distinct from retention in treatment it may be that increasingly negative evaluations of situations depicting alcohol misuse may also protect against dropout.

2.3.2: Inclusion of Noise Vignettes

There is some concern regarding the final choice of vignettes used. As mentioned in Section 2.2.2, O'Connor developed 60 vignettes of three signal strengths – high signal, low signal and noise – ultimately recommending that only the high signal and low signal vignettes were retained (n=40; Harper, 2000). This approach was ideal as Signal Detection theory depends on the ambiguity of the stimuli and the noise vignettes were thought to be the least ambiguous (Harper (2000, pp 246)). However, Harper herself noted that “the high and noise vignettes yielded higher alpha levels in terms of prediction of treatment outcome than high and low comparison” (p 247) therefore it cannot be ruled out that the noise vignettes would be useful in distinguishing between individuals who would remain in treatment and those who would dropout. Additionally, as this was an exploratory study, moving away from the signal detection paradigm and examining the influence of emotional tone, the noise vignettes were included as they may be inherently more positive than the low and high signal groups (as they contained no reference to problem alcohol use or intoxication).

2.4: Aims of Study 1

The first study will examine if the vignettes are confounded due to an association between ratings of emotional tone and those of problem alcohol use. It is hypothesised that positive ratings of emotional tone would be associated with ratings

of non-problematic alcohol use while more negative ratings of emotional tone would be associated with problematic alcohol use.

2.5: Methodology

2.5.1: Ethics

Ethical approval for this research was given by Strathclyde University's Psychology Department's Ethics Committee. All participants signed a consent form before each study indicating that they gave full, informed consent – with any questions raised addressed - and were aware of their right to withdraw their participation. After completion of the second session the participants were fully debriefed and any questions answered.

2.5.2: Participants

Participants were recruited opportunistically from the University of Strathclyde through adverts displayed on notice-boards or posted on the University's on-line information system "Pegasus". Participants were also opportunistically recruited through being directly approached and shown the information sheet around the psychology department. Of the 42 participants who completed the first part of the experiment, 30 completed the final part¹³. Of these, one participant had received treatment for substance-use issues so was excluded from the analyses. The final

¹³ Due to recruitment issues – namely attrition of 50% before the first meeting coupled with 30% attrition before the second meeting – recruitment was halted at 30.

sample therefore comprised 29 participants of whom 20 were recruited from the Psychology department's First Year Participant Pool (69%). Of the remaining 9 participants, 5 (17.2%) were postgraduate students, 3 (10.3%) were university employees and 1 (3.4 %) was from outside the university. The majority of the sample was female (20, 69%) and the mean age of the participants was 27.17 (SD= 10.14). The mean number of drinks consumed each week were 10.14 (SD=7.91) and the mean number of drinking episodes a week were 1.36 (SD=.99).

2.5.3: Design

The variables were emotional tone ratings (1= very negative, 2= fairly negative, 3 = fairly positive and 4 = very positive); problem alcohol use ratings (1 = very sure this is problem alcohol use, 2 = fairly sure this is problem alcohol use, 3 = fairly sure this is not problem alcohol use and 4 = very sure this is problem alcohol use) and signal strength (1 = High, 2= Low or 3 = Noise).

2.5.4: Materials

O'Connor's 60 vignettes (Harper, 2000) were used. As discussed in Section 2.2.2, they were designed to represent three signal strengths - High Signal, Low Signal and No Signal – with 20 vignettes in each group.

The vignettes were made into two separate workbooks, each with a different scale.

Within the emotional tone workbook, participants were asked to tick how positive or negative a story was (see Figure 2.4) – this scale was reverse-coded for the analyses.

In general, this is a very positive story	(1)
In general, this is a quite positive story	(2)
In general, this is a quite negative story	(3)
In general, this is a very negative story	(4)

Figure 2.4: Emotional tone rating scale.

In the problematic drinking workbook, participants were asked to rate whether the story showed problem drinking or not (Figure 2.5).

To increase the study's validity, the ratings scales were deliberately presented to ensure that a tendency to score in a particular way (for example favouring options 1 or 2) would not result in a positive correlation.

I am very sure this is problem alcohol use	(1)
I am fairly sure this is problem alcohol use	(2)
I am fairly sure this is not problem alcohol use	(3)
I am very sure this is not problem alcohol use	(4)

Figure 2.5: Problematic alcohol use rating scale.

2.5.5: Procedure

All participants were met by the researcher and the study was carried out within the psychology department. Participants rated the vignettes for emotional tone at the first meeting and then for problem alcohol use a week later¹⁴. Both meetings followed a similar format: participants were first given an instruction sheet and consent form to read and any questions raised were answered. After they had signed the consent form the workbook, with randomly ordered vignettes, was distributed and the participant asked to rate the stories. At the first meeting a questionnaire collecting demographical and alcohol history information was completed. Following the completion of the vignettes at the second meeting, the participants were fully debriefed.

The questionnaires' scores were entered into a statistical package (SPSS, Version 15), with the emotional tone ratings reverse-coded for ease of analysis and interpretation. This meant that, if the stories rated as being negative were associated with being identified as problem alcohol use, this would result in a positive correlation.

¹⁴ It is acknowledged that ratings of “emotional feel” might have influenced subsequent ratings of problem alcohol use but it was felt that this effect was less than if clients rating the vignettes for problem alcohol use first.

2.6: Results.

2.6.1: Checking Normality of Distribution

2.6.1.1: Problem alcohol use rating scale.

Due to the ambiguous nature of the vignettes the original 4-item confidence rating scale format used by O'Connor was retained in order to force a choice. The original 4-item rating scale (see Figure 2.5) signified – from an SD approach – different levels of confidence regarding whether or not a signal was present. As alluded to in Section 1.6.2.1, the generation of a Z-transformed Response Operator Curve (ROC) is necessary to assess the normal distribution of the signal and noise. On each occasion that this has been carried out using O'Connor's vignettes, the Z-transformed ROC curve was a straight line indicating that the data were normally distributed (Harper, 2000; Newham, 2007; O'Connor, et al., 2003). From this basis, the assumption of an underlying Gaussian distribution underpinning the confidence-rating scale is supported. It is therefore argued that the use of parametric statistics is justified.

To confirm this, the current data were examined. Frequency analysis of the data indicated that, for the problem alcohol use data, skew = $-.13$ (SE = $.06$) and kurtosis = -1.02 (SE = $.12$). Due to the large number of comparisons the standard errors are very small therefore it was not meaningful to z-transform the values of skew or

kurtosis (Field, 2005) but the histogram of the current participants' ratings for problem alcohol use (see Figure 2.6) indicates that the distribution is normal (Figure 2.6).

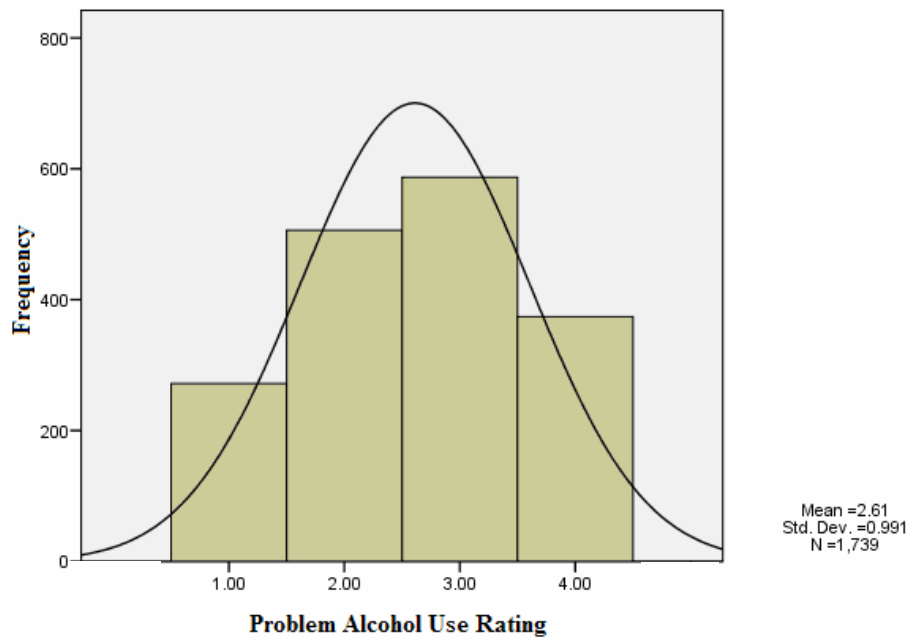


Figure 2.6: Histogram reflecting problem alcohol use ratings.

2.6.1.2: Emotional tone rating scale

O'Connor's original tool did not deliberately contain signals of how positive or negative the vignettes were. Consequently, the P (HIT) or P (FA) could not be calculated for this scale and it was not possible to generate a z-transformed ROC to assess the normality of the distribution for the four item emotional tone confidence rating scale.

The issue regarding whether the emotional tone scale is an interval or ordinal scale rests on the decision regarding the theoretical "space" between the points of the scale.

Conventionally, four item scales are not treated as interval as the conceived distance between the 2nd and 3rd options¹⁵ is greater than that between the 1st and 2nd, and the 3rd and 4th – i.e. the 2nd and 3rd options go through a theoretical “mid-point” and therefore have a greater distance between them. However, the mathematical properties of a rating scale are defined by the gathered data rather than the scale used (Jaccard & Wan, 1996). Jaccard and Wan report that "for many statistical tests, rather severe departures (from intervalness) do not seem to affect Type I and Type II errors dramatically" (1996, p. 4) - supporting the use of parametric statistics; however, this was confirmed through visual inspection of the data.

Visual inspection of the data indicates that the distribution appears fairly normal (see Figure 2.7 below). This reflects that the theoretical distance between the “I’m fairly sure” options (i.e. options 2 and 3 on the emotional tone scale) is comparable to that between options 1 and 2, and 3 and 4. For the emotional tone data, the skew value was .46 (SE = .06) and kurtosis was -.37 (SE = .12). Due to the large amount of data, it is again not possible to use the z-transformations of these values to obtain a meaningful measure of significance due to the problem of many small standard errors (Field, 2005). However, these observations, in addition to the robustness of Pearson’s correlation and other parametric tests to violations in normality (see Havlicek & Peterson, 1977; Labovitz, 1967, 1970), entitle Pearson’s r to be calculated (Field, 2005).

¹⁵ As per the reverse-coded emotional tone rating scale, 1st = In general, this is a **very negative** story ; 2nd = In general, this is a **quite negative** story; 3rd = In general, this is a **quite positive** story; and 4th = In general, this is a **very positive** story.

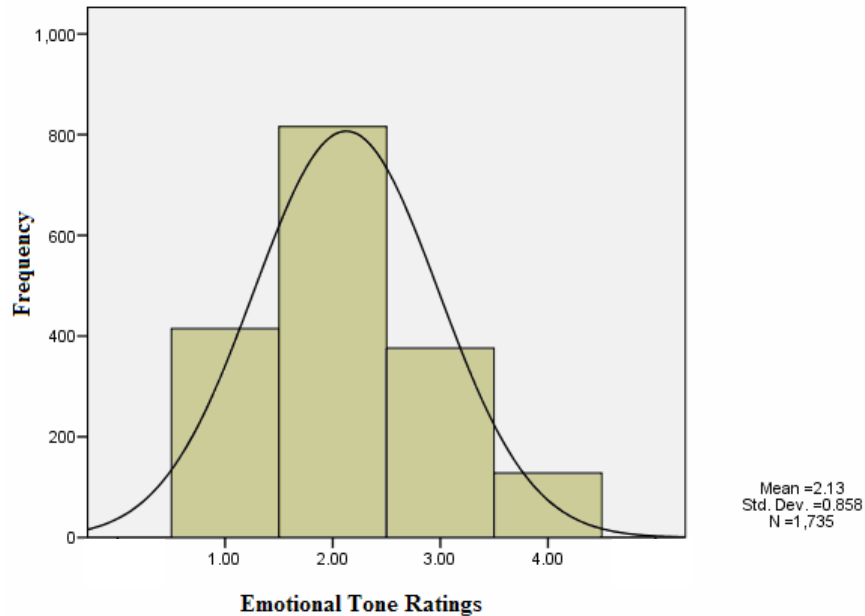


Figure 2.7: Histogram reflecting emotional tone ratings.

2.6.2: Correlation between Emotional Tone and Problem Alcohol Use Ratings

As discussed, the 60 vignettes comprised three different signal strengths: high, low and noise. To examine the association between emotional tone ratings and problem alcohol use ratings – allowing for the effect of signal strength to be ultimately controlled for - the data for signal strength, emotional tone and problem alcohol use were correlated using a Pearson’s correlation (see Table 2.2). Due to the large number of comparisons, while significance levels are reported, it is the percentage of variance which is accounted for that is the most important.

Table 2.2: Table of the vignettes’ Pearsons’ correlation.

	Emotional Tone	Signal Strength
Problem Alcohol Use	0.47*	0.58*
	n= 1734	n=1739
Emotional Tone		0.35*
		n=1735

* $p < 0.0005$

It was found, overall, that there was a significant positive association for all comparisons – unsurprising considering the large number of correlations conducted. The emotional tone and problem alcohol use ratings ($r=.47$, $N=1734$, $p<0.0005$) accounted for 22% of the total variance across all the vignettes. There was also a significant positive association accounting for 12% of the total variance between signal strength and emotional tone ratings ($r= .35$, $N=1735$, $p<.00005$). Finally, the significant, positive association between signal strength and problem alcohol use ratings ($r = 0.58$, $N=1739$, $p<0.0005$) accounted for 34% of the total variance. While the significance levels are an artefact of the size of the database, the amount of variance accounted for in each correlation is striking and indicates the emotional tone and problem alcohol use ratings are correlated. This suggests that how positively or negatively the vignettes are judged to “feel” does influence the problem alcohol use ratings – i.e. it is a confounding variable.

The direction of these correlations indicates that there was an association between whether or not the vignettes were rated as showing problem alcohol use and how positive/negative the stories were felt to be – i.e. positive stories were associated with non-problematic alcohol use and negative stories were associated with showing problem alcohol use. This is in line with the hypothesis. The association between signal strength and problem alcohol use indicated that the ratings of problem drinking were associated with signal strength – the higher the signal, the more problematic the drinking. This is in line with the underlying construction of the vignettes. Finally, there was a modest association between signal strength and

emotional tone which indicated that negative stories were associated with higher signal strength.

To follow this up, partial correlations were carried out. Partial correlations allow correlation between two variables to be ascertained when the variance associated with other variables is removed (Field, 2005; Tabachnick & Fidell, 2007). When signal strength was removed, there was a significant correlation between problem alcohol use and emotional tone ($r=.35$, $N=1731$, $p<0.0005$), accounting for 12.25% of the total variance. When emotional tone was removed, the correlation between signal strength and problem alcohol use was still significant ($r= .50$, $N=1731$, $p<0.0005$), accounting for 25% of the total variance. While the correlation between emotional tone and problem alcohol use accounts for less of the variance than the association between signal strength and problem alcohol use (12.25% vs. 25%) it is still apparent that emotional tone is associated with problem alcohol use independent of signal strength. ¹⁶

2.7: Discussion

These results indicate that the vignettes' ratings for the emotional tone were associated with the ratings of problem alcohol use when signal strength is controlled for. This suggests that the problem alcohol use ratings may be affected by not only the content of the vignettes (i.e. the presence of the included signal as per

¹⁶ It is worth noting that the correlation between signal strength and emotional tone, although significant, only accounted for 1% of the variance ($r=.12$, $N=1731$, $p<0.0005$). This suggests that there is nothing inherently positive or negative about the different signal strengths and therefore the association between emotional tone and problem alcohol use ratings is due to the construction of the vignettes rather than which DSM-IV criteria was included in the vignettes.

O'Connor's method) but also by the perceived emotional tone of the vignettes. The results also suggest that signal strength is more strongly associated with the problem alcohol use ratings than emotional tone is, which would be expected due to the construction of the vignettes. In fact – only 1% of the variance was accounted for by a correlation between signal strength and emotional tone. This suggests that positive or negative tone is not – among normal alcohol users – an artefact of signal strength, implying that there is nothing intrinsically positive or negative about the different signal strengths. The importance of emotional tone, therefore, is whether the vignettes were rated as showing problem alcohol use was influenced by (i) what DSM-IV criteria were present (as O'Connor intended) and (ii) how positively or negatively the vignettes were subjectively assessed as being. The latter influence was not intended by O'Connor and therefore confounds her vignettes and any subsequent interpretations, including whether the problem alcohol use rating scale was the best scale to use with the vignettes.

These results have implications in general within SD theory. As SD theory has moved beyond the psycho-physics arena in which it was developed the tasks have increased in complexity beyond simple perception of stimuli. The application of SD theory in social psychology has necessitated stimuli being developed that reflect our social world. For example, Tsoi and colleagues (Tsoi, Lee, Khokhar, et al., 2008) examined humour perception in individuals with schizophrenia by showing participants four humorous clips from television and film shows. The SD aspect was focused on the participants' detections of humour (the signal); however, while the clips showed the same number of humorous moments in each sketch, the content of

the section was not controlled for. The sketches examined 4 topics: Christmas, a Judo meeting, a department store (all starring “Mr Bean”) and an excerpt from the Full Monty. These clips depicted very different situations and – I propose – situations that varied in their emotional context. The Christmas clip depicts a man alone at Christmas – this may be very differently received based on an individual’s experience of Christmas. Specifically, individuals with mental health issues are more likely to be socially isolated (Cabinet Office, 2004) and therefore the context in general might be more negative for them. While this could be taken to excess – for example concerns regarding the depiction of a clip in a department store in case this arouses feelings of anxiety and discomfort due to a social phobia – researchers utilising SD theory in more novel ways must begin to show an awareness that participants are not machines detecting a signal. As previously discussed, their responses will be due to many small details. This is especially important when working with a clinical population as it may be that emotional cues have increased salience.

2.7.1: Limitations

To explore the confounding effect of emotional tone it was necessary for O’Connor’s 60 vignettes to be rated on two occasions, one week apart. This meant that it was not possible to recruit from individuals attending counselling for alcohol misuse as Newham (2007) found that clinical participants took in excess of 40 minutes to rate 40 vignettes and O’Connor indicated that it took clinical participants in excess of an hour to rate 60 vignettes (Harper, 2000). Additionally, Newham (2007) found that

clients were resistant to rating 40 vignettes on a single occasion and it was therefore decided that it would not be possible to ask a clinical sample to rate the full set of vignettes twice. It is this feature which necessitates the reduction of the length of O'Connor's tool.

It was therefore decided to conduct the first study using an opportunistic sample from a university setting. This resulted in a sample which comprised mainly (83%) students. It is likely that this non-problematic sample is younger than individuals recruited with severe dependency (Singleton, et al., 2000). An additional limitation is that only individuals who had not undergone treatment for alcohol or drug problems were recruited. Additionally, no one was included who had been advised to seek treatment for their drug or alcohol use.

Although it was desirable to recruit a clinical sample it was not necessary for this study as the aim of the study was to examine whether there was an association between ratings of problem alcohol use and emotional tone ratings. It should be noted that it is not proposed to generalise from these findings to a clinical group beyond proposing that the existence of the association between emotional tone and problem alcohol use ratings may be present in a clinical group if it exists within normal drinking sample. If this is the case, then it may be that rating the vignettes for emotional tone would be a better predictor for drop out than the problem alcohol use scale. It was therefore not the intention to quantify a relationship and generalise from that. The current study examines the underlying structure of O'Connor's vignettes and will allow the reduction in vignettes used in O'Connor's tool – subsequent

studies will examine the effect of emotional tone ratings on predicting dropout from alcohol counselling.

2.7.2: Conclusions

This study indicates that problem alcohol use ratings are most strongly correlated with signal strength, reflecting the manner of their construction. On the other hand, it is also apparent that emotional tone has an effect. Without the actual data from O'Connor's original studies it is not possible to tell what effect the 12% of the variance between the vignettes being attributable to emotional tone would have had on her results but it is proposed that this mediated her participants' ratings. What is unclear from the present study is the relationship between emotional tone ratings, problem alcohol use ratings and discharge status (i.e. whether they completed or dropped out). Subsequent use of O'Connor's tool will therefore assess whether emotional tone ratings would predict drop out as or more effectively than the problem alcohol use ratings. However, prior to this the length of the tool must be reduced.

Chapter 3 : Reducing O'Connor's tool.

3.1: Introduction

To develop O'Connor's tool for routine use within alcohol treatment agencies it is first necessary to reduce the number of vignettes used while retaining the predicting capability of her tool. As previously discussed (c.f. Section 1.8.2) the length of O'Connor's task renders it unsuitable for routine use with a clinical population. Individuals attending services for alcohol misuse are often distressed and disorganised and asking clients to complete a tool taking between 40 and 60 minutes is impractical. Additionally, the length of the task precludes it being administered verbally to those clients with literacy problems. The task therefore needs to be reduced to a realistic length while retaining its predictive powers.

3.1.1: The Extent of the Problem

Although O'Connor proposed 40 vignettes to be used in her final tool, the time taken to complete this number is still prohibitive¹⁷. Additionally, in selecting her final 40 vignettes O'Connor discarded the 20 noise vignettes but, as outlined in Section 2.3.2, the inclusion of the noise vignettes in O'Connor's original series of experiments increased the distinction between the dropout and successful completer groups. It

¹⁷ Newham (2007) found that clinical participants took in excess of 40 minutes to rate 40 vignettes and Harper indicated that it took clinical participants in excess of an hour to rate the full 60 vignettes (Harper, 2000).

was decided, therefore, to retain all three types of vignettes for this exploratory study to maximise the predictive capacity of the tool. For the test to be of practical use within alcohol services it needs to be as short as possible thus it was decided to retain 12 vignettes – four of each signal strength. It was hoped these would be sufficient to identify any differences between the groups while reducing the time taken to complete the vignettes to around 10 minutes.

3.2: Reducing the Tool

To reduce the tool, the ratings of Study 1's 29 "normal drinkers" were used (the features of these participants have previously been discussed in Section 2.5.2). An added level of complexity was to determine which of the two scales' ratings to base the reduced tool on. In the Study 1, ratings were taken of both the vignettes' emotional tone scores and their problem alcohol use scores separately. While it seems sensible to base the item selection on problem alcohol use scores (O'Connor's original rating scale) the outcome variable of interest is whether or not these individuals dropped out of service contact. Consequently, both the problem alcohol use and the emotional tone scores are potential predictors of dropout. At present, it is unknown which scale might be the better predictor therefore any decision taken on this would be arbitrary.

3.2.1: Possible Techniques for Reduction

The techniques of performing a cluster analysis or factor analysis were ruled out due to the small number of participants. Recommended participant numbers in excess of 300 (Tabachnick & Fidell, 1996) render the techniques unfeasible for a study such as this. In the first study the recruitment of 29 participants took over 3 months, due to an attrition rate of about 50% before the first meeting and 25% between the first and second meeting. Due to the slowness of the recruitment process, and the large number of vignettes rated by each participant, it was decided to accept 29 participants and develop the tool rather than commit a year to an exploratory study.

The technique of selection by Cronbach's Alpha was dismissed due to concerns about whether a true representation of the internal construction of the original scale would be maintained. Although the internal consistency would appear to have been maintained by careful selection of the items, the removal of some stories and the retention of others might lead to the underlying correlation matrix (see Table 2.2) being undermined.

These issues suggest that randomly selecting the items for inclusion might be the best solution but, when reducing a data set by the extent necessary here, it would be too easy to "miss" the relevant items that this scale may rely on. With all these factors in mind, it was felt that a novel approach must be developed that is suitable for this item set so that confidence can be had in subsequent studies' results. It was felt that a logical approach would circumvent some of the issues raised.

3.3 A Different Approach

To maintain the predictive power of O'Connor's original tool while reducing the number of vignettes it was necessary to retain the underlying structure of the tool. The best approach would therefore maintain the relationship found between emotional tone and problem alcohol use ratings found in Study 1 (c.f. Chapter 2). The Pearson's correlation matrix (reproduced in Table 3.1 below) quantified this relationship and it was therefore decided that any reduced tool would retain this relationship as closely as possible.

Table 3.1: Correlation matrix from Study 1

		Problem alcohol use rating	Emotional tone rating
Signal strength rating	Pearson Correlation	.58(**)	.35(**)
	N	1739	1735
Problem alcohol use rating	Pearson Correlation		.47(**)
	N		1734

** Correlation is significant at the <0.0005 level (2-tailed).

3.3.1: Data Set

The data used were from Study 1 (see Section 2.5 for methodological details) and comprised 29 participants' ratings of O'Connor's 60 vignettes for emotional tone and problem alcohol use. Using this data set enabled a number of options for vignette selection and therefore increased the likelihood of obtaining a final vignette selection whose underlying structure most closely resembled the original 60 vignettes.

3.3.2: Selecting the Vignettes

Study 1's correlation matrix (Table 3.1) quantified the underlying structure of O'Connor's vignettes by comparing the ratings given for emotional tone and problem alcohol use. That was the "gold-standard" against which the potential reduced tools' correlations would be compared in order to ensure that the structure was maintained. Using this methodology it is proposed that the structure of the reduced tool would closely resemble the original tool despite the reduced tool comprising 12 vignettes.

It was decided that the selection of vignettes would be done on the basis of standard deviations – i.e. the overall variance in ratings for each vignette would be examined. There were four items on each rating scale and the variance could range between zero and four. However, vignette selection based solely on the largest standard deviation was deemed unwise as - although this would select those vignettes with the greatest variance (and therefore the ones that might be supposed to discriminate most effectively) - Study 1's sample was "normal" drinkers. It may be that the vignettes upon which normal drinkers agree (i.e. have the lowest variance and therefore the smallest standard deviation) are the very vignettes that would distinguish between alcohol treatment clients' discharge status. To address this issue it was decided to select vignettes across the range of variance using the methodology detailed below.

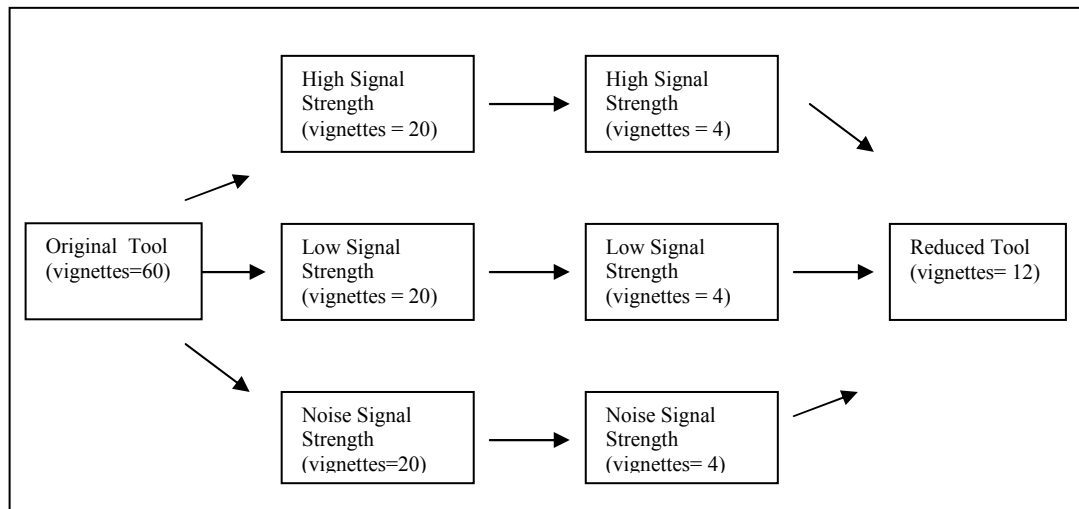


Figure 3.1: Overall Methodology for Reducing Original Tool.

3.3.2.1: Selection by standard deviation.

The reduction was conducted separately for the emotional tone ratings and the problem alcohol use ratings. Firstly, Study 1’s emotional tone vignettes’ ratings were separated according to signal strength and therefore each of the three signal strengths comprised 20 vignettes (see Figure 3.1). To retain four vignettes from each signal strength group – while preserving a spread of variance - the following procedure was undertaken separately for each signal strength.

For the high signal strength vignettes, the individual standard deviations were calculated for all the 20 vignettes – i.e. the spread of the respondents’ ratings was quantified for each vignette. The 20 vignettes were then listed *in ascending order* according to these standard deviations. To reduce the number of vignettes to four, every fifth vignette was selected from this list; however, whether the smallest or

largest standard deviation was retained would influence the correlation matrix. To combat this, two sets of vignettes were selected:

(1) The 1st, 6th, 11th and 16th vignettes as ordered were selected. This ensured the smallest standard deviation was retained.

(2) The 5th, 10th, 15th and 20th were selected. This ensured that the largest standard deviation was retained.

This method was repeated for the low and noise signal strength vignettes. The selected vignettes (four from each signal strength) were then combined to form two versions of the reduced tool: (i) the vignettes selected with the smallest standard deviation retained and (ii) the vignettes selected with the largest standard deviation retained.

The above protocol was repeated exactly for the problem alcohol use ratings resulting in four potential reduced tools (see Table 3.2)

Table 3.2: Remaining groupings after reduction of tool

Potential Reduced Tool	1	2	3	4
Rating Scale Used	Emotional Tone	Emotional Tone	Problem Alcohol Use	Problem Alcohol Use
Selection Criteria	Smallest standard deviation retained	Largest standard deviation retained	Smallest standard deviation retained	Largest standard deviation retained
Total number of vignettes retained	12	12	12	12

3.4: Results

Each potential tool's Pearson's correlation between the emotional tone, problem alcohol use and signal strength were calculated (i.e. the analysis detailed in Section 2.6.2 was repeated using only the vignettes selected for the potential reduced tools, see Table 3.2). The results are detailed in Table 3.3 below with the total data set's correlations (from Chapter 2) included in italics for comparison.

Table 3.3: Pearson's r values for the correlations

Vignette selection used		signal strength vs. problem alcohol use	signal strength vs. emotional tone	problem alcohol use vs. emotional tone
<i>Total Data Set</i>		<i>0.58</i>	<i>0.35</i>	<i>0.47</i>
Emotional Tone Ratings	Smallest standard deviation retained	0.60	0.65	0.62
	Largest standard deviation retained	0.48	0.21	0.35
Problem Alcohol Use Ratings	Smallest standard deviation retained	0.64	0.58	0.60
	Largest standard deviation retained	0.57	0.20	0.41

Table 3.4: Differences between total data set correlation and item-reduction correlations.

		signal strength vs. problem alcohol use	signal strength vs. emotional tone	problem alcohol use vs. emotional tone
Emotional Tone Ratings	Smallest standard deviation retained	-0.02	-0.30	-0.15
	Largest standard deviation retained	0.10	0.14	0.12
Problem Alcohol Use Ratings	Smallest standard deviation retained	-0.06	-0.23	-0.13
	Largest standard deviation retained	0.01	0.15	0.06

Table 3.4 shows each potential reduced tool directly compared to the corresponding total data set correlation – i.e. each correlation is taken from the total data set's corresponding correlation. For selection purposes, it is proposed to select the item set

that most closely matches this. For this reason, the mean difference in correlation was calculated across the three conditions (Table 3.5).

Table 3.5: Means of the differences between item-reduction correlations and “gold-standard”.

		Mean difference of correlations
Emotional Tone Ratings	1 st and the every 5 th vignette	-0.16
	Largest standard deviation retained	0.12
Problem Alcohol Use Ratings	1 st and the every 5 th vignette	-0.14
	Largest standard deviation retained	0.07

From Table 3.5 the reduced tool whose correlation matrix was most similar to the original tool’s matrix was from the problem alcohol use rating scores when every fifth item’s score was taken. These vignettes are listed in Table 3.6 below.

One final precaution was taken. Due to this method of selection the vignettes were not balanced for employment or gender as these features are integral to the vignettes and changing them would alter both the content and context and therefore this was accepted. However, a further issue was the length of the vignettes. From O’Connor’s design she ensured that there was no significant difference between the length of the vignettes across the three signal strengths by applying a one-way ANOVA (Harper, 2000). However, that cannot be assumed due to the sampling method employed here. To ensure that there was not a systematic bias by which, for example, all the “high” signal vignettes were short and all the “noise” vignettes were long the number of words were counted and the distribution of vignettes within this was inspected (Table 3.6). A one-way ANOVA was carried out and found no significant difference in the word count between the vignette conditions ($F(2,9)=.78, p=0.49$). This suggests that – although the distribution is not perfectly balanced – there is no obvious systematic

bias and therefore these vignettes were accepted as the final set of 12 (see Appendix B for the reduced tool’s final 12 vignettes).

Table 3.6: Retained vignettes with associated signal strength and word count.

Vignette	Signal Strength	Word Count
Paul	high	112
Simon	high	88
Jim	high	68
Liam	high	37
Kevin	low	109
Lorna	low	131
Martin	low	65
Fraser	low	71
Rory	noise	97
Duncan	noise	110
Helen	noise	100
Melville	noise	86

3.5: Discussion

The aim of this chapter was to reduce the vignette set to a usable number while retaining the predictive power of the tool and using an empirically rather than theoretically driven method. From the process outlined above it has been possible to reduce the number of vignettes from 60 to 12 while retaining the three signal strengths of the original tool. This resulting set of vignettes (the “reduced tool”) has a similar correlation matrix to the original 60 which, it is theorized, will maintain the tools’ predictive power. Additionally, the reduced tool’s vignettes do not differ significantly for word count between the three signal strengths.

The technique used within this chapter has resulted in 12 vignettes being retained while retaining the underlying structure of the O'Connor's original tool. However, at present there are two scales on which to rate the vignettes exist – the emotional tone scale and the problem alcohol use scale. Due to the issue of emotional tone confounding the problem alcohol use ratings (c.f. Chapter 2) it is unclear which rating scale would be the best predictor for discharge status. Study 2 (c.f. Chapter 4) will examine this issue by using both scales to predict discharge status from alcohol counselling in order to identify the more powerful predictor.

Chapter 4 : Predicting Dropout from Alcohol Counselling Services (Study 2).

This chapter will reduce the complexity of the calculations associated with the use of O'Connor's tool. It will then report a study designed to predict dropout from alcohol counselling using the 12 vignettes selected in Chapter 3.

4.1:Introduction

O'Connor's tool originally comprised 60 vignettes depicting scenarios in which alcohol was used and examined clients' response biases in order to identify problem alcohol use. A laxer response bias (i.e. identifying more vignettes as showing problem alcohol use) predicted for completing alcohol misuse treatment. In Chapter 2, Pearson's correlations supported a positive association between emotional tone ratings and problem alcohol use ratings – i.e. as ratings of problem alcohol use increased the stories were rated as more negative. This indicated that the construct of emotional tone may confound O'Connor's findings and her subsequent conclusions and suggested that emotional tone may predict for dropout. Using the data from Chapter 2, O'Connor's original tool was reduced to 12 vignettes (c.f. Chapter 3) while retaining the underlying structure and, therefore, the predictive power of the original tool.

These steps have resulted in two versions of a 12- item tool – the emotional tone rating scale and the problem alcohol use rating scale. The reduced size of the tool means that it is easier, and faster, for clients to complete but before the reduced tool is suitable for use with a clinical population, the final issue of the complexity of the associated calculations must be addressed¹⁸.

4.2: Reducing the Complexity of the Calculations

O'Connor's original tool's analyses used calculations specific to the Signal Detection methodology that underpinned the original tool's construction. It is proposed that the Signal Detection calculations were theoretically driven rather than being fundamental to the tool "working" and are unnecessarily complicated.

4.2.1: Original Calculation

From the original tool, those who completed treatment had a more negative response bias (reflecting a laxer response bias) than either the control or the dropout groups (Harper, 2000) – i.e. the individuals who completed treatment showed a tendency to rate the ambiguous drinking scenarios as showing problem alcohol use more often than those who dropped out.

The formula (1) that O'Connor used to obtain each participant's response bias can be examined to unpick exactly what her findings tell us.

¹⁸ It is not proposed that the final tool would comprise both rating scales. Only the version empirically shown to be superior will be used.

$$\text{Response Bias} = -0.5(Z(\text{HIT}) + Z(\text{FA})) \quad (1)$$

Consider the following two hypothetical examples from completing O'Connor's tool:

1. Participant A got 15 out of 20 ratings correct (i.e. said "yes" when there were signals showing problem alcohol use). Their probability of HIT ($P(\text{HIT})$) was 0.75. The same participant incorrectly reported on 10 out of 20 occasions that there was a signal when there was not one (i.e. said "yes" when there was no signal showing problem alcohol use). Their probability of FALSE ALARM ($P(\text{FA})$) was therefore 0.5. The Z-transformed (using a z-transformation table in Howell (2002)) probabilities of these values were 0.68 and 0 respectively. Participant A's response bias would therefore be calculated as -0.34.
2. Participant B got 5 out of 20 ratings correct – i.e. their $P(\text{HIT})$ was 0.25. They did not report any vignettes as depicting problem alcohol use when there were no signals; therefore their $P(\text{FA}) = 0$. The Z-transformed probabilities for each of these were -0.67 and -4. Participant B's response bias would therefore be calculated to be 2.33.

From these examples, Participant A has a laxer response bias (i.e. sees more episodes of problem alcohol use and indicated by a negative response bias) than Participant B.

According to O'Connor's results, Participant A would more likely be a completer and Participant B a dropout.

4.2.2: Possible Reasons for O'Connor's Observed Differences

Extrapolating from the above hypothetical examples, O'Connor's results suggest that there are three possible reasons accounting for the differences between her groups:

- (i) The completers reported detecting problem alcohol use more often than the dropout group therefore detecting more correct instances of problem alcohol use but also detecting more instances of problem alcohol use when this was not the case.
- (ii) The completers were more accurate in detecting signals than the dropout group (reporting, correctly, more instances of problem alcohol use) and there were no difference on the false alarm scores.
- (iii) The completers were less accurate than the dropout group therefore scoring more false alarms (saying it was problem alcohol use when there was not) but with no difference in detecting signals.

4.2.3: Simpler Technique

The conclusions above indicate that there may be a simpler method of scoring the stories by simply counting how often the respondents reported problem alcohol use – *regardless of accuracy*. O’Connor’s original tool used a rating scale (see Figure 4.1 below) but she recoded the 4-items into a dichotomy as the response bias calculations were based only on whether or not the respondent said “problem alcohol use” not the degree of certainty. By retaining the scale but implementing coding similar to that for a 4-item Likert scale (i.e. giving a value of between 1 and 4 for each response, see Figure 4.1) it would enable the responses simply to be totalled to give an indicator of the participant’s overall tendency to report problem alcohol use and how confident they are in their judgement.

I am very sure this is problem alcohol use	(1)
I am fairly sure this is problem alcohol use	(2)
I am fairly sure this is not problem alcohol use	(3)
I am very sure this is not problem alcohol use	(4)

Figure 4.1: Rating scale for problem alcohol use shown by vignettes.

This technique can also be applied to the emotional tone rating scale. The scale (presented below in Figure 4.2) can also be understood as a Likert-esque scale, indicating the degree of certainty with which the respondent makes their decisions.

In general, this is a very positive story	(1)
In general, this is a quite positive story	(2)
In general, this is a quite negative story	(3)
In general, this is a very negative story	(4)

Figure 4.2: Rating scale for emotional tone shown by vignettes.

4.3: Hypothesis

It is hypothesised, based on O'Connor's study, that there will be a difference in ratings between individuals who complete alcohol counselling and those who dropout. For the problem alcohol use scale, those who complete counselling will identify the vignettes as being more problematic as per O'Connor's findings. For the emotional tone rating scale, it is unclear where any difference might lie but if the completing group identify the vignettes as being more problematic – and Study 1 indicated a positive correlation between problematic alcohol use and more negative emotional tone – then it can be hypothesised that their emotional tone ratings would be significantly more negative than the dropout group. Finally, an important aspect of the following study will be to ascertain which of the two rating scales best discriminates between the groups.

4.4: Methodology

4.4.1: Ethics

Ethical approval was granted by the University of Strathclyde's Ethics Committee. All participants signed a consent form indicating that they consented to participating in this study, with any questions raised addressed, and that they were aware of their right to withdraw. Participants were told that the study was designed to investigate how different people rated the short stories. This slight deception was acceptable as it was possible that informing them that whether or not they subsequently dropped out of treatment might influence their future behaviour (and therefore their discharge status) – therefore invalidating the results. Additionally, it was decided that informing them of the true purpose of the research after the three month follow-up may negatively damage their relationship with the counselling agency.

4.4.2: Counselling Agency Features

Voluntary sector agencies were identified from Alcohol Focus Scotland's listings¹⁹. In total, eight counselling agencies were approached to take part in this study, all of whom were originally sister agencies under the heading of the Councils on Alcohol. Although the agencies are now autonomous, and no longer controlled by one central organisation, it was anticipated that they would share the same underlying values and

¹⁹ http://www.alcohol-focus-scotland.org.uk/getting_help/where_can_i_get_help/

ethos. Of those approached, seven counselling agencies agreed to take part – although ultimately only six agencies produced clients.

4.4.2.1: Agencies A, B, C, D and E.

With the exception of one agency (Agency F), the agencies were organised in the same way: clients underwent 1:1 counselling with a trained counsellor on an outpatient basis attending between once a week to once a month depending on their needs and the availability of counsellors. Clients attended the agency through either self-referral or referral through work, the Criminal Justice Service, social work services or medical professionals.

All agencies were aware of the Scottish Government issued definitions of outcomes from substance misuse (Department of Health, 2003- see Table 4.1 below). Broadly, the definition of unplanned discharge was when a client stopped attending the intervention prior to agreement with the counsellor and had no further contact with the agency. A planned discharge was where the user and counsellor agreed to the intervention's end.

Table 4.1: Criteria for defining planned, unplanned, and disciplinary discharges from substance abuse treatment described by the Scottish Government’s National Waiting Times Initiative Framework (Department of Health, 2003: Annex A).

Code	Definition
Planned	The client has been referred on to another agency or discharged at the end of his/her treatment with the agreement of the client and the agency.
Unplanned	The client was referred and did not attend a number of assessment or treatment appointments. In this case the discharge date should be entered as soon as agency staff agree that the client is no longer on its books or would be viewed as a new client if he/she re-presented at the agency.
Disciplinary	The client has been discharged due to misconduct.

4.4.2.2: Agency F.

Agency F – while previously affiliated with the Councils on Alcohol, like the other agencies – recruited clients who were living in the agency’s supported accommodation. These clients had contact with the agency 3 times a week and counselling on an ad hoc basis. While these clients’ experiences and treatments were obviously different to the other agencies’ clients’, the reduced tool is not expected to predict according to service modality. The outcome measure for this group was slightly different as those clients would be unlikely to dropout in a traditional sense as doing so would result in them becoming homeless. It was decided that individuals having a relapse to drinking would be recorded as a drop out; in the event, however, no participant relapsed.

4.4.3: Participants

Forty-two participants were recruited through the six counselling agencies: A (n=12); B (n=6); C (n=11); D (n=2); E (n=6); and F (n=5). One client left counselling when he entered police custody and a client from Agency F was no longer living in supported accommodation when the questionnaire was completed so her results were also excluded. Additionally, two clients got more than one question wrong on O'Connor's comprehension test (Harper, 2000) so their results were removed from the final analysis²⁰. Therefore 38 clients were included in the analyses. The participants were retrospectively put into groups depending on their outcome statuses 3 months later: still attending/open (n = 23); planned discharge (n = 10) and unplanned discharge (n=5).

All participants identified as being white with a mean age of 46.95 (SD = 10.89). Most were male (n=25, 65.8%), unemployed (n=33, 86.8%), had education up to secondary school level (n=13, 34.2%) and were married/living with a partner (n=14, 36.8%). The overall descriptives are presented in Table 4.2 below. The descriptive variables were examined for any relationship between the descriptors and outcome. For categorical variables, Fisher's Exact Test statistics were calculated (due to the small sample size and the expected count in cells being less than 5) and Kruskal Wallis tests were carried out for continuous variables.

²⁰ O'Connor's comprehension task required participants to answer five questions about a short story. For this client group this was quite a strict requirement therefore it was decided that answering 4 out of 5 correctly would display adequate comprehension skills.

Table 4.2: Descriptive statistics.

Descriptive	Planned	Unplanned	Still Attending n	Total
	n (%)	n (%)	(%)	n (%)
Agency				
A	4 (10.5%)	-	7 (18.4%)	11 (28.9%)
B	1 (2.6%)	1 (2.6%)	2 (5.3%)	4 (10.5%)
C	3 (7.9%)	1 (2.6%)	7 (14.49%)	11 (28.9%)
D	-	-	2 (5.3%)	2 (5.3%)
E	1(2.6%)	3 (7.9%)	2 (5.3%)	6 (15.8%)
F	1 (2.6%)	-	3 (7.9%)	4 (10.5%)
Gender				
Male	6 (15.8%)	2 (5.3%)	17 (44.7%)	25 (65.8%)
Female	4 (10.5%)	3 (7.9%)	6 (15.8%)	13 (34.2%)
Education				
None	2 (5.3%)	2 (5.3%)	4 (10.5%)	8 (21.1%)
Secondary School	4 (10.5%)	1 (2.6%)	8 (21.1%)	13 (34.2%)
Further Education	2 (5.3%)	2 (5.3%)	4 (10.5%)	8 (21.1%)
Higher Education	2 (5.3%)	-	4 (10.5%)	6 (15.8%)
Postgraduate Study	-	-	3 (7.9%)	3 (7.9%)
Employed				
Yes	2(5.3%)	-	3 (7.9%)	5 (13.2%)
No	8 (21.1%)	5 (13.2%)	20 (52.6%)	33 (86.8%)
Home Life				
Single	4 (10.5%)	4 (10.5%)	5 (13.2%)	13 (34.2%)
Separated/Divorced	1 (2.6%)	-	7 (18.4%)	8 (21.1%)
Married/Living with a partner	4 (10.5%)	1 (2.6%)	9 (23.7%)	14 (36.8%)
In a Relationship	-	-	1 (2.6%)	1 (2.6%)
Widower	1 (2.6%)	-	1 (2.6%)	2 (5.3%)
Past Treatment				
Yes	5 (13.2%)	4 (10.5%)	12 (31.6%)	21 (55.3%)
No	5 (13.2%)	1 (2.6%)	11 (28.9%)	17 (44.7%)
Missed Sessions*				
Yes	-	3 (7.9%)	7 (18.4%)	10 (26.3%)
No	10 (26.3%)	2 (5.3%)	16 (42.1%)	28 (73.7%)
Abstinent at present				
Yes	5 (13.2%)	2 (5.3%)	14 (36.8%)	21 (55.3%)
No	5 (13.2%)	3 (7.9%)	9 (23.7%)	17 (44.7%)
Read aloud				
Yes	2(5.3%)	2(5.3%)	8 (21.1%)	12 (31.6%)
No	8 (21.1%)	3 (7.9%)	15 (39.5%)	26 (68.4%)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
	<i>n</i> =10	<i>n</i> = 5	<i>n</i> = 23	<i>n</i> = 38
Age	45.3 (10.23)	41.2 (9.15)	51.83 (11.0)	48.24(11.04)
Time attending agency (months)	2.9 (2.47)	3.7 (3.73)	4.85 (4.31)	4.08 (.65)
How often attending agency (weeks)	1.13 (.52)	2.4 (1.52)	1.41 (.75)	1.47 (.91)
Units a week at entry	99 (79.9)	169.16 (177.76)	130.37 (96.67)	126.74
Units a week now	10.89 (20.13)	49.35 (61.52)	11.95 (26.21)	17.29 (33.79)

Fisher's Exact Test: * p<0.05

Only missing sessions prior to the study's date was significantly associated with outcome (FET (2) = 6.72, $p < .05$). Follow-up of the Fishers Exact Test involved examining the standardised residuals (SR; Field, 2009) and found that, although no clients who missed an appointment received a planned discharge (SR= - 1.6), and three out of the five unplanned discharges were among those who had missed appointments (SR= 1.5), the standardised residuals were not greater than +/- 1.96 and therefore were non-significant. However, overall it seemed that those who missed sessions were under-represented in the planned discharges and over-represented in the unplanned discharges groups.

4.4.4: Design

This was a between groups design where the dependent variables were the clients' ratings on the emotional tone and problem alcohol use scales and the independent variable was the discharge status three months post-study – i.e. whether they obtained a planned or unplanned discharge or were still attending.

4.4.5: Materials

The reduced version of O'Connor's tool comprised 12 vignettes - four vignettes of each of the three signal strengths: High Signal, Low Signal and Noise vignettes (see Appendix B). There were two separate workbooks – one with the rating scale for emotional tone and one with the problem alcohol use rating scale. To control for

order effects of the vignettes, their order was randomised for every workbook and participant.

There was also a demographics sheet that was completed through an interview and O'Connor's comprehension test. All interviews were recorded on a digital recorder.

4.4.6: Procedure

The recruitment of the participants was predominantly through their counsellors. All counsellors were given an information sheet detailing how they were to recruit individuals for the study. They were asked to distribute the information leaflets to all clients that explained the study and to ask their clients if they would be interested in taking part in the study. Those clients who were agreeable were met by the researcher (the author) at a convenient time - usually immediately before or after their next appointment with the counsellor. Alternatively, study leaflets were also left in the agencies' waiting areas (with the exception of Agency F) and clients could approach their counsellors directly to take part. To encourage participation, all participants were given a £10 gift voucher for their time²¹.

The meetings took place in the counselling agency location where the clients normally had their appointments and all participants underwent the same procedure. Before commencing the study the clients were asked to read an information sheet and sign the consent form – indicating that they consented to the interview parts of the

²¹ Initially the vouchers were for Woolworths but following their bankruptcy the vouchers distributed were for WH Smiths.

study being recorded with a digital recorder. The actual meetings took about 45 minutes and comprised 6 parts:

- 1) Interview 1: Structured interview gaining demographical information.
- 2) Interview 2: Minimally-structured interview cued by “Tell me about your alcohol use” (These findings are reported in Chapter 5).
- 3) O’Connor’s Comprehension test (Harper, 2000)
- 4) Task 1: Rating vignettes for emotional tone.
- 5) Interview 3: Minimally-structured interview cued by “How are you finding coming here?” (These findings are not reported within this thesis)
- 6) Task 2: Rating vignettes for problem alcohol use.

The demographical/drinking history questionnaire was completed verbally with notes taken by the researcher openly in-front of the participants (due to the complexity of drinking histories – and tangential answers – the notes were supplemented with the recorded data at the time of coding). This interview segment served the dual purpose of familiarising the participants with being recorded and as an ice-breaker. Once the structured questions were completed, the participants were asked to “Tell me about your alcohol use”. The participants then completed the comprehension test and the first 12 vignettes, rating them for emotional tone. Upon completion of this, the third interview element was undertaken cued by “How are you finding coming here?” – this served as a filler-task between the two ratings tools. Finally, the vignettes were rated for problem alcohol use.

To maximise generalisability it was felt that excluding individuals on the grounds of illiteracy would exclude a high proportion of “real life” treatment attendees and would therefore be a mistake. All clients were therefore asked if they would like the tool read out to them. Individuals who agreed to this (either due to a literacy issue or forgetting their glasses) completed all aspects of the task verbally and, as long as the comprehension questions were answered satisfactorily, those clients were included.

4.5: Preparing the Dataset for Use

4.5.1: Calculating Units Consumed

The number of units reported as consumed during a week pre-counselling and at the time of the study were calculated using a combination of the revised estimates presented by the Scottish Government (Scottish Government, 2008c) and an alcohol unit calculator (www.drinkaware.co.uk/tipsandtools/drink-diary).

Unless a brand was specified, certain rules were applied for example beer/lager was taken at 4% if draught and 4.5% if can/bottle; cider was calculated at 4.5%; wine at 12.5%, spirits at 40%; alcopops at 5%; and port at 18%. Contrary to the Government guidelines, premium lager was taken at 5% as 6% did not seem to be representative. Additionally, if the report was, for example, “10 bottles of Stella every three days” then the average was calculated and it was multiplied by seven.

4.5.2: Recoding Emotional Tone Vignette Scores

As in Chapter 2, the emotional tone ratings were reverse coded for ease of analysis and interpretation.

4.6: Results

Not all participants completed the whole of both questionnaires – the *n* for each part of the analyses details this.

4.6.1: Sample Descriptive Statistics

From the descriptives of the overall score for each rating scale (Table 4.3), the planned discharges scored less highly on the dependency rating scale than the unplanned discharges. This indicates that, overall, planned discharge participants saw the alcohol vignettes' use as more problematic than the unplanned group. For the emotional tone questionnaire the observed trend was reversed, with unplanned discharges scoring less highly than the planned discharges - indicating that the unplanned discharges rated the stories as more negative overall than the planned discharges. Clients still attending treatment – the “open” clients – more closely resembled those clients who had received an unplanned discharge.

Table 4.3: Descriptive statistics of the rating scales' totals.

Dependent Variable	N	Mean	SD
Problem Alcohol Use Total			
Planned	10	26.7	5.42
Unplanned	5	30.2	5.22
Open	21	29.05	5.89
Emotional Tone Total			
Planned	9	29.56	8.79
Unplanned	5	27.6	7.96
Open	20	26.95	7.29

4.6.2: Inferential Statistics

Due to the small, unbalanced sample size non-parametric statistics were used. A Kruskal-Wallis test was performed to test for any associations between the three different outcome groups (planned, unplanned and open) and their total scores on the two measures (Table 4.4). These tests found no significant association between the clients' status 3 months post-study and their scores on either questionnaire.

Table 4.4: Kruskal Wallis Results

Dependent Variable	Chi- Square	Df	Significance (one-way)
Dependency Total (n=36)	1.86	2	.20
Emotional tone Total (n=34)	.70	2	.36

4.6.3: Exploratory Data Analysis

In general, exploratory analyses are only justified if the hypothesis/es are statistically supported – which is not the case in these analyses. The subsequent analyses are

therefore not designed to test the hypotheses but will focus on examining the underlying features of the results and the tool as it is a vital aspect of this thesis.

It is possible that there might be a difference between the groups that is masked by using the overall total score. Within O'Connor's original study, using the three signal strengths, she found the greatest discrimination between the completers and dropouts to be between a comparison of high and noise signal strengths. This suggests that the different signal strengths of vignettes – and combinations of these - might have a better predictive potential than the overall total. This would have the added advantage of reducing the number of vignettes to be completed.

4.6.3.1: Examining components of the reduced tool.

To examine this, the participants' scores on both scales were obtained for (i) noise total only; (ii) high total only; (iii) low total only; (iv) high and low total; (v) high and noise total; and (vi) low and noise total. For ease of interpretation, the scales will be presented separately.

4.6.3.1.1: Problem alcohol use scale.

From the means and standard deviations of these combinations (see Figure 4.3) it was observed that, in the dependency group, the means of the unplanned discharge group were consistently higher than the planned discharge group – with exception in the high signal strength condition where planned was slightly greater than unplanned.

Across the combinations the still attending (“open”) group’s means fluctuated either being broadly in line with the planned group or the unplanned group. This indicated that the planned group saw slightly, but consistently, more problem alcohol use in the vignettes (as lower scores indicate more problem alcohol use).

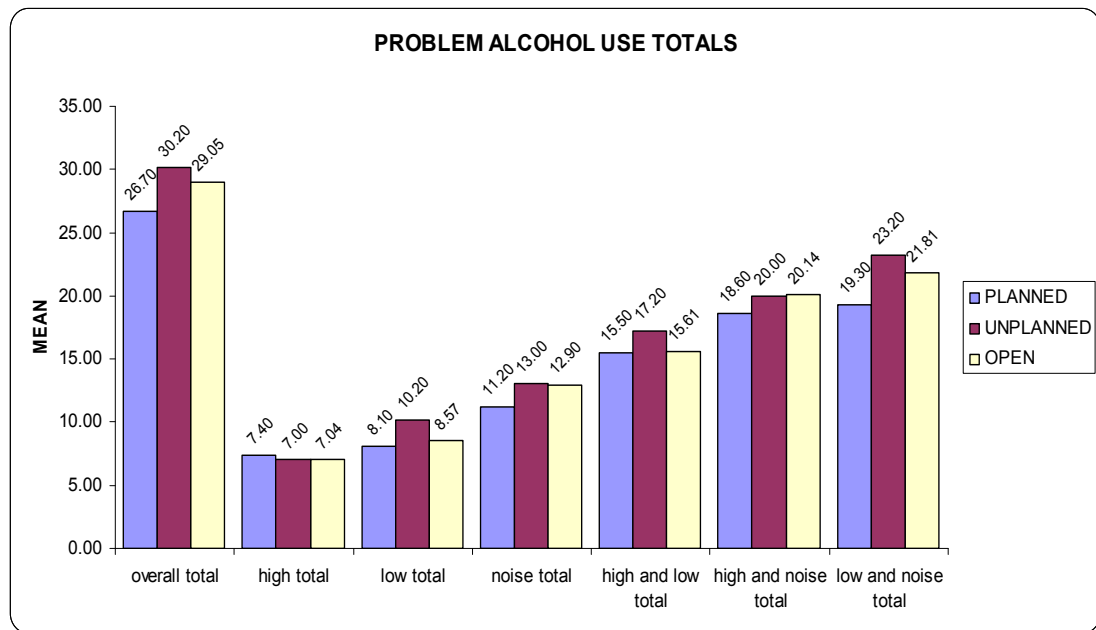


Figure 4.3: Mean scores for each problem alcohol use signal strength combination.

Kruskal-Wallis tests were undertaken for each of the dependent variables; these were all non-significant (the findings are presented in Table 4.5 below).

Table 4.5: Non-significant Kruskal-Wallis analyses for problem alcohol use rating scale.

Dependent Variable	Chi- Square	Df	Significance (one-way)
High only Total (n=38)	.15	2	.47
Low only total (n=38)	1.79	2	.21
Noise only total (n=36)	4.16	2	.07
High and low total (n=38)	.79	2	.34
High and noise total (n=36)	1.83	2	.2
Low and noise total (n=36)	3.7	2	.08

While the inferential statistics found no significant associations or differences, visual inspection of the Figure 4.3 suggests that there is a pattern to the mean scores for the seven calculations. From the seven calculations, the unplanned group's means were greater than the planned group's on six occasions. To investigate whether this differed from a chance distribution, Fisher's Exact Tests were carried out comparing the distribution to a chance distribution. There were three possible outcomes for a comparison between the groups' means:

- (i) planned > unplanned;
- (ii) planned < unplanned; or
- (iii) planned = unplanned.

Due to the sensitivity of the means it was unlikely that the planned and unplanned means would equal each other so this option was excluded. Therefore each of the remaining outcomes were weighted at 3.5 – i.e. out of 7 observations, each occasion should occur 3.5 times at a chance level. This was compared separately to the observed distribution for the scale. The dependency scale's distribution did not differ significantly from chance ($X^2(1) = 2.14$, *exact p* = .28). This, however, isn't conclusive as – for it to differ significantly from chance – it would be necessary for all seven observations to be the same due to the small number of comparisons.

4.6.3.1.2: Emotional tone scale.

For the emotional tone group, the pattern was reversed with unplanned discharge participants scoring less highly than planned participants on all calculated means except for the high only and high and low total combination means (see Figure 4.4).

Again, the still attending group's means fluctuated with no discernible pattern. This indicated that, in general, the unplanned discharge group rated the vignettes as being less negative.

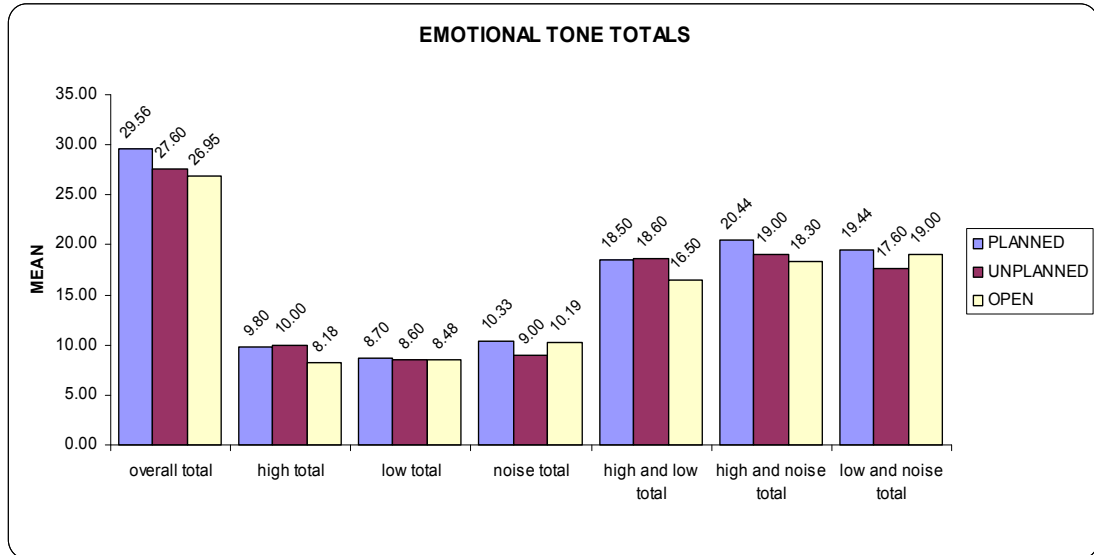


Figure 4.4: Mean scores for each emotional tone signal strength combination.

Kruskal-Wallis tests were carried out again on the data. As before, these were non-significant (Table 4.6).

Table 4.6: Non-significant Kruskal-Wallis analyses

Dependent Variable	Chi- Square	df	Significance (one way)
Emotional tone high total (n=37)	2.26	2	.16
Emotional tone low total (n=38)	.11	2	.48
Emotional tone noise total (n=35)	1.06	2	.3
Emotional tone high and low total (n = 37)	1.13	2	.29
Emotional tone high and noise total (n=34)	.84	2	.33
Emotional tone low and noise total (n=35)	.64	2	.37

Inspection of the means presented in Figure 4.4 reveals that, for five occasions out of the seven comparisons, the planned group's scores' means were greater than the unplanned group's. Fishers Exact Tests were again carried out to compare this distribution to a chance distribution. The emotional tone scale was not significantly different to the distribution expected by chance ($X^2(1) = .71$, *exact p* = .61).

4.6.3.2: Correlation between emotional tone and problem alcohol use ratings for planned and unplanned discharges.

As noted in the descriptive statistics previously, planned discharge participants rated the vignettes as more problematic but also as "feeling" more positive than the unplanned group. This is unexpected as it suggests there may be a negative correlation between the ratings – i.e. vignettes' ratings of problem alcohol may be associated with the stories being seen as more positive. This would not be in line with the observed correlations in Study 1 (c.f. Section 2.6.2).

Pearson's correlations were therefore carried out for each outcome group separately. For the planned discharge group a significant, positive correlation was found ($r = .29$; $N = 118$; $p < 0.005$) – indicating that as vignettes were rated as more problematic they were also rated as "feeling" more negative. The open group also found a significant, positive correlation ($r = .14$; $n = 269$, $p < 0.05$). On the other hand, the unplanned discharge group's correlation was non-significant ($r = -.13$; $n = 60$; $p > 0.1$, n.s.) but negative.

While these correlations only account for a small percentage of the total variance (8.41%; 1.96%; 1.69% respectively) it is notable that the correlations for the unplanned participants go in the opposite direction to the still attending group and planned discharge participants. This indicates that, for the unplanned discharge group, increased dependency ratings were associated with a less negative score. Using a Fisher's Z-transformation it was possible to test if there was a difference between the two correlations (Howell, 2002; see Appendix C for details of the equations).

The difference between the correlations for the planned and unplanned discharges groups was significant ($z = 2.65, p < .005$, two-sided). This indicates that there is a statistical difference between the association of how positively/negatively the vignettes were rated and how they were subsequently rated on the dependency scale for these two groups. Clients who completed treatment rated more negative vignettes as being more problematic whereas those who dropped out rated more positive vignettes as being more problematic.

4.7: Discussion

The results presented do not show any significant statistical difference between discharge status and scores on either of the ratings scales – it was therefore not possible to ascertain which scale was the better predictor. Due to the exploratory nature of this study, the data were examined in greater detail. While there were no significant differences between the groups, the evidence did begin to suggest that the planned and unplanned groups may have been distinct groups and the failure to find

conclusive differences may be due to issues with the sample obtained and the associated power. From the results presented here the null hypotheses were accepted.

4.7.1: Implications of the Exploratory Analysis

To fully understand the meaning of the data, further analyses were carried out. These analyses were not aimed at testing the hypotheses but to further our understanding of the underlying structure of the vignettes.

Examining the components of the tool – i.e. the three different signal strengths of vignettes – revealed no significant differences between the groups. Visual inspection of the means suggested a tendency, with the dependency ratings of the unplanned group's means being greater than the planned group's on six out of the seven possible occasions. While this distribution did not differ significantly from chance it is not possible to draw a firm conclusion due to the small number of events examined.

The groups' emotional tone and dependency ratings' correlations were examined in greater detail. The results indicated that the associations between the ratings for emotional tone and problem alcohol use for the unplanned and planned groups were systematically different – suggesting that there was an underlying difference between the two groups. The planned discharge and still attending groups acted in the anticipated fashion – a significant, positive correlation reflecting that when the vignettes were rated more positively they were rated as less problematic. For the dropout group the pattern was less clear as a slightly negative correlation was found.

While this suggests that as the vignettes were rated more positively then they were also rated as slightly more problematic, the correlation accounted for only 1% of the overall variance and was non-significant and therefore no concrete conclusions can be drawn from the negative correlation. A Fisher's Z-transformations found an underlying difference between the unplanned dropout and planned discharge groups. It would appear that these two groups conceptualise problem drinking differently – with the completers finding it more negative than the dropouts. These findings suggest that those who complete treatment are those who rate problematic alcohol consumption as most negative. This intuitively makes sense – although an individual may “see” problem alcohol consumption the *extent* to which this is seen as a bad thing is important.

That there was no difference between the open group and the other two groups may imply that the still-attending (open) group is not distinct. Potentially individuals in the open group may be undecided as to whether or not they would remain in treatment.

4.7.2: Implications for O'Connor's Vignettes

At present it has not been possible to replicate O'Connor's findings. This may be due to a lack of generalisability from her original sample to a community sample (O'Connor's participants were recruited from an intensive, outpatient group-therapy programme within a hospital clinic setting). Equally, it may also be the case that – by reducing the number of vignettes used from 60 to 12 – the predictive capability of the

tool has been lost. Due to the limitations of the current sample (discussed below) any discussion of the discrepancy between O'Connor's findings and this current study's results is speculation. Future research must focus on establishing whether the reduced tool is capable of distinguishing between discharge types.

4.7.3: Limitations

The current study recruited more participants (n=38) than O'Connor's original studies (n=33, 35 and 30; Harper, 2000) therefore it was expected that the study would have sufficient power to identify differences between the groups. It is proposed that – due to O'Connor's modest sample size – the effect size would be large and power analysis (G-Power; Faul, Erdfelder, Lang, & Buchner, 2010) – capitalising on the underlying chi square distribution of a Kruskal Wallis test (McDonald, 2009)- recommended a sample size of 39 for a large effect size with a power of .8. Howell (2002) proposes that this level of power is acceptable due to making a Type II error being relatively less important than making a Type I error (p219).

The current study, however, was undermined by a much lower completion and dropout rate than expected and a high “still attending” rate. This was unforeseen as the design of the present study was carried out in consultation with one of the counselling agencies. The counselling coordinator advised that the originally proposed six month follow-up period was too long and that three months were more appropriate as the majority of clients were out of agency contact by then. It was

therefore very surprising that, out of the 38 participants whose results were included, 23 were still attending.

One reason for the unexpectedly high still attending rate may have been the study's recruitment technique. To maximise the study's external validity, participants were recruited through agencies within the community and existing clients were targeted. Ethically, this was the "gold-standard" methodology for this type of study as it sought informed, written consent from all participants (British Psychological Society, 2009). Additionally, an incentive of a £10 voucher was offered to each participant for taking part to encourage participation and gain a more representative sample.

Unfortunately, the dropout and still attending rates question how representative the sample was. The reasons for this are likely to be three-fold. Firstly, many individuals who dropped out of treatment early would have done so before recruitment to this study and were therefore not available. Secondly, it is possible that those individuals who did volunteer to take part were not representative of the general clients in alcohol services. These individuals may have had more spare time and be "comfortable" within counselling and therefore less likely to leave it. Thirdly, counsellors may have only approached those clients that they felt were going to be receptive to taking part in a study. This is likely to be the more amiable clients that the counsellors have a better relationship with who, hypothetically, may be less inclined to dropout or leave counselling.

4.7.4: Future Directions

This recruitment strategy was always going to exclude early dropout – those individuals who did not return to the agency after attending one meeting – but it allowed the clients to consent to taking part in a research trial, an important feature for gaining ethical consent for research within this area. This was the result of a Catch 22 (Heller, 1961) situation – it is unethical to trial an untested tool on clients without their consent (i.e. at the start of counselling) but it can't be trialled successfully without distributing it at the first attended session. For this reason, this study represents a stepping stone to answering the set question rather than a definitive answer. Carrying out the study has illustrated the necessity of conducting a study without informed consent – i.e. where the clients do not know that they are taking part in a research experiment. This shall be the direction the follow-up experiment (c.f. Chapter 6) will take. However, prior to this, Chapter 5 will examine the possibility of developing a method to predict discharge status from alcohol counselling using discourse. This methodology would have an advantage over O'Connor's tool as it could be conducted as a natural part of the counselling process and therefore would not make the clients feel as though they are being “tested” and also not increase the counsellors' workloads noticeably.

Chapter 5 : An Alternative Approach for Assessing Risk of Dropout (Study 3)

5.1: Introduction

The current research programme is concerned with identifying a tool for predicting drop out. This is, therefore, not limited to developing O'Connor's tool. The methodology used in Study 2 afforded the possibility to examine a different technique for assessing dropout. From a counsellor's perspective, the ideal method to predict those at risk of dropping out would use discourse gained naturally through a counselling session as this would not interrupt the natural flow of the counselling process. Additionally, it would not require the counsellor to score the results and it would remove the literacy/ comprehension component of tool-based assessment.

Davies' Functional Discursive (FD) model (1997) made predictions about present and future behaviours according to the attributions made for interviewee's substance misuse. It is proposed that the FD model could predict for client drop out from alcohol counselling.

5.2: Functional Discursive model (Davies, 1997)

Davies' Functional Discursive (FD) model (1997) examined commonalities between the attributions made for drug and alcohol use (Davies, 1997; Melson, 2008; Newham, 2007; Quigley, 1996). Davies found similarities between these attributions

depending on the intended function of the discourse. Individuals motivated to talk about their substance use in a non-problematic way spontaneously made similar attributions; likewise, users who were having problems due to their substance use – and whose discourse therefore served the function of explaining those problems – produced similar discourses to each other. The attribution patterns which emerged from the discourses suggested six distinct “stages” to which the discourses could belong; the discourse elicited was dependent on the function.

Language is therefore viewed as a tool used to perform an action (c.f. Wittgenstein, Section 1.6.1.1) and from this premise, the stage allocated within the FD model is not a manifestation of a cognitive or physiological internal state but reflects the function that the speaker is motivated to achieve (for example presenting as a “normal drinker” versus seeking help for their alcohol use). However, this does not imply that the stage is meaningless. Predictions can be made according to the empirical relationship between discursive stage and their present and future behaviours (Davies, 1997). These predictions have primarily been concerned with users’ alcohol/drug using careers and their future behaviour but in this study it is proposed that stage may also predict for whether alcohol misusers complete counselling.

5.2.1: Stages within the FD Model

A more complete discussion of this model can be found in Davies (1997, pp95-8) but essentially there are six discursive stages within the FD model (the specific features

of each stage are presented in Table 5.1 below). Of the six possible stages, three are non-addicted (stages 1,2 and 5+) and three are addicted (stages 3,4 and 5-).

Table 5.1: Features of each discursive stage (abridged from Davies, 1997, pp 95-8; reproduced from Newham, 2007, p7)

Stage	Comments
Stage 1	Substance use is presented as being predominantly positive, fun, controlled and not problematic. Davies (1997) comments that “this is the stage of hedonistic recreational drug use” (pg 95). Importantly, there is no suggestion of dependent use or “addiction”.
Stage 2	Generally fluctuating and contradictory discourse, containing both the positive features of substance use seen in Stage 1 discourse and more negative observations. Discourse reflects the point when problems arise relating to substance use, therefore the conversation functions to explain these problems while justifying the continued (non-problematic) use.
Stage 3	The “addicted” box. There is reference to lack of choice and intention over their use and the predominant presentation of the use is negative. The problematic substance use is presented as inevitable and not chosen – being due to either constitutional/physiological factors or directly resulting from negative life events.
Stage 4	Discourse is fluctuating and contradictory. While the individual still presents self as being addicted, he/she begins to question the concept, which leads to the contradictory discourse within this box.
Stage 5+	Discourse makes reference to addiction but these are located as being in the past. The person does not present himself as a “recovering addict”. Their reported behaviour at this point may be abstinence or using in a non-problematic way.
Stage 5-	Contains individuals who have failed the system and/or the system has failed. This box’s inclusion is based on a small number of Portuguese drug-users (with none identified in the UK sample). The discourse obtained of this type is characteristically rambling and incoherent. It is an indeterminate state where substance use may be described in volitional and/or hedonistic terms but there is no other future visualised beyond continued substance use and ultimately death.

The six possible stages are presented diagrammatically in Figure 5.1 showing an alcohol user’s career. Theoretically, the six stages represent a “complete discursive cycle” (Davies, 1997, p. 94) but not all users will visit all of the stages. Additionally, some users may cycle between stages.

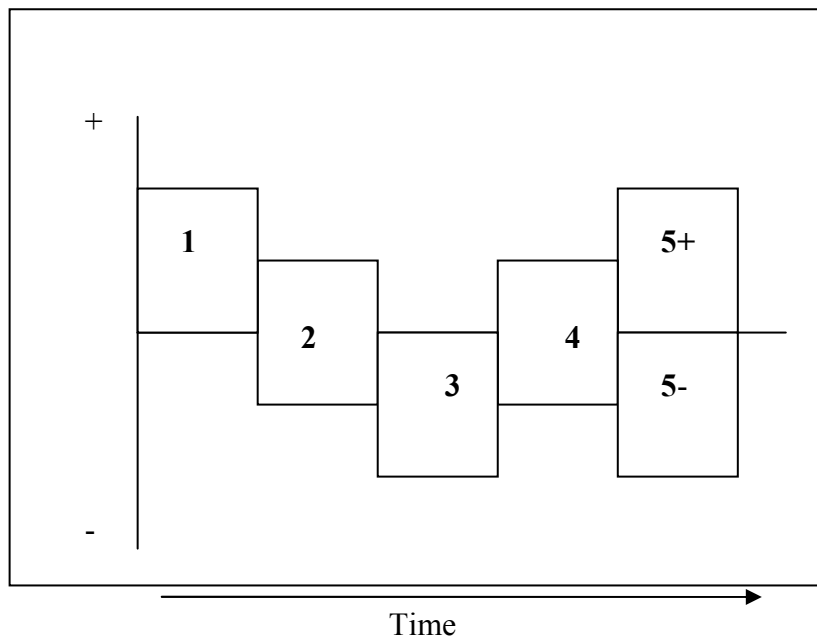


Figure 5.1: Functional Discursive Model (Davies, 1997, p 94)

As noted above, Davies (1997) found that certain predictions can be made according to the pattern of discourse produced (and subsequent stage allocation). Once an individual's pattern of discourse moves to the first "addicted" stage (stage 3) there can be no return to the "non-addicted" stages of 1 or 2 – any change must be to progress in the model. Additionally, not all movement is in a forward direction. There is marked sub-cycling between stages 3 and 4, and stages 1 and 2. Additionally, abstinence predominantly features at stage 3. Although the majority of Davies' original work was with drug users, these findings have been replicated among alcohol users (Melson, 2008; Newham, 2007; Quigley, 1996).

5.2.2: Dimensions Associated with the Model

Allocation into a stage is based on a minimally-structured interview. Davies proposed that six dimensions spontaneously emerged in the discourse and coding on these dimensions permitted allocation into a particular discursive stage (Davies, 1997). The dimensions are presented in Table 5.2 below.

Table 5.2: Dimensions Associated with Davies' FD mode (based on Davies, 1997, pp 101 - 2)

DIMENSION	DESCRIPTION
Time	The causal reasons for alcohol use could be presented as either lying in the past (for example parents were alcoholics or childhood experiences) or in the present (for example my friends do it, I want to, it's fun).
Generalisability	The number of individual factors presented as causal to the current substance use (for example ill-health, family, friends, job).
Purposiveness	Whether the substance use is presented as being under volitional control or not.
Hedonism	The attributions made for the substance use indicates whether the use is positive (e.g. pleasurable or fun/enjoyable) or negative.
Contradictoriness	The discourse's internal consistency is examined for contradictions between attributions (for example saying it was fun and enjoyable but then subsequently reporting it as being negative).
Addicted Self-Ascription	Whether the narrator presents as being addicted or not to the substance of interest. This can be either an explicit admission of addiction or that the discourse reflects attributions in line with alcoholism (uncontrollable and stable attributions – see Newham & Davies, 2007).

5.3: Mapping Alcohol Users' Response Biases onto the Functional Discursive Model (Newham, 2007)

A previous attempt (Newham, 2007) was made to simplify O'Connor's tool by mapping alcohol users' FD stage to their response bias, measured using O'Connor's original tool. Individuals who were "normal" drinkers (positioned at stage 1

according to the FD model, n=12) and “addicted” drinkers (positioned at stage 3, n=10) were recruited and asked to rate O’Connor’s (2003) vignettes for problem alcohol use. No significant difference was found between the two groups’ overall response biases. Closer examination revealed an interaction which reflected that, although there was no difference between the groups’ HITS (i.e. reporting problem alcohol use when it was present in the vignettes), the stage 1 (“normal”) group scored significantly more FALSE ALARMS than the stage 3 (“addicted”) group. This revealed that the stage 3 raters were more accurate than the stage 1 raters. It was concluded that the stage 3 (“addicted”) drinkers may have had more experience with “true” problem alcohol use and were therefore more accurate when identifying problem alcohol use.

5.4: Aim of Study

Following on from Newham (2007) it was considered that FD stage may act as a proxy for response bias among similarly experiences drinkers which would eliminate the need to use O’Connor’s tool to predict dropout. As discussed, it was not expected that discourse would semantically predict for dropout but rather that the pattern of attributions made would empirically predict subsequent behaviour. It is expected that only stages 3, 4 and 5 would be represented within the counselling as it would not be functional for an individual receiving counselling to make attributions consistent with “normal” alcohol consumption.

It is hypothesised that:

1. If response bias maps onto FD stage (as proposed by Newham, 2007) then those allocated to stages 3 or 4 (the “problem” stages of the model) would differ in their treatment outcome.
2. Clients producing stage 5+ (hereafter referred to as stage 5 discourse as 5- is theoretically possible but not found by Davies (1997)) discourse would be expected to have a planned discharge as these clients are presenting as “recovered”.

5.5: Methodology

5.5.1: Ethics

The data for this study were collected as part of Study 2’s methodology (c.f. Chapter 4) and therefore ethical approval for this study was granted by the University of Strathclyde’s Ethics Committee (see Section 4.4.1 for details).

5.5.2: Participants

There was no reason to expect literacy to affect discourse and therefore all participants eligible for inclusion in Study 2 were considered for this study (n=40). Due to equipment failure, one participant’s interview was not fully recorded and she

was excluded from this study. The final sample therefore comprised 39 clients. Their outcome statuses 3 months later were: still attending (n = 24); planned discharge (n = 10) and unplanned discharge (n=5).

All participants identified as being white with a mean age of 46.82 (SD = 10.76). Most were male (n=27, 69.2%), unemployed (n=33, 84.6%), had an education up to secondary school level (n=13, 33.3%) and were married/living with a partner (n=16, 41%). The sample differed slightly from the Study 2's sample – two additional clients were included and one client was newly excluded – but this was not felt to be sufficient to warrant re-assessment of any relationship between the descriptors and discharge status as these changes only affected still attending clients. Additionally, there was no great change to the descriptive statistics detailed above when compared to those presented in Section 4.4.3.

5.5.3: Procedure

The interviews were carried out as part of a larger study. Recruitment and study protocol were detailed in Section 4.4 therefore this procedural section will cover only the Functional Discursive model interview.

The methodology followed was detailed in Davies' book (Davies, 1997) and by Quigley (1996). After initial demographic questions each interview commenced with "Now, can you just tell me about your alcohol use?". The interviews were minimally structured with no set questions to be covered. It was proposed that the interviewees

would spontaneously raise the points most salient to their alcohol consumption and therefore prompts (in the form of repeating the original question or asking about an issue raised) were only used when the interview went excessively off-topic.

To promote brevity, and limit the overall experimental time, all interviewees were informed that the interview would last about five minutes. This was based on previous experience with FD interviews where they could last up to 49 minutes (Newham, 2007) and it was hoped that this tactic might promote brevity. In practice, interviews continued until they reached a natural conclusion. The interviews lasted between 3 minutes and 21 minutes. The mean interview length was 7 minutes and 46 seconds (sd= 4 minutes and 18 seconds).

5.5.4: Scoring on the Functional Discursive (FD) model

5.5.4.1: Coding the interviews within the FD Model.

The interviews were coded on each of the six dimensions (Time, Generalisability, Purposiveness, Hedonism, Contradictoriness and Addicted Self-Ascription) as detailed by Davies. The coding was then used to position the discourses within the FD model according to discursive stage and using the coding matrix (see Davies, 1997, for a full discussion of this). If the codes allocated did not map directly onto the matrix, the discourses were allocated to the stage which was the best fit for their discourse (Davies – personal communication, July 2007).

5.5.4.2: Reliability

To assess the reliability of the coding, and increase confidence in the stages allocated, three psychology post-graduates were recruited to re-code a subsample of transcripts. All had previous experience with using the FD model coding system and they took part in a refresher session held by the researcher on coding transcripts in the FD model. Of the original 39 interviews, four interviews were randomly selected. The raters were asked to score the same four transcripts using the same scoring matrix as the original researcher used and allocate to stage accordingly. Where their allocated scores did not fit with the dimensions associated with one particular stage, they were asked to allocate the stage according to the discourse's overall "feel" based on how Davies (1997) described the stage.

The raw percentage agreement (Table 5.3) does not indicate actual agreement as it was not corrected for chance and the large number of empty cells meant that Cohen's Kappa could not be calculated between the original rater and the other coders (Ranhoff & Laake, 1993). To calculate interrater reliability scores on the dimensions (HEDONISM, PURPOSIVENESS, GENERALISABILITY, TIME, CONTRADICTIONNESS and ADDICTED SELF-ASCRPTION) and the stage allocated an overall intraclass correlation (ICC) was calculated to assess inter-rater reliability while taking into account judge-specific differences (Howell, 2002). The overall reliability between all four coders was found to be $ICC = .66$ ($p < 0.005$), 95%

Table 5.3: Percentage agreement with researcher.

Dimension	% AGREED WITH ORIGINAL RATER		
	G	J	E
Time	75%	50%	50%
Generalisability	100%	75%	25%
Purposiveness	25%	50%	50%
Hedonism	50%	50%	75%
Contradictoriness	25%	75%	50%
Addicted	50%	25%	50%
Stage	25%	75%	50%

CI (.5 to .8). This is an acceptable level of agreement for an ICC reliability analysis (Ader, Mellenbergh, & Hand, 2008).

5.6: Results

The discursive stages allocated by the researcher and discharge statuses are presented in Table 5.4 below. The majority (79.5%) of clients produced were coded as either at stage 3 or 4 – i.e. the “addicted” stages. Additionally, stage 4 was the most common stage allocated (53.8%). This is the recovery stage where the clients are moving beyond attributions associated with being a “helpless addict” which characterises stage 3.

A Fisher’s Exact test was carried out to examine if there was an underlying association between stage and discharge type. This was non significant (FET (6) =6.56, $p=.29$) indicating there was no association between model stage and discharge type, although the standardised residuals approached significance (SR= +/-1.96; Field, 2009) for stage 5 clients receiving a planned discharge and stage 3 clients receiving an unplanned discharge.

Table 5.4: FD stages and discharge statuses.

FD Model Position	Planned n(%) <i>standardised residuals</i>	Unplanned n(%) <i>standardised residuals</i>	Open n(%) <i>standardised residuals</i>	Total n(%)
Stage 2	1 (2.6%) -0.2	1(2.6%) 0.4	3(7.7%) 0	5(12.8%)
Stage 3	2(5.1%) -0.4	3(7.7%) 1.5	5(12.8%) -0.5	10 (25.6%)
Stage 4	5(12.8%) -0.2	1(2.6%) -1	15 (38.5%) 0.6	21 (53.8%)
Stage 5	2(5.1%) 1.4	0 (0%) -0.6	1 (2.6%) -0.6	3 (7.7%)

5.7: Discussion

The study examined whether there was an association between FD stage and discharge status three months later. It had been hypothesised that those clients producing stage 5 discourses would have planned discharges and that there would be an outcome difference between those allocated to stage 3 and those allocated to stage 4. Ultimately, position in the FD model was not associated with discharge status therefore the null hypotheses were accepted.

These findings are in line with Newham's (2007) research which found no difference in response bias associated with position in Davies' model when comparing normal (stage 1) and "addicted" (stage 3) drinkers. It was hypothesised that among alcohol consumers with similar drinking experiences, position in FD model might still be related to response bias but the current results suggest that O'Connor's response

biases are not related to position in the FD model among drinkers assumed to have similar drinking experiences.

The majority of respondents were at stages 3 and 4, which would be expected as these are the problem alcohol using stages. What was not apparent from this “snapshot” study was the extent of cycling between stages 3 and 4. The non-significant results of the present study suggest that stage is unimportant and movement may be a normal part of successful treatment.

A surprising aspect of this study was the presence of clients producing stage 2 discourses. This suggests that individuals are attending treatment for whom it is not functional to present as “addicted”. It may be that these participants are in some way being coerced into attending treatment and this is reflected in the attributions which they made – for example if they were referred through the criminal justice services or were attending due to pressure from their family. It is, however, noteworthy that the majority of those at stage 2 were still attending three months after the initial interview (although this was not statistically significant). It would have been expected for this group to have the shortest treatment episode as they would be having the fewest problems; instead it appears that they remained in agency contact. At present, few conclusions can be drawn about this client group, and further research examining this group in detail is needed. If those who presented as stage 2 (“normal” drinkers who are having a few problems) subsequently endorsed “needing help” then there may be ethical issues associated with persuading someone that they

have a problem (the converse of this argument is, of course, that they had worked through their denial and now accept that they have a problem).

5.7.1: Criticism of Davies' Model

Problem drinking and alcoholism are two distinct concepts. While the majority of counselling attendees admitted to having a problem with their drinking, few explicitly stated that they were an alcoholic. This can be contrasted to illegal drug use. Using illicit drugs is likely to be socially stigmatised in a different way to alcohol use and therefore, within treatment, all drug users appear to subscribe to the "addiction" concept as this is functional to them. It would appear that this may not be the case for these alcohol misusers and it may be that this feature is especially strong in counselling. Newham's (2007) previous work with alcohol misusers involved individuals from Alcoholics Anonymous (AA) and those attending a rehabilitation unit which encouraged attendance at AA. It may be that those clients spontaneously referred to themselves as alcoholics due to the context from which they were recruited.

The FD model relies on minimally prompted interviews in order to cover the material most salient to the interviewee rather than the researcher. Additionally, Davies makes the point that the FD model "requires that discourse be functional from the outset; we cannot envisage a rationale for subjects "holding back" functional accounts till later in an interview" (Davies, 1997, p. 93). It was therefore expected that the salient attributions would be covered by the interviewees and therefore prompting was kept

to the minimum. It was the experience of this researcher that the naturally occurring discourse in response to “Tell me about your alcohol use” was insufficient to allow complete confidence in the reliability of the positioning of clients within the model, with some interviewees making very few spontaneous attributions. While prompting with direct, dimension-based questions may increase the reliability of the coding, the interviews would no longer reflect the attributions most salient to the interviewee. In Social Criterion terms, this would alter the responses given as it would increase the signals emitted regarding possible answers. At present it is unclear whether this would undermine stage allocation in the FD model.

Furthermore, the FD model does not deal well with ambiguous discourse as the “mixed” coding categories available for the dimensions of Time, Generalisability, Purposiveness and Hedonism. These are essentially “bucket” categories used when the discourses are un-codable on that dimension and the coding matrix dictates, therefore, that discourses which do not cover the “right” attributions are either allocated to stage 2 or 4 depending on whether or not the client presents as “addicted”.

5.7.2: Limitations

The paucity of clients dropping out is, again, a major limitation in this study. The reasons for this have been discussed elsewhere (c.f. Section 4.7.3) and will not be repeated here.

While the FD model has been successfully used with alcohol users (Davies, 1997; Newham, 2007; Quigley, 1996) the reliability statistic suggests that the inter-rater reliability is only acceptable (Ader, et al., 2008). This is disappointing as Davies' (1997) found Pearsons' correlations between two coders' ratings on the dimensions to lie between .77 and .9 while Newham (2007) found Spearman's rank order correlations on the dimensions between 5 coders to lie between .68 and 1. There are issues regarding the use of correlations as indicators of inter-rater reliability – for example two raters can be highly correlated but their actual scores very different – but the discrepancy between these findings and this present study's results suggest that there may be an issue with using Davies' model within this population.

5.7.3: Future Directions

To increase confidence in the FD model's validity it is vital that the coding's reliability is increased. As discussed above, this will involve using structure prompts to ensure that the dimensions are covered to allow confidence in the coding and decrease subjectivity. Using prompts or an interview schedule in qualitative research is widely accepted (for example Silverman, 2005) however it does modify the task requirements and, from a Social Criterion point of view, the researcher would emit strong signals regarding his/her aim in conducting the study and therefore the discourse obtained would reflect what is most salient to the researcher rather than the interviewee. At present, it is unknown whether this methodological – and theoretical – shift would invalidate the model.

Although retaining an interview methodology would superficially stay true to Davies' original minimally structured interviews it is argued that this would be disingenuous. There is no reason to assume that language's function would depend on whether a semi-structured interview or a questionnaire was used as long as the context was held constant because an interview guide would prompt answers in the same manner as a structured questionnaire. A questionnaire format is more practical as it does not require face-to-face meetings and can be administered online. These issues are examined in Chapter 10 through the development of an online questionnaire version of the FD model.

5.7.4: Conclusions

The FD model does not distinguish between discharge types. Additionally, this study's experience suggests that the FD model needs to be developed to make it suitable for use with alcohol misusing populations. It is proposed that being addicted to alcohol is very different to being addicted to drugs due to differences in societies' view of drug and alcohol misusers. It is likely that this is a result of there being no socially acceptable way of taking illegal drugs ergo having a problem with drugs is immediately synonymous with being a drug addict. Conversely, it is socially acceptable to drink heavily as long as this is done within socially agreed constraints (for example as a part of student life or at the weekends). For this reason excessive, harm causing alcohol consumption can be defined as being heavy and problematic without necessarily implying that the individual is addicted to it. Individuals in alcohol treatment – and perhaps especially within counselling – may therefore see

their excessive drinking as being a problem rather than an “addiction”. This has implications in positioning an individual within Davies’ model.

Due to the issues detailed above, at present efficacy of the FD model in assessing the risk of dropout from counselling cannot be established until the reliability issues are addressed. As a first step towards this, a questionnaire version of the FD model will be developed and piloted in Chapter 10, and used in Chapter 11, to begin to address the reliability issues.

Chapter 6 : No Consent Study (Study 4)

6.1: Introduction

To continue to develop the reduced version of O'Connor's tool into a usable method to predict dropout, this study aims to address the issues identified in Chapter 4 – namely the recruitment issues. While the results found that neither rating scales predicted for who would drop out of counselling for alcohol misuse, from the raw data there does appear to be a tendency for clients who received a planned discharge to rate the vignettes in a different manner to those who received an unplanned discharge, especially on the problem alcohol use scale. Whether this would translate into a significant difference between the groups is, as yet, unclear but deserves further investigation.

6.1.1: Issues to be Addressed

1. The study was under-powered. The reason for this was two-fold. Firstly, fewer people than anticipated were recruited through the approached agencies. The reasons behind this were unclear. All agencies' management teams expressed their commitment but it would appear that not all counsellors actively recruited – perhaps only approaching those individuals whom they were confident would take part. Secondly, fewer participants dropped out than expected. This may have been a function of the design as the recruiting

of clients already attending treatment meant that early dropout could not be sampled (26% of dropout from drug treatment occurred in the first two weeks of treatment; Millar, Donmall, & Jones, 2004)

2. There was an issue regarding how generalisable the population who volunteered was in comparison with those routinely attending these clinics. This was observed anecdotally, through counsellors' comments regarding these clients (for example "X is always on time"; "X is very reliable"), and is consistent with the "volunteer effects" observed in many other studies where volunteers are different from non-volunteers (for example Rosnow, Rosenthal, McConochie, & Arms, 1969). At present, it appears that taking part in a research study may in itself predict retention in treatment as dropout rate was lower than expected and not as many people as expected left treatment perhaps indicating that there was something "different" about the population.

3. Issues still remain regarding the usability of the tool within treatment agencies. The study took 45 minutes to complete – this included the two versions of the questionnaires and two interviews. It is still unknown whether it would be practical to rate twelve vignettes within a counselling appointment.

6.2: Aim of this Study

The main problem here is obvious: the tool, intended to predict dropout, cannot produce valid results if the sample is not representative and is biased towards staying in treatment. This is a problem associated with developing any tool – at some point in its development it must be given to the users in a “real world” situation to maximise the ecological validity of the results. The best way to circumvent this is to use the tool as a natural feature of attending an agency for counselling. For this reason, it is proposed that counsellors would distribute the tool at the end of their entry-interview – i.e. the counsellors would ask the clients to complete it as a natural part of the entry process.

6.2.1: Hypotheses

1. For the problem alcohol use scale, those who receive a planned discharge will rate the stories as significantly more problematic than the unplanned groups. This hypothesis is in line with O'Connor's findings.
2. For the emotional tone ratings, those who receive a planned discharge will rate the stories as significantly more negative than the dropout group.
3. It is not expected that the still attending group will differ from either the dropout or planned discharge groups.

Additionally, an important research question will also be addressed: which version of the tool is the better predictor for dropout/planned discharge?

6.3: Methodology

6.3.1: Ethics

Ethical approval was granted by the University of Strathclyde's Ethics Committee. The results of Study 2 indicated that individuals who volunteer to take part in experiments may not be representative of the general clients attending alcohol counselling. Based on the use of this tool with clinical populations, there have been no reports of clients being disturbed by the stories used or showing any discomfort implying that the risk to the participants is minimal. Additionally, the inclusion of the reduced tool at the end of the entry interview would appear "natural" to the clients as they would not know what to expect and therefore completing an assessment would appear normal to them. Permission was granted to distribute the tool as a natural part of the entry interview – i.e. participants were not informed that they were taking part in a University research project and that they had the right to withdraw.

The ethical issues involved here are clear but based on past research experience (c.f. Chapter 4) obtaining full, informed consent would render any findings invalid, which in itself raises different ethical issues. On the other hand, integrating the tool into the normal intake procedure was a natural and relatively unproblematic route to follow. At the start of the entry interview counsellors informed their clients that they did not have to answer any questions they did not wish to, so the agencies accepted that the clients could opt out of taking part in this study by invoking that option.

6.3.2: Participants

From the agencies, 63 participants were recruited between May 2009 and May 2010 from four clinics: B(n=27), C (n=25), G(n=2) and H(n=9)²². Of these, 47 (74.6%) were male and the mean age was 42.68 (SD=11.77). The majority of respondents were not in a significant relationship (68.3% - reporting as single (60.5%), separated/divorced (34.9%) or widowed (5.7%)²³), unemployed (71.4% - of whom 1 (2.2%) was retired), and had no educational qualifications (34.9%). The overall descriptives are presented in Table 6.1 below. Initially, all participants were examined together for any relationship between demographics and outcome using Fisher's Exact tests (for categorical variables) and the continuous variables were examined using a one-way ANOVA or a Kruskal Wallis (if the homogeneity of variance test was significant), with Mann Whitney Us used to follow-up any significant results. As seen from Table 6.1, the Fishers Exact tests revealed that employment status (FET (2) =9.63, $p < .01$) and the agency attended (FET (6) =12.19, $p < .05$) were both significantly associated with outcome. These variables' standardised residuals (SR) were examined (Field, 2009). The standardised residual is a z-score and therefore when its value is greater than 1.96 it is significant at $p < 0.05$ (Field, 2009). Agency H had an unusually large proportion of clients still attending (SR= 2.5, $p < 0.05$); however, no SR was significant for employment but the number of cases employed was lower than expected in the unplanned discharge group (SR= -1.8) and higher than expected (SR=1.7) in the planned discharge group.

²² Agencies B and C were included in Study 2.

²³ It was decided that those individuals who were separated/divorced or widowed but in a significant relationship would have indicated that with their response – either by checking two boxes or omitting to check the non-relationship box.

Table 6.1: Analyses of Descriptives

Descriptive	Planned	Unplanned	Open	Total
	n(%)	n(%)	n(%)	n(%)
Agency (n= 63)**				
B	8 (12.7%)	15 (23.8%)	4 (6.3%)	27 (42.99%)
C	9 (14.3%)	11(17.5%)	5(7.9%)	25 (39.7%)
G	1 (1.6%)	-	1 (1.6%)	2 (3.2%)
H	-	3 (4.8%)	6 (9.5%)	9 (14.3%)
Gender (n=63)				
Male	13 (20.6%)	23 (36.5%)	11 (17.5%)	47 (74.6%)
Female	5 (7.9%)	6 (9.5%)	5 (7.9%)	16 (25.4%)
Education (n=60)				
None	7 (11.7%)	8 (13.3%)	7 (11.7%)	22 (36.7%)
Secondary School Level	4 (6.7%)	14 (23.3%)	1 (1.7%)	19 (31.7%)
Further Education	2 (3.3%)	3 (5%)	3 (5%)	8 (13.3%)
Higher Education (includes PG qualifications)	5 (8.3%)	3 (5%)	3 (5.0%)	11 (18.3%)
Employed (n=63)*				
Working (including 3 Part Time workers)	9 (14.3%)	3 (4.8%)	6 (9.5%)	18 (28.6%)
Not Working	9 (14.3%)	26 (41.3%)	10 (15.9%)	45 (71.4%)
Home Life (n=63)				
Single (includes 15 Separated/Divorced)	12(19.0%)	21 (33.3%)	10 (15.9%)	43 (68.3%)
In a relationship	6 (9.5%)	8 (12.7%)	6 (9.5%)	20 (31.7%)
Criminal Justice Service Referred (n=62)				
Yes	1 (1.6%)	5 (8.1%)	1 (1.6%)	7 (11.3%)
No	16 (25.8%)	24 (38.7%)	15 (24.2%)	55 (88.7%)
Past Treatment (n=63)				
Yes	7 (11.1%)	15 (23.8%)	8 (12.7%)	30 (47.6%)
No	11 (17.5%)	14 (22.2%)	8 (12.7%)	33 (52.4%)
Version Questionnaire (n=63)				
Emotional Tone	9 (14.3%)	15 (23.8%)	10 (15.9%)	34 (54%)
Problem Alcohol Use	9 (14.3%)	14 (22.2%)	6 (9.5%)	29 (46%)
Comprehension test (n=63)				
Pass	16 (25.4%)	24 (38.1%)	11 (17.5%)	51 (81%)
Fail (includes those who did not answer, n=3)	2 (3.2%)	5 (7.9%)	5 (7.9%)	12 (19.0%)
Read aloud (n=62)				
Yes	5 (8.1%)	7 (11.3%)	5 (8.1%)	17 (27.4%)
No	13 (21%)	21 (33.9%)	11 (17.7%)	45 (72.6%)
	Planned Mean (SD)	Unplanned Mean (SD)	Open Mean (SD)	Total Mean (SD)
Age (n=60)	42.78 (13.72)	41.83 (11.42)	44.2 (10.48)	42.68 (11.77)
Weeks between appointments (n=61)	1.12 (.33)	1.14 (.35)	1.22 (.48)	1.15 (.38)
Units per drinking occasion at entry (n=55) ^{24**}	19.04 (8.09)	25.8 (13.1)	16.01 (6.43)	21.39 (11.07)
How many days a month drinking pre-treatment (n=59)	15.58 (12.22)	17.83 (10.93)	12.78 (10.45)	15.95 (11.22)
Units consumed a month ²⁵	265.81 (183.77)	462.36(388.54)	198.37(181.11)	336.93(310.79)

* $p < 0.01$, ** $p < 0.05$

²⁴ Levene's test was significant for this and units drunk over the course of a month therefore a Kruskal Wallis was performed with follow-up Mann Whitney Us. The reported probability is from the Kruskal Wallis.

²⁵ This is units drunk on a drinking day x number of drinking days a month.

A Kruskal Wallis revealed that there was a significant difference between the number of units drunk on a drinking day and discharge status ($H(2) = 6.74, p < .05$). A follow-up Mann Whitney U revealed that the unplanned group ($Mdn = 23.13$) reported drinking significantly more ($U = 85.5, p < .05, r = .38^{26}$) a day than the still attending group ($Mdn = 14.08$).

6.3.3: Design

This was a between-groups design with two conditions: participants completed either the emotional tone questionnaire or the problem alcohol use questionnaire. For each arm, the independent variable was outcome – i.e. whether they obtained a planned or unplanned discharge or were still attending - and the dependent variables were the clients' ratings on the scale.

6.3.4: Materials

Two separate workbooks of the reduced tool were made up – one utilising the rating scale for emotional tone and the other with the scale for problem alcohol use (the scales from Study 2 were retained). The order of the vignettes was kept constant to maximise the external validity of the study as, if this tool was used on a wide scale, there would have to be a constant format which would include a standardised order of vignette presentation. Each work book also included a demographics sheet and a comprehension test.

²⁶ Effect size was calculated by transforming the z-score provided by SPSS into an estimate of the effect size (r) using the formula: $r = Z/\sqrt{N}$ (Field, 2009, p. 550)

6.3.4.1: Comprehension test.

To decrease the time taken to complete the reduced tool, a new comprehension task (Appendix D) was developed to replace O'Connor's five question test with one that involved only one question. Like the original comprehension task, this was to assess the ability of the respondent to extract information from a passage as, if the respondent could not do this, then they may not be able to comprehend the vignettes sufficiently to allow a meaningful rating.

6.3.5: Procedure

Agencies that were previously affiliated with Councils on Alcohol were identified and approached. Initially those who had taken part in Study 2 were approached as they were familiar with the aims of this research but, due to a poor response rate, further agencies around Scotland were approached. Ultimately, 16 counselling agencies were approached and four agencies took part.

The Chief Executives of the counselling agencies were approached and the purpose of the study explained to them. In order to proceed with the study, the agencies were asked to change their entry interview protocol for an agreed period of time²⁷. During this time, the counsellors were asked to give the tool out as a natural part of the entry interview (i.e. it was to be completed within the interview) to ALL individuals who

²⁷ Originally this was set at 3 months but that timeframe was flexible to maximise recruitment.

were going to be offered further treatment – i.e. regardless of whether or not the counsellor perceived that they would be able to complete the tool. It was expected that this tool would take the client about 10 -15 minutes to complete. Three months after the client completed the questionnaire they were followed up through the agency and their treatment status noted.

The questionnaires were supplied in numbered envelopes, inside which was the reduced tool with either the problem alcohol use rating scale or the emotional tone scale, and an A5 instruction sheet informing the counsellor which version of the tool the client was completing. The envelopes were organised so that the versions of rating scale were alternated and the counsellors were asked to use the envelopes in order. If there was a comprehension issue then the counsellors were asked to reading the tool aloud and complete it for them. It was stressed that this tool was to be delivered as a natural part of the assessment process, not presented as a piece of research the agency was taking part in.

What the client had to do:

The clients answered background questions about themselves and answered a question about a short passage to indicate their level of comprehension. They then read the 12 vignettes and rated them either for how problematic they thought the described alcohol use is or for how generally positive or negative the stories were (depending on which version of the questionnaire they got).

What the counsellor was asked to do:

The counsellors were asked to say to the client: “We are interested in how people who have alcohol problems rate some stories on a scale. Please complete this.” If the client asked further questions about the study then it would be stressed that this is not going to determine whether or not they would be offered treatment, or what type of treatment they would be offered. The counsellors were also asked to complete a section on the back page of the questionnaire with the client number, if it was read aloud and the counsellor’s name/identifier. If the client was unwilling/unable to complete the task for some reason then the counsellors were asked to still return the questionnaire with these details completed.

6.4: Preparing the Dataset for Use

Some clients provided data in a non-numerical format (i.e. they used words instead of numbers). In these instances certain rules were followed to standardise the data entry.

In two instances the exact age was not given but a range recorded. In these instances the midpoint was taken (for example “between 40-50” was recorded as 45). Also, one individual had described themselves as both single and married/living with a partner – it was decided that this reflected a living arrangement most similar to being single so was recorded as such.

6.4.1: Calculating Days Drinking in a Month

When clients reported drinking everyday of a month they either said “every day” (or words semantically equivalent), 31 days or 30 days. Arbitrarily, it was decided that a month would be 30 days long therefore those reported as 31 were recoded to 30 as were any reports of “every day”. Additionally, some respondent gave a range for the number of days drunk in a month (for example 4-8 days). In these instances the midpoint was taken (for example for 4-8 days then 6 was recorded).

6.4.2: Calculating Units Drunk

Clients were asked to report their alcohol consumption in the number of drinks drunk rather than units. As in Chapter 4, the number of units reported as consumed during a typical drinking day were calculated using a combination of the revised estimates presented by the Scottish Government (Scottish Government, 2008c) and an alcohol unit calculator (www.drinkaware.co.uk/tipsandtools/drink-diary). For those specific drinks not listed the ABV was calculated.

Often clients were vague about the exact quantity. In these instances, certain rules were followed:

1. “At least” 5 pints or “over” 5 pints would be coded as 5 pints
2. “Up to” 6 would be coded using the mid-point between 0 and 6 was used – i.e. 3

Often, clients were not specific about what specifically they were drinking. If just “cider” was mentioned then it was assumed to be cheap and strong therefore coded as Frosty Jack (i.e. 7.5%). If a half bottle of spirits was reported then this was taken as half a standard bottle (i.e. half of 70cl). A report of drinking premium lager taken as half a standard bottle (i.e. half of 70cl). A report of drinking premium lager taken as 5%. If lager was mentioned but the volume not specified then it was assumed it was cans rather than pints.

6.5: Final Data Sets

6.5.1: Exclusions

6.5.1.1: Exclusions on basis of comprehension issues.

As can be seen from the Table 6.1, twelve participants did not pass the comprehension test (of these three participants did not complete it). This was a new task (see Appendix D) developed to replace O’Connor’s 5-question comprehension task (Harpers, 2000).

It was apparent that, for the new comprehension task, 19% of participants either could not or would not correctly answer it. This is a high percentage and, although this comprehension task was developed to be quicker and simpler than the previous one, it is possible that it was just too complicated for this client group. O’Connor’s comprehension task used in Study 2 found that 12% got one or more questions wrong (the criteria used for exclusion in Study 2 was getting more than one question

wrong hence fewer were excluded). This indicates that the new task had a higher error rate. So as to not erroneously exclude participants who had understood the task adequately but for an unknown reason failed the comprehension task – perhaps because it was too simple and they sought to over complicate it or because it asked for a number and the respondents panicked thinking it was a mathematical task – it was decided that it would be inadvisable to rely on passing the comprehension task as the sole criteria for inclusion. Instead, it was reasoned that individuals who had not understood the task might be identifiable by their scores on the questionnaire.

To identify those individuals who had not comprehended the task adequately, the total data set was first divided to examine the emotional tone and problem alcohol use data sets separately. Each data set was divided into the three outcome groups (unplanned, planned and still attending) and each participant group's data were z-scored separately²⁸. As will be recalled from Study 2 the total score for each rating scale comprises three “types” of vignettes – high signal, low signal and noise. It is conceivable that rating the vignettes randomly (as expected if the respondent does not comprehend the task) might produce a pattern of response resulting in a total score that is similar to non-random ratings. To mitigate against this, the z-transformed scores for the total scores, high signal vignettes only total score, low signal vignettes only total score and noise only vignettes total score were calculated and each of these examined for outliers. An issue with routinely screening data for outliers is that this can result in the removal of natural response variations and to

²⁸ As the three participant groups (planned, unplanned and still attending) are expected to be discrete it was most meaningful to examine outliers within the groups rather than across them.

guard against this, only those who had either failed or not answered the literacy test were considered for exclusion.

Within a normal distribution only 5% of values should be greater than 2, 1% greater than 2.8, with none greater than 3.29 (Field, 2005). With this in mind, any z-scores greater than 2 were examined in greater detail.

6.5.1.1.1: Emotional tone data set.

Within this data set, six clients had failed the comprehension test and two had not completed it. The cases were examined in greater detail. First, the responses were examined for general variability. One case was identified where there was little variability in their answers. Upon closer examination, the z-scores for this participant's responses were over 2 for each calculation. This response was therefore excluded as it did not appear that the client had understood the task (Participant 17).

6.5.1.1.2: Problem alcohol use scale.

Three clients completing this scale had failed the comprehension test and one had not completed it. Examining these clients' responses identified one case with little variation in the responses. This resulted in a very unusual pattern of responses which would suggest that the client had not understood the task. This client was therefore omitted (participant 68). The other three clients' z-scores were within the parameters

set out above, and there were no peculiarities about their patterns of response, and were therefore retained in the analysis.

6.5.1.2: Failure to complete task.

Some participants (n=6) skipped vignette(s) but they completed the task sufficiently to allow meaningful inclusion in certain parts of the analyses (the n is detailed in these instances) but one participant was removed from the problem alcohol use rating task as she failed to complete a sufficient number of vignettes for inclusion in any analyses beyond the general descriptives.

6.6: Results

6.6.1: Predictors of Discharge from Complete Dataset

A multinomial logistic regression was run to model the relationship between demographic/ drinking variables and clients' discharge status. This type of logistic regression allows a single, categorical dependent variable (with two or more categories of outcome) to be predicted from continuous and/or categorical predictor variables. Essentially, in a logistic regression the categorical dependent variable undergoes a logarithmic transformation in order to establish linearity and enable a regression to be carried out (Howell, 2002).

For this part of the results section, ratings on the reduced tool were not taken into account as the aim is to predict discharge based on demographic/drinking variables. For this reason, the total study sample was used.

Due to the constraints regarding the ratio of observations to outcome events, possible predictor variables were identified through initial analyses of the gathered demographic variables and drinking history variables as well as those suggested by past literature. Predictor variables were selected both through analyses of the collected potential variables and the past literature (Gum, et al., 2006; Ottenbacher, Ottenbacher, Tooth, & Ostir, 2004). Three variables predicted (see Table 6.1): work status, units drunk per drinking occasion at entry and agency attended. Due to the large differences in sample size recruited from each agency, entering the agency attended as a predictor variable resulted in an unstable model. It wasn't possible to collapse the categories meaningfully therefore this potential predictor could not be included.

The logistic regression therefore included two of these three variables. The literature also highlighted the importance of age, social isolation (in this case represented by relationship status) and educational status on predicting dropout so these were also included in the analyses. For the selected predictor variables, there were 5 variables and 53 participants included in the multinomial logistic regression; this was within the outcome event to independent variable ratio range of 10:1 which is acceptable for a multinomial logistic regression (Ottenbacher, et al., 2004).

6.6.1.1: Assumptions.

The data were examined for collinearity by running a multiple regression and only examining the collinearity diagnostics (Field, 2005). Both the tolerance values (range .72 to .94) and variance inflation factor (VIF) values (range 1.06 to 1.39) were well within the acceptable values of above .1 and less than 10 respectively (Field, 2005). To ensure that there was no over-dispersion (which would indicate that the cases included are not related therefore there is independence of errors) within the data, the goodness of fit chi-square was examined to ensure that the dispersion parameter (which is the Pearson chi-square goodness of fit statistics/degrees of freedom) was around 1 (a value lower than 1 indicates under-dispersion whereas greater than 2 reflects over dispersion(Field, 2009)). In this instance it was 1.06 and therefore this assumption was met. Additionally, the ordinal and continuous variables were tested to ensure linearity – that is, that each one is linearly related to the log of the outcome variable (Field, 2009). This was done by running a logistic regression with the interaction term for the continuous/ordinal variables and their log transformation (see Field (2009) for a discussion of this technique). None of the interaction terms were significantly involved in the final model and therefore linearity was accepted.

A forced entry multinomial logistic regression was therefore run with five predictor variables: age, units drunk on a drinking day at entry to treatment, employment status, educational attainment and relationship status. The levels of the non-continuous predictors are presented in Table 6.2 below.

6.6.1.2: Results of logistic regression model

The logistic regression model was run. Cases with missing data were eliminated – although this resulted in a reduced sample (n=53) it was necessary in order to retain confidence in the obtained R² values (Field, 2005).

Table 6.2: Level of non-continuous predictors.

Categorical or Ordinal Predictor	Composite Levels
Employment Status	Employed or Unemployed
Educational Attainment	None, Secondary School Level, Further Education, Higher Education
Relationship Status	In a relationship or Single

The resulting model explained more of the variance than the original model (i.e. where no predictor variables were added; $X^2(14)=31.65$, $p<0.005$). Only employment status and the number of units consumed each drinking day were retained in the final model (see Table 6.3 below).

Working status distinguished between those clients who had a planned discharge and those who had an unplanned discharge. The odds ratio indicated that as working status changed from employed to unemployed there was a change in the odds of

Table 6.3: Logistic Regression for Predictors of Dropout

		B	Std. Error	95% CI Odds Ratio		
				Lower Bound	Odds Ratio (Exp(B))	Upper Bound
unplanned (planned reference category)						
	Intercept	1.19	2.49			
	Units of alcohol drunk in a day	.09	.05	.99	1.09	1.21
	Age	-.03	.04	.89	.97	1.06
	Single vs. in a relationship	-.98	1.14	.04	.37	3.49
	Working vs. not working**	-3.55	1.32	.00	.03	.39
	No education	-.61	1.25	.05	.54	6.34
Education - all versus Higher Education	Secondary School Level	.94	1.29	.21	2.57	32.16
	Further Education	-.5	1.58	.03	.61	13.33
open (planned reference category)						
	Intercept	1.52	2.61			
	Units of alcohol drunk in a day	-.04	.05	.86	.96	1.06
	Age	-.05	.05	.87	.96	1.05
	Single vs. in a relationship	1.18	1.14	.35	3.26	30.6
	Working vs. not working	-.25	1	.11	.78	5.6
	No education	.1	1.22	.10	1.10	11.93
Education - all versus Higher Education	Secondary School Level	-1.31	1.6	.01	.27	6.16
	Further Education	1.11	1.32	.23	3.04	40.16
unplanned (open reference category)						
	Intercept	-.33	2.78			
	Units of alcohol drunk in a day*	.13	.06	1	1.14	1.29
	Age	.02	.05	.92	1.02	1.13
	Single vs. in a relationship	-2.17	1.37	.01	.12	1.68
	Working vs. not working*	-3.3	1.48	.00	.04	.67
	No education	-.71	1.4	.03	.49	7.64
Education - all versus Higher Education	Secondary School Level	2.25	1.72	.33	9.48	273.34
	Further Education	-1.61	1.68	.01	.2	5.4

Note: R²= .45 (Cox and Snell), .51 (Nagelkerke). Model X² (14) = 31.65, p<.005. **p<0.01, *p<0.05

getting an unplanned discharge rather than a planned discharge of 0.03 – i.e. an unemployed person having an unplanned discharge compared to a planned discharge is 33 times more likely than for an employed person²⁹. Similarly, working status distinguished between those who will still be attending treatment and those who had

²⁹ The odds ratios less than 1 were converted to a frequency to give a more intuitive measure of the likelihood of the event happening (Field, 2009).

an unplanned discharge – with those who are unemployed being 25 times more likely to have an unplanned discharge rather than still be attending treatment after 3 months. Finally, the number of units consumed on a drinking day significantly predicted whether client was an unplanned discharge rather than still attending. As units consumed on a drinking day increased by one the odds for an unplanned discharge increased by a factor of 1.14 in comparison to those still attending (i.e. have an “open” status).

Overall, this model correctly classified 62.3% of cases. As can be seen from Table 6.4 the model was best at predicting group membership for those who were unplanned discharges (predicting 76% of cases correctly). It predicted 58.8% of planned discharge cases correctly and was poorest in accurately predicting membership to the still attending group – only classifying 36.4% correctly.

Table 6.4: Classification capability of logistic model

Observed	Predicted			Percent Correct
	planned	unplanned	open	
Planned	10	6	1	58.8%
Unplanned	4	19	2	76.0%
Open	2	5	4	36.4%
Overall Percentage	30.2%	56.6%	13.2%	62.3%

6.6.2: Predictive Capability of Rating Scales

6.6.2.1: Descriptives of the final samples.

The final samples comprised clients who rated the vignettes for emotional tone (n=33) and problem alcohol use (n=28). The clients in each task did not differ along

any demographical or drinking variables measured when the categorical variables were assessed for association using Fishers Exact Tests and the continuous variables using one-way ANOVAs (see Table 6.5).

6.6.2.1.1: Emotional tone ratings.

The final sample who had rated the vignettes for emotional tone (n=33) comprised 9 (27.3%) clients who received a planned discharge, 15 (45.5%) clients who received an unplanned discharge and 9 (27.3%) who were still attending. The sample's mean age was 43.6 (SD = 11.99) and the majority were male (69.7%), had no qualifications (32.26%), unemployed (69.7%) and single (69.7%). The mean number of units consumed on each drinking day was 23.73 (SD = 13.02), with the mean drinking days in a month being 15.83 (SD=10.59).

6.6.2.1.2: Problem alcohol use ratings.

This sample (n=27) comprised 8 (29.6%) clients who received a planned discharge, 13 (48.1%) who received an unplanned discharge and 6 (22.2%) clients who were still attending. The mean age was 42.11 (SD=12.09) and the majority of this sample were male (81.5%), no qualifications (38.5%), unemployed (74.1%) and single (66.7%). The mean number of units consumed on a drinking day were 18.34 (SD = 8.16) and the mean number of drinking days in a month was 15.4 (SD = 12.22).

Table 6.5: Comparisons of clients' features between conditions.

Descriptive	Emotional Tone	Problem Alcohol Use	Total
	n(%)	N(%)	n(%)
Agency (n= 60)			
B	13 (21.7%)	12 (20%)	25 (41.7%)
C	14 (23.3%)	10 (16.7%)	24 (40%)
G	2 (3.3%)		2 (3.3%)
H	4 (6.7%)	5 (8.3%)	9 (15%)
Gender (n=60)			
Male	23 (38.3%)	22 (36.7%)	45 (75%)
Female	10 (16.7%)	5 (8.3%)	15 (25%)
Education (n=57)			
None	10 (17.5%)	10 (17.5%)	20 (35.1%)
Secondary School Level	8 (14%)	10 (17.5%)	18 (31.6%)
Further Education	5 (8.8%)	3 (5.3%)	8 (14%)
Higher Education (includes PG qualifications)	8 (14%)	3 (5.3%)	11 (19.3%)
Employed (n=60)			
Working (including 3 Part Time workers)	10 (16.7%)	7 (11.7%)	17 (28.3%)
Not Working	23 (38.3%)	20 (33.3%)	43 (71.7%)
Home Life (n=60)			
Single (includes 15 Separated/Divorced)	23 (38.3%)	18 (30%)	41 (68.3%)
In a relationship	10 (16.7%)	9 (15%)	19 (31.7%)
Criminal Justice Service Referred (n=60)			
Yes	2 (3.3%)	5 (8.3%)	7 (11.7%)
No	31 (51.7%)	22 (36.7%)	53 (88.3%)
Past Treatment (n=60)			
Yes	16 (26.7%)	14 (23.3%)	30 (50%)
No	17 (28.3%)	13 (21.7%)	30 (50%)
Discharge Status (n=60)			
Planned	9 (15%)	8 (13.3%)	17 (28.3%)
Unplanned	15 (25%)	13 (21.7%)	28 (46.7%)
Still Attending	9 (15%)	6 (10%)	15 (25%)
Read aloud (n=59)			
Yes	10 (16.9%)	5 (8.5%)	15 (25.4%)
No	23 (39%)	21 (35.6%)	44 (74.6%)
	Emotional Tone Mean (SD)	Problem Alcohol Use Mean (SD)	Overall Mean (SD)
Age (n=59)	43.6 (11.99)	42.11 (12.09)	42.92 (11.96)
Units per drinking occasion at entry (n=52)	23.73 (13.02)	18.34 (8.16)	21.34 (11.36)
How many days a month drinking pre-treatment (n=56)	15.83 (10.59)	15.4 (12.22)	15.64 (11.21)
Units consumed a month(n=51)	389.74 (356.13)	244.84	330.07 (315.8)
Appointments attended before follow-up (n=60)	3.91 (3.55)	4.44 (3.65)	4.15 (3.57)
Weeks between appointments (n=60)	1.18 (.39)	1.13 (.38)	1.16 (.39)

6.6.2.2: Examinations of the rating scales.

As in Chapter 4, the vignette set was disassembled into the component signal strengths to allow a deeper examination of the structure as it was anticipated that some features of the tool may be a better predictor than others. The scores of interest are the total ratings given for:

1. All 12 vignettes (“total”)
2. Only the 4 noise vignettes (“noise only”)
3. Only the 4 low signal vignettes – i.e. those containing aspects of DSM- IV criteria for alcohol intoxication (“low only”)
4. Only the 4 high signal vignettes – i.e. those containing aspects of the DSM-IV criteria for alcohol abuse and dependency (“high only”)
5. Both the 4 noise and 4 low signal vignettes (“noise and low together”)
6. Both the 4 noise and 4 high signal vignettes (“noise and high together”)
7. Both the 4 low signal and 4 high signal vignettes (“low and high together”)

Each client only returned one version of the tool therefore, from this point onwards, the emotional tone and problem alcohol scales will be examined individually.

6.6.2.2.1: Emotional tone rating scale

Table 6.6 below details the median associated with each scoring system separately³⁰. The unplanned discharges scored more highly on the emotional tone rating scale than the planned discharges or those still attending. This indicates that, overall, unplanned discharge participants saw the alcohol use in the vignettes as more negative than either of the other groups on most of the measures. Clients still attending treatment – the “open” clients – on the whole more closely resembled those clients who had received a planned discharge.

Table 6.6: Medians of the rating scales’ totals

Independent Variable	Planned	Unplanned	Open
Total Score	34 n = 9	37 n = 13	34 n = 7
Total Noise Vignettes Only	10 n = 9	10 n = 13	11 n = 8
Total High Signal Vignettes Only	11 n = 9	13 n = 15	11 n = 7
Total Low Signal Vignettes Only	13 n = 9	11 n = 15	13 n = 8
Total Low and Noise Signal Vignettes	23 n = 9	24 n = 13	23 n = 7
Total Low and High Signal Vignettes	24 n = 9	25 n = 15	23 n = 7
Total Noise and High Signal Vignettes	21 n = 9	23 n = 13	22 n = 7

Kruskal Wallis test were carried out due to the small group size and mis-matched group numbers and found no significant differences between the groups for any of the measures. This suggests that there was no difference between the discharge statuses and how the participants rated the stories for emotional tone.

³⁰ The emotional tone ratings were not reverse-coded in this study as they were not to be compared to problem alcohol use ratings.

6.6.2.2.2: Problem alcohol use rating scales.

The descriptives for the clients who rated the vignettes for problem alcohol use are presented in Table 6.7 below. As can be seen those who were still attending rated the vignettes as less problematic (i.e. a higher score) than with the planned or the unplanned discharges. In general, the planned group saw more instances of problem alcohol use than the unplanned or still attending groups. These data underwent analysis by Kruskal Wallis; no significant results were found indicating that there was no difference between the groups' ratings for problem alcohol use.

Table 6.7: Medians for Problem Alcohol Use Rating Scale

Independent Variable	Planned	Unplanned	Open
Total Score	26 n = 8	28 n = 12	30.5 n=6
Total Noise Vignettes Only	12 n = 8	12 n = 13	13 n = 6
Total High Signal Vignettes Only	6 n = 8	7 n = 13	7 n = 6
Total Low Signal Vignettes Only	7 n = 8	8.5 n =12	9.5 n = 6
Total Low and Noise Signal Vignettes	19.5 n = 8	20.5 n =12	23 n = 6
Total Low and High Signal Vignettes	14 n =8	15.5 n =12	17.5 n = 6
Total Noise and High Signal Vignettes	19 n = 8	19 n = 13	19.5 n =6

6.7: Supplementary Analyses

The rating scales have so far failed to distinguish between the different treatment types. It was believed that the use of a confidence scale would indicate a rater's tendency to say "yes, problem alcohol use" therefore emulating the function of O'Connor's response bias calculation. This proposition has not been borne out. From

examining the medians, the problem alcohol rating distribution appears to be systematic. Planned discharges identified more vignettes as being problem alcohol use than either unplanned discharges or still attending, in line with the findings from Study 2. Additionally unplanned discharges generally rated the vignettes more negatively than planned discharges in both studies. Both this present study and Study 2 suggest that there are systematic differences between the groups but these differences do not reach statistical significance. It may be that the use of a rating scale has increased the variance and rendered the study underpowered due to the modest sample size. Therefore, to reduce the variance, it is proposed to dichotomise that rating scales into problem drinking versus not problem drinking, and positive emotional tone versus negative emotional tone.

6.7.1: Dichotomising the Scale

All the vignettes' ratings for problem alcohol use were recoded. Those vignettes previously rated as either:

“I am very sure this is not problem alcohol use” or

“I am fairly sure this is not problem alcohol use”

were recoded into a single category entitled “Not showing problem alcohol use” and allocated a score of (0).

Those vignettes previously rated as either:

“I am very sure this is problem alcohol use” or

“I am fairly sure this is problem alcohol use”

were reclassified into a single category: “Showing problem alcohol use” and allocated a score of (1).

The total scores and composite scores were then calculated. Due to the binary scoring system the resulting score directly reflected the number of occasions problem alcohol use was identified (see medians in Table 6.8 below).

This procedure was repeated for the emotional tone ratings and the positive ratings were allocated a score of 1 and the negative ratings were allocated a score of 0. This meant that the total score was a count of how many vignettes were rated positively.

6.7.2: Problem Alcohol Use

The results were re-analysed using Kruskal Wallis tests due to the mismatched sample sizes and significant Levene’s tests, with follow up Mann Whitney Us to examine the significant results (p values are correct for a one-tailed test). These are presented in Table 6.8 below.

It was found that there was a significant difference between those who were still attending and those who had a planned discharge for (1) the total for low signal vignettes only ($U=8, p<.05, r = -.57$) and (2) the total for low signal and noise vignettes combined ($U=8, p<.05, r = -.56$). Additionally – although the original Kruskal Wallis found no significant difference – for the total score calculation there were significant differences between the still attending and planned discharge groups

Table 6.8: Medians number identified as problem alcohol use

Dependent Variable	Planned	Unplanned	Open
Total Score	8	7	5.5
Total Noise Vignettes Only	1	-	-
Total High Signal Vignettes Only	4	3	4
Total Low Signal Vignettes Only*	4	3	2
Total Low and Noise Signal Vignettes**	4.5	3.5	2
Total Low and High Signal Vignettes	7.5	6.5	5
Total Noise and High Signal Vignettes	5	4	4

* H(2)=5.32, p<.05; **H(2)=4.67, p<.05

($U=7$, $p<.05$, $r = .6$). These results illustrate that, for the aforementioned calculations, planned discharges identified significantly more episodes of problem alcohol use than those still attending treatment.

6.7.3: Emotional Tone

The emotional tone responses were also dichotomized with negative being allocated “0” and positive ratings being allocated “1”. This means that the scores are the number of instances that the vignettes were rated as positive within that signal strength. The medians are presented in Table 6.9 below. The Kruskal Wallis analyses were not significant for any of the measures. This indicated that how often the vignettes were rated positively did not distinguish between the groups.

Table 6.9: Medians number identified as positive

Dependent Variable	Planned	Unplanned	Open
Total Score	4	3	4
Total Noise Vignettes Only	2	1	1.5
Total High Signal Vignettes Only	1	1	2
Total Low Signal Vignettes Only	-	-	.5
Total Low and Noise Signal Vignettes	2	2	2
Total Low and High Signal Vignettes	2	1	2
Total Noise and High Signal Vignettes	3	3	3

6.8: Discussion

From the initial analyses it was not possible to distinguish between the planned and unplanned discharge groups based on either their ratings for emotional tone or problem alcohol use. Although the overall tendency was for the planned discharge group to rate the vignettes as being more problematic than the unplanned group, as hypothesized, this did not reach statistical significance. The tendency within the emotional tone ratings was contrary to the hypothesis, with unplanned discharges being more negative in their ratings than either other group – although this was non-significant also. Accordingly, both null hypotheses are accepted.

Although not statistically significant, the emotional tone ratings tended to be more negative within the unplanned group and problem alcohol use was seen more often by the planned discharge group. These are in line with the findings from Study 2 and are contrary to the hypothesised direction of the associations between emotional tone

and problem alcohol use based on the observations of Study 1. This suggests that, for the unplanned group, alcohol use may be negative but not necessarily problematic.

A logistic regression examining the predictive capabilities of the demographics and drinking history details collected from the clients found that employment status and the number of units consumed on a drinking occasion successfully predicted for discharge status. Specifically, unemployed clients received an unplanned discharge 33 times more often than a planned discharge and were 25 times more likely to receive an unplanned discharge rather than still be attending. Furthermore, as the number of units drunk increased the client was more likely to be an unplanned discharge than still attending the treatment centre at follow-up.

These findings are in line with past research by Rabinowitz and Marjefsky (1998) who found that unemployment was associated with poor retention in alcohol services. It is possible that unemployment indicates a level of entrenchment within the “alcoholic” lifestyle of the client. Conversely, variables that had previously been highlighted as important such as gender (Mammo & Weinbaum, 1993), age (e.g. Jackson, et al., 2006), and social contact (e.g. Leigh, et al., 1984) were not found to be predictors in this instance. Overall, the regression model was most successful at classifying unplanned discharges (correctly classifying 76% of these) than planned (58.8%) or still attending (36.4%).

6.8.1: Dichotomising the Scale

Dichotomising the scale – which acted to count only how often the client had identified the vignettes as depicting problem alcohol use (and therefore decreased the associated variance) – revealed significant differences between the still attending and planned discharge groups rather than the planned and unplanned discharge groups.

Those still attending and planned discharge groups were distinct in how many vignettes they identified as showing problem alcohol use when the low signal vignettes only were examined, and when the low signal and noise vignettes were combined together. Although there was no overall significant difference, post hoc testing indicated that there was also a difference between still attending and planned groups when all 12 vignettes were examined together. In each of these comparisons, the planned group identified more vignettes as reflecting problem alcohol use than the still attending group.

O'Connor's original calculations took into account both the probability of HIT and FALSE ALARM rates using a dichotomise measure (although the 4-item scale was from her research this was dichotomised once normality of distribution had been established). The reduced tool's problem alcohol use rating scales' results suggest that all clients are equally aware of the high signal vignettes – probably through socially acquired knowledge of the “dangers” of drinking – so these vignettes cannot be used to distinguish between client groups. From the results it appears that the predictive capability of O'Connor's tool lies in the client's FALSE ALARM rate

(although the total ratings distinguished between still attending and planned discharges, it is likely that this was mainly determined by the FALSE ALARM ratings).

By counting only those vignettes identified as problem alcohol use we are getting a simple representation of the client's FALSE ALARM rates. In Section 4.2.2 three possible explanations were posited for O'Connor's findings. The observations within this study are in line with reason (iii): the planned discharges are less accurate than the [still attending] group therefore scoring more false alarms (saying it was problem alcohol use when it was not) but with no differences in detecting signals.

6.8.2: O'Connor's Unplanned Discharges

It was unexpected that the differences lie between the planned discharges and those clients still attending after three month. The groups of interest were expected to be the planned and unplanned discharge groups as per O'Connor's original findings, while the still attending group was conceptualised as being a group defined by ambivalence regarding whether or not they would complete counselling. Re-examining O'Connor's studies (Harper, 2000) suggest a reason for this initially surprising result.

O'Connor's study originally recruited individuals attending a month-long, hospital based, daily outpatient programme for their alcohol misuse issues. O'Connor reported that if an appointment was missed or a daily breathalyser test failed then that client counted as a dropout. Due to the daily meetings, this would mean that a

relapse was quickly picked up – including heavy drinking the night before - and those participants asked to leave. Therefore it would be possible to attend the meetings but fail the breathalyser and count as a dropout. Conversely, in the counselling agencies recruited from for this thesis, the clients attended once a week. This would mean that a client could miss one or two appointments due to a relapse but, as long as they then re-attended, they would not be counted as a dropout. It is suspected, therefore, that O'Connor's original dropout group may have resembled this current project's still attending group. This hypothesis is tested further in Section 7.4.4.

6.8.3: Limitations

There were certain limitations associated with this study. The new comprehension test was too hard for this cohort. It is unclear exactly why that is the case but future research with this group must include the development of an appropriate test. It is suspected that it was the use of numbers which made the task harder than it was designed to be.

There were also some recruitment issues which led to recruitment taking place over a 13 month period. Overall, this study was supported by those running the agencies – perhaps due to the increased pressure to take part in research in order to secure further funding. However, there was some resistance to the study – with a few counsellors being concerned this study would negatively impact their clients and undermine the therapeutic relationship. Although their concerns were addressed

through counsellor meetings – where it was stressed that no client had reported being disturbed by these vignettes and that clients attending a pre-entry interview would be expecting to be assessed in some capacity – it is unclear whether this convinced all counsellors and this may have impacted on recruitment. Additionally, it may be that there is not the strong management team needed to implement the change in entry-interviews that was agreed for the study to be fully adopted by the counselling staff.

6.8.4: Conclusions

Through dichotomising the scale, and therefore reducing its variance, differences between the planned discharges and still attending group became significant for the problem alcohol use ratings. It is proposed to examine whether this effect is present if the ratings from Study 2 and the present study are combined. The emotional tone ratings did not distinguish between discharge groups and therefore the next study will focus only on the predictive capability of the problem alcohol use ratings.

Chapter 7 : Analysis of Study 2 and Study 4 Datasets Together.

7.1: Introduction

The findings of Study 4 suggest that the four-item rating scales increased the associated variance to an extent whereby the differences between the groups may not be observed. Although the sample sizes in Studies 2 and 4 were equivalent to O'Connor's original study, the study may have been underpowered due to there being three discharge groups. By dichotomising the rating scales the problem alcohol responses differentiated between those who made a planned discharge and those still attending counselling after three months. Furthermore, it appeared that the vital difference lay between the FALSE ALARM rates – namely, planned discharges were identifying the vignettes which did not contain “signals” of alcohol dependency as problem alcohol use more often than those who were still attending. Finally, it was concluded that the present studies' still attending group may be equivalent to O'Connor's “unplanned” group.

To investigate these findings, the data sets from Study 2 (Chapter 4) and Study 4 (Chapter 6) were combined. The studies were methodologically distinct therefore there are caveats associated with this amalgamation:

(1) Study 2's participants' ratings of the vignettes for problem alcohol use took place after they had rated the vignettes for emotional tone. The order was not balanced, as it was suspected that rating for problem alcohol use would have a greater influence on the subsequent rating for emotional tone than vice versa.

(2) In Study 4, the clients rated the tasks at their pre-entry appointment whereas in Study 2 clients were recruited from those already attending counselling (i.e. therefore not at their first appointment with the agency).

(3) In Study 2 the clients who took part were aware that they were participating in University research. The clients recruited in Study 4 were not aware that they were taking part in a study.

(4) In Study 2, the researcher (Newham) conducted the 1:1 session where the study data was collected. This meant that between the two studies there were differences in the quality and quantity of demographical and drinking history information gathered – as well as differences in the types of information asked for. For example, in Study 2 the drink quantity was drinks in a week pre-treatment rather than drinks on a drinking day/ how many drinking days a month. The volume calculated for drinks in a month was therefore divided by 4 to obtain an estimate of units consumed in a week for the no consent study participants but this was not ideal as, in Study 4, consumption per drinking day predicted for discharge status.

Although these caveats may limit the interpretation of results, combining the data sets would result in a larger and more diverse sample. As stipulated in the aims of this thesis, a robust measure is being sought. It is hoped that this robustness would extend to meaningfully predicting group membership in the face of recruitment differences.

7.2: Aim of Study

It is therefore proposed to merge the results from Studies 2 and 4 and reanalyse them by reducing the four-item problem alcohol use rating scale into a binary scale which would indicate the number of occasions each participant reported the vignettes as showing “yes, problem alcohol use”. In line with the previous chapter’s finding, only the results from three of the possible seven combinations of the scales’ vignettes will be used: (i) all of the vignettes (“total”), (ii) the low signal vignettes only and (iii) the low signal plus noise vignettes.

7.2.1: Hypothesis

In addition to the ultimate aim of identifying which of the possible combinations of the vignettes best predict for outcome, it is hypothesised that:

- 1) Clients who received a planned discharge will have identified more vignettes as showing problem alcohol use than those who are still attending treatment after 3 months.

- 2) The number of vignettes rated as showing problem alcohol use will be a better predictor than the demographic/drinking features of the populations.

There is also an additional hypothesis:

- 3) O'Connor's original tool successfully discriminated between those who dropped out and those who successfully completed (Harper, 2000). If the current studies' still attending group is equivalent to O'Connor's dropout group, and the reduced tool has the predictive capabilities of the original tool, then the reduced tool should predict group membership (i.e. still attending versus completed) to the same extent as O'Connor's original tool. A replication of O'Connor's discriminant function analysis will therefore be carried out. Conventional hypothesis testing does not allow for the null hypothesis to be tested explicitly therefore the experimental hypothesis (that there will be a difference between the discrimination capability of O'Connor's tool and the reduced tool) will be tested. It is expected that this hypothesis will be rejected.

7.3: Methodology

7.3.1: Ethics

As covered in Chapters 4 and 6, ethical approval was gained for each study. The re-examination of both data sets did not require any further ethical approval.

7.3.2: Participants

The sample comprised all clients who rated the 12 vignettes for problem alcohol use. Only those who were retained in the analyses in Studies 2 (n=38) and 4 (n=27) were included. The total data set comprised 65 clients. The majority of the participants were male (72.3%), had a secondary school level of education (i.e. had either Highers or Standard Grades or equivalent; 35.9%), were unemployed (81.5%), single (63.1%), and had at least one episode of past treatment for alcohol misuse (53.8%). Overall, 18 (27.7%) had received a planned discharge, 18 (27.7%) had received an unplanned discharge and 29 (44.6%) were still attending.

The overall descriptives are presented in Table 7.1 below. These data were examined for any relationship between demographics and outcome using Fisher Exact Test (for categorical variables) and the continuous variables were examined using a one-way ANOVA. It was found that age was related to dropout status ($F(2, 62) = 3.38$, $p < 0.05$, partial $\eta^2 = .1$). Follow-up analyses with a Tukey HSD revealed that the mean ages for the unplanned dropouts and the still attending group were significantly

different, the still attending group being older ($M=48.14$, $sd=11.16$) than the unplanned discharge group ($M=39.44$, $SD=11.3$). Although the means for the number of units of alcohol consumed in a week appeared notably lower for the

Table 7.1: Descriptives of dataset

Descriptive	Planned	Unplanned	Open	Total
	n (%)	n (%)	n (%)	n (%)
Agency (n= 65)**				
A	4 (6.2%)	-	7 (10.8%)	11 (16.9%)
B	3 (4.6%)	10 (15.4%)	3 (4.6%)	16 (24.6%)
C	9 (13.8%)	4 (6.2%)	8 (12.3%)	21 (32.3%)
D	-	-	2 (3.1%)	2 (3.1%)
E	1 (1.5%)	3 (4.6%)	2 (3.1%)	6 (9.2%)
F	1 (1.5%)	-	3 (4.6%)	4 (6.2%)
H	-	1 (1.5%)	4 (6.2%)	5 (7.7%)
Gender (n=65)				
Male	12 (18.5%)	14 (21.5%)	21 (32.3%)	47 (72.3%)
Female	6 (9.2%)	4 (6.2%)	8 (12.3%)	18 (27.7%)
Education (n=64)				
None	5 (7.8%)	6 (9.4%)	7 (10.9%)	18 (28.1%)
Secondary School Level	6 (9.4%)	8 (12.5%)	9 (14.1%)	23 (35.9%)
Further Education	3 (4.7%)	3 (4.7%)	5 (7.8%)	11 (17.2%)
Higher Education (includes PG qualifications)	4 (6.3%)	1 (1.6%)	7 (10.9%)	12 (18.8%)
Employed (n=65)				
Working (including 3 Part Time workers)	5 (7.7%)	2 (3.1%)	5 (7.7%)	12 (18.5%)
Not Working	13 (20%)	16 (24.6%)	24 (36.9%)	53 (81.5%)
Home Life (n=65)				
Single (includes 15 Separated/Divorced)	11 (16.9%)	13 (20%)	17 (26.2%)	41 (63.1%)
In a relationship	7 (10.8%)	5 (7.7%)	12 (18.5%)	24 (36.9%)
Past Treatment (n=65)				
Yes	9 (13.8%)	10 (15.4%)	16 (24.6%)	35 (53.8%)
No	9 (13.8%)	8 (12.3%)	13 (20%)	30 (46.2%)
Read aloud (n=64)				
Yes	3 (4.7%)	5 (7.8%)	9 (14.1%)	17 (26.6%)
No	15 (23.4%)	12 (18.8%)	20 (31.3%)	47 (73.4%)
	Planned Mean (SD)	Unplanned Mean (SD)	Open Mean (SD)	Total Mean (SD)
Age (n=65)*	45.28 (11) n = 18	39.44 (11.3) n = 18	48.14 (11.16) n = 29	44.94 (11.56) n = 65
Units consumed a week (n=54)	75.15 (68.09) n = 18	110.3 (123.3) n = 14	116.85 (93.89) n = 22	101.25 (95.2) n = 54

* $p<0.05$; ** $p<0.01$

planned discharge group, there was no significant difference found due to the large within-group variances³¹.

³¹ Due to the different methodologies, the measures of drinking were different therefore the units drunk in a week pre-treatment was the best measure of alcohol consumption that could be obtained.

Additionally, agency was associated with outcome (FET (12) = 22.41, $p < .01$, Cramer's $V = .44$). Upon examination of the agency's standardised residuals, the standardised residual was only significant (i.e. greater than 1.96 – therefore $p < 0.05$) for location B's unplanned group – i.e. location B had an unusually large number of clients that dropped out of treatment in comparison to the other groups.

7.3.3: Design

This was a between-groups design with the outcome variable being status 3 months post-tool completion on: planned discharge, unplanned discharge or still attending groups. The predictor variables considered were informed by the literature: age, social isolation (represented by relationship status) and employment status.

Additionally, it was anticipated that rating the reduced tool for problem alcohol use would predict discharge but it was unknown which combination of vignettes would predict best. Three logistic regression were therefore run, each including the ratings from one of the three potential combinations of vignettes as a predictor variable: 1) the total reduced tool (12 vignettes); 2) the low signal vignettes only (4 vignettes); and 3) the low signal and noise vignettes (8 vignettes).

7.3.4: Procedure

The data collection techniques for Studies 2 and 4 have been outlined in Sections 4.4.6 and 6.3.5 respectively therefore will not be repeated here. The two data sets

were combined and the drinking history and demographics conserved in order to retain all potential descriptives.

7.3.4.1: Dichotomising the ratings.

All the vignettes' ratings for problem alcohol use were recoded. Those vignettes previously rated as either:

“I am very sure this is not problem alcohol use” or

“I am fairly sure this is not problem alcohol use”

were recoded into a single category entitled “Not showing problem alcohol use” and allocated a score of (0).

Those vignettes previously rated as either:

“I am very sure this is problem alcohol use” or

“I am fairly sure this is problem alcohol use”

were reclassified into a single category: “Showing problem alcohol use” and allocated a score of (1).

By reclassifying in this way, the scores reflected the number of vignettes identified as showing problem alcohol use.

7.4: Analysis

The analyses were spilt into two sections. The first section investigated hypotheses 1 and 2. The second section focused on hypothesis 3.

7.4.1: Analyses Using Three Outcome Variables

A multinomial logistic regression was run to model the relationship between the predictor variables and clients' outcomes. As in Study 4, predictor variables were selected both through analyses of the collected potential variables and the past literature (c.f. Section 1.5.2; Ottenbacher et al., 2004). As well as the variables of age, social isolation (in this case represented by relationship status) and employment status, agency was highlighted by the Fishers Exact Test examination as significant and was therefore originally retained and entered into the model. However, as in Study 4, retaining agency as a variable resulted in an unstable model due to the large differences in sample size recruited from each agency. It was not possible to collapse agency categories meaningfully and therefore they were excluded from the analysis.

The logistic regression therefore included the predictor variables: age, homelife status, and employment status. Due to multicollinearity assumptions, the three different calculations from the tool could not be entered into the logistic regression together as these would be highly correlated due to the "low only" condition value being included in the "total" and the "low and noise" values too. Also, the "total" value would include the "low and noise" value. To combat this, three separate, multinomial logistic regressions were run, each including one of the three calculations from the revised tool. Therefore four predictor variables were entered within each analysis, well within the acceptable outcome event to independent observation ratio of 10:1 (Ottenbacher, et al., 2004).

7.4.2: Assumptions

As in Study 4, the data were examined for collinearity by running a multiple regression and only examining the collinearity diagnostics (Field, 2005)³². Both the tolerance values (range .84 to 1) and VIF values (range 1.01 to 1.1) were well within the acceptable values of above .1 and less than 10 respectively (Field, 2005). To ensure that there was no over-dispersion within the data (i.e. to check that the variance of the logistic regression model was acceptable (ibid)) the goodness of fit chi-square was examined to ensure that the dispersion parameter (which is the Pearson chi-square goodness of fit statistics/degrees of freedom) was acceptable. In this instance it was 1.06, indicating that there was no over-dispersion therefore this assumption was met (Field, 2009). Additionally, the predictor variables of age and “total” score were tested to ensure linearity (as they were continuous variables). None of the interaction terms was significantly involved in the final model and therefore linearity was accepted (Field, 2009).

A forced entry multinomial logistic regression was therefore run with four predictor variables: age, employment status, relationship status and a measure of how many vignettes were rated as problem alcohol use. The analysis was run three times in order to establish which computation had the best predictive capacity. The levels of the non-continuous predictors are presented in Table 7.2 below.

³² For all assumptions these were done using the score of all the vignettes as the other two scores were contained within the total score.

Table 7.2: Level of non-continuous predictors.

Categorical or Ordinal Predictor	Composite Levels
Employment Status	Employed or Unemployed
Relationship Status	In a relationship or Single

7.4.3: Results of the Multinomial Logistic Regression

The resulting three models– and their associated probability levels and chi square statistics – are presented in Table 7.3 below.

Table 7.3: Multinomial Logistic Regression Results for each trialed model.

	X ²	d.f.	p	R ² Cox & Snell	R ² Nagelkerke	% Accounted for in Model
Overall Total	15.08	8	.058	.22	.24	50%
Total Noise and Low	16.73	8	.03	.24	.27	51.6%
Total Low only	13.32	8	.10	-	-	-

The model obtained using only the low signal vignettes was non-significant. A significant model was obtained when the noise and low signal strength vignettes total were used. Additionally, a border-line significant model was also obtained for the total score – due to the arbitrariness of the 0.05 cut-off point for significance this model will also be reported. The noise and low signal strength vignettes total accounted for more of the variance (between 24 and 27% of the variance) in comparison to the overall total score (accounting for between 22 and 24% of the variance). These two models are presented in more detail in Tables 7.4 and 7.5 below.

For the calculation using the clients' ratings on all twelve vignettes (the overall score; see Table 7.4), those who received a planned dropout identified more of the vignettes as showing problem alcohol use when compared with those still attending after three months. Overall, as the number of vignettes identified as showing problem alcohol increased by one unit, the odds of receiving a planned discharge increased by a factor 1.5. Additionally, age distinguished between those who dropped out and those who were still attending after three months. As age increased by one unit, the odds of receiving an unplanned drop out changed by a factor of .98 in comparison to those still attending. Being younger therefore predicted for dropping out rather than still attending after three months.

Table 7.4: Logistic regression for overall score.

	B	Std. Error	Exp (B)/ Odds Ratio	95% CI Odds Ratio	
				Lower Bound	Upper Bound
planned (open reference category)					
Intercept	-3.34	2.19			
Age	-.02	.03	.98	.93	1.05
Total Score (all Vignettes)*	.41	.17	1.5	1.07	2.11
Working vs. not working	.96	.82	2.62	.52	13.15
Single vs. in a relationship	1.05	.77	2.85	.631	12.85
unplanned (open reference category)					
Intercept	1.61	1.69			
Age *	-.08	.03	.93	.87	.99
Total Score (all Vignettes)	.11	.15	1.11	.84	1.49
Working vs. not working	-.12	.99	.89	.13	6.25
Single vs. in a relationship	.84	.77	2.32	.51	10.53
planned (unplanned reference category)					
Intercept	-4.95	2.31			
Age	.06	.04	1.06	.99	1.14
Total Score (all Vignettes)	.30	.18	1.35	.95	1.92
Working vs. not working	1.08	1.05	2.94	.38	22.85
Single vs. in a relationship	.21	.89	1.23	.22	7.02

* $p < 0.05$

The predictive capability of the score for the low and noise signal strength vignettes is presented in Table 7.5 below. Those who received a planned discharge identified more of the vignettes as showing problem alcohol use. When the number of vignettes identified as showing problem alcohol use increased by one unit, the odds of receiving a planned discharge increased by a factor of 1.68. Age also distinguished between those who dropped out and those who were still attending after three months. As age increased by one unit, the odds of receiving an unplanned drop out was changed by a factor of .93 in comparison to those still attending – i.e. those who dropped out were younger than those still attending.

Table 7.5: Logistic Regression For Low Signal and Noise Vignettes Total

	B	Std. Error	Exp (B)/ Odds Ratio	95% CI Odds Ratio	
				Lower Bound	Upper Bound
planned (open reference category)					
Intercept	-2.27	1.89			
Age	-.02	.03	.98	.93	1.05
Noise and Low Vignettes*	.52	.2	1.68	1.15	2.47
Working vs. not working	.98	.85	2.67	.51	14.03
Single vs. in a relationship	.95	.75	2.57	.6	11.11
unplanned (open reference category)					
Intercept	1.84	1.52			
Age *	-.08	.03	.93	.87	.99
Noise and Low Vignettes	.17	.17	1.18	.84	1.66
Working vs. not working	-.02	1.0	.98	.14	7.0
Single vs. in a relationship	.86	.78	2.37	.52	10.87
planned (unplanned reference category)					
Intercept	-4.11	1.96			
Age	.06	.04	1.06	.99	1.14
Noise and Low Vignettes	.35	.2	1.42	.96	2.1
Working vs. not working	1.	1.05	2.73	.35	21.26
Single vs. in a relationship	.08	.87	1.09	.2	5.95

* $p < 0.05$

From these results, the best predictor for either receiving a planned discharge or still attending after 3 months was the number of vignettes identified as showing problem alcohol use when the noise and low signal strength vignettes were counted together. This model correctly classified 51.6% of the cases (see Table 7.6 for the percentage correct for each discharge status).

Table 7.6: Percentage predicted by discharge type.

		Predicted			Percent Correct
		Planned	unplanned	open	
Observed	planned	7	3	8	38.9%
	unplanned	4	6	7	35.3%
	open	4	4	19	70.4%
	Overall Percentage	24.2%	21.0%	54.8%	51.6%

7.4.4: Analyses Using Two Outcome Variables

It was suggested in Study 4 that this thesis' still attending group resembled O'Connor's dropout group – and the present study's unplanned group included individuals who had not been sampled by O'Connor as they would not have been offered (or commenced) the intensive treatment programme from which she sampled. If this is, in fact, the case it is proposed that – by excluding the unplanned dropout group – the two remaining groups (the still attending group and planned discharge group) should be distinguishable by the reduced tool at a level similar to that found by O'Connor's original study. O'Connor found – through a discriminant function analysis – that her methodology using response bias scores correctly distinguished 77.4% of cases ($X^2(1)= 4.47, p=0.035$, (Harper, 2000; see Table 7.7 below).

Table 7.7: O'Connor's findings from a Discriminant Function Analysis (Harper, 2000, p. 267)

	Dropout	Successful Completer	Total
Dropout	13 (81.3%)	3 (18.8%)	16 (100%)
Successful Completer	4 (26.7%)	11 (73%)	15 (100%)

The three versions of the questionnaire were entered individually into a discriminant function analysis. The score of the low signal vignettes only for the number of vignettes identified as showing problem alcohol use did not create a significant model. The other two scores resulted in significant models and are detailed in Table 7.8 below.

Table 7.8: Results of Discriminant Analyses

	X ²	d.f.	p	% accounted for	Canonical R ²³³
All vignettes	5.15	1	.023	68.9%	.11
Low Signal and Noise Vignettes Only	6.59	1	.01	71.1%	.14

From Table 7.8 it would appear that the low signal and noise vignettes correctly classify the most cases and therefore is the better predictor; this is in line with the conclusions drawn from the multinomial logistic regression above. The classification table was examined in greater detail in Table 7.9 below.

Table 7.9: Table of Classification Results

	Still Attending	Planned	Total
Still Attending	18 (66.7%)	9 (33.3%)	27 (100%)
Planned	4 (22.2%)	14 (77.8%)	18 (100%)

³³ Canonical R² is the effect size associated with a discriminant analysis; the square of the canonical correlation figure (A. Field, 2009)

Although this performed slightly more poorly than O'Connor's tool it is broadly comparable. A binomial test was conducted to examine if there was a significant difference between the observed and expected proportions for each outcome variable (Huck, 2004)³⁴ The binomial test revealed no significant difference ($z = .32$) between the current thesis' planned dropouts (77.8% correctly classified) and O'Connor's successful completer (73% correctly classified). The test between the still attending (66.7%) and unplanned dropout (81.3%) groups was also non significant ($z = 1.03$).

7.5: Discussion

The findings were in line with the hypotheses. Firstly, a multinomial logistic regression found that the number of vignettes rated as showing problem alcohol use predicted whether the outcome was a planned discharge or still attending. Of the three scoring systems used, the best model involved the total number of FALSE ALARMS (i.e. the ratings of the low signal strength and noise vignettes).

Secondly, the number of vignettes rated as showing problem alcohol use was a better predictor than demographics or drinking history to distinguish between those who would have a planned discharge and those still attending. Age did however distinguish between those who received an unplanned discharge and those who were still attending – with younger clients being more likely to dropout.

³⁴ The calculator found at: http://www.polarismr.com/education/tools_stat_diff_prop.html was used.

Thirdly, a discriminant function analysis indicated that, using the noise and low signal strength vignettes only, the reduced tool correctly classified 71.1% of cases in comparison to O'Connor's original tool which correctly classified 77.4% of cases. A binomial test found no significant difference between O'Connor's findings and the present study's; this suggests that the current studies' still attending group is statistically equivalent to O'Connor's drop out group. Additionally, it suggests that the reduced tool is equivalent to O'Connor's original tool in predicting group membership.

7.5.1: Implications of the Results.

7.5.1.1: Implications for vignettes.

These results are very promising. Regardless of the methodological differences between Studies 2 and 4 in this thesis, the reduced version of the tool has predictive power in distinguishing between those who completed treatment and those who are still attending after three months. Additionally, when the still attending group is taken as equivalent to O'Connor's unplanned group then the classification power of the tool resembles O'Connor's original tool. Essentially, this tool is interested in a client's false alarm rate. Those who erroneously identify the most false alarms (i.e. say "yes, problem alcohol use") successfully completed treatment within the 3 month period. The best predictor in the current study was the number of instances of problem alcohol use identified from the noise and low signal vignettes – i.e. the vignettes that do not contain "true" signals of alcohol dependency. This supports

O'Connor's measure of response bias mainly being influenced by a high false alarm rate.

As discussed in Section 2.2.2, the high signal vignettes contain aspects of the DSM-IV criteria for alcohol dependency and are therefore the least ambiguous depictions of problem alcohol use so do not distinguish between the groups. Ultimately this is due to a consensus among raters regarding what is definitely problem alcohol use and it points to these aspects of the DSM-IV criteria for dependency being learnt socially. It is unlikely that the raters were explicitly aware of the DSM-IV's definition of alcohol dependency but the DSM-IV's criteria is defined by doctors and therefore reflects their subjective opinion rather than an objective "truth" of what dependence is. Doctors are a part of society and therefore their opinions are based on internalisations of societal norms. In this way, it is likely that all members of society share a socially constructed view of definite problem alcohol use and the DSM-IV is a formal result of this construction.

While it is likely that the DSM-IV criteria for intoxication also arose from a socially constructed view of intoxication, it actually represents a grey area within an alcohol misusing career. There is a harm associated with this type of use – arguably the reason for its inclusion in the DSM-IV criteria – but the concept is relating to the single incident of intoxication. For this reason, it may be problematic drinking on that occasion but it does not mean there is an underlying condition of problem alcohol use (unlike for the dependency vignettes, where a key aspect is that the behaviour recurs (American Psychiatric Association, 1994)). These vignettes

therefore included indications of there being a possible problem but no indication of the severity of the problem. A common issue raised by the raters during the experiment was that there wasn't enough information to allow them to make an accurate judgement. If the behaviour being described was occurring often then it was problematic but if it was a one-off then that would not be a problem. It is intuitive that these vignettes would be susceptible to the subtle cognitive changes associated with, for example, increased motivation.

The importance of the noise vignettes is also illustrated here. While these vignettes contained no reference to any problematic alcohol use, their ratings contributed to the successful tool. As discussed, cognitions surrounding alcohol use are socially constructed and shared. For this reason, stories containing no problematic features should unambiguously be non-problematic; however, this reasoning neglects the importance of the context within which the vignettes were rated. According to Social Criterion theory, an individual's response bias – their tendency to say “yes, problem alcohol use” - is in part determined by the context in which the experiment is carried out (Davies & Best, 1996). The raters in these studies completed the tasks in a counselling agency getting help for their alcohol misuse. When asked to rate stories about alcohol according to whether or not they depicted problem alcohol use, the demand characteristics of the situation would suggest strongly that these stories are likely to be showing problem alcohol use. For this reason, stories that otherwise may be unambiguously non-problematic are examined and assessed for any hints that they are problematic. This effect – coupled with the hypothesised laxer response bias

among the planned discharges in comparison to those still attending – resulted in some raters seeing problem alcohol use in the noise vignettes.

Fundamentally, it is the decision making process at this point which is of interests. In Signal Detection parlance, we are interested in the motivation which causes clients to adopt a laxer response bias (i.e. rate more of these vignettes as problem alcohol use). It does indeed appear that those who received a planned discharge are motivated to have a laxer response bias than those who are still attending after three months.

7.5.1.2: Implications for demographic predictors.

There were no demographic predictors that distinguished between planned discharges and those still attending. It was, however, possible to distinguish between unplanned discharges and those still attending by age – with younger clients being more likely to dropout. This is contrary to the findings of Studies 2 and 4. In Study 2 the number of missed sessions was associated with the discharge status while Study 4 suggested that not working was associated with receiving an unplanned discharge and those who dropped out or completed treatment drank more units on a drinking day than those who were still attending treatment. The inconsistency in the predictors between the two studies is not uncommon and reflective of a general lack of consistency within the research body in general (Jackson, et al., 2006). Possible issues that have led to this are discussed in Section 7.5.2 below.

7.5.2: Limitations

The main limitation of this study – that the data set comprised two different studies’ data – also serves as one of its greatest strengths as it suggests that the tool is robust when dichotomous coding is used. There were methodological differences in how the data were gathered for the two studies which would not have been forgivable in a single study, yet this appears to have had minimal effects on the present analysis. It is notable, however, that less variance was accounted for in the logistic model in this study than in Study 4 when only the demographics and drinking history were entered. It is likely that this difference is a function of the different recruitment methodologies – the recruitment strategies may have resulted in two distinct populations being sampled in Studies 2 and 4. The demand characteristics of the two studies were very different too, with Study 4 being significantly shorter than the session in Study 2; however, it must be remembered that completion of the tool in Study 4 was carried out during a high stress situation (the counselling entry interview) so there may have been fatigue effects here too. Finally, rating the vignettes for emotional tone prior to ratings for problem alcohol use, as in Study 2, may have had an influence on the problem alcohol use ratings - as clients only rated one scale in Study 4, this effect was not present.

7.5.3: Conclusions

The technique has allowed the reduced tool to be further distilled. The high signal vignettes have a limited ability to distinguish between the planned discharges and

those who are still attending after 3 months and therefore any future use of the tool need not include them. Ultimately, O'Connor's tool has now been reduced from 60 vignettes to 8 vignettes – making it a much more manageable prospect within agencies.

At this juncture, recruitment for Study 4 had taken 18 months and Study 2 had taken 9 months due to the follow-up time and difficulties in agency engagement. While a final study using the final eight vignettes, and only the problem alcohol use scale, would have been ideal this was not possible in the time available for doctoral studies. For this reason it was not possible to undertake a third phase of recruitment from counselling agencies.

A final study was designed to examine the internal construction of O'Connor's scale in order to understand whether the only explanation for the observed difference between those who achieved a planned discharge and those who were still attending after three months was a difference in motivation, as O'Connor proposed (Harper, 2000) or if there was another possible explanation.

Chapter 8 : Examining the Social Criterion approach

8.1: Implications of the Reduced O'Connor's Tool

The conclusions of Chapter 7 asserted that the number of FALSE ALARMS – vignettes identified as showing problem alcohol use when there was no criterion from the DSM IV definition of dependency present – distinguished between those who achieved a planned discharge and those who were still attending counselling after three months. It is unclear why there is the difference between these groups of responders. O'Connor proposed an interpretation in line with the Social Criterion theory (Davies & Best, 1996; see Section 8.1.1 below) but it is proposed that this is not the only possible explanation.

8.1.1: Social Criterion Interpretation

According to the Social Criterion theory (Davies & Best, 1996), vignette ratings are determined by the researcher's and client's motivations rather than an objective representation of the client's cognitions³⁵. Therefore responses to the vignettes should be determined by the rater's motivation to answer in one way rather than another (in SC theory this is analogous to Signal Detection's response bias). From

³⁵ That is not to imply that the respondents are in some way lying. The respondents are reporting what they think – but this “truth” is fluid and determined by the task characteristics and their motivations. The interpretation of the results therefore can only be understood taking these features into account.

this stance, the differences seen between planned discharges and those who still attend are expected to be solely based on the motivation to complete treatment and it would therefore be posited that the planned discharges' laxer response bias was due to them being more motivated to complete treatment.

The analysis in Chapter 7 found no socio-demographical or drinking history differences between those who were still attending and those who received a planned discharge, inline with O'Connor who found no differences for these factors between her dropout and planned discharge groups (Harper, 2000). These findings support Davies and Best's (1996) position that participants' vignettes' ratings would be primarily determined by their motivation and also suggest that the vignettes' ratings would not be associated with any other feature. This hypothesis is supported by O'Connor's original findings which indicated that "normal" drinkers did not differ in their response criteria from the unplanned discharges (Harper, 2000) suggesting that unplanned discharges and normal drinkers share the same response bias and it is the planned discharge's group's motivation "causing" the lax response bias rather than alcohol consumption.

8.1.2: Alcohol Expectancies Literature

The Social Criterion interpretation is challenged by the alcohol outcome expectancies literature which proposes that expectancies of the outcome from alcohol use (i.e. how positive or negative these are perceived as being) significantly predicts the quantity and frequency of drinking (for example Dijkstra, Sweeney, & Gebhardt,

2001; C. M. Lee, Maggs, Neighbors, & Patrick, 2010; N. K. Lee, Greely, & Oei, 1999; Mooney, Fromme, Kivlahan, & Marlatt, 1987). Within this paradigm the reduced tool's ratings for emotional tone or problem alcohol use would be viewed as an expectation regarding the vignette's outcome and would therefore be expected to be associated with alcohol consumption.

8.2: Proposed Study

The purpose of the following studies is therefore to test Social Criterion theory's assumption that response bias is primarily determined by motivation to complete treatment rather than alcohol consumption. As you cannot have a negative hypothesis, the hypothesis is that ratings of problem alcohol use and emotional tone will be associated with alcohol consumption – this is in line with the expectancies research (see Section 11.1.1). If the SC position holds out, we expect to reject this hypothesis.

8.2.1: Plan of Research

The research project will utilise an online methodology. Using a different outcome variable – i.e. the volume of alcohol consumed – the predictive relationship between the scales' ratings and weekly alcohol consumption will be examined. The remainder of this thesis will therefore seek to tackle three remaining issues:

- 1) *Chapter 9: Developing the Reduced Tool for Use as an Online Questionnaire.*

There are issues associated with administering a paper-and-pencil tool online – namely that it cannot be assumed that the tool is valid across modalities. The reduced tool – using both rating scales – will be piloted online to assess its suitability in this medium. The demographical and drinking history questions’ suitability will also be assessed. This will allow logistical problems in the data collection to be addressed and will also give reassurance that there is adequate variance associated with the rating of responses for each vignette. After successful completion of this phase the reduced tool can be completed online.

2) *Chapter 10: Developing a Questionnaire to Assess Position in the Functional Discursive Model.*

To allow the participant’s position in their alcohol using career to be assessed – as well as addressing the issues raised in Chapter 5 - a questionnaire version of the Functional Discursive model will be developed. This will provide an important indicator of where each participant is in their alcohol using career – allowing the variance between this and alcohol consumption to be partialled out in the subsequent analyses. If this is successful then it would increase the potential application of the FD model by freeing it from an interview-based methodology and improving its reliability.

3) *Chapter 11: Online Questionnaire Assessing the Link between Alcohol Consumption and Ratings on the Reduced Tool.*

Combining the questionnaires developed in Chapters 9 and 10, a single online questionnaire will be distributed to assess any association between self-reported alcohol consumption and the vignettes' ratings on the two scales (i.e. emotional tone and problem alcohol use). It is proposed that, if rating decisions are functional and based solely on the decision to remain in treatment (c.f. Social Criterion theory), then there should be no association between consumption and ratings. Alternatively, if the hypothesis suggested by the outcome expectancies literature is valid then there will be a positive association. Due to the focus of expectancies literature on positive and negative outcomes to fully assess both the emotional tone rating scale and the problem alcohol use scale. Although Study 1 indicated a relationship between emotional tone and problem alcohol use ratings it is not proposed – or empirically supported – that the two scales are synonymous and therefore both scales must be used to examine the question at hand.

Chapter 9 : Developing the Online Questionnaire.

9.1: Introduction to Internet Based Research

The rise of Internet based communication has resulted in online research becoming increasingly popular. Intuitively, there appear to be advantages to this modality. For the researcher on-line recruitment is cost-effective in terms of both time and money (Kwak & Radler, 2002). On-line survey packages collate the responses allowing the easy export of results into Microsoft Excel or another statistical package and therefore manual coding of questionnaires is no longer needed. Participation in research is also easier as the study can be completed at a time and location of the participant's choosing simply by following or entering a "link" into a web-browser. Additionally, participants may perceive themselves as being more anonymous as they do not need to meet the researcher and increased anonymity can be assured if IP addresses are not logged and other identifiers not gathered. This is especially useful if the information gathered is about a potentially sensitive issue like alcohol use.

9.1.1: Equivalence of On-line and Paper-and-Pencil Questionnaires

While the benefits are obvious, the equivalence of on-line and paper-and-pencil methodologies cannot be assumed. In line with Social Criterion theory (Davies & Best, 1996), the demand characteristics of the task might differ depending on which modality the researcher chooses. However, studies which examined whether the

psychometric properties of questionnaires were retained between paper-and-pencil and on-line completion generally concluded that this was the case - for example, anxiety and panic disorder scales (Andersson, Kaldo-Sandström, Ström, & Strömgren, 2003; Carlbring, et al., 2007), leadership scales (Cole, Bedeian, & Feild, 2006); and stress and depression questionnaires (Herrero & Meneses, 2006).

9.1.2: Completion Rates

Kwak and Radler (2002) found that (in comparison to postal returns) online questionnaires had a faster response turn-around, more questionnaire items completed and longer open-ended responses; however, research is equivocal regarding whether return rates are inferior. A Danish study compared return rates for a paper-and-pencil questionnaire (returned in a prepaid envelope) to the completion of an online study and found a response rate of 17.9% for the Internet group and 73.2% for the paper-and-pencil group (Kongsved, Basnov, Holm-Christensen, & Hjollund, 2007). While Kongsved and colleagues' study's results may have been affected due to the link to the online questionnaire being posted out, a British study (which distributed the link via email) found that, after 17 days, there was a 72% return rate for the paper-and-pencil questionnaire and a 19% return rate for online questionnaire (R. Jones & Pitt, 1999). More recent research from the United States found that – from the initial data collection attempt – there was a 18.1% response rate for web-based questionnaires and 24.2% response rate for postal questionnaires (Kwak & Radler, 2002) while a Canadian study indicated that a primary response rate of 58% in the postal group and 45% in the internet group (Leece, et al., 2004).

Finally, Herrero and Menses (2006) found a greater response rate with on-line administration of a questionnaire when compared to a paper-and-pencil version.

9.1.3: Generalisability

Newsted (1985) proposed an online methodology excluded individuals who were not (or did not view themselves as being) competent on the computer. Although Newsted's study is 25 years old, and computer use is now much more wide-spread, this technique of data collection does discriminate against individuals with no internet access or who are not computer literate. Recent figures indicate that 66% of households in 2008 had an internet connection and 72% of households have computers (Office for National Statistics, 2010) which suggests that computer use is widespread. However, the distribution of computers is not equal if income indicators are taken into account. In the highest income group, 97% owned a computer and 95% had an internet connection while, for the lowest income group, only 35% of households owned a computer and 24% have an internet connection (ibid). This suggests that relying on on-line responses would not access the bottom sphere of society. This is a problem for social research in general and may be especially important when dealing with issues such as alcohol misuse where a high level of unemployment is normal (for example 85.5% of participants included in the final analyses were unemployed – see Section 7.3.2). Just as literacy in paper-and-pencil tests should not be assumed, neither should internet connectivity and computer knowledge. This does not imply that online studies are worthless rather it is

suggested that online studies must be interpreted while accepting (and making reference to) the limitations of the methodology.

9.1.4: Alcohol-related Questionnaires.

An online methodology is especially useful when the information being asked for is potentially sensitive. A meta-analysis examining the collection of embarrassing information found that slightly over 8% of respondents would give more sensitive information when assessed by a computer than in person or by a paper-and-pencil measure (Feigelson & Dwight, 2000) with seemingly no difference in the social desirability effect across the modalities in recent studies (for review see Dwight & Feigelson, 2000). Alcohol related questionnaires access potentially sensitive information – for example questions examining the volume and quantity of alcohol drunk or if the participants believes they are addicted to alcohol - may make internet-based questionnaires the “gold standard”.

9.2: Current Study.

It is proposed that, to maximise recruitment and sample a wide range of alcohol consumption patterns, an on-line tool will be developed. The limitations of an online methodology are acknowledged but there is no hypothesis that would suggest that computer literacy would influence the relationship between the vignettes’ ratings and alcohol consumption. To enable this, the tool must first be piloted to ensure its suitability within this mode of delivery.

The pilot was designed to highlight any issues with the tools' online usability and to identify any logistical problems in data collection. Although this tool has been completed successfully many times there were occasional problems raised regarding the interpretation of the instructions – specifically for the emotional tone questionnaires – therefore it was important to discover if this was still an issue. Additionally, support was sometimes necessary to encourage users to complete the questionnaire due to the ambiguity of the vignettes.

It was decided to pilot the online questionnaire with two groups of participants. Group 1 would complete the online questionnaire under the supervision of the researcher (i.e. in a computer lab at a pre-arranged time) and therefore their reactions to any problems could be monitored, and Group 2, however, would complete the online questionnaire remotely (i.e. they accessed the online questionnaire through a link at a time and place convenient to them). These strategies would enable the usability of the tool to be fully assessed.

9.3: Methodology

9.3.1: Ethics

Ethical approval for this pilot was given by Strathclyde University's Psychology Department's Ethics Committee. All participants indicated that they gave full, informed consent to the study and were aware of their right to withdraw their

participation before commencing the study. After completion of the online questionnaire, a debriefing sheet was presented on screen which gave details of the study's aim and also the researcher's contact information. The participants were encouraged to contact the researcher if they had any additional questions.

9.3.2: Participants

There were two distinct groups of participants who completed identical online questionnaires. The groups differed in terms of recruitment and accessing the study. Group 1 (n= 28; "the university group") were students who were recruited through a University of Strathclyde-based online information system and completed the questionnaire in a computer lab at an arranged appointment. This group received course credits for their participation. Group 2 (n=13; "the internet group") participants were recruited remotely through following an on-line link that was advertised on a social networking site ("Facebook").

The pilot questionnaire was attempted 43 times but only 41 of these were included in the final sample. The two excluded attempts were from the internet group; one questionnaire had been abandoned after the second demographical question and the other respondent only gave demographical information.

The sample comprised 10 males (24.39%) and 31 females (75.61%), with a mean age of 23.12 (SD = 7.12) and the mean time taken to complete the online questionnaire was 15 mins (SD= 12min 40 secs). The data separated for group is presented in

Table 9.1 below. Differences between the University and Internet groups were examined using independent t-tests for the continuous variables (age and the time taken to complete the questionnaire) and a chi-square for gender. Only age was significantly different between the two groups – with the Internet group being significantly older than the University group. Although there was a large discrepancy in the length of time taken to complete the questionnaire between the two groups this was non-significant, reflecting the wide variance within the Internet group.

Table 9.1: Descriptive statistics of the participants.

		University Group Mean (SD)	Internet Group Mean (SD)
Age*		18.54 (.69)	33 (3.6)
Time taken to complete		11 min 19 sec (1 min 48 sec)	22 min 57 sec (20 min 42 sec)
Gender	Male (%)	7 (25%)	3 (23%)
	Female (%)	21 (75%)	10 (76.9%)

* $p < 0.0005$

9.3.3: Materials

9.3.3.1: Composition of the online questionnaire.

The online questionnaire was developed using Survey Methods (www.surveymethods.com), an online web survey hosting and development site. This service stored respondents' responses and allowed them to be exported directly to Excel.

The online questionnaire comprised four parts and was presented in this order:

1. Functional Discursive (FD) model questionnaire
2. Background questions (demographics and drinking history)
3. Comprehension test
4. Reduced O'Connor tool – both rating scales

All four parts were piloted but the FD model questionnaire's construction and pilot differed from the other parts and will be reported in Chapter 10.

The reduced tool's vignettes – and both rating scales – from Studies 2 and 4 were used. The demographical information from Study 4 was altered slightly to maximise the ease of completion and Study 4's comprehension test was also used to assess comprehension and eliminate people who failed this (see Appendix D).

9.3.4: Procedure

The two recruitment groups differed in how they accessed the online questionnaire. The university-group responded to advertisements and the participants were met in a computer lab where they manually entered the website address (www.strathclydestudy.co.uk) into an Internet Explorer browser and then followed the instructions on-screen. The internet-group was asked to “click” on a link if they were interested in taking part in the study (again, www.strathclydestudy.co.uk). Once the link was entered, or selected, the task followed was identical for both groups. The link led directly to the study's information sheet which gave details about the

study and contact details of the researcher. If the respondent decided to take part in the study they selected a second link which routed them to the online survey.

The first page of the online survey was a consent form indicating that all data would be anonymous, destroyed at the end of the research period and alerting participants to their right to withdraw. Once the participant consented, the next five questions related to the Functional Discursive model (see Chapter 10). Following this, background questions asking about general demographics (age, gender, education, employment and relationship status) and drinking history (number of drinking days a month, amount drunk on a typical drinking day, past or present treatment for an alcohol problem). The comprehension test was then presented and this was followed by the emotional tone rating task and then the problem alcohol rating task. That concluded the online procedure and the final page was a debrief sheet giving additional information about the purpose of the study and supplying the researcher's contact details for any additional questions.

Once the questionnaire was complete, all of the University-group were asked, informally, "how they had found completing the questionnaire?". No participants reported any problems.

9.4: Results

The following results section will focus on the descriptives as the aim was to ensure the usability of the on-line tool rather than hypothesis testing.

9.4.1: Demographical Questions

From the completed questionnaires, all 41 participants consented to the study, reporting the required demographical and drinking history information.

There were a few issues raised in this section:

1. The education question's options were found to be too focused on the Scottish education system.
2. There was no student option and therefore there was an over-inflated report of unemployed and part-time employed level.
3. The employment question response options were limited (the only options were full-time employment, part-time employment and unemployed).
4. One respondent misunderstood the relationship question due to the question's title ("Home-life") responding "living with parents" when the question's focus was on relationship status.
5. Ethnicity information was not gathered therefore possible cultural difference could not be examined.

9.4.2: Comprehension Task

Of the 41 participants who completed the task, 2 (4.88%) failed the comprehension test. One was from the student group (male) and one was from the non-student group (female). It is unclear why these participants failed the comprehension test. The comprehension test is presented in Figure 9.1 below.

Walter goes out twice a week to the local pub to practise with his darts team. He will usually have four pints of beer. He is happy with the situation as he never feels drunk and it seems to improve his game, although he only drinks one pint all night if he's playing in a league match. Recently, his wife has started coming down to the pub with him to chat to the other players' wives. He's happy about this as it means she's not feeling lonely, nagging him to stop going to the pub.

How much beer will Walter drink when he's playing in a darts league match?

1

2

3

4

5

If other, please specify

Figure 9.1: Comprehension Test

On examining the passage and question it was decided that the wording may be slightly ambiguous therefore the passage was clarified slightly (see Figure 9.2).

Walter goes out twice a week to the local pub to practise with his darts team. He will usually have four pints of beer. He is happy with the situation as he never feels drunk and it seems to improve his game, although he only drinks one pint all night if he's playing in a darts league match. Recently, his wife has started coming down to the pub with him to chat to the other players' wives. He's happy about this as it means she's not feeling lonely, nagging him to stop going to the pub.

How much beer does Walter usually drink when he's playing in a darts league match?

Figure 9.2: Amended Comprehension Test.

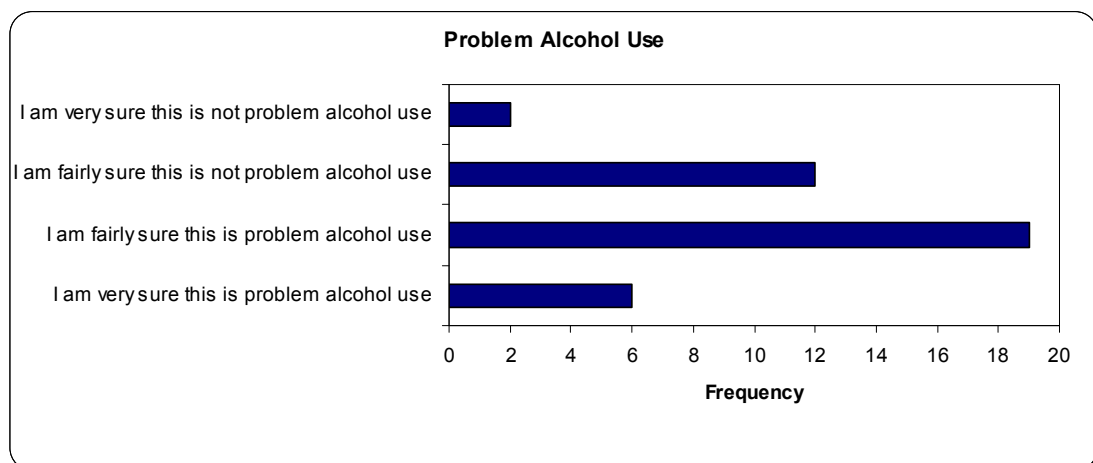
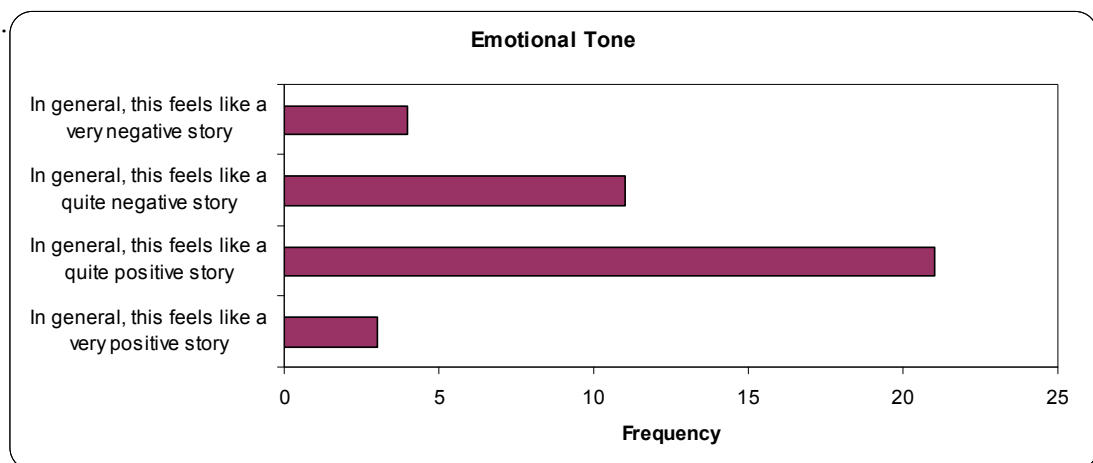
9.4.3: Emotional Tone and Problem Alcohol Use Task

All 41 participants who completed the tool answered every question but the results of the two who failed the comprehension task were omitted. The distribution of answers for 39 participants for each of the vignettes for the two ratings scales are detailed in Sections 9.4.3.1 to 9.4.3.3.

9.4.3.1: High signal.

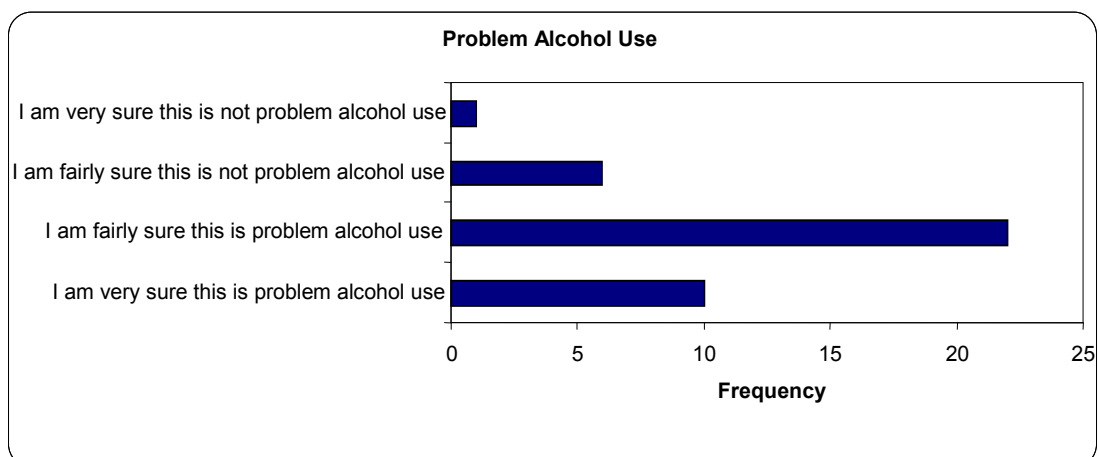
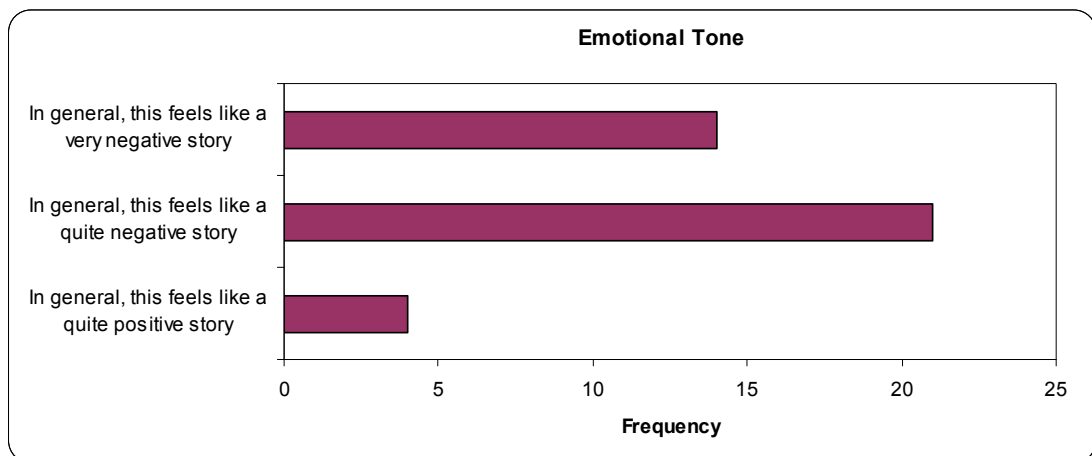
Liam Vignette

Liam worked back shift at a local biscuit factory. These hours suited him because they meant that he could go out drinking with his friends in the evenings, and have the mornings to recover from his hangovers



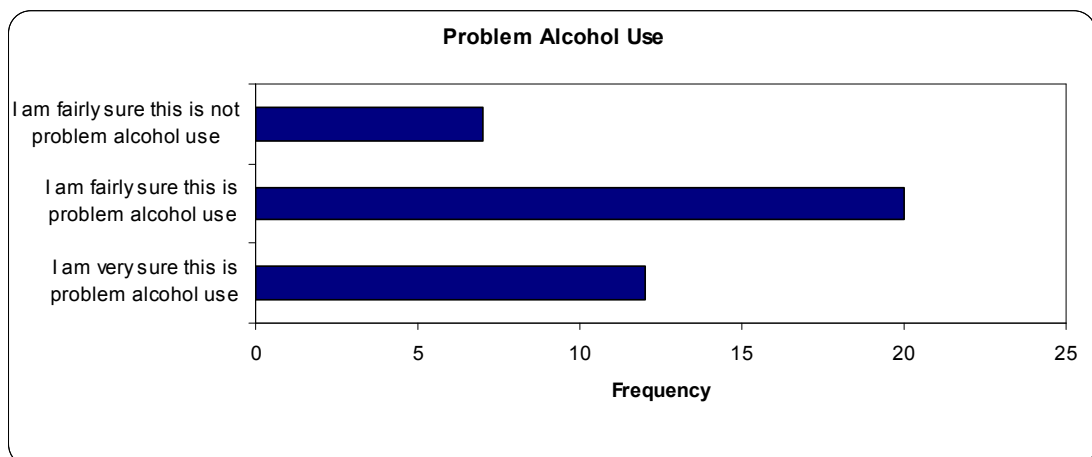
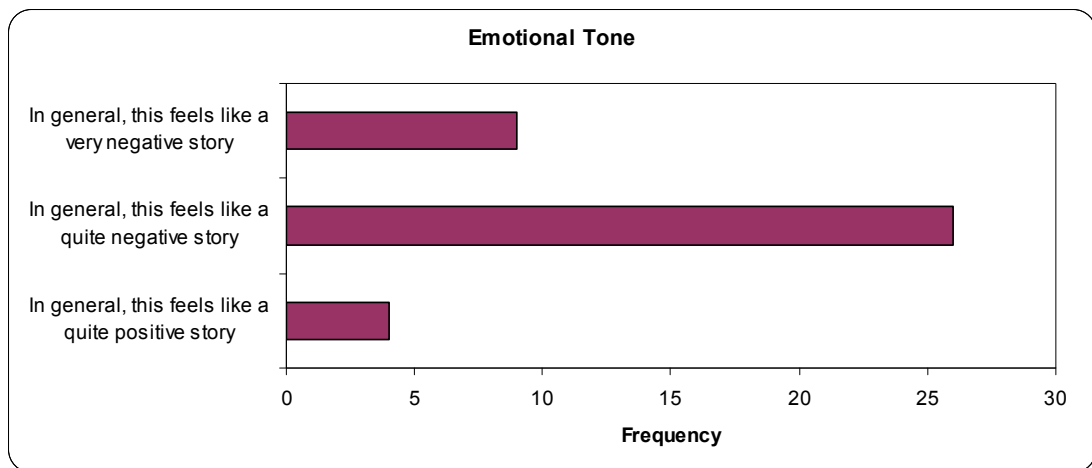
Paul Vignette

Paul had been working as a train driver for fifteen years. He did not mind his job except that sometimes he had to get up very early (virtually the middle of the night) to start work. This was only really a problem on those days where Paul had been out at the pub the night before. Sometimes Paul still felt quite woozy very early in the morning when he'd been drinking the night before. He was aware that it wasn't ideal for him to be driving a train under these conditions but he thought it was OK because it did not happen that often, two or three times a month at most.



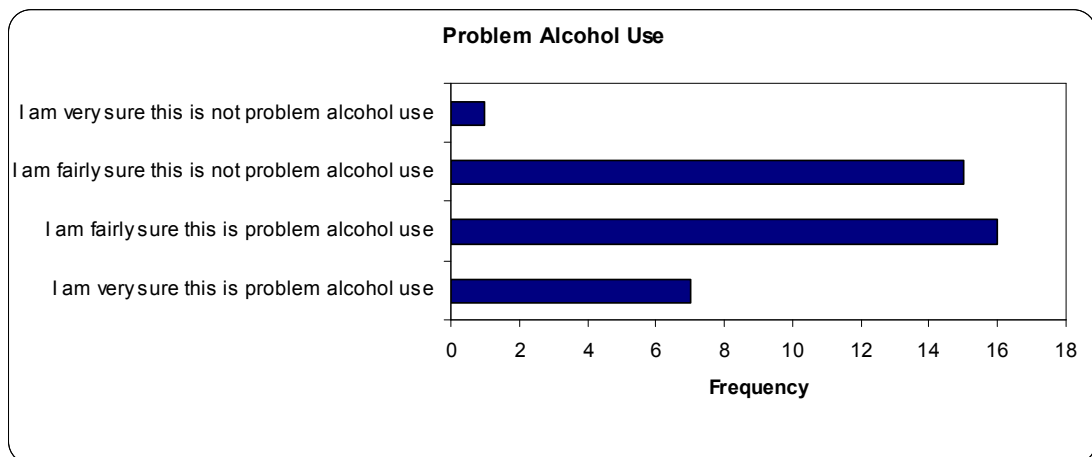
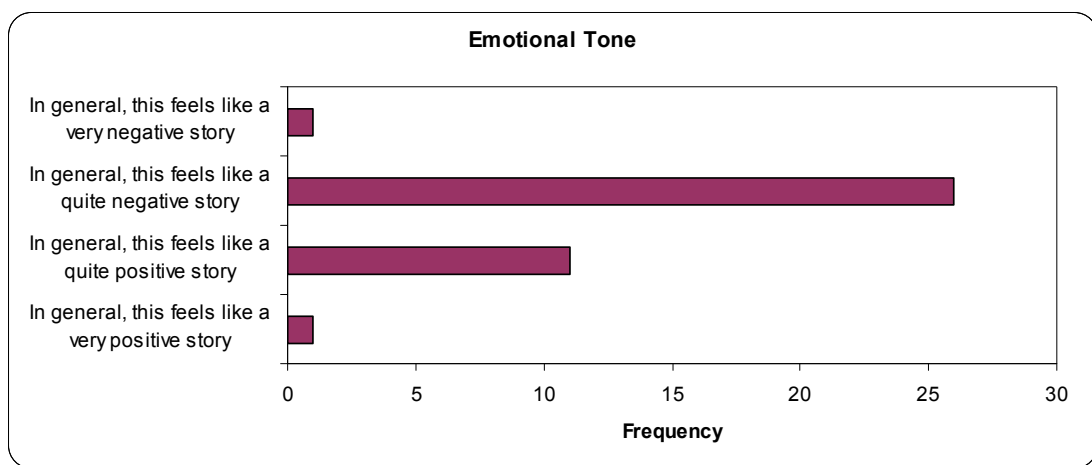
Simon Vignette

Simon was a journalist, who worked on a busy National newspaper. Like most journalists Simon enjoyed a drink, often going to the pub after work. Recently, Simon's Doctor had diagnosed a stomach ulcer, and had advised Simon to cut down on alcohol and spicy foods. However, Simon did not feel able to stop going to the pub because that was where he got a lot of information about new stories. He had cut down on his whisky drinking a bit and thought that should help with the ulcer.



Jim Vignette

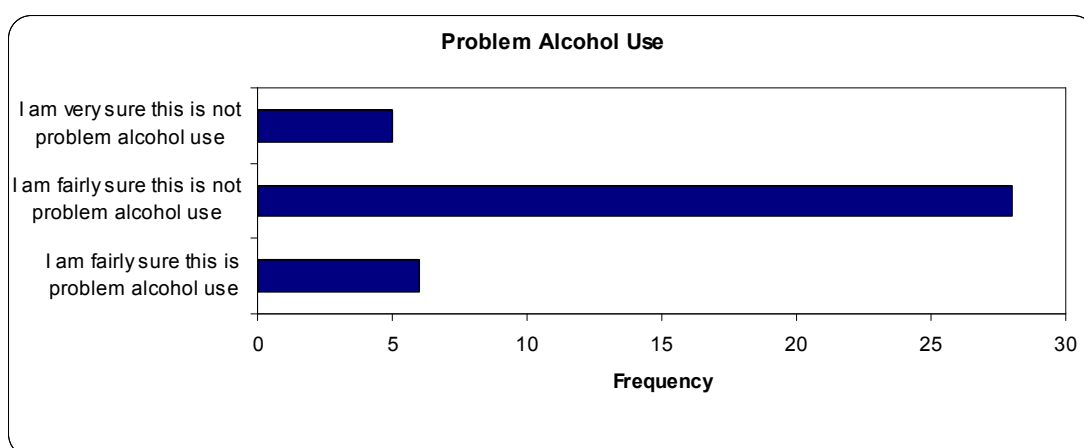
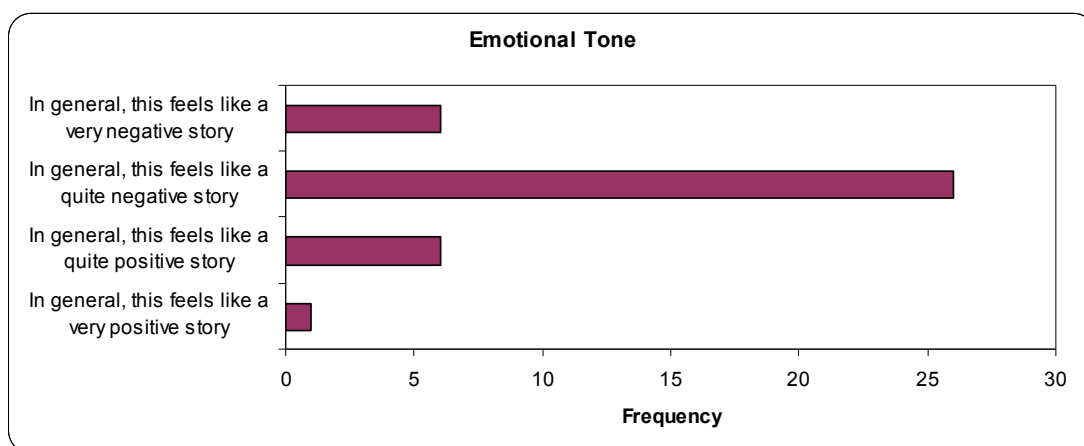
Jim was determined that he wouldn't drink too much this evening. He was at a party hosted by the Managing Director of his firm. The last party Jim had gone to he had drunk so much wine that he'd fallen over in front of everybody. Jim was resolved not to do a repeat performance tonight. But it was very difficult not to drink when the wine was free.



9.4.3.2: Low Signal.

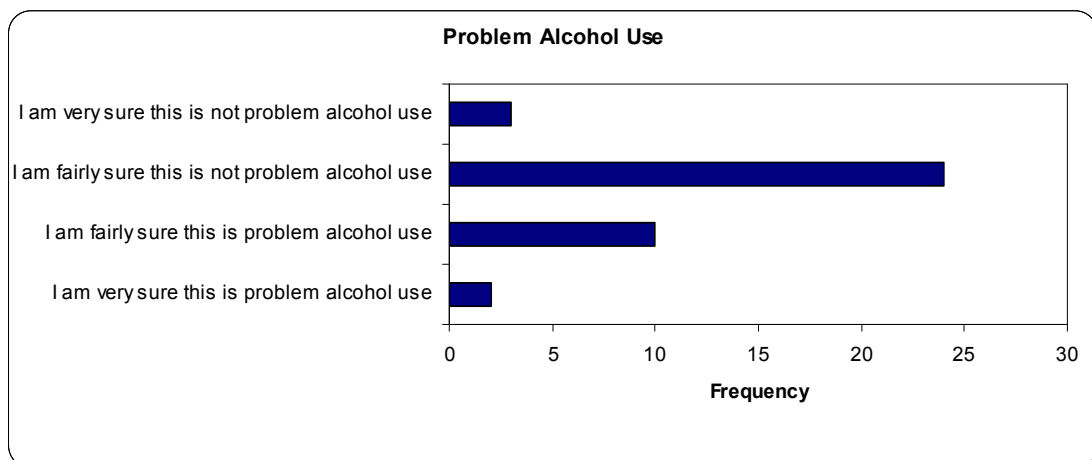
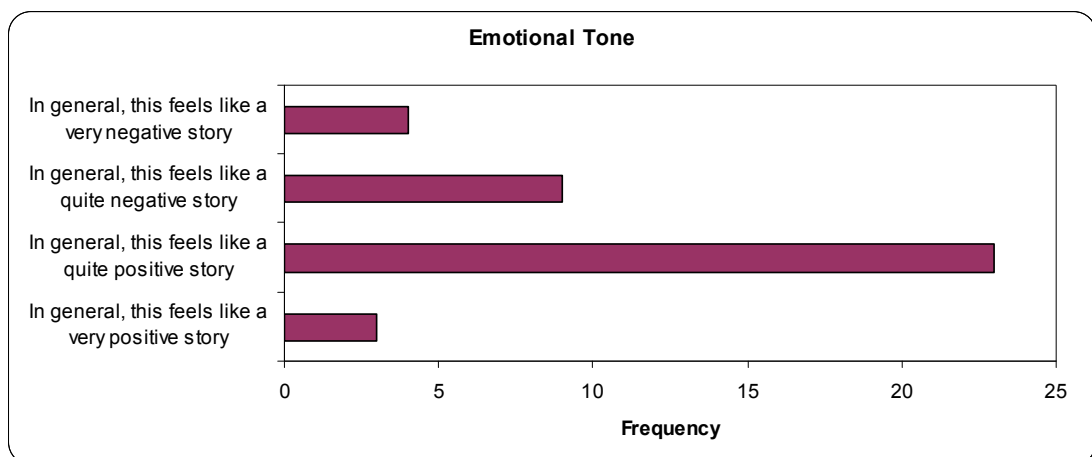
Fraser Vignette

Fraser had recently managed to split up with his long-term girlfriend. He had been trying to get rid of her for ages, but she was extremely clingy. Since they split up Fraser had been going clubbing every weekend on the lookout for a replacement girlfriend. Unfortunately, last Saturday he had got far too drunk and had been unable to chat to any girls, they had all told him to get lost.



Lorna Vignette

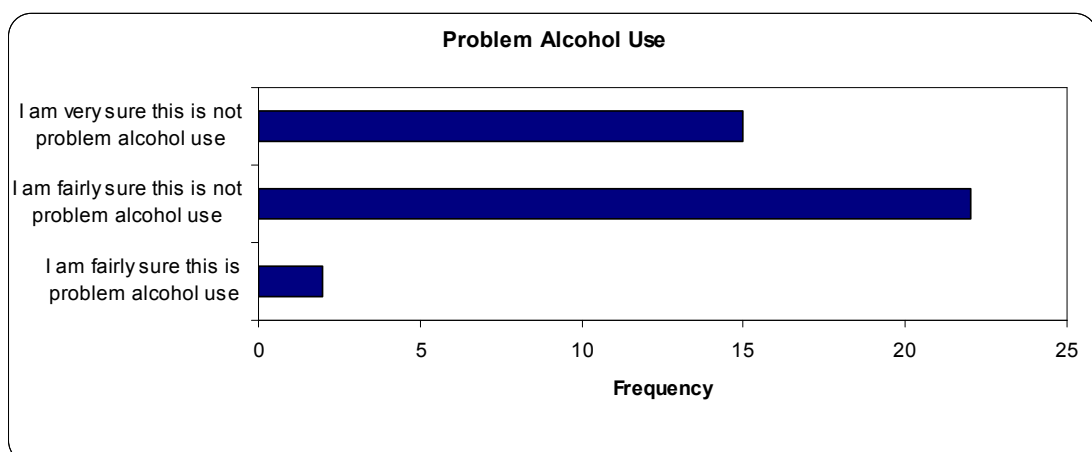
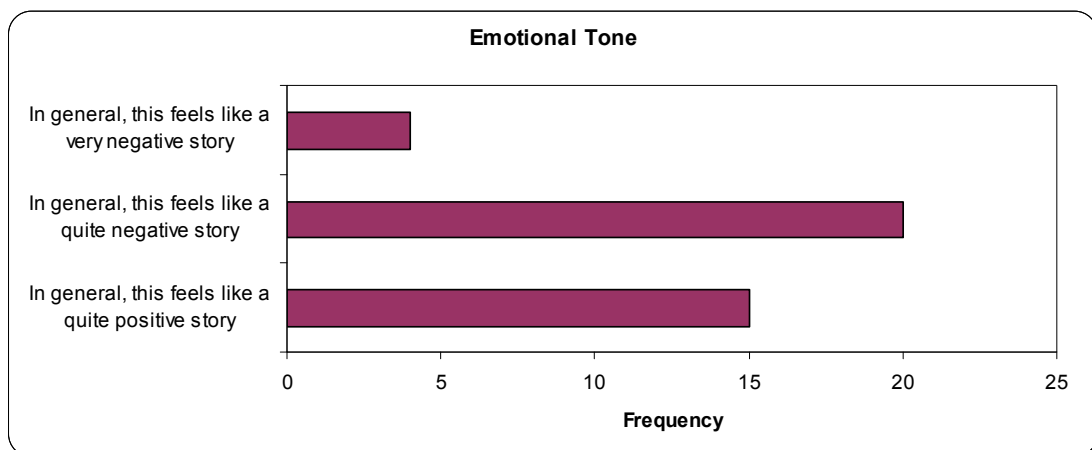
Lorna's company had decided to reward their staff by having a party. Lorna liked nothing better than a good party and got right into the swing of things, dashing about chatting to people and drinking lots of wine on her way. As the evening progressed, Lorna got steadily drunker but did not feel drunk because she was having such a good time. At some point a disco started up and suddenly Lorna realised they were playing her favourite song "Dancing Queen" by Abba. She turned to grab her friend Jo to make her dance, but they both overbalanced and fell across the table which was not as sturdy as it looked and it collapsed, spilling glasses and ashtrays everywhere. Lorna and Jo were laughing so much they could not get up.



Kevin Vignette

Kevin worked as a postman and had to get up very early to get to work on time.

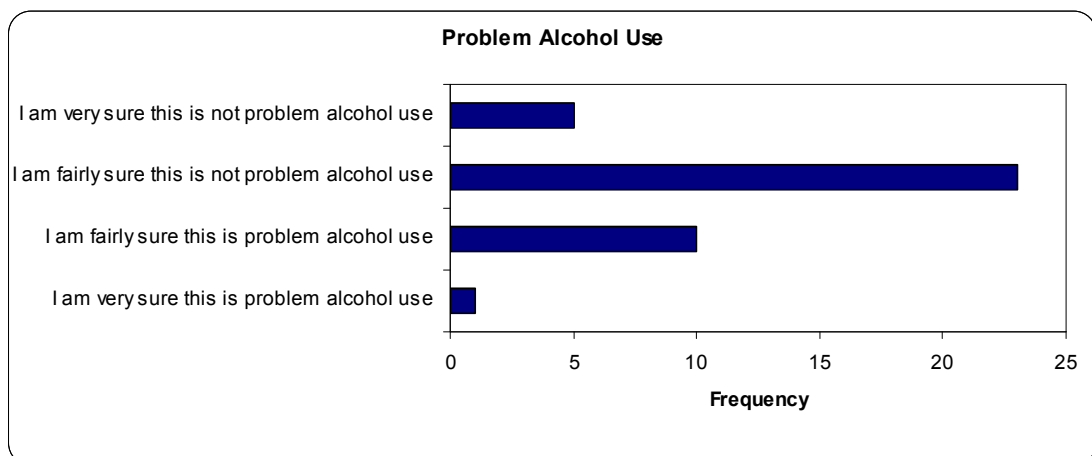
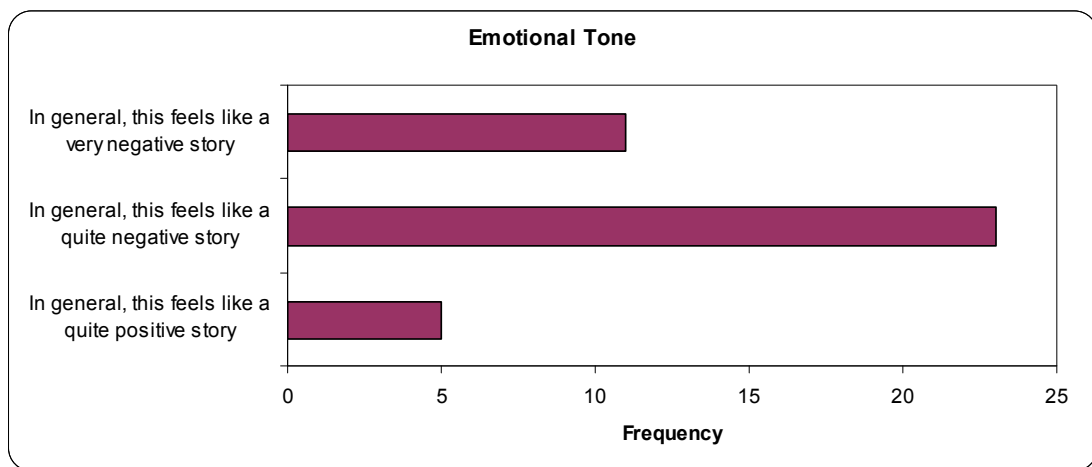
Yesterday had been his birthday and Kevin had gone out with his friends to celebrate in a local bar. The bar had been having a Mexican evening and tequilas were on special offer. Kevin had drunk a lot of tequila and by the end of the evening was standing on the table singing. Because he was hungover Kevin slept in for work the next day. He had to talk very quickly to calm down his boss, who was extremely strict and did not like people being late for work at all.



Martin Vignette

Martin was on holiday with his girlfriend and her parents. They had all been out drinking since early evening and it was now midnight and Martin was drunk.

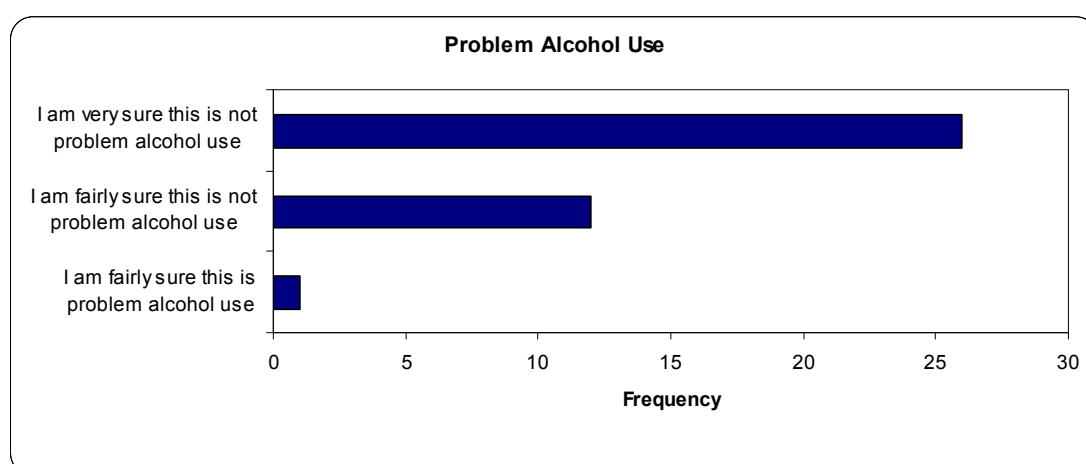
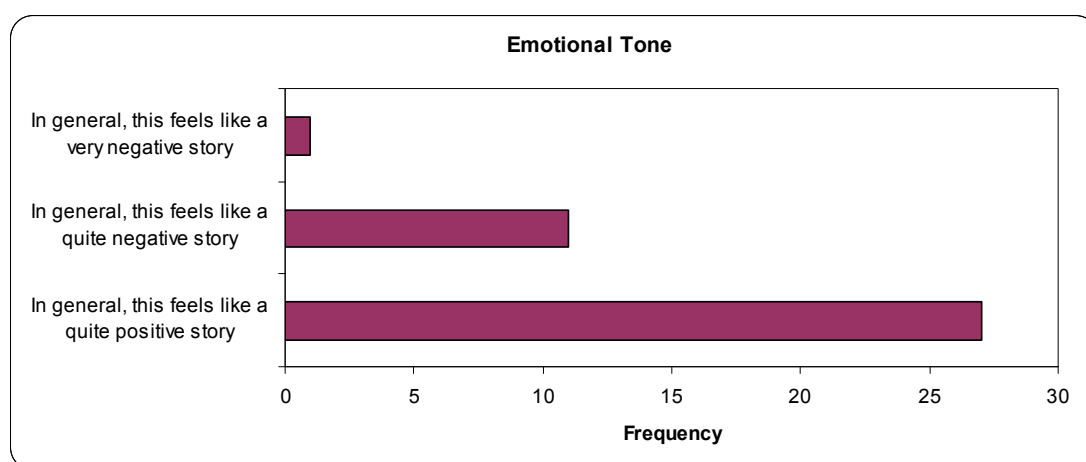
Martin's girlfriend had to help him home because he was not walking in a very straight line. Martin had to sleep downstairs in a makeshift bed with a bucket next to it in case he was sick.



9.4.3.3: Noise vignettes.

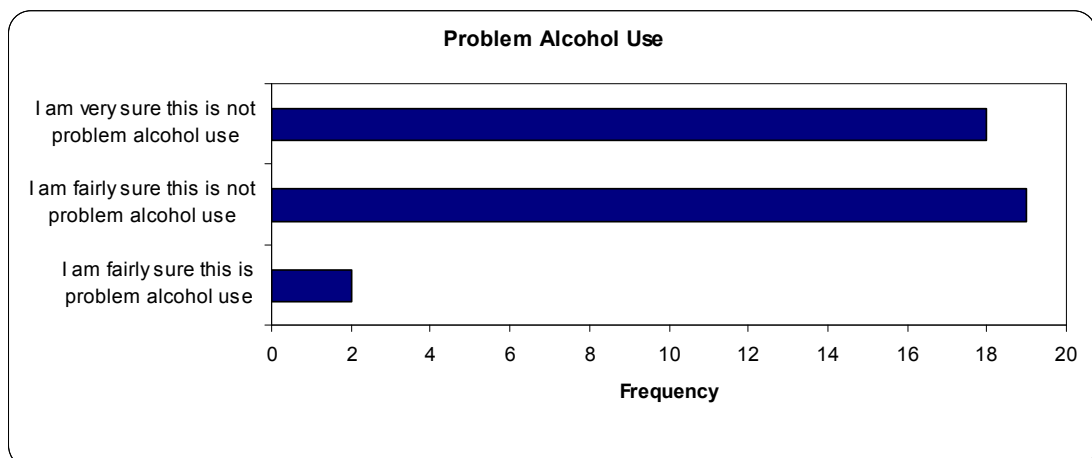
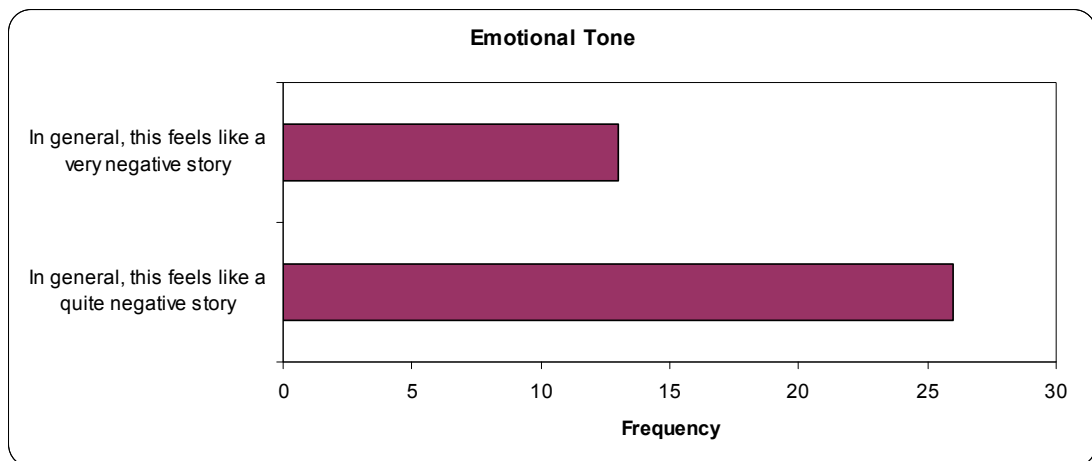
Rory Vignette

Rory was a very outgoing individual who liked nothing better than a good party. He was very excited because tonight he was having a big party in his flat. He had bought loads of booze and planned to make a big bucket of punch for everyone to drink. He got the recipe for the punch out of a Sunday newspaper and he thought it would be very tasty. As it turned out the punch was delicious and everyone complimented Rory on it. The party went very well too as there was a good mix of people there



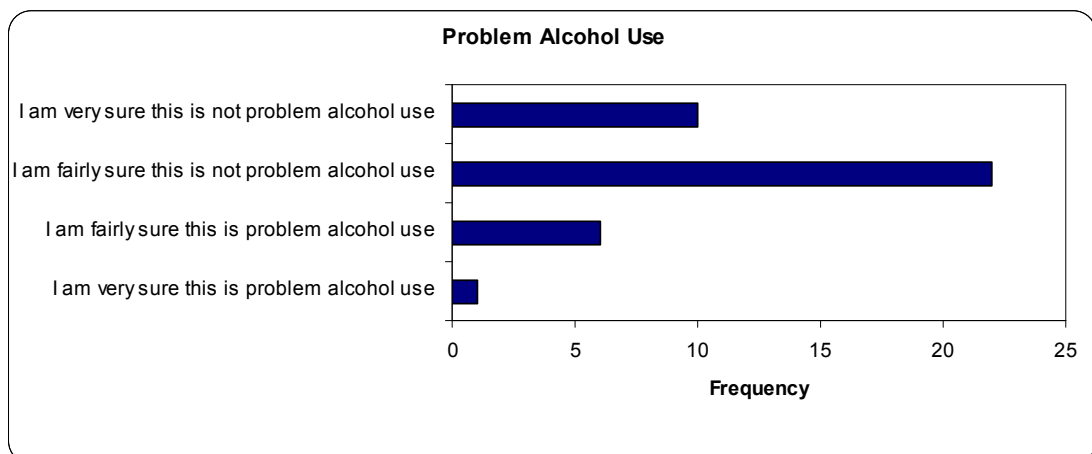
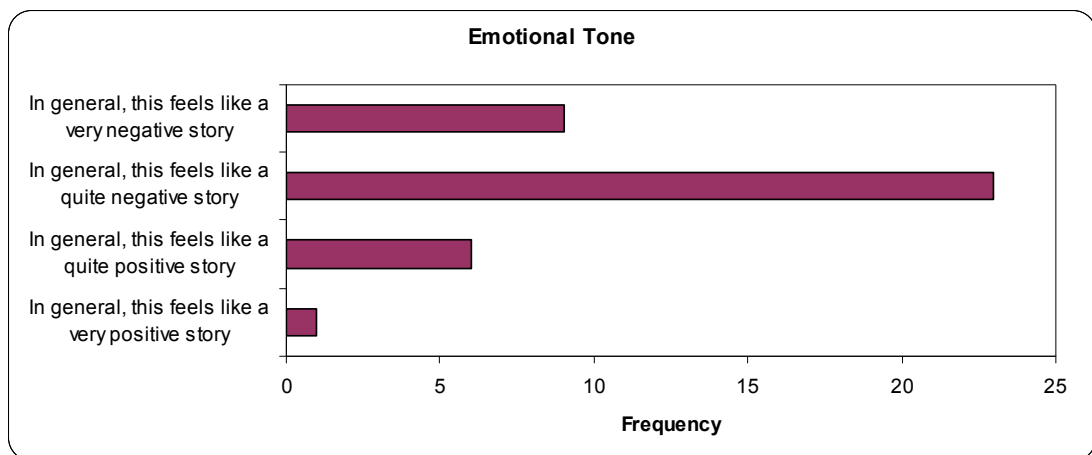
Duncan Vignette

Duncan had finished work early and was at a bit of a loose end. Luckily, as he was walking home he met an old friend called Lyndsay, who he hadn't bumped into in ages. They decided to go and have a beer in a local pub so they could catch up on old times. Unfortunately, a girl that Duncan had fancied for ages was in the pub and he neglected Lyndsay to talk to the other girl. Lyndsay was very upset by this because she had fancied Duncan herself for ages. Lyndsay was so annoyed that she made a complete fool of herself by shouting at Duncan and flouncing away.



Helen Vignette

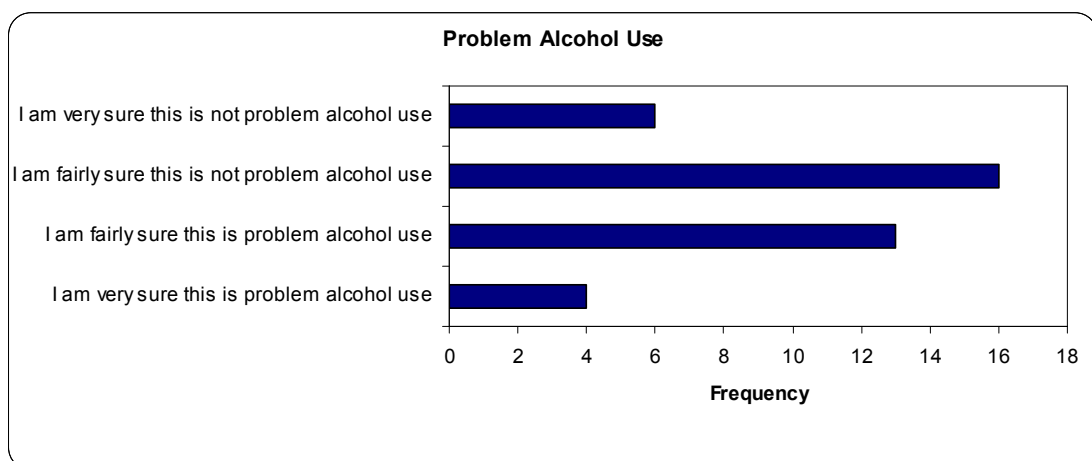
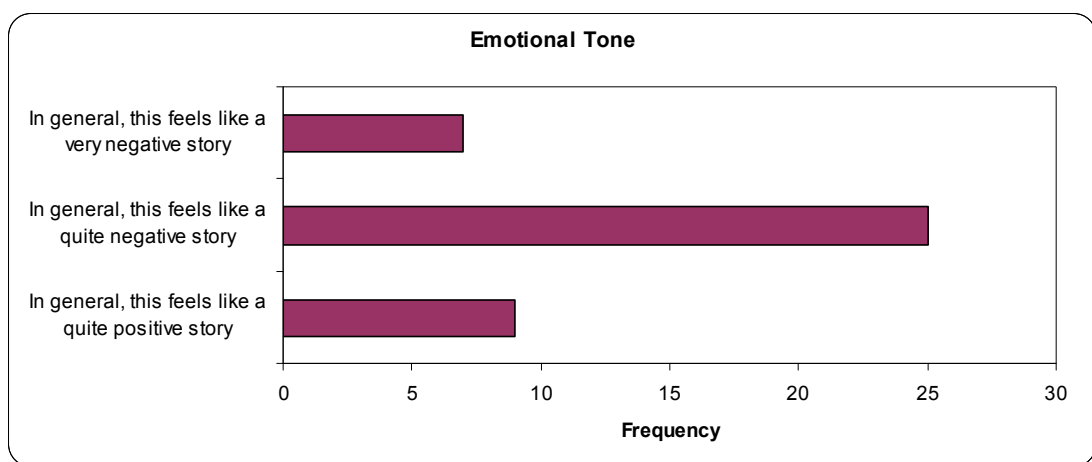
Helen had just been offered her dream job. She had been a shop assistant until now but she had just been told that she was to get her own shop to manage. To celebrate Helen bought a bottle of champagne on the way home, and planned to celebrate her new job by sharing the champagne with her three flatmates. However, when Helen got home she discovered that all her flatmates had gone out on the town and had not invited her. Feeling a bit depressed, Helen opened the champagne on her own and put a Tesco lasagne in the oven.



Melville Vignette

Melville was feeling extremely confused. He had just been told by his Mother that she was going to get married again (she had divorced Melville's Dad years ago).

Melville did not know how to feel about this at all. He did not know the bloke she was planning to marry so didn't know if he approved or not. Anyway, Melville's Mother was not asking for his approval, she had already made up her mind. Melville decided he wanted a glass of whisky to steady his nerves.



Examining all participants' ratings for each vignette revealed the range of ratings allocated. This gives an indication of the overall variance for each vignette. For example, for emotional tone the Melville vignette (see Section 9.4.3.3) received the ratings:

- a. In general, this feels like a very negative story,
- b. In general, this feels like a quite negative story, or
- c. In general, this feels like a quite positive story.

This vignette therefore was rated on one of 3 options by all participants. Conversely, the Duncan vignette (see Section 9.4.3.3) was only rated as either

- a. In general, this feels like a very negative story, or
- b. In general, this feels like a quite negative story.

and therefore had a rating range of 2 (as only two options were selected across the participants). A summary of the graphs presented in Sections 9.4.3.1 – 9.4.3.3 presenting the rating ranges for each vignette, for both rating scales, is presented in Table 9.2 below. The possible number of items on the rating scale is presented in the right hand column. This could be a minimum range of 1 (this would indicate that all raters selected the same response for a vignette – i.e. there was no variance in how the raters responded) to a maximum range of 4 (where all items in the rating scale were endorsed by at least one rater – i.e. the maximum variance possible).

Table 9.2: Summary of variance for both versions of the tool

RATING RANGE	RATING SCALE	
	EMOTIONAL TONE	PROBLEM ALCOHOL USE
1	-	-
2	1	-
3	6	5
4	5	7

Examining Table 9.2 reveals that, for the emotional tone ratings, 5 vignettes had a ratings range of 4 responses, 6 vignettes had a ratings range of 3 responses and 1 had a ratings range of 2 responses. This indicates that – with the exception of Duncan’s vignette – raters did not universally agree whether the vignettes were positive or negative. For the problem alcohol use rating scale, more vignettes (7) had a rating range of 4 responses and 5 had a rating range of 3 responses. This indicates that there were no vignettes which all the raters scored as being problem alcohol use or not problem alcohol use. From these results it was concluded that there was sufficient variance in the online task to suggest the ratings tasks are still valid when conducted online.

9.5: Discussion

Although it was not possible to assess the actual recruitment strategies – due to issues of cost and protecting the final sample – it appeared from this pilot that an online methodology is feasible. The pilot supported the validity of the main tool (the reduced vignettes) when an on-line method is used.

e completion rate of the online questionnaire was good (although one participant missed a question on part of the Functional Discursive questionnaire, see Section 10.3.2.2); however, two responses were started but not completed³⁶. It is notable that these partial completions occurred in the Internet group and it is likely that the 100% completion rate associated with the University group was due to this group receiving course credits and they were therefore motivated to finish the questionnaire. When recruitment occurs remotely it is likely that there would be a higher partial completion rate as “real-life” impinges on an intention to complete. This hypothesis is supported by the large difference in the time taken to complete the questionnaire between the two groups. Although the difference was not statistically significant (the large standard deviation in the Internet group reflected that the time taken to complete the questionnaire ranged from 6 min 5 sec to 1 hour 16 min and 29 sec) this suggests that some respondents are taking substantially longer to complete it remotely.

The observations concerning completion duration prompted the importance of context effects to be considered. Aside from the issue of “real life” impinging on completing the questionnaire (for example completing it in a busy household versus in a library) context effects may affect reporting of alcohol-related behaviours and ratings of alcohol-related stories. Research has indicated that the context in which questions are asked has an effect on the responses (Davies & Baker, 1987) and a

³⁶ It is unknown whether those two respondents completed the questionnaire at a later date and therefore may not have been lost to the analysis.

question was therefore included to ascertain the importance of the context within which the questionnaire was completed on the results (the issue of context is further discussed in Section 10.1).

9.5.1: Suitability of Reduced Tool for Online Use

It is apparent that – while slightly more variance was found for the problem alcohol use vignettes - there was sufficient variance in the vignettes' ratings for both conditions. Fundamentally, if there was no variance between responses then this would suggest that all respondents were answering in a similar fashion indicating little difference between participants – and it is this difference that we are interested in. The variance observed in this pilot indicates that the vignettes are ambiguous and therefore the response patterns elicited may be due to factors beyond social representations of, for example, problem alcohol use. This ambiguity was a key feature of O'Connor's Signal Detection-based methodology and is believed to be an important factor in the reduced tool's success in distinguishing between the still attending and planned discharge clients.

9.5.2: Limitations

A possible criticism of this pilot was the age difference between the two groups – the University-group was significantly younger than the Internet-group due to the University group comprising first year students who were predominantly in their late teens. While both groups completed identical online questionnaires, the University-

group completed the tool while the researcher was present so that issues could be identified as they arose. The Internet-based group completed the questionnaire remotely, without any input from the researcher, to ensure that it could be completed without supervision. The age difference was therefore felt to be unimportant as the pilot examined the online tool's usability rather than making conclusions (and generalisations) from the results.

9.5.3: Changes Made to the Questionnaire

As well as the changes made to the comprehension test to reduce any potential confusion, detailed in Section 9.4.2, changes were also made in other areas.

Following the results of the pilot, changes were made to the demographic questions.

Firstly, a student question was added to ascertain which respondents were students.

Additionally, to examine cultural differences that may arise based on familial and social experiences a question was added to collect ethnicity information. The

working category was also expanded to include retired and an "other" option was

added to allow respondents to give details about their situation if necessary. Issues

had been raised regarding the education section being too Scottish-orientated and, to

address this, English qualifications were included and the options expanded to

include other Scottish Qualifications. Finally, the section entitled "Home-life" was

changed to "Relationship Status" to address a concern that it was ambiguously titled.

Although there were no issues raised with the alcohol history questions these were

also altered to improve clarity. A question was included to examine attendance at

Alcoholics Anonymous; “treatment” was changed to “counselling or other treatment” in case respondents did not include counselling as treatment; a question was added to examine how many times an individual had attended treatment; and “are you attending treatment for alcohol problems” was altered to “are you currently attending treatment for alcohol problems”. Finally, a context question was added to establish where the online questionnaire was being answered to allow context effects to be examined.

Chapter 10 : Developing a Questionnaire to Assess Position in the Functional Discursive Model.

10.1: Introduction

In Chapter 5, Davies (1997) Functional Discursive (FD) model was not associated with discharge from alcohol counselling. Although it was concluded that stage did not predict discharge status, the moderate inter-rater reliability may have confounded the results as using another coder's stage allocation may have revealed a statistical difference between the discharge groups. It was felt that the root cause of the poor reliability was that Davies' six dimensions did not spontaneously emerge during the minimally-structured interviews.

Davies' model can be viewed as accessing three different socially constructed scripts – (i) attributions associated with “normal” drinking (stage 1); (ii) attributions associated with “addicted” drinking (stage 3); and (iii) attributions associated with “recovery” (stage 5). Which script is accessed depends on the function to be served. It is proposed that those who are harder to classify (stage 2 or 4) may not have these socially agreed scripts accessible to them (i.e. it is not functional for them to present as a “normal” drinker or an “addict”). This is supported by the observation raised in Section 5.7.1: stages 2 and 4 are essentially distinguished by the respondent presenting as addicted or not; attributions relating to the other dimensions are characteristically either not presented or too ambiguous to code. Issues may have

arisen due to those in counselling not spontaneously alluding to being “addicted” to alcohol.

To improve reliability, the methodology associated with the FD model must be altered to include prompts for the six dimensions allowing the interviewer to directly ask about dimensions not spontaneously raised by the interviewee. Although topic guides and prompting is a widely used technique in qualitative research (for example Dowrick, et al., 2009; Selman, et al., 2009; Sinclair & Green, 2005; Stokes, 2003) this is at odds with Davies’ postulation that only those attributions which spontaneously emerge are important. However, for the FD model to be used it must be “fit for purpose” – and therefore researchers must have faith in its reliability.

Moving the model away from spontaneous dialogue to a more structured assessment would also enable stage in the FD model to be assessed using a questionnaire.

Although a questionnaire emits much stronger “signals” than an unprompted, minimally-structured interview (c.f. Davies & Best, 1996) this distinction decreases if prompts are added to the interview. As discussed above, to improve reliability in the interviews it will be necessary to develop prompts to ensure that all the dimensions are covered and, from this position, it is unclear to what extent the answers given would differ between a prompted interview and a structured questionnaire. Underpinning the FD model is the notion that discourse is functional – there is no hypothesis, therefore, that suggests that an individual would present themselves in one way during a prompted interview but a different way if manually completing a questionnaire – *as long as the context in which the individual completes*

the questionnaire or interview remains constant. This is supported by research conducted by Coggans et al. (1991; as cited in Davies, 1997) who found self-report differences depending on whether the interviewer was dressed formally and using a formal questionnaire or dressed informally with an informally-worded questionnaire. Additionally, Davies (see Davies (1997) and Davies & Baker (1987)) suggested that heroin users presented as “sicker” when the context changed from a non-formal (e.g. interviewed by another heroin user) to a more formal research setting (e.g. interviewed by a university-affiliated researcher). It could be extrapolated from these that alcohol users may give different self-reports depending on whether they completed a questionnaire in a clinical or non-clinical setting.

10.2: Aims of the Chapter

It is argued that, for the FD model to be reliable, prompts must be included in the interview to ensure that the dimensions are adequately covered. Drawing from this, it is proposed to develop a FD questionnaire specifically addressing each of the FD model’s dimensions. This questionnaire would subsequently be used as part of the online task.

The optimum method of assessing validity of the questionnaire would be to triangulate position allocation from the questionnaire with that from an interview. There are, however, issues with this. Firstly, it is not clear how an interview would be obtained without influencing (or being influenced by) the questionnaire responses and secondly, the reliability issues suggest that any mismatch of stage may be due to

a lack of sensitivity in the interview data rather than the attributions actually being different. However, the past research using the FD model suggests that there may be an alternative method involving the theoretically driven recruitment of participants whose FD stage can be inferred from their current behaviour.

10.2.1: Relation of Position in FD Model to Situation

While no research has directly examined this, past research utilising the FD model suggests that FD stage is broadly determined based on where the participants are recruited from. The author's Masters of Research thesis examined individuals who were in treatment with alcohol problems in a residential rehabilitation unit or Alcoholics Anonymous and compared them to student users (Newham, 2007). This research involved positioning 12 students and 11 alcohol users in the FD model and reported that all students were positioned at stage 1, while 10 of the problem alcohol users were positioned at stage 3 and 1 at stage 4. Additionally, research by Melson (2008) positioned 36 "non-problem drinkers" (mainly students) on the FD model and found 34 at stage 1 and two at stage 2. These observations are supported by Davies' original work on the FD model which found that a clinical population of drug users predominantly (90.1%) presented at stages 3 or 4 while the non-clinical group principally (86.5%) presented at stages 1 or 2 (see Davies, 1997, pp 144-145).

Theoretically driven recruitment, focused on specified locations, would therefore derive a sample whose probable stage could be hypothesised. It was therefore proposed to obtain four groups of participants: (i) students; (ii) non-clinical

participants; (iii) clients currently attending rehabilitation; and (iv) clients attending a “wet unit” (where the majority of residents have a long-term alcohol misuse problem and continue to drink heavily).

10.2.2: Hypotheses

Based on the above predictions of location and FD stage, the following hypotheses would be made:

1. Students and non-clinical participants would be positioned in stages 1 or 2 of the FD model.
2. Individuals in rehabilitation when completing the questionnaire would be positioned in stages 3 or 4 of the FD model.
3. Individuals in a “wet unit” (i.e. individuals with an alcohol problem who cannot look after themselves but are not undergoing treatment) would be positioned in stages 4 or 5.

Recruiting from clinical populations (i.e. rehabilitation and “wet unit” populations) requires a paper-and-pencil version of the questionnaire to be used. Although no difference is expected a negative hypothesis cannot be tested therefore the experimental hypothesis below is expected to be rejected.

4. There will be a statistical difference between the paper-and-pencil version of the questionnaire and the online version.

10.3: Methodology

10.3.1: Ethics

Ethical approval for this research was given by Strathclyde University's Ethics Committee. All participants gave full, informed consent and were aware of their right to withdraw their participation. After completion of the questionnaire, participants were debriefed and all questions they had were answered.

10.3.2: Participants

A targeted recruitment strategy was used to sample the theoretically distinct groups. The participants completed the developed questionnaire in one of two ways: Group 1 (n=51) completed a paper-and-pencil copy of the questionnaire, while Group 2 (n=41) completed an on-line version of the questionnaire as part of the pilot detailed in Chapter 9.

10.3.2.1: Group 1: Paper/pencil version.

Participants were recruited from 3 areas: (1) students from a computer laboratory at the University of Strathclyde (n=29); (2) clients identified by the staff as heavy,

chronic drinkers from a “wet” unit in Glasgow (HU, n=10); and (3) clients attending a residential rehabilitation unit in Glasgow from substance misuse (RU, n = 13). These populations were targeted as it was believed that this would give a diverse range of answers to allow the theoretical differences between the groups to be observed in the results. Fifty-two questionnaires were completed by three groups of participants. One questionnaire from the wet unit was not fully completed and was therefore omitted from the study. The final sample therefore comprised 51 participants. As it was a pilot, no demographical information was recorded from these participants to minimise the intrusiveness of the questionnaire and increase compliance.

10.3.2.2: Group 2 - online version.

In Chapter 9 two groups completed the online version and were distinguished according to the recruitment strategies: the “online” group (n=13) and the “university group” (n=28). Details of their recruitment can be found in Section 9.3.4. For the purpose of this analysis, the online group will be referred to as the “non-clinical” group and the university group will be referred to as “students”. One participant was omitted from the online/non-clinical group due to failing to answer the generalisability question and therefore the final online sample was 12.

10.3.3: Questionnaire Development

The questionnaire development was based on the FD coding matrix (see Table 10.1 below) and the dimensions' descriptions provided by Davies' (1997, p 101-102; See Table 5.2).

Items were developed to reflect the FD model's six dimensions; however, the dimension of "Contradictoriness" was operationalised as a general "feeling" of contradictoriness throughout the interview and therefore it was not possible to assess it with a single item. Consequently, the final questionnaire covered five dimensions (Time, Generalisability, Purposiveness, Hedonism and Addicted Self-Ascription). These dimensions' explanations – and the corresponding questionnaire items – are presented in Table 10.2 below. The dimensions of Purposiveness and Hedonism were straight forward to develop into questionnaire items; however Time, Generalisability and Addicted Self-Ascription were more complicated and are described in the following three sections.

10.3.3.1: Time dimension.

The Time dimension was one of the hardest to code for when allocating FD stage as it refers to attributions for alcohol consumption rather than when the drinking is occurring. To mitigate against confusion, examples were provided.

Table 10.1: FD model matrix for determining suggested stage (Davies, 1997, pg100)

	STAGE					
	1	2	3	4	5+	5-
TIME	Pr	M	P	M	Pr	P
GENERALISABILITY	LO	M	HI	M	LO	M
PURPOSIVENESS	HI	M	LO	M	HI	LO
HEDONISM	HI	M	LO	M	M/HI	LO
CONTRADICTIONESS	Ab	Pr	Ab	Pr	Ab	Ab

10.3.3.2: Generalisability.

This dimension refers to the number of factors viewed as causal to alcohol consumption. The question format was developed in list form so that common answers could be endorsed. There was also the opportunity to report non-prescribed factors in an open-ended box.

Table 10.2: Davies' explanation and the related items

DIMENSION	DAVIES' EXPLANATION (ABRIDGED; (1997, p 101-102))	CORRESPONDING ITEM
Time	Coded as "past" if current alcohol use is attributed to reasons that lie in the past. For example, if current use is attributed to break up of a past relationship ... the text is characterised as "past". Concurrent reasons are coded as "present" ... <coding in time dimension> must derive from reasons for use. If the text as a whole cannot be reasonably characterised in either of these terms, it is assigned to the "mixed" category.	<ul style="list-style-type: none"> • I drink mainly because of things that happened in the past (e.g. <i>relationship breakup; death of family member/friend etc.</i>) • I drink mainly because of what's going on at the time (e.g. <i>friends/family drinking; social events where you might have a drink etc.</i>) • I drink because of a combination of both these things
Generalisability	A tendency to invoke a broad range of factors as being causal in connection with current drug use. Thus social, personal, employment, health, family and other factors will feature in accounts that are HI on this dimension. By contrast, drug use explained in terms of a single, or a small and focused group of factors, will be LO on generalisability. If the text overall cannot be reasonably characterised in either of these terms, it is assigned to the "mixed" category.	<p>I drink because:</p> <ul style="list-style-type: none"> i) It's sociable/ my friends do it ii) Of things that happened to me in the past iii) My job drives me to it iv) Health issues v) Family issues vi) Other (please specify in box below)
Purposiveness	Text making reference to <alcohol> use arising from wishes, desires, decisions, purposes or other terms which imply choice or decision making is said to be HI on this dimension. By contrast, accounts which characterise the <alcohol> as forced or inevitable response to either internal states or external circumstances are said to be LO. If the text overall cannot reasonably be characterised in either of these ways, it is said to be "mixed".	<ul style="list-style-type: none"> • In general, I feel I have control over my drinking. • Sometimes I feel I have control over my drinking. • In general, I feel I have no control over my drinking.
Hedonism	Hedonism characterises accounts where <alcohol> use is referred to in terms which have a positive evaluative and emotional tone. The experience is described as enjoyable or desirable, and these positive effects are sought after... In such cases, hedonism is HI. By contrast, accounts which have no such positive tone, or refer explicitly to lack of any pleasure and LO on hedonism. Contradictory accounts are mixed.	<ul style="list-style-type: none"> • In general, I enjoy my drinking. • Sometimes I enjoy my drinking. • In general, I don't enjoy my drinking.
Addicted Self-Ascription	Refers to the tendency to explain <alcohol> use in terms of a general "addiction" stereotype... This is simply coded as absent/present.	<ul style="list-style-type: none"> • I think I have a problem with alcohol • I don't think I have a problem with alcohol • I once had a problem with alcohol but I don't have it anymore.

10.3.3.3: Addicted self-ascription.

From the matrix (Table 10.1) it was observed that stages 1 and 5 were practically identical. This indicated that it would not be possible to discriminate between the two stages based on the information obtained from a questionnaire using solely Davies' original classification of Addicted Self-Ascription being present or absent. To address this, an option of "past problem" was included under the Addicted Self-Ascription dimension.

The final questionnaire is presented in Appendix E.

10.3.4: Procedure

Participants completed either an online or paper-and-pencil version of the questionnaire. This was necessary when recruiting from a rehabilitation or a wet unit as a paper-and-pencil questionnaires were more transportable, easier to use and did not have the security issues that might have been associated with carrying a laptop. Additionally, it was expected that there may be computer literacy issues with the population being sampled therefore an online format was not appropriate. It was also important to trial this tool for use online and therefore students were recruited using both methodologies to identify differences in the attributions made by students between modes of presentation.

10.3.4.1: Online sample.

The procedure for this group has been detailed in Section 9.3.4.

10.3.4.2: Paper-and-pencil sample.

All participants were given an information sheet which explained the study, which was read aloud to all individuals in the wet or rehabilitation unit. The information sheet provided information about the task and reassured participants that all responses would be anonymised, confidential and all the copies of their data stored on a password protected database. It also stated that their data would be destroyed at the end of the research period, participation was voluntary and that they could withdraw from the study at any time.

On one afternoon, over a half hour period, the student participants were approached in an on-campus computer laboratory and asked if they would mind filling in a brief questionnaire. The individuals from the wet unit were first identified by a member of staff as misusing alcohol and were then approached by the researcher and asked if they would mind taking part in a study. If their consent was obtained, the questions were read to all participants from the unit. The individuals at a residential rehabilitation unit comprised both alcohol and drug misusers who were approached during their break time. Of those who took part, two questionnaires were administered verbally.

10.4: Analysis

10.4.1: Scoring

To allow the easy allocation of participants into groups, the questionnaire was coded by awarding “scores” for each answer using a coding system derived from Davies (1997, p 100). The coding gave an indication of how they presented their alcohol use and allowed the participants’ answers to be positioned within the Functional Discursive model (Tables 10.3 – 10.5 present the dimensions, possible codes, questionnaire items and allocated score).

10.4.1.1: Addicted self-ascription.

The “addiction” dimension was treated separately from the other 4 dimensions as the move from presenting as not having a problem to having a problem was conceptualised within Davies’ model as being a threshold; there was no return from having a problem (Davies, 1997, pp 146 – 147). Therefore “no problem” participants could only be positioned at stages 1 or 2, “problem” participants could only be positioned at stages 3 or 4 and “past problem” at stage 5+/- . The scores given to the addiction dimension answers reflected this (see Table 10.3).

Table 10.3: Dimension of Addicted Self-Ascription.

DIMENSION	CODE	QUESTIONNAIRE ITEM	SCORE
ADDICTED SELF-ASCRPTION	NONE	I don't think I have a problem with alcohol	10
	PRESENT	I think I have a problem with alcohol	20
	PAST	I once had a problem with alcohol but I don't have it anymore	30

10.4.1.2: Hedonism, time and purposiveness.

The dimensions of hedonism, time and purposiveness were represented by three possible answers. Each possible answer was therefore allocated a “score” (see Table 10.4).

Table 10.4: Dimensions of hedonism, time and purposiveness.

DIMENSION	CODE	QUESTIONNAIRE ITEM	SCORE
PURPOSIVENESS	HI	In general, I feel I have control over my drinking.	1
	MIXED	Sometimes I feel I have control over my drinking	2
	LO	In general, I feel I have no control over my drinking.	3
HEDONISM	HI	In general, I enjoy my drinking.	1
	MIXED	Sometimes I enjoy my drinking	2
	LO	In general, I don't enjoy my drinking	3
TIME	PRESENT	I drink mainly because of what's going on at the time (<i>e.g. friends/family drinking; social events where you might have a drink etc.</i>)	1
	MIXED	I drink because of a combination of both these things	2
	PAST	I drink mainly because of things that happened in the past (<i>e.g. relationship breakup; death of family member/friend etc.</i>)	3

10.4.1.3: Generalisability.

For the dimension of generalisability (see Table 10.5), the number of reasons selected/given were counted. Any reasons given that were covered by other aspects of the questionnaire (for example I enjoy it, I need to do it) were not included.

Table 10.5: Dimension of Generalisability.

DIMENSION	CODE	QUESTIONNAIRE ITEM	SCORE
GENERALISABILITY	LO (0 ³⁷ , 1 or 2 reasons)	I drink because: i.It's sociable/ my friends do it.	1
	MIXED (3 or 4 reasons)	ii.Of things that happened to me in the past iii.My job drives me to it iv.Health issues v.Family issues	2
	HI (5 or more reasons)	vi.Other (please specify in box below)	3

10.4.1.4: Scoring system.

The coding methodology was arranged so that the minimum score would be obtained by individuals at stage 1. Davies' matrix for stage allocation, with the corresponding scores in brackets, is present in Table 10.6.

The totals from Table 10.6 reflect the stereotypical scores; however, it would not allow allocation for the full range of possible scores. Furthermore, a questionnaire does not allow for subjective judgement used when coding discourse to place poorly fitting examples into a stage. It was therefore decided to examine all possible

³⁷ Zero was awarded if the reason given was covered by other aspects of the questionnaire – for example, “I enjoy it” would be covered by the hedonism score.

combinations of scores and – imagining discourse was being obtained that reflected the combinations – to decide how a judgement call would be made.

Table 10.6: Stereotypical responses for each stage, with associated scores.

	STAGE					
	1	2	3	4	5+	5-
PURPOSIVENESS	HI (1)	M (2)	LO (3)	M (2)	HI (1)	LO (3)
HEDONISM	HI (1)	M (2)	LO (3)	M (2)	M/HI (2/1)	LO (3)
TIME	Pr (1)	M (2)	P (3)	M (2)	Pr (1)	P (3)
GENERALISABILITY	LO (1)	M (2)	HI (3)	M (2)	LO (1)	M (2)
ADDICTED SELF-ASCRPTION	Ab (10)	Ab (10)	Pr (20)	Pr (20)	Ab (30)	Ab (30)
TOTAL SCORE	14	18	32	28	35/4	41

The possible range of scores for non-problematic drinking (stages 1 and 2) ranged from 14 to 22; problematic drinking (stages 3 and 4) from 24 to 32; and past-problem scores (stages 5+ and 5-) from 34 to 42³⁸. It was decided that stage 1 answers could only deviate from the stereotypical response detailed in Table 10.6 by a maximum of two points; anything beyond that would be coded as stage 2. For example a discourse reflecting that he/she did not have a problem with alcohol but it wasn't fun and not always controllable although they did it for immediate and few reasons would be

³⁸ Note that there is no overlap outwith the non-addicted/addicted/recovery groups. The answers to the other 4 dimensions only served to distinguish between stages 1 and 2; stages 3 and 4; and stages 5+ and 5-.

positioned at stage 2 as he/she was having problems with their alcohol use. This discourse, if presented in a questionnaire, would obtain a score of 17 points and therefore be classified at stage 2. Conversely, a discourse reflecting that the participant mostly enjoyed drinking, generally controlled it, used due to reasons in the present, did not have a problem with alcohol and did it for few reasons would be positioned at stage 1. The questionnaire equivalent of this discourse would obtain a score of 15 points.

To distinguish between stages 3 and 4, it was decided that stage 3 answers could only deviate from the stereotypical score of 32 by 3 points. Anything beyond that would be coded as stage 4. For example, an individual reporting that he/she has a problem with alcohol, drinks for lots of different reasons, does it because of things that happened in the past and things happening at the present time, generally enjoys it, and can control it would be classified as stage 4 as he/she is acknowledging a problem but is not presenting as a typical “helpless addict”. This would be scored from a questionnaire as 28 points. Conversely, if an individual reports that he/she has a problem with alcohol, drinks for lots of different reasons, does it because of things that have happened in the past, doesn’t enjoy it and can’t control it then this would be classified as stage 3 – a typically “addicted” pattern of discourse. The questionnaire equivalent would be scored as 32.

Finally, the distinction between stages 5+ and 5- was based on Davies’ descriptions. However, the description of 5- is vague and based more on logical necessity than from discourses. From this basis both stage 5 discourses do not have an addicted self-

ascription, with 5- discourses' other dimensions most closely resembling those seen at stage 3 – the “addicted” user. Stage 5+ discourses are generally non-problematic thus resembling stage 1 discourses on the other relevant dimensions. From this basis, a discourse reflecting having had a problem with alcohol in the past, drink for reasons in the past, also many different reasons drawn upon, has no control over their drinking and doesn't enjoy it would be coded as stage 5-. The questionnaire equivalent of that would obtain a score of 42. A discourse describing past alcohol problem, drinking because of reasons in the present, high controllability, few reasons blamed and high fun would be coded as 5+. This would be awarded 34 points. Based on these theoretical situations the stages, with their associated ranges, are presented in Table 10.7.

Table 10.7: Stages and their associated range of scores.

STAGE	SCORE (RANGE)
STAGE 1	14 - 16
STAGE 2	17 - 22
STAGE 3	29 - 32
STAGE 4	24 - 28
STAGE 5 +	34 - 38
STAGE 5 -	39 - 42

10.5: Results

10.5.1: Equivalence of paper-and-pencil to online questionnaire

The data were first examined to see if the paper-and-pencil version was answered in a similar fashion to the on-line version. It was hypothesised that, if this was the case, then there should not be a difference between the online student group's answers and

the paper-and-pencil students. From the stage allocations presented in Table 10.8 it is apparent that the distribution of the two groups is very similar, with the exception of 3 individuals in the online group reporting as stage 2.

Table 10.8: On-line versus paper and pencil questionnaire

	Stage 1	Stage 2	Stage 4	Total
Students paper-and-pencil <i>Std. Residual</i>	27 .2	-	2 .4	29
Students online <i>Std. Residual</i>	24 -.2	3 1.3	1 -.4	28
Total	51	3	3	57

A Fishers Exact Test (due to expected frequencies being less than 5) was carried out and revealed no significant difference between modality and allocation to stage in FD model ($FET(2) = 3.49$, *exact p* = .32). This indicates that there was no significant difference in the student responses depending on whether they were collected on-line or through traditional, paper and pencil, methods. This finding supports that these two modalities elicit equivalent responses and also allows further analysis of this pilot data to proceed using both the online and offline responses.

10.5.2: Overall Distribution of Stages.

The student groups were collapsed to form a single group. From the overall stage allocation presented in Table 10.9 it is apparent that the vast majority of the participants were positioned as would be expected – the students were in “non-problematic” stages 1 and 2 (with three exceptions, which were at stage 4); the non-

students also presented as non-problematic users with the majority at stage 1; the individuals in treatment were positioned predominantly at stages 3 and 4 (with two exceptions, one individual at stage 1 and one at stage 5-); finally the wet unit alcohol users were at stages 4 and 5+ (see Table 10.9)

Table 10.9: Distribution of stages between the groups.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5+	Stage 5-	Total
Student (online and paper/pencil) <i>Std. Residual</i>	51 2	3 .8	- -2.1	3 -1.8	- -1.8	- -.8	57
Non-clinical (online) <i>Std. Residual</i>	10 .6	- -.6	- -1	- -1.3	2 1.7	- -.4	12
Wet unit (paper/pencil) <i>Std. Residual</i>	- -2.5	- -.5	- -.8	6 4.2	3 3.6	- -.3	9
Rehabilitation (paper/pencil) <i>Std. Residual</i>	1 -2.6	- -.7	7 6	4 1.6	- -.8	1 2.3	13
Total	62	3	7	13	5	1	91

A Fisher's Exact Test was carried out which found a significant association between participant type and allocation to stage in Davies' model (FET (15) = 82.23, $p < .0005$, Cramer's V = .64). Examining the standardised residuals³⁹ (Table 10.9) indicated that the distribution of stages appears to differ markedly between where the participant groups came from. Although the non-clinical group were only coded at either stage 1 or stage 5+, no standardised residuals were significant indicating that the distribution was as predicted. Students were over-represented in stage 1 (SR=2, $p < 0.05$), while being under-represented in stage 3 (SR=-2.1, $p < 0.05$). Conversely, the participants recruited from the wet unit were over represented at stages 4 and 5+

³⁹ The residual is the error between the expected and observed outcomes, standardised (i.e. z-scored; A. Field, 2009) and therefore +/- 1.96 is significant at the 5% level, +/- 2.58 is significant at the 1% level and +/- 3.29 is significant at the 0.1% level.

(SR=4.2 and 3.6 respectively, $p<0.001$) and under-represented in stage 1 (SR=-2.5, $p<0.05$). Finally, those in rehabilitation were over represented at stage 3 (SR=6, $p<0.001$) and 5- (SR=2.3, $p<0.05$), while under-represented at stage 1 (SR=-2.6, $p<0.01$). In general, these observations fit with the hypotheses.

The most notable aspects of these observations, with relation to the hypotheses, were that (1) only individuals in treatment presented at stage 3 and (2) the majority of students and non-students were in the non-problematic stage 1 band.

10.6: Discussion

The pattern of the results was predominantly as hypothesised with no differences for the student group between the online and paper-and-pencil versions of the questionnaire – suggesting that the online use of the tool was valid. The groups were theoretically selected as it was hypothesised that there would be limited stage overlap between the groups and the analyses suggests that this was indeed the case; the non-clinical and student groups were predominantly positioned at stages 1 or 2 (the non-problematic drinking stages), the individuals in residential rehabilitation at stages 3 or 4 (problematic drinkers) and those from a “wet unit” were stages 4 or 5 +.

There were, however, some unexpected results. Two participants from the rehabilitation unit were anomalous – one positioned at stage 1 and the other at 5-. The rehabilitation unit was for both drug and alcohol misusers. The individual who was at stage 1 was attending treatment for drug misuse and clearly stated, before

filling in the questionnaire, that she did not have a problem with alcohol and was therefore reluctant to complete the questionnaire. From this basis, it is appropriate that she would complete the questionnaire as a “normal” alcohol user and the fact that she was in stage 1 supports this tool’s validity. Interestingly, the other two individuals who were receiving treatment for drug misuse scored as stage 3 and, while the reasons behind this are unclear, it is likely that these two clients were being treated for both alcohol and drug abuse – although drug abuse was their primary reason for admission. Alternatively, this might reflect that individuals attending treatment for drugs view alcohol as a drug and therefore it was functional for them to respond to the questionnaire as an “alcoholic”.

One individual in the residential rehabilitation unit was positioned at stage 5-. Although this stage was theoretically possible, Davies and colleagues in the United Kingdom had not found any substance user presenting at this stage. From the matrix (Davies, 1997, p. 100), the distinguishing feature of this stage is that alcohol addiction is in the past while still abusing alcohol. It is unclear why the respondent completed the questionnaire in that manner; however, it is possible that – because he was undergoing treatment for his alcohol problem – the respondent felt that his problem was in the past while still talking about his alcohol use as problematic.

Additionally, three students were positioned at stage 4 (a stage representing being addicted to alcohol). It is unclear why these students responded in this manner. It cannot be discounted that they may be functioning alcoholics; in Davies’ original study, 7 out of the original 52 (13.5%) non-clinical interviews were coded as

indicating problematic alcohol use (Davies, 1997, p 144) which is markedly higher than the 5.26% reported here. An alternative interpretation would be that the addiction self-ascription item (see Table 10.2 above) is flawed. The wording of this item was deliberately selected as it was felt to have more cultural meaning than “addicted to alcohol”; that is to say, while one may talk of being “addicted to drugs” it is comparatively rare to describe an experience of being “addicted to alcohol” and more common to say a “problem with alcohol”. Unfortunately, it is possible that respondents subscribing to having a “problem with alcohol” will not be limited to, people who are “addicted” to alcohol. The addicted dimension serves to position people within the model and therefore it is given more weighting than the other questions.

10.6.1: Implications of Results

The results suggest that it has been possible to develop a questionnaire to assess stage allocation in Davies’ FD model using a scoring system to allow stage allocation based on respondents’ functional, categorical response to the dimension items. It must be remembered, however, that the total scores do not represent a continuum with underlying mathematical properties (i.e. an individual scoring 28 on the questionnaire has not scored twice as much as someone scoring 14 - these scores can only be understood in terms of stage allocation).

10.6.2: Limitations

This study is limited by the reliance on students to assess the issue of modality on questionnaire responses. While the results indicated that there was no difference between those who completed the response online or with paper-and-pencil, there is no data on the effect of questionnaire modality on the clinical population. It was not possible to ask clients at the “wet” or rehabilitation units to complete the questionnaire online as it was expected that computer literacy may be an issue (and also the practical issues alluded to above) – it would be very difficult to ascertain whether the root of any difference was more than a computer literacy issue. There was, however, no hypothesis to suggest that non-clinical, “addicted” alcohol users would be more affected than the student users by differences in questionnaire modality when the context it was completed in remains constant.

10.6.3: Changes Made to the Questionnaire

The main issue was the inclusion of a question specifically asking about being “addicted” to alcohol in the final questions. It was decided not to directly replace the “problem alcohol use” question; instead an additional yes/no question was added at the end of the questionnaire: “Do you feel that you are “addicted” to alcohol?”.

10.6.4: Conclusion

It appears that the questionnaire was able to discriminate between "problem" alcohol users (stages 3-5 in Davies' model) and "non-problem" alcohol users (stages 1 and 2) with an acceptable degree of sensitivity. This suggests that the questionnaire can be used in place of the interviewing technique to position people within the FD model although for subsequent administration of the tool there will be the addition of a question asking specifically about addiction.

Chapter 11 : Online Questionnaire (Study 5)

11.1: Introduction

Using the online methodology, devised and piloted in Chapters 9 and 10 - the current study will examine the relationship between responses on the reduced tool and drinking. It is expected that the results here will increase understanding of how the tool functions. If it is purely due to motivation (as O'Connor proposed in Harper, 2000) then there should be no link between self-reported alcohol consumption and ratings as this link was not found in Chapter 7's analyses.

11.1.1: Relationship between Drinking and Expectancies

Alcohol expectancies – i.e. positive or negative assessments about the outcomes of alcohol use – have been shown to significantly predict the quantity and frequency of drinking (for example Dijkstra, et al., 2001; C. M. Lee, Maggs, et al., 2010; N. K. Lee, et al., 1999; Mooney, et al., 1987). Although the relationship between drinking and expectancies is not straightforward due to the many methodologies used (for example which tool was used to assess expectancies or the definition of drinking behaviours) overall positive alcohol expectancies are associated with an increase in drinking behaviours (Dijkstra, et al., 2001; B. T. Jones, Corbin, & Fromme, 2001). Dijkstra et al. (2001) proposed that positive expectancies accounted for 18% of the

total variance in drinking behaviours although Jones and colleagues' (2001) review found that – when measures of drinking attitudes or previous drinking behaviour were included – then the variance accounted for by expectancies was low (1-3% of the variance).

Jones and colleagues' (2001) review of the explicit expectancies literature concluded that there was a positive relationship between drinking habits and expecting positive outcomes, and an inverse relationship for negative outcome expectancies – with, in general, drinkers with more experience (including problem drinkers or alcoholics) giving more positive expectancies (see B. T. Jones, et al., 2001). Additionally, it has been proposed that expectancies predict the commencement of problematic drinking as well as the start and continuation of “normal” alcohol consumption (ibid).

That positive associations may lead to problematic drinking is important. Mallett, Bachrach, & Turriss (2008) examined US students' perceptions of supposedly negative consequences of drinking and, although no regression was carried out to predict alcohol consumption, they found individual differences in perceiving events as negative or neutral/positive. Consequences directly attributed to alcohol use such as hangovers, binge eating or unplanned behaviour such as leaving a party with strangers were rated as negative by fewer than half of the respondents, while being embarrassed – either physically or socially – or blacking out were rated by just over half as being negative (ibid.). Mallett and colleagues (2008) also found that those situations which might be thought of as even less ambiguous – such as being arrested, vomiting or having belongings stolen or lost – still had a notable number of neutral

or positive ratings and that there were significant, positive associations between more positive ratings of the traditionally negatively viewed events (i.e. hangovers, skipping evening meals, black outs, vomiting and regrettable sexual experience) and increased alcohol consumption. Furthermore, Lee, Maggs et al (2010) found that, among US college students, positive outcomes were experienced through drinking and suggested that they may reinforce drinking, ultimately leading to the associated negative outcomes. Theoretically, these factors may contribute to drinking at a level which incurs an economic cost to society.

Although the outcome expectancies literature is influential, and has been implemented in prevention and intervention programmes (with varying degrees of success - see B. T. Jones, et al., 2001, for review) explicit alcohol expectancy research has been criticised. As well as issues regarding social desirability inherent with the self-report methodology utilised, there are concerns over (1) the ability to accurately report the cognitions surrounding non-novel behaviours and (2) the effect of the expectancy questions on subsequent self-reports of alcohol consumption as the participant tries to be consistent (Gadon, Bruce, McConnochie, & Jones, 2004). These are valid criticisms and it may be that moving away from overt outcome expectancy questions to a judgement-based exercise (such as the one trialled in this study) would combat some of these issues.

11.2: Aim of the Current Study.

The scenarios presented within O'Connor's vignettes are situations that "normal" drinkers would be expected to encounter in their drinking career (for example falling over, wanting a drink due to bad news, or working following a heavy drinking situation). Making judgements in ambiguous situations require utilising as many potential sources of information as possible including, it is hypothesised, what the expected outcome would be for oneself in the depicted situation. The rating judgements regarding their emotional tone (how positive or negative they are) or whether or not they show problem alcohol abuse are likely to depend on memories pertaining to outcome consequences from drinking. These memories may arise both from personal experiences and the internalisation of societal norms. The expectancies literature would hypothesise that ratings of the vignettes would be positively associated with alcohol consumption.

O'Connor's tool was originally designed to predict drop out from alcohol treatment, using a Signal Detection (Green & Swets, 1966) methodology. Interpreting Chapter 7's results from a Social Criterion (Davies & Best, 1996) approach suggested that the still attending group and planned discharge group differed in their motivations with the more motivated respondents (those who obtained an planned discharge) having a laxer response bias. This was independent of alcohol consumption. However, the outcome expectancies literature would offer a very different interpretation.

Accordingly, Social Criterions theory's interpretation that responses to the reduced tool's rating scales are determined primarily by motivation will be tested against the outcome expectancies' assumption that ratings on the reduced tools will be associated with alcohol consumption.

11.2.1: Hypotheses:

As you can not have a negative hypothesis, the experimental hypothesis is that ratings of problem alcohol use and emotional tone will be associated with alcohol consumption. Specifically, it is hypothesised that as self-reported alcohol consumption increases:

- 1) The reduced tool vignettes would be rated more positively.
- 2) Fewer problems with alcohol use would be seen in the vignettes.

These hypotheses are in line with the expectancies research. If the SC position holds out, we expect to reject this hypothesis.

11.3: Methodology

11.3.1: Ethics

Ethical approval for this research was given by Strathclyde University's Psychology Department's Ethic Committee. All participants indicated that they consented to the

study before commencing, indicating that they gave full, informed consent and were aware of their right to withdraw their participation. After completion of the online questionnaire, a debriefing page was included with the researcher's contact details for any additional questions.

11.3.2: Participants

In total, 1937 questionnaire responses were partially completed with an attempted comprehension test. Those who failed the comprehension test (n=154) or were underage (n=3) were excluded. Additionally, those who did not supply either of the outcome information (either the number of drinking days in a month or the number of units drunk on a typical drinking day) were excluded (n=413). The cleansed dataset therefore comprised 1371 cases.

11.3.2.1: Time taken to complete online questionnaire.

For the cleansed dataset cases, an average time of 19 minutes and 17 seconds (SD= 45 minutes 1 second) was taken to complete the tool. The size of the standard deviation reflected the extreme range of times (from 3 minutes 52 seconds to 21 hours 4 minutes and 57 seconds) and suggested substantial outliers. Eight cases were identified where the z-transformed duration scores were greater than +/- 3.29 (i.e. where 99.9% of scores would lie between in a normal distribution) and were therefore outliers on this variable (Field, 2005). When these were excluded, the mean completion time fell to 16 minutes 32 seconds (SD= 13 minutes 3 seconds).

There is no hypothesis to suggest that the length of time taken to complete the questionnaire would affect the vignettes' ratings or alcohol consumption therefore these outliers were retained in the final sample.

11.3.2.2: Demographical features.

Not all participants answered every question therefore the numbers for each variable will be provided in a footnote. The majority of participants were white (92.8%)⁴⁰, female (67.5%)⁴¹, in a relationship or married/living with a partner (54.4%; 353 married/living with a partner and 393 in a relationship)⁴² and had a mean age of 27.35 (SD=9.97; ranging from 18 to 69 years old)⁴³. The sample was evenly split between students and non-students; 675 (49.6%)⁴⁴ were students of whom 572 (42.1% of the total sample) were full-time students and 103 (7.6% of the total sample) were part-time students. The majority of non-student respondents (53.29%, n=364)⁴⁵ were educated to at least degree level and they were predominantly (62.3%)⁴⁶ in employment (full time: n=300, 44.1%; part-time: n = 124, 18.2%; or self-employed: n=22, 3.2%); about a quarter were unemployed (n=186, 27.3%).

⁴⁰ n=1367

⁴¹ n= 1371

⁴² n= 1371

⁴³ n=1365

⁴⁴ n= 1360

⁴⁵ n = 683

⁴⁶ n = 681

11.3.2.3: Alcohol consumption.

The mean number of drinking days in a month was 7.59 (SD= 6.94, range from 0 to 30)⁴⁷ and the mean number of units drunk in a typical drinking day was 8.06 (SD=7.32, range 0 to 62.6)⁴⁸. For those who supplied both the number of drinking days and how much they typically drank⁴⁹ the mean number of units consumed in a month was 67.79 (SD= 108.72, range 0 to 1761.6).

11.3.2.4: Experience of alcohol use.

Seventy-two respondents (5.3%)⁵⁰ reported that they had received help (either treatment or Alcoholics Anonymous) for an alcohol problem - 29 (40.3%) of this group were currently attending counselling (or other treatment) and/or Alcoholics Anonymous. When details of how often the respondent had attended treatment or AA were given⁵¹, the majority attended only once (n=30, 45.5%) or twice (n=13, 19.7%); the range was 1 to 14 treatment episodes.

11.3.3: Design

The dependent variable of interest was alcohol consumption. However, three measures of this were available:

⁴⁷ n= 1360

⁴⁸ n= 1221

⁴⁹ n=1218

⁵⁰ n= 1369

⁵¹ n=66

- i. the number of drinking days in a month (DDmonth),
- ii. the number of units drunk in a typical drinking day (DDunits),
- iii. the number of units drunk in a month (calculated by multiplying (i) and (ii) together (Units Drunk in a Month))

The predictor variables of most interest were the two versions of the reduced tool: emotional tone and problem alcohol use ratings. Demographic, Functional Discursive model stage (as an indicator of where the participant were in their drinking career) and alcohol using history data was also collected so that the effects of these could be partialled out through the linear, multiple regression.

11.3.4: Materials

The measures piloted in Chapters 9 and 10, with the resulting changes implemented, were included in the final online questionnaire. The addition of the addiction question (see Section 10.6.3) raised a concern that participants might expect questions to increase in sensitivity throughout the questionnaire and therefore its inclusion may alienate participants. It was therefore decided to ask this question last – with the option of opting out. Additionally, titles of some pages were altered to ease completion of the questionnaire.

The online tool therefore comprised the consent form, the comprehension test, reduced tool ratings for emotional tone, reduced tool ratings for problem alcohol use, demographical information sheet, drinking history, FD model, addicted question,

prize draw information and debriefing sheet. The final online questionnaire used in this study is presented in Appendix F.

11.3.5: Procedure

Participants were recruited through an online advert (see Figure 11.1 below) which gave very brief details of the study and the £50 prize draw. Interested parties were asked to follow a link for further details.

WIN £50!!

Participants are needed to complete an on-line questionnaire that takes about 20 minutes.

We need a wide variety of people (18+) to rate some stories and answer questions about themselves and their alcohol use. Two lucky participants will win £50 each.

Go to www.strathclydestudy.co.uk for further details and to take part.

Figure 11.1: Online Advert

The adverts were displayed on two internet resources. Firstly, it was displayed on the University of Strathclyde's internal portal engine "Pegasus" – which gives staff and students access to their student records, human resources details and finance information as well as providing announcements of activities occurring around the University. The advert was also displayed on an online classified-ads posting site called Gumtree for three months. This UK-wide website has listings for local community classified ads (for example items for sale, employment opportunities, flat shares). After obtaining permission from the website's operators, adverts were put in

the voluntary employment section of the website for each UK city for which there was a designated site (n=45).

The advertisement's link loaded the study information sheet which informed the participants that the research was to help develop a tool to improve treatment outcomes for people who have problems with alcohol. If the participants were happy to take part then they were asked to follow a link which took them to the questionnaire.

11.4: Results

11.4.1: Coding the Data Set

11.4.1.1: Open-ended questions.

Three open-ended questions were included to achieve descriptive responses and these had to be recoded into numerical form for further analyses. These questions were:

1. How many days a month do you drink, on average?
2. How many times have you got help for your drinking?
3. On a typical drinking day, how much do you drink (e.g. 4 cans of lager/bottle of whisky/ couple of glasses of wine)?

The majority of the responses were in numerical format; however, systematic types of non-numerical responses were encountered for all three questions and certain conventions were adopted (see Figure 11.2).

1. When a range was reported then the median point was used (for example “4 – 5” was recorded as 4.5).
2. If, for example, “4 or less” was reported then the median was recorded (i.e. 2).
3. Some responses contained words which inferred a quantity and therefore: “several” = 5.5; “few” = 3.5; “couple” = 2.
4. “Around”, e.g., 10 would be coded as 10.
5. Responses which contained words for which there was no conventional number associated (for example “some” or “too many”) were not coded.

Figure 11.2: Coding rules implemented.

In addition to these, certain question-specific situations arose:

11.4.1.1.1: How many days a month do you drink, on average?

For question one, a month was arbitrarily taken as 30 days therefore “31 days”, “everyday” or “4 weeks” were recoded as 30; however, if the response was “almost every day” then there was considered to be one free alcohol day a week so this response was recoded to 26 days.

11.4.1.1.2: How many times have you got help for your drinking?

This question’s response occasionally indicated that treatment was “ongoing” – this was coded as the respondent experiencing one episode of treatment.

11.4.1.1.3: On a typical drinking day, how much do you drink?

Question 3 was worded to elicit open-ended responses in the assumption that this would provide the most meaningful information. Unit allocation for drinks was calculated using a combination of the revised units estimates presented by the Scottish Government (Scottish Government, 2008c) and an alcohol unit calculator⁵². Unless a brand was specified, beer/lager was taken at 4% if draught, 4.5% if can/bottle; cider at 4.5%; wine at 12.5%, spirits at 40%; alcopops at 5%; and port taken at 18%. Contrary to the Government guidelines, premium lager was taken at 5% as 6% didn't seem to be representative. Beyond these rules, certain strategies were followed. As in Studies 2 and 4, the number of units reported as consumed were calculated using a combination of the revised estimates presented by the Scottish Government (Scottish Government, 2008c) and an alcohol unit calculator (www.drinkaware.co.uk/tipsandtools/drink-diary). For those drinks not listed the ABV was calculated.

11.4.1.2: Ethnicity.

The participants who completed the online questionnaire were predominantly white (93.1%). A one-way ANOVA was conducted on the remaining ethnic groups (Asian Indian (n= 20), Asian Pakistani (n=5), Asian Other (n=7), Chinese (n=17), Black (7), Mixed Ethnicity (n=19) and Other (n=13)) to examine any differences between the units drunk in a month and the different ethnic groups. If there was no difference

⁵² www.drinkaware.co.uk/tipsandtools/drink-diary

between these groups then combining them into a single, “non-Caucasian”, group would be meaningful. The results of a one-way ANOVA were significant ($F(6,81)=2.49$, $p<0.05$) but post-hoc analysis using Hochberg’s GT2, which corrected for unequal sample sizes (Field, 2005), indicated that there were no significant differences between any of the groups ($p>.05$). It was likely that the significant ANOVA result capitalised on the unbalanced group sizes and it was concluded that combining these variables into a single “other” group would be meaningful in terms of units drunk in a month.

As an additional check further one-way ANOVAs were carried out between the different ethnic groups and their scores on the two versions of the questionnaire. As noted above, a proposed method for making the decisions to code the vignettes was based on accessing social representations of “normal” or otherwise alcohol use (and likewise positive or negative events). It is possible that different ethnic groups would have internalised different norms for these, which may affect their responses. The ANOVAs found no significant differences between the groups for both analyses ($p=0.5$) supporting the decision to combine these ethnic groups.

11.4.1.3: Emotional Tone Rating Scale.

As in Studies 2 and 4, this scale was reverse-coded. A higher value therefore indicated that the vignette’s emotional tone was rated more positively.

11.4.2: Analysis

To limit the number of predictors entered into the regression decisions were taken concerning variable inclusion. It was felt that educational attainment was the most meaningful measure of social status because employment was contaminated by the large population of students and it was not possible to combine the two categories due to the large number of students who were also working. Bivariate analyses indicated that the addiction question was poorly correlated with the log-transformed units consumed in a month. Although the correlations were significant due to the large sample size, being addicted to alcohol only accounted for 1.7% of the variance ($p < 0.0005$). Additionally, reporting that one was addicted to alcohol was negatively associated with reporting not having a problem with alcohol use ($-0.52, p < 0.01$) – as would be expected - and this variable was therefore omitted from the analyses. Due to the large sample size, the more sensitive, 4-item rating scale was used for the vignettes rather than dichotomising the results. The complexity of the regression was limited by only using the total scores for both rating scales. Seventeen predictors were therefore entered in the preliminary analysis, due to the dummy coding of categorical variables (see Table 11.1 for the blocks of entered variables).

11.4.2.1: Normal distribution.

The three dependent variables (number of units drunk on a typical drinking day; number of drinking days in a month; and number of units drunk in a month) were

screened to ensure their distributions were normal⁵³. All three variables had non-normal distributions therefore they were logarithmically transformed to normalise their distributions. This was meaningful, resulting in the dependent variables being continuous measures of, for example, how many units were consumed in a month rather than reflecting the actual volume of units (c.f. Lee, Greely, & Oei, (1999)).

Table 11.1: Details of Blocks' Variables

Block	Variables
Client Characteristics	Gender, age, ethnicity, educational attainment (none, school education, further education, higher education, postgraduate education)
Treatment for Alcohol Misuse	Past treatment (incl. AA), present treatment (incl. AA)
Functional Discursive Model Questionnaire Items ⁵⁴	Perceive control over alcohol use; Perceive alcohol use as enjoyable; Perceive self as having a problem with alcohol use; Perceived reasons for drink; number of reasons given for drinking
Questionnaire Scores	Emotional Tone Score; Problem Alcohol Use Score

11.4.2.2: Diagnostics.

11.4.2.2.1: Outliers.

In a normally distributed population 99.9% of the scores are expected to lie between -3.29 and +3.29 standard deviations from the mean. Due to the large data set data lying between these points are likely to be part of the expected distribution of scores

⁵³ There is no assumption of a normal distribution within the predictor variables only that the errors are normally distributed (A Field, 2005, pg. 170).

⁵⁴ The allocated FD stage was initially entered as well but had substantial issues with multicollinearity within the model (especially with the problem alcohol use item ($r=.85$) with the questionnaire – due to how the questionnaire was scored and the disproportionate influence that it had on group allocation). This resulted in a very low tolerance score for this item (.26). Investigation indicated that it was a very poor predictor – the regression model containing only FD stage accounted for 18% of the variance compared to the model dimensions accounting for 29.6% of the variance. For this reason it was omitted from the presented analyses.

and therefore only standardised residuals over ± 3.29 were identified as being potential outliers (Tabachnick & Fidell, 1996).

To identify outliers, the multiple regression was run using the dependent variable “log transformed units consumed per month”. Cases with missing data were excluded from the analysis therefore 1094 cases were entered into the multiple regression. While this excluded 277 cases, if cases with missing data were not excluded then different numbers of cases would enter the regression equation at different points. This may produce an “impossible” intercorrelation matrix (Howell, 2002, p. 544) – i.e. the regression would be nonsensical (Field, 2005; Howell, 2002).

Four cases were identified whose standardised residuals were over ± 3.29 and their Mahalanobis’ values, Cook’s distances and leverage values were then examined to ascertain whether they should be excluded. No case had a Cook’s distance greater than 1 indicating that no single case had an extreme influence on the model (Field, 2005). However, one case had a Mahalanobis value greater than 41.3 indicating that it has a higher influence (Barnett and Lewis (1994) and it was the only case to have a leverage value (i.e. degree by which this case differs from that expected in the variable) greater than the expected level (three times greater than the average leverage (calculated from $(k + 1)/n$, where $n=1094$ and $k = 17$; Field, 2005)). This case was removed ($n= 1093$). Repeat exploratory regressions were run to identify all outliers from the multivariate analyses and assess these for removal. All those whose standardised residual value was greater than ± 3.29 and whose Mahalanobis distances and leverages were greater than expected were removed. This iterative

process ceased once a regression was run that yield no cases with high Mahalanobis or leverage values. Ultimately, 9 cases were removed using this technique therefore the sample comprised 1085 cases. The regressions were re-run with the dependent variables of log-transformed units and log-transformed drinking days but no more cases were identified as outliers.

As no further outliers were discovered when the log-transformed units and drinking days variables were entered into the regression it was decided that all future assumption testing would only be carried out for log-transformed units consumed in a month as this is a composite of the other two variables.

11.4.2.2.2: Multicollinearity

The correlation matrix of the predictor variables indicated that there were no inter-predictor correlations greater than -.57 (between hedonism and problem alcohol use ratings). Further examination found that the largest variance inflation factor (VIF – assessment of the strength of linear association between factor(s)) value was not greater than 10 and the average across the predictor variables' VIFs was 1.3. This was not substantially different from 1 (Field, 2005), indicating that the standard error is not increasing substantially due to correlations between predictors (Howell, 2002). Additionally, the tolerance level was above 0.5 for all cases indicating that no predictor variable accurately predicts another (Field, 2005; Howell, 2002). Having a low VIF and high tolerance indicates that the regression coefficients are fairly stable (Field, 2005; Howell, 2002) and that there is no multicollinearity.

11.4.2.2.3: Homoscedasticity.

Inspection of the residual plots indicated that the assumption of homoscedasticity had not been violated as the points were randomly and evenly dispersed around zero.

This indicated that the residuals' variances are equivalent.

11.4.2.2.4: Normality of residuals.

A histogram plotting the regression's standardised residuals showed a normal, bell shaped curve. This indicated that there was a normal distribution of residuals and illustrated that the error terms are normally distributed. Equally, the normal probability plot line was straight which indicated that there were no deviations for normality.

11.4.2.2.5: Independent errors.

Finally, the Durbin-Watson statistic was inspected and found to be very close to 2 (D-W=1.99) suggesting that the residual terms are independent (Field, 2005) .

11.4.3: Analysis Plan.

The assumptions of a multiple regression being met, a hierarchical multiple regression was used to examine the predictive powers of the two versions of the reduced tool to predict alcohol consumption. Predictor variables were entered into

the regressions in four blocks, with each block using the ENTER method of entry (details of the variables comprising each block are presented in Table 11.1). The problem alcohol use and emotional tone rating scores were entered in the final block enabling the predictive capability of the reduced tool to be assessed with the covariates partialled out. A conservative alpha level of 0.01 was adopted to avoid capitalising on the large sample size.

11.4.3.1: Dependent variables.

There were three dependent variables associated with this study and although it was believed that the units drunk in a month would be the most sensitive measure of alcohol consumption there was no evidence to confirm this. To address this, three separate regressions were carried out to ascertain which dependent variable resulted in the best model.

As noted in Section 11.4.2.2.1, cases missing data were excluded from the multiple regressions and therefore the total number of cases included in the regression depended on which dependent variable was used. The three dependent variables, with their associated sample size, are: the log-transformed units drunk in a month score (n=1085); log-transformed number of units consumed on a typical drinking occasion (n=1087) and the log-transformed number of drinking occasions in a month

(n=1221). The large sample size enabled the exclusion of cases with missing observations while retaining the power to identify effect sizes as small as .02⁵⁵.

11.5: Results

11.5.1: Analysis by Units Consumed Each Month

The results of the multiple regressions for each dependent variable are presented in Table 11.2. When the dependent variable was the log-transformed units drunk in a month then the total model accounted for a higher percentage of the variance than when log-transformed units or log-transformed drinking days in a month were used as dependent variables (31% versus 23% versus 25% respectively). This implies that monthly unit consumption was a better indicator of drinking behaviour than either of the other two measurements as it maximised the model's predictive power. This therefore suggested that multiplying the number of drinking occasions by the number of reported units drunk was both meaningful and advisable. *Subsequently, this analysis will concentrate on the prediction of monthly unit consumption.*

The covariates entered at blocks one and two reflected that males (M=55.6; SD=72.48) drank more heavily than females (M=95.84; SD=158.63); whites

⁵⁵ The equation ($R^2 = k/(N-1)$, where k = the number of predictors and N = the sample size) for calculating the effect size detected for random data in a multiple regression was supplied by Field (2005)

Table 11.2: Multiple Regression Analysis Predicting Units Drunk in a Month.

Predictor	UNITS CONSUMED EACH MONTH				UNITS CONSUMED ON A TYPICAL DRINKING OCCASION				NUMBER OF DRINKING OCCASIONS IN A MONTH										
	R	R ²	Δ R ²	B	Std. Error	Beta	R	R ²	Δ R ²	B	Std. Error	Beta	R	R ²	Δ R ²	B	Std. Error	Beta	
Block 1 : Client Characteristics	.28	0.08	0.08 **				.35	.12	.12**			.22	.05	.05**					
Block 2: Treatment past or present	.29	0.09	0.01				.35	.13	.0			.23	.05	.01					
Block 3 : Functional Discursive Model	.53	0.28	0.19**				.46	.21	.08**			.48	.23	.18**					
Questionnaire Items																			
Controllability				0.33	0.04	0.27**				.15	.02	-.24**				.15	.02	.21**	
Hedonism				-0.31	0.03	-0.26**				-.11	.02	-.17**				-.17	.02	-.25**	
Perceived problem				-0.09	0.03	-0.10*				.00	.02	.00				-.08	.02	-.15**	
Time				-0.21	0.05	-0.15**				-.06	.03	-.08				-.12	.03	-.15**	
Generalisability				0.05	0.04	0.03				.01	.02	.02				.04	.02	.05	
Step 4: Questionnaire Scores	.56	0.31	0.03**				.48	.23	.02**			.5	.25	.03**					
Emotional Tone Score				0.01	0.01	0.09*				.01	.0	.06**				.01	.0	.08*	
Problem Alcohol Use Score				0.02	0	0.13**				.01	.0	.11*				.01	.0	.12**	

*** $p < 0.0005$; * $p < 0.005$;

(M=69.46;SD= 109.26) drank more heavily than the “other” ethnic group (M=52.61; SD=105.34); and married people (M=53.75, SD=79.19) drank less heavily than singles (M=79.61, SD= 128.47). Treatment participation – past or present – did not predict for drinking.

With exception of the generalisability dimension, all aspects of the FD questionnaire predicted – accounting for 19% of unique variance. Increased units drunk over the course of a month was predicted by reporting less control over their drinking, having a drink problem, enjoying it more and attributing drinking to reasons in the past.

The basic model up until this point accounts for 28% of the total variance. When the two versions of the reduced O’Connor tool were added into the model, they account for 3% of additional (unique) variance. Entering problem alcohol use and emotional tones separately into the regression accounted for slightly less of the variance than using both – problem alcohol use alone accounted for 2.5% of the variance, emotional tone for 2%. This indicated that drinking increased as perceived problems decreased and positivity increased– i.e. those who drank more perceived fewer problems and viewed the scenarios more positively.

11.6: Discussion

The analyses indicated that, once the covariates were controlled for, a self-reported higher level of alcohol consumption over the course of a month was predicted by both a

decrease in the perception of problem alcohol use and the vignettes being perceived more positively. These findings are in line with the stated hypotheses and contrary to the SC theorised no association.

These findings reflect the outcome expectancies literature – i.e. that positive outcome expectancies (conceptualised here as positive ratings for the stories and viewing the depicted alcohol use as non-problematic) are associated with increased drinking (Dijkstra, et al., 2001; B. T. Jones, et al., 2001). Once the covariates were controlled for only an additional 3% of the variance was accounted for using these measures. Although this is well below the 18% Dijkstra and colleagues (2001) accounted for, it is in line with Jones and colleagues' (2001) review which found that – when measures of drinking attitudes or previous drinking behaviour were included – then variance accounted for by expectancies were low (1-3% of the variance). When the two versions of the ratings scales (emotional tone and problem alcohol use) were entered separately as predictors into the regression, the problematic alcohol use ratings is only a slightly better predictor than those for emotional tone. This suggests that people's reported drinking is within self-imposed (and self-determined) guidelines which may, in part, be due to their assessment of the extent to which the depiction of the alcohol use is problematic and if it is generally negative or positive.

The ambiguous nature of the vignettes addressed some of the criticisms raised about explicit expectancy questionnaires (see Gadon et al., 2004), moving away from self-report scales involving rating how positive/negative certain outcomes are if they

happened to the respondent. It is naïve to assume that social desirability effects are not at play by asking for ratings of stories in the third person but it is hoped that they might have a decrease influence – especially in light of the online methodology used. Whether these memories are implicit or explicit in their influence – i.e. whether it is conscious or unconscious – is unclear; most likely it is a combination of both. Certainly, there would be an implicit aspect as it is unlikely that participants have full awareness regarding all factors which shape their ratings (Reich, Below, & Goldman, 2010).

The findings also illustrated that basing calculations on an index of both the self-reported drinking frequency and quantity resulted in a model that accounted for more variance than either indices separately. This has implications for future research as it would appear that neither self-reported frequency or consumption is the best indicator of drinking behaviour – although a review suggested that the relationship between expectancies and drinking is stronger with the quantity of alcohol consumed rather than the frequency (B. T. Jones, et al., 2001). The reasons for this are self-apparent: neither a measure of frequency nor consumption gives an accurate picture of drinking behaviour. Using a combination index is limited – as it presumes, for instance, that individuals drinking a little but often resemble those who drink a lot infrequently – but the analyses carried out found that those individuals report consuming similar amounts across a month are more similar, as measured by the predictor variables used, than those who report consuming a similar amount in one sitting or on a similar number of occasions.

11.6.1: Social Criterion Theory

Social Criterion theory proposed that responses are due to the motivations of the researcher and the respondent. From this basis, the problem alcohol use scale's success in distinguishing between clients who subsequently left treatment and those who were still attending (c.f. Chapter 7) was interpreted as due to differences in motivation. It was posited that, if this was the case, then there would be no association between how the reduced tool was rated and alcohol consumption as there was no significant difference between self-reported alcohol consumption and discharge status (c.f. Section 7.3.2). The results of the present study indicate that this hypothesis must be rejected.

While the results achieved in the current study can be interpreted from a SC framework – those individuals who saw fewer problems in alcohol related vignettes were motivated to report higher levels of alcohol consumption – this interpretation does not elucidate the findings of Chapter 7. However, from a Social Criterion point of view this can be interpreted as different contexts evoking different functional responses and therefore motivation. Drinkers responding to the task in a non-clinical environment may be motivated to defend their alcohol consumption whereas their motivations in a clinical environment may be to present themselves as “real” problem alcohol users. However, these points of view are difficult to reconcile as it is unclear why the tool would be responded to in these two different ways independent of alcohol consumption.

11.6.2: Functional Discursive Model

The results of the questionnaire developed from the FD model were unexpected and deserve to be explored fully. The FD questionnaire was developed to allow the positioning of people within Davies' model according to self-report on a questionnaire. It was envisaged that this would enable the variance associated with FD stage to be partialled out. Although this moved away from the functionality of minimally-structured discourse essential to Davies' model, it was proposed that self-report in a questionnaire was functional and therefore might be used as a "short-hand" for positioning within the model.

This developed questionnaire found that the FD stage (allocated on the basis of the questionnaire's answers) was a poor predictor of drinking. On the other hand, the individual items of the FD questionnaire were significant predictors – accounting for 19% of the variance – after the variance associated with the demographics and drinking-treatment history were partialled out. Increased drinking was associated with perceiving oneself as having less control, having a problem with alcohol use and drinking for reasons in the past. While these are in line with positioning within the model – those attributions reflective of experiencing problematic drinking would be expected to be associated with consuming more alcohol - the converse of this was that those who perceived drinking as more enjoyable also drank more. It is likely that this observation undermined the stage allocation's predictive power – those who enjoyed drinking (and therefore would generally be positioned in stages 1 and 2) were drinking similarly to

those who had problems with drinking (and therefore would generally have been positioned in stages 3 and 4). This is in line with the assumptions behind the FD discourse model where there would be no prediction of consumption in line with elicited discourse (Davies, 1997).

It is unclear why generalisability did not predict for monthly alcohol consumption although it is likely that it reflects the coding for this feature – namely that the number of attributions given for drinking were coded from a list written by the respondent. It is possible that the number of reasons given differed as a function of motivation to list many reasons rather than reflective of how many reasons would spontaneously arise in conversation.

11.6.3: Limitations

The use of an on-line methodology limits the results to those individuals who regularly use a computer and the internet. The issues regarding on-line methodologies have been covered previously (c.f. Chapter 9) and will not be repeated but – possibly due to the demographics of individuals who regularly use the internet sites targeted - the mean age was under 30, although a wide range of ages took part. It was hoped that by recruiting both from a university setting and a public forum the sample would not comprise students only. While this aim was achieved – with only 50% of the sample being full-time students – it resulted in a lower than ideal mean age.

Additionally, the use of a self-report measure for alcohol consumption was not ideal. Although self-report is recognised as procuring valid estimates of consumption (Del Boca & Noll, 2000), self-reported alcohol consumption levels has been criticised as reflecting under-reported consumption (Stockwell, et al., 2004). While there is a correlation between self-reported alcohol consumption and physiological or collateral measures of consumption which suggests that self-report measures are valid (Midanik, 1982) this is not perfect. However, these issues are of less importance in research such as this which would not purport the alcohol consumption levels to be an objective truth but instead a motivated response.

11.6.4: Implications

This study adds to the literature suggesting that expectancies held about drinking – acquired both through our own experience with alcohol and society’s relationship with alcohol – are related to the quantity of alcohol drunk. Understanding positive and negative evaluations of potential outcomes from drinking may be important in the development of interventions, both within clinical and non-clinical populations (C. M. Lee, Patrick, et al., 2010; N. K. Lee, et al., 1999) – although attempts to create interventions challenging expectancies have had limited success (see B. T. Jones, et al., 2001 for a review). At the same time, caution must be utilised before embarking on an educational strategy to increase awareness of the negative consequences of alcohol use. Muraven, Collins, Morsheimer, Shiffman, & Paty (2005) found that, among American social drinkers, violation of self-imposed restrictions in alcohol use led to feelings of

guilt and distress which in turn were associated with increased consumption and intoxication, as well as further violations of the self-imposed limits.

Additionally, these results indicate that measures of alcohol consumption which obtain only frequency or volume questions merely give a partial answer. It found that using an index of both generated the best model.

Finally, this research suggests that the reduced tool cannot solely be understood in Social Criterion terms. While motivation may distinguish between those clients still attending counselling after three months and those who achieved a planned discharge, this is not the only group between which the tool can distinguish. It appears that ratings on the reduced tool initially predict alcohol consumption but, at some point, alter to predict motivation to complete treatment.

Chapter 12 : General Discussion

Although non-problematic alcohol use has economic and personal benefits, the personal and economic costs of alcohol misuse are high. Effective treatment is a cost-effective method to address severely hazardous alcohol misuse (e.g. UKATT Research Team, 2005a) but dropout (unplanned discharge) from alcohol misuse treatment is a major issue with the best estimates suggesting that 50% of entries to treatment in Scotland result in an unplanned discharge (Newham, et al., 2010). This results in individuals whose level of drinking already has substantial economic costs to society incurring the additional costs of failed treatment.

O'Connor's original tool (Harper, 2000; O'Connor, et al., 2003) predicted discharge status from an intensive, hospital based, outpatient alcohol misuse programme. The tool was based on a Signal Detection methodology and was too long and complicated for use outwith an academic setting. The original tool has been developed into a usable, robust tool that can discriminate between those clients who completed counselling and those who were still attending after three months. It is suggested that O'Connor's unplanned discharge groups are similar to the current studies' still attending groups (see Section 6.8.2 for a discussion of this) and therefore the predictive capability of the original tool has been retained.

12.1: Summary of the Thesis

The main features of the thesis are summarised in Table 12.1 below. The identification of emotional tone as a confounding variable in Chapter 2 enabled O'Connor's original tool to be systematically reduced while retaining the underlying structure and the results of Chapter 7 strongly suggests that the novel reduction methodology was a success. Although ultimately emotional tone was not a good predictor of discharge status (Chapter 6), the association between emotional tone and problem alcohol use ratings allowed the predictive capability of the tool to be retained. Moreover, recognising that that the Signal Detection (SD; Green & Swets, 1966) calculations were ideologically rather than empirically driven enabled the tool's analyses to move away from the SD model and develop a purer – and more intuitive – measure. The results from the simplified calculations and the dichotomous scale indicated that the identification of the noise and low signal vignettes as showing problem alcohol use discriminated between the outcome groups – with those who made a planned discharge from counselling identifying more vignettes as showing problem alcohol use (i.e. have a higher FALSE ALARM rate) than those who were still attending. Ultimately, this resulted in the final tool comprising eight vignettes that could discriminate between those who had a planned discharge and those still attending after three months.

Table 12.1: Summary of Thesis Findings

Chapter 2 <i>Study 1</i>	Identified emotional tone as a confounding variable undermining the structure of O'Connor's Tool.
Chapter 3	Reduced tool from 60 vignettes to 12, with two rating scales (the emotional tone or problem alcohol scale).
Chapter 4 <i>Study 2</i>	Examined the differences between clients who dropped out of treatment and those who completed counselling for alcohol misuse but neither version of the reduced tool was found to distinguish between the discharge groups. Correlations differed between those who had a planned discharge and an unplanned discharge suggesting the groups were distinct.
Chapter 5 <i>Study 3</i>	Examined the association between position in Davies' Functional Discursive Model (Davies, 1997) and discharge type but no association was found. Additionally, positioning within Davies' model had disappointing reliability.
Chapter 6 <i>Study 4</i>	Clients completed either the emotional tone or problem alcohol scale at entry to treatment. When the problem alcohol use scale was recoded from a 4-item scale to a dichotomous scale differences emerged between still-attending clients and planned discharges. It was suggested that the current thesis' still-attending clients were synonymous with O'Connor's unplanned discharge group. No effect was shown for emotional tone scale.
Chapter 6	Both Studies 2 and 4's data were combined to form one data set and their problem alcohol use ratings dichotomously recoded. The ratings discriminated between the still attending and planned discharge group and the still attending group was shown to be equivalent to O'Connor's tool in her original study. The best predictor was using eight vignettes – the low and noise signal strengths.
Chapter 11 <i>Study 5</i>	The predictive capability of the on-line version of the reduced tool was examined for an association with alcohol consumption. The tool was found to predict for alcohol consumption. Additionally, individual dimensions of the Functional Discursive model were found to be predictors of alcohol consumption.

12.2: Functionality of Language

A theme running through this thesis is that language is functional rather than veridical which has enabled the predictive powers of language to be examined independently of an assumed semantic “truth”. An unsuccessful attempt was made to predict dropout from counselling according to position in Davies’ (1997) Functional Discursive (FD) model – although in the final study the individual dimensions accounted for 19% of the variance in monthly alcohol consumption. Additionally, interpreted with the Social Criterion approach (Davies & Best, 1996) the reduced tool’s ratings are due to the respondent’s motivations: those who subsequently receive a planned discharge are motivated to have a laxer response bias. However, the results of the final study expanded this as self-reported alcohol consumption was related to responses on the problem alcohol use (and emotional tone) ratings (see Chapter 11). Specifically, those who reported drinking the least had a laxer response bias. This suggests that the ratings are context dependent and the adopted response bias is determined by the intended outcome of the responses.

12.4: Generalisability

Concerns were raised about the wisdom of implementing exclusion criteria within alcohol research when doing so results in the elimination of individuals who make up a substantial proportion of those who receive alcohol misuse treatment (e.g. Humphreys & Weisner, 2000). From this basis, the results highlight the impact that inclusion criteria, type of treatment sampled, measurement tool and how dropouts are defined has on

research and underline the problems within dropout research. Although O'Connor's group was a hospital-based group – and the present studies' groups were community-based – it would appear that the community group were less high-functioning. Many of O'Connor's group were diagnosed with neurological and physical deficits associated with alcohol misuse yet very few (5%) failed the comprehension test (Harper, 2000). This meant that only 5% had reading or comprehension issues (none of O'Connor's participants received the vignettes verbally) which suggest that the group was very high-functioning regardless of these deficits. Additionally, her client group successfully rated between 40 and 60 vignettes while the clients recruited in the present studies had difficulty completing 12 or 24 vignettes. This implies that cognitive screening occurred prior to participation in the hospital treatment programme she recruited from – although this was not alluded to in her thesis. There is, unfortunately, not enough detail about her client group to make firm conclusions but it is apparent that it was very different to the present group (and, I would suggest, less representative of the alcohol abusing population as a whole – RN).

It appears likely that the doctor running the clinic from which O'Connor recruited may have selected clients based on undefined criteria. The dropouts in the current studies attended very infrequently and it is likely that these clients would not have been offered treatment in O'Connor's study as they may not have kept the assessment appointment(s) – or had proven themselves to be unreliable. The counselling agencies from which the current studies recruited had a very lax entry requirement and did not breathalyse prior to entry. This supports the principle that generalisability within research is vital with

excessive recruitment protocols resulting not just in the exclusion of dropouts pre-treatment but also in those who do dropout not being representative of dropouts in general.

12.5: Methodological Issues

A main methodological issue which arose from this research was the use of counselling agencies for recruitment and gave invaluable insight into the agencies themselves. Any study relying on external sources for recruitment will meet unforeseen issues and one of the challenges to an applied social researcher is addressing these. Due to the failure to implement a regime by which all clients were given the opportunity to complete the tool in the current research project it is likely that there was a bias in recruitment. Although the counsellors were asked to include all clients in the studies it was apparent from the number of participants – and the length of time taken to data collect – that this was not the case. The reasons are unclear but some counsellors asked many clients and other counsellors asked none and it is likely that the reasons for this differed between the two data collection points. At the data collection point for Studies 2 and 3 it is likely that counsellors asked clients who were viewed as being more receptive to taking part – counsellors would not ask those clients in crisis if they would take part in a study. This would explain the high number of still attending clients as these were clients who the counsellors knew would not leave the agency. Conversely, in Study 4 the high rate of unplanned discharges may reflect that the counsellors asked those that they had less of a rapport with – as there would have been more “dead-time” in the entry interview.

The reluctance of agency workers to follow protocol which – to the researcher – appears straightforward was documented by Devine, Brody and Wright (1997) who describe counselling staff sabotaging a randomisation process put in place for a study examining outcome from alcohol and drug treatment. They found that if favoured clients (i.e. those the counsellors felt would have a good outcome) were randomised “in” to the study condition then this was accepted whereas if a non-favoured client (i.e. one the counsellors felt would have a poor outcome) was randomised in then the randomisation process was ignored. Importantly, this does not occur due to malice but, I propose, due to a lack of awareness about research within agencies. The current economic climate resulted in Chief Executives agreeing to their agencies’ involvement in order to enhance their chances of gaining funding; counsellors, however, were not as enthusiastic. It may be that the importance of taking part in research was not communicated to the counsellors. Specifically the counsellors were not aware that participating in research would increase the likelihood of them retaining their funding and therefore their jobs. Additionally, it is likely that the counsellors are not aware of the importance of research on their daily practice.

It is therefore necessary to interpret the findings with certain caveats. It is likely that the dropout and still-attending rates are functions of who was asked to take part rather than reflective of the client population as a whole; however, altering the methodology to use “real life” clients has resulted in valuable data. Additionally, there was real enthusiasm for taking part in the research. The methodology used in Study 4 was a massive

undertaking for the agencies involved as it increased the length of each entry interview- which the CEOs of the agencies agreed to and, initially, the counsellors expressed their willingness. Although in practice this was problematic as some counsellors viewed the entry interview to be the start of the counselling process and therefore there was a fear that asking clients to complete the tool would negatively influence the client's future decision to attend the agency, there was an enthusiasm which might be developed as agencies become more involved in research.

Research with stringent inclusion/exclusion criteria is so far removed from the "coal-face" that the results are questionable as generalisation is only possible to other hand-selected clients and, in the most extreme cases, it may hold back research. For example, a possible interpretation of Project Match's results is that for the included participants it did not matter which treatment they were assigned to because they were always going to have a positive outcome. From this basis, the Project Match study may have prevented the effect of "matching" being observed because the inclusion/exclusion criteria removed the individual differences across which matching would have an effect. To give a non-alcohol example: if a woman needed to learn to swim to save their child then she would be very motivated and accept any help, have a positive outcome and make it across the river. On the other hand, if her motivation was not so strong then it may be that the teacher – and the method – would make the difference. Part of that lack of motivation may manifest in a low commitment to treatment (i.e. missing initial appointments) and she would therefore be excluded from research.

Although recruiting through the counsellors resulted in bias as they selected who was included – and this must be acknowledged – the research acts as a first step. It may be the case that those who were not asked to complete the task differed from those who did complete it; however, by conducting research within the agencies complete compliance with recruitment strategies will increase as counsellors become more used to conducting research and also as they see the relevance (and benefit) of research to their daily practice.

12.6: Policy Makers

The developed tool has real implications for maximising the cost-effectiveness of alcohol treatment. Although the counselling dropouts were not identified by the tool, those who were still attending counselling after three months were identified and it is proposed that this group is equivalent to dropouts from treatment services with more stringent inclusion/exclusion criteria.

It is proposed that these individuals' continued attendance reduces the cost-effectiveness of counselling. Conceivably, these clients are either still attending because (1) they are rapidly fluctuating between dropping out and re-attending or (2) they need long-term support for their alcohol problems. While they may incur fewer economic costs due to a positive effect of attendance (although further research is needed to establish this) the number of counselling places is finite and therefore they are preventing another problem drinker from accessing counselling. Identifying those clients who would be still

attending after three months would enable them to be offered alternative – more cost-effective - treatment services. Drop-in support based in a “wet” centre based may be appropriate for those individuals who are disorganised or still drinking excessively, whereas those clients who required long-term support might move to a more specialised service (for example group counselling).

Additionally, policy makers have a responsibility to promote evidence-based practice within agencies both by encouraging participation in research activities and educating the agency workers regarding the benefits of these. The temptation is to “blame” agencies for poor retention; however, this encourages the view that clients are a vulnerable commodity that must be retained. Counsellors were very concerned with not upsetting the clients by asking them to complete an assessment which suggests that a view prevails that clients could be “put off” recovery because they were asked to complete an assessment. This may indicate a deeper problem within counselling agencies. Although a professional client-counsellor relationship may be an important aspect of the discourse of those clients who completed treatment, part of this relationship must be that the client is responsible for their attendance. It is unclear how a professional relationship can develop if the counsellor is trying to retain the client. While this approach may retain individuals who were in the still attending group after 3 months, the question remains whether these individuals should be retained within conventional services as their cycling consumes resources rather than affecting a positive change in the client’s life.

12.7: Future Directions

From these results the effective tool is eight vignettes long and can be completed in less than 10 minutes and scored very quickly. Additionally, it is likely that further research would enable this to be shortened further – either by reducing the length of the vignettes or reducing the number of vignettes used. At present, due to the sample size, it is not possible to reduce the number of vignettes used any further as a factor or cluster analysis would need in excess of 300 participants (as discussed in Section 3.2.1; Tabachnick & Fidell, 1996). From Study 4 it was observed that it was possible for agency workers to distribute and for clients to complete the 12 vignettes. As the tool now comprises eight vignettes it is likely that this would now be less time consuming to distribute and complete. In the future, with the routine use of the tool, a database could be generated to allow further analyses to be carried out to reduce the tool further.

However, further work would be needed before the tool could be routinely used within agencies as there are questions left unanswered. Firstly, the cut-off points which discriminate between the groups need to be established. Moreover, the rating scale needs to be examined more closely as, although the scoring system is now binary, it is unclear whether the ratings would be equivalent using a two-item scale. It is possible that, due to the ambiguous nature of the vignettes only the most certain vignettes would be rated as “yes, problem alcohol use” with all others being rated as “not problem alcohol use” – this would mean that only the vignettes previously rated as “very sure this is problem

alcohol use” would be rated as problem alcohol use and therefore it is possible that the four item scale would have to be retained.

In addition, a qualitative, exploratory study examining the barriers which prevent counsellors becoming involved and enthusiastic about research is vital. While agency bosses understand the importance of taking part in research from a funding perspective, this enthusiasm is not shared by the counsellors. Although it is possible that the counsellors involved in this study were particularly unenthusiastic it is likely that these counsellors are not unique and there is a very real problem that counsellors – who are at the “coal-face” of the agencies – do not appreciate the point of research, viewing it suspiciously. Maximising their engagement is therefore vital for any real-world research.

The findings indicated that – once covariates were controlled for – ratings for emotional tone and problem alcohol use predicted monthly alcohol consumption. Overall, the conclusions suggest that as self-reported alcohol consumption in a month increases then the reduced tool vignettes are rated as less problematic and more positive but it is unclear whether these ratings reflect “true” cognitions (and therefore objective reasons for alcohol consumption) or that the ratings are motivated by a desire to justify the self-reported alcohol consumption. Developing an education programme educating about the consequence of alcohol use would enable this to be examined. If the responses were reasons for alcohol consumption (as alcohol outcome expectancy research would propose) then this suggests that altering individuals’ expectancies of the consequences of alcohol use would decrease alcohol consumption which may have implications for

education. Conversely, if the ratings are motivated by justifying alcohol consumption level (as Social Criterion theory would endorse) then education would be expected to fail as it was the alcohol consumption which determined the vignettes' ratings rather than vice versa.

12.8: Conclusions

While counsellors do not appreciate the relevance of research then it will be viewed as additional work rather than an important aspect of their jobs that benefits them and their clients. As discussed in the introduction, an increased awareness of the importance of dropout within agencies is vital to reduce apathy within agencies while a move towards increased accountability is necessary to monitor performance within agencies. This, it would be hoped, would increase the counsellors' appreciation of outcome and the need to work towards improving this. It would be hoped that this would motivate counsellors' involvement with research.

This thesis has simplified a pre-existing tool to maintain the predictive powers associated with the original version of the tool. It has resulted in a reduced tool that can be completed within an alcohol counselling setting and distinguishes between those clients who are going to have a planned discharge within three months and those who would still be attending at the three month follow-up. Additionally, these results are valid across two discrete data collection episodes suggesting the tool is robust. While

this tool requires further development before it can be routinely used, it is concluded that it is possible to conduct research in a real-life setting with valid results.

References

- Ader, H. J., Mellenbergh, D. J., & Hand, D. J. (2008). *Advising on research methods: A consultant's companion*. Rosmalen, The Netherlands: Nextprint BV.
- Agarwal, D. P. (2002). Cardioprotective effects of light-moderate consumption of alcohol: A review of putative mechanisms. *Alcohol and Alcoholism*, 37(5), 409-415. doi: 10.1093/alcalc/37.5.409
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders : DSM-IV*. (4th ed. ed.). Washington DC: American Psychiatric Association.
- Andersson, G., Kaldo-Sandström, V., Ström, L., & Strömgren, T. (2003). Internet administration of the Hospital Anxiety and Depression Scale in a sample of tinnitus patients. *Journal of Psychosomatic Research*, 55(3), 259-262.
- Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. . *Psychological Bulletin* 82, 738-783.
- Barnett, V., & Lewis, T. (1994). *Outliers in statistical data*. (3rd Ed. ed.). Chichester: John Wiley & Sons.
- Berman, A. H., Kallmen, H., Barredal, E., & Lindqvist, P. (2008). Hopeless patients? A study of illicit opiate users who drop out from in-patient detoxification. *Journal of Substance Use*, 13(2), 121-130. doi: 10.1080/14659890701682287
- Booth, P. G., & Bennett, H. E. (2004). Factors associated with attendance for first appointments at an alcohol clinic and the effects of telephone prompting. *Journal of Substance Use*, 9(6), 269-279. doi: doi:10.1080/14659890410001711715
- Bottlender, M., & Soyka, M. (2005). Outpatient alcoholism treatment: Predictors of outcome after 3 years. *Drug and Alcohol Dependence*, 80(1), 83-89.
- British Psychological Society. (2009). *Code of ethics and conduct* Leicester: The British Psychological Society.
- Britt, G. C., Knisely, J. S., Dawson, K. S., & Schnoll, S. H. (1995). Attitude toward recovery and completion of a substance abuse treatment program. *Journal of Substance Abuse Treatment*, 12(5), 349-353. doi: 10.1016/0740-5472(95)02004-6
- Brodsky, A., & Peele, S. (1999). Psychosocial benefits of moderate alcohol consumption: Alcohol's role in a broader conception of health and well-being. In S. Peele & M. Grant (Eds.), *Alcohol and Pleasure: A health perspective*. Philadelphia: Brunner/Mazel.
- Cabinet Office. (2003a). *Alcohol misuse: How much does it cost?* London: Strategy Unit Retrieved from <http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/econ.pdf>
- Cabinet Office. (2003b). *Strategy unit alcohol harm reduction project: Interim analytical report*. Strategy Unit Retrieved from http://webarchive.nationalarchives.gov.uk/+/http://www.number10.gov.uk/files/pdf/SU%20interim_report2.pdf.
- Cabinet Office. (2004). *Mental health and social exclusion: Social exclusion unit report*. . London: Cabinet Office Retrieved from

- http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/mh.pdf.
- Carlbring, P., Brunt, S., Bohman, S., Austin, D., Richards, J., Öst, L.-G., et al. (2007). Internet vs. paper and pencil administration of questionnaires commonly used in panic/agoraphobia research. *Computers in Human Behavior*, 23(3), 1421-1434.
- Cole, M. S., Bedeian, A. G., & Feild, H. S. (2006). The measurement equivalence of web-based and paper-and-pencil measures of transformational leadership: A multinational test. *Organizational Research Methods*, 9(3), 339-368. doi: 10.1177/1094428106287434
- Coles, M. E., & Heimberg, R. G. (2005). Recognition bias for critical faces in social phobia: a replication and extension. *Behaviour Research and Therapy*, 43(1), 109-120. doi: 10.1016/j.brat.2003.12.001
- Connors, G. J., Carroll, K. M., DiClemente, C. C., Longabaugh, R., & Donovan, D. M. (1997). The therapeutic alliance and its relationship to alcoholism treatment participation and outcome. *Journal of Consulting and Clinical Psychology*, 65(4), 588-598.
- Copello, A., Godfrey, C., Heather, N., Hodgson, R., Orford, J., Raistrick, D., et al. (2001). United Kingdom Alcohol Treatment Trial (UKATT): Hypotheses, design and methods. *Alcohol and Alcoholism*, 36(1), 11-21.
- Coulson, C., Ng, F., Geertsema, M., Dodd, S., & Berk, M. (2009). Client-reported reasons for non-engagement in drug and alcohol treatment. *Drug and Alcohol Review*, 28(4), 372-378. doi: 10.1111/j.1465-3362.2009.00054.x
- Cournoyer, L.-G., Brochu, S., Landry, M., & Bergeron, J. (2007). Therapeutic alliance, patient behaviour and dropout in a drug rehabilitation programme: The moderating effect of clinical subpopulations. *Addiction*, 102(12), 1960-1970. doi: 10.1111/j.1360-0443.2007.02027.x
- Crane, M., & Warnes, A. M. (2003). Wet day centres in the United Kingdom: A research report and manual. Sheffield: Sheffield Institute for Studies on Ageing
- Cutler, R. B., & Fishbain, D. A. (2005). Are alcoholism treatments effective? The project MATCH data. *Bmc Public Health*, 5. doi: 10.1186/1471-2458-5-75
- Davidson, R., & Raistrick, D. (1986). The validity of the Short Alcohol Dependence Data (SADD) Questionnaire: A short self-report questionnaire for the assessment of alcohol dependence. *British Journal of Addiction*, 81(2), 217-222.
- Davies, J. B. (1997). *Drugspeak: The analysis of drug discourse*. Reading, UK: Harwood Academic Publishers.
- Davies, J. B., & Baker, R. (1987). The Impact of Self-Presentation and Interviewer Bias Effects on Self-Reported Heroin Use. *British Journal of Addiction*, 82(8), 907-912.
- Davies, J. B., & Best, D. W. (1996). Demand characteristics and research into drug use. [Article]. *Psychology & Health*, 11(2), 291-299.
- Del Boca, F. K., & Noll, J. A. (2000). Truth or consequences: the validity of self-report data in health services research on addictions. *Addiction*, 95, S347-S360.
- Department of Health. (2002). *National alcohol harm reduction strategy: Consultation document*. London: Department of Health Retrieved from http://www3.westminster.gov.uk/newcsu/Policy_and_Scrutiny_Committees/Old

- O and S Committees and Sub-Committees/Health and Community OandS- includes Social Services and Housing/2003/03-04-09/C%20-%20Item%205%20-%20Alcohol%20Report%20-%20Appendix%202.pdf.
- Department of Health. (2003). *National waiting times information framework, 2003*. Edinburgh: ISD Scotland Retrieved from <http://www.drugmisuse.isdscotland.org/wtpilot/framework.htm>.
- Department of Health. (2007). *Safe. Sensible. Social. The next steps in the National Alcohol Strategy*. London: Home Office Retrieved from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_075218
- Department of Health. (2009). *Referrals and Attendances - Commissioner based summary 09/10 - Quarter 2*. London: Department of Health.
- Derisley, J., & Reynolds, S. (2000). The transtheoretical stages of change as a predictor of premature termination, attendance and alliance in psychotherapy. *British Journal of Clinical Psychology, 39*, 371-382.
- Devine, J. A., Brody, C. J., & Wright, J. D. (1997). Evaluating an alcohol and drug treatment program for the homeless: An econometric approach. *Evaluation and Program Planning, 20*(2), 205-215.
- Dijkstra, A., Sweeney, L., & Gebhardt, W. (2001). Social cognitive determinants of drinking in young adults: Beyond the alcohol expectancies paradigm. *Addictive Behaviors, 26*(5), 689-706.
- Doran, C. M., Shakeshaft, A. P., Hall, W., & Petrie, D. (2009). Alcohol industry and government revenue derived from underage drinking by Australian adolescents 2005. *Addictive Behaviors, 34*(1), 75-81. doi: 10.1016/j.addbeh.2008.09.006
- Drummond, D. C. (1999). Treatment research in the wake of Project MATCH. *Addiction, 94*(1), 39-42.
- Dwight, S. A., & Feigelson, M. E. (2000). A quantitative review of the effect of computerized testing on the measurement of social desirability. *Educational and Psychological Measurement, 60*(3), 340-360. doi: 10.1177/00131640021970583
- Ernst & Young. (2009). *The contribution made by beer to the European Economy*. Amsterdam: Ernst & Young.
- Fann, K. T. (1971). *Wittgenstein's conception of philosophy*. Berkeley and Los Angeles, California: University of California Press.
- Farris, C., Treat, T. A., Viken, R. J., & McFall, R. A. (2008). Sexual coercion and the misperception of sexual intent. *Clinical Psychology Review, 28*(1), 48-66. doi: 10.1016/j.cpr.2007.03.002
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2010). G*Power - Programme. Retrieved from <http://www.psych.uni-duesseldorf.de/abteilungen/aap/gpower3/download-and-register>
- Feigelson, M. E., & Dwight, S. A. (2000). Can asking questions by computer improve the candidness of responding? A meta-analytic perspective. *Consulting Psychology Journal: Practice and Research, 52*(4), 248-255.
- Field, A. (2005). *Discovering Statistics Using SPSS* (2 ed.). London: Sage.
- Field, A. (2009). *Discovering Statistics Using SPSS* (Third ed.). Londonw: Sage Publications Ltd.

- Fiske, S. T. (1993). Social cognition and social perception. *Annual Review of Psychology, 44*, 155-194.
- Flynn, P. M., Kristiansen, P. L., Porto, J. V., & Hubbard, R. L. (1999). Costs and benefits of treatment for cocaine addiction in DATOS. *Drug and Alcohol Dependence, 57*(2), 167-174.
- French, M. T., McCollister, K. E., Sacks, S., McKendrick, K., & De Leon, G. (2002). Benefit-cost analysis of a modified therapeutic community for mentally ill chemical abusers. *Evaluation and Program Planning, 25*(2), 137-148.
- Gadon, L., Bruce, G., McConnochie, F., & Jones, B. T. (2004). Negative alcohol consumption outcome associations in young and mature adult social drinkers: A route to drinking restraint? *Addictive Behaviors, 29*(7), 1373-1387.
- Gendolla, G. H. E., & Richter, M. (2006). Cardiovascular reactivity during performance under social observation: The moderating role of task difficulty. *International Journal of Psychophysiology, 62*(1), 185-192. doi: 10.1016/j.ijpsycho.2006.04.002
- Goldfried, M. R., & Wolfe, B. E. (1996). Psychotherapy practice and research - Repairing a strained alliance. *American Psychologist, 51*(10), 1007-1016.
- Gordis, E., Dorph, D., Sepe, V., & Smith, H. (1981). Outcome of alcoholism-treatment among 5578 patients in an urban comprehensive hospital-based program: Application of a computerized data system. *Alcoholism-Clinical and Experimental Research, 5*(4), 509-522.
- Green, D. M., & Swets, J. A. (1966). *Signal detection theory and psychophysics*. New York: Wiley.
- Gum, A. M., Arean, P. A., Hunkeler, E., Tang, L. Q., Katon, W., Hitchcock, P., et al. (2006). Depression treatment preferences in older primary care patients. *Gerontologist, 46*(1), 14-22.
- Halme, J. T., Seppa, K., Alho, H., Poikolainen, K., Pirkola, S., & Aalto, M. (2010). Alcohol consumption and all-cause mortality among elderly in Finland. *Drug and Alcohol Dependence, 106*(2-3), 212-218. doi: 10.1016/j.drugalcdep.2009.08.017
- Hansel, B., Thomas, F., Pannier, B., Bean, K., Kontush, A., Chapman, M. J., et al. (2010). Relationship between alcohol intake, health and social status and cardiovascular risk factors in the urban Paris-Ile-De-France Cohort: is the cardioprotective action of alcohol a myth? [Article]. *European Journal of Clinical Nutrition, 64*(6), 561-568. doi: 10.1038/ejcn.2010.61
- Harper, S. (2000). *Verbal reports as signal detection: An alternative approach to the collection and analysis of questionnaire data*. PhD, University of Strathclyde, Glasgow.
- Hartnack, J. (1965). *Wittgenstein and modern philosophy*. London: Methuen & Co. Ltd.
- Harwood, H. (2000). *Updating estimates of the economic costs of alcohol abuse in the United States: Estimates, update methods and data*. . Rockville, MD: National Institutes of Health Retrieved from <http://pubs.niaaa.nih.gov/publications/economic-2000/alcoholcost.PDF>.

- Havlicek, L. L., & Peterson, N. L. (1977). Effect of the violation of assumptions upon significance levels of the Pearson r. [Article]. *Psychological Bulletin*, 84(2), 373-377.
- Heller, J. (1961). *Catch-22*. New York: Simon & Schuster.
- Helmus, T. C., Downey, K. K., Arfken, C. L., Henderson, M. J., & Schuster, C. R. (2001). Novelty seeking as a predictor of treatment retention for heroin dependent cocaine users. *Drug and Alcohol Dependence*, 61(3), 287-295.
- Herrero, J., & Meneses, J. (2006). Short web-based versions of the Perceived Stress (PSS) and Center for Epidemiological Studies-Depression (CESD) Scales: A comparison to pencil and paper responses among internet users. *Computers in Human Behavior*, 22(5), 830-846. doi: 10.1016/j.chb.2004.03.007
- Hillbom, M. (1998). Alcohol consumption and stroke: Benefits and risks. *Alcoholism-Clinical and Experimental Research*, 22(7), 352S-358S.
- HM Revenue and Customs. (2010). *Alcohol duties*. Retrieved from <https://www.uktradeinfo.com/index.cfm?task=factalcohol&hasFlashPlayer=true>.
- Howell, D. C. (2002). *Statistical methods for psychologists*. Duxbury: Thomson Learning.
- Huang, W. Y., Qiu, C. X., Winblad, B., & Fratiglioni, L. (2002). Alcohol consumption and incidence of dementia in a community sample aged 75 years and older. *Journal of Clinical Epidemiology*, 55(10), 959-964.
- Huck, S. W. (2004). *Reading Statistics and Research* (4th ed.). Boston: Pearson Education Inc.
- Humphreys, K., & Weisner, C. (2000). Use of exclusion criteria in selecting research subjects and its effect on the generalizability of alcohol treatment outcome studies. *American Journal of Psychiatry*, 157(4), 588-594.
- International Centre for Alcohol Policies. (2006). *ICAP reports 17: The structure of the beverage alcohol industry*. Retrieved from <http://www.icap.org/LinkClick.aspx?fileticket=DZ9ittvJ%2FZs%3D&tabid=75>.
- Jaccard, J., & Wan, C. K. (1996). *LISREL approaches to interaction effects in multiple regression*. Thousand Oaks, CA: Sage.
- Jackson, K. R., Booth, P. G., McGuire, J., & Salmon, P. (2006). Predictors of starting and remaining in treatment at a specialist alcohol clinic. *Journal of Substance Use*, 11(2), 89-100. doi: 10.1080/14659890500143614
- Jones, B. T., Corbin, W., & Fromme, K. (2001). A review of expectancy theory and alcohol consumption. *Addiction*, 96(1), 57-72.
- Jones, B. T., & McMahon, J. (1994). Negative and positive alcohol expectancies as predictors of abstinence after discharge from a residential treatment program: a one-month and three-month follow-up study in men. *Journal of Studies on Alcohol*, 55(5), 543-548.
- Jones, R., & Pitt, N. (1999). Health surveys in the workplace: comparison of postal, email and World Wide Web methods. *Occupational Medicine-Oxford*, 49(8), 556-558.
- Kavanagh, D. J., Sitharthan, T., & Sayer, G. P. (1996). Prediction of results from correspondence treatment for controlled drinking. *Addiction*, 91(10), 1539-1545. doi: 10.1111/j.1360-0443.1996.tb02257.x

- Kongsved, S. M., Basnov, M., Holm-Christensen, K., & Hjollund, N. H. (2007). Response rate and completeness of questionnaires: A randomized study of Internet versus paper-and-pencil versions. *Journal of Medical Internet Research*, 9(3). doi: 10.2196/jmir.9.3.e25
- Kwak, N., & Radler, B. (2002). A comparison between mail and web surveys: Response pattern, respondent profile and data quality. *Journal of Official Statistics*, 18(2), 257-273.
- Labovitz, S. (1967, 2). Some observations on measurement and statistics [151-160].
- Labovitz, S. (1970). Assignment of numbers to rank order categories *American Sociological Review*, 35(3), 515-524.
- Lee, C. M., Maggs, J. L., Neighbors, C., & Patrick, M. E. (2010). Positive and negative alcohol-related consequences: Associations with past drinking. *Journal of Adolescence, In Press, Corrected Proof*.
- Lee, C. M., Patrick, M. E., Neighbors, C., Lewis, M. A., Tollison, S. J., & Larimer, M. E. (2010). Exploring the role of positive and negative consequences in understanding perceptions and evaluations of individual drinking events. *Addictive Behaviors*, 35(8), 764-770.
- Lee, N. K., Greely, J., & Oei, T. P. S. (1999). The relationship of positive and negative alcohol expectancies to patterns of consumption of alcohol in social drinkers. *Addictive Behaviors*, 24(3), 359-369.
- Leece, P., Bhandari, M., Sprague, S., Swiontkowski, M. F., Schemitsch, E. H., Tornetta, P., et al. (2004). Internet versus mailed questionnaires: A randomized comparison (2). *Journal of Medical Internet Research*, 6(3), 26-33.
- Leigh, G., Ogborne, A., & Cleland, P. (1984). Factors associated with patient dropout from an outpatient alcoholism treatment service. *Journal of Studies on Alcohol* 45, 359-362.
- Li, C. S. R., Lin, W. H., Chang, H. L., & Hung, Y. W. (2004). Psychophysical measure of attention deficit in children with attention-deficit/hyperactivity disorder. *Journal of Abnormal Psychology*, 113(2), 228-236. doi: 10.1037/0021-843x.113.2.228
- Lin, Y. S., Kikuchi, S., Tamakoshi, A., Wakai, K., Kawamura, T., Iso, H., et al. (2005). Alcohol consumption and mortality among middle-aged and elderly Japanese men and women. *Annals of Epidemiology*, 15(8), 590-597. doi: 10.1016/j.annepidem.2004.10.010
- Lovaglia, M. J., & Matano, R. (1994). Predicting attrition from substance misuse treatment using the Inventory of Interpersonal Problems. *International Journal of the Addictions*, 29(1), 105-113.
- Ludbrook, A., Godfrey, C., Wyness, L., Parrott, S., Haw, S., Napper, M., et al. (2001). *Effective and cost-effective measures to reduce alcohol misuse in Scotland: A literature review* Edinburgh: Scottish Executive Retrieved from <http://www.scotland.gov.uk/health/alcoholproblems/docs/lire.pdf>.
- Mallett, K. A., Bachrach, R. L., & Turrisi, R. (2008). Are all negative consequences truly negative? Assessing variations among college students' perceptions of alcohol related consequences. *Addictive Behaviors*, 33(10), 1375-1381.

- Mammo, A., & Weinbaum, D. F. (1993). Some factors that influence dropping out from outpatient alcoholism-treatment facilities. *Journal of Studies on Alcohol*, 54(1), 92-101.
- McCollister, K. E., & French, M. T. (2003). The relative contribution of outcome domains in the total economic benefit of addiction interventions: a review of first findings. *Addiction*, 98(12), 1647-1659.
- McDonald, J. H. (2009). *Handbook of Biological Statistics (2nd ed.)*. Baltimore, Maryland: Sparky House Publishing.
- McNicol, D. (1972). *A Primer of Signal Detection Theory*. London: George Allen & Unwin Ltd.
- Meier, P. S., Donmall, M. C., McElduff, P., Barrowclough, C., & Heller, R. F. (2006). The role of the early therapeutic alliance in predicting drug treatment dropout. *Drug and Alcohol Dependence*, 83(1), 57-64.
- Melson, A. J. (2008). *Evaluating the impact of two television based health communications on alcohol-related cognition and behaviour within a social criterion framework*. MRes, University of Strathclyde, Glasgow.
- Midanik, L. (1982). The validity of self-reported alcohol consumption and alcohol problems: a literature review. *British Journal of Addiction*, 77(4), 357-382.
- Millar, T., Donmall, M., & Jones, A. (2004). *Treatment effectiveness: demonstration analysis of treatment surveillance data about treatment completion and retention*. London National Treatment Agency for Substance Misuse Retrieved from http://nta.shared.hosting.zen.co.uk/publications/documents/nta_demonstration_analysis_surveyance_data_treatment_completion_and_retention_2004_tel.pdf.
- Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.
- Mitchell, A. J., Psych, M. R. C., & Selmes, T. (2007). A comparative survey of missed initial and follow-up appointments to psychiatric specialties in the United Kingdom. *Psychiatric Services*, 58(6), 868-871.
- Moncrieff, J., & Drummond, D. C. (1998). The quality of alcohol treatment research: an examination of influential controlled trials and development of a quality rating system. *Addiction*, 93(6), 811-823.
- Mooney, D. K., Fromme, K., Kivlahan, D. R., & Marlatt, G. A. (1987). Correlates of alcohol consumption: sex, age, and expectancies relate differentially to quantity and frequency. *Addictive Behaviors*, 12(3), 235-240.
- Moos, R. H., & Moos, B. S. (2003). Long-term influence of duration and intensity of treatment on previously untreated individuals with alcohol use disorders. *Addiction*, 98(3), 325-337.
- Muraven, M., Collins, R. L., Morsheimer, E. T., Shiffman, S., & Paty, J. A. (2005). The morning after: Limit violations and the self-regulation of alcohol consumption. *Psychology of Addictive Behaviors*, 19(3), 253-262.
- Newham, R. (2007). *Mapping alcohol users' response biases onto the Functional Discursive model: In search of a method to assess treatment dropout*. MRes, University of Strathclyde, Glasgow.

- Newham, R., & Davies, J. B. (2007). Attributions given by drug users from three different settings. *Addiction Research & Theory, 15*(3), 299-308. doi: 10.1080/16066350701303451
- Newham, R., Russell, C., & Davies, J. B. (2010). Planned and unplanned discharge from alcohol services in Scotland, 2004-2008. *Alcohol and Alcoholism, 45*(1), 64-69. doi: 10.1093/alcalc/agg081
- Newsted, P. R. (1985). Paper versus online presentations of subjective questionnaires. *International Journal of Man-Machine Studies, 23*(3), 231-247.
- Noel, N. E., McCrady, B. S., Stout, R. L., & Fishernelson, H. (1987). Predictors of attrition from an outpatient alcoholism treatment program for couples. *Journal of Studies on Alcohol, 48*(3), 229-235.
- O'Connor, S. M., Davies, J. B., Heffernan, D. D., & van Eijk, R. (2003). An alternative method for predicting attrition from an alcohol treatment programme. *Alcohol and Alcoholism, 38*(6), 568-573. doi: 10.1093/alcalc/agg112
- Office for National Statistics. (2008). *Alcohol deaths – rates in the UK continue to rise*. London: National Statistics Retrieved from <http://www.statistics.gov.uk/pdfdir/aldeaths0108.pdf>.
- Office for National Statistics. (2009). *Annual abstract of statistics*. London: National Statistics Retrieved from http://www.statistics.gov.uk/downloads/theme_compendia/AA2009/AA09Webversion.pdf.
- Office for National Statistics. (2010). *Living costs and food survey*. London: National Statistics Retrieved from <http://www.statistics.gov.uk/cci/nugget.asp?id=868>.
- Ottenbacher, K. J., Ottenbacher, H. R., Tooth, L., & Ostir, G. V. (2004). A review of two journals found that articles using multivariable logistic regression frequently did not report commonly recommended assumptions. *Journal of Clinical Epidemiology, 57*(11), 1147-1152.
- Patra, J., Taylor, B., Irving, H., Roerecke, M., Baliunas, D., Mohapatra, S., et al. (2010). Alcohol consumption and the risk of morbidity and mortality for different stroke types - a systematic review and meta-analysis. *Bmc Public Health, 10*. doi: 10.1186/1471-2458-10-258
- Perez-Lopez, J. R., & Woody, S. R. (2001). Memory for facial expressions in social phobia. *Behaviour Research and Therapy, 39*(8), 967-975.
- Pokorny, A. D., Kaplan, H. B., & Miller, B. A. (1972). The brief MAST: A shortened version of the Michigan Alcoholism Screening Test *American Journal of Psychiatry, 129*(3), 342-&.
- Prochaska, J. O. (1991). Prescribing to the stage and level of phobic patients. [doi:10.1037/0033-3204.28.3.463]. *Psychotherapy: Theory, Research, Practice, Training, 28*(3), 463-468. doi: 10.1037/0033-3204.28.3.463
- Prochaska, J. O., Diclemente, C. C., & Norcross, J. C. (1992). In search of how people change - Applications to addictive behaviors. *American Psychologist, 47*(9), 1102-1114.
- Project Match Research Group. (1993). Project MATCH: Rationale and methods for a multisite clinical trial matching patients to alcoholism treatment. *Alcoholism Clinical and Experimental Research, 17*(6), 1130-1145.

- Project Match Research Group. (1998). Matching alcoholism treatments to client heterogeneity: Project MATCH three-year drinking outcomes. *Alcoholism Clinical and Experimental Research*, 22(6), 1300-1311.
- Pulford, J., Adams, P., & Sheridan, J. (2006). Unilateral treatment exit: A failure of retention or a failure of treatment fit? *Substance Use & Misuse*, 41(14), 1901-1920. doi: 10.1080/10826080601025847
- Quigley, A. (1996). *A longitudinal assessment of explanation and behavioural shift in alcohol users comparing two model of substance use*. PhD, University of Strathclyde, Glasgow.
- Rabinowitz, J., & Marjefsky, S. (1998). Predictors of being expelled from and dropping out of alcohol treatment. *Psychiatric Services*, 49(2), 187-189.
- Raistrick, D., Hodgson, R., & Ritson, B. (1999). *Tackling alcohol together: The evidence base for UK alcohol policy*. London: Free Association Books.
- Ranhoff, A. H., & Laake, K. (1993). The Barthel ADL Index: Scoring by the Physician from Patient Interview is not Reliable. *Age and Ageing*, 22(3), 171-174.
- Rees, D., Beech, H., & Hare, B. (1984). Some factors associated with compliance of alcoholism. *Alcohol and Alcoholism* 19, 303-307.
- Reich, R. R., Below, M. C., & Goldman, M. S. (2010). Explicit and implicit measures of expectancy and related alcohol cognitions: A meta-analytic comparison. *Psychology of Addictive Behaviors*, 24(1), 13-25. doi: 10.1037/a0016556
- Reynolds, K., Lewis, L. B., Nolen, J. D. L., Kinney, G. L., Sathya, B., & He, J. (2003). Alcohol consumption and risk of stroke - A meta-analysis. *Jama-Journal of the American Medical Association*, 289(5), 579-588.
- Ribes-Inesta, E. (2006). Human behavior as language: Some thoughts on Wittgenstein. *Behavior and Philosophy*, 34, 109-121.
- Rist, F., Randall, C. L., Heather, N., & Mann, K. (2005). New developments in alcoholism treatment research in Europe. *Alcoholism-Clinical and Experimental Research*, 29(6), 1127-1132.
- Rosnow, R. L., Rosenthal, R., McConochie, R. M., & Arms, R. L. (1969). Volunteer effects on experimental outcomes. *Educational and Psychological Measurement*, 29, 825-846.
- Rothwell, P. M. (2005). External validity of randomised controlled trials: "To whom do the results of this trial apply?". *The Lancet*, 365(9453), 82-93.
- Ruitenber, A., van Swieten, J. C., Witteman, J. C. M., Mehta, K. M., van Duijn, C. M., Hofman, A., et al. (2002). Alcohol consumption and risk of dementia: the Rotterdam Study. *Lancet*, 359(9303), 281-286.
- Sanchez-Marin, F. J., & Padilla-Medina, J. A. (2008). A psychophysical test of the visual pathway of children with autism. *Journal of Autism and Developmental Disorders*, 38(7), 1270-1277. doi: 10.1007/s10803-007-0507-9
- Scott, K. L. (2004). Stage of change as a predictor of attrition among men in a batterer treatment program. [doi:10.1023/B:JOFV.0000011581.01231.1e]. *Journal of Family Violence*, 19(1), 37-47. doi: 10.1023/B:JOFV.0000011581.01231.1e
- Scottish Government. (2008a). *Changing Scotland's relationship with alcohol: A discussion paper on our strategic approach*. Edinburgh: Scottish Government.

- Scottish Government. (2008b). *Costs of alcohol use and misuse in Scotland*. .
Edinburgh: Scottish Government Retrieved from
<http://www.scotland.gov.uk/Resource/Doc/222103/0059736.pdf>.
- Scottish Government. (2008c). *Revised alcohol consumption estimates from the 2003 Scottish Health Survey*. Edinburgh: Scottish Government Retrieved from
<http://www.scotland.gov.uk/Resource/Doc/224573/0060598.pdf>.
- Silverman, D. (2005). *Doing qualitative research: A practical handbook*. London: Sage Publications.
- Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., & Meltzer, H. (2000). *Psychiatric morbidity among adults living in private households, 2000*. London: The Stationery Office Retrieved from
http://www.statistics.gov.uk/downloads/theme_health/psychmorb.pdf.
- Smith, K. J., Subich, L. M., & Kalodner, C. (1995). The Transtheoretical Model's Stages and Processes of Change and Their Relation to Premature Termination. *Journal of Counseling Psychology, 42*(1), 34-39.
- Soyka, M., & Schmidt, P. (2009). Outpatient alcoholism treatment - 24-month outcome and predictors of outcome. *Substance abuse treatment, prevention and policy, 4*(15).
- Soyka, M., Zingg, C., Koller, G., & Kuefner, H. (2008). Retention rate and substance use in methadone and buprenorphine maintenance therapy and predictors of outcome: results from a randomized study. *International Journal of Neuropsychopharmacology, 11*(5), 641-653. doi: 10.1017/s146114570700836x
- Stampfer, M. J., Kang, J. H., Chen, J., Cherry, R., & Grodstein, F. (2005). Effects of moderate alcohol consumption on cognitive function in women. *New England Journal of Medicine, 352*(3), 245-253.
- Stark, M. J. (1992). Dropping out of substance abuse treatment: A clinically oriented review. *Clinical Psychology Review, 12*(1), 93-116.
- Stockwell, T., Donath, S., Cooper-Stanbury, M., Chikritzhs, T., Catalano, P., & Mateo, C. (2004). Under-reporting of alcohol consumption in household surveys: a comparison of quantity-frequency, graduated-frequency and recent recall. *Addiction, 99*(8), 1024-1033. doi: 10.1111/j.1360-0443.2004.00815.x
- Stockwell, T., Murphy, D., & Hodgson, R. (1983). The severity of alcohol dependence questionnaire - its use, reliability and validity. *British Journal of Addiction, 78*(2), 145-155.
- Substance Abuse and Mental Health Services Administration. (2008). *Treatment Episode Data Set (TEDS): 2005. Discharges from Substance Abuse Treatment Services*. Rockville, MD: DHHS Publication Retrieved from
<http://www.dasis.samhsa.gov/teds05/TEDSD2k5index.htm>.
- Sutton, S. (1999). Project MATCH and the stages of change. *Addiction, 94*(1), 47-48.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics*. Boston: Pearson Education, Inc.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson Education, Inc.
- Thavorncharoensap, M., Teerawattananon, Y., Yothasamut, J., Lertpitakpong, C., & Chaikledkaew, U. (2009). The economic impact of alcohol consumption: a

- systematic review. *Substance Abuse Treatment Prevention and Policy*, 4. doi: 10.1186/1747-597x-4-20
- Thun, M. J., Peto, R., Lopez, A. D., Monaco, J. H., Henley, S. J., Heath, C. W., et al. (1997). Alcohol consumption and mortality among middle-aged and elderly US adults. *New England Journal of Medicine*, 337(24), 1705-1714.
- Timko, C., Moos, R., Finney, J., & Lesar, M. D. (2000). Long-term outcomes of alcohol use disorders: Comparing untreated individuals with those in Alcoholics Anonymous and formal treatment. *Journal of Studies on Alcohol*, 61(4), 529-540.
- Treat, T. A., McFall, R. M., Viken, R. J., & Kruschke, J. K. (2001). Using cognitive science methods to assess the role of social information processing in sexually coercive behavior. *Psychological Assessment*, 13(4), 549-565. doi: 10.1037//1040-3590.13.4.549
- Tsoi, D. T., Lee, K. H., Gee, K. A., Holden, K. L., Parks, R. W., & Woodruff, P. W. R. (2008). Humour experience in schizophrenia: relationship with executive dysfunction and psychosocial impairment. *Psychological Medicine*, 38(6), 801-810. doi: 10.1017/s0033291707002528
- Tsoi, D. T., Lee, K. H., Khokhar, W. A., Mir, N. U., Swalli, J. S., Gee, K. A., et al. (2008). Is facial emotion recognition impairment in schizophrenia identical for different emotions? A signal detection analysis. *Schizophrenia Research*, 99(1-3), 263-269. doi: 10.1016/j.schres.2007.11.006
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124-1131.
- UKATT Research Team. (2005a). Cost effectiveness of treatment for alcohol problems: Findings of the randomized UK alcohol treatment trial (UKATT). *Bmj*, 331, 544-548.
- UKATT Research Team. (2005b). Effectiveness of treatment for alcohol problems: findings of the randomised UK alcohol treatment trial (UKATT). *Bmj*, 331(7516), 541.
- Velasquez, M. M., DiClemente, C. C., & Addy, R. C. (2000). Generalizability of Project Match: a comparison of clients enrolled to those not enrolled in the study at one aftercare site. *Drug and Alcohol Dependence*, 59(2), 177-182.
- Vercammen, A., de Haan, E. H. F., & Aleman, A. (2008). Hearing a voice in the noise: auditory hallucinations and speech perception. *Psychological Medicine*, 38(8), 1177-1184. doi: 10.1017/s0033291707002437
- Wells, K. B. (1999). Treatment research at the crossroads: The scientific interface of clinical trials and effectiveness research. *American Journal of Psychiatry*, 156(1), 5-10.
- Welsh Assembly Government. (2008). *Working together to reduce harm performance management framework: Substance misuse in Wales, 2007 – 08*. Cardiff
Retrieved from
www.wales.gov.uk/docs/dsjlg/publications/commsafety/081215smframework0708.pdf
- Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy dropout. *Professional Psychology-Research and Practice*, 24(2), 190-195.

World Health Organization. (2002). *The world health report, 2002: Reducing risks, promoting healthy lives*. Geneva: WHO.

York Health Economics Consortium. (2010). *The Societal Cost of Alcohol Misuse in Scotland for 2007*. Edinburgh: Crown Retrieved from <http://www.scotland.gov.uk/Resource/Doc/297819/0092744.pdf>.

Appendix A: Newham, Russell and Davies (2010) Article

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TREATMENT

Planned and Unplanned Discharge from Alcohol Services in Scotland, 2004–2008

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Abstract — **Aims:** Available data suggests that the rate of unplanned discharge from alcohol treatment services is an international problem reflective, perhaps, of ambivalence surrounding treatment in general. Given Scotland's escalating prevalence of alcohol misuse, a preliminary study of Scottish dropout rates would make a useful contribution to the international scene. **Methods:** A retrospective analysis of discharge statuses (planned/unplanned/disciplinary) of entries to alcohol treatment services between 1 April 2004 and 31 March 2008 was conducted on data provided by 10 regional Drug and Alcohol Action Teams (DAATs) and three individual treatment providers. **Results:** Of 48,299 cases, 52.23% ($n=25,231$) were unplanned discharges. Data showed a general increasing trend in the rate of planned discharges across the examined 4-year period, from 41.66% in 2004–2005 to 51.94% in 2007–2008. Inspection of the data revealed marked regional variations in ratios of planned to unplanned discharge, with only four of the 10 regions examined reporting a planned discharge rate >50%. **Conclusion:** More than one of every two entries to alcohol misuse services between 2004 and 2008 resulted in an unplanned discharge. The trend of improvement over the examined 4-year period was not consistent for all regions. A comparison of this figure with available US and Welsh data is made. The importance of these data in assessing the cost-effectiveness of alcohol treatment services and implications for policy making is discussed.

INTRODUCTION

In 2000, alcohol contributed to 1.8 million deaths (3.2% of all deaths worldwide) and 58.3 million of Disability-Adjusted Life Years (DALYs) (4% of total loss of DALYs from all causes) (WHO, 2002). In the UK, alcohol-related deaths rose from 12.9 per 100,000 population in 2005 to 13.4 per 100,000 population in 2006 (Office for National Statistics, 2008). The US Centres for Disease Control and Prevention (CDC) place excessive alcohol consumption as the third most important risk factor for premature death (CDC, 2008), an assertion in line with the World Health Organization's conclusion that alcohol is the third most important risk factor for European ill-health and premature death, only behind smoking and raised blood pressure (WHO, 2005). In 1998, it was estimated that alcoholism and alcohol abuse cost ~\$185 billion annually in the USA (Harwood, 2000). More recent figures from the UK estimate that alcohol misuse accrued a cost of up to £20 billion to English and Welsh societies combined in 2000–2001 (Cabinet Office, 2003) and up to £2.25 billion to Scottish society in 2006–2007 (Scottish Government, 2008). As a consequence, reducing the prevalence of alcohol misuse has been made key in national alcohol strategies (e.g. Department of Health, 2007).

The provision of effective treatment is an important route to reducing the costs of alcohol misuse with cost-effectiveness analyses having consistently found that individuals successfully treated for alcohol problems subsequently incur less cost to society than do untreated individuals. Savings in health and social costs also consistently exceed the costs of the treatment (Ludbrook *et al.*, 2001; UKATT, 2005). However, treatment provision alone is not sufficient; the economic and societal benefits of treatment depend both on uptake of treatment and a positive outcome from treatment (i.e. a reduction in drinking or absolute abstinence). Research has indicated that clients' discharge statuses from alcohol treatment services (i.e. a planned versus an unplanned discharge) are strongly associated with their long-term drinking outcomes, with unplanned discharges being more likely to relapse to previous

patterns of alcohol misuse and less likely to maintain improvement than those who complete treatment (Weisner *et al.*, 2003; Baekeland & Lundwall, 1975). Unplanned discharge patients/clients subsequently also continue to incur a greater cost to society than completers. Though many factors influence whether people stay in treatment, these previous studies indicate that recording treatment completion is a useful predictor for progress beyond treatment. Therefore, strategies aimed at tackling alcohol misuse must focus not only on increasing access to treatment but on maximizing the retention of patients in treatment for the full planned course.

The problem of dropout is not specific to alcohol treatment or other substance misuse services. Ambivalence from service users, which manifests itself as non-compliance with treatment, is common within in all branches of medicine. Specifically focusing on dropout, Olfson *et al.*'s (2009) US national study found that 22% of people treated for a mental health problem dropped out before the provider wanted them to stop. People also dropout from tuberculosis treatment at a chest clinic (39%; Kim *et al.*, 2001), *in vitro* fertilization treatment (17%; Verberg *et al.*, 2008), sex offender rehabilitation programmes (37.5%; Browne *et al.*, 1998), bipolar group therapy (20%; Graff *et al.*, 2008), marriage and family therapy (25.4 and 17.1% dropped out of couples therapy and family therapy, respectively; Masi *et al.*, 2003) and drug misuse treatment (40% of discharges are voluntary, South West Public Health Observatory, 2007). A review by Stark (1992) found that ~50% of entrants dropped out within the first month of substance abuse treatment. Relating specifically to alcohol services, Stark's review found evidence of up to 45% dropout from a hospital-based treatment programme (Gordis *et al.*, 1981), 15% failing to attend any outpatient appointments and only 28% keeping more than eight (Leigh *et al.*, 1984), 46% failing to attend an initial interview at a hospital alcoholism treatment unit and with 44% of those who did attend the initial interview failing to return thereafter (Rees *et al.*, 1984).

Beyond Stark's review there has been little recent work that has examined the extent of the problem of dropout from alco-

hol treatment. Amalgamation of recent government figures from the USA detailing discharge for all types of treatment show that, from the 533,987 entries to treatment whose primary substance abused was alcohol, 67% received a planned discharge—with 83.62% of these cases completing treatment, the other 16.38% being transferred (Substance Abuse and Mental Health Services Administration, 2008). In the UK, there has been no national assessment of this type to date, government or independent, though the Welsh Assembly has published data pertaining to discharge type for cases whose main problem was alcohol. In 2007–2008 it was found that, of 9265 cases that entered alcohol treatment services funded by the Welsh Government (both from the statutory and voluntary sectors), 39.91% resulted in a planned discharge (Welsh Assembly Government, 2008).

All these figures indicate that unplanned discharge is a major problem within alcohol misuse services. However, the implications of these findings for policy have not yet been acknowledged. It is apparent that dropout from alcohol treatment has a considerable detrimental impact on treatment effectiveness and that the problem is an international one. However, it is also clear that the collection of such data and the subsequent use made of them is variable and incomplete. Comparisons between rates internationally can provide pointers to important differences in service position in different localities and countries. With this in mind, and given the current, well-documented escalating prevalence of alcohol problems and binge-drinking in Scotland, it was decided that a preliminary study of Scottish dropout rates would make a useful contribution to the international scene. This study therefore aimed to provide an estimate of the problem of unplanned discharge from alcohol services in Scotland between 1 April 2004 and 31 March 2008.

METHOD

A search and review of academic and government publications failed to yield any evidence of the prevalence of dropout from alcohol-only treatment in Scotland or the UK as a whole, although there are published studies which give rates for particular treatment programmes. The search engines of Psych Info, Science direct, Pub Med and Google Scholar were searched using combinations of the terms: planned, unplanned, discharge, alcohol, treatment, Scotland, UK, drug, dropout, research, US, statistics, misuse, completion, services, effectiveness and outcome. Additionally, government publication listings were examined for publications in this field.

As a central collation point for national health data, the Information Services Division (ISD) of NHS Scotland was contacted. The ISD produces statistical reports and documents for all branches of the NHS in Scotland. Although our literature review revealed that the ISD had not produced any report describing alcohol treatment dropout prevalence, they are responsible for the collation of data concerned with substance misuse. The ISD reported that they had no alcohol treatment service discharge data as this was outside their remit. While this precluded access to a pre-existing, collated database courtesy of the ISD, we were informed that the ISD was aware that alcohol-treatment data—including discharge type—were collected by the Scottish Local Government Drug and Alcohol Action Teams (DAATs), al-

though the extent of this was unknown. From this basis, it was decided to follow two distinct paths: contact the local DAATs and contact a sample of individual agencies.

Initial contact was made with each of the 21 Scottish DAATs (as indicated on the website for Scottish DAATs: <http://www.drugmisuse.isdscotland.org/dat/dat.htm>) by phone, after which a standard 'study information sheet', detailing the study rationale and data requests, was sent via email. When contact could not be made via phone, a standard letter detailing study aims and data requests was sent to appropriate persons via post or email. In addition, the same letter was sent directly to 63 alcohol treatment services across Scotland. These services were randomly sampled from those listed on Alcohol Focus Scotland's (AFS) website (www.alcohol-focus-scotland.org.uk), a national charity for alcohol issues. AFS provides a directory of alcohol counselling and treatment services in Scotland.

They were asked to provide the number of planned, unplanned and disciplinary discharges recorded by the treatment agencies which feed data to them, annually where possible, since April, 2004. This tactic capitalized on a definition set out by the National Waiting Times Initiative Framework's guidelines (Department of Health, 2003)—a Scottish Government initiative to allow assessment of waiting times for medical treatment. As an adjunct to the waiting times information, the NWTIF also provides a template for the recording of additional information—including discharge type (see Fig. 1). The individual treatment agencies were also asked to directly provide the number of planned, unplanned and disciplinary discharges recorded at their agency during the same period. Initially, client demographic data and treatment characteristics (length and proportion of treatment completed prior to discharge, treatment modality and origin of referral) were sought in addition to discharge data; however, only one DAAT reported maintaining a database that was capable of satisfying this additional request, the remainder indicating that discharge data were only available to them in count form.

All data providers were assured that neither the names of individual treatment agencies nor any individuals employed by these agencies would be named in the final report. If service data were received twice (i.e. once directly from the service and once from the DAAT to whom these data were fed by this service), we would first ensure that both data sets matched up before discarding one. As DAATs collate waiting times information for services for alcohol, drugs and alcohol/drugs, they were asked to take care to ensure that all data were correctly labelled and that drugs and alcohol-drugs (or any other poly-substance misuse) data had been omitted before sending data; all data providers gave verbal assurances to these effects upon the provision of data. For the purposes of the following analyses, any services specifically targeting adolescents were excluded from final analyses. The services monitored by the DAATs included statutory services from Health and Social Care including designated inpatient services and community-based specialist nursing and counselling services as well as non-statutory counselling services. It excluded private-for-profit services.

RESULTS

For the period 1 April 2004 and 31 March 2008, discharge status data were received from three individual services ($n=2063$)

Code	Definition
Planned	The client has been referred on to another agency or discharged at the end of his/her treatment with the agreement of the client and the agency.
Unplanned	The client was referred and did not attend a number of assessment or treatment appointments. In this case the discharge date should be entered as soon as agency staff agree that the client is no longer on its books or would be viewed as a new client if he/she re-presented at the agency.
Disciplinary	The client has been discharged due to misconduct.

Fig. 1. Criteria for defining planned, unplanned and disciplinary discharges from substance abuse treatment described by the NWTIF (Department of Health, Scottish Executive, 2003: Annex A).

and 10 DAAT-defined regions of Scotland: Ayrshire & Arran, Borders, Dumfries & Galloway, Forth Valley, Greater Glasgow & Clyde, Highlands, Lanarkshire, Moray, West Lothian and Western Isles DAATs ($n=46,236$). The population of these 10 regions account for ~61.65% ($n=3,154,480$) of the total Scottish population estimate (General Register Office for Scotland, 2006). The recording year for treatment discharges ran from 1 April to 31 March. Data from the three individual services were included in the total for the region where each was situated. Across the 4-year period, the volume of data reported increased steadily year on year in all 10 regions. The fewest data reported was for 04/05 ($n=5185$) and most data reported was for 07/08 ($n=18,785$). The mean number of discharge data reported per year was 12,074.75 cases ($SD=5825.61$). This trend suggested a steady improvement in recording and reporting practises since the inception of the NWTIF in 2003.

Of 48,299 entries to services for alcohol misuse across 10 Scottish regions between 2004 and 2008, 22,380 (46.34%) obtained a planned discharge, 25,231 (52.23%) were unplanned discharges and 688 (1.42%) were discharged before completing for disciplinary reasons (each case may or may not have been a unique individual as the data did not allow us to discriminate between treatment entries by new clients and repeated entries by previous clients—i.e. we were not able to ascertain if individuals were 'cycling' around treatment services.) Annual planned discharge rates steadily increased each year of the examined 4-year period (41.66% in 2004–2005, 42.79% in 2005–2006, 43.17% in 2006–2007 and 51.94% in 2007–2008) whereas unplanned discharge rates remained roughly constant until a sharp drop from 55.58% in 2006–2007 to 47.21% in 2007–2008. In fact, 2007–2008 was the only of the 4 years in which the overall planned discharge rate exceeded the unplanned discharge rate (51.94 vs 47.21%). Disciplinary discharges decreased steadily throughout this period (3.05% in 2004–2005, 1.9% in 2005–2006, 1.25% in 2006–2007 and 0.86% in 2007–2008). A chi-square analysis confirmed a significant association between year and discharge type ($\chi^2(6)=516.06$, $P<0.0005$, Cramer's $V=0.07$), pointing to the significance of this trend exception in 2007–2008.

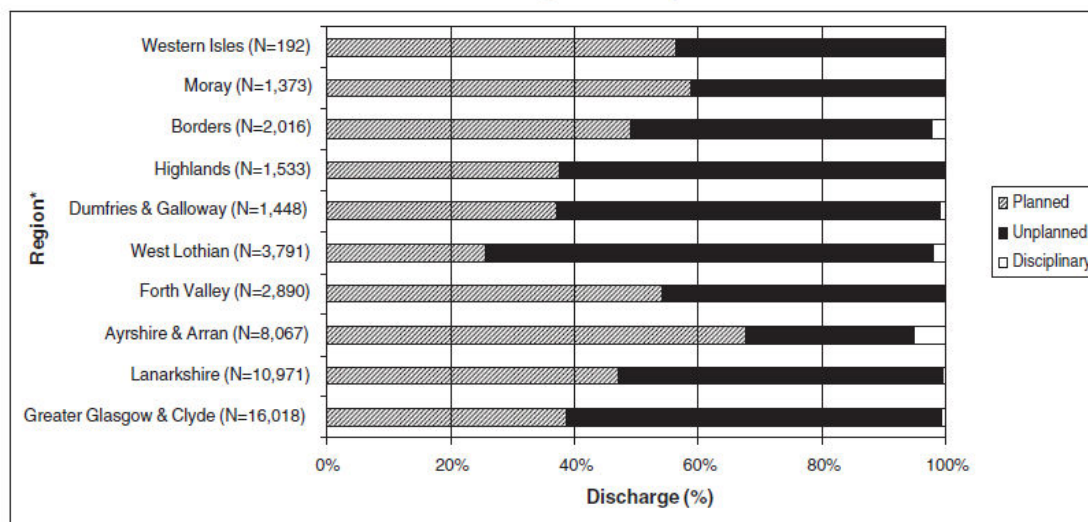
However, the data also clearly show an overall dropout rate of over 50% over the 4-year period of the study. There was considerable inter- and intra-regional variation in discharge rates, and a chi-square analysis confirmed a significant asso-

ciation between region and discharge type ($\chi^2(18)=4096.64$, $P<0.0005$, Cramer's $V=0.21$). Ayrshire and Arran reported the most favourable mean planned/unplanned/disciplinary ratio between 2004 and 2008 (67.71 vs 27.22 vs 5.07%); West Lothian reported the least favourable mean ratio (25.61 vs 72.33 vs 2.06%). Only four of the 10 regions reported a mean planned discharge rate >50% across the 4-year period: Ayrshire and Arran (67.71%), Moray (58.70%), Western Isles (56.25%) and Forth Valley (54.29%). Mean planned, unplanned and disciplinary discharges reported for each region between 2004 and 2008 are summarized in Fig. 2.

To examine whether the obtained regional planned discharge rates were associated with areas of deprivation, the proportion of deprived areas in each DAAT defined region in the top 20% of deprived areas in Scotland was calculated using the Scottish Index of Multiple Deprivation (Scottish Executive, 2006). The three most deprived regions in our sample were Glasgow City and Clyde, Lanarkshire and Ayrshire & Arran, with proportions of 38.61, 26.10 and 22.71% respectively (the proportion is the percentage of the number of data zones in each DAAT region in the SIMD top 20% most deprived areas from the total number of data zones in each DAAT region.) Excluding the Borders, these regions reported the three greatest and two fewest entries, respectively, to treatment across the 4-year period, as shown in Fig. 2. A Pearson's correlation test confirmed that discharge data provided was significantly positively correlated with SIMD proportion ($r=0.97$, $P<0.0005$). This indicated that the number of cases entering alcohol services increased with the greater deprivation of the region, as indicated in Fig. 2. No significant association was found between regions' SIMD scores and percentage of planned discharge across the 4-year period ($r=-0.15$, $P=0.69$).

DISCUSSION

Although the rate of planned discharges increased year on year across the examined 4-year period, from 41.66% in 2004–2005 to 51.94% in 2007–2008, fewer than half (46.34%) of the 48,299 recorded entries to services for alcohol problems between 1 April 2004 and 31 March 2008 resulted in a planned discharge from the service.



* Regions are presented in order of deprivation from least deprived (Western Isles) to most deprived (Greater Glasgow and Clyde).

Fig. 2. Regional ratios of planned, unplanned and disciplinary discharges from alcohol treatment between 1 April 2004 and 31 March 2008.

The average 4-year unplanned discharge rate of 52.23% presently reported is comparable with the majority of investigators who reported a dropout rate of 50%, indicated by Stark's (1992) review, although Stark's figure referred to the first month in treatment whereas the stage at which dropout occurred for the cases in our dataset was unknown. The average Scottish figure for planned discharge over the 4-year period (46.34%) indicates the problem of dropout from alcohol treatment is less serious than that in Wales (39.91% planned discharge recorded for 2007–2008), while the USA is outperforming both Scotland and Wales in terms of planned discharge from treatment (67.00%).

There were considerable regional variations within Scotland in discharge rates. For example, planned discharge rates ranged from 24 to 81% in 2007–2008. A detailed investigation of the causal factors is outside the reach of this study, but inspection of the data suggests that it is likely that these variations might be due to regional differences in how alcohol misuse services are structured and funded. This highlights the importance of discharge information in general; regional and generic factors associated with retention in treatment must be identified in order to improve service performance and best allocate resources. A more in-depth analysis would indicate whether the reasons lay at an institutional level—either with national policy making or regional implementation—or at a more individual psychosocial level due, perhaps, to factors such as isolation, resilience, self-efficacy, support networks etc. Although a current analysis confirmed that regions' numbers of entries to treatment and level of deprivation were associated, with Scotland's more deprived areas registering more entries to treatment across the 4-year period, deprivation was not associated with planned discharge rates.

A specific limitation of this study is that while all services worked from the same definitions of discharge types, the consistency with which these were applied was not known—though all DAATs confirmed to us that they had received a verbal assurance from every service feeding data to them that these definitions were applied consistently during coding. Moreover, the client base of each service was not detailed nor was the type of services from which the data were drawn or the treatment plan. Therefore, the authors do not posit the current figure as a definitive but, rather, as the most reliable estimate available at this time using a pragmatic and systematic methodology. Nonetheless, the figure is reflective of the larger problem found internationally and one which policy is currently failing to address in its own right.

The Scottish Government is presently striving to increase public access to treatment services for alcohol misuse. An estimated £61 million was invested in specialist alcohol treatment services in 2006–2007 alone (Drummond *et al.*, 2009) and Scotland's access to specialist alcohol treatment services is 48% greater than that found in England (Drummond *et al.*, 2009). However, reports detailing expenditure would only be telling half the story, in light of a lack of accountability and outcome measures assessing the cost-effectiveness of alcohol service spending in Scotland at present (Audit Scotland, 2009) and treatment completion (Drummond *et al.*, 2009). Additionally, given the cyclical nature of treatment-related cessation and relapse from alcohol and other substance misuses experienced by many individuals (e.g. Scott *et al.*, 2005; Hser *et al.*, 1997; Hser *et al.*, 2001), it may be that increasing access results in increased cycling of the same individuals rather than a positive outcome. In Wales, 15,301 referrals were made for alcohol problems in 2007–2008 but these comprised 10,112 individuals, therefore ~1

in 3 referrals made were re-referrals (Welsh Assembly Government, 2008). The relationship between cycling and unplanned discharge must be assessed in the future to ensure the cost-effectiveness of treatment.

On an international scale, the discrepancy between the US data and that found within the UK is important. It has been speculated that the 'worth' of treatment is viewed differently depending on whether the individual pays for some or all of the treatment; in the Scottish services studied here, there was no payment by the client/patient, unlike some US provision. Patient/client characteristics may vary also. Chick et al. (2000) noted that despite following a standardized European study protocol, 57% of patients recruited to a study at UK sites were categorized at baseline in the two poorest prognosis groups compared to 39% in the Austrian recruits, and 48% of UK recruits were unemployed (a predictor of treatment outcome) compared to 26% in the German and 21% in the French recruits. This suggests that UK levels of dropout would be expected to be higher than other nations—which is borne out by the US data.

On the basis of the present data, and those presented elsewhere, studies of dropout are useful in assessing the effectiveness of alcohol treatment programmes. Furthermore, such data may be helpful in pointing out regional influences in treatment effectiveness. The present study has shown that within a UK context such data are available and it is to be regretted if some agencies are less than forthcoming with these types of data as distinct from data from successful completers.

To conclude, this exploratory study found that 46.34% of the 48,299 recorded entries to treatment for alcohol problems in Scotland between 1 April 2004 and 31 March 2008 completed treatment as planned. The planned discharge rate increased each year of this examined 4-year period. These figures can serve as a baseline against which the cost-effectiveness of future Scottish expenditure to increase access to treatment for alcohol problems can be measured and provide a context for other international figures of treatment dropout.

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REFERENCES

- Audit Scotland. (2009) *Drug and Alcohol Services in Scotland*. Audit Scotland: Edinburgh. http://www.audit-scotland.gov.uk/docs/health/2009/nr_090326_drugs_alcohol.pdf (26 March 2009, date last accessed).
- Baekeland F, Lundwall L. (1975) Dropping out of treatment: a critical review. *Psychol Bull* 82:738–83.
- Browne KD, Foreman L, Middleton D. (1998) Predicting treatment drop-out in sex offenders. *Child Abuse Rev* 7:402–19.
- Cabinet Office. (2003) *Strategy Unit, Alcohol Misuse: How Much Does it Cost?* Strategy Unit: London. <http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/econ.pdf> (24 March 2009, date last accessed).
- Centres for Disease Control and Prevention. (2008) *Alcohol and Public Health*. Atlanta. <http://www.cdc.gov/alcohol/> (7 August 2009, date last accessed).
- Chick J, Howlett H, Morgan MY et al. (2000) United Kingdom multicentre acamprosate study (UKMAS): a 6-month prospective study of acamprosate versus placebo in preventing relapse after withdrawal from alcohol. *Alcohol Alcohol* 35:176–87.
- Department of Health, Scottish Executive. (2003) *National Waiting Times Information Framework, 2003*. <http://www.drugmisuse.isdscotland.org/wtpilot/framework.htm> (26 October 2008, date last accessed).
- Department of Health, Department for Education and Skills, and Department for Culture, Media and Sport. (2007) *Safe. Sensible. Social. The Next Steps in the National Alcohol Strategy*. Home Office: London. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_075218 (22 October 2008, date last accessed).
- Drummond C, Deluca P, Oyefeso A et al. (2009) *Scottish Alcohol Needs Assessment*. London: Institute of Psychiatry, King's College London.
- General Register Office for Scotland. (2006) *Summary Statistics for Council Areas*. <http://www.gro-scotland.gov.uk/statistics/council-areas-map/index.html> (13 August 2009, date last accessed).
- Gordis E, Dorph D, Sepe V et al. (1981) Outcome of alcoholism treatment among 5,538 patients in an urban comprehensive hospital-based program: application of a computerized data system. *Alcohol Clin Exp Res* 5:509–22.
- Graff FS, Griffin ML, Weiss RD. (2008) Predictors of drop-out from group therapy among patients with bipolar and substance use disorders. *Drug Alcohol Depend* 94:272–5.
- Harwood H. (2000) *Updating Estimates of the Economic Costs of Alcohol Abuse in the United States: Estimates, Update Methods, and Data*. Report prepared by The Lewin Group for the National Institute on Alcohol Abuse and Alcoholism, 2000. Based on estimates, analyses, and data reported in Harwood, H; Fountain, D; and Livermore, G. The Economic Costs of Alcohol and Drug Abuse in the United States 1992. Report prepared for the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Department of Health and Human Services. NIH Publication No. 98-4327. Rockville, MD: National Institutes of Health, 1998.
- Hser Y, Anglin MD, Grella C et al. (1997) Drug treatment careers: a conceptual framework and existing research findings. *J Subst Abuse Treat* 14:543–58.
- Hser Y, Hoffman V, Grella CE et al. (2001) A 33-year follow-up of narcotics addicts. *Arch Gen Psychiatry* 58:503–8.
- Kim HJ, Hong YP, Kim SJ et al. (2001) Ambulatory treatment of multidrug-resistant pulmonary tuberculosis patients at a chest clinic. *Int J Tuberc Lung Dis* 5:1129–36.
- Leigh G, Ogbome AC, Cleland P. (1984) Factors associated with patient drop-out from an outpatient alcoholism treatment service. *J Stud Alcohol* 45:359–62.
- Ludbrook A, Godfrey C, Wyness L et al. (2001) *Effective and Cost-effective Measures to Reduce Alcohol Misuse in Scotland: A Literature Review*. Edinburgh: Scottish Executive, Department of Health.
- Masi MV, Miller RB, Olson MM. (2003) Differences in dropout rates among individual, couple, and family therapy clients. *Contemp Fam Ther* 25:63–75.
- Office for National Statistics. (2008) *Alcohol Deaths – Rates in the UK Continue to Rise*. National Statistics: London. <http://www.statistics.gov.uk/pdfdir/aldeaths0108.pdf> (23 March 2009, date last accessed).
- Olfson M, Mojtabai R, Sampson NA et al. (2009) Dropout from outpatient mental health care in the United States. *Psychiatr Serv* 60:898–907.
- Rees DW, Beech HR, Hare BD. (1984) Some factors associated with compliance of alcoholism. *Alcohol Alcohol* 19:303–7.
- Scott CK, Foss MA, Dennis ML. (2005) Pathways in the relapse-treatment-recovery cycle over 3 years. *J Subst Abuse Treat* 28: S63–S72.
- Scottish Executive. (2006) *Scottish Index of Multiple Deprivation 2006: General Report*. Scottish Executive: Edinburgh.
- Scottish Government. (2008) *Costs of Alcohol Use and Misuse in Scotland*. <http://www.scotland.gov.uk/Resource/Doc/222103/0059736.pdf> (24 March 2009, date last accessed).
- South West Public Health Observatory. (2007) *Issues in Drug Treatment 1: New Clients Dropping Out of Structured Treatment*. Publications and Communications Department, South West Public Health Observatory. <http://www.swpho.nhs.uk/resource/item.aspx?RID=33227> (13 August 2009, date last accessed).

Appendix B: Reduced Tool Vignettes

High Signal Vignettes

Paul had been working as a train driver for fifteen years. He did not mind his job except that sometimes he had to get up very early (virtually the middle of the night) to start work. This was only really a problem on those days where Paul had been out at the pub the night before. Sometimes Paul still felt quite woozy very early in the morning when he'd been drinking the night before. He was aware that it wasn't ideal for him to be driving a train under these conditions but he thought it was OK because it did not happen that often, two or three times a month at most.

Simon was a journalist, who worked on a busy National newspaper. Like most journalists Simon enjoyed a drink, often going to the pub after work. Recently, Simon's Doctor had diagnosed a stomach ulcer, and had advised Simon to cut down on alcohol and spicy foods. However, Simon did not feel able to stop going to the pub because that was where he got a lot of information about new stories. He had cut down on his whiskey drinking a bit and thought that should help with the ulcer.

Jim was determined that he wouldn't drink too much this evening. He was at a party hosted by the Managing Director of his firm. The last party Jim had gone to he had drunk so much wine that he'd fallen over in front of everybody. Jim was resolved not to do a repeat performance tonight. But it was very difficult not to drink when the wine was free.

Liam worked back shift at a local biscuit factory. These hours suited him because they meant that he could go out drinking with his friends in the evenings, and have the mornings to recover from his hangovers.

Low Signal Vignettes

Kevin worked as a postman and had to get up very early to get to work on time. Yesterday had been his birthday and Kevin had gone out with his friends to celebrate in a local bar. The bar had been having a Mexican evening and tequilas were on special offer. Kevin had drunk a lot of tequila and by the end of the evening was standing on the table singing. Because he was hungover Kevin slept in for work the next day. He had to talk very quickly to calm down his boss, who was extremely strict and did not like people being late for work at all.

Low Signal Vignettes (cont.)

Lorna's company had decided to reward their staff by having a party. Lorna liked nothing better than a good party and got right into the swing of things, dashing about chatting to people and drinking lots of wine on her way. As the evening progressed, Lorna got steadily drunker but did not feel drunk because she was having such a good time. At some point a disco started up and suddenly Lorna realised they were playing her favourite song "Dancing Queen" by Abba. She turned to grab her friend Jo to make her dance, but they both overbalanced and fell across the table which was not as sturdy as it looked and it collapsed, spilling glasses and ashtrays everywhere. Lorna and Jo were laughing so much they could not get up.

Martin was on holiday with his girlfriend and her parents. They had all been out drinking since early evening and it was now midnight and Martin was drunk. Martin's girlfriend had to help him home because he was not walking in a very straight line. Martin had to sleep downstairs in a makeshift bed with a bucket next to it in case he was sick.

Fraser had recently managed to split up with his long-term girlfriend. He had been trying to get rid of her for ages, but she was extremely clingy. Since they split up Fraser had been going clubbing every weekend on the lookout for a replacement girlfriend. Unfortunately, last Saturday he had got far too drunk and had been unable to chat to any girls, they had all told him to get lost.

Noise Vignettes

Rory was a very outgoing individual who liked nothing better than a good party. He was very excited because tonight he was having a big party in his flat. He had bought loads of booze and planned to make a big bucket of punch for everyone to drink. He got the recipe for the punch out of a Sunday newspaper and he thought it would be very tasty. As it turned out the punch was delicious and everyone complemented Rory on it. The party went very well too as there was a good mix of people there.

Duncan had finished work early and was at a bit of a loose end. Luckily, as he was walking home he met an old friend called Lyndsay, who he hadn't bumped into in ages. They decided to go and have a beer in a local pub so they could catch up on old times. Unfortunately, a girl that Duncan had fancied for ages was in the pub and he neglected Lyndsay to talk to the other girl. Lyndsay was very upset by this because she had fancied Duncan herself for ages. Lyndsay was so annoyed that she made a complete fool of herself by shouting at Duncan and flouncing away.

Noise Vignettes (cont.)

Helen had just been offered her dream job. She had been a shop assistant until now but she had just been told that she was to get her own shop to manage. To celebrate Helen bought a bottle of champagne on the way home, and planned to celebrate her new job by sharing the champagne with her three flatmates. However, when Helen got home she discovered that all her flatmates had gone out on the town and had not invited her. Feeling a bit depressed, Helen opened the champagne on her own and put a Tesco lasagne in the oven.

Melville was feeling extremely confused. He had just been told by his Mother that she was going to get married again (she had divorced Melville's Dad years ago). Melville did not know how to feel about this at all. He did not know the bloke she was planning to marry so didn't know if he approved or not. Anyway, Melville's Mother was not asking for his approval, she had already made up her mind. Melville decided he wanted a glass of whiskey to steady his nerves.

Appendix C: Fisher's Z-Transformation

This technique is described in detail in Howell (2002, p 278); the equations used were:

$$z = \frac{r'_1 - r'_2}{\sqrt{\frac{1}{n_1 - 3} + \frac{1}{n_2 - 3}}}$$

where r' is calculated as:

$$r' = 0.5 \times \log_e \left| \frac{1+r}{1-r} \right|$$

Appendix D: New Comprehension Task

Please read the passage below and answer the question on it:

Walter goes out twice a week to the local pub to practice with his darts team. He will usually have four pints of beer. He is happy with the situation as he never feels drunk and it seems to improve his game, although he only drinks one pint all night if he's playing in a league match. Recently, his wife has started coming down to the pub with him to chat to the other players' wives. He's happy about this as it means she's not feeling lonely, nagging him to stop going to the pub.

How much beer will Walter drink if he's playing in a league match?

Answer: _____

Appendix E: Functional Discursive Model Questionnaire.

Tell Me About Your Alcohol Use

Part 1: For each box, please tick the option that best describes your drinking.

- In general, I feel I have control over my drinking
- Sometimes I feel I have control over my drinking.
- In general, I feel I have no control over my drinking.
- In general, I enjoy my drinking.
- Sometimes I enjoy my drinking.
- In general, I don't enjoy my drinking.
- I think I have a problem with alcohol
- I don't think I have a problem with alcohol
- I once had a problem with alcohol but I don't have it anymore.
- I drink mainly because of things that happened in the past (*e.g. relationship breakup; death of family member/friend etc.*)
- I drink mainly because of what's going on at the time (*e.g. friends/family drinking; social events where you might have a drink etc.*)
- I drink because of a combination of both these things

Part 2: Please tick all that apply

I drink because:

- i. It's sociable/ my friends do it
- ii. Of things that happened to me in the past
- iii. My job drives me to it #
- iv. Health issues
- v. Family issues
- vi. Other (please specify in box below)

Appendix F: Online Questionnaire

CASP study

Page 1 - CONSENT FORM

1. Before participating in the study it's important that you are aware of the following:

- You will be asked to rate some stories on a scale and answer some background questions about yourself.
- You understand that your anonymity is guaranteed and that all data will be used solely for the purposes of this study.
- You are aware that the researcher is happy to answer any questions regarding this study.
- You may refuse to take part or withdraw from the study at any time, without giving a reason.
- Your data will be destroyed at the end of the research project.

Please use the options below to indicate if you consent to participate in the study. In providing consent you confirm that you are aware of and understand the information listed above. After you've selected your answers please click "next".

Yes - I consent to participate

No - I do not consent to participate

Page 2 - PLEASE READ THE PASSAGE BELOW AND ANSWER THE QUESTION.

2. Walter goes out twice a week to the local pub to practice with his darts team. He will usually have four pints of beer. He is happy with the situation as he never feels drunk and it seems to improve his game, although he only drinks one pint all night if he's playing in a darts league match. Recently, his wife has started coming down to the pub with him to chat to the other players' wives. He's happy about this as it means she's not feeling lonely, nagging him to stop going to the pub.

How much beer does Walter usually drink when he's playing in a darts league match?

1 pint

2 pints

3 pints

4 pints

5 pints

If other, please specify:

Page 3 - HOW DO THE STORIES "FEEL"? 1/3

I am interested in how positive or negative some stories "feel" to you. Please read the following 12 short stories and rate them for how positive or negative you feel they are overall.

3. Paul had been working as a train driver for fifteen years. He did not mind his job except that sometimes he had to get up very early (virtually the middle of the night) to start work. This was only really a problem on those days where Paul had been out at the pub the night before. Sometimes Paul still felt quite woozy very early in the morning when he'd been drinking the night before. He was aware that it wasn't ideal for him to be driving a train under these conditions but he thought it was OK because it did not happen that often, two or three times a month at most.

In general, this feels like a very positive story

In general, this feels like a quite positive story

In general, this feels like a quite negative story

In general, this feels like a very negative story

4. Lorna's company had decided to reward their staff by having a party. Lorna liked nothing better than a good party and got right into the swing of things, dashing about chatting to people and drinking lots of wine on her way. As the evening progressed, Lorna got steadily drunker but did not feel drunk because she was having such a good time. At some point a disco started up and suddenly Lorna realised they were playing her favourite song "Dancing Queen" by Abba. She turned to grab her friend Jo to make her dance, but they both overbalanced and fell across the table which was not as sturdy as it looked and it collapsed, spilling glasses and ashtrays everywhere. Lorna and Jo were laughing so much they could not get up.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

5. Duncan had finished work early and was at a bit of a loose end. Luckily, as he was walking home he met an old friend called Lyndsay, who he hadn't bumped into in ages. They decided to go and have a beer in a local pub so they could catch up on old times. Unfortunately, a girl that Duncan had fancied for ages was in the pub and he neglected Lyndsay to talk to the other girl. Lyndsay was very upset by this because she had fancied Duncan herself for ages. Lyndsay was so annoyed that she made a complete fool of herself by shouting at Duncan and flouncing away.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

6. Helen had just been offered her dream job. She had been a shop assistant until now but she had just been told that she was to get her own shop to manage. To celebrate Helen bought a bottle of champagne on the way home, and planned to celebrate her new job by sharing the champagne with her three flatmates. However, when Helen got home she discovered that all her flatmates had gone out on the town and had not invited her. Feeling a bit depressed, Helen opened the champagne on her own and put a Tesco lasagne in the oven.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

Page 4 - HOW DO THE STORIES "FEEL"? 2/3

7. Simon was a journalist, who worked on a busy National newspaper. Like most journalists Simon enjoyed a drink, often going to the pub after work. Recently, Simon's Doctor had diagnosed a stomach ulcer, and had advised Simon to cut down on alcohol and spicy foods. However, Simon did not feel able to stop going to the pub because that was where he got a lot of information about new stories. He had cut down on his whisky drinking a bit and thought that should help with the ulcer.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

8. Melville was feeling extremely confused. He had just been told by his Mother that she was going to get married again (she had divorced Melville's Dad years ago). Melville did not know how to feel about this at all. He did not know the bloke she was planning to marry so didn't know if he approved or not. Anyway,

Melville's Mother was not asking for his approval, she had already made up her mind. Melville decided he wanted a glass of whisky to steady his nerves.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

9. Fraser had recently managed to split up with his long-term girlfriend. He had been trying to get rid of her for ages, but she was extremely clingy. Since they split up Fraser had been going clubbing every weekend on the lookout for a replacement girlfriend. Unfortunately, last Saturday he had got far too drunk and had been unable to chat to any girls, they had all told him to get lost.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

10. Kevin worked as a postman and had to get up very early to get to work on time. Yesterday had been his birthday and Kevin had gone out with his friends to celebrate in a local bar. The bar had been having a Mexican evening and tequilas were on special offer. Kevin had drunk a lot of tequila and by the end of the evening was standing on the table singing. Because he was hungover Kevin slept in for work the next day. He had to talk very quickly to calm down his boss, who was extremely strict and did not like people being late for work at all.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

Page 5 - HOW DO THE STORIES "FEEL"? 3/3

11. Liam worked back shift at a local biscuit factory. These hours suited him because they meant that he could go out drinking with his friends in the evenings, and have the mornings to recover from his hangovers.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

12. Rory was a very outgoing individual who liked nothing better than a good party. He was very excited because tonight he was having a big party in his flat. He had bought loads of booze and planned to make a big bucket of punch for everyone to drink. He got the recipe for the punch out of a Sunday newspaper and he thought it would be very tasty. As it turned out the punch was delicious and everyone complimented Rory on it. The party went very well too as there was a good mix of people there.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

13. Jim was determined that he wouldn't drink too much this evening. He was at a party hosted by the Managing Director of his firm. The last party Jim had gone to he had drunk so much wine that he'd fallen

over in front of everybody. Jim was resolved not to do a repeat performance tonight. But it was very difficult not to drink when the wine was free.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

14. Martin was on holiday with his girlfriend and her parents. They had all been out drinking since early evening and it was now midnight and Martin was drunk. Martin's girlfriend had to help him home because he was not walking in a very straight line. Martin had to sleep downstairs in a makeshift bed with a bucket next to it in case he was sick.

In general, this feels like a very positive story
In general, this feels like a quite positive story
In general, this feels like a quite negative story
In general, this feels like a very negative story

Page 6 - IS THIS PROBLEM ALCOHOL USE OR NOT? 1/3

Thank you. Please read the following 12 short stories and rate them for whether or not you think they show problem alcohol use.

15. Kevin worked as a postman and had to get up very early to get to work on time. Yesterday had been his birthday and Kevin had gone out with his friends to celebrate in a local bar. The bar had been having a Mexican evening and tequilas were on special offer. Kevin had drunk a lot of tequila and by the end of the evening was standing on the table singing. Because he was hungover Kevin slept in for work the next day. He had to talk very quickly to calm down his boss, who was extremely strict and did not like people being late for work at all.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

16. Fraser had recently managed to split up with his long-term girlfriend. He had been trying to get rid of her for ages, but she was extremely clingy. Since they split up Fraser had been going clubbing every weekend on the lookout for a replacement girlfriend. Unfortunately, last Saturday he had got far too drunk and had been unable to chat to any girls, they had all told him to get lost.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

17. Helen had just been offered her dream job. She had been a shop assistant until now but she had just been told that she was to get her own shop to manage. To celebrate Helen bought a bottle of champagne on the way home, and planned to celebrate her new job by sharing the champagne with her three flatmates. However, when Helen got home she discovered that all her flatmates had gone out on the town and had not invited her. Feeling a bit depressed, Helen opened the champagne on her own and put a Tesco lasagne in the oven.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use

I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

18. Paul had been working as a train driver for fifteen years. He did not mind his job except that sometimes he had to get up very early (virtually the middle of the night) to start work. This was only really a problem on those days where Paul had been out at the pub the night before. Sometimes Paul still felt quite woozy very early in the morning when he'd been drinking the night before. He was aware that it wasn't ideal for him to be driving a train under these conditions but he thought it was OK because it did not happen that often, two or three times a month at most.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

Page 7 - IS THIS PROBLEM ALCOHOL USE OR NOT? 2/3

19. Jim was determined that he wouldn't drink too much this evening. He was at a party hosted by the Managing Director of his firm. The last party Jim had gone to he had drunk so much wine that he'd fallen over in front of everybody. Jim was resolved not to do a repeat performance tonight. But it was very difficult not to drink when the wine was free.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

20. Martin was on holiday with his girlfriend and her parents. They had all been out drinking since early evening and it was now midnight and Martin was drunk. Martin's girlfriend had to help him home because he was not walking in a very straight line. Martin had to sleep downstairs in a makeshift bed with a bucket next to it in case he was sick.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

21. Simon was a journalist, who worked on a busy National newspaper. Like most journalists Simon enjoyed a drink, often going to the pub after work. Recently, Simon's Doctor had diagnosed a stomach ulcer, and had advised Simon to cut down on alcohol and spicy foods. However, Simon did not feel able to stop going to the pub because that was where he got a lot of information about new stories. He had cut down on his whisky drinking a bit and thought that should help with the ulcer.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

22. Melville was feeling extremely confused. He had just been told by his Mother that she was going to get married again (she had divorced Melville's Dad years ago). Melville did not know how to feel about this at all. He did not know the bloke she was planning to marry so didn't know if he approved or not. Anyway, Melville's Mother was not asking for his approval, she had already made up her mind. Melville decided he wanted a glass of whisky to steady his nerves.

I am very sure this is problem alcohol use

I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

Page 8 - IS THIS PROBLEM ALCOHOL USE OR NOT? 3/3

23. Lorna's company had decided to reward their staff by having a party. Lorna liked nothing better than a good party and got right into the swing of things, dashing about chatting to people and drinking lots of wine on her way. As the evening progressed, Lorna got steadily drunker but did not feel drunk because she was having such a good time. At some point a disco started up and suddenly Lorna realised they were playing her favourite song "Dancing Queen" by Abba. She turned to grab her friend Jo to make her dance, but they both overbalanced and fell across the table which was not as sturdy as it looked and it collapsed, spilling glasses and ashtrays everywhere. Lorna and Jo were laughing so much they could not get up.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

24. Duncan had finished work early and was at a bit of a loose end. Luckily, as he was walking home he met an old friend called Lyndsay, who he hadn't bumped into in ages. They decided to go and have a beer in a local pub so they could catch up on old times. Unfortunately, a girl that Duncan had fancied for ages was in the pub and he neglected Lyndsay to talk to the other girl. Lyndsay was very upset by this because she had fancied Duncan herself for ages. Lyndsay was so annoyed that she made a complete fool of herself by shouting at Duncan and flouncing away.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

25. Liam worked back shift at a local biscuit factory. These hours suited him because they meant that he could go out drinking with his friends in the evenings, and have the mornings to recover from his hangovers.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

26. Rory was a very outgoing individual who liked nothing better than a good party. He was very excited because tonight he was having a big party in his flat. He had bought loads of booze and planned to make a big bucket of punch for everyone to drink. He got the recipe for the punch out of a Sunday newspaper and he thought it would be very tasty. As it turned out the punch was delicious and everyone complimented Rory on it. The party went very well too as there was a good mix of people there.

I am very sure this is problem alcohol use
I am fairly sure this is problem alcohol use
I am fairly sure this is not problem alcohol use
I am very sure this is not problem alcohol use

Page 9 - ABOUT YOU. 1/4

Thank you for rating the stories. The remaining questions are about you and your drinking.

27. What is your gender? Male / Female

28. How old are you?
29. Which ethnic group do you identify with?
 Asian - Bangladeshi
 Asian - Indian
 Asian - Pakistani
 Asian - other
 Black - African
 Black - Caribbean
 Black - other
 Chinese
 White
 If other, please specify:
30. What is your highest level of completed education? (please tick one box only)
 None
 SQA units
 O-Grades/Standard Grades/GCSES/Equivalent
 Highers/AS-Levels/ Equivalent
 CSYS/Advanced Highers/A-Levels/Equivalent
 HNC/Apprenticeship/Equivalent
 HND/Degree/Equivalent
 Postgraduate Qualification/Professional Qualification/Equivalent
 If other, please specify
31. Are you employed?
 Yes, full-time
 Yes, part-time Unemployed
 Retired
 If other, please specify
32. Are you a student?
 Yes, full-time
 Yes, part-time
 No
33. What's your relationship status?
 Single
 Separated
 Divorced
 Married/Living with partner
 In a relationship
 Widowed
 If other, please specify
34. Where are you completing this questionnaire?
 At home.
 At university.
 At work.
 In the pub.
 In a cafe.
 On public transport.
 If other, please specify

35. How many days a month do you drink, on average?
36. On a typical drinking day, how much do you drink? (e.g. 4 cans of lager/ bottle of whisky/ couple of glasses of wine)
37. Have you ever got help for alcohol problems (including attending Alcoholics Anonymous)? Yes/No
38. If you answered yes to question 37, how many times have you got help for your drinking?
39. Are you currently attending counselling or other treatment for alcohol problems? Yes/No
40. Are you attending Alcoholics Anonymous at present? Yes/No

Page 11 - ABOUT YOU. 3/3

41. Please check the option that best describes your drinking:

In general, I feel I have control over my drinking
 Sometimes I feel I have control over my drinking
 In general, I feel I have no control over my drinking

42. Please check the option that best describes your drinking:

In general, I enjoy my drinking.
 Sometimes I enjoy my drinking.
 In general, I don't enjoy my drinking.

43. Please check the option that best describes your drinking:

I think I have a problem with alcohol
 I don't think I have a problem with alcohol
 I once had a problem with alcohol but I don't have it anymore.

44. Please check the option that best describes your drinking:

I drink mainly because of things that happened in the past (e.g. relationship breakup; death of family member/friend etc.)
 I drink mainly because of what's going on at the time (e.g. friends/family drinking; social events where you might have a drink etc.)
 I drink because of a combination of both these things

45. I drink because (please tick all that apply):

It's sociable/ my friends do it
 Of things that happened to me in the past
 My job drives me to it
 Health issues
 Family issues
 If other, please specify

46. Do you feel that you are "addicted" to alcohol?

Yes
 No
 I don't know

Page 12 - PRIZE DRAW

To maintain your anonymity, to enter the prize draw please send an email to strathclydestudy@googlemail.com. Your email address will be extracted from this email and entered into the prize draw. At the end of the research period, two email addresses will be chosen at random to each win £50.

Page 13 - THANK YOU FOR TAKING PART IN THIS STUDY.

That is the end of the study. Thank you very much for spending this time to help us to develop a tool that will benefit individuals with alcohol issues. As you may have noticed, the stories were the same in both the rating tasks. I'm interested in how we assess what's problematic or non-problematic drinking and whether we use "rules of thumb" such as how positive or negative the stories feel overall. There's no right or wrong answer - I am just interested in the views of a wide range of individuals.

From research such as this, we are hoping to develop a tool that can be used in alcohol treatment centres to improve the outcome for individuals who are undergoing treatment.

If you've got any questions about the study then please contact me on 0141 548 4284 or email me at: rosemary.e.newham@strath.ac.uk.

Thanks again, Rosemary