Institute of Alcohol Studies

Internet Influences on Adolescent Attitudes to Alcohol

A report for Alcohol Research UK

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Abstract

The current study had the broad aim of examining the alcohol content encountered online by young people, evaluating young people's responses to that content and assessing whether relationships exist between consumption, implicit attitude and online alcohol exposure. This was achieved by focusing on three objectives through three studies. *Study 1* used thematic analysis of semi-structured interviews to examine young people's response to actual online screenshots encountered during internet-use. *Study 2* was a content analysis of the actual Internet use of 91 participants, examined for instances of alcohol and non-alcohol, coded by *website type*, *activity*, *source*, *prominence* and *valence*. *Study 3* examined relationships between drinking behaviour, implicit attitude (assessed through the Implicit Association Test) the alcohol content encountered by participants' in *Study 2*. Alcohol content online mainly manifested as *passive* references from sources outside participants' peer network and was generally of positive valence relative to non-alcohol. Associations were found between alcohol exposure and consumption as well as between implicit attitudes and consumption. Thematic analysis revealed the high level of discrepant speculative assumptions made when interpreting online media, with general trends towards a focus on the aesthetics of the setting and the appearance of people in the screenshot. Results were discussed with implications for future research and policy.

Background

There is a considerable body of research exploring the relationship between exposure to media content and its influence on adolescent behaviour. Research has been conducted across various forms of media including; television (Wallack et al., 1990), soap operas (Furnham et al., 1997), music videos (DuRant et al., 1997; van den Bulck and Beullens, 2005), film (Hanewinkel et al., 2007; EUCAM, 2010) and animation (Thompson and Yokota, 2001). More recently research has explored the relationship between adolescent alcohol consumption and exposure to alcohol content in online media (Moreno et al., 2007; Moreno et al., 2010; Moreno et al., 2011; Ridout et al., 2011). The majority of research takes the form of content analysis and is focussed on documenting the prevalence of alcohol references found within the media. Although some attempt has been made to describe the qualities and valence of the alcohol content found, comparatively little is known about the attitudes young people have towards this content and how the qualities of this content influence their appraisal of it.

Exposure to alcohol media content has been found to be associated with later drinking practices (Smith and Foxcroft, 2009; Anderson et al., 2009) as well as influencing immediate alcohol consumption (Engels et al., 2009). Additionally, media use generally has been found to correlate with alcohol consumption (Villani et al., 2001). Although direction of causality could not be inferred in these studies, it is clear that there is a link between exposure to media content (particularly alcohol related media content) and drinking practices that must be investigated further.

Following the recommendations of previous research (Brown and McDonald 1995), more recent research has examined viewers' responses to media content. With a focus on young people, Nicholls (2009) contrasted results of a content analysis of TV and paper news sources with a survey and interviews with undergraduates on their opinions of news sources. They found young people have a tendency towards scepticism for news sources depicting negative consequences of drinking and health campaigns presenting binge drinking as a

serious problem. Research on alcohol advertising on the other hand has illustrated the salient qualities that can make certain types of alcohol advertising appeal to children and young people (Chen and Grube, 2002; Chen et al., 2005). These findings along with evidence illustrating the failures of past public health campaigns to curb excessive drinking in young people (see Room et al., 2005) highlight the need for more research uncovering the ways in which young people respond to alcohol content in the media.

Qualitative research with young people in the UK has identified that engagement in excessive alcohol consumption is mainly associated with social facilitation, individual benefit and the influence of social norms; while limiting factors pertain to concerns regarding health, individual safety and legal influences (Coleman and Cater 2005). Excitement, social facilitation, group pressure, parental attitudes and adult symbolism (i.e. drinking associated with being grown up) have been found to be important themes in influencing young people from drinking cultures (Kloep et al., 2001).

With the ubiquity of Internet and New Media in young people's lives today (see Ofcom's report on Children's media literacy 2010), there are influential new media channels in young people's lives that also must be examined for their alcohol content. The interactive nature of the Internet perhaps sets it apart from conventional media channels as it provides a greater degree of active control over content experienced by the recipient. This control applies not only in choosing which websites are visited, but also which pages of websites are viewed, time spent on each page, font size and layout, and size and location of window on screen. The interactive element of Internet experience creates an environment different from other forms of media where the user is typically a more passive recipient of content, and one medium in which the effects of exposure could be qualitatively different.

The Internet is therefore of particular interest due to its specific interactive nature. The arrival of social networking means that viewers themselves can, and do, construct media content. This brings into question the very nature of the influence of the medium as the Internet can act as an extension of the individuals

peer network. While there have been studies exploring the influence of Internet activity on other behaviours such as sex and violence (Peter and Valkenburg 2007) there is comparatively little relating to drinking patterns despite claims that Internet use 'may lead to greater exposure to alcohol' (Stockdale 2001: 234). This dearth of research on the influence and association between Internet exposure and alcohol consumption needs to be addressed.

Research has begun to examine the prevalence and influence of alcohol content encountered online. Studies on social networking sites tend to find that alcohol is extremely common in this medium (Moreno et al., 2007; Moreno et al., 2010., Ridout, Campbell and Ellis, 2011). Further, consumption of specific online media (social networking sites and music downloads) has been found with short and long term drinking (Epstein, 2011).

As a consequence of its purpose to directly influence drinking habits, alcohol advertising has been the area of online media that much research has tended to concentrate on; however, research on marketing (particularly modern marketing) illustrates the multi-media channel approach to marketing employed by brands to advertise their products in subtle ways (see Alcohol Concern, 2011, for a discussion the marketing practices of the drinks industry). Case studies of the practices of the drinks industry have been examined to reveal a complex system of direct advertising, product placement and promotion of brand images, slogans and values (Brooks, 2009; Chester et al., 2010). Interestingly, in interviews commissioned by Alcohol Concern (2011), young people reported being unaware of having experienced alcohol brand advertising online and on social networking sites; while In contrast, all of the young people interviewed claimed to have experienced references and photographs portraying alcohol related behaviour in people their own age.

With increasingly complex advertising practices making it difficult to confidently identify instances of marketing online, and the increasing potential for young people to encounter alcohol content through peer generated material (i.e. on social networking sites), it is important for research of this nature to shift its

focus somewhat away from alcohol advertising and onto alcohol advertising more generally encountered during everyday use.

This is especially true in light of psychological research on implicit information processing, which has highlighted the links between automatic responses to alcohol stimuli and drinking attitudes, practices and behaviours (i.e. Houben and Wiers, 2007; Wiers et al., 2009) as well as the associations between drinking habits and psychological processing of alcohol-related stimuli (Townsend and Duka, 2000; Stollery et al., 2006; Zetteler et al., 2006). Further this influence is particularly of concern when the mere exposure effect – whereby an individual can become more positively disposed towards a stimulus through direct experience with it independent of conscious cognitive appraisals – is taken into account (Zajonc, 1968; Zajonc 1984). This helps illustrate how a focus on online alcohol advertising (an aspect of online alcohol content that has not yet been demonstrated to be particularly prevalent in young people's Internet experience) could miss other more mundane sources of alcohol content that could be having an influence on young people independent of any promotional intent. Clearly investigation is required into the true nature of alcohol content experienced by young people, how they appraise this content and how this content influences them (consciously or unconsciously).

Recent studies have begun to focus on young people's response to online media content. Recent research by the Joseph Rowntree Foundation has suggested that although young people acknowledge that uploading drinking photographs on social networking sites is very common, they are reluctant to admit to doing it themselves and generally speak negatively of their peers who do it (Atkinson et al., 2011). However, interviews with an older sample (of university students) has revealed that social networking sites come to be integral to the structure of drinking occasions helping to facilitate the theme of 'eventfulness' whereby documented drinking outcomes (even seemingly negative ones such as embarrassing situations) create anecdotes that can be recalled and reminisced about later (Nicholls, 2009).

If the interactive element of online media is to be taken into account the methodological approaches need to be adapted accordingly. Established content analysis, involving the identification of popular channels and assessment of content, would be inappropriate for two reasons. Firstly, Internet users can take a complex path to a wide variety of sites, including popular sites such as Facebook and YouTube. Secondly, peer generated content is often restricted in terms of access and is only accessible to members of the greater peer network.

The current study attempts to address some of these issues through examining the alcohol and non-alcohol drinks content from all sources across multiple websites visited by young people. The data for this study is derived from on-screen recordings of actual recreational Internet activity in a number of young people. The aim is to provide an insight not just into the alcohol content available on websites popular with young people, but to the alcohol content actually experienced by young people during recreational use.

In addition to this content analysis, the current study aims to gain an insight into young people's response to that content, as well as the relationship between the frequency and quality of that content and consumption and attitude to alcohol.

Aims

This research project consisted of three studies with three distinct objectives; the design and findings for each are discussed separately.

Objective 1. To explore the ways in which young people respond to alcohol references in Internet media.

Objective 2. To examine the prevalence and nature of alcohol content in sampled Internet use.

Objective 3. To examine the association between alcohol references, alcohol consumption and implicit attitudes towards drinking.

Data Collection and Sample Demographic

A total of 112 participants took part in this research, with 10 taking part in a shorter pilot study and 102 in the main study. Participants in the pilot study were paid £8 each for the time, while participants in the main study were paid £15 over 2 sessions.

Participants were recruited from 6 youth clubs across London (mainly in the boroughs of Bromley and Camden) between November 2010 and July 2011. The mean age was 15.4 years (SD 1.0) and 59.8% were male. A breakdown of participants' ethnicity and religion is provided in Appendix Item 4, derived from the questionnaire from *Study 3*. Ethical permission was granted by the University of Kent Social Research Ethics Committee, reference SRCEA 0087.

In order to preserve anonymity, participants were identified by a unique password they decided upon in advance. This password was spoken aloud into a voice recorder prior to the interviews, entered into the search-bar at the start of the content analysis recording, and entered as answers to questions during the questionnaire and IAT tasks. This procedure ensured that participants' scores could be combined for the analysis in *Study 3*, without having to identify them personally.

Although 102 participants were recruited for the main study, not all participants took part in every aspect of the task. Specific participant numbers are given in the design section for each study, as is a description of the ways in which the procedure for that study was refined based on the pilot study.

Study 1. Exploration of the ways in which young people respond to alcohol references in Internet media: a qualitative analysis.

Method

Participants
87 participants took part in this aspect of the task overall.

Two separate pilot studies were conducted, both using 10 participants, in order to effectively refine the procedure based on the feedback from the participants, the interviewer's experiences, and the assessment of the recorded interviews by the other researchers. The procedure for the main task was refined after the initial pilot and then tested in the second pilot to ensure that the main task had an interview system that drew open-ended, descriptive responses from participants but also retained a task-focussed structure. The main interviews were conducted on 67 participants.

Pilot
Both the pilot studies were conducted in the same way as the main study with participants being interviewed independently and providing feedback on a number of Internet screenshots containing alcoholic and non-alcoholic drinks. The key alteration made between the initial pilot study and the main study was in not explicitly asking participants to characterise the screenshots overall as positive or negative. It was found in the pilot study that this created a simple classification task for many of the participants whereby insightful details were withheld in favour of giving a simple numerical appraisal of the screenshot. It was also found that many answers given by participants were internally inconsistent, with mutually contradictory statements given as an explanation for their classification of certain screenshots.

It was agreed by researchers that the main task would eliminate these explicit value judgements in favour of conducting the research in a more open-ended way, allowing participants to divulge as much information as possible on their feelings towards the screenshots. These responses would then be evaluated with regard to their identifiable themes rather than an assessment of overall valence. It was also learnt from the pilot that the interviews must be preceded by a clear explanation that we were looking for participants' opinions of the screenshot itself, as opposed to their views on alcohol in general. Participants tended to focus on the latter in the pilot, presumably as they were aware of the nature of the research, and needed to be directed to talk about the screenshots so we could gain a more nuanced picture of how different contexts affects alcohol messages. Additionally, a set of guideline questions and prompts were devised to ensure that the interviews remained focussed on these contexts, as informed by the pilot.

Procedure

The interviews were conducted at the youth clubs themselves with each participant being interviewed individually by the researcher. This was to create a more informal environment in a setting the participants were familiar with to encourage them to be honest and not restrict their answers. Similarly, the interviews were conducted in private so participants would not be influenced by their peers or youth group leaders.

Prior to the interviews, 20 screenshots of actual online Internet activity were drawn from data taken from *Study 2*. These screenshots were taken with full consent from the participants and contained a mix of alcoholic and non-alcoholic drinks references from a variety of website types and sources, with a variety of positive and negative attributes (in the researchers' judgements).

Also prior to the interviews, all screenshots were edited in Adobe Photoshop so that all references to names or information that could be used to identify the participants (or other individuals in the screenshots) were removed. In their place, made-up names and information matched for number of letters and approximate font, style, size and colour was edited into the screenshots.

Feedback from the pilot studies indicated that the natural appearance of the screenshots was to a large extent preserved. When asked, no participants indicated that they were aware that the screenshots had been edited.

Each participant was presented with 10 screenshots, 5 containing alcohol and 5 containing other drinks. Each of the 5 screenshots for each type of drink included 2 references that the researchers judged to present the drink in a positive light, 2 in which the presentation was negative and 1 where it was judged a neutral depiction. The order of presentation was decided upon based on the feedback from the pilot and was carefully constructed so as to avoid priming the participants for patterns of answers as the interviews progressed.

For each screenshot, the participant was first asked whether they could see a reference to drink in the picture and whether they thought it was alcohol or non-alcohol. They were then asked to describe the context of the screenshot, any first impressions and whether they generally liked it. Next, participants were asked for their opinions on the presentation of the drink in the screenshot, whether they judged the setting to be particularly positive or negative, and which characteristics of the screenshots resulted in that judgement. Participants were asked for feedback on how positive or negative the drink within the screenshot appeared and why, as well as any other relevant observations they had about the images.

Interviews were conducted in a semi-structured format with the interviewer allowing the participants to provide as much information as possible without going off-topic. All interviewers were recorded using an Olympus Digital Voice Recorder DS-30, then played back and fully transcribed. Transcriptions were analysed and participants' judgements of the screenshots and the drink they contained were analysed thematically for salient themes relating to the attributes that affected their judgements. The thematic analysis was conducted for each individual screenshot so as to provide an insight into the themes that influenced participants' judgements of that particular reference. Common themes across multiple screenshots were also identified as particularly salient factors in influencing participants' responses to online drink content.

Findings

Thematic analysis structure

Over the course of the research a number of screenshots were trialled on participants in an attempt to develop a set that was both interesting enough to provoke discussion and that represented a balance between the type of drink represented and its prominence and valence. Ten screenshots were used as the final set, being shown to 54 participants, with an additional number of screenshots in the set having been used when trialling the screenshots. The number of participants who viewed each of the screenshots is recorded with the titles. These screenshots were selected on the basis of the aforementioned criteria, and also demonstrated (in the researchers' judgements) a set that represented the commonly recurring drinks references in *Study 2*.

Although the open-ended structure of the interviews generated numerous discrepant themes between participants, there were many commonalities. For the purposes of the summary of the qualitative data, the themes referenced and discussed were the most frequently recurring ones; themes that occurred only in single instances were not discussed unless the themes were closely related to other referenced themes. With the particular emphasis of this project, it was considered useful to examine participants' judgements about the screenshot's relation to the drink and its influence and their attitudes towards the drink, and therefore themes pertaining to these categories were examined regardless of how many instances of the theme occurred.

In sorting each of the themes from the various screenshots into discrete categories representing specific areas of interest to the project a common structure was identified that was effective in separating groups of themes within multiple screenshots. This structure was applied to the majority of the screenshots discussed.

The themes were sorted into the following categories:

General descriptions

Descriptions of the environment, situation or overall themes of the screenshot beyond simple mundane observations using language that seemed, in the researchers' views, indicative of a participant's attitude towards the screenshot.

Feelings towards the screenshot

Specific value judgements made by participants about the screenshot usually pertaining to the valence they had attributed to it.

Characters

Themes relating to salient observations and judgements about the individuals within the screenshot.

What the screenshot said about the drink

Themes in this category were participants' representations of how the screenshot indicated something specific about the drink in question.

Influence

This category represented themes describing the influence of each specific screenshot on viewers' drinking attitudes or behaviours, whether that be influence on the participant or perceived influence on other people. This was discussed by participants and researchers as the influence of the *type* of screenshot that contained the qualities participants had identified, rather than the specific single frame recording being discussed.

Independent attitude

In discussing screenshots, many participants revealed general attitudes towards drinks that were judged to be explicitly independent of the screenshot. Although they may not be directly related to the screenshot, it is interesting to examine which values each participant discussed in response to viewing a particular screenshot. It was also judged useful to have a general record of attitudes towards drink that were described by participants.

It is worth noting that although this structure of categorisation was viable (in terms of being a consistently applicable classification of themes and of being relevant to the aims of the research) for the majority of screenshots, some screenshots were qualitatively different enough for these category headings not to apply. For example, it was not possible to focus on *characters* in screenshots that contained no people. Additionally, some screenshots (see **P. Diddy** and **Heineken advert**) had particularly prominent drinks within the screenshot that provoked participants into discussing the visual appeal of the drinks in a way they did not in most other screenshots. Therefore, though most screenshots followed the aforementioned method of theme characterisation, some themes in

specific screenshots did not seem to be represented by these category labels; thus, new categories were generated in these instances.

Once all the themes in each relevant category were collected and summarised, an overall summary of the screenshot was recorded – representing the overall trends in participants' interpretations and attitudes towards the screenshot and how it represented the drink in question.

It should be noted that although in most instances the theme labels were derived from quotes by participants, this was not always the case and comments in speech marks did not always reference direct quotes but were rather themes derived from what participants said.

Rude Tube Summary (54 Participants)

The screenshot was taken from the opening credits to the TV programme "Rude Tube" and displayed a highly ambiguous situation with many bright colours and boxes of unusual activity. In the centre of the screenshot was a comical image of scientists holding a bottle of coca-cola and appearing to do experiments on it. As a result of the unusual imagery depicted in this screenshot, it was interpreted by participants in a variety of different ways with a wide range of value judgements made about the situation and the influence of the drink. Most participants focussed on the unusual individuals in the screenshot, with many describing the situation and characters with terms such as "silly" and "crazy". Possibly because of this characterisation, it was assumed by a large number of participants that the characters in the screenshots were drunk. With the screenshot being quite unusual, few participants remarked on the influence of the screenshot and few revealed existing attitudes towards drink.

General descriptions

- Being a highly ambiguous screenshot, the setting was interpreted in a variety of ways from being an advert, to being a party, to being a celebration of some kind. Other interpretations of the screenshot included a scientific experiment and a world record-breaking attempt. With such a range of general descriptions and interpretations, it is not surprising that subsequent value judgements were somewhat discrepant between the participants.

- Participants tended to characterise the screenshot as either "funny" or "fun", with those 2 themes being by far the most commonly remarked adjectives used to describe the setting of the picture (10 and 8 instances respectively).

- With slightly different connotations, "silly" was also a common theme in describing the picture (7 instances). In contrast to observations of the screenshot being "funny", these responses tended to express a slightly more negative, with participants going on to describe the scene as "ridiculous" when questioned further.

Feelings towards screenshot

- By far the most commonly reported feeling about the screenshot was that it was unappealing (8 instances), with the majority of participants in this theme also expressing that they would not want to be there (6 instances).

- A smaller set of participants expressed the contrasting view that they would want to be there (3 instances). However, these participants qualified their statements by saying that they would only want to be there if their interpretation of the screenshot was correct (that it was a party) or if they weren't drunk.

Characters

- Many participants identified the characters in the screenshot as being "drunk" (18 instances), with some participants going on to describe it as a good kind of drunk or a normal kind of drunk ("just drunk"). Interestingly, despite our selection of this screenshot as a 'non-alcohol' image because of the appearance of the diet coke bottle on screen, this "drunk" theme was by far the most commonly expressed across all categories in this screenshot.

- The above point is likely a result of the characters in the screenshots appearing and being dressed unusually. Four participants suggested that the characters were "dressed drunk" and 3 suggested that they "looked drunk" (with "posture" being specified as an example of why). As is apparent from this and other screenshots, there is a tendency for young people to associate unusual appearances with being drunk.

- Participants also had a tendency to focus on the characters' unusual behaviour and conclude that this was a result of drunkenness. "Behaving drunk" was a theme that came up in describing the actions of the characters on 6 occasions,

with 2 of these participants going on to express that they were behaving drunk in a negative way.

- Other observations about the characters' appearance and behaviour included that they were "out of control" (3 instances), "screaming/cheering" (3 instances), "dancing" (3 instances), "jumping" (2 instances), being "hyper" (4 instances), acting "random" (5 instances), "crazy" (3 instances), "looking stupid" (4 instances), were "acting like an idiot" (5 instances) or wearing "weird clothes" (5 instances). These smaller themes combine to illustrate the main focus of the participants' observations that the characters in the screenshot appeared and behaved extremely unusually. Although they did not always explicitly tie this unusual behaviour to alcohol, the common recurrence of themes such as these could go some way to explaining why so many participants also judged the characters in the screenshot to be drunk.

- Seven participants remarked that the characters in the screenshot were "embarrassing", which given observations about the characters' appearance and behaviour, as well as the tendency for participants to express a lack of desire to be in the screenshot, is not surprising.

- However, the characters were also seen as "happy" (11 instances) and having a good time (2 instances of "enjoyment") by several participants. Given the other negative descriptions, this suggests an image can show someone being happy and drunk without it being explicitly appealing to the viewer.

What the screenshot said about the drink?

- Aside from the many observations about the characters being, looking or behaving drunk, there was no direct suggestion that the screenshots explicitly revealed anything about alcohol. This could well be a result of the highly unusual situation depicted in the screenshot making generalisations to other situations untenable.

- Two participants observed, with reference to the coke in the screenshot, that the screenshot suggested that coke "gives energy".

Influence

- Many participants described the setting as "fun" or "funny" and the subject as enjoying himself whilst still not finding the setting personally appealing. This would suggest that they aren't explicitly influenced by the screenshot even when able to pick out positive attributes. Participants also indicated they did not think

others would be influenced by this presentation of alcohol, for example one participant said it "wouldn't influence kids".

- Only 2 participants indicated the screenshot had the potential to influence a person viewing it; these 2 participants remarked that "others wouldn't want to be like that" and that "it would give a bad impression to kids and encourage drinking". Again, it seems likely that it was the unusual nature of the screenshot resulted in the variable and contradictory assessments of its potential influence on other people.

- The fact that so few participants (compared to other screenshots) remarked on the influence is also likely to be a result of the unusual setting depicted making generalisations beyond the picture very difficult.

- It is worth noting that 2 of the 3 references to the screenshot's influence were taken to be an influence "on kids", a demographic the participants did not perceive themselves to be part of.

Independent attitude

- A few participants revealed a priori attitudes towards alcohol that influenced their assessment of the screenshots. Only 4 such themes were revealed; they were "negative experience with alcohol" (1 instance), "alcohol makes you do unusual things" (2 instances), "wouldn't want to be drunk" (1 instance) and "alcohol makes you happy" (1 instance). Considering the emergent themes in describing and evaluating the screenshot, the screenshot provoking these particular opinions is not surprising. The fact that so few participants discussed their opinions of alcohol could again be a result of the situation in the screenshot being unusual enough for it to not have any association with participants' beliefs or values.

- In discussing the screenshot, only one participant referenced an existing attitude to coke, saying "coke is bad for you".

Sniper Summary (55 Participants)
This screenshot presented participants with a picture of a stick man in a computer game drinking shots from a bottle alone at a bar with the name of the game, Sniper Assassin, at the top. There is text describing him as an assassin who has finally retired from sniping after his wife was murdered. While very few participants made reference to the text, most focussed on the visual environment

or the appearance of the character himself, overwhelmingly describing him in negative terms with particular reference to him being "depressed" and "alone". Many participants speculated upon his motivations for drinking, with a clear tendency to ascribe negative motivations to the character (e.g. " drinking because depressed" and "drinking because something bad happened"). Most participants did not indicate that the screenshot said anything specifically bad about drinking in general, and none indicated that the screenshot could have an effect on people of their age group. The screenshot did provoke a few participants into indicating that the screenshot depicted a type of drinking they would never engage in themselves.

General descriptions

Whilst this screenshot was generally interpreted negatively, as evident in participant descriptions of the character, a few participants described it as "normal/casual" (4 instances) or positively ("nice environment"; "funny setting"; "Quiet (good)"). Some also commented on the fact that it was a video game that featured "killing/violence" (4 instances), 3 of which explicitly said this was a bad thing.

Feelings towards screenshot

- Participants who voiced their own feelings towards the screenshot overwhelmingly indicated that the setting was "unappealing" (20 instances); these incorporated explanations and sub-themes such as "wouldn't want to be there" and "unattractive setting". Some participants (4 instances) also pointed to the "dark" or "grim" setting.

- This contrasted with only 2 participants who found the screenshot "appealing" – both indicating that they would want to be there, but only when older and with friends.

Characters

- The most commonly recurring theme in discussing the character was that the participants felt as though he was "depressed" (22 instances).

- Another common theme was that the sniper in the picture was "alone" or "lonely" (12 instances). These two common themes clearly indicate that the participants did not find the image of drinking spirits alone in a bar an attractive one.

- A large number of participants commented on the character's negative "body language" (10 instances); this often went with descriptions of him being "slumped" or "slouched", or with his "head down".
- Participants also made reference to the situation that the character appeared in. These tended to fall into the umbrella category of "bad situation" (6 instances), which incorporated the interpretations such as him being in a "peed off situation" or planning "revenge". This contrasted with only 2 participants who indicated that the screenshot displayed a "good situation".
- Contrasting with other screenshots where a large number of participants indicated that the appearance or behaviour of characters suggested drunkenness, only 8 participants made reference to the character in this screenshot being "drunk". This seems unusual, given that this screenshot actually depicted a character drinking shots from a bottle of drink on a bar in front of him. This could be a result of the observed tendency across screenshots for participants to judge drunkenness by appearance and behaviour rather than direct depictions of alcohol use. Two participants even made comments on the apparent "moderate drinking" occurring in this screenshot – with one participant saying that the character "could drink more". Two participants did however comment on that he had "drunk too much" and looked "like an alcoholic".
- Other themes that occurred multiple times were consistent with the general impression participants had of the character and included "unhappy" (4 instances) and "stressed" (4 instances). A few participants also thought that the screenshot was a depiction of someone "drowning sorrows" and "not living a good life" (both 2 instances).
- It is worth noting that the theme "relaxed" occurred multiple times (5 instances) in discussing the character. But any other such themes with a positive valence were extremely rare with no other positive observations about the character occurring in more than one participant. Other positive observations included "masculine" (specified as good) and "cool lifestyle" (elaborated as being a sniper and living life on the edge).

Character's motivations for drinking
- In discussing the characters, many participants speculated upon the character's motivation for drinking.

- The most commonly ascribed motivation for drinking was "because depressed" (9 instances), which is unsurprising given the large number of participants who remarked upon the character looking depressed.

- Another commonly ascribed motivation was "drinking to feel better" (7 instances), which often took the form of "drinking to be happy" and was considered to be a positive motivation by one participant.

- Another common motivation related to the characters circumstance, with many participants speculating that he was "drinking because something bad had happened" (6 instances). These negative circumstances included "something bad at work" and "arguing with his wife" (even though the text in the image explained that his wife was murdered). A commonly interpreted motivation was "drinking to forget" (6 instances). "Drinking because stressed" and "drinking to relax" (specified as a negative thing) also occurred multiple times (3 and 2 instances respectively).

- An interesting theme that occurred multiple times in relation to the character's drinking was "drinking because he has nothing to do in life" (3 instances). It is interesting that multiple participants attributed this motivation that seems to extend far beyond what was actually visible in the screenshot. Examples given to illustrate what was meant by this point included that the character was drinking because he was "wasting his life", and one participant even suggested that drinking was "normal when bored".

- Two participants indicated that the screenshot was an example of "normal drinking".

What the screenshot said about the drink

- Three participants remarked that the screenshot "made alcohol look good". "Something bad will happen [as a result of him drinking]" was referenced by 2 participants, and "makes alcohol look bad" was a theme discussed by another participant.

- One participant observed that in this screenshot "alcohol sets the scene", a theme that was prevalent in some other screenshots.

Influence

- Some participants indicated that they believed that the game depicted in the screenshot would give a "bad impression to young people" (4 instances). This was elaborated on by some participants who indicated that it would influence

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violence in young people. One participant remarked that "computer games influence the brain of eight to twelve year olds"; specifying this age range would seem to imply the belief that it did not influence the brain of older people (such as those in the age range of the participants).

- Some participants indicated that the game would "influence others" (4 instances), with one of these participants making clear that although it influenced others it did not influence him. Similarly, a single participant pointed out that a game would not influence his behaviour ("game wouldn't affect me").

- These themes mainly pertain to the influence of violent content in games and do not explicitly address the depiction of alcohol. Indeed only 1 participant thought that the game "shouldn't promote alcohol".

Independent Attitude

- The most common revelation about their own attitude to drink was by participants suggesting that the screenshot was an example of drinking they would never partake of, indicating that they "wouldn't drink in that way" (4 instances).

- Three participants revealed that they held "negative personal opinions of alcohol" in discussing of the screenshot.

- Three participants said that "alcohol causes violence", an independent attitude but presumably prompted by the violent content of the video game.

- No other attitudes towards alcohol independent of the screenshot were revealed by multiple participants.

High Vis Summary (54 Participants)

This screenshot depicted a young man on a field in a high visibility jacket with a bottle of water in his hand and was selected by the researchers as it was a very ordinary image with little activity – thus representing the kind of neutral valence screenshot frequently encountered online. The mundane setting in this screenshot provoked comparatively little discussion, with many participants not identifying any tangible themes at all during the discussion and simply describing the picture. Generally, participants interpreted the screenshot as being an example of the character "working" in some way. A few participants noted that the body language of the character implied that he was hiding the drink, which led to conclusions that it was probably alcohol. Regardless, there

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was no reference to any influence or effect that the screenshot would have on someone who came across it and no indication that it portrayed the drink in a particular way.

General descriptions

- The main general theme that occurred when describing the overall context of the picture was that of "nature" (5 instances); these involved discussions of "good weather", "recycling" and "helping the environment".

- Other interpretations of the situation generally involved it being an example of an outdoor recreational activity of some kind – "camping", "fitness" and "going on a journey" (all with 1 instance).

- A few participants interpreted the screenshot as being "normal" (4 instances), which possibly helps to explain why the mundane setting depicted in this picture failed to provoke as much discussion as other screenshots.

Feelings towards screenshot

- Very few participants expressed any significant personal opinion on the screenshot, with only one participant describing the screenshot as "appealing", one describing it as "fun" and one expressing that he "wouldn't want to be there".

Character

- The character in the screenshot was mainly interpreted as being a person "working" (15 instances), or specifically "working for the community" (5 instances). Other participants indicated that the character was "cleaning" (4 instances).

- There were few judgements made about the character's appearance or his apparent state of mind. Two participants indicated that he looked "happy". There was also 1 instance each of the themes "alone", "depressed", "respectable", "sensible" and "in control".

- Many participants focussed on the bottle in the character's hand, with many interpreting the character as "hiding drink" (6 instances), thus leading to speculation that this meant that the drink was in fact alcohol, and possibly stolen or that they were at risk of getting caught by the police. Only one participant thought that the character appeared under the influence of alcohol however ("drunk" – 1 instance).

What does it say about drink

- Few participants indicated that the screenshot said anything in particular about the drink – whether it was interpreted as alcohol or not.

- The water in the screenshot was positively regarded with several observations that people "need water" (11 instances) for their health, particularly when working hard.

- Comments about the character hiding drink and the suggestions that "something bad could happen" (1 instance) would indicate alcohol is associated with negative outcomes and is something that needs to be hidden.

Influence

- No participants indicated that they believed that the screenshot would be influential in any way.

Independent attitude

- The only recurring theme independent of the screenshot discussed was a general "negative attitude towards alcohol" (6 instances), usually brought up under interpretations involving the character hiding alcohol or cleaning because of mess (illustrated by sub-theme discussions of "alcohol causes mess" and "bad to drink after work"). The fact that participants commented that people shouldn't work and drink and that "drinking while paintballing is bad" (2 instances – by participants with a very different interpretation of the picture) illustrates that participants have an awareness that are certain situations where drinking is not acceptable.

P. Diddy Summary (57 Participants)

The screenshot was taken from a P. Diddy music video on YouTube, depicting a bright nightclub setting with brightly coloured drinks on a bar. Being familiar to many participants, and being a very colourful screenshot with lots of activity, this screenshot provoked a lot of discussion. Participants generally saw the scene as positive. Out of all the screenshots, this one had the highest number of participants expressing the desire to be in the screenshot. Many participants focussed on the vibrant and colourful aesthetics in the screenshot as examples of it being an "attractive environment". Characters in the screenshot were generally perceived as being sociable and enjoying themselves. A great deal of discussion centred on the prominent drinks on the bar, which were described as being "attractive drinks" by an extremely large number of participants due to the

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colour, presentation and taste. A few participants believed that the screenshot would influence others (including children), but no participants suggested it would have any influence on themselves.

General descriptions

- The participants described the scene using positive adjectives such as "fun" (20 instances), "vibrant" (3 instances), "sociable" (7 instances) and "glamorous" (5 instances).

- Generally, it was viewed as a party scene ("good party" – 16 instances) or a "night out" (1 instance) where people were "celebrating" (1 instance) and "dancing" (4 instances).

- Some participants focussed on the "celebrity" aspect of the setting (3 instances), discussing the lifestyle and influence of rap artists in particular. Unsurprisingly, this lead some participants to also discuss the setting as "expensive" (6 instances), a theme predominantly described as positive, with participants going on to explain how this indicated the club was "high class", "good quality" and "sophisticated".

- However, the same elements that made it look "fun" lead other participants to perceive the setting as "crowded" (2 instances), "rowdy" (1 instance) and "unsociable" (1 instance). Three participants also highlighted the "unattended drinks". That this aspect had grabbed their attention would suggest they were prompted by this screenshot to consider the more negative aspects the club setting.

- In the research as a whole, participants had a tendency to point out that "nothing bad was happening" in the screenshots; in the case of 'P. Diddy', this manifested itself in comments about there being "no aggression" (2 instances) and that people were drinking in "moderation" (2 instances).

- Although only referenced by a few participants (2 instances), the theme "the drink sets the scene" was volunteered, implying that the drink was a contributing factor in assessing and interpreting the scene in the screenshot.

Feelings towards screenshot

- Most participants voiced clearly positive attitudes towards the scene depicted when describing it, with 31 participants saying they "would want to be there".

- A large number of participants focussed on the aesthetics of the environment, describing the scene as an "attractive environment" (29 instances). Examples

used to illustrate this included "friendly", "welcoming", "modern", "colourful", "[good] layout" and "loud music". Clearly this environment is a particularly appealing one to the age demographic interviewed.

- A great many participants also focussed on the activity in the club, aside from the aesthetics, discussing the scene as an example of a "good party" (16 instances).

- Some participants indicated that their opinion of the song or music video led to them being more positively disposed to the isolated screenshot ("good song/good music video" – 9 instances). In contrast, 2 participants "did not like the video/song".

- It's also worth noting that a comparatively small number expressed a dislike of the setting, describing it as "unappealing" (8 instances). Some participants also described the scene as one that would be "appealing to others" (5 instances), with a further 3 of those participants explicitly adding "but not to me". A few specified that it was for people different to them either in terms of "race" (1 instance) or "age" (3 instances).

- As indicated by the high recurrence of participants vocalising their fondness (or lack of fondness) for the setting, clearly this type of screenshot is one that provokes vocal responses in young people in a way that other screenshots did not.

Characters

- Most participants interpreted the individuals in the screenshot as having a good time, with "enjoyment" themes being discussed repeatedly (15 instances).

- Other recurring themes were generally positive in discussing the characters, with descriptions of them being "happy" (4 instances) and being "in control" (2 instances).

- Some participants focussed on the sociable interactions of the characters, remarking positively about how there were examples of "relationship" (2 instances – "hugging" and "kissing") and "friendship" (2 instances).

- There were 8 references to characters being "drunk" in the screenshot and 2 to them being "unaware of what they're doing". Interestingly, despite the generally positive appraisals of the setting and the characters, 5 participants specified that this was a "bad" thing, whereas only 3 indicated that it was "good". Four

additional participants said that the characters were "drinking to enjoy themselves" – going on to explain that drinking makes you have fun.

Opinion of the drink

- A large number of participants spoke about how appealing the drinks in the screenshots were, with "attractive drinks" being an umbrella theme that recurred 22 times. This number is considerably higher than in other screenshots. Participants pointed to "colour", the fact that they "stand out", "sweetness" and "flavour" as examples of what made the drinks particularly appealing. It is clear that something about the presentation of the drinks in this screenshot, or something about the drinks independently is particularly appealing to young people.

- These participants far outweighed the 4 who thought they were "unattractive drinks".

What the screenshot said about drink?

- Four participants indicated that the screenshot "makes alcohol look good", but the reasoning given varied – with the participants elaborating that it was" because it was a party" or "because it is not affecting the people". While people described the characters as drunk, there was little given as justification for this interpretation —participants did not reference body language as they did with other screenshots. This is possibly simply the result of a casual association between a club environment and being drunk.

- As with other screenshots, participants discussed the potential negative consequences, indicating that "something bad will happen" (3 instances), examples given for this included "getting into a fight" or "ending up in a ditch". This seems likely to be drawn from independent views of, or experiences with, alcohol, as opposed to being an interpretation of the events in the screenshot itself which did not explicitly suggest either of these outcomes.

- One participant indicated that the music video made alcohol look good because it was explicitly "promoting alcohol"; interestingly, this was the only reference to the product placement in the video across all the participants. One participant even indicated that the screenshot was promoting the song, but not the drink, saying:

"*they weren't really trying to promote a drink, you know?*"

This illustrates how normal it can be to see branded drinks in a setting such as this and not interpret it as a form of marketing. This is especially relevant given that P. Diddy, Sean Combs, sponsors the drink featured in this music video (see http://ciroc.com/#!/about-seancombs) and that this particular brand of vodka appears in many of his other videos as well. The fact that so few participants discussed the drink with reference to it being product placement could illustrate a lack of awareness of marketing practices amongst this demographic.

- One participant indicated that the screenshot "suggests you need to drink to have a good time", explaining that this was a bad thing because it was not true.

- Alcohol was seen as a normal and, in some cases, integral part of the party scene in this screenshot. Eleven participants said that the drinks featured were "normal practice", either because it was a club or because of the celebrity element. Not only was it normal, participants' thought it would have been unusual if there was not any alcohol there, as illustrated by the following interview extract:

"*If you went to a party at that age and it was for famous people and there weren't no alcoholic drinks, people would give you a funny look*"

In this example, the participant cannot entirely relate to the scene as he sees himself as too young, but can still imagine himself there, and still recognises that a celebrity party without alcohol would be highly unusual. Other participants are similarly able to relate to the setting, with one saying the following:

" *I wouldn't go there if there weren't no drink there.*

Another participant confirmed this view, explaining:

"*What's a party without a drink so they say, in da club.*"

- Evidently, the club venue is the most important aspect of the screenshot for these participants and one they expect alcohol to be in. One participant even indicated that you "can't help drinking in this environment" and went on to describe how this was unfair to people who didn't like to drink. Further, alcohol

was described as "representing a particular kind of lifestyle' (1 instance), so this screenshot was certainly perceived to give out certain messages about alcohol to some participants.

Influence

- The most common remark about the influence of the screenshot was "doesn't influence me" (4 instances), with one participant going on to explain "I drink if I want to drink" independent of external influence.

- As with other screenshots, some participants indicated that it gave a "bad impression to kids" (3 instances), with 2 of them saying that this was an issue with music videos on general.

- The other references to the influence of the screenshot were that it "influences others" and that "people would imitate". Five participants said it was "appealing to others", 3 of whom explicitly followed with "but not to me". No participants indicated that it would have any influence on them personally. Evidently, participants do not feel they are (or can be) influenced by alcohol messages in the media despite being able to recognize that they can influence others, as is also true of the population as a whole regarding alcohol adverts and other media messages alike (Paul et al., 2000).

Independent attitude

- The screenshot provoked themes relating to a nonspecific general "negative opinion towards alcohol" in 3 participants.

- Otherwise, there were no recurring themes, with just 1 instance each of participants discussing themes such as "not bad to drink", "people get hurt drinking alcohol", "alcohol helps sociability" and "drinking makes you confident".

Red Bull Summary (56 Participants)
This screenshot depicted a party with many young people of similar age to the participants in a crowded outdoor tent; one person is clearly holding a can of Red Bull. This screenshot provoked a mixed response from participants, with an equal number describing the scene as "appealing" as "unappealing"; those with positive comments were more vocal however, with many more themes being relayed that portrayed the depicted party as "fun" and showing "friendship". Many participants commented on the young appearance of the people in the screenshot and how they appeared to be drunk (in spite of no alcohol being

present on screen); multiple explanations of how mixing alcohol with Red Bull was "normal practice" (especially amongst young people) could go some way to explaining this. The main theme relating specifically to the drink was "Red Bull gave energy", with some participants describing it as a party drink.

General descriptions

- When describing the setting, participants tended to say that setting was "fun" (20 instances), though it is hard to differentiate between the participants who thought that they personally would find the environment fun, and those who just thought the characters in the screenshot were having fun.

-Eight people interpreted the setting as being an example of "celebration", with some participants specifying "birthday" or "reunion". Many participants discussed "friendship" as a theme when describing the situation (15 instances). Some people pointed to the fact that there were "lots of people" (3 instances) as an example of a positive social environment, while some went as far to describe the scene as "vibrant" (2 instances). "Energy" was also a theme that came up repeatedly in describing the setting (6 instances).

- Other more negative descriptions included that the scene appeared "crowded" (6 instances, with 5 participants explicitly specifying that this was bad), that it was "crazy" (3 instances, with one participant explicitly stating this was bad) and that the scene was "boring" (2 instances).

- Some participants described the scene negatively in its depiction of "underage drinking" (4 instances); 2 of these participants even went as far as to describe the party as a "children's party", and one participant commented on how this was illegal.

- The observations about age may go some way to explaining why participants thought there was alcohol present, with 12 participants saying it was 'normal practice'. Indeed a sub-set of those participants (who had seemingly assumed that the setting contained examples of drinking alcohol) specified that it was "normal practice for young people to drink alcohol at these parties" (4 instances), as illustrated by the following comment:

"Youngsters wouldn't have, go, to a party without drinking, even if they've got to sneak it in, they will find a way to get drink in."

Further supporting this were the two participants who said it was "strange to have Red Bull" instead of alcohol at parties (2 instances).

Feelings towards screenshot

- Interestingly, this screenshot was quite polarising, with an equal number of participants describing the scene as "appealing" as "unappealing" (15 instances of each). A few participants also indicated that they could see that the scene would be "appealing to others" (2 instances) but was not to them personally.

- Participants who found the scene appealing tended to expand on their reasons in very general noncommittal terms, with descriptions of it being a "good situation", or "a nice environment". One participant stated that it was appealing "because there was no alcohol" in sight.

- Participants who found the scene unappealing tended to do so because they "did not like parties" themselves. Multiple participants (3 instances) pointed to the fact that they "did not like parties outside" as the reason the scene was unappealing. Other reasons included that the setting was "too dark" and "not my type of thing". Clearly it can be seen that this type of crowded, outdoors party is one that appeals to only to a sub-set of these participants, whereas others prefer a quieter more relaxed settings.

- The theme "good party" recurred multiple times (11 instances) independently of whether it was appealing or not. While the opinions towards the scene were mixed in the sample, there were more examples of positive evaluations than negative ones.

- Two participants, slightly unusually, described "nothing bad is happening" as an example of a positive appraisal (with one of the participants giving "no one is being sick" as an example). Although this was only referenced by a few participants, it is interesting to note that "bad things happening" and "being sick" are associated somewhat with parties of this nature. It may also stem from a general aversion many participants had to passing comment on other peoples' choices of behaviour.

Characters

- The most common observation of the characters in this screenshot was that they were "drunk" (14 instances), which was interesting considering that most

participants could not see any alcohol in the picture. Of these participants, two described this as "bad" and one described it as "good".

- The lack of explicit alcohol references, but the characters appearing drunk, was reconciled by a number of participants who described how the people in the screenshot were "mixing drinks" (meaning that the Red Bull can contained alcohol – 7 instances). Four of these participants described this as "normal practice" and a further 2 participants went on to say that this was common practice in particular for Red Bull, with one participant saying:

"When I see Red Bull I just generally think alcohol"

Another indicated that "Red Bull was possibly alcoholic". It is interesting that discussion of alcohol was prompted by noticing the can of Red Bull in these cases.

- Aside from the drinking behaviour of the characters, the other themes related to the characters in the screenshot that recurred were "enjoyment" (11 instances) and them being "happy" (7 instances). Similarly, participants also commented favourably that they were "smiling" (4 instances) and "dancing" (4 instances).

- The characters were then generally perceived to be drunk and having a good time. Further, there were not many clear examples or reasons given for perceived drunkenness in the picture aside from a small number of references to people being "dressed drunk" (1 instance) or having "drunk body language" (1 instance), so it seems this was an assumption by the participants based on what they would expect of the people in such a setting.

- Participants also commended on the "sociability" present in the screenshots (4 instances), with further description of how "sharing drinks" illustrated this.

- There were few negative comments specifically regarding the characters in the screenshot, though some participants described them as "out of control" (in a bad way – 2 references). Similarly, 2 other participants suggested that the scene looked like "bad things would happen" (though these things were not specified). Such negative appraisals were in a minority, however.

- A few participants focussed on how young the people in the screenshot looked with "people look young" occurring 5 times as a theme. Their age was sometimes

referenced as "teenage", while others described them as "the same age as me" or "younger". Other participants observed "underage drinking" (4 instances) and pointed out that the party looked "unsupervised" (2 instances) which would seem to express disapproval.

What the screenshot said about drink

- The only explicit suggestion that the screenshot would give an impression about drinks came from discussions around the theme that the situation "shows you can have fun without alcohol" (3 instances); these came from interpretations of the drink being unmixed Red Bull.

Influence

- No comments regarding the screenshot's potential influence occurred.

Independent attitude

- The most common independent opinion revealed in discussing this screenshot pertained to the Red Bull and was "Red Bull gives you energy" (6 instances), with explanations about how this gave a good "buzz", made one "hyper" and "happy", and was an "energetic party drink". It is clear that amongst this demographic, Red Bull is seen as a drink common at parties that often goes hand in hand with alcohol. Other attitudes expressed towards Red Bull were the contrasting "Red Bull has no effect" and "Red Bull makes you act weird" (both with 1 instance). It is also worth noting that 1 participant was not sure whether Red Bull was alcoholic or not.

- Regarding the alcohol, there were only two recurring themes expressing independent attitudes: "alcohol causes fights" (2 instances), which was specified by 1 participant as being true "particularly in young people"; and "alcohol makes you happy" (2 instances). There were single references to the themes of "alcohol makes you sick", "alcohol gives you confidence", "alcohol makes you look bad" and "alcohol gives you headaches" across the sample. Two participants claimed to have deduced drunkenness from the fact that people looked like they were enjoying themselves ("enjoyment implies drunk" — 2 instances) and 1 participant said "alcohol was essential to fun", illustrating how fundamental a component alcohol is to having a good time amongst some young people.

Guitar gang summary (5 Participants)

This screenshot, taken from a YouTube video, portrayed a party in a house with both beer and Lucozade bottles in sight. The individuals in the party appeared to be quite young, most were sitting down, and one was holding a guitar. Although some participants found this party to be a "boring", most participants described the scene in positive terms, pointing in particular to the "fun" and "friendship". There was something of a split between participants finding the scene "appealing" or "unappealing", with many participants perceiving the setting as positive but "not my type of thing". As many participants interpreted the characters as being "drunk" as saw the scene as portraying drinking in "moderation". It is possibly as a result of these discrepant interpretations and opinions that the screenshot provoked a wide variety of expressed attitudes towards alcohol in participants.

General descriptions

- The most commonly reported General descriptions were that the scene looked "relaxing" (20 instances), "fun" (14 instances) and that it depicted "friendship" (20 instances).

- However, many participants also found the scene depicted in the screenshot to be "boring" (9 instances), with some of these elaborating by discussing how this was indicated by the characters "sitting down" in a party screenshot.

- Some participants described the setting as an example of "normal practice" (9 instances), with 3 going on to specify that this held in particular "for a boy's party". A further 2 participants described the scene as a "normal" one more generally.

- This was seen by some participants as an example of drinking in "moderation" (6 instances), possibly as a result of the quiet atmosphere with people sitting down. When it was specified, this was considered to be a "good" thing.

Feelings towards screenshot

- Most participants who voiced an opinion described the scene as "appealing" (27 instances), though many of them specified caveats – "if my friends were there", "if there were more people", "if I was older", "if there was no alcohol". This implied that though the participants could relate to the scene in a positive way, the specific situation was not perceived as unambiguously positive.

- A large number of participants also took the contrasting view, describing the scene as "unappealing" (15 instances). Many of these responses were from

females, who saw the party as being "for men" and therefore "could not imagine being there". Interestingly, this number is also higher than the number of participants who found the 'party' settings in other screenshots appealing, for example the **Red Bull** (15 instances) and **Pepsi party** (12 instances) screenshots. Of those 27 who said it was appealing, 12 cited the "nice environment" as their reason. This suggests, as was also apparent with other screenshots, that a relaxing more intimate environment was more attractive to some participants than a crowded party scene.

-A number of participants discussed how the party was "not my type of thing" (6 instances). Reasons given for this were "prefer parks to indoors" and because it was perceived as a "skater boys party". Clearly the view that this type of setting was for one particular demographic of young people but not others was one that was prevalent through the responses.

- Whilst 10 participants thought it was "boring", a few liked the "normal" (2 instances) nature of the setting, describing it as "safe" (3 instances), for example because it was "indoors" and "better than drinking on the streets".

Characters

- Participants tended to perceive the characters as enjoying themselves ("enjoyment" – 17 instances), as conveyed by the description of them as 'having a laugh' by several participants, being social ("sociability" – 11 instances) and being "happy" (5 instances).

- Some commented on how the characters were "smiling" (2 instances), "relaxed" (2 instances) and "in control" (2 instances).

- While there was reference to the relaxed setting depicting moderate drinking, some participants saw the characters in the screenshot as "drunk" (7 instances), with 4 of those participants stating that this was "bad". Two other participants said that they thought the characters were on drugs.

- Little was said about their behaviour, the only exceptions being the participants who thought they looked "in control" (2 instances), were "acting stupid" (1 instance) or exhibiting "suspicious behaviour" (1 instance).

Opinion of the drink

-Six participants described the drinks depicted in the screenshot as "unattractive drinks", with an example given because it "was not sweet enough".

- Five participants described the drinks as "attractive drinks", with reasons being mainly that they "stand out". With both beer and Lucozade being present in the screenshot it was not always clear if the participant was referring to a specific drink, or to the collection of drinks together.

- Some participants commented on how the "drink sets the scene" in the screenshot (3 instances), highlighting the contribution of the drinks to the overall impression they had of the screenshot.

What the screenshot said about drink

- Two participants indicated that the screenshot "suggests that alcohol helps with sociability" referring presumably to the social, friendly setting being implicitly related to the drinks in the screenshot.

- Other sole instances of a participant discussing the impression the screenshot gave about the drink were: "drink is part of fun atmosphere" and "makes alcohol look good".

- Presumably prompted by the nature of the research, 2 participants referred to the promotion of alcohol, saying this screenshot "doesn't promote drinking" and it "encourages responsible drinking". Another participant observed that "it's good to have choice between alcohol and non-alcohol" (because the screenshot features both). This screenshot was not then, generally seen to give out any negative messages about alcohol.

- Other relevant comments about alcohol displayed little consensus. Observations ranged from motivations for drinking – for example "drinking to relax" (2 instances), "drinking more because at home" (1 instance) and "drinking to get in character" (1 instance) – to personal associations between alcohol and aspects of the environment– for example "tidy implies not drunk" and "alcohol makes you messy" (1 instance each).

Influence

- No participants indicated that the screenshot would have a particular influence on the viewer – aside from suggestions that the screenshot would "appeal to boys" that has been discussed previously.

Independent attitude

- In discussing the screenshot, 2 participants indicated that they did not drink beer and another participant indicated that they did not drink at all, which is likely to have an influence on their interpretation and evaluation of such a

screenshot. Another participant was of the opinion that people "should only drink at parties".

- In contrast, 2 participants described how "not drinking is boring".

- While no other themes in this category recurred, a wide variety of different attitudes towards alcohol were discussed by participants during presentation of this screenshot. These predominantly centred on the perceived consequences of drinking alcohol and were; "alcohol makes you forget", "alcohol makes you unhappy", "alcohol accentuates mood", "alcohol makes you happy", "alcohol livens things up", "alcohol makes you say things you might regret", "alcohol causes fights" (all 1 instance). It is interesting that this screenshot provoked such a range of different outcomes associated with drinking.

Pepsi Party Summary (57 Participants)

This screenshot depicted a crowded party with young people standing on tables, dancing, laughing and smiling while holding soft drink bottles (Pepsi and 7-up). Most participants believed that the characters in this screenshot had been drinking, with some either believing that the soft drink bottles had been mixed with alcohol, or that the individuals were already "drunk". Although a small number of participants disliked the "crowded", "messy" and "hectic" atmosphere, most thought the setting looked "fun". In spite of this, most participants who commented found the party to be "unappealing" and expressed no great desire to be there. Discussions mainly focussed on the characters' "drunk" and "crazy" behaviour and appearance. A few participants decried the idea of being in such a picture on Facebook for everyone to see. The screenshot provoked some participants into discussing a wide variety of attitudes towards alcohol, which were largely to do with the negative consequences of drinking or how they did not drink.

General descriptions

- By far the most common observation was that the scene depicted in this screenshot looked "fun" (30 instances). Some participants also discussed the themes "friendship" (5 instances), "funny" (2 instances) and "relaxed" (2 instances) as examples of positive qualities present in the screenshot.

- Some observations that were seemingly not so positive were noted by a small number of participants, and included that the party was "boring" (3 instances),

"hectic" (2 instances), "hyper" (2 instances), and "messy" (2 instances). Similarly to the **Red Bull** screenshot, some also pointed to it being "crowded" (4 instances), and a few participants spoke negatively about the individuals "unusual dress" in the screenshot (2 instances). A couple of participants also highlighted that this screenshot displayed "underage drinking" and another thought it displayed "eventfulness".

- As with a previous screenshot, some participants noted "nothing bad is happening" (2 instances).

Feelings towards screenshot

- As appears to be a commonality among screenshots depicting adolescent parties, the participants were quite split on their feelings towards the scene depicted in this screenshot.   However, more participants found the scene "unappealing" (18 instances), than "appealing" (12 instances).

- Some participants gave an appraisal of the party itself, with 5 indicating that it was "good party" and 3 others expressing that it was "not a good party" using terms such as "mad" or "bad" to illustrate this. In contrast, a few participants thought it was not fun or mad enough, describing it as "boring" (3 instances)

- Some participants reserved judgement on whether the party appealed to them or not, describing the scene as "not my type of thing" (4 instances) instead.

- Other participants were more vocal in their opinion of the action depicted in the screenshot, with some describing it as "embarrassing" (5 instances).

- A large number of participants drew attention in particular to the fact that the screenshots were on Facebook, expressing that they "would be embarrassed to be in the picture" because of this (15 instances). These comments illustrate the important part that image and reputation play amongst this demographic in how they appraise and relate to such a screenshot. Participants generally seemed to be aware of the propensity of these types of pictures to end up on Facebook and were conscious of not being portrayed in a bad light. The behaviour in this image was evidently not how most of the participants wanted to appear on Facebook.

Characters

- Although most participants used qualifying statements in their answers, numerous participants admitted that the characters in the screenshot appeared

to be enjoying themselves ("enjoyment" – 15 instances) and that this was a generally a good thing.

- However, a large number of participants also described the individuals in the screenshot as "out of control", going on to explain that some individuals appeared "not to know what they were doing" and that the party had "got out of hand".

- Unsurprisingly, a great many participants described the characters as being "drunk" (26 instances); this was generally expressed as a "bad" thing, with 7 participants expressing this negativity, whilst only 2 described the drunkenness as "good".

- This interpretation also came across in a great many participants who highlighted the actions of the characters in the screenshot, describing their "drunk behaviour" (17 instances). Discussions around this theme focussed on how they were "standing on the table", "dancing on the tables", "bent over" and "falling over". Some of these participants focussed specifically on the dancing, asserting definitely that "drunk dancing is bad".

- A few participants discussed, specifically, the "drunk appearance" of the characters (5 instances) – pointing to the individuals "drunk faces" and using the fact that they were "dressed drunk" to illustrate this. The girls were also described as "messy" (2 instances) by participants who "wouldn't leave the house like that". This reiterates the importance of appearance to several of the participants.

- All this discussion of drunken behaviour and appearance is interesting given that there was no clear alcohol present on screen. Only a few participants commented that the characters were "hiding drink" – implying they were hiding alcohol in the soft drink bottles (2 instances) – these came with a particularly negative evaluation.

- A large number of participants did, however, comment on the practice of "mixing drinks" (meaning mixing a soft drink with alcohol) visible in this screenshot (18 instances). When the theme was discussed in this way it did not hold the same negative connotations, with some participants describing this as "normal practice" amongst teenagers (3 instances), and some saying it was "good".

- Those who did not make specific reference to the drunken behaviour did comment on the "crazy behaviour" on view in the screenshot (9 instances). Interestingly examples given to illustrate this were very similar to those given to discuss the "drunk behaviour", with examples of "bending over", "falling over" and "jumping off tables".

Opinion of the drink

- Only a few participants expressed any feelings towards the drinks themselves, with a few discussing the "unattractive drinks" in the screenshot (3 instances).

What the screenshot said about the drink

- No participants suggested directly that this screenshot showed anything in particular, though it did provoke many participants into revealing attitudes towards drink.

Influence

- No participants indicated that the screenshot would influence anyone who saw it.

Independent attitude

- There was some discussion of how "alcohol influences behaviour" – making one "do unusual things" (2 instances). There were also a few references to how alcohol was "bad for health" (2 instances).

- Aside from those, this screenshot provoked many different themes relating to their opinions on the (largely negative) consequences of drinking alcohol. These included, "alcohol makes you look stupid", "alcohol makes you forget", "alcohol accentuates mood", "drunk people ruin other people's nights", "alcohol makes you outgoing" and "alcohol gives you confidence" (all with 1 instance). There were also single instances of participants saying "you wouldn't want your child to get drunk", that they personally "wouldn't drink" and that you "can have fun without alcohol". Clearly this screenshot provoked participants with negative attitudes to drinking into revealing and discussing these opinions. The range of different attitudes discussed in response to this picture is revealing.

Alcohol-Free Beer Summary (55 Participants)
This screenshot was different from most the others that were shown to participants in that it did not depict any people, and instead showed a MySpace music page with a prominent advert on the side for "Becks Non-Alcoholic Beer"

(including a prize draw promotion). Strikingly, most participants thought this was an advert for alcohol, and some were completely unfamiliar with the concept of alcohol-free beer and interpreted it as meaning something different. Although some participants spoke positively of the design of the advert, they were largely ambivalent about the advert itself, with most indicating that the advert and drink were "unappealing" and a very large number saying they "wouldn't click on". Some participants believed that the advert would appeal to others and in some cases influence them, but generally found the advert to be "unpersuasive" and something that may "influence others but not me". A few participants found the idea of advertising alcohol on a site popular with young people to be unethical, and although the advert was for alcohol-free beer, most did not interpret it in this way and did not think others would either.

General descriptions

- The most common General description about the advert was that the advert "promotes drink" (11 instances).

- The most interesting revelation was that the majority of participants (39 instances) believed the advertised drink to be alcoholic. Surprisingly, many participants viewed the "alcohol free" part of the advert to be part of the promotion for free alcohol. When it was pointed out that the drink was not alcoholic, many participants were confused with "alcohol-free beer is confusing" being a theme discussed multiple times (5 instances). Clearly young people do not expect to see adverts for non-alcoholic drinks by alcohol brands and interpret them as being alcohol adverts; and a few participants were not even aware that non-alcoholic beer existed.

- Amongst participants who did know that the advert was for non-alcohol, 2 participants described how "Drinkaware implied non-alcoholic" and discussed how Drinkaware was synonymous with non-alcohol product – indicating that you could be sure the drink was not alcohol because it carried the Drinkaware branding. This coupled with the above point illustrates the areas where young people are not educated in the advertising and promotion of alcohol.

- Despite this, 2 participants did also describe how "Drinkaware gives safe drinking advice".

- Many participants described how the advert "stands out" (6 instances), with many describing it as "eye catching". Some other participants had the opposing

view that the advert was not impressive enough and "didn't stand out" (4 instances).

- A few participants described how they saw a "risk of computer virus" in interacting with the advert on screen (2 instances). These participants described how their association with viruses in online adverts made the advertised drink look bad in their eyes.

Feelings towards advert

- The most common comment when discussing participants' feelings towards the advert was that they "wouldn't click on" (28 instances). While 1 participant extended this to all online adverts, saying he "wouldn't click on any advert", most participants expressed a lack of interest in finding out more about alcoholic or non-alcoholic Becks.

- A few participants indicated that they "would click on" the advert (5 instances), but some qualified this with "but only if bored" and "if I liked Becks". Two participants also suggested that it was a "good advert" with a "good design".

- Quite a few participants did find the advert to be "attractive" (8 instances), focussing on the "colours", "brightness" and "slogan" as the reasons why it was appealing.

- Although some participants believed that the advert would be appealing to others, few said it was appealing to them – "appealing to others but not to me" was a theme that was discussed multiple times (4 instances). Interestingly, it was speculated that this would be particularly appealing to "people who drink" despite it not being alcohol.

Feelings towards drink in advert

- Most participants who commented on their feelings towards the depiction of the drink, described it as "unappealing". This was elaborated on with descriptions of "not sweet enough". One participant said that the fact that it was non-alcoholic was what made the drink appear unappealing. A few participants also believed the drink itself to be unattractive independent of the advert, with "unattractive drink" being discussed as a theme by 2 participants.

- Many participants explained that beer in general was not appealing to them ("beer not personally appealing" – 7 instances). Some of these participants specified that they "did not drink beer" (4 instances), with one emphasising that it "tasted horrible".

- In instances where the participant was aware that the drink was non-alcohol, or the interviewer pointed it out, some participants went on to express that "alcohol-free beer is good" (7 instances) although with slightly questionable reasoning. It was said that alcohol-free beer "made a good alternative to alcohol", "would be allowed by parents" and 1 participant said that it was "good for alcoholics" as it had the taste without the effects. Clearly the participants perceived this drink to be one that people would not drink for pleasure but out of necessity when alcohol was not a valid option.

Influence

- Two participants described the advert as "unpersuasive", explaining that it "would not make me want to know more". Two other participants explained that they "were not susceptible to alcohol advertising". This is not surprising as a general trend throughout the screenshots was that even when acknowledging others may be influenced by a portrayal of drink, the participants believed themselves to be immune to these persuasive qualities.

Independent attitude

- A few participants revealed their opinions on the ethics of advertising alcohol online through discussing how "advertising alcohol is bad" (4 instances). Of these participants, 3 commented that "advertising alcohol on MySpace is inappropriate" as it can be visited by underage users. Although the argument could be made that this was an advert for a non-alcoholic drink, clearly participants did not interpret it as such and did not believe that other young people would either. Another participant believed "advertising alcohol has a negative influence".

- Some attitudes and practices of young people revealed by a few participants were that they "didn't drink" (2 instances), that "young people don't like beer" (1 instance) and that "young people like spirits and shots instead of beer" (2 instances). Although some evidence has shown that beer is in fact popular amongst young people (SDD 2010), these along with other more prevalent comments indicate that beer was not a popular drink amongst this sample.

- This advert also provoked a few more general negative feelings towards alcohol, such as: "excessive consumption is bad", "alcohol ruins the body" and the "point of beer is to get drunk" (1 instance each).

- As previously discussed, some young people found the idea of non-alcoholic beer to be "pointless" and "confusing" while some people found it to be a positive thing for people who couldn't or shouldn't drink alcohol. Other more general comments about alcohol-free beer that were revealed were that it was "funny" (in a good way), that it was "a fun way to trick police" (into thinking you are drinking when you are not) and "'alcohol-free' means alcohol that does not taste of alcohol". Clearly these comments go with others previously discussed to illustrate that the young people interviewed had a confused attitude to the purpose of alcohol-free beer.

Couple Summary (55 Participants)
This was a picture uploaded to Facebook that showed a young couple posing with their arms around each other for the camera. References to drinks came in the form of the album title which was "once again we drank too much". Most of the comment centred on the appearance of the characters, with particular focus on how "drunk" the male character looked, in particular because of his "drunk eyes". This contrasts with relatively positive appraisals of the female character, who participants described as looking "good". Most participants found the setting to be generally "unappealing", with some focussing on not wanting to have such a bad picture of themselves uploaded on Facebook for others to see. Few participants speculated that this type of screenshot would influence others but it did provoke a number of variable negative comments about alcohol such as it "making you vomit" and "making you sleepy".

General descriptions
- With most comments focussed on the appearance of the characters, there were few recurring General descriptions about the screenshot, with "fun" and "friendship" (both with 5 instances) being the most discussed themes. A few participants also described the picture as "funny" (2 instances).

Feelings towards screenshot
- The participants who described the setting in terms of it being "unattractive/unappealing" (9 instances) tended to do so because it represented an environment where they "wouldn't want to be" (2 instances) as a result of it being a generally "bad environment" and "not a good picture". These tended to be elaborated on with specific references to the characters in the screenshots.

- In stark contrast, those who found that setting "appealing" (6 instances) expressed almost the exact opposite view, with 3 participants stating they "would want to be there" and references to it being a "good situation" and a picture "they would want to be in".

- Those who found the screenshot to be of negative valence focussed on the loss to the image and reputation of those in the picture by asserting that the picture "shouldn't be put on Facebook" (3 instances), with one participant saying he would mock the picture if it was a friend. Other participants also clearly stated that they "wouldn't want to be in picture" (2 instances).

Characters

- The most common comment in discussing this picture was that the individuals were "drunk" (27 instances). A number of participants went on to describe whether this was in a good way or not, with 6 describing it as "good" and 8 saying it was "bad".

- A great deal of comments were on the appearance of the two characters in the screenshot, with many focussing on the negative aspects of the male character's appearance in particular. "Drunk face" was a comment that recurred many times (15 instances) in discussing the male in the picture. Of these, most focussed on his "drunk eyes" (13 instances) and the fact that his eyes were "glazed" or "closed". A further 2 participants commented on his "weird eyes". Clearly to these participants, the appearance of the eyes was important in determining a character's drunkenness.

- With focus on the male character, many participants also revealed that they believed him to be "under the influence of drugs" (8 instances), with some specifying "cannabis" and many (again) referring to his eyes to illustrate this.

- In contrast, the female in the picture was seen to generally "look good" (4 instances) by participants who commented on her; participants described her as "perky", "pretty" and "attractive". Some participants drew a contrast between the two, with one stating:

 "*she looks nice and smiley but he just looks a state.*"

It is interesting to note how much the appearance of the face was a factor in the participants' assessments of the two characters behaviours and level of

intoxication in spite of them both being together at the same party. However, 2 participants did suggest "she looks bad" with reference to the girl, with one describing her as "looking like an idiot" (though not explaining why).

- When discussing the female character or the couple in general, a few participants described them as being "in control" (2 instances). However, when focussing on the male character, people tended to describe him as being "out of control" (4 instances) with descriptions of him "not knowing what is going on" and "not knowing what he's doing".

What the screenshot said about drink

- No participants indicated that the screenshot said anything in particular about drink.

Influence

- One participant believed that the screenshot would "influence others" and another thought it would "influence young people" (in a negative way).

Independent attitude

- Again, this screenshot largely provoked variable negative attitudes towards alcohol. Perhaps as result of the much discussed male character's eyes in the screenshot, 2 participants discussed how "alcohol makes you tired".

- Other negative comments towards alcohol were: "alcohol makes you vomit" (2 instances), "alcohol causes only short term happiness", "alcohol makes you forget" and "drinking makes you not care" (all with 1 instance). The only positive attitude was revealed by 1 participant who described how "drinking causes fun".

Heineken Advert Summary (55 Participants)

This was a screenshot taken from YouTube that showed a still from the middle of a well-known Heineken TV advert. The screenshot showed four men looking excited at being in a walk-in fridge filled with cans of Heineken. This screenshot provoked a positive response from participants, many of whom were familiar with it (12 instances) with participants describing the scene as "fun", "funny" and "chaotic". While more participants described the scene generally as "unappealing" than "appealing", participants still tended to generally appreciate the humour in the advert and say that it made the drink look good. Most participants' interpretation of the characters' "excitement over beer" revealed their understanding of the story depicted in the screenshot. While few

commented on its influence, this screenshot was the only one to provoke participants into admitting that it may have an influence on them. Compared to other screenshots, presentation of this image provoked more discussion of participants' general attitude to drinks, with many expressing a dislike of beer or of alcohol more generally. Overall this was described as being a recognisable and positively regarded advert amongst this sample who interpreted the advert accurately and believed it presented the drink in a positive and potentially influential manner.

General descriptions

- This screenshot was described in generally positive terms with large numbers describing the scene as a "happy" one (26 instances). Other participants found the screenshot to be "fun" (9 instances), and "funny" (8 instances), showing "friendship" (5 instances). Others described it more ambiguously as "chaotic" (6 instances). 2 participants even went as far as to describe the image of being in walk-in fridge filled with Heineken as being "like heaven".

- The theme of "gender stereotypes" was also discussed by a few participants in their assessment of the screenshot (4 instances), with participants seeing this as an example of a "male stereotype" – one participant described the theme of the advert as "real men drink strong beer".

Feelings towards screenshot

- In contrast to the positive descriptions of the screenshots, most participants with an opinion on the matter said that they found the image an "unappealing" one (21 instances), with 10 of those specifying that they "would not want to be there". The reasons given for this were interesting, with participants describing the individuals as being "too old", there being "too much drink" and it being generally "not my kind of thing" or "not my cup of tea".

- Those who found the scene to be "appealing" were also numerous (14 instances). Four of these participants asserted they "would want to be there" and others of this set described the setting as having "nice colours" (6 instances). Other comments by these participants were that it was "bright" and a "nice environment".

- As with other screenshots, some participants identified this as a potentially appealing screenshot but said it did not affect them personally: statements around the proposition that it was "appealing to others but not to me" were

vocalised by 5 participants. "Men" were the others that some female participants indicated it would appeal to.

- Some participants who generally seemed to attribute a positive valence to this screenshot described how "nothing bad is happening" (3 instances) in the screenshot. This interesting negation of a negative event to stress a positive was present in other screenshots and highlights a clear association between alcohol and negative consequences even in situations that are appraised positively.

Characters

- The characters in the screenshot were discussed in mainly positive terms, with large numbers describing them as enjoying themselves ("enjoyment" – 7 instances).

- Many participants focussed on the "shocked" expressions on the faces of the characters (16 instances) describing them as looking "over-surprised". In assigning motivations to the characters, many participants described the characters as being "excited over beer" (18 instances). It is clear that participants were either familiar enough with this advert, or were able to infer enough from the still image, to understand the narrative of the advert and the motivations from the single screenshot.

- Some participants were harsher in their assessments of the characters in the advert with some describing them as "being stupid" (5 instances). These participants characterised the individuals in the advert as "childish" and "silly".

Drink in screenshot

- Most participants who commented maintained that the drink looked "attractive" (6 instances), with a focus on the "bright colours" and the "layout" as the explanation for this.

- Fewer participants thought that the screenshot contained examples of "unattractive drink" (2 instances).

- One participant explained that they were "unsure whether the drink was alcohol or not", but this lack of drink and brand awareness was rare among the sample.

What the screenshot said about drink

- A few participants thought that the advert "makes alcohol look good" (2 instances) in general. But quite a few (relative to the other screenshots) indicated that this advert "makes the drink look attractive" (5 instances). Clearly

from the participants understanding of the situation and their generally positive appraisal of it and its portrayal of the drink, this advert can be considered to be an effective one.

- One participant even described the screenshot as "glorifying beer".

Influence

- This screenshot produced the only instance of a participant admitting they could be influenced by it throughout all the screenshots, with one participant stating they "would buy Heineken because of this advert".

- However, other participants maintained that the screenshot (and the advert from which was taken) "would not make me want to buy alcohol" and one participant claimed they were "not susceptible to alcohol adverts" (1 instance each).

Independent attitudes

- As with other screenshots depicting beer, this screenshot provoked participants into revealing that they "did not like beer" (5 instances). One of these participants admitted that the advert would make the drink look appealing if it was advertising a soft drink or spirit.

- Another group of participants revealed that they "did not like alcohol" at all (4 instances), with a description of how this meant "the advert meant nothing" to them.

- This also provoked a more severe response from some participants who expressed the belief that "alcohol is bad" (4 instances).

- Other negative attitudes towards alcohol provoked by this screenshot were "drinking makes you over excited" and "alcohol is bad for you" (both with 1 instance). Two participants described how "people my age don't drink beer", with one of them going on to describe beer as a "strong adult drink". Regardless of this, most participants were very familiar with the advert and acted favourably towards it.

Discussion

General trends

As was revealed through the thematic analysis, participants in this sample tended to discuss screenshots with a strikingly discrepant range of interpretations resulting in very different attitudes towards the screenshots.

While attitudes towards the drinking activity in the screenshot, or the screenshot in general, varied significantly, most participants had strong views on the scenes they were interpreting and spoke with confidence and certainty about the judgements they had assigned to them.

Regarding this lack of commonality in discussed themes and interpreted valence, a striking trend across the screenshots was that screenshots depicting user-generated material from participants their own age tended to be the most polarizing screenshots. These screenshots depicting drinking behaviour of some kind (usually from party photos) in people of similar age to the participants tended to provoke very strong opinions. It was these screenshots (**Red Bull**, **Guitar Gang**, **Pepsi Party** and **Couple**) that represented the biggest split between participants finding the setting "appealing" and "not appealing" and stating they "would want" or "would not want" to be there. Value judgements made about these screenshots tended to use more extreme language, with participants vocalising their dislike using terms such as "embarrassing" and "stupid", whilst using positive terms such as "fun" and "friendship" to express positive attitudes. This is not surprising considering these screenshots likely represented situations participants were most familiar with, could most easily relate to, or possibly would most frequently encounter online, (with Facebook being the most frequently visited website, after Google, in *Study 2*). While many other screenshots may have been novel enough for participants to reserve judgement somewhat, participants were comfortable in expressing their views and approving of or condemning specific behaviours encountered in screenshots uploaded by people of their own age group

Another pertinent point relating to user-generated content was that participants who disapproved of the behaviour often referenced image and reputation rather than moral values as being reasons why one shouldn't upload these images. It is possible that the high number of negative responses towards this type of content was partially a result of this being content that they could realistically imagine having an effect on the image they wish to portray to peers online.

Further, the user-generated screenshots that featured lively party scenes with lots of young people, **Red Bull** and **Pepsi Party,** were equally divisive which is important in illustrating that young people are not necessarily positively influenced by seeing alcohol in these contexts. This is illustrated by the fact that

more participants found the **Guitar Gang** screenshot appealing than did these party scenes. It is worth noting that there is also a gender difference between these screenshots, with **Red Bull** and **Pepsi Party** mainly featuring girls at a party in contrast to **Guitar Gang** (which features boys at a house gathering). Evidently, the attributed valence of screenshots was highly dependent on individual preferences, so further research on individual differences in responses to and processing of media content amongst this demographic is required. Type of drink may also be relevant as some research has indicated that girls are less likely than boys to drink beer (SDD 2010). It could be the case that the gender of participants affected whether they found pictures of boys with beer appealing.

The most positively received screenshot was **P. Diddy**, which portrayed a stylised club scene with colourful lighting and bright prominent alcoholic drinks on a bar. The product placement promoting Ciroc Vodka in this screenshot was apparently very effective, as participants pointed not just to the appealing environment and its positive association with the drinks, but also to the specific attractiveness of the drinks themselves. Participants also seemed to be unaware that the screenshot they were viewing contained an example of a product placement. Clearly the aesthetics of the screenshot were extremely important in influencing participants' judgements, with most focussing on the "colours", "layout" and "lighting". This screenshot was described in terms of being "appealing" by more participants than any other screenshot. These visual environmental themes having a substantial influence on participants' appraisal of the scene and the drinks within was interesting as it demonstrated how an extremely positive reaction can be generated in participants in this age group independently of the characters in the screenshots. Though the characters were interpreted as enjoying themselves, few participants focussed on the people ahead of the atmosphere and environment conjured up by the design and colours in the setting. However, it is worth noting that participants' familiarity with the music video (or the song) from which this screenshot was taken (12 indicated they were familiar while only 1 volunteered that they were not) may well have produced positive associations that made them react more favourably towards elements of the image.

Interesting findings regarding alcohol advertising were uncovered. Most striking of these is the contrast in participants' attitude towards the **Alcohol-free Becks advert** and the **Heineken advert**. Most participants reacted favourably towards the humorous Heineken advert, describing it in positive terms and finding it amusing; some participants also indicated that they believed this advert would influence people to buy the product. In contrast, participants reacted with relative indifference to the text and still image in the Becks advert with participants describing the advert as "unpersuasive" instead. Clearly, as has been found by other studies (Chen and Grube, 2002; Chen et al., 2005), young people tend to respond favourably to alcohol advertising involving story and humour elements rather than information and price promotions.

Also of note within the advert screenshots discussions, participants only discussed the immorality of advertising alcohol online in the **Alcohol-free Becks advert**, describing it as "inappropriate". In contrast, participants spoke favourably of the humour in the **Heineken advert**, seeming to find little problem with an advert on a video streaming site visited by someone their age. This is particularly interesting in light of the Becks advert being for non-alcoholic beer. Clearly, the moral issues surrounding having easily accessible alcohol advertising online are interpreted in unusual ways by this age group and could present a problem for advertisers who are concerned with how their adverts are received by those below the legal drinking age.

In fact, the **Alcohol-free Becks advert** was not interpreted as being an alcohol-free product by most participants. This was not just a matter of participants overlooking the "alcohol-free" part of the text, as many commented on how this phrase must indicate a promotion to obtain free alcohol by clicking the link. Further, many participants were completely unfamiliar with the concept of alcohol-free beer and expressed confusion at the concept. Those familiar with the concept assumed that it was to be used by very specific demographics – recovering alcoholics and those who couldn't drink. Clearly, there seems to be an issue here regarding young people's interpretations of non-alcohol adverts of this nature. When advertising an alcohol-free product on a site popular with young people (with no age verification system in place), it is clear that to many young people this functions simply as an advert for alcohol, and one that they find to be generally inappropriate. Assuming that this is not the desired effect,

steps may need to be taken to either remove advertising of this nature or present it in a way that is less confusing to young people.

A common trend across the various categories was for participants to be influenced by characters in the screenshot. As can be observed by screenshots such as **Sniper**, **High vis** and **Heineken advert**, the interpretations participants' give to the behaviour, motivations and feelings of the characters within the screenshot tend to mirror the overall representations of the setting and screenshot – meaning that screenshots with characters described using positive statements tend to be received far more positively across the board than the characters described negatively. Although it is not clear which direction this trend is in, or whether it is simply the case that positive environmental attributes and positive character attributes to go hand-in-hand, it is clearly the case that screenshots in which the characters are positively received are described in far more positive terms by participants and they are far more likely to express the desire to be there. This could go some way to explaining the previously discussed discrepancy between participants' responses to the two adverts – with the Heineken advert with characters described in positive terms being discussed far more favourably than the advert with no characters. A focus on the characters was clearly highly influential in determining participants' assessment of the screenshot in examples such as **Pepsi party** and **Couple**.

Participants in this sample tended to place an emphasis on the physical appearance of the characters in screenshots in determining the overall valence, but also the level of drunkenness they interpret. There is an assumption (as evidenced by responses to **Rude Tube**, **Red Bull** and **Pepsi party**) that unusual dress or appearance implies drunkenness even where no alcohol is visible. It is worth noting here the contrast between the references to characters being "drunk" in **Sniper** (8 instances) compared to **Rude Tube**, **Red Bull** and **Pepsi party** (18, 14 and 17 instances respectively). This is striking in that the latter three screenshots were chosen as exemplars of non-alcohol, with no alcohol being visible, whereas the **Sniper** screenshot showed a figure drinking alcohol from a shot glass with a spirit bottle on the table beside him and text implying the character had turned to drink following the murder of his wife. It was the "drunk behaviour" and "appearance" of the characters in the other screenshots that gave rise to claims of excessive drinking in the screenshots; some

participants even found the **Sniper** image to present a case of "moderate drinking". Clearly there is an association in the minds of the participants between being dressed or behaving unusually and being drunk. In contrast to the association of drinking with the party images, an image that was chosen by researchers as an exemplar of problematic excessive drinking associated with extremely negative outcomes provoked far less emphasis on the prominent drink and far more emphasis on the general gloomy environment.

The screenshot **Couple** revealed interesting notions about participants' views on physical appearance and how it related to drunkenness. This screenshot showed a couple with their arms around each other posing for a photo. In selecting this screenshot as an example of a happy couple with subtle references to alcohol in the background, researchers did not anticipate that the participants would divide their views so distinctly between the two characters rather than seeing them as one unit. Specifically, the male character was described as being "drunk", "on drugs" or "out of control", whereas the female character was described in far more favourable terms. This is interesting because the context of the screenshot would lead one to assume that both the characters were a similar level of drunkenness and would be exhibiting similar types of behaviour. The participants focussed instead on very specific aspects of the characters' appearance (in particular the male character's eyes) and extrapolated their entire interpretation of the situation from there. This focus on seemingly minor aspects of characters' appearances rather than the overall context or background text of the screenshot was interesting and could reveal how minor details within a screenshot have a disproportionate effect on young people's interpretation of the context, and in this case of the drinking behaviour occurring in the screenshot.

An important finding from this research was that young people seem to assume that there was very little influence from screenshots on people's perception of drink or drinking behaviour; and further, where there was an influence, it was one that only affected "other people". This is unsurprising in light of evidence that has shown a propensity for individuals to underestimate the effectiveness of advertising and similar visual stimuli in influencing behaviour (Paul et al., 2010); however it does show that young people potentially underestimate the influence

of information encountered online. Where there was a suggestion that a particular type of screenshot could influence others it tended to be "kids" who were speculated as being the influenced (see **Sniper** and **P. Diddy**); this is interesting as it reveals that young people in this sample did not perceive people of their own age to be within the "kids" demographic. Participants often speculated upon generic "others" as being those who could be influenced, but participants were usually adamant that it "would not affect me" with one participant even indicating he was "not susceptible to alcohol adverts". Throughout all ten screenshots, there was only one admission that the screenshot would have an influence on them (**Heineken advert**). It is interesting that young people (or possibly people in general) tend to believe that there is a discernible influence from information of this kind, but believe themselves to be immune to it. Given research illustrating the implicit (rather than explicit) influence of recurring visual stimuli on implicit learning and subsequent behaviour it is unsurprising that these young people did not think themselves subject to the influence of online visual stimuli.

Regarding the independent attitudes that were revealed on presentation of these screenshots, it is interesting to note that, where discussed, most attitudes towards alcohol were negative. From the participants' positive responses to many screenshots depicting (in their interpretation) drunken behaviour, as well as the drinking practices revealed in the survey, it is unlikely this sample represented one that was negatively disposed to alcohol in general. Therefore, it seems to be the case that negative attitudes to drink were simply more likely to be evoked upon presentation of these screenshots than positive attitudes. The argument could be made that having a positive or indifferent attitude to depictions of drinking behaviour is perceived to be too uninteresting to be worth reporting to researchers, whereas the participants in the sample who had a negative disposition towards alcohol were either more provoked by the screenshots or felt the need to be more vocal about them.

Finally, alcohol was discussed in relation to the majority of the screenshots by the majority of participants. While efforts were made to emphasise that the interviews were not about participants' opinions on alcohol and that screenshots featured non-alcohol drinks as well, the participants' knowledge of the research may have influenced their keenness to discuss alcohol regardless. This

nonetheless suggests that alcohol was familiar and considered 'normal' by most of the participants and drinking considered to be 'normal practice' in a variety of situations, with normality of drinking alcohol being a regular theme for all of the screenshots. Hence, even with screenshots featuring only Red Bull, Pepsi and Sprite, participants repeatedly brought up the idea of "mixing drinks" as normal practice, doubting that alcohol would be absent from the scenarios.

Study 1 Summary

These interviews revealed the interesting variety in young people's responses to screenshots encountered online as well as a number of common tendencies and trends. Generally, the young people responded favourably to depictions of stylised and colourful settings as well as to characters who appeared to be having fun and to whom they could relate to. Images depicting user-generated content (usually in the form of party photographs uploaded to Facebook) tend to provoke more discussion and lead to more vocal and polarising attitudes towards the screenshot, with negative expectations being focussed on the embarrassment of having a drunk photo for the world to see.

Interpretations of drinking behaviour and their consequences tend to be focussed on the physical appearance of the characters and the interpretation of their actions, rather than the setting or the context; whereas the appearance (or lack of appearance) of alcohol on screen seems to do little to alter this interpretation. Unusual behaviour and dress tends to be perceived as a sign of drunkenness, as do particular aspects of characters' appearances (mainly the eyes, face and posture). Drunkenness itself tended to be seen as a bad thing, but there was also a clear association present in the participants' minds between drinking and having a good time.

Participants tended to find drinks attractive when they were bright and colourful, and presented in an environment that was appealing to them; screenshots with characters perceived to be having fun were also an influence on how they perceived the drink.

These young people tended to believe that the various screenshots would have little influence on people's behaviour, but there was some speculation that it could influence people younger than themselves. Many participants actively

described how alcohol content would not influence them personally, but may influence others.

The participants exhibited misunderstandings about specific alcohol adverts, particularly being unaware that "alcohol-free" referred to a drink that did not contain alcohol and interpreted this as having the same effect on themselves and others as an alcohol advert would. There was a much more favourable response to the alcohol advert containing a story with humorous elements than the non-alcoholic beer advert with information and text.

The screenshots tended to provoke more negative than positive general attitudes towards alcohol, but these general discussions of alcohol were infrequent, with participants tending to focus on the specific elements of each screenshot instead.

Study 2. Examining the prevalence and nature of alcohol content in sampled Internet use

Method

Participants
A total of 102 participants took part in this aspect of the study with 10 of those taking part in a pilot study and 92 in the main study.

In the interests of informed consent, participants were informed that the information from the Internet session would be recorded and of the purposes for which it would be used.

Pilot Study
Prior to the main task, 10 participants were recruited to engage in a shorter version of the Internet task (20 minutes as opposed to 1 hour). Following this trial run, the practicalities of using the screen recording and video playback software were examined in case any changes needed to be made. Additionally, the recording data was coded, with the coding system examined and refined to account for any problematic references.

Procedure
Participants engaged in a set period of one hour of unrestricted recreational Internet activity on the computers in the youth clubs that was recorded using the pre-installed software CamStudio version 2.0 (http://camstudio.org/) for PCs, and VLC Media Player (http://www.vlcmediaplayer.org) for Macs; both screen recorders were visible on screen during the sessions. The recording software was set to capture a full screen image at a rate of 1 frame every second, and the program Timeleft (http://www.timeleft.info/) – displaying an onscreen clock, permanently visible – was used on PCs to measure the passing of time (in seconds) between each recorded frame so as to more accurately measure the duration of exposure to the recorded alcoholic and non alcoholic references; time on Macs was calculated using the "display the time with seconds" option from the system clock.

The recordings (along with the other tasks in the study) were completed in the youth clubs in an attempt to provide participants with a more natural, less restrictive environment than in school or a lab in the hopes that this would provide an environment where they were less likely to alter their Internet activity as a result of the task.

Participants were told in advance that they would be able to upload photos if they wanted, so could bring phones, mp3 players, cameras or portable hard drives to the session. Again, this was to avoid restricting the range of online activities that they engaged in.

Content analysis strategy

Once the Internet sessions were recorded, the 76 hours of data was played back frame-by-frame using QuickTime player, version 7.6.4 for Mac OS X. The coding of the data was performed by a single researcher with a further 9 participants (representing roughly 10% of the data), chosen at random, being independently coded by a second researcher to ensure internal consistency. In addition, samples considered particularly difficult to code were selected for independent coding by both other researchers, with differences in coding resolved by discussion.

The content was coded under the 6 criteria described below, and the duration of each drink reference was coded using previously described time display software which was present through all of the participants' sessions. When a drink reference was observed anywhere within the screenshot, it was coded and the corresponding time on the clock was noted; for references that appeared in multiple consecutive screenshots, the clock was used to measure the number of seconds of exposure that these references had on the participants. An example coding sheet is provided in Appendix Item 6.

In coding the screenshots, a maximum of one drink *content* type (*alcohol*, *non-alcohol* and *unsure*) for each *source* type (*peer*, *other*, *commercial* and *self*) was coded for each panel on the visited website. A panel was defined as a self-contained array of information on a website, usually in a clearly enclosed space.

For example, a maximum of one reference to each drink type for each identifiable *source* was coded within each picture, video, body of text, menu, advert box, and for each individual comment on a page. Multiple references to the same drink type within the same panel were coded as a single reference but with an increased prominence score to reflect the greater level of exposure. For popular websites, researchers agreed in advance what sections of the page would constitute a self-contained website panel.

However, references to the same drink were counted multiple times within the same screenshot in instances where each reference came from a different panel on the website page; for example, a YouTube video with a drinks reference and an associated advertisement was coded as two distinct references (one for the video itself, and one for the advert); and further, any visible comments related to the video within the screenshot that also referenced that same drink were coded separately at one additional reference per comment, each with their own associated *Prominence* and *Valence*.

This coding strategy was employed because it was considered less reliable when researching exposure to drink-related content to excessively limit the number of distinct references to a particular drink simply because they appeared within one screenshot. This strategy allowed for the coding of references from multiple sources within the same screenshot where the drink in question was depicted in discrepant ways.

The passing of time in between each drink reference was also noted so that the prevalence of drink references in relation to the entire time period could be observed. For each participant, the time at which they finished typing their password into the Google search-bar was taken as the starting point for their session and the end point was the point at which the recorded activity stopped.

In coding the data, researchers were able to utilise the context of the previous frames in coding the *content*, *source* and *valence* of references rather than coding each individual frame of the reference in isolation. This ensured that a drinks reference that had previously been deemed to have a certain quality did not have

to be coded differently as a result of isolated ambiguous frames where not all the contextual information was immediately visible. Researchers also used salient contextual information when making judgements about the screenshot that the drink reference actually appeared in. This allowed for a more contextually informed analysis.

Information revealed in subsequent frames that would influence the coding of existing references, however, was not used to recode the references. Instead, new information altered the coding only of subsequent occurrences of the reference in question. Thus, any new information over the time-period of the participants' recordings related to the qualities of an existing drinks reference resulted in an altered coding of the reference from that point on, but not before. No knowledge from other participants' recordings was used to influence the coding of a particular reference.

This coding logic was decided upon as it was reasoned to allow for the most representative coding of the drinks references in relation to the way the participant experienced them. This was important as scores generated at a participant level were used in the analysis of *Study 3*.

The content analysis data were coded under the following six criteria:

Website:
The domain name of each site that a drinks reference appeared in was noted where visible. After the coding, the websites were classified into one of fifteen categories (*Discussion*, *Email*, *Entertainment*, *Events*, *Finance*, *Gambling*, *Games*, *Hobby*, *Info*, *Media*, *News*, *Search*, *Shopping*, *SNS* and *Technology*), and an *Other* label was also used for the few websites visited that did not fall into any of these categories.

While some categories are self-evident, most require elaboration. The *Discussion* category represented blogs and forums; *Entertainment* was a small category that represented sites such as joke websites or movie reviews; *Finance* was a category to include banks and money management (but within the sample only

included the site www.paypal.com); *Games* represented online games (in particular popular flash game sites); *Hobby* was assigned to sites providing advice on real world hobbies (including various How To websites); *Info* represented information sites (such as government websites and encyclopaedias); *Media* represented audio, video or picture sharing websites (including YouTube, online radio and image hosting websites); *Search* represented search engines or links sites; *Technology* represented websites relating to electronics, computer hardware and software information and downloads.

Content

This criterion referred to the type of drink content within a reference and was coded nominally as *Alcohol*, *Non-Alcohol* or *Unsure*. *Unsure* references were coded in instances where a drink of some description was clearly visible in the screenshot, but the specific type or brand of the drink was not clear enough to distinguish it as *Alcoholic* or *Non-Alcoholic*; these references were coded as *Unsure* (rather than being omitted entirely from the data) so as to represent the data more transparently. Affective words indicative of alcohol or its consumption such as "drunk" or "wasted", as well as non-alcohol equivalents, were coded into the relevant category under this criterion.

Similarly, references to brands and companies (i.e. Coca-Cola) were coded as references to the *content* category that the brand of drink represented. This was not the case in instances where the researchers considered the brand name was being used in a context that did not represent it as a drinks company (i.e. references to Guinness in 'Guinness World Records' were considered to be sufficiently unrelated to the drink not to code as an alcohol reference).

In circumstances where a brand or drink unfamiliar to the researchers was observable during the coding, the brand was researched to verify its content as alcoholic or non-alcoholic; otherwise the reference was coded as *Unsure*. Similarly, any drinks reference where the category of drink was questionable (i.e. in a slightly obscured photographic reference) was flagged for discussion and was only then coded into the *Alcoholic* or *Non-Alcoholic* category providing all

three researchers were uniformly confident of the classification, otherwise the drink was classed as *Unsure*.

In instances where the image of a drink appeared to be non-alcoholic, but any text associated with the image claimed otherwise the drink was categorised by what the supplemental information associated with the image indicated.

Pictures with references to multiple different drinks of the same *content* but appearing very close together (i.e. within a drinks cabinet) were coded as a single reference, but with the number of drinks taken into consideration and manifesting as a higher level of *Prominence* coding instead. Similarly, cocktail recipes with multiple drink ingredients of different *content* were coded as a single reference – with the actual cocktail being the target reference and the drink ingredients not being coded. Using an extension of this coding logic, references to drink combinations presented as a single drink such as 'vodka and coke' were counted as a single alcohol reference unless the component drinks were presented in a context where they were judged to be different enough from each other to warrant coding as distinct drinks references.

Activity:
This category referred to whether the observed drinks reference was being actively interacted with by participant or not (i.e. through email, social networking sites or chat programs). This category was coded dichotomously as *Active* or *Passive*.

The primary purpose for coding under the *Activity* category was to give an indication of how often the participants themselves were responsible for, or seemed to be actively interested in, the observed drinks references. As such, these references were intended to include instances of participants typing drinks references or uploading images. Other references were coded as *Passive*.

As *Active* references related to a participants active interaction with a drinks reference, it was not necessary for classification for a participant to actually reference a drink themselves; simply responding (for example through a chat

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program) to drinks content was enough to code the reference as *Active* unless the response was judged contextually distinct from the original reference (i.e. if a participant responded to a drinks-related comment with an unrelated reply). Similarly, in instances where an explicit drink reference disappeared from the screen but an interaction between the participant and someone over the Internet continued, the reference was still coded as an *Active* drink reference so long as the subject of the conversation did not change and the drink in question was still considered to be significant to the conversation.

Active drinks references were only coded as such for the frames in which the participant was actually interacting with the reference. Frames prior to, or subsequent to this interaction where the drink was still observable on screen were coded as passive.

Prominence:

This criterion was used to represent how important and salient the observed drinks reference was in relation to the rest of the screenshot. This criterion was categorized ordinally from 1 to 4 and was based on the researchers' judgements informed by the predefined guidelines agreed prior to the coding. The four levels of *Prominence* were coded as follows:

- References coded at *level 1* represented items that were either of central importance to the page being viewed, or that were considered highly noticeable or significant to the screenshot (for example, references in headlines on news sites or clear close-up pictures of people drinking).
- References coded at *level 2* referred to items that were considered to be extremely difficult to miss in the screenshot, but not of absolute central importance when compared with the rest of the page (for example, references where people clearly held drinks in the background of photographs, or comments on a Facebook page).
- *Level 3* references were items observable in the background of the screenshot, not considered contextually important to the page, and reasoned to be somewhat unnoticeable without close observation (these

included references to pictures of drinks in the distant background of the image).

- *Level 4* references were items that were difficult to notice, and were judged only to be observable upon active scanning of the entire screenshot (these references often manifested as drinks references within pictures on social networking sites that had not been enlarged).

When coding the *prominence* category, researchers took into account size, location on screen, contrast, context and clarity of reference when determining the level of coding. In situations where some of these factors were indicative of high prominence, extremes in other factors could lead to the image being coded at a lower rank (for example, a large picture with a drink in the centre of the screen could still be demoted to being coded at *level 2* if the image was blurry and the reference not entirely clear). In most instances, *Prominence* tended to be coded in relation to the size of the reference within the screenshot.

In instances where pictures containing drink references on social networking sites had been enlarged and displayed previously unnoticed drink references, the references continued to be coded after the pictures were minimised to a smaller size, even when no longer clearly visible, but only at a *Prominence level* of 4.

Source

This category referred to who the contributor of the drinks reference appeared to be in relation to the participant (if the reference was not themselves); this category was coded nominally as *peer*, o*ther, commercial and self*.

The *peer* category represented anyone who the participant appeared to know, and included friends and family on social networking sites, contacts in chat programs and other individuals interacted with by email. Most references occurring on social networking sites (that were not commercial) were coded as peer though there were also references coded as other where the source of the reference was a celebrity or (for example) a popular Facebook group.

The category *self* was coded when the drinks references appeared to be inserted into the relevant screenshot by the participants themselves (for example by uploading images or typing comments). Where possible, researchers attempted to determine whether existing content present in the recording had been generated by participants themselves prior to the recording – for examples, participants' user names on forums and social networking sites were noted so that content matching the names could be accurately attributed to them on that website.

Commercial references referred specifically to advertising by drinks companies (with drinks references found in advertising for other products coded as *other*); this included advertising panels on websites, pop-up adverts, brand sponsorship, brand websites and references to brand profiles or spaces on social networking sites. In addition to this, advertising of drinks by suppliers was also classed as commercial references (for example, drinks promotions on supermarket websites). The classification of a commercial reference can therefore be summed up as *drinks references directly advertising the product or the sale of the product*.

Research has highlighted the variety of 'indirect' methods of marketing used by the drinks industry (Alcohol Concern, 2011) to market their product online. Due to the complex nature of this marketing and the difficulty in determining when a genuine instance of indirect marketing has been found rather than a coincidental reference to a brand, the coding of commercial references focussed on the direct marketing examples provided above. This meant that for the purposes of this study, product placement was not considered *commercial*.

All references that did not fall into these other labels were categorized as *other*.

Valence

This criterion represented the researchers' subjective judgements regarding how positive or negative the screenshot made the drinks reference in question appear to be. This category was rated on a five point scale (*-2,-1,0,+1,+2*), representing 2 degrees of both positive and negative, and a neutral level.

As the valence criterion was used to represent participants' affective exposure to the drinks references, it was coded in relation to the entire screenshot rather than just the section of the page it appeared. This allowed for instances where a particularly negative page could cause a drink to be coded slightly negatively even if the immediate surroundings of the drink were neutral. Consideration was always given to the extent to which the drink reference in question was related to the attributes of the screenshots being judged as positive or negative. Therefore, positive and negative influences within the screenshot were ignored if they were considered unrelated to the presentation of the drink content. For the most part, only the immediate context of the surrounding drink had information relevant enough to affect the valence of the drink.

Although determining valence is an inherently subjective practice, some guidelines were agreed upon by researchers to ensure a consistent framework for attributing valence. Drink references associated with anger, unhappiness, ill health, embarrassment, lack of control and other negative outcomes were coded negatively. Drinks references associated with happiness, fun, good relations, good health, desirability and other tangible positive outcomes were coded as positive valence.

In coding the valence of pictures containing drinks, consideration was given to the people in possession of the drinks where possible. In these situations drinks were coded positive or negative predominantly as a function of how positively or negatively disposed the people were and how much the drink was a contributing factor to this impression. Individuals consuming drinks was not sufficient to make the reference positive in itself, there was also required to be a positive or negative outcome identifiable from the drink (which could include the person appearing to enjoy the drink) before valence was coded as anything other than neutral.

Although valence was predominantly a function of associations with positive qualities and perceived outcomes related to the drink, for some references it was necessary to also make reference to their stylistic presentation and the perceived purpose of the drink within the screenshot. These instances were cases where

the drink reference existed as a result of deliberate creative design (such as in advertising or choreographed scenes in music videos). For example, some websites appear to use images of champagne to denote celebration even if this association is not explicit. Rather than not representing this association in these references, information drawn from the stylistic presentation and the perceived symbolic use of drink was used to inform the valence coding, but only in cases where these influences were extremely clear to the researchers.

In complex instances where a screenshot had competing positive and negative influences that were related to the drink, an aggregate valence score was decided upon that took the various positive and negative influences into account. For many of these instances, it was necessary to resolve the issue through discussion. Where in doubt, researchers erred on the side of caution and classified references as neutral.

Unlike some previous research, which has defined the valence of drinks as a result of the medium in which it appears (for example, by classifying all alcohol references in popular music videos as positive as they are likely to be positively received by the audience), the content analysis coding for this study was designed to only code valence as a result of the discernable qualities that were independent of the medium in which it appeared. The reason for this was that for the purposes of this analysis it was deemed fruitless to examine the qualitative dimensions of drinks references online (through attempting to establish a framework for analysis) if references in particular mediums were going to be automatically classified as positive or negative based on a priori assumptions. In order to provide insight into the collective influence of websites visited by young people, deciding in advance that certain websites (very likely to be visited by the participants) would automatically communicate content in an intrinsically positive way rendered the exercise of content analysis essentially futile. By approaching the content analysis in a more objective way, with fewer assumptions made in advance about the type of content that would be found, this study attempted provide a less biased analysis of valence, less likely to be influenced by error from potentially faulty assumptions on the researchers' part.

Findings

Once all data was coded, mean prominence and valence scores were generated separately for every website type, with scores both totalled and subdivided by *Content*, *Activity* and *Source*. Additionally, the number of participants to visit each individual website were totalled and presented as cumulative totals for each *Website Type* so as to give an indication of the most popular website types visited by participants. Raw data on the number of visits to the 10 most popular websites is also provided in Appendix Item 7. Data for Prominence and Valence are presented in Appendix Tables 8 and 9 respectively.

Inter-rater reliability

As this content analysis was not simply a classification exercise, steps needed to be taken prior to evaluating inter-rater reliability. As coding involved first noticing a reference and then indicating the time-stamp at which the reference appeared, coding sheets from multiple coders did not produce equivalent lines of classification that could be compared (for example, there were cases where one coder noticed a reference for a few seconds before another, and there were cases where one coder noticed a low prominence reference that the other coder missed entirely). This was resolved by examining judgements made only for references to the same item where the relative time stamps overlapped – for example, in cases where one coder entered a time stamp to represent the onset of a reference a second before the other coder, the first second was removed and only judgements for coding that overlapped were analysed. This resulted in 1416 individual frames (each with comparable judgements for *Content*, *Activity*, *Source*, *Prominence* and *Valence*) to test for agreement. Many of these frames represented coding for a few references that were on screen for an extended period of time, and therefore represented only one classification judgement for each criteria multiplied over (in some cases) several hundred frames; this resulted in data that seemed likely to be excessively influenced by a few references that happened to be on screen for very long periods of time. To resolve this problem, and to ensure that reliability estimates were based on a higher proportion of unique references (and therefore more coding decisions proportionally), individual references that were on screen for 30 seconds or more were eliminated.

This resulted in 370 frames of coding being available for inter-rater reliability comparisons. Cohen's Kappa statistic was used to evaluate the extent to which there was agreement between the coders for each coded criterion. *Content* classification (*Alcohol* vs. *Non-Alcohol* vs. *Unsure*) resulted in a Kappa value of 0.87 representing extremely good agreement; *Source* agreement (Peer vs. Other. vs. Commercial. vs. Self) resulted in a Kappa value of 0.98 indicating near perfect agreement. Due to the large discrepancy between *Passive* and *Active* references found in the results, one coder had a consistent *Passive* classification in the *Activity* criterion across all 370 frames so Kappa values could not be calculated; however there was a near perfect 99.7% (all but one case) agreement for this criterion.

For the ordinal classifications, *Prominence* agreement (derived from scores on a 4-point scale) resulted in a Kappa value of 0.29; though this represents a fair level of agreement, *Prominence* on this type of scale was judged too inconsistent a result to be used reliably, and although *Prominence* scores for all the discreet criteria (sorted by website type) are recorded for all Internet data (Appendix Table 8), they are not used in any subsequent analysis or discussion. *Valence* agreement (on a five point scale from -2 to +2), resulted in Kappa values of 0.36, representing a similar level of agreement to that of the *Prominence* criterion. As valence was an area of particular interest to this research project all valence scores were re-coded to represent a 3 point scale (-1 to +1) with -2s re-coded to -1 and +2s recoded to +1. The aim of this rescaling was to eliminate the effect of disagreement between scores judged either "moderately" or "very" positive or negative (+2 vs. +1 and -2 vs. -1), as this seemed a very subjective distinction. Agreement for this restricted scale resulted in a Kappa value of 0.50 representing moderate agreement. This scale was used to represent valence in subsequent analysis.

Frequency and valence scores
Although in generating scores for the content analysis, taking account of valence and prominence was judged to be valuable from a qualitative perspective, all results for
the previously mentioned *prominence* and *valence* scores were also calculated again without any reference to prominence and valence as simple *frequency*

scores. These scores represented simply a sum of the frames that contained alcohol, non-alcohol or unsure drinks references for each website type subdivided by the *Activity* and *Source* nominal coding criteria. These scores are available in Appendix Item 11.

These additional sets of scores were produced for a number of reasons, with the main being that they produced a far more objective measure of drink prevalence – taking into account only *Content*, *Activity* and *Source* (all of which produced extremely high inter-rater agreement). It was important, for the purposes of data analysis in *Study 3*, to account for the possibility that the valence of the drinks were not actually influential on a participant's processing of drinks references. Previously referenced research on the mere exposure effect has indicated that simply being exposed to a target is sufficient to becoming more positively disposed towards it (with the valence of the target being potentially irrelevant); thus multiplying exposure scores by valence could serve to introduce error into a measure that was previously more valuable to the analysis.

While *prominence* and *valence* scores were calculated for every reference that appeared on screen (including multiple overlapping references within the same frame), *frequency* scores were calculated at a maximum of 1 reference of each drink type per frame (essentially providing a binary *reference present* vs. *reference absent* classification for each drink type within each frame) – this was due to the nature of the data, with the cumulative totals of the *frequency* scores being unable to exceed the number of frames recorded, but such concerns being irrelevant for *prominence* and *valence* scores described in terms of their means.

Content analysis descriptive results
As can be observed on Appendix Table 11, Search (largely consisting of Google homepages), Games, Media and Social Networking sites were by far the most common categories of websites visited. When Appendix Table 7 is also consulted, it is not difficult to see that these categories were defined by a few sites that represented the most popular websites and the websites from which the majority of this data is derived (Google in the case of *Search*, Facebook in the case of SNS and YouTube in the case of *Media* sites); Games was a more varied category, representing many frequent visits to numerous different websites. This

breakdown of most popular domains is similar to that found in other research on young people's Internet preferences in the UK (see Ofcom, 2010); the only noticeable difference here is the emphasis on *Game*. It would seem as though the Internet sites visited here are representative of those visited by young people generally – though it is also worth noting that many of these websites also represent the most popular websites visited regardless of age (see http://www.alexa.com/topsites).

The most striking finding amongst the cumulative frequency scores is the lack of *Active* references present in the data (a total of roughly 2% of the frames of drinks references across all three *content* categories). Likewise, *Commercial* and *Self* generated references accounted for a very low proportion of the source (representing around 11% and 10% of the overall data respectively), with the vast majority of data being accounted for by *Peer* and *Other* references.

Frequency comparisons

All data from this section was derived from Appendix Table 11.

The first comparison examined was between the frequency of *alcohol* and *non-alcohol* (8723 vs. 6170). A chi-square goodness of fit test was conducted using the null hypothesis that a frame of drink that was encountered was equally as likely to be *alcohol* as *non-alcohol* and was highly significant, $X^2(1, N = 14893) = 437.64$, $p <.001$. This illustrates that young people are significantly more likely to be exposed to *alcohol* than *non-alcohol* content online.

Though, descriptively, large differences were apparent between *active* and *passive* alcohol frequencies, this is not necessarily a noteworthy finding as there is no reason to assume that more *active* references would be observed for any other coded criteria, and this level could represent the natural balance of activity in participants generally. A 2x2 chi-square was conducted on cumulative totals for *Activity* coding (*active* vs. *passive*) and Content (*alcohol* vs. *non-alcohol*) revealing a highly significant effect, $X^2(1, N = 14893) = 54.65$, $p <.001$. The relative difference in proportion of active references between these groups (3.2% vs. 1.2% respectively) illustrates this significant effect and demonstrates how much more likely *alcohol* references are to be *active* than *non-alcohol* references.

Categories *peer* and *self* were combined and totaled for *alcohol* and *non-alcohol* references (representing 4120 and 3030 total frames respectively) and put into a 2x2 contingency table with a combined *other* and *commercial* category (representing 4603 frames for *alcohol* and 3140 frames for *non-alcohol*). These categories represented groups that approximated *within peer network* and *external to peer network* references. A significant difference was observed (X^2(1, N = 14893) = 5.10, p = 0.02), thus illustrating the tendency for alcohol references to be found outside a participants' peer group compared to non-alcohol references. This difference is clearer when testing *alcohol* and *non-alcohol* totals for the *peer* and *other* criteria specifically, X^2(1, N = 11161) = 15.31, p <.001. One final chi-square analysis was conducted on *commercial* versus *non-commercial* references for *alcohol* and *non-alcohol* content, this result was statistically significant X^2(1, N = 14893) = 27.06, p <.001 and indicated that *non-alcohol* marketing was significantly more likely to be experienced by participants than *alcohol* marketing.

Valence score comparisons
Data for these comparisons was drawn from the 3-point valence information on Appendix Table 10. Although means are reported for the totals on this table (as it was judged to give the best visual impression of the direction of the central point), chi-square analysis seemed more appropriate for analysing data on this restricted ordinal scale. Comparisons were drawn between categories using frequency counts for +1 (*positive*) valence (and a *not-positive* category totaling counts of 0 and -1 classifications) as the dependent variable.
As with the frequency table comparisons, the first comparison was between *positive* and *not-positive* references for all *alcohol* and *non-alcohol* frames. This analysis yielded an extremely significant result, X^2(1, N = 14794) = 249.38, p <.001 in the direction of more positive references being encountered for alcohol content.

With this result clearly indicating a more positive valence for alcohol content, within-alcohol coding categories were examined further. A chi-square analysis indicated a highly significant difference in positively coded valence between *active* and *passive* alcohol references, X^2(1, N = 8660) = 204.41, p <.001, with

active references very rarely (only in 4.78% of instances) being positive relative to passive references . Likewise, *peer* and *other* references differed considerably on this measure, with *other* references generating significantly more positive frames, $X^2(1, N = 6616) = 272.11, p <.001$.

Discussion

The result of this content analysis illustrates unambiguously how prevalent alcohol content is amongst young people's Internet activity. The results here indicate both how much more frequently it occurs than non-alcohol, and how considerably more of it is of positive valence. With regards to the nature of this content, it tends to be more prevalent in the form of passive background references (i.e. from *other* sources beyond the participants' peer network).

Although there were few active references, there were considerably more *active* alcohol references proportionally than non-alcohol (by a ratio of nearly 3:1). This would seem to illustrate that alcohol is the drink significantly more likely to be discussed or focussed on within a webpage than any other. In coding the Internet data, it was apparent that many *active* references to alcohol occurred as a result of participants discussing interesting or noteworthy events that had occurred recently as a result of drinking. It is perhaps alcohol's capacity to be associated with so many memorable events (both bad and good) that results in it being actively interacted with and discussed online by participants so often relative to other drinks. This description of drunken events may explain why the active alcohol references were also generally found to be negative relative to passive references. If this pattern also exists for other individuals within the demographic, then it is not surprising that *other* references were found to be far more positive than *peer* references – as they would represent a similar observed pattern of discussion of potentially drunken events (i.e. on social networking sites) mirrored across peer networks.

It must be observed that this study found fewer alcohol *commercial* references than some researchers may have expected – with *peer* and *other* alcohol references outnumbering *commercial* references several times over. It also must be noted that a significantly greater proportion of non-alcohol *commercial*

content was found relative to alcohol *commercial* content; this is particularly noticeable given how much more alcohol content was found generally. It is clear that although alcohol advertising to young people online may be a problem, they encounter disproportionately fewer instances of direct alcohol advertising than they do advertising for other drinks (although this does not take the considerable effects of *indirect* marketing into account).

This content analysis indicated that it was the passive references that are outside of peer networks that contribute most to both the quantity of alcohol references encountered, and to its overall positive valence. Clearly this illustrates the need for alcohol references of this nature (not generated by advertisers or by peers) to be examined more closely. It seems likely that repeatedly coming across alcohol stimuli of a generally positive nature in the background of popular websites must have some influence on how young people evaluate and process alcohol information. The argument could be made that alcohol references of this nature serve to normalise alcohol considerably and to emphasise it as an established ubiquitous product within society. It is not difficult to speculate as to how this would have an impact on young people when they come to evaluate educational and public health campaigns relating to alcohol that stress the more extreme aspects of alcohol not depicted in passive online content.

Study 2 Summary
Significantly more alcohol than non-alcohol content was encountered in this content analysis (8723 frames relative to 6090). Alcohol references were considerably more likely to be *active* references than non-alcohol references and considerably more likely to represent *other* content found beyond participants' online peer network. Alcohol content was far more likely to be interpreted as being positive than non-alcohol content, and alcohol content that was of a *passive* nature and from an *other* source (beyond the participant, their *peers*, or *commercial* sources) was significantly more positive.
Relatively few instances of direct commercial references were found. Although instances of alcohol commercial references outnumbered non-alcohol equivalents, a significantly greater proportional number of non-alcohol commercial references were found in the sample.

Study 3. Relationship between Internet alcohol exposure and drinking attitudes and behaviour.

Methods

Participants

A total of 111 participants contributed to this aspect of the task, with 10 taking part in the pilot study. A breakdown of demographics by age, sex, religion and ethnicity for participants in the main study is provided in the Appendix Tables 3, 4 and 5.

Procedure

Pilot

For this task, participants in the pilot study took part in a small version of the Internet recording task (lasting 20 minutes rather than an hour) as well as a trial run of the questionnaire and the IAT task. Feedback was gathered from the participants to ensure that they understood and were engaged with all aspects of the task.

Main study

Internet data

Internet alcohol exposure scores were all calculated based on data from *Study 2*, but exposure scores were generated for each individual participant. Based on data analysed in *Study 2*, the *prominence* criterion was not considered a robust or consistent enough measure to use in this task, and the *valence* criterion was also discarded for the purposes of this analysis.

Two variables were derived from the Internet data and used in this analysis. Alcohol exposure was calculated as a dichotomous variable to indicate whether a participant was exposed to any alcohol references during the recorded Internet session. The overall proportion of seconds any alcohol reference remained on screen was calculated. This was derived by dividing the number of seconds of alcohol references by the total number of seconds in the recorded session.

Self-reported alcohol consumption

A questionnaire on drinking behaviour and preferences was given to participants and was designed to take no longer than 10 minutes. Questions were derived from 'Smoking Drinking and Drug Use among Young People in England' (SDD 2008) and the ESPAD questionnaire (2007); for brevity the beverage-specific quantity-frequency questions in SDD were adapted. The questionnaire was aimed at assessing participants' level of alcohol consumption into three distinct categories; whether they ever drank, whether they engaged in heavy episodic consumption defined as consuming three or more drinks on a single occasion, whether they had been intoxicated.

Additionally, two questions about attitudes and preferences were included that had been adapted from the IAT research. Basic demographic information (relating to gender, ethnicity and religious beliefs) was also collected in the questionnaire. The questionnaire was designed and presented to participants through the online questionnaire tool SurveyMonkey (www.surveymonkey.com).

Implicit Association Test (IAT)

The IAT was used in order to establish a measure of an individual's implicit attitude towards alcohol. The method aims to uncover the participants' implicit attitude by measuring the relative strength of automatic associations between a target object and any negative or positive attributions through reaction time tasks.

In the IAT's design, the participants are required to classify, as quickly as possible, various stimuli as either belonging to the target category or an appropriate contrast category. A second sequence also requires participants to classify stimuli with a positive or negative valence into positive or negative attribute categories. In both these cases, the category labels are on either side of a computer screen, and reaction time is measured as the latency between the presentation of a stimulus and its appropriate categorization by way of

respondents pressing the key corresponding with the labels. The significant trials take place during sequences where both target and attribute labels are present on screen at once, with the target and attribute stimuli being alternately presented for classification. These combined sequences are alternated during the trial so that respondents experience pairings between the target and positive labels (with the contrast category and negative attribute labels paired on the other side of the screen), and between the target and negative labels.

The IAT's measure of effect comes from comparing respondents' reaction times between the different pairings in these combined trials, with the assumption that congruent pairings (i.e. pairings of a likeable target category with the positive attribute labels) should produce more comfortable (and therefore faster) responses than incongruent pairings. The IAT's implicit effects have been shown to reliably correlate with explicit and behavioural measures across a number of different attitudes (see Greenwald et al., 2008, for a review).

The present study used the *bipolar alcohol-related affective IAT* design described and recommended by Houben et al (2009) as it has been found to produce the best correlations with explicit measures and drinking behaviour. Although the classic IAT has been found to produce generally consistent results when utilised for measuring a variety of socially sensitive attitudes (e.g. towards gender and race), with regard to results on measures of alcohol attitude the classical IAT has a tendency to reveal negative associations regardless of self-reported alcohol consumption or explicit attitudes (De Houwer et al, 2004; Wiers et al 2002); this effect has been shown to be curbed by using the *bipolar alcohol related IAT*, and thus it was selected for use in this study.

This variant of the alcohol IAT differs from the classical IAT (as described by Greenwald et al, 1998) as it uses alcohol-related (rather than generic) words for the attribute stimuli (e.g. "party" and "confident" for the positive attributes, and "nausea" and "headache" for the negative). Both negative and positive words are listed in Appendix table 6.

In the present IAT design, the target category *Alcoholic Drink* is contrasted with the label *Other Drink* and paired in the combination trials with *Positive* and *Negative* attribute labels. The more general *Other Drink* contrast category label was used in place of the more traditional *Soda* label found in most bipolar alcohol IATs (Wiers et al, 2002; Houben and Wiers, 2006); this was done mainly for cultural reasons – with the term *Soda* not in common parlance in the UK. The broad category of *other drink* facilitated the inclusion of many culturally popular non-alcoholic drinks such as tea and coffee. Pictures of a range of 9 alcoholic and 9 non-alcoholic drinks were used as stimuli for the two target concepts and the aforementioned alcohol affective words were used as stimuli for the *positive* and *negative* attribute categories. The alcoholic and non-alcoholic drinks images were chosen in pairs and matched for size and colour to ensure, as far as possible, that one set of pictures was not more aesthetically appealing than another. This was to avoid interfering with the positive and negative implicit associations of alcoholic versus non-alcoholic drinks that we were measuring. The photos were all taken with identical backgrounds for the same reason.

The IATs were designed using Psyscope build 53 for Mac OS X, with the design following the procedure outlined by Greenwald, Nosek and Banaji (2003), including counterbalancing for order of presentation of combined trials between participants (so that half of them had *Alcohol* and *Positive* paired in the first combined trials task, and half had *Alcohol* and *Negative*), eliminating trials with latencies greater than 10,000 ms, and eliminating participants with more than 10% of responses under 300 ms. Rather than replacing error latencies with block means + 600 ms (as recommended in Greenwald et al.'s, 2003, paper), the present study opted to use the alternative of simply reporting the total latency to the correct response for these trials as this was considered to be a less arbitrary mechanism for dealing with incorrect responses. In the event of incorrect responses occurring, participants were presented with an error symbol after having previously been advised (in the instructions before the trials) to press the alternative key when this happened.

All of the IAT trials were presented on a white background, with the *Alcoholic Drink* and *Other Drink* target labels in blue, and the *Positive* and *Negative*

attribute labels in black. The alcohol images were presented on a blue background, and the attribute stimuli words were in black (so as to correspond to the colour of the relevant labels); the error symbol was a red 'X'. All labels were presented on the upper left or right side of the screen, and all stimuli (and the error symbol) were presented in the centre of the screen. Stimuli were categorised to their corresponding labels by pressing the 'z' and '.' keys for the left and right labels respectively. Instructions were presented before the start of each target and attribute sequence, and before each of the combined trial sequences. The IATs were presented on a MacBook and took between 10 and 15 minutes.

Analysis

Relationships between alcohol exposure, IAT and consumption were analysed and descriptive statistics for demographics and consumption variables were produced using STATA IC12. Means and standard deviations were derived for continuous variables and proportions for categorical variables.

Chi-square analysis was used to explore the association between any alcohol exposure and consumption categories; any drinking, episodic and intoxication. In order to explore any confounding due to age and gender these were included in a sensitivity analysis using a logistic regression model with consumption as the dependent variable. In a similar way analysis of covariance was used to explore the proportion of exposure and consumption patterns with an associated sensitivity analysis.

Findings

Sample demographics are presented in Appendix Table 3. The mean age of the sample was 15.4 years (SD 1.0), more than half were white (53.7%) and male (59.8%).

Responses to the alcohol consumption questionnaires are presented in Appendix Table 13. The majority (84.4%) had consumed alcohol and the mean age of first drink was 12.6 years (SD 2.19). A large proportion had engaged in heavy

episodic alcohol use (80%) and almost 50% did this on a regular basis. A similar proportion (77.5%) had been intoxicated. More of the sample stated that they preferred alcoholic to soft beverages (45.7% versus 35.7%) and the mean alcohol attitude score was greater than the point of ambivalence at 6.3 (SD 2.9).

Analysis exploring the association between IAT score and alcohol consumption categories, Appendix Table 16, found no association between IAT score and any consumption but significant association between episodic consumption (-0.05 vs -0.36; p=0.02) and intoxication (-0.02 vs -0.40; p=0.001) suggesting a more positive implicit attitude towards alcohol for those consuming alcohol in these categories. Sensitivity analysis including both age and gender found no significant influence of either age or gender and confirmed the initial findings.

Cross-tabulations of any alcohol reference exposure and consumption categories are presented in Appendix Table 17. Significant associations were found between heavy episodic consumption and any alcohol reference (93% versus 69%; p=0.04) but not for other consumption categories. A similar association was noted, Appendix Table 18, for associations between proportion of alcohol references and episodic consumption (0.52 vs 0.26; p=0.02). Sensitivity analysis accounting for gender and age confirmed the main findings.

Study 3 Summary
The analysis of the association between IAT scores and consumption categories tends to support previous research evidence that those with more positive implicit attitudes towards alcohol are more likely to consume more alcohol. There is evidence of an association between any alcohol reference exposure and the proportion of alcohol references and heavy episodic consumption. The analysis provides no evidence of causality and no indication of whether Internet exposure causes increased consumption or whether increased consumption increases the exposure to, or seeking of, Internet alcohol references. However, these results do highlight the interaction that occurs between uptake of alcohol media content, implicit attitude and consumption and how intertwined they are. Results are discussed in light of the outcomes of *Study 1* and *Study 2* in Implications.

Implications: The relationship between online alcohol content, interpretations and drinking attitudes and behaviour

The three outcomes of this project provide an insight into the prevalence and qualities of alcohol media content encountered online, how young people interpret this content, and the relationship it has with consumption of and attitudes towards alcohol.

The qualitative analysis in *Study 1* illustrated a clear trend for participants to focus on the aesthetics of the setting depicted in the screenshot and the physical appearance of any characters within the screenshot rather than contextual information. This superficial evaluation of contexts in which alcohol is found is interesting in light of the content analysis in *Study 2* where it was found that content tended predominantly be of a *passive-other* nature. If alcohol media messages are being processed superficially, and a great deal of content encountered by young people online is content not particularly salient to the individual, it can be seen how cognitive uptake of this alcohol content could be done with very little thought. Previous research on the mere exposure effect (e.g. Bornstein and D'Agostino, 1992) illustrates how alcohol content of this nature could be processed with little cognitive appraisal yet have a large effect on an individual's attitude.

Research on implicit associations illustrates how unconscious processing of information can predict not only levels of consumption, but also estimate some measures of problem drinking behaviour (Wiers et al., 2009). If participants' implicit attitude towards alcohol is being affected by the content encountered online (either through mere exposure or through associations between the alcohol content and the context in which it appears), then it seems likely, in light of *Study 2*'s findings pertaining to *valence*, that the nature of the alcohol content they encounter online will have an effect on their attitudes (explicit or implicit) and drinking behaviour. The current study found relationships between IAT results and self-reported consumption, and although the direction of causality cannot be inferred, these results indicate that such an interpretation have a legitimate case.

It is also worth noting that participants' misunderstandings of some of the alcohol messages online (i.e. interpreting "alcohol-free beer" as being a price promotion for regular beer) could contribute towards errors in appraising drink content that could also augment these implicit cognitive associations. Many participants described scenes involving individuals having fun while drinking soft drinks (See **Pepsi Party** and **Red Bull** from *Study 1*) as being instances of disguised alcohol – often this was justified with explicit descriptions of how alcohol was essential in order to have fun. This association between alcohol and positive expectancy could be being reinforced by non-alcoholic drink content found online, or possibly even by general depictions of 'fun' found online.

It would seem as though if it was existing drinking attitudes influencing the pattern of IAT results (and also influencing the content found online), rather than vice-versa, then the alcohol media content discovered in *Study 2* would be more heavily weighted towards *active* and *peer* references – as participants who were already primed to find alcohol would do so actively. However, this is speculation; future research could construct designs to better unpick these associations between implicit attitude, consumption and uptake of alcohol media content online.

What can be inferred through the current study is that online alcohol content is more prevalent than non-alcoholic content, that this content tends to take the form of passive background references that are received in more positive contexts, and that this content shows statistical relationships with consumption at an individual level. In spite of this effect on the individual, participants tended to indicate that they were not influenced by the type of alcohol content shown to them in *Study 1*. This could simply be a result of the "third-person effect" (Paul et al., 2000) where individuals tend to believe that persuasive media has a greater influence on others than themselves (as illustrated by the prevalent "*would influence others but not me*" type appraisals that ran through multiple screenshots in *Study 1*). As there was a relationship between alcohol exposure and drinking behaviour, it seems likely that there is some influence from persuasive online media even if participants are unaware of it.

Participants also indicated that they were largely unaffected by alcohol advertising online, and while this seems unlikely given the persuasive and effective nature of advertising, only 12% of alcohol content online represented identifiable instances of marketing, so it would seem likely that effects transmitted through interacting with and absorbing alcohol media came mostly from sources that were not advertising. While policy to limit exposure to alcohol amongst young people often focuses on curbing advertising, the results of this study reveal that there are many more avenues for underage drinkers to encounter alcohol with positive associations online. It seems as though if there is a goal to reduce this exposure, then other avenues of policy must also be explored.

Overall, this research highlights the need for less exploratory studies to examine the relationship between the variables examined here in more detail through by testing more controlled hypotheses. The results of the qualitative analysis provide insight into the themes that are pertinent to young people when they are appraising online alcohol media and its influence. The content analysis in *Study 2* gives a numeric breakdown of data discovered from actual Internet activity (rather than inferences drawn from researchers examining websites popular with young people) over an extremely large sample of recorded Internet screenshots. *Study 3* illustrates how this online content is associated with drinking consumption, and how drinking consumption is in turn associated with Implicit Attitudes to alcohol.

Limitations

Although many aspects of the methodology may contain facets that future researchers will find valuable to incorporate into their study (aspects of the content analysis coding and the changes made to IAT category labels among UK samples for example), there are also many aspects that future research may consider avoiding.

It is clear from the level of inter-rater agreement in *prominence* (and arguably the *valence* coding) that constructing scales to represent the data in subjective coding exercises should be carefully considered to avoid the pitfall of making the

task too complicated or dependent on coding instructions. Simpler coding schemes such as binary positive versus negative decisions may be more appropriate for research of this nature.

Secondly, our interviewees were aware that their interviews were being analysed as part of a research project on alcohol, so they could potentially have been primed to discuss alcohol and this could be implicated in their interpretations of non-alcohol screenshots as containing alcohol. Although steps were taken to prevent this – the procedure was refined across two separate pilot studies with feedback given by participants on the structure of the interviews and the order in which the drinks were presented – there was no way to tell whether or not they were effective.

There may also be limitations when extrapolating from results of the Implicit Association Test. While the IAT correlates reliably with self-reported measures (as it did in this study), there has been debate as to the construct validity of the IAT and what the nature of the relationship between it and other measures implies (see Blanton and Jaccard, 2006).

Finally, there were problems with data acquisition throughout this study and while it was intended that 100 participants complete each of the three tasks in *Study 3*, only 77 participants completed all aspects of the task. This was due to various logistical challenges, some of which were outside the researchers' control. The study used youth clubs rather than school environments as this was perceived to be a more informal setting that would result in more natural Internet use. Regrettably, as the main study was conducted over two tasks, the gap between sessions coincided with local council spending cuts in some boroughs and some youth clubs were shut down in between sessions preventing some participants from returning to complete the second part of the study.

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Appendix

Young people and the Internet

We are conducting research on young people and the internet, investigating what people see and do whilst online. We are therefore asking 100 people your age (14-16 yr olds) to participate in a research study.

We would like to invite you to take part in this study. This will involve attending two separate sessions, the first lasting 1 hour and the second lasting up to 45 mins. If you choose to take part, we will pay £15 worth of vouchers in total for your time, £5 worth of vouchers at the end of the first session and £10 worth of vouchers at the end of the second session.

First session (1 hour):

For the first session, we will invite you to spend an hour on a computer using the internet to do whatever you would normally do in your leisure time. We will record this by using computer software to take a snapshot of your screen once a second for the whole hour.

When we analyse these recordings, we will be looking for references (in pictures or words) to drinks, both alcoholic and non-alcoholic. However, we would like to emphasise that we are interested in normal, leisure time use of the internet. Whether there are lots of drinks references or none at all, we will still be interested. Please just use the internet as you usually would.

Second session (45 minutes maximum):

In the second session, there are three short tasks. First, you will be asked to fill in a short questionnaire on your drinking behaviour and a few general questions e.g. your age, gender. The second task involves looking at pictures of drinks on a computer and pressing one of two buttons as quickly as possible to say whether it's an alcoholic or other type of drink. Finally, we will show you 10 "drink" images/text recorded in the first session (not necessarily from your own internet use) and ask you to comment on them. We will record your comments using a dictaphone, to make sure we don't miss anything important. This will help us to think about the pictures that came up in peoples' internet use.

About Us
The Institute of Alcohol Studies is an independent educational charity with plenty of experience of conducting research projects. We aim to provide accurate information about alcohol and its effects, as well as promoting research in this area.

The researcher who will be working with the young people is Natalie Coe who has recently completed a research Masters degree at UCL. Natalie has experience of working with children and has an up to date **enhanced CRB disclosure**. The project will be overseen by Professor Simon Coulton, Professor of Health Services Research at the Centre For Health Services Studies, University of Kent

All information will be anonymous and confidential. This is an anonymous study and therefore does not ask for your name or any other information which would identify you individually. Instead, we will ask you to choose a password to use in each

part of the study and we will not know which password belongs to which person. The study is also confidential so no personal information will be revealed to anyone other than yourself and the researchers.

If you choose to take part, you have the right to withdraw from the study at any time and do not have to give a reason.   In addition, you can ask us to delete your data up to two weeks after the end of the research (for which you will need your password).

No quotes, extracts from internet use or other results arising from your participation in this study will be included in any reports, even anonymously, without your agreement.

If any of this is unclear or if you have any other questions about the study, please ask the researcher (Natalie Coe) either at the start of the study or by emailing her: ncoe@ias.org.uk.

If you're happy to take part, please read and sign the enclosed consent form.

<u>Results of the Study</u>

The findings will be written up as papers for scientific journals and the final report will be put on our website. There will also be a shorter report written for a non-scientist audience.

If you are interested in the research and would like to see a copy of our findings, please contact us using the following details:

Address:
Institute of Alcohol Studies
Elmgren House
1 The Quay
St Ives
Cambridgeshire
PE28 5AR

Tel: 01480 466766

Website: www.ias.org.uk

Email: Natalie Coe ncoe@ias.org.uk

Many thanks for your time ☺

Item 2: Consent Form

Project: Young People (14-16 year olds) and the Internet

Consent Form

Researchers: Alex Hartigan and Natalie Coe, for the Institute of Alcohol Studies
Supervisor: Professor Simon Coulton, Professor of Health Services Research at the Centre For Health Services Studies, University of Kent

Please read the following points and tick the Yes or No box for each, then sign at the bottom if you are willing to take part in the first part of this study.

	Yes	**No**
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason	☐	☐
3. I agree to my internet activity being recorded	☐	☐
4. I agree to being audio recorded	☐	☐
5. I agree to take part in the above study	☐	☐
6. I agree that my data gathered in this study (after it has been anonymised) may be stored and used for future research	☐	☐
7. I agree to quotes, extracts from internet use and other results arising from my participation (after they have been anonymised) being included in any reports about the study	☐	☐

Name of Participant   Date   Signature

……………………………….. …………… ………………………………..

Name of Researcher   Date   Signature

……………………………… …………… ………………………………..

Table 3: Sample demographics

Mean age in years (SD)	15.4 (1.0)
% Male (n)	59.8 (61)
% White (n)	53.7 (95)

Item 4: Ethnic Groups for Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	9	8.8	9.5	9.5
	White English	46	45.1	48.4	57.9
	White Irish	3	2.9	3.2	61.1
	Any other White background	2	2.0	2.1	63.2
	White and Black Caribbean	3	2.9	3.2	66.3
	White and Black African	4	3.9	4.2	70.5
	White and Asian	1	1.0	1.1	71.6
	Any other Mixed background	1	1.0	1.1	72.6
	Indian	1	1.0	1.1	73.7
	Bangladeshi	1	1.0	1.1	74.7
	Any other Asian background	1	1.0	1.1	75.8
	Caribbean	6	5.9	6.3	82.1
	African	14	13.7	14.7	96.8
	Any other Black background	3	2.9	3.2	100.0
	Total	95	93.1	100.0	
Missing	System	7	6.9		
Total		102	100.0		

Item 5: Religion for Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	7	6.9	7.8	7.8
	Agnosticism	6	5.9	6.7	14.4
	Atheism	18	17.6	20.0	34.4
	Christianity	43	42.2	47.8	82.2
	Hinduism	1	1.0	1.1	83.3
	Islam	6	5.9	6.7	90.0
	Sikhism	1	1.0	1.1	91.1
	Prefer not to answer	8	7.8	8.9	100.0
	Total	90	88.2	100.0	
Missing	System	12	11.8		
Total		102	100.0		

Item 6: Sample Coding Sheet

Time From	Time To	Website	Content	Activity	Prominence	Source	Valence	Notes

Item 7: Top 10 Websites Visited

Website	Website Type	Number of Visits
www.google.co.uk	Search	84
www.facebook.com	SNS	75
www.youtube.com	Media	63
www.miniclip.com	Games	16
twitter.com	SNS	9
www.addictinggames.com	Games	7
www.mozilla.com	Technology	7
www.bbc.co.uk	News	6
www.bing.com	Search	6

Item 8: Mean Results for Prominence

Type	Alcohol	Active	Passive	Peer	Other	Comm	Self	Non-Alc	Active	Passive	Peer	Other	Comm	Self	Unsure	Active	Passive	Peer	Other	Comm	Self
Discussion	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Email	2.23	2.00	2.23	2.23	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	0.00
Entertainment	2.00	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	0.00
Events	2.00	0.00	2.00	2.00	0.00	0.00	0.00	1.91	0.00	1.91	2.00	0.00	1.91	0.00	2.00	0.00	2.00	2.00	0.00	0.00	0.00
Finance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gambling	2.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Games	1.94	0.00	1.94	2.77	2.06	1.51	0.00	2.38	0.00	2.38	2.53	2.48	2.00	0.00	2.30	0.00	2.30	2.58	2.28	0.00	0.00
Hobby	1.96	0.00	1.96	0.00	1.96	0.00	0.00	2.13	0.00	2.13	0.00	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Info	2.23	0.00	2.23	0.00	2.91	1.43	0.00	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
Media	2.79	2.00	2.81	2.39	2.94	2.67	2.00	2.22	0.00	2.22	2.11	2.59	2.01	2.00	2.73	2.00	2.74	2.06	3.36	0.00	2.00
News	2.67	0.00	2.67	0.00	2.67	0.00	0.00	2.36	0.00	2.36	0.00	2.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Search	1.44	1.00	1.46	1.65	1.72	1.50	1.00	2.91	3.00	2.91	1.00	2.87	2.97	0.00	1.95	1.00	2.01	0.00	3.11	3.00	1.00
Shopping	2.35	0.00	2.35	2.42	2.15	2.71	0.00	2.43	3.00	2.29	2.69	2.25	2.00	2.00	2.41	0.00	2.41	2.43	2.20	0.00	0.00
SNS	2.80	2.00	2.87	3.02	1.85	2.58	2.67	2.53	3.00	2.52	2.57	2.79	2.24	2.00	3.33	1.55	3.34	3.55	2.65	0.00	1.12
Technology	1.59	1.00	1.61	2.39	1.12	2.00	1.00	2.20	0.00	2.20	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overall Mean	2.57	1.95	2.61	2.86	2.39	2.18	2.47	2.47	2.99	2.46	2.50	2.60	2.29	2.00	3.06	1.55	3.07	3.32	2.73	3.00	1.12

Item 9: Mean Valence Score (5 Point Scale)

Type	Alcohol	Active	Passive	Peer	Other	Comm	Self	Non-Alc	Active	Passive	Peer	Other	Comm	Self	Unsure	Active	Passive	Peer	Other	Comm	Self
Discussion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Email	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Entertainment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Events	1.57	0.00	1.57	0.00	1.57	0.00	0.00	0.17	0.00	0.17	0.00	0.17	0.00	0.00	0.07	0.00	0.07	0.00	0.07	0.00	0.00
Finance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gambling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Games	1.81	0.00	1.81	0.00	1.81	0.00	0.00	0.20	0.00	0.20	0.00	0.20	0.00	0.00	-1.17	0.00	-1.17	0.00	-1.17	0.00	0.00
Hobby	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Info	1.06	0.00	1.06	0.00	1.06	0.00	0.00	-2.00	0.00	-2.00	0.00	-2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Media	0.01	0.00	0.01	1.90	-0.07	0.46	0.00	0.61	0.00	0.61	2.00	0.42	0.97	0.00	-0.12	0.00	-0.12	0.00	-0.12	0.00	0.00
News	0.43	0.00	0.43	0.00	0.43	0.00	0.00	0.21	0.00	0.21	0.00	0.21	0.00	0.00	-1.00	0.00	-1.00	0.00	-1.00	0.00	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Search	1.12	1.00	1.13	0.00	1.35	0.50	1.00	-0.39	-1.00	-0.36	0.00	-0.39	0.00	0.00	-0.02	1.00	-0.09	0.00	-1.78	0.00	1.00
Shopping	1.33	0.00	1.33	0.00	1.00	1.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SNS	0.33	-0.71	0.39	0.10	0.05	1.98	0.09	0.47	1.99	0.45	0.41	0.43	1.24	0.02	0.75	0.00	0.75	0.76	0.71	0.00	0.00
Technology	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mean Valence	1.13	0.77	1.14	1.18	1.17	1.46	0.48	0.59	1.88	0.57	0.66	0.47	1.16	0.03	0.66	0.45	0.66	0.89	0.40	0.00	0.88

Item 10: Valence Scores and Means (3 Point Scale)

Type	Ve	Alcohol	Active	Passive	Peer	Other	Comm	Self	Non-Alc	Active	Passive	Peer	Other	Comm	Self	Unsure	Active	Passive	Peer	Other	Comm	Self
Discussion	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discussion	0	13	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discussion	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Email	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Email	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Email	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Entertainment	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment	0	0	0	0	0	0	0	0	7	0	7	0	7	0	0	0	0	0	0	0	0	0
Entertainment	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Events	+1	85	0	85	0	85	0	0	43	0	43	0	43	0	0	30	0	30	0	30	0	0
Events	0	9	0	9	0	9	0	0	472	0	472	0	472	0	0	402	0	402	0	402	0	0
Events	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.90	0.00	0.90	0.00	0.90	0.00	0.00	0.08	0.00	0.08	0.00	0.08	0.00	0.00	0.07	0.00	0.07	0.00	0.07	0.00	0.00
Finance	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gambling	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gambling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gambling	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Games	+1	1012	0	1012	0	1012	0	0	12	0	12	0	12	0	0	5	0	5	0	5	0	0
Games	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Games	-1	37	0	37	0	37	0	0	2	0	2	0	2	0	0	71	0	71	0	71	0	0
Mean Ve		0.93	0.00	0.93	0.00	0.93	0.00	0.00	0.71	0.00	0.71	0.00	0.71	0.00	0.00	-0.87	0.00	-0.87	0.00	-0.87	0.00	0.00
Hobby	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hobby	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hobby	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Item 10 (cont.): Valence Sores and Means (3 point Scale)

Type	V	Alcoho	Activ	Passiv	Peer	Othe	Com	Self	Non-	Activ	Passiv	Peer	Othe	Com	Self	Unsur	Activ	Passiv	Peer	Othe	Com	Self
Info	+1	133	0	133	0	133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Info	0	12	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Info	-1	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Mean Ve		0.92	0.00	0.92	0.00	0.92	0.00	0.00	-1.00	0.00	-1.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Media	+1	547	0	547	10	417	120	0	482	0	482	4	231	247	0	34	0	34	0	34	0	0
Media	0	1045	0	1045	0	881	164	0	282	0	279	0	263	19	0	562	0	562	0	562	0	0
Media	-1	680	0	680	0	659	21	0	25	0	25	0	25	0	0	116	0	116	0	116	0	0
Mean Ve		-0.06	0.00	-0.06	1.00	-0.12	0.32	0.00	0.58	0.00	0.58	1.00	0.40	0.93	0.00	-0.12	0.00	-0.12	0.00	-0.12	0.00	0.00
News	+1	25	0	25	0	25	0	0	38	0	38	0	38	0	0	0	0	0	0	0	0	0
News	0	0	0	0	0	0	0	0	162	0	162	0	162	0	0	0	0	0	0	0	0	0
News	-1	10	0	10	0	10	0	0	10	0	10	0	10	0	0	9	0	9	0	9	0	0
Mean Ve		0.43	0.00	0.43	0.00	0.43	0.00	0.00	0.13	0.00	0.13	0.00	0.13	0.00	0.00	-1.00	0.00	-1.00	0.00	-1.00	0.00	0.00
Other	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Search	+1	92	9	83	0	58	8	26	49	0	49	0	49	0	0	46	5	41	0	0	0	46
Search	0	36	0	36	0	20	16	0	25	0	25	0	25	0	0	15	0	15	0	3	12	0
Search	-1	2	0	2	0	2	0	0	80	8	72	0	80	0	0	24	0	24	0	24	0	0
Mean Ve		0.69	1.00	0.67	0.00	0.70	0.33	1.00	-0.20	-1.00	-0.16	0.00	-0.20	0.00	0.00	0.26	1.00	0.21	0.00	-0.89	0.00	1.00
Shopping	+1	170	0	170	0	30	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shopping	0	23	0	23	0	0	23	0	38	0	38	36	2	0	0	0	0	0	0	0	0	0
Shopping	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.88	0.00	0.88	0.00	1.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SNS	+1	2048	4	2044	120	40	567	241	1479	69	1410	734	201	534	10	1345	0	1345	112	220	0	0
SNS	0	1366	66	1300	790	40	1	535	2509	0	2509	118	453	130	740	821	6	815	652	163	0	6
SNS	-1	1280	192	1088	107	19	2	180	291	0	291	253	33	0	5	125	0	125	125	0	0	0
Mean Ve		0.16	-0.72	0.22	0.04	0.21	0.99	0.06	0.28	1.00	0.27	0.22	0.24	0.80	0.01	0.53	0.00	0.53	0.53	0.57	0.00	0.00
Technology	+1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technology	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean Ve		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overall Mean Valence		0.24	-0.66	0.27	0.04	0.31	0.76	0.09	0.28	0.79	0.28	0.22	0.20	0.84	0.01	0.31	0.45	0.31	0.53	0.04	0.00	0.88

Item 11: Frequency Score

Website Type	Number of Visits	Alcohol	Active	Passive	Peer	Other	Comm	Self	Non-Alc	Active	Passive	Peer	Other	Comm	Self	Unsure	Active	Passive	Peer	Other	Comm	Self
Games	110	1084	0	1084	0	1084	0	0	111	0	111	0	111	0	0	117	0	117	0	117	0	0
Hobby	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Info	24	145	0	145	0	145	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Media	97	2267	0	2267	1	1961	305	0	786	0	783	0	520	266	0	712	0	712	0	712	0	0
News	27	35	0	35	0	35	0	0	210	0	210	0	210	0	0	9	0	9	0	9	0	0
Other	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Search	101	130	9	121	0	80	24	26	154	8	146	0	154	0	0	85	5	80	0	27	12	46
Shopping	65	193	0	193	0	30	163	0	38	0	38	36	2	0	0	0	0	0	0	0	0	0
SNS	92	4762	262	4500	3137	99	570	956	4348	69	4279	2239	687	667	755	2292	6	2286	1903	383	0	6
Discussion	7	13	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Email	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment	3								7	0	7	0	7	0	0	0	0	0	0	0	0	0
Events	7	94	0	94	0	94	0	0	515	0	515	0	515	0	0	432	0	432	0	432	0	0
Finance	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gambling	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technology	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	568	8723	271	8452	3138	3541	1062	982	6170	77	6090	2275	2207	933	755	3647	11	3636	1903	1680	12	52

Table 12: Questionnaire

Questionnaire

This questionnaire is part of a study on alcohol among people your age. The results will be presented in an academic paper to increase understanding of certain issues related to alcohol.

It is an anonymous questionnaire and therefore does not ask for your name or any other information which would identify you individually. It is also confidential so no personal information will be revealed to anyone other than yourself and the researchers.

If the study is to be successful, it is important that you answer each question as thoughtfully and honestly as possible. Remember your answers are totally anonymous.

It is also voluntary so if there is any question which you would prefer not to answer, just leave it blank.

Finally, this is not a test. There are no right or wrong answers.

If you have any questions, please do not hesitate to ask. Otherwise, if you are happy to take part, please turn to the next page and begin.

Thanks in anticipation!

Section 1

Firstly, we would like to ask some general background questions

Q.1 What is your gender?

Male
Female

Q.2 What is your ethnic group

White English
White Scottish
White Welsh
White Irish
White Polish
Any other White background **(please write in)**

White and Black Caribbean
White and Black African
White and Asian
Any other Mixed background **(please write in)**

Indian
Pakistani
Bangladeshi
Any other Asian background **(please write in)**
Caribbean
African

Any other Black background **(please write in)**

Chinese

Any other ethnic group **(please write in)**

Q.3 To what extent do you consider yourself to be religious?

Please answer on a scale from 1 to 5 where 1 is Not at all religious and 5 is Extremely religious

Not at all religious 1   2   3   4   5 Extremely religious

Q.4 Among the options below, which best describes your religious beliefs?

Atheism
Agnosticism
Christianity
Islam
Hinduism
Sikhism
Judaism
Buddhism
Other **(please write in)**
Prefer not to answer

Section 2

This section contains questions related to alcohol. Remember that your name is not on the questionnaire, so no-one who knows you will find out your answers

Q.1 Have you ever had a proper alcohol drink - a whole drink, not just a sip?

Yes
No (Go to Q.12)

Q.2 How old were you when you had your first proper alcoholic drink? Write in the box your age at that time.

I was…years old

Q.3 On how many occasions (if any) have you had a proper alcoholic drink? If you can't remember exactly, please give your best guess.

Mark one box for each of the following time periods
Number of occasions

                  0   1–2 3–5 6–9 10–19 20–39 40 or more
a) In your lifetime …………………………………………
b) During the last 12 months …………………………
c) During the last 4 weeks ………………………………
Q.4 Have you ever had three or more alcoholic drinks on one occasion? A drink is half a pint or a small bottle of beer/cider, a small bottle of alcopops, a small glass of wine or a single measure of spirits.

Yes
No (Go to Q.9)

Q.5 How many times (if any) have you had three or more alcoholic drinks on one occasion? If you can't remember exactly, please give your best guess.

Mark one box for each of the following time periods
Number of occasions

                                        0 1–2 3–5 6–9 10–19 20–39 40 or more

a) In your lifetime ....
b) During the last 12 months ....
c) During the last 4 weeks ....

Q.6 Have you ever been drunk, for example staggered when walking, not been able to speak properly, thrown up or not remembered what happened?

Yes
No (go to Q.11)

Q.7 On how many occasions (if any) have you been drunk? If you can't remember exactly, please give your best guess.

Mark one box for each of the following time periods
Number of occasions   0 1–2 3–5 6–9 10–19 20–39 40 or more

a) In your lifetime ....
b) During the last 12 months ....
c) During the last 4 weeks ....

Q.8 Which statement best describes you?

I strongly prefer alcoholic drinks to soft drinks
I moderately prefer alcoholic drinks to soft drinks
I slightly prefer alcoholic drinks to soft drinks
I like/dislike alcoholic drinks and soft drinks equally
I slightly prefer soft drinks to alcoholic drinks
I moderately prefer soft drinks to alcoholic drinks
I strongly prefer soft drinks to alcoholic drinks

Q.9 Please rate how warm or cold you feel about drinking alcohol
(0 = coldest feelings, 5 = neutral, 10 = warmest feelings)

0   1   2   3   4   5   6   7   8   9   10

Thank You!

Table 13: Descriptive responses to consumption questionnaire

Ever had an alcoholic drink % (n)		
	Yes	84.4 (81)
	No	15.6 (15)
Mean age in years of first drink (SD)		12.6 (2.19)
Number of drinking occasions in lifetime % (n)		
	1-2	7.8 (6)
	3-5	9.1 (7)
	6-9	7.8 (6)
	10-19	23.4 (18)
	20-39	11.7 (9)
	40+	40.3 (31)
Number of drinking occasions in past 12 months % (n)		
	None	5.6 (4)
	1-2	11.1 (8)
	3-5	13.9 (10)
	6-9	15.3 (11)
	10-19	20.8 (15)
	20-39	15.3 (11)
	40+	18.1 (13)
Number of drinking occasions in past 4 weeks % (n)		
	None	21.9 (16)
	1-2	27.4 (20)
	3-5	23.3 (17)
	6-9	13.7 (10)
	10-19	5.5 (4)
	20-39	4.1 (3)
	40+	4.1 (3)
Ever had 3 or more drinks in a single occasion % (n)		
	Yes	80.0 (64)
	No	20.0 (16)
Number of 3 or more drinks in lifetime % (n)		
	1-2	9.8 (6)
	3-5	9.8 (6)
	6-9	6.6 (4)
	10-19	26.2 (16)
	20-39	18.0 (11)
	40+	29.5 (18)
Number of 3 or more drinks in past 12 months % (n)		
	None	6.7 (4)
	1-2	13.3 (8)
	3-5	13.3 (8)
	6-9	18.3 (11)
	10-19	21.7 (13)
	20-39	13.3 (8)
	40+	13.3 (8)
Number of 3 or more drinks in past 4 weeks % (n)		
	None	20.0 (12)
	1-2	26.7 (16)

	3-5	23.3 (14)
	6-9	16.7 (10)
	10-19	6.7 (4)
	20-39	3.3 (2)
	40+	3.3 (2)
Ever been intoxicated on a single occasion % (n)		
	Yes	77.5 (62)
	No	22.5 (18)
Number of times intoxicated in lifetime % (n)		
	1-2	21.3 (13)
	3-5	6.6 (4)
	6-9	14.8 (9)
	10-19	13.1 (8)
	20-39	21.3 (13)
	40+	23.0 (14)
Number of times intoxicated in past 12 months % (n)		
	None	8.8 (5)
	1-2	19.3 (11)
	3-5	22.8 (13)
	6-9	17.5 (10)
	10-19	12.3 (7)
	20-39	7.0 (4)
	40+	12.3 (7)
Number of times intoxicated in past 4 weeks % (n)		
	None	36.2 (21)
	1-2	25.9 (15)
	3-5	22.4 (13)
	6-9	10.3 (6)
	10-19	1.7 (1)
	20-39	0
	40+	3.4 (2)
Alcohol soft drink preference % (n)		
I strongly prefer alcoholic drinks to soft drinks		8.6 (7)
I moderately prefer alcoholic drinks to soft drinks		12.3 (10)
I slightly prefer alcoholic drinks to soft drinks		14.8 (12)
I like/ dislike alcoholic and soft drinks equally		18.5 (15)
I slightly prefer soft drinks to alcoholic drinks		14.8 (12)
I moderately prefer soft drinks to alcoholic drinks		13.6 (11)
I strongly prefer alcoholic drinks to soft drinks		17.3 (14)
Mean attitude to alcohol score (SD) (Range 1 to 11 with lower score being more negative and 6 indicating equivalence)		6.3 (2.9)

Table 14: Words used in the Implicit Association Test (IAT)

Positive	Negative
party	headache
cheerful	accident
confident	regret
relaxed	nausea
flirtation	confusion
chatty	injury
sociable	unconscious
celebration	fight
fun	aggression

Item 15: Images Used for the IAT (alcoholic and non-alcoholic drinks were matched for likeness)
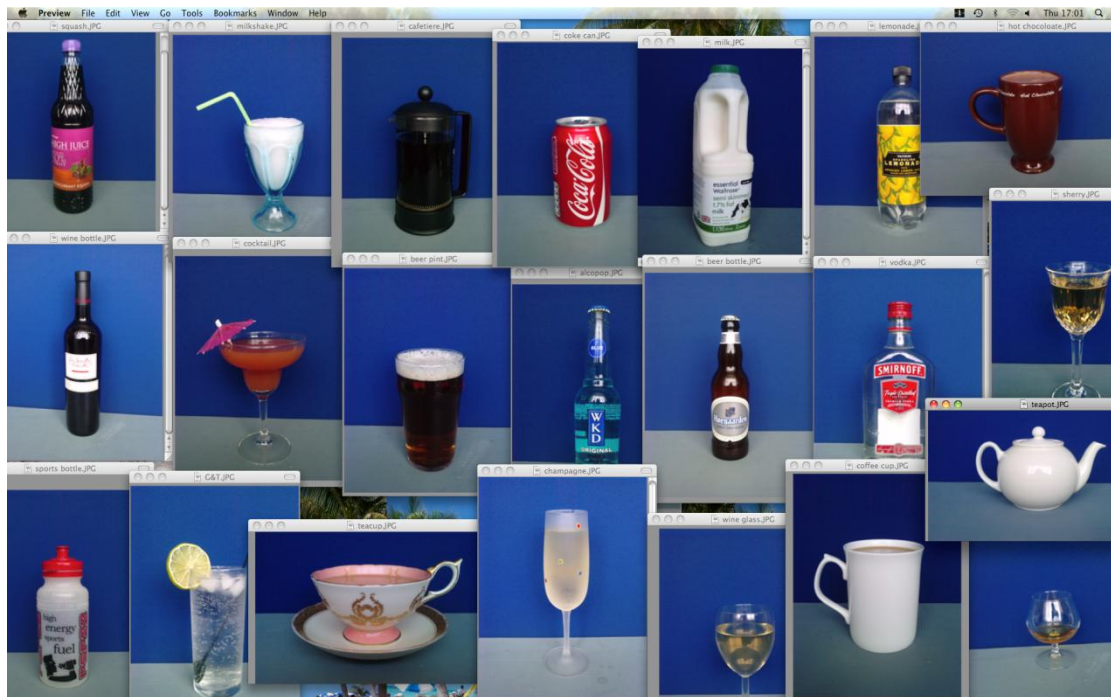
Table 16: Association between IAT score and consumption variables

		Mean IAT score (95% CI)	p-value
Ever drank			
	Yes	-0.10 (-0.21; 0)	
	No	-0.19 (-0.37; 0)	0.51
Heavy episodic consumption			
	Yes	-0.05 (-0.16; 0.07)	
	No	-0.36 (-0.52; -0.21)	0.02
Intoxicated			
	Yes	-0.02 (-0.13; 0.09)	
	No	-0.40 (-0.64; -0.21)	0.001

Table 17: Association between presence of any alcohol reference and consumption

		Alcohol reference		
		Yes	No	p-value
Ever drank				
	Yes	62	8	
	No	13	2	0.56
Heavy episodic consumption				
	Yes			
	No	52	4	
		9	4	0.04
Intoxication				
	Yes			
	No	50	5	
		11	3	0.20

Table 18: Association between proportion of alcohol references and consumption variables

	Mean proportion (95% CI)	p-value
Ever drank		
Yes	0.47 (0.38; 0.55)	
No	0.53 (0.32; 0.73)	0.57
Heavy episodic consumption		
Yes		
No	0.52 (0.43; 0.62)	
	0.26 (0.06; 0.46)	0.02
Intoxication		
Yes		
No	0.35 (0.40; 0.58)	
	0.37 (0.15; 0.58)	0.24