

Acknowledgements

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Executive summary

Purpose of the Study

Commissioned by the Responsible Gambling Trust, this study examined the relationship between gambling machines characteristics and consumer behaviour. The main objective of the research was to explore how players interact with a range of machine features during 'real time' play at selected gambling venues. The specific aims of the research were to:

- observe what happens within an individual machine play session;
- explore how different machine features affect what happens within play sessions and to what extent are players aware of them;
- assess to what extent different machine features may shape decisions made by players within sessions and how this may relate to the session outcome; and
- examine overall session outcome compare with what the player expected at the start of the session.

Methodology and analysis

A qualitative research design was used to gather rich data on player behaviour during a play session. Research was conducted at two gambling venues, an Adult Gaming Centre and a Bingo Club. The methodological approach comprised of traditional depth interview along with observation of play and use of video recordings to explore play. Participants were recruited on site and invited to play on a gaming machine of their choice. Data collection comprised the following elements:

- Observation of the play session and detailed note-taking;
- Video recording of the play session;
- In-depth interview immediately following play with the video recordings of play to explore behaviour.

A purposive sampling strategy was used capture a broad range of machine players at each venue. In total 23 players participated in the research providing sufficiently rich data to conduct a robust analysis of gaming machine players' behaviours. The analytical approach and interpretative focus of this study was on the individual and their approach to playing on a machine.

Findings

The accounts from participants suggested that patterns of play are complex and driven by the interplay of three factors: personal, environmental and machine. Evidence from our research indicates that these factors play an important role in how players make decisions and judgments in relation to starting, progressing and ending a play session. Crucially, the potential impact of machine features upon play should be considered alongside these other issues.

Personal Factors

These factors were value laden helping participants to justify play-related decisions. Players tended to focus on the enjoyment derived from play as well its perceived

social benefits. Players' preference for specific machines or games was based on previous play experiences and led them to believe that they understood how these machines (or games worked). Others personal factors included the time players had available and their financial situation.

Environmental factors

Participants identified a number of factors – inside and outside the venue – which influenced their behaviour and play session decisions. Geographical proximity to relevant locations, such as home and work as well as easily accessible public transport routes combined with long opening hours to attract people to the venues. Internal venue characteristics such as the ambient atmosphere including music, lighting, and the perceived friendliness of venue staff helped to create an impression of a welcoming and relaxing environment.

Machine factors

The unique features of gaming machines, such as stakes, autoplay, credit transfer, bonuses and jackpot sizes influenced participants' behaviour and decision making during a play session. Sensory stimuli (lights and sounds) accompanying these machine or game features were instrumental in how play progressed and lead some to attribute human characteristic to machines. Critically, the combination of these features pulled some players into the 'zone' – a level concentrated play during which players were able to block out all ambient sounds.

The pattern of play observed during this study suggests that these factors work in complex combinations to act as either restraining forces helping players to limit play or as pull forces encouraging play. Notably, most machine features were described as 'pulling' forces. However, the influence of these factors can vary significantly from one play session to another as well as within a play session.

Typology of player behaviour

Analysis of player behaviour supported the development of a player typology based on player interactions and play session outcomes. The typology emerged through identification of two individual attributes: a pre-determined play strategy (play intentions) and maintenance or cognitive control (the extent to which players were able to keep to their intentions). Pre-play intentions and maintenance of these during play suggested a spectrum of player behaviour ranging from the very controlled who were able to maintain all intentions to the other end of the spectrum where players had a poor or limited level of control and/or abandoned their pre-play intentions. Three types of machine player were identified;

More controlled – these players had very specific pre-play intentions and maintained these intentions as play progressed and ended. They used a range of strategies to support this, from choosing particular types of machines to play (generally simpler machines with fewer features) to using certain personal strategies such as only coming to the venue with the money they were willing to spend.

Less controlled – these players also had specific pre-play intentions but did not maintain these as play progressed and typically spent more money and/or time than

originally intended. They appeared to be more influenced by some characteristics of machines and in some cases used them in such a way that did not support their intention – for example, using auto-play or changing stake based on how they felt the machine was playing.

Not controlled – these players had no pre-play intentions and their session of play seemed to be guided more by their interaction with the machine. This group typically chose more complex machines with a greater range of features to play and did not appear to have any personal strategies in place to help them limit their play.

Evidence from this study suggests that players do not remain static along the control spectrum because of the dynamic nature of gambling behaviour. Players' ability to maintain pre-play intentions are mediated by the interaction of personal, environmental and machine factors. It is likely that the level of cognitive control displayed by players varies from one session to another and fluctuates, often rapidly in response to specific stimuli, within a single play session.

The dynamic and changing responses of players across the control spectrum highlights a high level of heterogeneity in player behaviour. This necessitates consideration of both the internal and external contexts of play.

Policy implications and recommendations

Debates about the impact of gaming machines often miss the role of the individual and their ability to maintain pre-play intentions (if these were articulated). Our findings suggest that responsible gambling solutions should focus on individuals that are unable to resist the 'pull' factors that encourage play beyond pre-play intentions. Strategies or interventions targeted at this type of player (like the less controlled players observed in this study) are likely to be beneficial as these groups may have greatest risk of experiencing harm from gambling. This is especially important when thinking about technological responsible gambling tools (such as limit setting, dynamic messaging etc) where focus should be given to who understanding who would use these options and what the impact is upon different types of gambler. This explicitly recognises the heterogeneity of machine players and player sessions.

The study suggests further research in two areas: 1) a study of players who have modified their behaviour moving from frequent play and incurring huge losses to limited and controlled play to further understanding of the mechanisms and influences that help to restrain play behaviour and 2) a more detailed study of player behaviour to develop a deeper understanding of how the range of contextual factors interact to influence play behaviour.

1 Introduction

1.1 Purpose of the study

This project was originally commissioned in September 2011 by the (then) Responsible Gambling Fund (RGF) to explore the relationship between certain characteristics of gambling machines and consumer behaviour. The overall research objective, as agreed with the RGF, was to understand how players interact with machine features (visual, auditory, stake size etc) by qualitatively exploring sessions of play from beginning to end within existing gambling venues.¹

Specific aims of the research were to:

- observe what happens within an individual machine play session;
- explore how different machine features affect what happens within play sessions and to what extent are players aware of them;
- assess to what extent different machine features may shape decisions made by players within sessions and how this may relate to the session outcome; and
- examine overall session outcome compare with what the player expected at the start of the session.

The project design focused on observing individual sessions of machine play conducted in real gambling venues in real time. It was agreed that this research should be conducted in naturalistic settings as much of the existing evidence base has been produced using laboratory stimulations, using non-gamblers as research participants, using tokens or vouchers instead of real money and so on. The need for research into machines to better replicate real play, using real life gamblers, was noted by the Responsible Gambling Strategy Board in their submission to the Department of Culture, Media and Sport's triennial review of machine stakes and prizes (RGSB, 2013).

1.2 Policy Context

This project was highlighted as a priority area by the British Responsible Gambling Strategy Board (RGSB). The role of the RGSB is to provide strategic oversight about responsible gambling in Great Britain and to provide advice to policy makers on these issues. In their Strategy for 2010, RGSB highlighted the need develop a programme of work around gambling machines and specifically to '*test anecdotal conclusions about impact and harm and examine the specific features of gaming machines operating in Britain in terms of how consumers interact with the*' (RGSB, 2010).

¹ In March 2012, the Responsible Gambling Fund was disbanded and replaced by the Responsible Gambling Trust, who took over responsibility for the project contract.

In 2010, the RGF commissioned the ‘Map the Gap’ report to examine the current evidence base relating to a number of responsible gambling themes. This included review of the research evidence on the relationship between machine features and play patterns. This report concluded that:

‘overall, the evidence base for the impact of structural features of gambling products is very limited. The majority of studies are lab based, use small sample sizes, involve participants who are irregular and non-problem gamblers, and do not seek to look directly at the association between these features and the development and maintenance of problem gambling. There have been no studies conducted in Britain.’
(Rand Europe, 2010)

This report drew attention to some useful opinion reviews by Parke & Griffiths (2006; 2007) which outlined the potential relationships between machine characteristics and behaviour. However, as noted by Rand Europe, these are opinion pieces rather than empirical investigation. This further underlined the need for empirical research to be conducted in this area.

Further review of evidence published since the ‘Map the Gap’ report shows that more recently available research has not addressed these gaps, though more empirical work has been conducted. A number of studies have been conducted in laboratory settings examining the relationship between near misses and subsequent play (e.g., Clark & Chase, 2010; Kururcz & Kormendi, 2011; Habib & Dixon, 2010) or looking at objective and physiological responses to machine play (e.g., Clark et al, 2011, Dixon et al, 2010, Lole et al, 2011). Some research has used computer simulations to model play (e.g., Harrigan & Dixon, 2010; Turner, 2011). Whilst these make an interesting and useful contribution to the evidence base and to theory, they do not provide deeper understanding of naturalistic play and of the complex interaction between personal motivations, environmental and situational features and machine features that can shape play. In-depth qualitative investigation with machine players in naturalistic settings can help fill this gap and supplement learning from research conducted in more controlled environments.

There is limited evidence examining the complex nexus of factors that could influence individual machine play sessions (the micro perspective) and how this varies across a range of machine players. In short, there is a need to understand within session play (and within session play routines) for individuals, how and why they vary, and the contribution different machine features makes to session play.

Some earlier qualitative research highlighted clear typologies of machine gamblers. Among youth, Fisher (1993) identified six different types of machine players, ranging from Arcade Kings and their Apprentices, Machine Beaters, Escape Artists, Action Seekers to Rent-a-Spacers. The features of these groups ranged from the most experienced and skilled players using self-control and skill to enhance their experience and chances of winning to those who played machines to escape reality. A second research project, published in 2010, presented a broad typology of adult machine players in a range of venues (Griffiths, 2010). The typologies identified in this research were the dedicated professional, the dedicated impulsivist, the dedicated amateur, the part-time professional, the part-time impulsivist and the casual amateur.

Their characteristics varied across a number of domains including how long they spent gambling, their ability and their control. However, these observations were conducted covertly without the participant's knowledge and therefore detailed follow-up with machine players to understand their views, motivations or attitudes could not be gathered. In short, the voice of the machine player themselves was omitted from this research.

Therefore, in addition to the research gaps noted by the 'Map the Gap' report, there is also a paucity of up to date research which examines machine player types from observations of play sessions. Understanding how machine players vary when playing, in what ways and how machine features may influence play sessions, is important. This is a research gap that this report seeks to contribute towards.

The importance of understanding the diversity of play and players has been brought into focus more recently with increasing discussion about the potential of player-led regulatory approaches and of technological responsible gambling tools that could be used across the sector. For example, there is much debate about the impact of offering players the opportunity to determine money spent and time spent limits at the outset of play. These player-led regulatory approaches have attracted the interest of the RGSB and its Machines Expert Panel. In their recent submission to the Department of Culture Media and Sport's consultation on machine stakes and prizes the RGSB stated that "player-centred controls appear to offer some potential to benefit those experiencing harm or at risk of harm" but that "further research is needed to understand the efficacy and effectiveness of player-centred approaches and to address some of the practical barriers to implementation" (RGSB, 2013).

This has been brought into sharper focus as a recent industry proposal to government included a trade off around stakes and prizes and technological responsible gambling tools. When responding to DCMS's consultation on stakes and prizes, industry made the suggestion that in return for an increase of stakes and prizes on certain machines, they could implement a range of technological responsible gambling tools on these machines. This potentially includes offering players the option to set limits on the amount of money and/or time spent on the machine, use of other player tracking devices and/or use of pop-up (or dynamic) responsible gambling messaging. This offer, initially tabled by the casino industry, raises key questions about who is most likely to engage with these tools, whether such a policy would impact different groups in different ways and who (in an assumed voluntary system) is most likely to use these responsible gambling tools. To better understand this potential, more detailed understanding of the varied ways in which people play machines – starting from their expectations and motivations at the outset of play through to the transitions and trajectories they experience whilst playing machines – is needed.

It is critical to understand the diversity of machine player behaviour in order to help make an assessment about which types of players could potentially benefit (or otherwise) from such an intervention. This is an area of policy interest which has gained traction since this project was commissioned. As an emerging area of policy interest, a secondary aim of this report is to contribute to this debate (where possible) by presenting rich descriptions and understanding of machine play sessions and the variety of factors that influence play.

1.3 Gambling machines in Great Britain

Great Britain has a complex array of different types of gambling machines available to the public. They are categorised into 12 different types by the Gambling Commission (the industry regulator). This information is summarised in the table below.

<i>Machine category</i>	<i>Maximum stake</i>	<i>Maximum prize</i>
A	Unlimited	Unlimited
B1	£2	£4000
B2	£100 (in multiples of 10)	£500
B3	£2	£500
B3A	£1	£500
B4	£1	£250
C	£1	£70
D (non money prize- other than crane grab machine)	30p	£8
D (non money prize- crane grab machine)	£1	£50
D (money prize)	10p	£5
D (combined money and non money prize- other than coin pusher or penny falls machines)	10p	£8 (of which no more than £5 can be a money prize)
D (combined money and non money prize- coin pusher or penny falls machines)	10p	£15 (of which no more than £8 can be a money prize)

Different categories of machine are available in different venues, according to the licensing regulations set out by the Gambling Commission. In Adult Gaming Centres and bingo clubs (the venues used for this research, see Section 2.1.2) machine categories B3 (or B4), C and D are permissible. Therefore, this study only focuses on these types of machines and this should be borne in mind when reviewing these results.

2 Study methodology

The main objective of this research was to explore the relationship between features of British gambling machines (visual and auditory features, wins, bonuses etc) and consumer behaviour. The research brief therefore required a design which would elicit a clear understanding of the ways in which machine features affect transitions in play. A qualitative approach was identified as the most appropriate method to effectively explore player sessions on slot machines. A qualitative approach provides a rich description of play sessions and allows trajectories from commencing to ending play to be traced.

Given the complexity of collecting data on this topic a full methodological review was carried out prior to finalising the study design (see Gray & Wardle, 2012. This review should be considered as a companion to this report). This outlined key issues with different qualitative approaches, traced the benefits and limitations of each and made recommendations about the study approach. In particular, this review focused on the pros and cons of conducting concurrent or retrospective think-aloud whilst participants were playing machines, the ethics of asking participants to use their own money whilst participating in the research, the ethics and practicalities of conducting research in real venues and also of video recording behaviour. In addition to reviewing current research literature on these issues, the review also included information from interviews with machine players outlining what they felt would be acceptable to participants and what the limitations may be. Recommendations from this report were built into the finalised study design. What follows is an overview of the research protocol used on this project.

The final qualitative approach combined observation of play sessions with in-depth interviews using video-recorded sessions to explore players' motivations, attitudes and beliefs and to record and assess behaviour during play sessions. This innovative methodological approach afforded a unique insight into gaming machine player behaviour and, to our knowledge, has not been used before to study machine play behaviour². The data collection methods used are described in more detail in the next section.

Readers familiar with qualitative sampling, recruitment, data collection and analysis techniques may prefer to skip the next sections and continue reading from Chapter 3.

2.1 Data Collection

2.1.1 Ethical Approval and protocol

All stages of this research were approved by NatCen's Research Ethics Committee (REC), which includes external experts and specialists in methodology. In obtaining ethical approval for this study, a pre-specified research protocol was set out and

² This approach has not been used before in the UK and search of academic databases did not identify any other peer-reviewed research employing this methodology.

agreed. Any subsequent amendments to this protocol were resubmitted and approved by the REC.

On the day of the research, a full description of what the research involved was given to participants prior to interview, including video recording of play and the requirement to use their own money when playing. Participants had the opportunity to ask any questions about the research and were only included in the project if they provided written consent (all did so). The video recordings were destroyed at the end of the interview, witnessed by the participant, as this was their stated preference. The machine players consulted when developing the study protocol suggested that most machine players would prefer video recordings of them to be destroyed rather than securely stored (Gray & Wardle, 2012). As this was the first time, to our knowledge, this method has been used among machine players in Great Britain, it was agreed to delete recordings immediately to promote participation in the study.

A copy of the consent form is provided in Appendix C.

2.1.2 Recruitment

To ensure research was conducted in naturalistic settings familiar to players, gambling venues were recruited first. Once this was done, participants who actively use these venues were then recruited.

Recruiting venues

Venues were recruited through our network of contacts with industry members. This involved liaising with a number of operators, explaining the purpose of the research and outlining our requirements to negotiate access to the venues. There was a great deal of willingness to co-operate but, for some operators, other considerations prohibited full support when deciding whether to grant access to venues or not. Praesepe and Mecca Bingo were the operators who agreed to grant access to their venues and ultimately supported this research. They provided the actual venues in which the research was conducted, supported us in recruiting participants and provided general oversight and points of clarification about their population of machine players. These operators, whilst providing support when needed, also understood that the research should be conducted independently and that our design should not be influenced by commercial considerations. They respected the views and directives of NatCen's Research Ethics Committee and adhered to these protocols.

The venues offered by Praesepe and Mecca Bingo were an Adult Gaming Centre at a busy city centre location and machines housed within a large bingo club. This means the range of machines included in this project is limited to those available at these venues. These are Category D, C and B3 machines. Furthermore, this also means the observations from this research are limited to players within these venue types.

Recruiting participants

Two separate recruitment methods were used to make contact with potential participants who played slot machines in these venues.

In the city centre location, the research team worked closely with venue staff who acted as a gatekeeper. The venue staff informed their customers about the opportunity to participate by handing out flyers and telling customers about the research. This method meant that the research team were dependent on the venue staff doing the recruitment and had little control over how this process was undertaken in practice. That said, the venue staff were briefed on the need to include a range of machine player types, in terms of gender, age, machine preference and frequency of play.

For the bingo club location, the venue provided the research team with a list of their members.³ The research team used this listing to select a sample of potential participants (based on age and sex). Those selected were sent a letter outlining the purpose of the study and inviting them to participate. The letter also included an opt-out protocol and requested that selected participants contact the research team within two weeks from receipt if they did not want to take part. After this period, NatCen's telephone interviewers contacted those who had not opted out. The telephone interviewers provide further information about the study and sought consent to recruit participants into the study. This involved checking that they regularly played fruit machines and would be willing to take part. The telephone interviewers were provided with a recruitment script to ensure correct procedures were adhered to. Recruits were sent a letter providing further information about the study including confirmation of when their interview would take place.

Qualitative sampling approach

Qualitative sampling methods differ from quantitative approaches in one important respect: the latter's emphasis on numbers. Qualitative approaches involve the study of many fewer people, but delve more into those individuals, settings, subcultures, and scenes, and are designed to generate a deeper understanding of individual perspectives, behaviour and lived experiences.

In contrast to the probability sampling techniques used in quantitative studies, qualitative studies deploy purposive sampling approaches which involve the development of a framework of the variables that might influence an individual's contribution. The choice of variables is based on the researcher's practical knowledge of the research area and available literature and evidence.

Profile of participants

A purposive or judgement sample of 23 participants was recruited from both venues. The recruitment strategy was designed to include the diversity of machine players in each venue with respect to age, sex and type of machine played. However, recruitment was limited by a) the city centre venue conducting the recruitment process

³ Where members had agreed to third party contact.

and b) those who agreed to participate. The profile of participants is detailed in the following tables.

Table 2: Age and sex of participants

Age group	Male	Female	Total
18-34	2	5	7
35-59	5	6	11
60+	3	2	5
Total	10	13	23

Table 3: Location of interviews by machine type

Machine Category	City centre venue	Bingo club venue	Total
B3	2	4	6
C	2	3	5
D	8	4	12
Total	12	11	23

Table 4 : Location of interviews by machine type played in research

Machine type	City centre venue	Bingo club venue	Total
Random probability ⁴	2	8	10
Compensated	7	0	7
Unknown	3	3	6
Total	12	11	23

⁴ Whilst the majority of category C & D machines are based on compensated payouts, some of the newer category C & D machines played in Luton were recorded by interviewers as being random probability machines. Some newer category C & D machines are moving towards random probability and therefore this should not be viewed as inconsistent with the number of B3 machines recorded.

Table 5: Additional characteristics of participants

Frequency player plays fruit machine	<i>No. participants</i>
Everyday/ almost every day	2
4-5 days a week	4
2-3 days a week	10
About once a week	3
2-3 days a month	0
About once a month	1
6-11 times a year	1
1-5 times a year	1
Unknown	1
Education level	
A levels or higher	5
ONC/BTEC/ O level or GCSE equivalent (Grade A – C)	9
O level or GCSE (Grade D – G)	2
Other qualifications	
No formal qualification	6
Unknown	1

Tables 2-5 show there was a roughly even mix between male and female participants. Slightly more participants age 35-59 were interviewed, though this reflects the typical age profile of those who play machines in these two venues. In the city centre venue, there were more participants who chose to play a category D machine whereas in the bingo venue there was a greater mix of play on category B3-D machines. Most participants were regular slot machine players, playing machines at least once a week or more often. Highest level of educational qualifications varied between those who had achieved A Levels (or equivalent and higher) to those who had no educational qualifications.

Finally, there are two types of slot machines available in the British market: those which calculate their return to players based on random probabilities (meaning that previous events do not influence the outcome of subsequent ones) and compensated models (whereby return to players varies based on the outcome of previous events). There was a mix of random and compensated machine models included in this research. There were a number of cases in each venue where the type of machine was not noted. In some cases, it was difficult to identify what machine type it was (i.e., you had to scroll through various information screens to access the information) which was difficult to do when participants were waiting to access the machine. In other cases, the missing data is due to interviewer error as they did not record this. Because of this missing data, this research can not provide evidence into differences between these two machine types, though where appropriate some differences are noted.

2.1.3 Fieldwork procedures

The fieldwork was conducted slightly differently at each venue, though the overall procedure was the same. In the city centre location, the AGC was closed to the public for the evening to allow the research to take place. There were over twenty potential participants who attended the session and a number of venue staff. This enabled us to recreate the atmosphere of a typical ‘public’ session, especially as many of the participants played on the machines whilst they waited for their interview. Participants were observed and interviewed on a first come, first served basis. At the bingo club location, interviews were conducted during the day when the venue was open to the public. Because the research team had controlled the recruitment for this venue, we were able to specify appointment times for each participant.

Despite this difference in context for each venue, the study procedure was the same for all participants. Before each interview, a member of the research team spoke to the participant individually about the study and answered any questions he or she had about the study. Once the participant fully understood the study and what taking part involved, written consent was gained. If the team member believed that the person did not understand the study or felt coerced or influenced in any way to take part in the study they were not interviewed. Some basic demographic information was collected at the recruitment stage. Everyone who took part in the interviews was given a £30 high street voucher, a thank you letter, and a leaflet providing them with details of organisations that they could approach, should they wish to, for further information about problem gambling and support services.

The research was conducted in two stages.

- **Stage 1:** Observing the player overtly playing a machine of their choice using a) an observation schedule and b) video recording the play.
- **Stage 2:** In-depth interviews with each participant were conducted after the observation, using the video recording as an elicitation tool. Participants were asked to retrospectively think aloud about how they went about their play and probed on specific points.

Each stage was conducted by one of four NatCen qualitative research experts. The same researcher conducted stage 1 and 2 for each individual participant.

Stage 1: Observation

Players were asked to play as normal during the observation stage. This meant playing on a machine of their choice with their own money for as long as they wanted, up to a maximum of an hour to limit the observation stage. All interviews took place straight after the observation stage. Participants were asked to choose which machines they wanted to play on so to better replicate naturalistic play. It was judged by the research team that an accurate picture of play sessions would not be obtained if participants were playing on machines that they would not normally use.

There were two elements to the observations. Firstly, interviewers used an observation schedule to record their observations and secondly, they video recorded play. The idea was to observe play, using the observation schedule, for around 10-15 minutes, and then with participant’s consent, start to video record the machine session. In

practice the observation time was limited by the length of time the participant wanted to play for. There were occasions when both observation stages happened concurrently because participants played for a short time and a sufficient length of video recording was needed to use during the interviews. However, the interviewer continued to note down observations while play was being recorded. There were no notable differences in participant responses as a result of the variation in technique at this stage.

Observation schedule

The observation schedule consisted of a check list of behaviours that interviewers recorded during the play. A copy of the observation schedule is presented in Appendix B. The schedule was developed based on review of research literature about the structural and situational features that may affect machine play. The schedule was 'pre-tested' by the research team who collectively reviewed the schedule and used it in practice interviews with volunteers. The instrument was refined after both stages.

Video recording

The second element of the observation stage was video recording play. As a technique it elicits durable and sharable records that can be viewed again and again, and even in slow motion, allowing detail to be captured which might otherwise have been missed in fieldwork observation (Patton, 2002). As videos can be played back it is a useful elicitation tool to assist participants "to recall and describe their thoughts, feelings and reactions at different points in time during a given event" (DuFon, 2002). It is this latter method that was used for this study as videos were deleted after the interview was completed.

A tripod and video recorder was used for this stage, positioned in a manner so as to record the screen of the fruit machine, and not the player specifically, to have a record of the play for the interview. The voice of the player and the sound of the machine were recorded on the video recorder.

Think aloud techniques

Think aloud techniques were used in some of the observations, if it came naturally to players, and it was also used in the in-depth interviews.

Think aloud, or verbal protocol, is a method that requires participants to talk aloud while solving a problem or performing a task. It was originally developed by Ericsson and Simon (1984) and has been widely applied in cognitive psychology research. Think aloud has become an established means of observing different forms of behaviour requiring individuals to verbalise their thought processes and actions (Gray & Wardle, 2012).

Think aloud can be carried out in two ways:

- concurrently: at the time the subject is solving the problem or completing the task (known as a 'live' report), or
- retrospectively: after the event.

Concurrent think aloud requires minimal input from the investigator (Ericsson and Simon, 1993) whilst retrospective think aloud data can either involve uninterrupted accounts of the event or can be facilitated by retrieval or other cues such as video recordings of the event or specific questions about what happened (Taylor & Dionne, 2000). Concurrent think aloud has previously been used within gambling research (Griffiths, 1994; Brochu et al, 2010; Gabour & Ladouceur, 1989; Walker, 1992). For those interested, the advantages and disadvantages of each are set out in Appendix A.

In this research both concurrent and retrospective think aloud were used. Concurrent methods were used during the observational stage and retrospective think aloud using video elicitation in interviews conducted immediately after the observational stage.

Stage 2: Interview

Immediately after the observations, participants took part in an in-depth interview. All the interviews took place in designated areas in the gambling venue to ensure privacy and confidentiality at all times, for example in office spaces. The interviews were audio recorded, with participant's consent, on encrypted digital recorders. At the start of the interview, the interviewer explained the structure and the purpose of the interview. The interviewer then played the video recording on a laptop and asked the participant to talk them through how they played using retrospective think aloud methods. To aid this process both the interviewer and participant could pause, rewind, forward and play the video as and when appropriate. The interviewer used a topic guide and observation notes to follow up on specific elements. Interviews varied in length, from 20 minutes to just over an hour depending on the length of play and time available for the interviews.

Once the interview was completed, the video recording was deleted in front of the participant after the interview using Blancco File Shredder.

2.1.4 Analysis

A Framework approach to data management and analysis was used. Framework is a matrix approach where data is summarized into cells with a row representing an individual case and a column representing a common theme across the data. The advantage of this approach is that it facilitates the analysis of different aspects of an individual's experiences and the connections between them as well as enabling analysis of particular themes across different cases.

All notes and transcripts were 'summarised' into an analytical framework set up in Nvivo 9.2. This analytical framework consisted of a number of descriptive and analytical categories. The framework included a summary of the characteristics of participants: such as their sex, age, frequency they played on the machines⁵, category

⁵ The following frequency of play question was asked at the end of the interview. In the last 12 months, how often have you spent money on fruit/slot machines? Answer options: Everyday/ almost every day; 4-5 days a week; 2-3 days a week; About once a week; 2-3 days a month; About once a month; 6-11 times a year; 1-5 times a year.

of the machine they played on, highest educational qualification and interview location. The framework was organised by features. Under each feature, a summary was made of each interview's findings pertinent to that feature. Thus, data could be read horizontally as a complete case record for an individual, or vertically by question, looking across all cases.

2.2 Research challenges and solutions

There were a number of ethical and logistical challenges faced during the course of the study. These challenges ranged from issues around capturing natural play, accessing and defining a suitable sample; the impact of video recording participants on behaviour; ensuring privacy of non-participants in the research setting and data protection and confidentiality. These are discussed below along with steps taken to mitigate issues.

2.2.1 Capturing natural play

The overall aim of the study was to explore the relationship between the characteristics of gambling machines and consumer behaviour in natural settings. It was therefore important that participants replicate, as far as possible, a typical play session. This involved conducting research in existing gambling venues, on machines that they usually play and asking participants to play with their own money. This last requirement is unusual in gambling research and presents certain ethical challenges. For example, what is the ethical responsibility of the researcher to the participant if they lose more money than they intended? These issues were discussed in depth with the Research Ethics Committee. It was agreed that it should be made clear to the participant that involvement was voluntary, that they were expected to use their own money and that they should sign a disclaimer stating they understood the monetary risk of participation. This information was provided to participants during recruitment and at the start of the interview.

This procedure enabled us to conduct the research with participants using their own money, therefore more closely replicating natural play and decision making. Of course, it is possible that the consent procedure made participants more attuned to this risk whilst playing and this may have altered how they played. However, the alternative was people playing using vouchers or free play which would also alter how they play.

Another consideration was the impact video recording the session might have. Research has shown that the extent of the influence of video recording on research subjects varies depending on how the camera is used: whether it is in a fixed position or mobile/roaming (Heath et al, 2010); how long the study lasts for, with the influence of the camera lessening over time (Knoblauch et al, 2006; Kress et al, 2005: cited in Jewitt, 2011); and the context of the research (Jewitt, 2008: cited in Jewitt, 2011). Heath et al (2010) concluded that the issue of 'reactivity' (video observation changing the behaviour being observed) can be exaggerated. A review of their studies showed that within a short space of time the camera is rarely noticed or given any attention. Based on the evidence reviewed, the research team concluded that the affects of

filming were likely to be short lived and so the decision was made to record the session. Participants tended to ignore the video once they started playing.

A final issue considered was the possible impact that ‘watching behaviour’ could have on the participant’s play. The research team were sensitive to the fact that some players may get upset by being watched. Griffiths (1994) highlighted that gamblers often display disbelief around the things they had said when shown video recordings of them playing machines. To counter this, all the interviewers working on this study were highly experienced and trained to manage sensitive situations if they arose. Support researchers were also present to provide additional support and resource, should it have been needed. Each interviewer reassured participants’ about confidentiality and anonymity at various points during the research. Participants were also given a leaflet at the end of the interview, which provided further information about the study and contained details of organisations providing problem gambling support. That said, there is a real possibility that only those players who were comfortable being ‘watched’ volunteered to take part in this research. These people may vary in terms of profile and behaviour from those who are less comfortable with this.

2.2.2 Privacy of non participants

When videoing in real gambling venues it was important not to accidentally record anyone who had not given consent to be recorded. Furthermore, filming players in a venue could be off-putting to others, irrespective of whether they were taking part in the research or not. This may have an effect therefore on how ‘natural’ the research environment felt. In the city centre location, the venue was closed to the public for the evening when the research took place. In the bingo hall, the venue was open to the public. Posters were prominently displayed in entrance areas and around the venue telling people that filming was taking place. We also had a researcher present who was not involved in the interviews to answer peoples’ questions.

3 Research context

3.1 Machine features

A key feature of this research was to examine the relationship between players and machine features within a play session. To encourage naturalistic play, participants were asked to choose which machine they wished to play on. Therefore the range of features observed within this study was limited by a) the participant's choice and b) machine category. The design of this study was to obtain rich qualitative accounts of machine play rather than the experimentally test the impact of alternative feature types (for example, different speed or payout ratios). Therefore, the evidence presented in this report pertains to the individual player sessions and players' views of the features and how they felt these related to behaviour.

The table below summarises the main features observed within this study.⁶ As can be seen, the main features observed are features which are most obviously recognisable to the player (audio or visual features) or relate to where the player has a clear choice to engage with the feature (stake, autoplay, credit transfers etc).

Feature	Description from fieldwork
Audio features	<p>Audio features are sounds made by the machines. These features were musical (e.g.,a machine playing the theme tune from Rocky), sound effects ('nudge' sounds, digital imitations of mechanical sounds like the reels turning, a bell signifying a win or the mechanised sound of a machine paying out) or vocal cues (e.g., characters saying 'let's make crazy money' or 'well done' at point in play). Several machines within this study had special music and sound effects that came into play when the bonus features were activated.</p> <p>Some machines observed emitted almost constant music and sound effects, and/or were particularly loud. Other machines had only minimal sounds such as the sound of reels clunking. Multi-game machines had several different sets of sounds, with one for each game.</p> <p>Auditory features varied based on what was happening in a particular game. Some machines observed made more noise (along with more flashing lights) as the player got closer to the jackpot.</p>
Visual features	<p>The level of visual features (lights, images, symbols) observed varied between machines included in this study. This variety reflected 1) the range of colours used 2) the dynamism and numbers of images used and 3) use in particular stages of play.</p> <p>Some simpler reel machines (category D machines) used colours around the red spectrum and black and white. These machines used only one or two dynamic images which were lit up at strategic points during the game, like being able to play the hi-lo ladder. Other machines (typically</p>

⁶ These do not represent all the different types of structural features contained within machines, rather just those we were able to include and observe within this study. See Parke & Griffiths, 2007 for a fuller description.

	<p>category C or higher) offered a broader range of visual features. These machines used a range of bold colours like blues, reds, greens and yellows and the whole screen could be lit up with flashing lights or animations (especially on the digitised machine).</p> <p>Some machines made use of familiar symbols or characters. Some visual effects were based on themes such as films or board games (i.e., monopoly). Others games used characters like fairies, leprechauns, aliens, martians and pixies as additional visual features.</p>
Stake	<p>The stake is the cost to the player of playing a game. Minimum and maximum stake varied across the machines included in this study, ranging from 10p for category D machines to £2 for category B3 machines. Machines offered either fixed stakes – where the machine only offers a game for a set price per play - or variable stake. Fixed stake machines clearly advertised the price per play (typically 10p for category D machines). Variable stake machines allowed the value of the stake to be changed at the start and/or during play through use of a specific ‘stake’ button. On some games observed, like Rainbow Riches, a message flashed up on the screen during play when a particular bonus feature was available which said 'change stake'.</p>
Auto play	<p>Auto play, a feature available on most of the machines observed, provides an option whereby machines play the game automatically for the player. The auto play could be stopped at any time during play. If auto play was not stopped by the player, it ended when the player’s credit ended or when an event such as hold, nudge or collect required the player to act.</p>
Transfer	<p>Transfer features were common on many machines. When present, the transfer feature was linked to a ‘Bank’ feature from which it transfers money into credit for play. Cash fed into the machine usually goes into credit whilst the winnings go into the bank. When the credit runs out it is topped up by either manually feeding more money into credit and or transferring money from the bank to credit. In some machines the transfer only operated in one direction, from bank to credit. On other machines it was a two way flow. The cash in the bank could be collected through pressing a collect button whilst this is not always the case with cash in credit.</p>
Bonus	<p>Most machines included in this study had ‘bonus features’ where the game deviates from normal play, and new sets of controls, rules and prizes may apply. These bonus features are often the only way to access the higher prizes, though the value of prize varied by category of machine. Bonus features mix various different stimuli. Visual features included flashing lights, lights moving in sequences, and animations. Auditory features are also common, for example louder music and sound effects like lightning striking. Bonus features often contain an element of progression, so the player may first access the bonus and then play on to see which of several prizes will be won.</p>
Jackpot levels	<p>Prize levels for each machine included in the study are regulated by law. The different levels included ranged from £5 for category D machines to £70 for category C machines to £500 for category B3 machines.</p>
Speed	<p>The speed with which machine plays a game cycle (one bet, one outcome) is mandated by technical standards set out by the Gambling Commission. The speeds of machines included in this study varied from 1.5 seconds for some category D machines to 1.0 seconds for some category C machines and 2.5 seconds for category B3.⁷</p>

⁷ These figures represent the minimum speed for a single cycle. These minimums varied based on length of play. For example, the minimum average speed for a Category C machine for one hour duration should be 1.25 seconds. For category D machines, speeds vary based on stake amount.

3.2 The analytical approach

Qualitative data collection approaches gather in-depth accounts of research participants' perspectives, experiences, attitudes and motivations in order to build a comprehensive composite picture of processes or events that affect participants' lives. These accounts are categorised, sorted, and reviewed as part of a multi-level analytical process. This means that qualitative data analysis can be illustrative, describing a process or a situation in detail. It can also offer more complex analytical depth through a comparison of thematic strands across all data encounters (or interviews). This can result in the development of analytical typologies or frameworks which can be replicated. Analytical rigour is built layer by layer when the data is reviewed and interpreted from different perspectives or voices.

The analytical approach taken in this study locates the participant (player), the principal 'actor', at the centre of analysis. Although active in the process, 'the actor' is also subject to different forces which determine what happens and how it happens. Our approach examines the actions of 'the actor' in the context of difference forces that apply negative or positive pressure to influence decisions made by 'the actor'.

With the player as the focal point of our analysis, individual behaviour – a critical aspect of machine play – can be studied and interpreted from different perspectives and at varying levels of analytical depth to shed light on the same process, in this case a session of play on a slot machine. The focus of the approach taken is not on one individual participant but on the combined accounts of all research participants; this helps to elucidate the range of possible behaviours and interactions, to offer explanations, and to extract policy recommendations.

The following chapter cover three phases of analysis undertaken with research participants as the analytical focal point. The first phase, descriptive in nature, explains the different stages of a play session and covers the range of perspectives and issues that were observed and explained by research participants. This is followed by a categorisation and analysis of factors that determine play and explanations of the ways in which players interact with and negotiate these factors. It also discusses how the influence (negative or positive) and strength of these factors results in particular play behaviour. The third and final level of analysis focuses on the individual and the decisions they take during play and sets out a typological framework of player behaviour.

4 Findings

4.1 Player trajectories

This section presents descriptive information about players' decisions and choices through a session of play. Starting with pre-play, within session play (and focussed play within that) and finally ending play, the data is described with particular attention to the features and factors that influence play and outcomes.

4.1.1 Pre-play

The decision to engage in a machine play session is related to a participants' contextual situation which determines play behaviour. In this section, descriptive analysis discusses play routines and frequency of play described by participants. It explores the reasons that participants gave for playing and discusses how they manage play over time and across multiple sessions. This is followed by a discussion of how a play session is 'set-up' and explores participants thinking in relation to pre-play decision making. It sets out the range of reasons participants gave for choosing a machine and considers both machine specific reasons and those that relate to personal finances and of the location of the venue. Overall, this section describes the pre-play context and participants' management of this context.

Contextual factors

A range of contextual factors were identified by participants to explain their play routines and the duration of play. Most had been coming to the venue where the research was located for a number of years with some players describing a regular weekly routine which spanned decades of play. These players demonstrated a high level of familiarity with the venue where they were very much at ease with staff and in some instances with other players. This venue appeared to be the type of external social environment they were seeking, although it is unclear what types of other options they were choosing from.

The extent to which players were able to exercise some control of their routine and frequency of play varied from those could play all night to others who were able to alter their routine and take a break "*when it gets too much*". One participant, who reduced a regular play routine to playing only a few times a year, did so to limit the amount of money spent (and losses incurred) while playing the machines.

"I would get stuck on the machine, I would put lots of money in".

The mechanisms by which players such as this participant are able to modify their play routine behaviour would merit further investigation.

Some came primarily to play bingo and passed their time either before the start of bingo or during breaks by playing on machines. This type of participant was able to

change play routine behaviour quite easily as the machines were a secondary source of enjoyment.

Optimising the chances of winning led some participants to pick particular times of the day or days of the week to play. Morning play was identified as a preference because of the belief that machines which had cooled down from the previous day's play would "*play better*". On the contrary another expressed preference for evening play but on specific days of the week, estimating that there would be more money in the machines at that particular time of the day. This participant expressed some familiarity with money related practices at the venue and chose not to play on Wednesdays as that was the day money was collected from the machines.

Reasons for playing

The reasons research participants gave for playing the slot machines fall into three broad categories: external; personal and play-related. Foremost was the entertainment value of playing and the enjoyment they derived from playing.

"It is purely for the fun side of thing that I do it"

External factors

The ambience of the venue and specific machines features were found to be a key attraction for most players. Familiarity with the venue was combined with a feeling of comfort from a mix of sensory stimuli which suggests that the atmosphere resonated with individuals at a deeper emotional level. The sounds of the machines were described by one participant as "*soothing*" while another evoked a welcoming and relaxed but at the same time stimulating environment:

"...flashing lights, warm environment, hot drinks, comfy seats..."

The geographical proximity of the venue to participants' homes or workplace was a contributory factor to the frequency of play and visiting the venue was, for some, a way to pass the time. One pensioner who lived a short distance from the venue, played regularly to pass the time.

As mentioned above, spending 'empty' time playing on machines was apparent with bingo players. For bingo players it appears that the time allocated to play on machines was a calculated decision dictated by the pattern and timing of bingo sessions. One participant described playing on machines whilst waiting for the supermarket to open. Others recounted playing regular play sessions during their lunch break while another played immediately before work, and as a result arrived late to work on occasion.

Other contextual factors such as venue opening times, accessibility to other alternative public spaces and seasonal variations might influence the frequency of play for those who played more sporadically or tended to play during work lunch breaks. The extent to which these factors influenced research participants is unclear.

Personal factors

Some participants expressed the value of social aspects of play and tended to come to the venue with a relative. Playing for these participants was an opportunity to spend regular, structured time with a spouse, child or friend. It appears that playing on the

machines provided a common external focus, a way of maintaining a relationship without having to enter into extended conversations on a personal or other topic. For others, the venue provided an opportunity to engage in social interaction in a manner that one might do in a local cafe or in the home but with the bonus of playing bingo or on machines:

"It is a nice atmosphere; you have a chat and a cup of tea".

Work related factors influenced play for a number of participants. Playing presented a way to cope with a difficult or stressful day at work. For this type of participant, playing helped them focus on the immediateness of play and made the difficulties in their daily life temporarily diminish: *"It's escapism for a little while for me"*. There was evidence also of participants wishing to continue playing on machines after a session of bingo to avoid returning home and back to the reality of their daily lives.

Play-related factors

The pleasure derived from play was expressed by most participants. The anticipatory excitement of winning and the risk of financial loss were mentioned. Participants who spoke of the excitement or *"buzz"* of playing were more pragmatic about their chances of winning.

"Obviously I don't come expecting to win. I am in it to win and to pass the time. I know it isn't the best way, just wasting your money but it is purely for the fun side of things that I do it".

Playing for the jackpot rather than winning elicited the most pleasure for some: *"[it] puts a smile on your face"*. An intuitive sense of feeling lucky drove some participants to take advantage of promotional offers and influenced the length of time spent playing for others.

Some participants mentioned that they decided to play a machine after making a tactical judgment about how much money might be in the machine. Playing on a full machine, that is one on which previous players had lost money would, in their opinion, maximise their chances of winning.⁸ One player mentioned choosing a machine that shows how much can be won. He thought slot machine play involved little skill but chose a machine based on his earlier winnings and if he felt the machine would 'pay out'.

Choice of machine

Participants were asked to choose which machine they would prefer to play on. Understanding this choice was part of the research process. A number of themes emerged relating to machine choice. Some of these related to specific machine characteristics and others to players experiences and beliefs.

Visual and auditory features

Participants generally liked the look, feel and sounds associated with particular machines, especially aesthetically complex machines. However, there were others who clearly preferred aesthetically simpler machines, with fewer features.

⁸ This participant played compensated machines.

If players found auditory features annoying then they tried to find quieter machines or found ways of blocking out the sound.

“Sometimes you’ve got machines up there that make awful racket. That annoys me... I can’t abide that sort of noise – it’s too much!”

However, for many players sounds and lights were a large part of what attracted them to the machines or a particular machine. Machine and game choice were driven by a preference for the music that the game played; the "inviting" sounds it made or both: *"the music is nice, the lights are nice"*.

Visual features influenced machine and game choice in several ways. Participants found machines with bright lights and warm colours more attractive and familiar fantasy images such as fairies, leprechauns, or Martians were also appealing. A machine’s graphic and visual features were considered to be enticing and increased the pleasure derived from playing.

The stake

The size of stake was an important factor in machine choice and was linked with the prize structure: machines with larger jackpots have larger maximum stakes.⁹ For some, maximizing time on a machine, for a pre-determined price, was important. Other took the calculated risk to invest more in the hope of winning more. For this type of participant, the choice of stake was related to the type of game and the size of jackpot on offer.

The size of their stake (e.g. 10 pence, 25 pence, £1 etc) influenced machine choice and was determined by how much money participants were willing to spend, how long they wanted to play and whether they wished to vary the stake. If players had a predetermined budget and they selected a machine offering a low value stake, they could play for longer because their money lasted longer. This in turn limited their losses or meant they lost *“more slower”*.

Those who chose a fixed, usually lower stake (10, 20, or 30 pence) and a 'simpler' machine did so because they preferred the visual and auditory features of the game. There was also the perception that these types of machine were 'guaranteed to pay out', offering better value for money. The choice of a variable stake machine was linked to a preference for more interactive games which gave players a feeling of having more control over the game. The link between thrill of play and the size of the stake was also made by participants who thought that low stake machines were *"boring"* and wins were negligible.

There was some evidence of participants selecting a machine with a lower or higher stake depending on the outcome of play in an earlier session or on a different machine within the same session of play. Players who had lost what they considered to be a

⁹ This is true for the venues in which this research was conducted, but is not true across all gambling machines in Great Britain.

significant amount of money in an earlier session were able to exercise some level of control by choosing a lower stake machine in order to limit their expenditure.¹⁰

Jackpot size

Participants played on machines that offered £5 jackpots to £500 jackpots. Among those who played on the lower jackpot machines (£5 - £70) the motivation to play was the fun of winning rather than the amount that could be won.

“It is not as if you want the five pound jackpot. It is the fun of getting it. That’s what it is.”

There was a range of reasons that motivated participants to play on the £500 jackpot machines. Firstly, players were attracted by the machines themselves. They were motivated by the visual stimuli of seeing larger value bonuses. Some felt that they had a better chance of winning on the £500 jackpot machines and also winning larger amounts than on lower jackpot machines.

The choice of machine depended also on personal financial circumstances and prior experiences of winning on a particular machine. For example, participants spoke about playing on the higher jackpot machines when they felt flush and could afford the higher stake to try for bigger wins.

Influence of bonus features on machine and game choice

The nature of bonus features also influenced participants' choice of machine and game in a variety of ways. The community bonuses allowed play with friends. For these players the enjoyment derived from the communal aspect of play was considered to be more important than winning. Bonus features also signalled the possibility of attaining higher prizes and the accompanying audio-visuals aspects added to the excitement of playing.

“It’s very pretty, it’s a stupid thing to say about a fruit machine! It’s ever so dainty, and they fly and they’ve just got little wings and they go round and touch the toadstool and you think ‘is that going to be money or is it going to be some fairies that come out?’ And if it’s fairies they all flutter off and turn other toadstools over. And it’s nice.”

Others found bonus features to be too complex because they tended to be associated with certain audio-visual features which were perceived to be "*too tempting*". This type of player appeared to understand how a machine's sensory stimuli affected them and was able to demonstrate more controlled play-related decision-making.

Familiarity with the machine

Machine choice was also influenced by participants understanding and perceptions of how machines and games worked and when they paid out. One participant said he had "*done his homework*" and knew which machines had accumulated a large sum of money (played without giving any wins) and would therefore increase the chance of a jackpot. Conversely, another looked for machines that had not been played as the

¹⁰ There were some participants who deliberately chose lower stake machines for the research as they had played the machines previously that day and wanted to limit their expenditure in this session.

belief was that a machine could be "*overplayed*" and would therefore not pay out.¹¹ The decision to play certain fruit machines was explained by one participant: "*I seem to understand them more*".

All machines provide information on the return to player ratio on an information screen or on a sticker. There was no evidence that this information influenced machine choice. Indeed, the meaning of this information was poorly understood by all players.

Setting a budget

Some participants mentioned setting a pre-determined budget before starting play. This could depend on how much money they had with them or was based on how much money they were willing to lose. Others arrived to play without a set budget in mind and made a decision immediately before play. One participant explained that her budget depended on the amount of cash in her purse. She started play with £20 but said she would have preferred to play with £10. It is unclear whether an opportunity to obtain smaller value notes was available at the venue.

There was a relationship between the value of the stake selected and the length of a play session. Participants who had a predetermined budget tended to select a machine offering a low value stake either fixed or variable. This allowed them to play for longer because their money lasted longer (e.g. 10 plays for £1 as opposed to 1 play for £1) which in turn limited their losses or meant they lost "*more slower*". Typically these players made a conscious decision, deliberately playing lower value stake machines as a way of managing or attempting to manage their expenditure within the session of play.

4.1.2 The play session

The previous section set out the pre-play context and the range of influences that determine how and when play will take place and players' reasoning behind the choice of machine. Once these decisions are made and the play session starts, players' interact with the machine and play progresses through a stimulus-response process involving a series of transitions. This creates a play trajectory unique to the session until the decision to end play is reached. The key interactions, responses and transitions described by research participants are covered in this section.

Setting and breaking spending limits

As noted previously, there was evidence that some participating players set limits at the start of play on how much they would spend. Whether they stuck to these limits varied.

Some participants started with a pre-determined budget but would add their wins to the amount played: "*...sometimes I play my winnings sometimes I save them for the following day*". Here playing with money from the house was seen as distinct from playing with their own money.

¹¹ In this example, the former participant preferred to play B3 machines which use the random probability operating model, whereas the latter participant played compensated machines.

There was also evidence of some players using certain strategies to keep track of their money by putting a set amount of money (which corresponded to a win) in their pockets or lining up their money along the top of the machine. Some players kept track of their losses and stopped playing once the pre-determined spending amount had been lost.

However, there were instances where players were not able to keep within their pre-determined limits. One participant described this as being "naughty" but without any guilt. Others who broke their spending limits were more remorseful about the loss of control.

"Well I usually say forty pound. That's it. Because it's so easy to change another note. Then it gets out of hand... I have done it and I think how stupid you are spending money you can't really afford".

It appears that there is a 'tipping point' at which players who were losing thought they could win if they continued to spend more money: "I go to the edge and I will take out another £20 or whatever". Feeling "lucky" pushed players who had won money to continue playing in the hope of another win. Another player described a session of play during which he had lost a lot of money: 'The following day you think "what an idiot!" but on the night you are in the buzz.

Transfer features

Transfer, a common feature on machines, can also influence how people manage their overall expenditure, their stakes and their winnings. Therefore, this feature is related to if, how and when people break any limits. Not all the machines participants chose for the purposes of this research had a transfer feature.

Players who did not use the transfer button when it was available did so to consciously manage their money and winnings. This was either because people wanted to keep winnings separate from stake or because they did not want to play/reinvest all of their winnings.

The transfer feature aided these players to carry on playing without stopping play to feed the machine. The use of transfer buttons ensured ease and speed of play, enabled unbroken play and allowed a player to continue to chase winnings overall with greater ease.

"You press transfer for it to play again for games to try and get five pounds. Because that is the prize, that's the top prize...I transfer it [the winnings], being a gambler!"

Players made a strategic and conscious decision about using money from the bank by transferring funds. One player explained that he consciously always collected and never transferred when he is playing in order to encourage the machine to keep paying out. He believed that if he left the money in the machine this would discouraged the machine from paying out again.

In this way, decisions about whether and how to use the transfer features were mediated by a range of personal beliefs and other machine characteristics.

Changing the stake

Players who had chosen a variable stake machine felt a greater sense of control over the game. This allowed players to determine (to some extent) the amount of time they played for and how much they spent. Players who lowered the stake did so to make their money last longer (and consequently lengthen the session of play). For others it provided a means by which players felt they could influence how the machine was playing.

Some players said that they changed the stake level within a session when they were chasing either a bonus or wins, as they thought that it would increase their chances of winning. Having this type of interaction with the machine led players to believe they had more control over play and the overall outcome of play. This perceived control contributed to these players' enjoyment of the game.

Bonus features

For many players bonus features had an influence on both in-game strategies and the amount of time and money they spent on the machines. Players described frequent use of the hold and nudge buttons in order to try and access bonus features when they felt they were close to achieving a bonus.

Progressive amounts available in some bonus features was a powerful incentive that led some players to play longer and chase higher amounts when they had won a small bonus.

"I could have taken it out but I thought yeah, just in case I get another bonus then I could double that and get nearly £50. There is always the feeling, that I can get a higher amount."

Triggering a bonus had the effect of drawing playing into the game and encouraging play:

"...it made me feel excited, because that's what the machines do. They entice you. They make you feel excited when you get a bonus."

Some players thought that if they increased their stake at certain points in the game they were more likely to reach a bonus and were observed doing this. In some of the games a message flashed on the screen during play when a particular bonus feature was available to prompt a 'change stake'. This highlights the interaction between bonus features, visual reinforcements, stake and behaviour.

Use of autoplay

Autoplay gives a player the option to let the machine play the game for them. To use this feature requires a conscious decision by the player. Some players used auto play as a tactic to increase their chances of winning because they believed it improved

play. Other shifted between manual and autoplay in an attempt to change the way the machine played.

“You can use it when you don’t seem to be winning...you think oh well I’ll try a different route... You play auto to try and make it different to the way you have been playing and so you can get the jackpot”

Others used autoplay because they wanted the machine to keep playing if their physical engagement in playing was waning or so the machine could play on its own while they took a physical break from playing.

Those who preferred manual play did so because they wanted the enjoyment of interacting with the machine by pressing buttons and not just watching the game being played out.

“It’s being tactile isn’t it? You need to be pressing things. There’s no point in playing it if you’re just doing to put the money in and let it play itself”.

Listening to the machine

Machine sound and auditory features affected concentration, encouraged and guided play and also influenced machine choice. Though, not all participants were influenced by either the sounds of their own machines or the sounds of others.

Overwhelmingly, the auditory features of a game were viewed positively as a means to draw players back into the game if they had been distracted. Understanding what the sounds meant and using them to progress play was considered important. For example, a sound that indicated progress toward a bonus increased participants’ anticipation of achieving a bonus. Other sounds prompted players to take certain actions. However, in some instances it was unclear if players understood the mechanics of play and what the consequences of their actions might be.

“It makes a noise and you press the button to shift whatever down”.

Ambient sounds, particularly hearing another player winning either through hearing money fall or through hearing bonus features activated had the effect of encouraging players to spend more money on the machines influencing, perhaps, their pre-play budget decisions. In a few instances, the sounds of another game being played or hearing other players achieve a bonus prompted participants to change the game they were playing. The sounds of a win on another machine evoked sadness because other players were winning and disappointment with their own game. These sounds and the emotions they triggered tended to increase the desire to win and prompted some players to change the game they were playing.

Sound was used also in trying to understand the machine and to determine whether it would pay out. One participant described using the mechanical sound of coins falling down the money chute as a way to gauge if the machine would pay out.

The influence of lights on play

Visual stimuli worked in a similar way to auditory features. On their own or in combination with auditory features, visual stimuli prompted players to take specific actions to progress the game. Among some players this stimuli evoked positive feelings and encouraged play for longer.

“It is aesthetic qualities - the lights, its luminosity, the pictures on the screen, it looks like it can give you monetary awards... It creates the atmosphere that you are a winner that you can win.”

Some participants relied on visual cues to continue playing and to influence how play progressed. For example, play buttons such as hold, nudge and start lit up at the relevant stage of play informing players when the buttons were active. Additionally symbols and light informed players when bonuses were activated.

The machines used by players during the research displayed messages of the amount of money in the bank and how much credit players had to play with. Participants who kept an eye on the bank and on the credit if they were winning considered this a positive visual reinforcement.

Messages such as ‘congratulations’ and ‘you have won’ or conveying how much could be won appeared in bright bold fonts and encouraged continuous play. The association between lights and winning was very strong. When the jackpot was won the machines lit up reinforcing the excitement of the win and together with the accompanying sound drew other players’ attention.

Shaping play using sounds and lights

Auditory and visual features were deeply intertwined and produced similar effects. They were appreciated by some players as they offered enhanced excitement and a fun playing experience. These features served as markers of progress throughout play and reinforced one another, with players looking out for one or the other, or both.

“Now if that lights up I will get the ‘talking man’. They call that the talking man then if I do get that now, I will hold them, put another £1 in and when I press it he’ll say ‘oh lets make crazy money’... That is what everybody looks for.”

The interaction of sounds and visual characteristics with bonus features kept some participants playing longer and offered similar benefits in terms of an enhanced playing experience and shaping within session play.

4.1.3 Focused play

'In the zone'

During game play there was a tendency among many players participating in the study to focus solely on the reels or just the gaming screen and to ignore other parts of the machine in play because they did not want to miss any opportunity to get a win.

Although this could be a conscious decision to focus on this area initially, after a while participants spoke about how they could 'zone out' or lose track of time while watching the wheels spin or watching the screen. The extent to which players were 'in the zone' was variable with some players more able to come out of 'the zone' easily. Being 'in the zone' was described in terms of a fixation or a loss of control over the machine:

"where the machine's going to take you, where the machine is taking your money ... being unconsciously zombified, you know".

Irrespective of the machine characteristics that players focused on, being 'in the zone' was characterised by players' ability to block out ambient sounds. Players' interaction with the machine was transformed and resulted in specific play-related behaviours and emotions that signified a heightened and more intense level of engagement with the machine.

"I don't focus on anything else around me when I'm playing, I just focus on the machines, I just listen to the machines."

It was suggested, by a player who had previous experience of playing in this focused way that 'getting into the zone' was linked to player's personal lives and focused play was a means of shutting out problems. This confirms to some extent the reasons for playing given by some participants.

Physical and emotional effects of focused play

Some participants spoke of how play that was focused on the auditory and visual features of a machine affected them physically. One player described being in the zone as "staring" at the machine. Another spoke of his eyes hurting if he concentrated on watching the reels for too long. This player, aware of this consequence of focused play, had adapted his behaviour and was able to stop concentrated play to take breaks.

Another player reported that the sounds from the machine made him play faster, and that this has a cumulative effect if he played for a long time.

"If you stay too long the noises come into my brain, Bam! Bam! Bam!"

Often players were 'in the zone' within a few minutes of starting play. This state of play was associated with positive emotions and intense attachment to the machine: *"I just love everything about this machine"*. The theme of escapism and of being transported away from the reality of daily life was expressed repeatedly by some participants.

"I'm not even in this world when I am playing"

"I'm miles away. I'm happy"

Regret was also expressed when players realised, after play ended, that they had lost track of time and continued to play when they should have stopped. The inability to stop playing was a key characteristic of being 'in the zone'. It is likely that pre-

determined limits are broken during this level of focused play resulting in post-play guilt for some and regret at the loss of control experienced. On the contrary, however, one participant who preferred to focus on the game interpreted focused play as more controlled behaviour, he said, "*otherwise you feel out of control*".

Personification of the machine

Participants engaged in intense, focused play showed a tendency to refer to the machine as an animate object that was responsive to their needs and desire to win. This type of personification was demonstrated by many participants and was characterised by physical interaction with the machine. This behaviour was accompanied by beliefs about how the machine would respond to their actions.

Participants were tactile with the machines in a range of ways. There were examples of players unconsciously tapping the screen during play; of hugging and caressing the machine and also of gently rocking it from side to side. One player believed that moving the machine would alter the reels and elicit a specific response:

"it may nudge something in ..[that's] what I want it to do"

There was hope that the machine would acknowledge the physical contact made by players and respond with a win. One participant who felt the need to keep pushing buttons and rubbed the machine where the bells and bars were located explained the message being communicated to the machine: "*I was saying, oh give me something big*".

Frequent play on one machine or type of game led participants to think that they understood the machine and how it processed and responded to external cues. One participant thought that the lights and sounds from the machine let him know whether he would win. If he felt that the machine was telling him that he would not win then he would attempt to change the way the machine was playing. He did this by either changing (in this instance raising) the stake. Another tactic used by this participant involved switching between auto and manual play if he believed the machine was "*being naughty*".

Some players expressed an intuitive understanding about the machine and how it might respond to play. One player thought he understood the machines better than other players described getting "*a feeling*" about how to play. On the other hand, others thought that understanding how the machines worked gave them a tactical advantage and expressed a desire to "*outsmart*" the machine. One player demonstrated competitive and risk taking tendencies which were linked to a keen desire to win. This participant's main focus was on "*seeing if you can beat it and see if I can get money out, no one else could and I can*".

The influence of wins, losses and potential wins on focused play

There was some evidence that being 'in the zone' was behaviourally associated with wins and losses. Some focused more when losing while others did so when winning or when hoping for a win. Forgetting how much time was spent playing and playing longer than intended were consequences of this type of intense concentration. One participant, who tended to play before starting work, blocked out sounds, ignored

people and lost track of time and tended, as a consequence, to be late for work. The intensity of concentrating on the game was explained: *“I’m deep in it – just hoping for a win.”*

The potential of winning, even winning small amounts was a powerful motivator to continue playing for most players. In particular, some win type events, like near misses or the experience of ‘losses disguised as wins’ (where the amount won is less than the amount staked) were equally powerful motivators. Players believed that they were on the right track or that their luck was going to turn. One participant understood that she had lost but explained it as a win:

“Well, I sort of won. I got 50p for that. But I bet pound to win 50p”

Similarly, the main effect of ‘near misses’ was to encourage the player to continue playing in search of future wins because they interpreted the signs of a near miss as an indication that the machine was getting closer to paying out. One participant summarised this feeling after a ‘near miss’ event saying *“Well, I know it’s gonna come in sooner or later...”*.

4.1.4 Ending play

Ending play was guided by players’ practical considerations around time and money and whether they thought a machine would pay out. Some players, such as the participant who played during lunch breaks, were able to end play when they either ran out of money or time. More focused players who acknowledged being ‘in the zone’ tended to struggle to end the session of play.

The decision to end play was forced on most players when they had run out of money. Among this type, were also players who played to their pre-determined budget but were reluctant to end play. Some players also expressed disillusionment with their session of play and frustration with the machine. One participant explained, *“I got fed up ... it wasn’t going to give it to me”*.

More pragmatic players limited play or stopped play as soon as a machine paid out. The strategy to limit losses after a win involved converting coins into notes and playing with the remaining coins. Some players acknowledged the possibility of losing everything if they continued to play with their winnings:

“Some days you win some day you don’t, that’s how it goes”

Other players broke their session purposely claiming that after a win they stopped playing on a machine for a short time in order to *“encourage it”* to pay out again. However, the implication here is that they broke the session in order to obtain more productive play.

Players who found it difficult to stop included those who were chasing their losses and those who thought a loss would lead to a bonus. One participant who lost a small amount could not decide when to end play. This was driven by the belief that after the small loss the machine would pay out and this participant did not want another player to benefit from his loss.

Even those participants who found it difficult to end play were, at times, able to make conscious changes in order to keep to their pre-determined limits and end play. One participant who played before going to work and had, on occasion, arrived late at work has made a conscious decision to stop play after spending a certain amount of money. This participant explained that 'knowing the machine' helped in ending play.

Ending play also depended on how participants felt and whether they were in the mood to take risks. *"I've been good sometimes. But sometimes I've been naughty, put too much in, hoping the next pound will be [the one]."*

In some instances, researchers observing play sessions had to help participants end play so that research interviews could be conducted.

4.2 The restraining and pull factors influencing choice and play

4.2.1 Analytical approach

As Section 4.1 shows, there are a number of potential factors influencing participants' progression in a session of play. These represent a complex myriad of factors relating to both personal belief systems, interactions with machine features and other environmental factors, ranging from ambient atmosphere and sounds to accessibility. The following analysis builds on these themes examining how personal factors, machine factors and environmental factors may influence where, when and how people play machines in more detail.

The analysis presented in this section was developed through an iterative analytical process. The combined interview accounts were reviewed and participants' references to anything or anyone that might have influenced where, when and how they play machines were extracted. The key influential factor in each reference was identified and the nature of the factor and its influence on play was interpreted, assessed and categorised. For example, a reference to 'playing before going to work' was categorised firstly, as a personal factor because the assumption was that employment related commitments were individual in nature. The second interpretation, related to accessibility, was the 'venue to work' distance. The implication was that the journey between the play venue and work was accessible (short travel distance or frequent public transport) allowing for a specific play routine. This location aspect was external to the individual and was classified as an environmental factor.

Following this process of identification and classification of factors influencing play, the play session trajectory was reviewed to establish an understanding of the ways in which these factors influenced play. Analytical techniques used were adapted from a force field analytical framework. This approach requires the identification of factors in complex processes or problems and seeks to explain their influence. Specifically, the approach determines whether certain factors function as a driving force (with a pull

effect) or a restraining force to guide individuals through a process to reach an established outcome or end.

The field force analysis approach was adapted for this project. In this analysis, the play session is viewed as complex micro-environment or process where the input (choice of machine), the process and trajectory of play and the end of play (outcome) are determined by a range of factors that interact and influence decisions made by players. Along this play trajectory the pull effect of factors encourages play pulling some players to play with fewer constraints while the restraining effect of other factors strengthens decisions to limit play.

This type of analysis is particularly pertinent as it is widely recognised that gamblers are a heterogeneous group, with a range of different motivations for gambling, patterns of behaviour and experiential outcomes. It is therefore likely that the same is true of machine players as a subset of gamblers. It is evident from our study that the session of play creates a highly interactive and stimulating micro-environment. Within this environment players need to use their understanding of how the machine works, manage risks and expectations and exercise some control over their budget and time to determine the trajectory of their play session.

4.2.2 Factors determining play behaviour

Combining analysis of all player accounts on in session play as well as their explanations of play-related behaviour over time helped to identify an array of emerging factors that influence player behaviour. Evidence from our research indicates that these factors play an important role in how players make decisions and judgments in relation to starting, progressing and ending a play session. These factors can be categorised into three groups: personal, environmental and machine factor. These are discussed in more detail below.

Personal factors

Individual level personal factors were often value laden, helping players justify why they play and are largely focused on the positive aspects of playing. Players in our study emphasised the enjoyment and fun they derived from playing and winning rather than stating that they enjoyed taking risks. Players also mentioned machine play as way to counteract stressful situations encountered elsewhere.

The perceived social benefits of play – either playing with a relative or communicating with other players – appeared important although during a session of play the social benefits diminished as some players mentioned that they did not like having people around them or watching them play. In some instances, playing with a relative acted as a restraining factor leading players away from play and potentially avoiding riskier play behaviour.

Alongside this, personal beliefs and personal understanding of the machine and how it works played an influential role in machine choice. This also determined interactions with the machine during a play session. Players held complex beliefs based on a mix of emotions, perceptions about feeling lucky and their (sometimes flawed) understanding of machine behaviour based on prior knowledge and experience. These beliefs were

used to interpret play progression and to assess the likelihood of losses or chances of a machine paying out. In this way, personal beliefs could either be a pull or restraining factor throughout the play session depending on what those beliefs were and how they were enacted.

The time players had available to play depended on personal circumstances. Those not in work, such as pensioners, tended to spend more continuous time at the venue, while the play of those with work related or other personal commitments was time bound and restricted. This was particularly true for players who mainly played bingo and spent time between bingo sessions playing the machines. Here again, personal factors could act as a pull or restraining factor depending on circumstances. However, not all players were able maintain or respect their personal time boundaries and the evidence suggest that machine factors (discussed below) were instrumental in this decline in cognitive control. Furthermore, the length of a play session and the willingness of some players to extend it demonstrated a lack of due regard of the consequences on other activities (such as arriving late to work).

A player's financial situation, another key personal factor, helped in reaching a decision about the amount of money to play on a particular day or during a session of play. Evidence from this study showed that the potential restraining effect of a pre-determined budget depended on machine related pull factors. Those more influenced by the machine demonstrated increasing risk taking behaviour and a disregard of pre-play boundaries. This demonstrates how a potential (and personal) restraining factor may be rendered less influential when faced with a stronger, competing pull factor.

Environmental factors

A number of factors influencing machine play behaviour can be classified as environmental. These can be factors external or internal to the play venue; these are discussed in turn below.

External environmental factors are those outside the venue where machine play takes place. Significant in many instances was the geographical proximity of the venue to other relevant locations, such as home or work. Easy access both in relation to time and distance travelled and to venue opening hours were also important, acting as potential pull factors. Venue proximity allowed some to combine work and machine play on a regular basis. The impression was that venue opening hours also pulled players into the venue. An example is the participant who played (and lost) while waiting for a supermarket to open.

The accessibility of a venue in terms of the distance travelled, time spent travelling and available transport links are also likely to influence the frequency of play, with easier access acting as a pull factor. One participant mentioned playing at a venue which was next to the bus stop where she waited for a specific bus.

Aspects of the venue itself can be categorised as internal environmental factors. The atmosphere created for players was noted as a pull factor attracting players into the venue. This includes the ambient sounds - the music, lighting, the sound of people talking, as well as, machine or game lights and sounds - that create an illusion of a cosy, welcoming environment that entices people to play. This ambience along with familiarity with (and the perceived friendliness of) venue staff led players to describe

venues as inviting environments that helped them relax. This group of venue-specific pull factors encouraged time spent on site and playing. Likewise, there was some evidence of a relationship between access to additional resources (a cash machine to withdraw additional funds) and extension of play within a session. Here an internal environmental feature potentially acts as a pull factor within a session of play for some players.

Machine factors

While the interplay between environmental and personal factors is complex, with some factors being restraining and other pulling towards play depending on the individual, factors related to the machine can be described overwhelmingly as pull factors. This effect helped players choose a machine and a game to play and also pulled some people into focused and sometimes lengthened sessions of play.

Players' familiarity with machines helped to identify the most attractive game with the most personally appealing levels of sensory stimuli. For some, the high level of stimuli was what attracted them to the machines, offering excitement and making the machines seem more attractive. Those who were less attracted by the visual and audio features of a machine purposively chose simpler machines to play and based their choice on other features such as the stake, the ability to vary the stake during play, and jackpot size.

One participant explicitly recognised the pull effect of stake and jackpot features and sought to avoid them by choosing to play a simpler machine. Depending on the interplay of personal and environmental factors, stake and jackpot features could act as restraining or pull factors. Interestingly, a variable stake machine when a player lowers the stake, acts as a restraining factor on the money input into the machine but is, at the same time, a pull factor lengthening the session of play.

The visual attractiveness of a game, the imagery depicted on the screen, the colours and movements as well and the sounds and lights emitted during play help players focus on the game. Critically, this pulled some players into 'the zone' where they are able block out all ambient sound and venue activity.

The physical appearance of the machine and its effects appear to work in combination with players' beliefs, superstitions and understanding of the machine and of wins and losses. This resulted in a complex thought process that guided play and influenced both uncontrolled and tactical decision making.

The process of personification by which some players attributed human characteristics to the machine helped to them to make decisions and modify play behaviour. Once a player started playing a game, the interplay of sights, sounds, pressing buttons and touching the machine helped to create an illusion that a meaningful interaction was taking place, further pulling people towards play. These machine factors stimulate a player's sense of excitement at the possibility of a win, however small.

Decision making before and during play

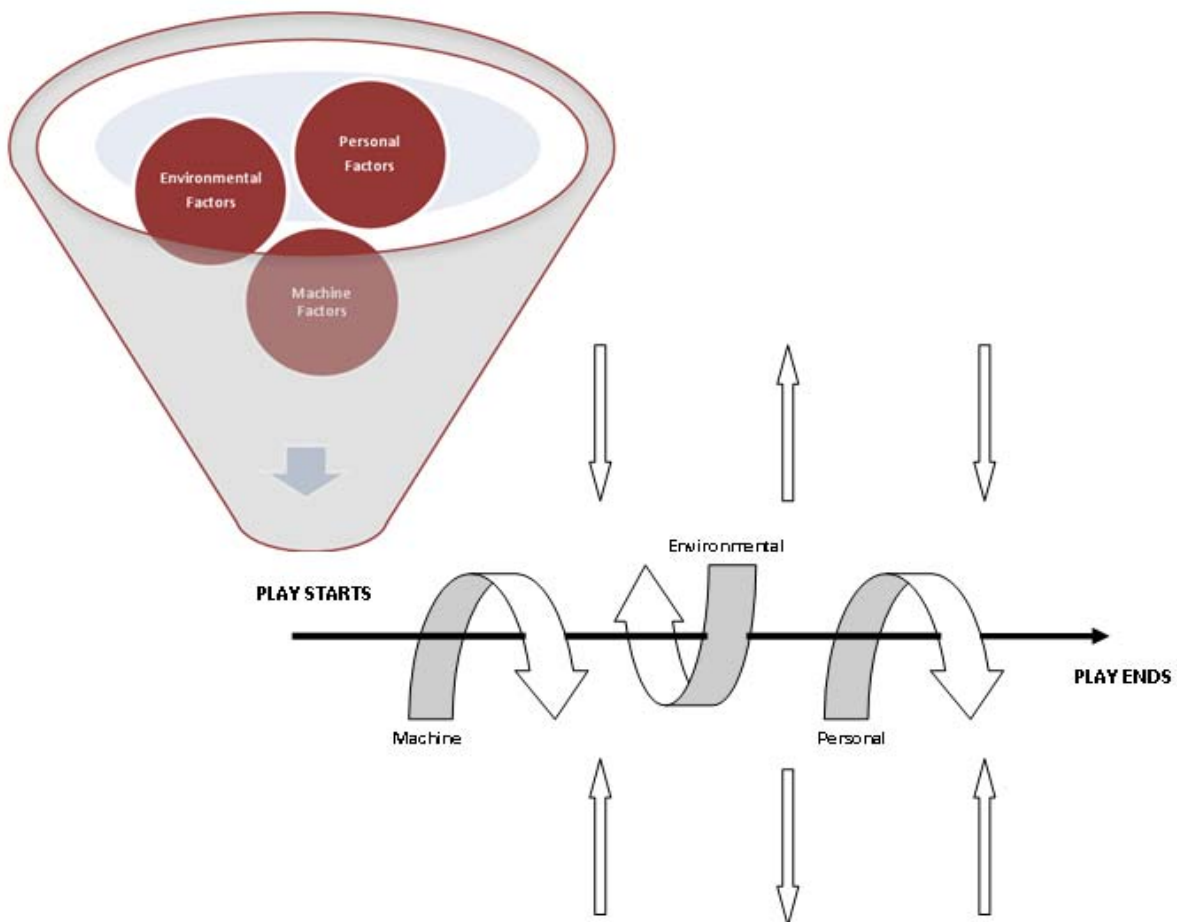
The above description illustrates the complex combination of factors that influence the motivation to play and the choices and decisions made before the start of a play

session and their potential interaction as restraining and pull forces during a session of play. This process is visualised in Figure 1.

Here, a combination of environmental, personal and machine level factors influence decisions making at the start of a session. As a session progresses, these factors continue to have an influential effect on how play progresses. During play, the strength of these factors influences players' decision-making and their subsequent responses to the game. These factors can have a restraining effect, helping players to keep to their pre-play limits or helping them decide to limit their losses. They can also function as pull factors encouraging play and increasing financial investment in the game.

Interestingly, the ability of certain machine features, such as stake, autoplay and credit transfer to act as either a restraining or pull factor is likely mitigated or propagated by these personal, environmental and machine level factors. For example, for some the stake acts as a restraining factor, limiting play volume while for others it acts as a pull factor encouraging greater levels of play. Furthermore, during the most interactional phase of play, the most intense period of which can be described as being 'in the zone', players made rapid decisions and introduced modifications to pre-determined play boundaries of money and time. Here, it may be difficult to tease apart which factors are operating as pull or restraining factors as personal, environmental and machine factors may be operating simultaneously with different levels of influence.

Figure 1: Factors influencing play



The complex interplay of personal, environmental and machine factors that influence behaviour make it particularly difficult to ascertain which factors function predominantly as restraining forces. The motivation to play is strongly influenced by the interplay of external personal and environmental factors the strongest of these appears to be availability comprising three key components money, accessibility (of venue) and time ('empty' time and for some 'social' time). These vary on an individual basis and their influences can shift from one play session to the next. Similarly, the extent to which a player gets 'caught up' in a play session can vary from one session to another and some factors can act as restraining or pull forces depending on their salience in that session and how they interact with other factors.

For some players the ability to contain personal urges that pulled them into riskier play behaviour were at times combined with the view that the 'machine always wins'. This worked effectively in helping players to take decisions that limit play. Those who demonstrate restraint are less likely to be 'in the zone' where the immediacy of interaction with the machine predominates. These types of players appear to be more self aware having a better understanding of how their personal or individual factors influence their interactions with the machine. One participant clearly understood this relationship with the machine:

"I am addicted but I'd say that I'm knowledgeable addicted. I'm aware of them and I'm wary of them. I am aware of what they can do. I'm aware that the fact is that you can get really serious".

Machine factors obviously have the strongest pull effect inviting play, guiding play and are critical to influencing players to continue play either to chase losses or wins and potential wins consequently increasing the likelihood of incurring greater losses. Player accounts suggest a 'tipping point' at which pre-determined limits (financial and/or time) are modified and after which less emphasis is placed on the consequences of uncontrolled play-related decisions. For other players at this point, the excitement of play could diminish with the realisation that a win is unlikely. Players with money left over may move to another machine; others are forced to stop play.

The evidence suggests unique individual player trajectories where a range of contextual factors interact. How players manage and negotiate this interaction and the influence it has on their behaviour at the 'tipping point' reveals a behavioural typology which is discussed in the next section.

4.3 Exploratory machine gambling types

4.3.1 Developing typologies

The previous section described the range of features that could interact in a play session either as restraining or pull forces encouraging or limiting play. It also highlighted the complex interaction between personal, environmental and machine features that may affect session trajectories in different ways. This final section focuses on individual level analysis, based on participant accounts of play and explanations of their behaviour during play, to explore this further. This is with the aim of beginning to identify some common themes between groups of participants (types)

that might be informative when thinking about how sessions of play evolve for different people.

Developing typologies relies on categorising people based on a several dimensions that reflect a number of different themes. The process of developing a typology involves an initial categorisation of participants based on a review of the data, fieldwork notes and application of theory. The next step is to define the categories that make up the typology and ‘test’ them by placing every respondent into a category, which often throws up issues of comprehensiveness or definition. An iterative process of reviewing or refining the typologically categories follows. This continues until the typology is conceptually coherent and comprehensive or it is felt that the typology does not work and the typology abandoned. In this way, the typologies are developed from the data up, by looking at common themes and behaviours and grouping them together (a grounded theory approach). It is tested by having members of the research team review cases independently to ensure consistency of classification.

Review of players accounts suggest a range of typologies that characterises particular player types based on play involvement and outcomes. These typologies were based on consideration of two main issues. The first is the extent to which players displayed some kind of pre-determined strategy to limit their session of play prior to starting (i.e., their intentions). The second was the level of strength the player displayed in maintaining cognitive control whilst playing the machine (i.e., their maintenance of these intentions, where they existed).

Intentions and maintenance were conceptualized as contributing to a spectrum along which machine session behaviour moved. Some respondents had intentions of playing in a very controlled way but abandoned or modified these intentions as the session of play progressed. Others had no intentions at the beginning of play and their patterns of play evolved as the session progressed whereas others had pre-specified intentions to gamble in a certain way and maintained these throughout the play session. Therefore, these two domains, intentions and maintenance, can be viewed as contributing to not only a spectrum of play but also a spectrum of control in terms of how much control the player exhibited over their session of play.

Based on analysis of participant’s behaviour focusing on these issues, machine players were placed into one of three mutually exclusive groups. In this typology, the term ‘control’ relates to the level of control the players attempted to exert over their own behaviour within the session observed. It is to be noted that participant accounts suggest that player behaviour is dynamic and that players may move between types across multiple sessions.

- **More controlled** – these were machine players who had a number of pre-determined strategies and the intention to limit their play to set levels and who stuck to them, regardless of what happened within their gambling session.
- **Less controlled** – these were machine players who had a number of pre-determined strategies and the intention to limit their play to set levels but did not stick to these limits once they started to play the machines.
- **Not controlled** – these were machine players who had no pre-determined strategies or intentions to limit their play and what happened within their machine play session governed how much time or money they spent.

In the sections that follow, the characteristics of these groups are examined. Particular focus is given to the interaction between each type of machine player and the characteristics of machines. Furthermore, consideration is given to whether certain features act as a restraining or pull factor for each player type and how personal, environment and machine factors may interact to modify behaviour.

4.3.2 More controlled

'More controlled' machine players tended to either:

- choose machines with a more limited range of features;
- implement personal control strategies which helped them to limit their play; or
- display greater resilience to the (potential) pull effect of some features when playing the machines.

These are discussed in turn.

Pre-determination strategies

A number of personal strategies were used by players to set limits or control their play within a session. These were:

- Setting a pre-defined amount of money to spend.
This included :
 - Leaving bank cards at home
 - Only coming to the venue with money they were happy to spend
 - Setting a mental limit
 - Being prepared to lose and being aware this was the most likely outcome
 - Setting a pre-defined amount of time to spend
 - Picking certain machines to play

Other behaviours which acted as a strategy to constrain play to set limits were:

- Limiting how often they played
- Playing with family and friends who monitored what each other was doing

Machine choice: Despite noting that bonus features as well as the auditory and visual features of a machine were attractive, 'more controlled' players tended to choose simpler machines with less visual and audio complexity. For some, this was a preference for simplicity, for others, it was a recognition of the potential 'pull' effect of more complex machines. Similarly, they demonstrated a preference for simpler machines in relation to stake size and whether the stake could be changed and often chose low stake and fixed stake machines. For this type of player category D reel machines were the typical machine of choice. The amount of money players had available linked with the desire to maximise the time spent playing. This underpinned the machine choice decision and acted as a restraining factor for this group.

Personal control strategies: 'More controlled' players' choice of 'simpler' machines reduced the amount of 'player-machine feature' interaction available to them. The use of the auto play function was not popular as this type of player felt this increased the

speed of play and used up their money too quickly. Here personal preferences were acting as a restraining factor. The clearest illustration of personal control was in relation to credit transfer systems and/or approach to winnings. ‘Most controlled’ players tended not to use credit transfer and cashed out winnings as and when they accumulated. Other control strategies used by players included keeping money for expenditure and winnings in different pockets or by lining up money to be spent on playing along the top of the machine.

The ritual of collecting winnings was, in some instances, combined with beliefs about influencing the machine to pay out. For example, some players held the belief that if they physically collected their winnings each time they occurred, the machines would pay out again. Furthermore, by manually putting money into the machine they felt were less inclined to lose track of their money which gave them more control over their budget. Therefore, these personal control strategies encompass both practical personal accounting mechanisms and (erroneous) personal belief and control systems. It is notable is that for this group their personal beliefs acted as a restraining factor.

Maintenance: ‘More controlled’ players did not display behaviour where they chased their winnings or their losses thus helping them to stick to their original play intentions. This was typically because they were playing for fun and they did not want to feel bad at the end of their session if they lost more than they intended. Despite expressing specific beliefs and behaviours, such as stroking the machine, which they felt would bring them ‘luck’, this type of player stuck to their original strategy for play, keeping within the time and money limits they had set themselves. The ability to resist the attractiveness of an array of features including auditory and visual features helped players remain within their pre-determined limits

4.3.3 Less controlled

‘Less controlled’ players did not display a clear pattern of behaviour in relation choice of more complex machines or simpler machines. The main themes that emerged for this type of player, related to personal control strategies and maintenance, both of which were influenced by beliefs about machine behaviour.

Personal control strategies: ‘less controlled’ players spoke about setting limits for the amount of money or time they would spend gambling but tended to have a condition (or tipping point) when this could be breached. This largely related to within session experience. Players were willing to put more money in if they felt a machine ‘gave them an indication’ that it might pay out. These players tended to attribute negative human qualities to explain how the machine worked. Assuming that jackpots occurred randomly, one player described the machine as “*deceptive*” but still patterned his play on perceived machine behaviour.

Some ‘less controlled’ players described personal strategies guided by superstitious beliefs to help end a session of play. One participant typically ended a session of play after four wins and carried on playing until this was achieved. For this type of player the boundaries of limiting or ending a session of play were fluid and depending on perceptions about machine behaviour players extended a session of play beyond the

original time and financial limits. Other ‘less controlled’ players described how they would leave their bank cards at home to try to limit what they spent but that, despite this, they would still spend more than they originally intended.

Maintenance: Evidence suggests that ‘less controlled’ players’ ability to resist the pull of certain machine features varied between players and across sessions of play. The extent to which players were able to keep within their pre-determined limits by avoiding or refusing to interact with specific machine features was mediated through their beliefs about machine behaviour. These interactions and the ability to resist machine features are summarised in Table 6.

Table 6 Summary of player’s maintenance of intentions by potential influence of machine features

Feature	Less maintenance	More maintenance
Bonuses	‘Less controlled’ players reported that they chased bonus features. The bonus feature symbols increased the ‘buzz’ or excitement of interacting with the machine. They encouraged participant to carry on playing. There was a sense among ‘less controlled’ players that the bonus features, and chasing them, could influence the amount of time and money spent on the machine.	
Auditory	Some ‘less controlled’ players reported being affected by hearing noises of other people winning, encouraging them to think that they could win.	Other ‘less controlled’ players either chose to play machines that were quieter than others or stated that the noise the machines made did not affect them because they could block this out.
Visual	‘Less controlled’ players attributed importance to visual features as a cue to inform them about progress. They also described a sense of frustration when there was a lack of visual features appearing during play as this indicated they were losing.	
Auto play	Some ‘less controlled’ players did use auto play. This was mainly when they had been playing for a long time and where tired. Some reported using auto play when they had lost money and used it to see if the machine would pay out.	Some ‘less controlled’ players, like ‘more controlled’ players, chose not to use auto play as they thought the game would no longer be fun to play as it removed interaction with the game.
Stake	Some ‘less controlled’ players chose variable stake machines, changing their stake based on how they perceived the machine ‘was playing’.	Other ‘less controlled’ players, like controlled players chose fixed stake machines to regulate the amount of money they spent and limit their losses. They didn’t want to be tempted to increase their

Feature	Less maintenance	More maintenance
		stake in pursuit of chasing bonuses or winnings or to forget to lower the stake to an amount they were happy to play with, particularly if they had recently experienced losing money. There were also those who chose variable stake machines, selecting a stake to suit their budget
Credit transfers	The use of credit transfer was popular among many 'less controlled' players. This involved transferring winnings to credit and not cashing out after each win.	Some 'less controlled' players did not use credit transfer feature, preferring to cash out winnings. Like, most controlled players, they described a belief that cashing out winnings would encourage the machine to pay out again.

4.3.4 Not controlled

'Not controlled' players tended to choose machines based on availability of a wide range of features. Like 'more controlled' and 'less controlled' players, beliefs and rituals were an important part of their playing strategies and they displayed varying levels of (potential) impact of certain characteristics on how they interacted with these characteristics. 'Not controlled' players, by definition, did not have a pre-determined strategy or intentions which governed their levels of play. What seemed to influence them was the pattern of wins, losses and bonus features evident within the session. They were stimulated by wins to keep playing, rationalising that more wins might be on the way and they also chased their losses.

Machine choice: a range of features were described as being important and appealing to 'not controlled' players when choosing a machine. Auditory features particularly were appreciated because they marked progress and signalled wins. Similarly visual features and the quality of the graphics attracted players and offered an enhanced and more 'fun' player experience in comparison with older, simpler machines. Non-controlled players used these visual and auditory markers to play machines simultaneously. This type of player tended to choose machines with higher stakes and prizes, with a variable stake and variety of bonus features.

Relationship with machine features: 'Not controlled' players displayed a greater interaction with a variety of machine characteristics on within session play. They described how auditory features encouraged them to play for longer or to speed up their play. Evidence suggests that 'not controlled' players were stimulated by the speaking features which gave positive reinforcement messages, such as 'congratulations'.

'Not controlled' players also demonstrated more interaction with features such as the variable stake feature in an attempt to increase their winnings. These players believed this interaction provide some level of control over the play. However, there were 'not controlled' players who liked to play fixed, 10p stake machines because they felt 'safer' playing them: the lower stake slowed down their losses, therefore extending the time they could play and because they liked the games.

This type of player made the most consistent use of credit transfer systems to keep playing. Some transferred all their banked winnings to continue to play whereas others transferred lesser amounts and kept some of their winnings back. Unlike their ‘more controlled’ and some of their ‘less controlled’ counterparts, ‘not controlled’ players did not cash out their winnings and manually feed the money back into the machine; they simply used the transfer function for speed and ease. Bonus features were also a key motivation to continue play, some were aware of the ‘pull effect’ of this feature but were unable or lacked inclination to limit play.

Belief systems. For ‘not controlled’ players, beliefs about machine behaviour influenced the use of certain features and the level of control exercised during play. Distinct among ‘not controlled’ players was the belief that the using auto play button would increase their chances of winning by changing how the ‘machine felt’ or by giving out more wins compared with manual play.

‘Not controlled’ players described how they felt tied to their machines because of the time and monetary investment they had made and were reluctant to leave machine and allow someone else to take their win. This tie increased the more money these players put into the machine and was magnified if the machine had not paid out as yet.

For ‘not controlled’ players, their belief systems operated in a way that encouraged them to play for more money or to play for longer. For ‘more controlled’ players, the opposite was true. Their belief systems (for example, believing that cashing out after a win encouraged more wins or that low value (10p a play) stake machines offered better value for money) operated in a way that enabled more personal accountability over the amount of money spent and marginally slowed down the speed with which the machine was played.

Typologies and dynamic behaviour

The typologies described above were developed based on the session of play observed by the research team rather than more general descriptions of what they usually do, though for some participants there was some overlap between the two. However, these categories should not be viewed as static or that a player is definitively one type or another. Gambling is a dynamic behaviour and machine play is no different. It is likely that players transition along a spectrum of control (with intentions mediated by a variety of personal and environmental circumstances) at different points and, indeed, these transitions may occur over very short time frames.

It is possible that a player may be controlled in one playing session and less controlled in another and it is likely that the range of different factors discussed previously will influence this. Some participants who were defined as ‘more controlled’ based on the observed session of play spoke about being so because they had previously lost a lot of money or felt that their gambling was out of control. The timeframes described ranged from a few years ago to in the past week to earlier that day. This illustrates the dynamic nature of this behaviour and how some people may vary their play based on past (and very recent past) experiences.

It is also likely that these dynamic transitions work in both directions and it is not just a flow from 'not controlled' to 'more controlled' but that some people transition in the opposite way. These transitions may not always be a linear, stepwise process either. It is likely that some players will fluctuate around the spectrum. It is difficult for us to determine these patterns from this data as the research design is cross-sectional. Repeat longitudinal observations would be needed to confirm these patterns and to understand in greater depth how and why behaviour changes between playing sessions.

Furthermore, we should caution against over interpreting these data. Just because play within a session may be not controlled, does not mean this is synonymous with problematic play but rather describes a different style of play to that observed among other players. To understand how these player types relate to the maintenance and development of problematic behaviour requires further examination of the range of factors influencing behaviour and players' decision making processes over a longer time frame.

5 Summary and recommendations

5.1 Summary

The main objective of this study was to explore the relationship between machine characteristics and consumer behaviour. By observing real players in actual venues, playing in real time for their own money, this research aimed to replicate naturalistic play as far as possible.

Considerable heterogeneity in players' motivations, beliefs and behaviour was evident: far greater and more nuanced than the existing research literature suggests. Play sessions varied hugely and a complex interaction of personal, environmental and machine factors that influence individual trajectories of play were identified.

Using a field force analysis approach proved insightful, allowing the various factors that restrain or pull towards certain levels of play to be identified. Critical to this understanding was tracing how players engage with features of machines in different ways. Most machine features provide some sort of pull towards play, be it obvious in terms of attracting players to the machine through stimuli or jackpot size or less obvious through functions to facilitate more seamless play, such as credit transfers or autoplay. However, whether these features act as pull or restraining influences depends on how a player interacts with them. How people interact with these features is often underpinned by their personal beliefs and their level of pre-determined control over play. These in turn may be influenced by the environment in which the play is conducted and wider personal circumstances.

What this demonstrates is the critical need to consider these issues in context. Computer simulations in laboratory settings provide informative and useful information about neurobiological and psychological responses to some machine features under certain conditions. However, this knowledge needs to be supplemented with consideration of a broader range of influences that might shape behaviour. There has been a great deal of research into the effect of machine features upon play, putting the feature at the centre of analysis. This report puts the individual at the centre of analysis to track variations in play sessions and to better understand complex motivations and behaviours. It is important not to lose this player-led focus. What debate about the impact of machines often misses is the role of the individual. The focus should be on the effect these features have on people, how this effect is mediated or propagated through personal cognitions, beliefs and strategies and, in turn, the nature of the interplay between this and broader environmental and personal considerations. Peller, LaPlante and Shaffer (2008) concluded that more attention should be given to the dynamic interplay between individuals, gambling activities and environment when thinking about gambling-related harm. Evidence from this study shows how focus on this dynamic interaction should also be given to how machine play is shaped and enacted.

This study has shown that it is critical to consider these in combination. Analysis of typologies suggested the existence of different groups of machine players who

interacted with machines in different ways. Some were more resilient than others to the 'pull' of machines within a play session and some displayed an interaction with certain machine features that served to either pull or restrain their play further. That said, the interactions with machine features which restrained played largely focused on ignoring certain features, such as autoplay, credit transfer or higher stakes.

Across all groups, personal beliefs mediated and propagated certain interactions between the player and machine. However, it was notable that among some 'more controlled' players, these personal beliefs acted in a way that allowed them to take more control over their play session (i.e., cashing out and feeding money back into the machine manually). Among 'less controlled' and 'not controlled players', these beliefs operated in a way which gave the player less control over their session or speeded up play (i.e., using auto play and credit transfer).

Players understanding of how slot machines work was limited leading to a reliance on personal beliefs and superstitions about the machine. The limited understanding that players had built up through experience on playing on a particular type of machine was at times applied incorrectly to a different category of machine. Generally this meant that the gap in understanding was filled by players projecting emotional attributes to machine resulting in more tactile and emotive interactions.

As with any study, there are limitations that should be taken into account. This study only included participants from two venue types, predominately playing category D and C machines (though some B3 play was included). Including other venue types and other machine categories may highlight a greater range of behaviour and/or player types. We would encourage further research to explore this potential. Furthermore, the way in which the research was conducted may have influenced the results observed. Many steps were taken to mitigate against this possibility, but this is an attendant issue with all applied social research. However, the research was conducted ethically and with adherence to the best recommended protocol. This, combined with observation of play in naturalistic settings, provides robust evidence upon which to discuss the implications of this study's findings for policy.

5.2 Implications for responsible gambling policy

The findings of this study raise some interesting perspectives for the development of responsible gambling practices.

Firstly, we have identified a group of players who wished to limit their play but were unable to do so. This was the 'less controlled' player group. The reasons for this relate to an inability to resist the potential 'pull' of certain machines features, a lack of personal strategies implemented to help them stick to their limits and interactions between play and certain personal belief systems. This group did not lack the desire to limit play but rather failed on determination. This raises the possibility that other strategies could be developed to help this group of players stick to their pre-determined limits. It is this group specifically which may benefit from some type of intervention or pre-determined limit setting that helps them stick to their play parameters. This could include technological solutions such as setting limits at the start of play or displaying dynamic summary messages about how much money and time has been spent playing. Further investigation would be needed to examine what the range of strategies

might be, how best to implement them and to assess how effective they are. A study of players who have modified their behaviour moving from frequent play and incurring huge losses to limited and controlled play would further understanding of the mechanisms and influences that help to restrain play behaviour. However, the identification of a group of players who, within certain sessions, seemingly have the 'will but not the way' to limit their play provides an impetus to consider these options more seriously.

Related to this, further thought should be given to the balance of pull and restraining factors that influence play and how responsible gambling strategy can influence this. Most of the machine features identified offered little potential for the player to restrain play unless the player chose not to engage with this feature at all. This is not surprising, machines are designed to be attractive and to attract play. However, there are no counterbalancing restraining features available on UK machines. In order to exercise more control over their session, a player has to rely on a range of alternative strategies, such as leaving bank cards at home, lining money up along the top of machines. This behaviour suggests some appetite for further measures and strategies to help restrain play to set levels. As with the 'less controlled' group, 'more controlled' players may also appreciate technological-led responsible gambling machine features which even up the balance between pull and restraining factors.

However, we would caution against viewing technological and player-led responsible gambling tools as a panacea; solving all issues of gambling-related harm and machine play. Evidence from non-controlled players suggests the existence of a group of players who do not wish to set predetermined limits and played in much more uncontrolled way, some expressing feelings of guilt at the end of play. It should be emphasised that the non-controlled play should not be viewed as synonymous with 'problematic' play and that a single session of not controlled play may not be of itself particularly concerning. However, these players tended to prefer higher stake, more complex machines and displayed less resistance to the 'pull' of certain features upon behaviour. Given the higher volume of play witnessed among this group and their pattern of play, one may speculate that this group may include those at greater risk of experiencing harm from their gambling. With the lack of interest shown in setting predetermined limits on play, it is possible that this group of machine players would not engage with any voluntary technological responsible gambling tools. This possibility may limit the effectiveness of these tools in that those who need them most may not engage with them.

Of course, these are broad assumptions that are unproven. Further work would be necessary to establish whether similar groups of players were evident across other machine venues and, if possible, to quantify the size of these respective groups. This should be conducted alongside research to better understand why this group do not set limits and whether they would do so if the opportunity arose.

This study has also shown that players value variety. There are players who like simpler, lower stake machines and those who like the more complex, higher stake machines. Some like the auditory and visual features, others do not. Some are attracted to higher jackpots whereas others are not. Our study shows that people seem to value the ability to choose between different machine types with different levels of features. Of particular note is the preference for lower stakes among more controlled

players, here acting as a factor restraining play. Much is debated about increasing maximum stake sizes in policy circles with scant attention to the value of minimum stake sizes. Evidence presented here suggests that some players purposively chose lower stakes to restrain their play and to play responsibly. This should be recognised and respected in debates about stake and prize levels.

Evidence from this study also highlighted a critical misunderstanding among players in the way in which machines operate and of some key terms. For example, return to player values, which are often prominently displayed on machines, were totally misunderstood. Players did not understand the long term calculations on which these were based or that there would be short term and longer term fluctuations between wins and losses. Players also displayed a variety of erroneous beliefs about the way the machines operated. Most interesting was the transfer of logic and playing strategies from compensated machines to random probability machines. Further work should be conducted to improve communication of these key messages to players. These should be carefully developed and tested with players to ensure they describe the function of machines in a way that people can understand.

Finally, having demonstrated that different types of player interact with and value machine characteristics in different ways, careful consideration of the (potential) impact of any changes to these features upon different player types should be given. Thought must be given to whether there is the potential for impact to disproportionately effect one player type more than another. In short, having identified the variations that exist between players, the implications of this must be considered in subsequent policy development. For example, if new responsible gambling policy aimed at mitigating against gambling-related harm disproportionately affected 'more controlled' players, this would render this policy less effective. Understanding of the complexity and heterogeneity of machine players should therefore be built into future responsible gambling strategy.

5.3 Study limitations

This study has a number of limitations that should be considered. Firstly, the evidence produced is limited by the types of venues where fieldwork was conducted and the range of machines contained in these venues. Only machines in two venue types were included meaning that the research evidence presented in this report is limited to category D, category C and category B3 machine types. In addition, the majority of play in the city centre location was on category c and category d machines. Furthermore, including machines in a bingo club introduces a specific context which might affect how people in this venue play machines. This was evident in some findings, with people playing machines in between bingo sessions and machine play being of secondary importance to bingo play.

As noted above, there were a number of ethical and logistical challenges which may impact on this research. Because the city centre location carried out recruitment for us, the achieved sample potentially did not contain as much diversity as was optimal. Ideally, more B3 players would have been included in the study. Research was also constrained by when fieldwork could take place, meaning that only participants who were available to come along to the venue on a fixed day could take part. This also limited how many interviews were conducted and in the case of the bingo venue, where interviews were conducted during the day, influenced the demographic profile of those who took part. All of this may affect findings. Indeed, it would be of interest to attempt to replicate these typologies in different venues, settings or with different groups of players.

The use of video recording, observations and simply taking part in research may have modified how participants played, though a number of steps were taken to mitigate this. Furthermore, in the city centre location, potential participants were given some free tokens to play the machines whilst they waited for their interviews. This may have subsequently altered their behaviour.

Finally, only one session of play was observed for each player. Therefore the research pertains to this session. This does not allow this research to capture dynamic transitions between sessions or to follow through what impact a previous session might have on a subsequent one. A longitudinal design would be necessary for these kinds of questions. However, given the paucity of evidence about machine play sessions conducted a naturalistic setting, this study makes an important contribution to building an evidence base that takes a more holistic approach to understanding the relationship between players and machines at a given single point in time.

Despite these limitations, the combination of qualitative data collection methods and video elicitation offered an innovative approach that provided unique insights into player behaviour. It has emphasised the diversity of machine players' behaviours and the complex nexus of factors that influence within session play. This includes personal beliefs, motivations, attitudes, environmental and contextual issues as well as certain characteristics of some machines.

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Appendix A. Advantages and disadvantages of think aloud techniques

Concurrent think aloud		Retrospective think aloud	
Advantages	Disadvantages	Advantages	Disadvantages
Information in the short term memory is directly reported (Taylor and Dionne, 2000)	The act of thinking aloud affects the natural behaviour being observed, if it is not the usual practice (Griffiths 1994).	Does not affect the behaviour being observed.	Participants have to recall the behaviour retrospectively creating a, a risk of editing and rationalisation behaviour. There is a risk of 'usual' behaviour being reported than that of a particular episode (Taylor & Dionne, 2000).
Direct reporting minimises the relative demand on the short term memory (Taylor & Dionne, 2000)	Only the thought process that the participant is aware of is reported. Studies have shown that simple rules can be processed quickly and consequently not verbalised (Essens et al, 1991).	Participants who use retrospective think aloud can give more information compared with participants who used concurrent think aloud because they provide explanations and suggestions for their actions (Bowers and Snuder cited in Haak et al (2003)	Not a live account, so possibly detail could be lost through recall difficulties. Information is retrieved from the long term memory. Not all the information noted in the short term memory is fixed in the long term memory (Hayes and Flower cited in Taylor and Dionne, 2000) and not all are retrievable on demand (Ericsson & Simon, 1987: cited in Taylor & Dionne, 2000)
	Verbalisations elicited via concurrent think aloud are limited by the capacity of the short term memory to concurrently think <i>and</i> report thinking.		
	Difficult tasks may not be reported because of the high cognitive load (Ericsson and Simon, 1993: 91)		

Appendix B. Observation schedule & topic guide

The main objectives of the interview are:

- To explore respondent's general perception and understanding of the features on the machine
- **To explore which features respondents notices and why**
- **To explore how features affect play**
- **To explore the decision making process regarding how much and how long to play.**

CHECK LIST

- Copy of the written consent form and information leaflet
- Video recorder and tripod ready to use:
 - Battery check
 - Memory card check
 - Light check
 - Record Format check
- Laptop should have sufficient battery life to run without mains
- Video recording posters put up/ video recording area ready to demarcate while carrying out the video recording.
- Know which fruit machine you will be video recording.
- Know where you will be carrying out stage 3: the think aloud and retrospective probing
- Encrypted recorder ready to use for stage 3

Name of Interviewer: _____

Date of Interview: _____

Location of interview (pub/social club or arcade) _____

Multiple interviews taking place simultaneously (Yes/No) _____

Serial ID Number: _____ (e.g. P3122_MB01)

Setting the Scene: Introduction, observation and interview procedure and background information

❖ Introduce yourself, NatCen Social Research, and the study:

- NatCen Social Research (NatCen) is carrying out a study on behalf of the Responsible Gambling Trust to explore the role of structural features on fruit machine play.
- To do this we are carrying out interviews to look at the role of features on play and will be reporting to the RGT about whether features do affect play and if they do how they affect play.
- This research is important because there is a void in the research in Britain looking at the role of features on fruit machines on how people play fruit/slot machines.

❖ Explain the interview procedure:

- Stress the confidentiality of the process; that all the findings will be reported anonymously. The respondent's name will not be on any of the notes you write up. Everything they say will be used solely for research purposes only and only members of the Research team at NatCen will have access to the video and sound recordings. Their sound recording/video will not be shared for example with the RGF.
- Explain that there will be three stages to the research, 1) you observing them 2) you video recording them and 3) interviewing them while playing the video recording.
- Remind them that the interview will last for around 1.5 hours, possibly a bit longer.
- Check if they have any questions before you start. Remind Rs that they can ask you questions about the study at each stage of the research.

STAGE 1 OF INTERVIEW: OBSERVATIONS – USING OBSERVATION SCHEDULE

Aim: To explore how the respondent plays and to identify the features on the fruit machine to inform the interview

The observation schedule is not intended to act as a checklist, but as guidelines of what to look out for during the observations. We would like you to follow up on your observations during the cognitive interview (stage 3). Please note that not all of the things noted down in this observation schedule will be relevant to every session you observe. As fruit machines vary in regards to features this observation schedule should only be used as a guideline, as mentioned above.

You should try to be unobtrusive as possible during the observation, and simply make notes about what you see. You should not interrupt the respondent's play. Please make notes on in the table below. Please pick up any other cues which you think could affect the respondent's play.

INTERVIEWER: Please explain to the R that you would like them to play on their usual machine like they would usually do and try to imagine that you are not there.

*** INTERVIEWER/RESEARCHER: TAKE A PHOTO of the fruit machine's screen using the camera feature on your video recorder or using a camera.**

1) INTERVIEWER/RESEARCHER NOTE DOWN:

1a. Start time of R's play: _____

1b. End time of R's play: _____

1c. If play stopped and restarted, how long was it stopped for? _____

2) USE OBSERVATION SCHEDULE (next page)

OBSERVATION SCHEDULE	
BACKGROUND INFORMATION ON THE MACHINE	YOUR NOTES
<ul style="list-style-type: none"> • What features can you see on the machine (insert this information in the feature table found on pages 9 to 10) 	<p>Feature 1:</p> <p>Feature 2:</p> <p>Feature 3:</p> <p>Feature 4:</p> <p>Feature 5:</p>
<p>Some possible features are:</p> <ul style="list-style-type: none"> ○ Reel speed / multiple lines ○ Bet size ○ Use of notes v coins and size of acceptor ○ Cash/Token Winnings ○ Size of winnings ○ Message saying they have won ○ Near miss ○ The music coming from the machine The lights on the machine ○ Venue sounds ○ Other players 	
<ul style="list-style-type: none"> • What is the minimum bet size on this fruit machine? 	
<ul style="list-style-type: none"> • Is the fruit machine based on random probabilities or a compensator model? (You may need to press the help button after the interview). 	
<ul style="list-style-type: none"> • Is there a sticker/button warning players of the risk of gambling? 	
BUTTON FEATURES	
<ul style="list-style-type: none"> • Which buttons features are available on this machine? 	
<p>Some possible buttons are:</p> <ul style="list-style-type: none"> ○ Bonus ○ Auto play ○ Stop button on the machine (change the speed of play) ○ Auto play (the machine plays on the R behalf) 	

<ul style="list-style-type: none"> If you can tell, which buttons does the R use during the play? 	
<ul style="list-style-type: none"> Are there visual cues flashing on the screen to engage the R at any point during the play? Do these vary during the play to keep the player engaged 	
<ul style="list-style-type: none"> Does the machine make any sounds to encourage play at any point during the session? 	
<ul style="list-style-type: none"> Does the R temporarily suspend play? 	
ENVIRONMENTAL FACTORS – OTHER PEOPLE IN THE VICINITY	
<ul style="list-style-type: none"> At any point during the R's gambling session are there people in the general vicinity? 	
<ul style="list-style-type: none"> Are there people gambling near by during the R's session? 	
<ul style="list-style-type: none"> Is it quiet or noisy near the respondent? 	
<ul style="list-style-type: none"> Are there background noises which could affect respondent's play? E.g. sounds of other machines like jackpot sounds going off? Background music – if so is it slow or fast music? 	
<i>At the start of the session.</i>	
<ul style="list-style-type: none"> Is there a person playing on either fruit machine immediately next to the machine the respondent is playing? 	
<i>During play</i>	
<ul style="list-style-type: none"> At any point during the R's session, does someone come along and start playing on a fruit machine immediately next to the machine the respondent is playing? 	
<ul style="list-style-type: none"> <i>If you can tell</i>, does this affect the R's play 	

during the session? If so how.	
<ul style="list-style-type: none"> Is the respondent disrupted at any point during the play? What are the disruptions? 	
<ul style="list-style-type: none"> During the play does the respondent talk to other people? If you can hear is the conversation about the fruit machine/gambling? 	
DESCRIPTION OF THE R'S PLAY	
<i>Money/Winnings</i>	
<ul style="list-style-type: none"> How many times does the respondent put in money? 	
<ul style="list-style-type: none"> How much does the R put in at a time? 	
<ul style="list-style-type: none"> Is the respondent using notes/ coins/ combination of both? If you can tell, how large are the notes the R is using? 	
<ul style="list-style-type: none"> How many times does the respondent win? 	
<i>Getting in the Zone – the role of features on play</i>	
<ul style="list-style-type: none"> Does the respondent point to things on the screen/bend down to look at the symbols on the reels? 	
<ul style="list-style-type: none"> If you can tell, does the respondent seem absorbed in the game? 	
<ul style="list-style-type: none"> If you can tell, what stops the R being absorbed in the game? 	
<i>Winnings</i>	
<ul style="list-style-type: none"> Does the respondent collect winnings during the play? 	
<ul style="list-style-type: none"> Does the fruit machine have the facility to convert winnings into credits? 	
<ul style="list-style-type: none"> Does the respondent convert winnings into credits? So doesn't collect the cash winnings. 	
<ul style="list-style-type: none"> Does the respondent save winnings and collect all at one go at the end of the session? 	
IMPACT OF THE RESEARCH	

<ul style="list-style-type: none"> Does the respondent seem to be playing naturally or is the 'research context' affecting this stage of the interview? 	
ANY OTHER OBSERVATIONS	

INTERVIEWER/RESEARCHER: DON'T FORGET TO NOTE DOWN WHAT TIME R STOPPED PLAYING ON PAGE 2

{ASK R}

Q3. How long do you think you just played for?

STAGE 1 OF INTERVIEW: OBSERVATIONS – VIDEO RECORDING AND COMPLETING OBSERVATION SCHEDULE

Aim: To capture an accurate record of how R plays to explore with the R in the interview (video elicitation tool)

Now explain to the R that you would like them to carry on playing like they are doing either on the same machine or on the machine you have identified before the start of the interview, for a 'usual' session. Remind the R that you will be video recording them for this part of the research. The R should do his/her best to imagine that you are not there and that he/she is not being recorded. If **THINK ALOUD** comes naturally to the R, ask them to think aloud while playing.

INTERVIEWER: If R is playing for longer than 30 minutes bring the play to a close.

CHECK LIST

At the start

- Check if R has any questions prior to video recording.

- Remind Rs that the video recording will be deleted in front of them after the interview.
- Set up the equipment and make sure the **RECORD button** is pressed.

STAGE 2: INTERVIEW USING THINK ALOUD AND RETROSPECTIVE PROBING

Project Aims: To explore *how* the players interacted with the structural features on the fruit machine

- Explain you will be audio recording the interview so that you don't have to make lots of notes. Check this is OK with the respondent. If they ask who will have access to the audio recording, tell them that only the small research team at NatCen and yourself will, and that recordings are stored securely i.e. they are password protected.
- Remind Rs that the video recording will be deleted in front of them after the interview.
- Load video recording on to your laptop and check settings, e.g sound can be heard.
- **Talk the R through think aloud using an example such as the window's example.** Below are additional probes to ensure the area is mapped in the interview.
- **REMEMBER TO VERBALLY REFER TO FEATURES SO IT GETS AUDIO RECORDED**

BACKGROUND

Aims: To pen a picture of the R's play and use of this venue and the features which initiate play

PLEASE Remember to explicitly refer to features and areas that the R refers to on the fruit machine so it gets audio recorded.

General Background

- How long have you been playing fruit machines/slot machines?
- How long have you been playing at this venue?
- Where do you regularly play fruit machines?

Fruit Machine

- What type of fruit machines do you play? *Explore if R plays only one type of fruit machine or different types.*
- How did you decide what fruit machine to play? How easy or difficult was this decision to make? Why
- What do you like about playing this fruit machine? Probe fully
- *If plays different types* – what do you like about these other machines to play?

Usual time period

- Explore what a usual time period is for the R to play fruit machines.
- Explore the factors which shape how long the R plays fruit machines.
- Interviewer, if you stopped play explore how long the R felt they would have played for and the reasons for this.

PLEASE Remember to explicitly refer to features and areas that the R refers to on the fruit machine so it gets audio recorded.		
Feature 1	Feature 2	Feature 3
Feature 4	Feature 5	

 **PLAY VIDEO LET THE RECORDING PLAY FOR AROUND 5 MINS THEN PAUSE VIDEO**

START OF PLAY

Aim: To explore the features that initiated and stimulated the first few games on the fruit machine

Let the R know they can pause the video at any time while they are talking

- Ask R to talk you through
 - **how** they are playing;
 - **why** they are playing this way;
 - **which areas they focus on** while playing; and,
 - **How they decided how much to play with** (in terms of cash and credits).

To explore features R knows they respond to initially.

If not already covered:

- How did you decide how much money to play with initially?

If the option is available on the fruit machine

- How did you decide which game(s) to select?
- How easy or difficult was this decision to make? Why

▶ PLAY VIDEO AND USE YOUR DISCRETION TO PLAY AND PAUSE THE RECORDING WHEN THE RESPONDENT IS TALKING THROUGH HOW THEY PLAY.

THE MAIN PLAY

Aim: To establish the primary features that the R recognises stimulates them to play and to identify secondary features which maybe less influential

(Let the R know they can pause the video at any time while they are talking)

Let the R **tell you about features first** and **then go back and explore** if R had noticed features not spoken about.

- **Ask R to talk you through how and why they played the way they did.** (To explore features R knows they respond to during the main play).
- Ask R to talk you through:
 - **how** they are playing;
 - **why** they are playing this way;
 - **which areas they focus on** while playing; and,
 - **How they decided how much to play with** (in terms of cash and credits).
- **Explore ease and difficulty of the decision making process**

PLEASE Remember to explicitly refer to features and areas that the R refers to on the fruit machine so it gets audio recorded.

Feature 1	Feature 2	Feature 3
Feature 4	Feature 5	

EXPLORE YOUR OBSERVATIONS USING YOUR OBSERVATION SCHEDULE

If not already covered in the think aloud

- **Probe influence of features not spoken about** (to explore role of these features on how R play).
 - Probe for features in your feature table not already mentioned by the R
 - Explore **how, why and when** it influences
 - Probe for anything else (possible features are listed below)
 - Explore **how, why and when** it influences

Possible additional features are:

Affects of winnings/losses

- Size of winnings
- Any Winnings - losses
- Near miss

Machine options

- Reel speed / multiple lines
- Bet size
- Use of notes v coins and size of acceptor
- Stop button on the machine (change the speed of play)
- Auto play (the machine plays on the R behalf)
- The music coming from the machine
- The lights on the machine

Environmental Factors

- Venue sounds
- Other players

II PAUSE RECORDING

FOR REEL BASED MACHINES - Explore understanding of features on this type of fruit machine

Encourage R to talk you through what they had been thinking while they were playing

Aim: To explore how specific features on reel based machines influence play

- If not already covered: Please talk me through each of your games telling me how you decided to play the way you did.

Additional Probes

- What did two matching symbols next to each other in a row mean to you when you played this fruit machine?
- Did this vary depending on the symbols? Why?
- Does the meaning vary depending on how long you have been playing? Why?
- What about when you had two matching symbols but they were on reel one and three, so not next to each other?
- Did this vary depending on the symbols? Why?
- Does the meaning vary depending on how long you have been playing? Why?
- Did this vary depending on how much money you had to play with? Why?
- What did x flashing mean to you?
- What does the auto play button mean to you on this machine?
- What does the stop button mean to you on this machine?

~~Remember to verbally refer to features and areas that the R refers to on the fruit machine so it gets audio recorded.~~

Feature 1	Feature 2	Feature 3
Feature 4	Feature 5	

II PAUSE RECORDING

FOR LINE BASED MACHINES - Explore understanding of features on this type of fruit machine

Encourage R to talk you through what they had been thinking while they were playing

Aim: To explore how specific features on line based machines influence play

- If not already covered: Please talk me through each of your games telling me how you decided to play the way you did.

Additional Probes

- How did you decide how many lines to play?
- How easy or difficult was this decision?
- Did this vary depending on how long you were playing for? How did it vary?
- Did this vary depending on how much money you had to play with? Why?
- What did x flashing mean to you?
- What does the auto play button mean to you on this machine?
- What does the stop button mean to you on this machine?
- What did the credit button mean to you on this machine?
- Did this vary depending on how long you were playing for? How did it vary?

II PAUSE RECORDING

FOR POKER MACHINES - Explore understanding of features on this type of fruit machine

Encourage R to talk you through what they had been thinking while they were playing

Aim: To explore how specific features on poker based machines influence play

- If not already covered: Please talk me through each of your games telling me how you decided to play the way you did.

Additional Probes

- Explore ease and difficulty
- Explore features which helped the R to make a decision (hint button, lit button)
- Explore features which encouraged the R to play.
- Explore if the features meaning varied? If it did explore reasons (winnings/losses/length of play)
- If not already covered explore what each button means on the poker machine. Why and if this varies depending on just playing, middle of game.

II PAUSE RECORDING

VENUE

Aim: To explore the affects of the venue on play

If not already covered

- When you were playing did you notice other things going on around you or do you just notice your fruit machine?
- If R notices other things explore what these were e.g.
 - Other people winning (jackpot sounds, coins falling in the coin tray)
 - People watching them
 - People talking

II PAUSE RECORDING

IN THE ZONE

Aim: To explore the affects of getting 'in the zone' on play

Read out: Sometimes people refer to players getting in the 'zone', this is used to describe players getting immersed in the game.

Do you get in the zone when you play? Explore reasons for why/why not.

If yes

- How would you describe your experiences of being in the zone?
 - How long does it last?
- Explore if R felt they got in the zone during the video observations?

If yes

- Explore awareness of features:
 - before getting in the zone;
 - in the zone; and
 - coming out of the zone.
- Explore how long R thinks s/he was in the zone.

END OF PLAY

Aim: To explore the features which may trigger the R to end play and to explore additional factors that shape play

If play wasn't stopped by the R/not already covered

- Explore the factors which lead the R to decide to end play when s/he did
- Explore ease and difficulty to make this decision looking at the interplay of factors

- Explore what OTHER factors affect how the R plays
 - Venue
 - Day e.g. weekdays v weekends
 - With company (having someone specifically with them/ just people in the venue) / being able to be alone
 - Other factors

NOW COLLECT SOME BACKGROUND INFORMATION

Aim: To collect background information to help with analysis

INTERVIEWER: Thank the R for talking you through how they played the fruit machine. Please now explain to the R it is useful for us to have some background information to help the team with the analysis. Ask the 3 questions below.

Q1. In the last 12 months, where have you played fruit/slot machines?

Please code ALL that applies.

1. Pub or bar
2. Amusement arcade
3. Bingo club
4. Bookmaker's
5. Sports or social club
6. Casino
7. Somewhere else

Q2. In the last 12 months, how often have you spent money on fruit/slot machines?

Do not include: quiz machines, online fruit/slot machine style games

1. Everyday/ almost every day
2. 4-5 days a week
3. 2-3 days a week
4. About once a week
5. 2-3 days a month
6. About once a month
7. 6-11 times a year
8. 1-5 times a year

Q3 What is your highest level of education qualification?

Show the respondent the list or read out...

1. A levels or higher
2. ONC/BTEC/ O level or GCSE equivalent (Grade A – C)
3. O level or GCSE (Grade D – G)
4. Other qualifications
5. No formal qualification

 **STOP AUDIO RECORDING**

- Thank participant for their time and reassure them about confidentiality
- Delete video recording
- Give R the £30 voucher and collect receipt
- Give them the support leaflet and thank you letter.

AFTER THE INTERVIEW PLEASE PROVIDE DETAILS OF THE FRUIT MACHINE OBSERVED

- **INTERVIEWER/RESEARCHER please fill in this table. (You may need to press the help button after the interview on the fruit machine(s)). If you DK please indicate this.**

What was the type and category of the machine the respondent played on?		
Research Stage	Was it a random probabilities or a compensator model?	What was the category of the fruit machine? E.g. B3, B4, C
Stage 1 (observation)		
Stage 2 (video recording)		

Appendix C. Consent form

TO EXAMINE HOW FEATURES ON FRUIT MACHINES AFFECT HOW PEOPLE PLAY

RESEARCH CONSENT FORM

This consent form accompanies the research information sheet. The research information sheet explains the research more fully and should be read before you complete this form.

Please indicate whether you are happy to take part in this research by placing your initials in the boxes below and then signing this form to indicate that you have understood the different components of this research.

Your consent:

**Please
initial box**

I understand that NatCen Social Research cannot be held responsible for any financial losses I incur during the play being observed as part of this research.

I give my consent to be video recorded while I'm playing on the fruit machine and for my interview to be audio recorded.

I understand that the video recording will be deleted immediately after the interview in front of me.

I understand the audio recording will be securely stored for the duration of the research project and will then be securely deleted.

NAME _____

SIGNATURE _____ **DATE** _____