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Lottery Ticket Purchases by Adolescents and Their Gambling Behaviour: A Qualitative and Quantitative Examination

Jennifer R. Felsher

Department of Educational and Counselling Psychology

McGill University, Montreal

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ABSTRACT

The primary purpose of this study was to explore the differential gambling patterns of underage adolescents in order to identify the specific characteristics and determinants that influence the appeal of the lottery and their lottery playing behaviour. This study was an exploratory investigation of the structural characteristics of lottery products that are particularly appealing to youth (e.g., monetary value, attribute of the ticket, type of game, prize structure, advertisements, colour of ticket, etc.).

This research consisted of three phases. Phase I consisted of the inclusion of 5 focus groups (47 children, age 12-19) designed to provide qualitative information on adolescent lottery playing behaviour; Phase II included the development and validation of an instrument to assess lottery playing and gambling behaviour; and Phase III included the participation of a large community sample of youth in Ontario (N = 1,072; aged 10 to 19 years-old; mean age of 14) who completed the questionnaire assessing their gambling behaviour in general, factors influencing lottery playing behaviour (e.g., structural characteristics of lottery tickets), and severity of gambling problems.

Playing the lottery was found to be the most popular activity with 39% of underage youth reported playing the lottery within the past week and 17% indicated doing so within the past month. Of the various lottery products, playing scratchcards was found to be the most popular form of lottery ticket, with the age of onset being approximately 12. Furthermore, more than half of the youth who indicated having played lottery products reported that they were able to purchase lottery tickets with little difficulty. The vast majority of youth were aware of the legal age to purchase tickets. Although they indicated being aware of legal age restrictions to purchase lottery tickets, half of probable pathological and at-risk gamblers believed there should be no age requirement to purchase any form of lottery ticket. The results confirm previous research findings that the vast majority of youth report engaging in both legal and illegal forms of gambling.

RÉSUMÉ

Le but primaire de cette étude est d'explorer les modèles différentiels des joueurs mineurs afin d'identifier les déterminants et les caractéristiques spécifiques qui influencent leurs comportements envers les jeux de lotterie ainsi que l'attraction de celle-ci. De manière générale, cette étude vise à examiner les caractéristiques structurales des produits de lotterie qui plaîsent particulièrement aux mineurs (par. ex.: valeur monétaire, l'attribut du billet, modèle de jeu, structure du prix, les annonces, aspects esthéthiques des billets, etc...).

Cette étude a été complétée en trois phases. La première phase a été concue pour rassembler de l'information qualitative sur le comportement des joueurs de lotterie adolescents et a rassemblé cinq goupes de 47 enfants âgés entre 12 et 19 ans. La deuxième phase comporte le développement et la validation d'un instrument mesurant les différents jeux de lotterie ainsi que le comportement des participants envers ces jeux. La phase finale a inclu la participation d'un large groupe d'adolescents de la province de l'Ontario (N= 1, 072; âge de 10 à 19 ans; âge moyen de 14 ans) qui ont complété un questionnaire examinant leur comportement addictive, le comportement addictive de leurs parents, les facteurs qui ont influencé leur comportement de joueur ainsi que la sévérité des problèmes associés avec les jeux d'argent.

Les résultats de cette étude ont démontré que les jeux d'argents sont les activités les plus populaires parmi les adolescants avec 39% d'entre-eux rapportant avoir jouer dans la dernière semaine et 17% rapportant avoir jouer dans le dernier mois. Parmi les produits de lotterie, on a constaté que les cartes à grater étaient les produits les plus populaires parmi les adolescants agés de 12 ans et plus. En outre, plus que la moitié des participants ayant indiqué avoir jouer la lotterie ont révélé qu'ils pouvaient acheter les billets de lotterie sans difficulté. La grande majorité des participants était au courant de l'âge minimal requis pour se procurer des billets de lotterie. Nonobstant, plus que la moitié d'entre-eux sont d'avis qu'il ne devrait pas y avoir des restrictions concernant l'âge pour se procurer des billets de lotterie. Tous ces résultats confirment les recherches précédents sur se sujet indiquant que la majorité des adolescents s'engagent activement dans des formes légales et illégales du jeu.

CHAPTER I

INTRODUCTION

Research has found that most adolescent problem gamblers follow a similar pattern of gambling before experiencing difficulties. This pattern generally includes playing cards for money, betting on skill activities (e.g., pool, videogames, etc.), purchasing lottery tickets, sports betting (both legal through provincial and state lottery corporations and illegal sports betting), with many problem gamblers progressing to video lottery terminals and/or casino playing. Lottery products remain one of the most popular games of all (Macmillan, 1985). Part of its popularity comes from the fact that these products offer a low entry cost with the possibility of winning valuable cash prizes (Wood & Griffiths, 1998; 2001). Despite our understanding of this progression and the popularity of lottery products among youth, most studies have failed to carefully examine the appeal of the lottery, those attributes of lottery products deemed important, and concomitant factors associated with lottery purchases by youth. A careful examination and understanding of these parameters may well help understand the appeal of the lottery for youth. Given that many youth with gambling problems begin by playing and purchasing a variety of lottery products (draws, scratch cards [often referred to as scratch tickets], sports lottery) this study may provide clinicians and researchers with additional information as to why certain individuals are susceptible to develop a gambling problem. The results of this research will provide valuable information that may be subsequently used in the development of more effective gambling prevention programs for youth.

CHAPTER 2

REVIEW OF THE LITERATURE

Current trends in legalized gambling

Today's youth are exposed to an increasingly widespread and easily accessible variety of gambling venues and advertising. The trend worldwide appears to be toward the growing legalization of various forms of gambling. While the inclusion of lotteries in Canada is relatively recent, multiple forms of gambling can now be found in all provinces. What began as a way to raise funds for identified projects has rapidly turned into a multi-billion dollar industry (National Council of Welfare, 1996). Prior to 1970, legal gambling in Canada was generally restricted to occasional charity bingo, raffles, and friendly wagers between individuals. By 1993, legal gambling had expanded to include slot machines and video lottery terminals (VLTs), casinos, large-scale bingo operations, sports wagering/tickets, scratchcards, pull-tabs, and off-track betting on horses (Ladouceur, 1996). A recent Canada West Foundation (2000) study found over 70% of Canadians participated in some form of gambling during the past year, with the lottery being the most popular activity (49.6% of adults reported purchasing a draw ticket [e.g., 6/49], with 41.5% purchasing lottery scratchcards).

The legal age to participate in lotteries for the province of Ontario is 18, while all other forms of gambling (e.g., horse track, casino's) is restricted to individuals 19 years of age and older. In Ontario, several new forms of gambling have become available, including hospital lotteries, pull-tab tickets, and charity casinos (Addiction & Mental Health Services, 1998). In addition to these forms of gambling activities, a number of full-scale casinos have opened. Ontario leads the nation in gambling participation rates

with 79% of respondents reporting having gambled during the past year, followed by British Columbia (74%), the Western Provinces (72%), Quebec (65%), and the Atlantic Region (63%).

There now appears to be a general social approval for a risky activity that was once prohibited (Stinchfield & Winters, 1998). Not only does there appear to be a general approval for gambling activities, gambling is seen as a public right in Canada (Canada West Foundation, 2000).

Youth gambling prevalence rates

Gambling has become a well-established recreational form of entertainment for youth as well as adults (Gupta & Derevensky, 1998a, 1998b). Like adults, most youth gamble responsibly without ever developing a serious problem. Nevertheless, there is a small but significant proportion of youth who gamble excessively and experience a number of significant problems associated with their gambling (Gupta & Derevensky, 1998a, 1998b; Jacobs, 2000; Stinchfield & Winters, 1998). Research efforts have revealed that over 80% of children and adolescents engage in gambling activities, and that between 4-8% meet the diagnostic criteria for pathological gambling with another 10-14% of adolescents at-risk for developing a serious gambling problem (using instruments such as the DSM-IV-J, MAGS, and SOGS-RA) (Derevensky & Gupta, 1998a, 1998b, 2000; Gupta & Derevensky, 1998a, 1998b; Ladouceur, 1996; National Research Council, 1999; Shaffer & Hall, 1996, 2001). The results of the National Research Council's (NRC) (1999) review of literature concluded that 85% of adolescents gambled during their lifetime. A study by Rupcich, Govoni, and Frisch (1996) in Windsor Ontario, found even higher rates of gambling behaviour with 96% of youth

reported having gambled during their lifetime and 90% having gambled during the past year. Prevalence estimates suggest that 24-40% engage in some form of weekly gambling behaviour (Huxley & Carrol, 1992; Ladouceur & Mireault, 1988; Lesieur & Klein, 1987). More recent studies in Ontario found that 7.5% of youth met the criteria for at-risk gambling problems and 5.8% met the criteria for probable pathological gambling using the SOGS-RA criteria (Adlaf & Ialomiteanu, 2000). Given the large number of underage adolescents who report gambling fairly regularly, this phenomenon raises serious mental health and public policy concerns (Korn & Shaffer, 1999; NRC, 1999).

Jacobs (2000), in a comprehensive review of a large number of adolescent gambling prevalence studies, found that the median percentage of gambling participation by Canadian youths during the period between 1988-1998 was 66%, with a range between 60% and 91%. Furthermore, after analyzing the results of nine American and six Canadian studies examining serious gambling related problems among juveniles, Jacobs concluded that the median value of serious gambling related problems among juveniles had risen to 14% for American and 15% for Canadian youth. He concluded that along with the accessibility and availability of gambling venues there has been a concomitant rise in juvenile gambling and that minors (12-17 years of age) have managed to penetrate and participate to some degree in every form of legal and illegal gambling activity.

Age of onset

Jacob's (2000) review of youth prevalence studies also revealed a striking finding that the reported age of onset for initial gambling experiences ranged from 11-13 years of age, with an overall median age of 12 (e.g., seventh graders). In addition to retrospective reports by adults with severe gambling problems, a number of adolescent studies of

problem and pathological gamblers seem to suggest that these youth began gambling at 10-11 years of age (Gupta & Derevensky, 1998a; Wynne, Smith & Jacobs, 1996).

Adolescent gambling participation should raise serious concern since studies have indicated that when individuals begin gambling in childhood they are more susceptible to develop gambling problems as adults (Fisher 1993; Griffiths, 1995a; Winters, Stinchfield, & Fulkerson, 1993) and it is believed that early gambling is a warning sign for adult pathological gambling (Jacobs, 1989). Youth who engage in gambling at an early age may win and lose large amounts of money and develop a pattern of recurrent gambling over a period of time such that they may be well on their way to becoming pathological gamblers (Fisher, 1992).

Gambling preferences and lottery playing among youth

The range of gambling activities in which youth engage are quite varied. It includes, cards, dice and board games with family and friends, betting with peers on games of personal skill (e.g., bowling, playing arcade or video games for money), raffles, sports betting, wagering on horse and dog races, bingo, slot machines and table games in casinos, pull tabs and lottery tickets, playing VLTs, and wagering on the Internet (Jacobs, 2000). While youth have accessibility to gambling venues, there are identifiable gambling preferences. Jacobs' (2000) review suggests that within the past year, 67% of underage youth have gambled for money with lottery playing and purchases being the predominant activity. Shaffer and Zinberg (1994), examining the prevalence of underage lottery purchases, reported that 47.1% of seventh grade children had purchased a lottery ticket during their lifetime, 22.9% had purchased a lottery ticket during the past month, and by the time students reached their senior year in high school the prevalence rates had

increased to 74.6% for lifetime purchases and 35.3% purchased lottery tickets during the previous month. Furthermore, 7.5% of Massachusetts youth under the age of 17 were found to have purchased one lottery ticket on average every week, and 2.7% of youth reported purchasing 20 or more lottery tickets during the past month.

In a more recent study in Louisiana, Westphal, Rush, Stevens, and Johnson (1998b) found 65% of youth had played scratchcard tickets, with lottery playing exceeding all other forms of licensed gambling. Volberg and Moore (1999) found a significant increase in youth lottery play between 1993 and 1999 in Washington and Ladouceur and Mireault (1998) found that the three most popular forms of gambling were lotteries (60%), sports betting (45%) and card games (36%) amongst Quebec francophone youth. Gupta and Derevensky (1998a) found slightly different results with the most popular gambling activities among youth being card playing (56.2%), lottery tickets (52.4%), bingo (35.2%), sports pools (34%), electronic gambling machines (31.8%), sports lottery tickets (30.3%), and games of skill (28.4%). However, when the traditional lotteries (52.4%) and sports lottery tickets (30.3%) are combined, it is clear that youth prefer these forms of gambling activities to all others (Gupta & Derevensky, 1998a). A telephone-survey of 702 Minnesota youth 15-18 years of age found that 27.6% of minors reported purchasing scratchcards, pull-tabs, or lottery tickets. Furthermore, 8.2% of youth reported that their underage friends purchased lottery products for them when they were unable to (Wager, 1996).

Since enforcement of age restrictions in most jurisdictions are minimal at best, the early accessibility to lottery purchases may be a "gateway" for other forms of gambling activities (Shaffer & Zinberg, 1994). Lottery purchases by underage youth is widespread

and its impact upon psychosocial functioning has a broad based influence on public health (Korn & Shaffer 1999; Shaffer & Hall, 2001; Shaffer & Zinberg, 1994). While underage youth are actively involved in purchasing or playing the lottery, its appeal has never been empirically studied.

There is considerable research that has shown that adolescent males tend to engage in gambling activities more than females (e.g., Adlaf & Ialomiteanu; 2000; Fisher, 1990; Govoni, Rupcich, & Frisch, 1996; Griffiths, 1989; Gupta & Derevensky, 1998a; Jacobs, 2000; Ladouceur, Dubé, & Bujold, 1994; Stinchfield Cassuto, Winters, & Latimer, 1997; Wynne et al., 1996). With respect to the lottery, more males (21%) than females (14%) reported thinking they had a greater chance to win money in the UK National Lottery, while 25% of males and 19% of females believed they would win money playing scratchcards (Wood & Griffiths, 1998).

Parental influences upon youth gambling

Parental modeling of gambling as an acceptable form of recreational activity may encourage adolescent gambling behaviour. Parents are often aware of their children's gambling behaviour and youth report that their parents do not object to their participation. Ladouceur, Jacques, Ferland, and Giroux (1996) found that 50% of parents were aware of their children's gambling behaviour and were not worried about it, independent of the age of the child. More recently, Ladouceur, Vitaro, Côté and Dumont (2001) reported that 62% of parents complied with their children's requests to purchase a lottery ticket for them, many were aware that their children gambled, most were unfamiliar as to what age their children started gambling, half the parents reported gambling in front of their

children, and most had a poor understanding of the potential negative consequences associated with gambling.

Children who gamble regularly report gambling with family members, with 40% having gambled with their parents (Gupta & Derevensky, 1997). Wood and Griffiths (1998), in their study of adolescents in England, found that the vast majority of lottery ticket purchases for youth were made by relatives, with 71% of relatives purchasing lottery draw tickets and 57% purchasing scratchcards for underage youth with similar results being reported in Minnesota (Laudergan, Schaefer, Eckoff, & Pirie, 1999; Wager, 1999). Shaffer (1996) reported that 15% of children actually made their first bet with their parents and another 20% did so with other family members. Children sometimes form partnerships with their parents on lottery tickets and many youth report receiving lottery scratch cards and tickets as Christmas stocking stuffers. By the time children leave elementary school less than 10% of children fear getting caught gambling (Derevensky & Gupta, 1998a; Gupta & Derevensky, 1997). Some forms of gambling (e.g., lottery) are perceived to be both socially acceptable and harmless as they are state, province or federally run and endorsed, advertised widely, and available in a variety of public places (e.g., supermarkets, banks, convenience stores) (Wood & Griffiths, 1998).

Social learning theorists have long pointed to the important role of observation and imitation. According to social learning theory (Bandura 1977), modeling plays an important role in shaping behavior of all kinds, both socially desirable and undesirable behavior. Social learning takes place within a specific reference group, and as both the family and peer groups remain the primary reference groups for youth, these groups could potentially encourage gambling participation (Cornish, 1978). Parents have been

reported to include their children in their gambling activities by asking their advice and/or providing an active role in the actual gambling activity (e.g., completing lottery stubs, selecting numbers for draws, carrying money, holding and/or scratching tickets) (Walker, 1992). Social learning theory appears to be one viable explanation and component in helping understand the acquisition and maintenance of gambling amongst youth (Gupta & Derevensky, 1997). Since parental influences occur earlier than peer influence, their influences on gambling participation may have an even stronger influence, especially for males (Griffiths, 1990).

Of particular concern is the finding that 18% of parents believed that gambling with family members is good recreational fun, with 56% reporting that it is an acceptable leisure activity, and 21% of parents having purchased lottery tickets for their children (Ladouceur et al. 1994a). While at the time of their study it was not illegal in Quebec for minors to purchase lottery products, 52% of the respondents believed that it was forbidden to sell lottery tickets to minors, and 20% thought that a minor could claim a prize over $5,000 (both inaccurate assumptions). More importantly, less than 40% of the parents attempted to monitor their children's gambling. Parental perceptions that youth gambling is a relatively harmless, innocuous behaviour with few negative consequences are still widespread (Ladouceur et al., 2001).

Youth with gambling problems are also more likely to have parents who gamble. Seventy-three percent of adolescent pathological gamblers were found to have a parent who gambles compared to 45% of youth at-risk for a gambling problem (Ladouceur, Boudreault, Jacques, & Vitaro, 1999). Gupta and Derevensky (1998a) similarly reported that adolescent pathological gamblers were more likely to have a mother or father with a

gambling problem. Govoni et al. (1996) reported that individuals whose parents gambled excessively had almost twice the rate of problem and at-risk for gambling problems compared with youth who did not report excessive parental gambling (22.1% and 26.5% vs. 9.4% and 15.9% respectively). Furthermore, Govoni et al. (1996) reported the levels of problem and at-risk gamblers was lower for those adolescents who reported their parents did not gamble than those who reported their parent gambled (7.8% problem gambling and 12.2% at-risk gambling vs. 11.8% problem gambling and 18.5% at-risk gambling).

The appeal of lottery products

Researchers have suggested that gambling experiences among children tend to occur when a) opportunities to wager even small amounts of money are readily accessible; b) where the social climate of the home and the local environment is conducive and accepting of such behaviour, and c) where the rules of the gambling activities are easy to master (Jacobs, 2000; Walker, 1992). Studies by Browne and Brown (1994) and Coups, Haddock, and Webley (1996) found that friends' and parents' lottery play were significant predictors of students' lottery participation suggesting a strong social component.

The role of advertising on lottery ticket participation

Lotteries and other gambling products have become a familiar part of television, print and radio advertising (Browne & Brown, 1994). The Independent Television Commission (1995), in the United Kingdom, reported that the UK National Lottery weekly, live television program, was the second most popular program for 10-15 year olds, with 38% of youth viewing this program on a regular basis. Youth may not

understand the inherent risks, or the low probability of winning; therefore they may be more susceptible to media and governmental promotion of these activities (Stinchfield & Winters, 1998). Within the U.S., due to constitutional statutes, lottery corporations are actually exempt from the federal truth-in-advertising laws. Gambling in general, and lotteries in particular, are heavily advertised and promoted. Since youth often view themselves as invulnerable, the perceived risks associated with gambling are usually professed as negligible. As a result, excessive play and gambling-related problems may go undetected compared to other forms of addition, such as alcohol or illegal drug use (Arcuri, Lester, & Smith, 1985; Gupta & Derevensky, 1998a; 2000; Lesieur & Klein, 1987).

The advertising of lottery products has become considerably more aggressive (Jacobs, 2000; Kaplan, 1989; Walker, 1992; Wood & Griffiths, 1998). In North America and the UK, advertising slogans have been designed to encourage individuals to believe they have a good chance of winning (Felsher, Gupta & Derevensky, 2001; Griffiths & Wood, 1999). Advertising slogans such as "*it could be you,*" and "*everyone's a winner,*" have been designed to promote a belief that the chances of winning are good.

Familiarity of lottery products

Lottery corporations are aware of the importance of product familiarity in advertising. For example, research on the psychology of familiarity indicates that the titles of slot machines are important in terms of gambling behavior (Griffiths & Dunbar, 1997; Parke & Griffiths, 2001). This psychological phenomenon may be adapted to apply to instant scratch tickets. Lottery tickets with titles such as *Bingo*, *Crossword*, *Monopoly*, *Betty Boop*, and *Battleship* offer the potential player a source of familiarity (Griffiths &

Dunbar, 1997; Parke & Griffiths, 2001). Celebrity endorsements, the use of licensed products, and familiarity with television shows or board games have been successfully used as lottery marketing tools (Parke & Griffiths, 2001). Griffiths (1993) further suggests that the media may induce a "psycho-structural interaction," leading players to find the game more pleasurable because they can interact with identifiable images.

Provinces and states promote lotteries as enjoyable and exciting forms of entertainment. The Ontario Lottery and Gaming Commission's (OLGC) advertising budget has significantly increased over the past few years and its total promotional budget is approximately 1-2% of sales (Lottery Insights, 2001a). The OLGC has spent approximately $25 million on advertising during the past year (Television-$12 million; Radio-$5 million; Print-$4.5 million; Outdoor Signage-$2.5 million; Miscellaneous-$1 million). These figures exclude free public service announcements. According to the OLGC, television is the best medium to maintain or establish a brand image and provides the broadest reach to advertise jackpots that ultimately result in increased sales (Lottery Insights, 2001a). The OLGC's 2001 campaign uses the tagline, "e*very day, millions win*" to highlight the fact that earnings are returned to its residents. However it could also be misconstrued and interpreted to mean that there are millions of winners each day.

The OLGC's advertising campaign does not use one major theme when advertising lottery products. Each brand has it's own specific themes which has helped to establish solid brand images. For example; Lotto 6/49 – is positioned as *"sharing and caring;"* Super 7 – "*cold, hard cash*" with big jackpots that are geared to the confident and youthful; Ontario Instant Millions - is the only instant game that can "*change your life by making you an instant millionaire*" and is geared toward the younger adult male;

Cash for Life – is the lottery that will provide individuals with security; Sports lotteries (Proline, ProPicks, & Point Spread) – appeal to the sports enthusiast; Instant Bingo – is considered the "*my treat, my time*" lottery with the tagline, *"happiness is yelling bingo;"* and Gifting – are products promoted for the holiday seasons (Lottery Insights, 2001a). Clotfelter and Cook (1987) in an analysis of lottery advertisements concluded that they promote materialistic values and are highly misleading concerning the odds and probabilities of winning. Lottery products have been noted as *selling the dream* (Felsher et al., 2001).

Specific structural characteristics of lottery products significantly contribute to their appeal. Yet, to date, no empirical, non-industry based research has been conducted looking at the specific attributes (e.g., colour, size, prize structure, type of game/prize, and theme tickets) that make lottery products so appealing to youth. It may well be that it is one or more of these structural characteristics that add to its appeal.

Color

The North American Association of State and Provincial Lotteries (NASPL) reported that colourful and vibrant tickets are vital to the lottery's ongoing success such that strategically designed and printed tickets are more important than ever before (Lottery Insights, 2001b). Today's tickets are being designed and printed with increased graphic images, enhanced quality, and with more vibrant colours. Lotteries will continue to receive superior enhanced image quality with shadows that are darker, denser, and optically brighter highlights. The results of these improvements will make the ticket "even more irresistible than ever to the potential customer" (Lottery Insights, 2001b).

Not only have the quality of tickets changed over the last few years, marketing strategists have developed alternative ticket formats. One new type of ticket that is likely to appeal to youth is the pop-up interactive ticket that can be played by more than one player (Lottery Insights, 2001b). Consumers will be able to play *head-to-head* and the prize structure is designed so that both players can win on a single ticket. It is anticipated that this new, two player format will be more enjoyable, offer more flexibility than conventional tickets, will hold greater appeal to consumers, and would be ideal for social venues (e.g., gambling in restaurants and bars) (Lottery Insights, 2001b). The interactive nature of lottery products such as *Treasure Tower* and the perception of the individuals' belief about their ability to control the outcome may be very appealing to youth.

Psychology of lottery gambling

Gambling activities such as weekly lottery draws and sports pools may be conceptualized as *soft* forms of gambling resulting from their slow event frequency in contrast to *more hard* forms of gambling with more potential risks usually resulting from the high stakes or rapidity associated with them (Griffiths, 1999; Griffiths & Wood, 1999; 2001). VLTs, roulette, blackjack, horse/greyhound betting and scratchcards are deemed potentially hard forms of gambling since there is a rapid event frequency, a fast payout rate, are deceptively inexpensive, require little or no skill, are highly accessible, and have short payout intervals (Griffiths & Wood, 1999). These properties make them potentially highly additive forms of gambling. According to Wood and Griffiths (1998), since fruit machine gambling (slots machines) results in major problems for many youth in the UK, and scratchcards have similar structural characteristics (rapid event frequency,

near miss) that may be equally problematic as well. Youth's participation in these forms of gambling remains a concern.

Gupta and Derevensky (2000) found that the activities that are the most problematic for many youth include sports betting (e.g., sports select), casino playing (for youth gaining access to casinos), and VLTs. They also found that lottery tickets relating to sporting events are highly problematic. Youth reported that betting on the outcome of a sporting event or watching the reels of the VLT makes their adrenaline flow, their heart rate increase, and the excitement intensify (Gupta & Derevensky, 2000). These youth reported the same physiological response regardless whether they win or lose. Gupta and Derevensky (2000) suggest that introduction to the exhilaration and excitement of gambling through scratchcards may be a gateway to other forms of gambling activities.

Reinforcement contingencies

Lottery tickets and scratchcards have been referred to as "paper slot" machines (Griffiths, 1995b). As such, there is a minimal interval between the initial scratching and the observation of success or failure. The losing period maybe brief, as individuals can immediately scratch another ticket with little time for financial considerations (Griffiths & Wood, 1998). The amount gambled by the individual is constrained only by the speed at which an individual can scratch off the winning or losing symbols and financial resources.

To produce high rates of gambling, those schedules that present rewards intermittently have been shown to be the most effective (Skinner, 1953). By paying out rewards occasionally, the gambler is more likely to continue to play, since they may believe that the next ticket could be the winning ticket. Subsequently, when they win,

they frequently believe it has something to do with their ability to control events or control outcomes (e.g., selecting the "best" ticket) independent of previous experiences (Derevensky, Gupta, & Della Cioppa, 1996). Gambling may result in compulsive behaviour mainly because the systems of gambling employ variable-ratio schedules (Gupta & Derevensky, 1996). It is important to note that rewards may not only be in the form of money, it could be peer recognition, illusion of skill and control, or autonomic arousal (Fisher, 1992; Gupta & Derevensky, 1996). Children, adolescents, and even adults can easily get caught up and become over-involved in the excitement and risks involved in gambling activities such that their realistic cognition's are replaced with false ones governed by intermittent schedules of reinforcement (Derevensky et al., 1996).

Near – Miss phenomena

Another related aspect of operant conditioning is the "near miss", which has been hypothesized to act as an intermediate reinforcer (Reid, 1986; Griffiths, 1991; 1999; Wood & Griffiths, 1998). Near misses are failures that appear to approximate being successful (e.g., uncovering two similar symbols on a scratchcard with the third symbol being different). A scratch card (or slot machine) reinforces players when certain arrangements of three symbols appear in the window. Apparently, almost hitting the jackpot can increase the probability that the individual will purchase additional lottery tickets (Reid, 1986). Cognitively, the near miss may produce some of the excitement of a win, where the player is not continuously losing, but always close to winning (Parke & Griffiths, 2001). Moreover, the near miss may cause frustration produced by nearly winning, thereby evoking a form of *cognitive regret* (Parke & Griffiths, 2001; Kahneman & Tversky, 1982). This cognitive regret could be eliminated by playing again,

strengthens ongoing gambling behaviour, and promotes future play (Parke & Griffiths, 2001). The commercial gambling industry ensures that scratchcards and video lottery terminals are formulated to have a higher than chance frequency of near misses (Griffiths, 1991; 1999; Wood & Griffiths, 1998, 2001).

Cognitive distortions

A further notable mechanism that maintains gambling behaviour according to Griffiths and Wood (1999) are flexible attributions. Flexible attributions are cognitive distortions in which gamblers attribute their success to their own skill and failures to some external influence (Tversky & Kahneman, 1973). Gilovich's (1983) study demonstrated that sports betters spend less time discussing their wins, recall their losses more than their wins, thus transforming their losses into near wins. This provides evidence for the claim that the biased evaluation of outcome may be the basis for persistence at some forms of gambling despite losses. Wins are taken as evidence of skill whereas with losses, chance factors are emphasized. This biased evaluation of outcomes will allow the losing gambler to continue to believe in his or her ability to beat the system despite repeated monetary losses (Walker, 1992). This may lead to a form of entrapment, a commitment to a not yet reached goal. Resources expended, even without reward, motivate a person to continue gambling until the goal is ultimately reached or no financial resources are left (Walker, 1992). For example, individuals have a tendency to select the same numbers each week on lottery draws (e.g., 6/49), as they perceive they are coming closer to winning. Lottery players remain committed to continue to play, since their perceptions remain that their numbers have a greater probability of being selected in the near future (Griffiths & Wood, 1999). The prospect of stopping and thereby missing

the big prize is potentially too demoralizing for many players who persist with playing their numbers week after week. This entrapment becomes greater as time passes (Walker, 1992).

Illusion of control

It has been well established that avid gamblers experience numerous cognitive distortions (Griffiths & Wood, 1999; Ladouceur & Walker, 1996; Langer, 1975). According to cognitive theory, the cognitions of gamblers involve invalid beliefs such as, gambling involves skill or special knowledge, the individual can influence the outcome of the events, good luck is a personal characteristic, and the results of wins validate these beliefs (Walker, 1992). Irrational thinking consists of those beliefs that result in the overestimation of the chance of winning, independently of any action taken by the gambler, and the associated reasoning that lead the gambler to conclude that he or she has more control over the outcome than is in fact the case (Walker, 1992). Pathological gamblers hold a false belief that in spite of repeated losses, these losses will be recovered. Youth with gambling problems have been shown to underestimate the amount of money they lost, overestimate the amount won, fail to utilize their understanding of the laws of independence of events, and they believe that if they persist at gambling they will recoup their losses (chasing behaviour) (Gupta & Derevensky, 2000).

Pathological gamblers maintain their conviction that they can control the outcome of gambling events, which are in fact random (illusion of control) (Langer, 1975). The assumption of pathological gamblers is that on some chance event (for example, purchasing a lottery ticket), conditions that involve familiarity, choice, and involvement, stimulate an illusion of control thereby producing a *perceived* skill orientation. Successful

outcomes are attributed to factors internal to the person such as skill and effort, whereas failures are attributed to factors beyond personal control such as bad luck (Gilovich, 1983; Gilovich & Douglas, 1986; Walker, 1992).

A study of children's cognitive heuristics used in selecting 6/49 lottery tickets by Herman, Gupta, and Derevensky (1998) found that children's use of specific strategies reflect a belief that selection of the winning lottery ticket is governed to some degree by predictable rules as opposed to a chance event. Older children (14 year olds) in this study reported that greater levels of skill increased the chance of success. Moreover, knowledge of rules of the game enables older children and adults to believe they can exert control over the predictability of the outcome of totally random events (Herman et al., 1998).

According to Walker (1992), the persistent gambler suffers from the erroneous belief that he or she is better equipped to win, and that the reward of the gamble will eventually come with persistence. Gamblers engage in irrational thinking and cognitive distortions that it is their own behaviour, not the result of luck that determines if they win or not (Wagenaar, 1988). It could be this sort of irrational thought processes that explains why, even in the face of odds that are against them, lottery players persist at playing lotteries. As Wagenaar (1988) points out it is not skill that will change the final drawing of the winning numbers, but luck, that will help the player pick the right numbers or ticket in the first place.

Structural characteristics of lottery products

Although media advertising surely promotes gambling participation, there are many other factors that may psychologically draw an individual towards gambling activities. Until recently, lotteries were not thought to be particularly attractive to

compulsive gamblers since it is perceived that lotteries lack many of the elements which make gambling appealing (e.g., low odds, an apparent lack of excitement, and perceived lack of skill involved) (Kaplan, 1989). Selecting a lottery number to reveal matching symbols may not be perceived as an intrinsically stimulating experience and the odds against winning a jackpot are astronomical. As a result, most pathological gamblers may focus their energies on activities that offer a higher probability of success (e.g., sports select) (Kaplan, 1989) (It is interesting to note that Nevada has no state lottery).

Lottery products have changed from a static format to a more engaging variety (Griffiths, 1990, 1995a; Kaplan, 1989; Wood & Griffiths, 1998). The emergence of daily number games, and instant scratchcard tickets that immediately reveal outcomes may be more appealing in comparison to traditional lottery draws (e.g., 6/49), where players purchase a ticket and must wait to match their ticket with winning numbers drawn at a later date (Kaplan, 1989).

New technologies in the instant ticket industry have impacted the variety and sophistication of current products. It is recognized that many lottery ticket and scratchcard purchases are bought impulsively (Lottery Insights, 2001b). These tickets are openly displayed on store and newsstand counters and many encourage impulse buying.

Recent developments in the nature of lottery games and prize structures are causing concern among clinicians. It is these structural characteristics that may encourage or entice youth to initially participate and to continue involvement in lottery activities. Once youth learn about the exciting properties of gambling by exposure to lottery products, they may progress to more serious gambling venues (e.g., slot machines, casino playing). Lottery corporations spend thousands of dollars in market research to

understand customers preferences (e.g., colour of a ticket, specific themes, prize structures, cost), in order to make lottery products appealing, therefore, more marketable. This is the first psychological study to systematically look at similar structural properties.

Principal Aims

While a number of studies have examined gambling participation among youth, to date there is no research examining specific lottery purchases, playing patterns, structural characteristics, and attributes or properties of lottery products that make them so appealing to adolescents. As well, the present study attempts to examine differences in lottery purchasing and playing behavior, and lottery playing patterns based upon level of gambling severity.

Specifically, the objectives of this research include:

- To identify whether there are specific types of lottery products and games which appeal to underage youth.
- To identify the structural characteristics of lottery products that are particularly appealing to youth (e.g., monetary value, attribute of the ticket, type of game, prizes, advertisement, prizes, etc.).
- To differentiate gender and developmental differences with respect to preferential patterns of lottery purchases of underage youth.
- To investigate lottery product familiarity, familial influences, and past buying experiences among adolescents.
- To determine whether the characteristics and types of tickets purchased differ between youth as a function of frequency and severity of gambling problems.

CHAPTER 3

PHASE I: FOCUS GROUP TESTING

The primary purpose of the focus groups was to ascertain information concerning lottery playing and lottery purchasing behaviours, the importance of advertisements, the perceived attractiveness of lottery tickets (structural characteristics), and other pertinent information in order to help construct a questionnaire for the community sample.

Participants

Five focus groups consisting of 47 adolescents (13 grade 6; 20 grade 8; 8 grade 10/11; 6 grade 12) (age 12-19), approximately equal in the number of males and females from two elementary schools and one high school participated.

Procedure

Focus groups were held in small classrooms and discussions lasted approximately one hour. Similar discussions were held in each group focusing upon issues concerning gambling behaviour in general and lottery participation in particular. The participants were informed that all of their responses would remain anonymous and confidential, and that their participation was voluntary.

Group discussions addressed the following issues: age of onset; rate of lottery playing behaviour; accessibility to lottery products; money spent on lottery products; parental knowledge and attitudes; reasons for playing the lottery; youth knowledge of gambling laws and restrictions; the role of advertising/media; near miss; structural characteristics of tickets; attractiveness of lottery draws, scratchcards, and sports betting; and their perception of the role of skill and luck. In addition to information obtained regarding general lottery use, students were presented with a variety of lottery tickets

(i.e., draws, scratchcards, Pro-Line) and asked about their preferences and the structural attributes of tickets. Discussion evolved around the price of tickets, the importance of the ticket name (familiarity factor), colour, prizes/money, type of game, probability of winning, and physical size of the ticket.

All discussions were either audio taped and transcribed for later use or extensive notes were taken by one of the research assistants.

Results

Accessibility

The majority of students reported having played some type of lottery product, with initial onset of playing (e.g., scratching the ticket, helping pick numbers) being between 4-8 years of age. Additionally, the majority of adolescents had reported that they had purchased lottery products themselves at convenience stores beginning at age 10. All students indicated that they had received lottery products from parents, relatives and siblings. Students reported receiving tickets as gifts for birthdays, holidays, and had received as many as 7 tickets at any given time. Younger students (grade 6) reported receiving scratchcards occasionally. Moreover, adolescents reported that when they had difficulty purchasing tickets for themselves, parents readily purchased the products for them. They revealed that their parents are "ok" with them purchasing tickets illegally. All the students were aware of the legal age restrictions for purchasing lottery products. Some younger students recommended that there should be no age restriction for purchasing a ticket. Interestingly, older students, age 16-17, believed that the minimum age to purchase lottery tickets should be 16. Despite the fact that many youth reported

that lottery products are harmless, some students indicated that it was more appropriate to wait until they were older before playing and/or purchasing lottery tickets.

A number of students reported attempting to purchase tickets at a convenience store and had been refused. However, other students remarked that their local store "will sell tickets to anyone." Grade 10 students indicated that it is the much more difficult to purchase alcohol and cigarettes compared to lottery tickets. These students stated that there should be no consequences to clerks who sell lottery products to minors. However, the same students recommended that store licenses should be removed when alcohol is sold to underage youth. The older students (e.g., 16-17) indicated that they would like to go to the casino but were afraid of getting caught.

Advertising

All students readily recited popular lottery commercials/slogans and revealed that the "catchy tunes" go through their head when they see the ticket. They report that they are immune to advertisements; they "filter advertisements out," and television, radio, and print advertisements do not influence their behaviour. Paradoxically, students reported that advertisements and commercials had a general effect on them to the extent that they were enticed to purchase a lottery ticket, but necessarily the one that was publicized.

Title/Familiarity

All students mentioned that the title and their familiarity with the lottery ticket influenced their selection (e.g., they know how to play *Bingo*, *Monopoly*, and *Battleship*). Some students reported favoring tickets with names of familiar board games (e.g., M*onopoly*) and they would select this ticket over one that had a better probability of winning. However, others indicated they would choose a ticket that had a better

probability of winning if it looked like "fun," independent of their familiarity of the ticket name. Despite, the importance of the name and the familiarity with the product, older students mentioned that novelty is important and they would like to try new tickets at least once.

Skill and Pseudo-Skill

Several younger students (ages 11/12) perceived that they had a greater chance at winning a prize playing Lotto 6/49 because they have the opportunity to select their own numbers. All students ages 14/15 (20/20) reported that they would choose their own 6/49 numbers, although they do not believe that choosing their own numbers increases their chances of winning. Students age 16/17 indicated having strategies for choosing lottery tickets (they would pick their own 6/49 numbers and maintain the same numbers weekly). These students indicated that they would not sell their lottery ticket that they had picked themselves and if they did sell their lottery numbers they would use the money to purchase another ticket. If students lost, most would keep the same numbers, as they perceived it increased their chances of winning in the future.

Type of Game:

Most students (e.g., grades 6–12) preferred *Bingo* to the other lottery products, indicating that *Bingo* is a popular scratchcard because "everyone knows how to play the game." Students remarked that they enjoyed *Bingo* because it is fun, there are more chances to win, more places to scratch, and generally like the game itself. Despite, the possibility of greater chances to win on other tickets, all students selected *Bingo* as their preferred scratchcard because it had more items to scratch (toy manufacturers refer to this as 'play value') and takes more time to play. Additionally, participants (primarily boys)

chose *Battleship* as an enjoyable scratchcard. Several of the adolescents stated they would try other tickets with the same name as a popular board game (e.g., *Monopoly*). Generally, students indicated that the most essential quality of a lottery ticket is that is it "fun," it provides entertainment, and it facilitates their opportunity to "dream" (e.g., escape).

Size of the Ticket

Students indicated that, "the bigger the ticket the better." They seemed to prefer larger tickets as these tickets in general, have more games and longer 'play value.' Students stated that the smaller tickets (e.g., $1 tickets) are not as much fun as the larger tickets (e.g., $3 tickets) because there is "not enough stuff to do on them." Since they report that their chances of winning prizes and/or money are minimal, their priority in selecting a ticket is predicated upon one that has multiple games and requires more playtime.

Cost of the Ticket

Most students preferred the tickets that have the longer playtime independent of cost. They reported a preference for one, $3 ticket rather than three $1 tickets since there are more games on the $3 ticket. Adolescents stated that they would still purchase a ticket with their favorite game (e.g., *Bingo*) even if the price increased to $4 or $5. Some older youth (age 16) mentioned that they would be willing to spend $5 for a lottery ticket if significantly more activities were included. Younger children, age 11/12, preferred $1 tickets because they are inexpensive. In addition, many 14-year-olds expressed a belief that there is a greater chance of winning on an inexpensive ticket as the prizes are smaller.

Size of the Prize and the Probability of Winning

Very few grade 6 students (2/13) preferred lottery draws (e.g., lotto 6/49) over scratchcards reporting that selecting their own numbers significantly increases their chances of winning. In contrast, the other students believe they have a better chance winning on scratchcards, even though the prize may be smaller. More than half the adolescents indicated knowing someone who has won a considerable amount of money playing lottery products (e.g., $500-$700), and 18 students reported having won prizes ranging from $1 to $250. Younger students did not consider the value of the prize before selecting a ticket, rather, purchasing tickets based upon familiarity. Many 15-16 year-olds place great importance on the size of the possible jackpot, and 18 out of 20 students indicated they would buy a ticket that they believe had a greater probability of winning. Most adolescents reported that they would prefer money as the prize, however many indicated that the amount of money won is unimportant as long as they win something. Students over 18 years old indicated that the prize of the ticket, along with the type of game is an important reason for choosing a ticket.

Colour

Younger children (11/12) preferred certain lottery tickets (e.g., Lucky O'Instant) because of the pictures and colour. Grade 8 students indicated that seeing colorful and shiny tickets on the counter encourages them to ask their parents to purchase a ticket. They remarked that these characteristics (e.g., shine, colour, and pictures) on lottery tickets (e.g., scratchcards) prompt their choice. Older students (15-18) indicated that they purchase the first ticket that "grabs their attention," the more colours on the ticket the

more appealing it is, and the graphics depicted are more important than the title of the ticket.

Near Miss

Most students indicated that near misses "stress them out,"and does not entice them. Nine of the 13 grade 8 students said they would not ask for another ticket due to this factor. Several older students stated that near misses on scratchcards encouraged them to play more and motivated them to purchase another ticket.

CHAPTER 4

PHASE II: QUESTIONNAIRE DEVELOPMENT AND RELIABILITY

Procedure

Based upon the focus group testing and information gathered from past research a questionnaire was developed to ascertain information pertinent to adolescent gambling and lottery playing behaviour, as well as their lottery ticket preferences. This questionnaire was pilot tested at a local school to ensure its readability, to identify problem areas, and to determine the time necessary to complete all the measures. Students required 40-60 minutes to complete the questionnaire. Difficulties and/or ambiguities with specific items on the questionnaire were addressed and modified.

Reliability estimates using 80 participants (20 students from each grade 6, 8, 10, & 12) were performed using a test-retest method within one-week between testing sessions. Items deemed most important were selected and concordance rates and reliability alphas were calculated to determine the agreement between sessions 1 and 2.

Results

Overall, a fairly high concordance rate was found for most items, ranging from 38.4% to 97.3%, with a mean concordance rate of 81.2% (Table 1). Items with lower concordance rates related to the structural characteristics of lottery tickets. For example, the concordance rate for *the one most important structural characteristic* in choosing a ticket was relatively low (38.4%). This may be due to the fact that participants may perceive many factors to be equally important and were not committed to any particular factor. The ease of purchasing tickets (56.2%) may be due to the fact that during the

interim between testing sessions some students had different experiences in purchasing tickets.

Participants were presented with scanned lottery ticket pairs and were required to rate each ticket and to select their preferred one ticket from the pair (forced choice). Moderate concordance rates were found for ticket selection for pairs 3, 5, 9, 11, 12, 13, and 16. The best explanation for variations is that youth changed their mind as to the ticket they prefer depending on the structural characteristic deemed most important at that time or they were not committed to any one particular ticket. For example, *Lucky Dice* is more colourful, less expensive, and has a smaller prize than *Instant Millions*. Perhaps the change in the choice of ticket from Time I to Time II was based on the price of the ticket, whereas the participants may not have been initially concerned about the price, but rather the larger prize was more appealing. The relatively low concordance rate for pair 9 (*Mouse Maze* vs. *Bingo*) may be due to the widespread appeal for both tickets by youth. Both of these tickets cost the same amount to purchase, had the same prize value, however, *Bingo* is more familiar to youth than is *Mouse Maze*, whereas, *Mouse Maze* is "cuter." It may well be that identifying the structural characteristics of tickets by matching pairs may be somewhat limiting and further groupings are necessary. To further support the above assertions, pair 2 (*Bingo* and *Golden Ticket*) and pair 15 (*Grand Slam* and *Pro-Line*) both have the highest concordance rate. The high concordance rate for pair 2 is likely due to the fact that *Bingo* is a very popular ticket and the cost of *Golden Ticket* is $10, therefore, participants consistently chose *Bingo*. A similar line of reasoning follows for *Grand Slam* vs. *Pro-Line*. While both are sports tickets, one represents a scratchcard and the other requires a perceived skill in selecting winning teams.

Participants clearly had their preferences with most selecting *Grand Slam* given its greater simplicity.

Table 1: Concordance Rates for Selected Items

	Concordance Rate
Q. 1 Plays lottery Draws	89.0 %
Q. 1 Plays scratch tickets	83.6 %
Q. 1 Plays Sports Tickets	94.5 %
Q. 4 Last played lottery	84.9 %
Q. 5 Parents aware of lottery product participation	93.2 %
Q. 6 Afraid of getting caught buying lottery products	97.3 %
Q. 14 Scratch ticket immediately	83.6 %
Q. 15 Return to purchase more tickets if won money	82.2 %
Q. 16 Return to purchase more tickets if lost money	78.1 %
Q. 17 Computer choose lottery numbers	89.0 %
Q. 20 Parent purchases lottery draws	82.2 %
Q. 20 Parent purchases scratch tickets	89.0 %
Q. 20 Parent purchases sports tickets	87.7 %
Q. 22 Bought ticket for a friend	94.5 %
Q. 28 Would you buy a ticket that you do not know how to play	80.8 %
Q. 29 What would you choose prize or money	80.8 %
Q. 30 Do larger tickets have more games	71.2 %
Q. 32 Is there a legal age to purchase tickets	83.6 %
Q. 36 More likely to buy ticket because had seen advertisement	75.3 %
Q. 37 Prefer larger or smaller tickets	68.5 %
Q. 41 Ease of buying tickets illegally	56.2 %
Q. 42 Single most important structural quality	38.4 %
Q. 43 Larger jackpot or longer playtime	83.6 %

Table 2: Concordance Rates for Preferred Lottery Ticket

Pairs	Concordance Rate
Lucky O'Instant & Cash of the Day (pair 1)	68.5 %
Bingo & Golden Ticket (pair 2)	75.3 %
Lucky Dice & Instant Millions (pair 3)	57.5 %
Battleship & Bingo (pair 4)	68.5 %
Red Hot Cash & Instant Millions (pair 5)	54.8 %
Cash for Life & Millennium (pair 6)	68.5 %
Mouse Maze & Viva Las Vegas (pair 7)	67.1 %
Jokers Wild & Mini Monopoly (pair 8)	67.1 %
Mouse Maze & Bingo (pair 9)	65.8 %
Lucky O'Instant & Grand Slam (pair 10)	68.5 %
Bingo Express & Football Fever (pair 11)	65.8 %
Holiday Greetings & Doubling Red 7's (pair 12)	57.5 %
Crossword & Viva Las Vegas (pair 13)	52.1 %
Lotto 6/49 & Monopoly (pair 14)	68.5 %
Grand Slam & Pro-Line (pair 15)	74.0 %
Red Hot Cash & Bingo Express (pair 16)	65.8 %

CHAPTER 5

PHASE III: COMMUNITY SAMPLE

Participants

Participants included 1,072 adolescents (521males, females) from grade 6 through to grade12 (age range10-19 years-old, mean age of 14). The majority (96.3%) of the sample was under 18 years of age therefore, it is illegal for them to participate in lottery activities. Only 6.7% of those participants that were legally allowed to purchase/play lottery products reported doing so.

Approval was requested and obtained from seven school boards, with 9 high schools and 20 elementary schools agreeing to participate. These school boards were selected based upon their willingness to participate and represent a variety of regions from Ontario (see Appendix A). When school board approval was granted, individual schools were approached with a detailed proposal of the study. Schools were located in both rural and urban areas, and participants came from a variety of socio-economic and cultural backgrounds. The distribution of the sample with respect to grade and gender is provided in Table 3.

Table 3: Sample Distribution by Gender and Grade Level

Gender	**Sample Distribution N=1072**
Male (N = 521)	48.6 %
Female (N = 551)	51.4 %
Grade Levels	
Grade 6/7 (N = 224) (M age = 11.29)	20.9 %
Grade 8/9 (N = 338) (M age = 13.14)	31.5 %
Grade 10/11 (N = 307) (M age = 15.20)	28.6 %
Grade 12 (N = 203) (M age = 17.15)	18.9 %

Instruments:

Gambling Activities Questionnaire (GAQ) (Gupta & Derevensky, 1996). The GAQ is designed to assess four general domains related to gambling behaviours: *Descriptive information* including prevalence, types of activities, frequency of gambling, amount wagered, social factors; *cognitive perceptions* of the amount of skill and luck involved in various gambling and non-gambling activities (using a 7 point Likert scale); *familial gambling* such as parental gambling behaviour; and *comorbidity* with other addictive and delinquent behaviours. Questions within each section domain are discrete, analyzed individually, and no cumulative scores are calculated. For this study a modified version of the GAQ was used and only the descriptive information is reported. The questions were incorporated into the primary instrument that can be found in Appendix D.

DSM-IV-MR-J Revised (Fisher, 2000). This 12-item, 9-category instrument is a screen for pathological gambling during adolescence. It was modeled after the DSM-IV (APA, 1994) criteria for diagnosis of adult pathological gambling, and an earlier version, DSM-IV-J (Fisher, 1992) has been used by several researchers and has been found to be the most conservative adolescent measure available of pathological gambling (Derevensky & Gupta, 1996, 2000; Gupta & Derevensky, 1998a, 1998b; Marget, Gupta, & Derevensky, 1999; Powell, Hardoon, & Derevensky, 1999; Volberg, 1998). The revised DSM-IV-J, the DSM-IV-MR-J (MR = multiple response, J = juvenile), was developed for use with adolescents that have gambled during the past year. To compensate for the loss of opportunity for probing, most of the questions in the revised instrument have been given four response options; "never," "once or twice,"

"sometimes," or "often." Each item endorsed is given a score of 1, with a total score of 4/9 or greater being indicative of severe gambling problems. The DSM-MR-IV-J assesses a number of important variables related to pathological gambling; progression and preoccupation, tolerance, withdrawal and loss of control, escape, chasing, lies and deception, illegal activities and family/school disruption.

Principal factor components analyses revealed that the scale is represented primarily by one general factor accounting for 33.3% of the variance. A second Principal component factor explains a further 11% of the variance. The first factor shows positive correlations with the psychological states known to be associated with problem gambling and appears to be measuring the negative psychological dimensions including preoccupation, tolerance, loss of control, escape and chasing loses. The second factor is correlated with withdrawal symptoms experienced when trying to cut down on gambling and the antisocial/illegal behaviours associated with juvenile problem gambling including telling lies about the extent of gambling involvement, committing antisocial or illegal acts because of gambling (using school dinner money and stealing), arguing with family or friends because of gambling, and truancy from school to gamble. Factor 2 draws attention to the negative social consequences of juvenile problem gambling. Internal consistency reliability for this scale is acceptable, with Cronbach's alpha being = 0.75 (though slightly lower than .78 for the original DSM-IV-J screen).

Measuring Adolescent Lottery Ticket Participation and Structural Characteristics (Felsher, Derevensky, & Gupta, 2001). Focus group testing (Phase 1) was conducted to determine playing behaviour, salient characteristics of lottery products, and differential patterns of playing behaviour based upon age and gender. Using this

information, a 140-item instrument was developed specifically for this study identifying important playing behaviour, patterns, amount of money spent on lottery products, with whom products are purchased, advertising, perceived skill and luck in gambling activities, perception of different gambling activities, and desirability of lottery products based upon their structural characteristics. This questionnaire differentiated between machine lottery draws, scratchcards, and sports tickets to determine if developmental and gender differences exist depending on the different types of widely used lottery products (See Appendix D). More specifically, the questionnaire ascertained *age and rate of lottery playing behaviour* (10 questions), *money spent on lottery products* (9 questions), *impulse purchases and ease of purchasing lottery products* (6 questions), *parental knowledge and attitudes* (10 questions), *reasons for lottery play* (2 questions), *lottery ticket playing behaviour* (3 questions), *knowledge of gambling laws* (4 questions), *advertising* (5 questions), *perceptions of skill and luck* (7 questions), *youth perceptions regarding gambling activities and structural characteristics* (20 questions), *structural characteristics based upon lottery pairs* (64 questions presented in 16 different tickets pairs with each ticket pair having 4 separate questions). This booklet contained a variety of lottery tickets from North America that were selected on the basis of their structural characteristics (e.g., cost, title, type of game, number of activities, type or amount of prize, colour and pictures). These selected tickets from different states were scanned in colour and reproduced to appear as realistic as possible. Students were asked to rate each ticket in the pair (7-point Likert scale) on its appeal and were forced to choose only one ticket from the pair according to their preference. Students were then asked to indicate the single most important reason they selected one ticket over the other based on

predetermined structural characteristics. The questionnaire and accompanying booklet can be found in Appendix D.

Procedure

Consent forms and a letter describing the purpose of the study were distributed to parents via the participating schools after school board approval. Informed consent was obtained from parents of all children prior to their participation in the study. Students who did not wish to participate, or those whose parents did not authorize their child's participation, did not complete the questionnaires. The measures were group administered to participants in classrooms and/or school cafeteria by several, trained research assistants. Groups ranged from 10-250 students depending on where the test administration took place (e.g., a classroom vs. school cafeteria). The number of research assistants during administration varied according to the group size (ranging from 1-4). Participants completed the questionnaire individually and were instructed that gambling is defined as an activity that involves an element of risk where money could be won or lost . Students were informed that all responses are anonymous and confidential and that their participation was voluntary. Research assistants were present at all times to answer any questions the participants may have. Participants required approximately 45 minutes to complete the instrument.

RESULTS: GENDER & DEVELOPMENTAL DIFFERENCES

Prevalence

Of the total adolescent sample, 74.0% of adolescents reported having gambled during the past 12 months with 21.2% having gambled at least once per week. Of those participants who reported gambling once a week or more, significantly more males (31.0%) reported playing than females (11.7%). Based upon gambling behaviour and the DSM-IV-MR-J criteria, 2.8% of youth met the criteria for probable pathological gambling (scores of ≥ 4), 6.8% of the sample was at-risk for pathological gambling (scores of 2-3), and 65.2% were considered to be social gamblers (scores of 0-1). Males were found to gamble more frequently than females and experienced more gambling-related problems. A greater number of males were identified as probable pathological gamblers (4.7%) and at-risk for pathological gambling (10.7%) than females (1.0% and 3.7% respectively) (this information is presented in greater detail in the next section where gambling severity differences are discussed). Frequent gambling behaviour (once a week or more) was found to be relatively consistent across grade levels.

Table 4: Gambling Participation Rates

Gender	Never	Less than once a week	Once a week or more
Male	22.4 %	46.6 %	31.0 %
Female	31.3 %	57.1 %	11.7 %
Grade Level			
Grade 6/7	33.0 %	45.5 %	21.6 %
Grade 8/9	27.6 %	52.2 %	20.2 %
Grade 10/11	22.9 %	55.8 %	21.3 %
Grade 12	25.1 %	52.8 %	22.1 %
Gambling Severity			
Non-Gambler	100 %	0.0 %	0.0 %
Social Gambler	0.0 %	77.4 %	22.6 %
At-Risk Gambler	0.0 %	35.3 %	64.7 %
Probable Pathological Gambler	0.0 %	7.1 %	92.9 %
Total	26.9 %	51. 9 %	21. 2 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥ 4

Participation in Gambling Activities During the Past 12 Months

Rates of participation in a variety of gambling activities during the past 12 months are found in Table 5. Of those adolescents that reported gambling *for money* (combining regular and occasional playing), 44.4% reported playing cards, 40.3% purchased scratchcards/lotto tickets, 30.7% played bingo, 27.7% wagered on games of skill, 24.3% wagered on sports, 14.8% played videos or video poker, 13.0% purchased sports lottery tickets, and 10.2% reported playing slots. If one adds the purchasing of lottery draws and scratchcards with sports lottery tickets, although not mutually exclusive, adolescent participation in the lottery appears to be the most popular form of gambling activity.

Significant differences in gambling activities and rates of participation were found between males and females for all activities; card playing (51.8% vs. 37.4%) (χ^2 (466)=16.73, $p<.001$), wagering on sporting events (36.4% vs. 12.8%) (χ^2 (256)=8.26, $p<.004$), purchasing sports lottery tickets (22.4% vs. 4.1%) (χ^2 (137)=7.03, $p<.008$), purchasing draws/scratchcards (42.9% vs. 37.7%) (χ^2 (425)=8.62, $p<.003$), video games/poker (22.2% vs. 8.0%) (χ^2 (156)=9.69, $p<.002$), bingo (28.2% vs. 33.0%) (χ^2 (322)=9.26, $p<.002$), slot machine playing (11.9% vs. 8.5%) (χ^2 (106)=5.61, $p<.018$) and betting on games of skill (40.4% vs. 15.7%) (χ^2 (291)=8.24, $p<.004$). The most frequently engaged in gambling activity was card playing for males and lottery draw/scratchcards for females. With the exception of bingo, males reported greater *occasional* and *regular* participation than females in all activities. In particular, males reported a greater preference for wagering on sporting events and playing sports lotteries than females (see Table 5).

Table 5: Participation in Various Gambling Activities During the Past Year by Gender

		Gambling Activities								
		Cards**	Wager sports*	Sports lottery	Draws/ scratch*	VG/ Poker	Bingo*	Slots*	Games of skill*	Other
Male	Never	48.2%	63.6%	77.6 %	57.1 %	77.8%	71.8 %	88.1 %	59.6 %	80.9 %
	Occasional	37.9 %	24.5 %	15.2 %	34.9 %	16.1 %	22.5 %	8.3 %	29.3 %	11.8 %
	Regular	13.9%	11.9 %	7.2 %	8.0 %	6.1 %	5.7 %	3.6 %	11.1 %	7.3 %
Female	Never	62.6%	87.2 %	95.9 %	62.2 %	92.0 %	67.0 %	91.4 %	84.4 %	93.0 %
	Occasional	33.1 %	10.9 %	3.9 %	34.4 %	7.6 %	30.2 %	7.6 %	13.8 %	5.2 %
	Regular	4.3 %	1.9 %	0.2 %	3.3 %	0.4 %	2.8 %	0.9 %	1.9 %	1.7 %
Total	Never	55.6 %	75.7 %	86.9 %	59.8 %	85.1 %	69.3 %	89.9 %	72.3 %	87.0 %
	Occasional	35.4 %	17.6 %	9.4 %	34.7 %	11.7 %	26.5 %	8.0 %	21.3 %	8.5 %
	Regular	9.0 %	6.7 %	3.6 %	5.6 %	3.1 %	4.2 %	2.2 %	6.4 %	4.5 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson Chi-Square analysis.

Significant differences in gambling activities and rates of participation were found by developmental level for purchasing draws/scratchcards (χ^2 (425)=8.48, $p<.037$), and bingo (χ^2 (322)=9.63, $p<.022$) (see Table 6). Playing cards for money increased by developmental level, with 15 year-olds (grades 10/11) reporting the highest rate (48.9%). Most gambling rates increased with the age of the participants. This finding is not surprising and likely increased because of easier access to gambling venues, increased risk-taking associated with their developmental level, and access to more money. Generally, younger children (grades 6/7) preferred playing cards (41.7%), bingo (40.2%) and lottery tickets (36.2%). Adolescents in grade 8/9 had a preference for card playing (41.4%), lottery (34.3%) and bingo (29.8%), those in grades 10/11 preferring cards (48.9%), lottery (41.8%), and games of skill (32.7%), with 12th grade students preferring lottery tickets (52.3%), cards (44.4%), and games of skill (30.3%). If sports wagers (non-lottery) and the playing of lottery sports ticket are combined, it can be seen that sports betting is quite prevalent among adolescents.

Table 6: Participation in Various Gambling Activities During the Past Year by Developmental Level

		Gambling Activities								
		Cards	Wager sports	Sports lottery	Draw/ scratch *	VG/ poker	Bingo*	Slots	Games of skill	Other
Grade 6/7	Never	58.4 %	85.5 %	91.7 %	63.8 %	82.2 %	60.0 %	91.7 %	78.9 %	87.9 %
	Occasional	31.7 %	10.0 %	6.4 %	28.1 %	13.2 %	31.8 %	6.0 %	15.1 %	7.5 %
	Regular	10.0 %	4.5 %	1.8 %	8.1 %	4.6 %	8.2 %	2.3 %	6.0 %	4.5 %
Grade 8/9	Never	58.5 %	76.7 %	89.7 %	65.7 %	80.3 %	70.2 %	91.5 %	74.0 %	84.0 %
	Occasional	32.3 %	18.2 %	7.0 %	29.8 %	16.4 %	24.9 %	6.4 %	21.8 %	11.8 %
	Regular	9.1 %	5.2 %	3.0 %	4.5 %	3.3 %	4.9 %	2.1 %	4.2 %	4.2 %
Grade 10/11	Never	51.2 %	69.4 %	82.8 %	58.3 %	88.4 %	72.8 %	89.3 %	67.3 %	87.6 %
	Occasional	40.6 %	21.1 %	12.3 %	35.8 %	9.3 %	24.5 %	8.7 %	24.1 %	7.2 %
	Regular	8.3 %	9.5 %	5.0 %	6.0 %	2.3 %	2.6 %	2.0 %	8.6 %	5.2 %
Grade 12	Never	54.5 %	72.9 %	83.4 %	47.8 %	91.4 %	72.7 %	85.8 %	69.7 %	90.1 %
	Occasional	36.9 %	19.6 %	12.6 %	48.3 %	6.1 %	26.3 %	11.7 %	23.2 %	5.8 %
	Regular	8.6 %	7.5 %	4.0 %	4.0 %	2.5 %	1.0 %	2.5 %	7.1 %	4.1 %
Total	Never	55.6 %	75.7 %	86.9 %	59.8 %	85.1 %	69.3 %	89.9 %	72.3 %	87.0 %
	Occasional	35.4 %	17.6 %	9.4 %	34.7 %	11.7 %	26.5 %	8.0 %	21.3 %	8.5 %
	Regular	9.0 %	6.7 %	3.6 %	5.6 %	3.1 %	4.2 %	2.2 %	6.4 %	4.5 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson Chi-Square analysis.

Lottery Product Participation

To investigate the frequency and type of lottery products used, participants were asked if they had ever played lottery draws, scratchcards, and sports tickets. Lottery products were examined independently to examine the type of products youth prefer and their rate of participation. Categories were regrouped based upon playing behaviour are presented in Table 7. Overall, participants reported playing scratchcards more frequently (54.2%) compared to lottery draws (22.4%) and sports tickets (14.8%). With respect to regular use (once a week or more), scratchcards were again the most popular (2.7%), followed by sports tickets (2.3%) and lottery draws (1.4%). For more detailed information see Table B1, Appendix B.

Table 7: Participation in Various Lottery Products by Gender

		Lottery Product Participation		
		Male	Female	Total
Draws** (N = 1065)	Never	72.1 %	82.7 %	77.6 %
	Occasional	25.6 %	16.8 %	21.0 %
	Regular	2.3 %	0.5 %	1.4 %
Scratch (N = 1070)	Never	43.3 %	48.2 %	45.8 %
	Occasional	52.9 %	50.2 %	51.5 %
	Regular	3.8 %	1.6 %	2.7 %
Sports** (N = 1066)	Never	76.6 %	93.2 %	85.2 %
	Occasional	18.6 %	6.8 %	12.5 %
	Regular	4.8 %	0.0 %	2.3 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
**Statistically significant ($p<.01$) as tested by Pearson Chi-Square analysis.

Of those participants who indicated playing lottery products, significant gender differences were noted for lottery draws (χ^2 (1,065)=16.91, $p<.001$) and sports tickets (χ^2 (1,066)=58.17, $p<.001$). As can be seen in Table 7, males reported regular (weekly and daily) participation with lottery draws (2.3%) (χ^2 (1,065)=6.03 $p<.014$), scratchcards (3.8%) (χ^2 (1,065)=4.95, $p<.026$), and sports tickets (4.8%) (χ^2 (1,065)=27.08, $p<.001$) significantly more than females (.5%, 1.6%, and 0% respectively). For more detailed information see Table B2, Appendix B.

Developmentally, statistically significant differences were found among adolescents for sports lottery participation (χ^2 (1,066)=9.07, $p<.028$). Detailed developmental information is presented in Table 8. For more detailed information see Table B3, Appendix B.

Table 8: Participation in Lottery Products by Developmental Level

		Lottery Product Participation				
		Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Draws (N = 1065)	Never	83.3 %	76.1 %	76.1 %	75.1 %	77.6 %
	Occasional	15.8 %	22.1 %	21.9 %	29.4 %	21.0%
	Regular	0.9 %	1.8 %	2.0 %	0.5 %	1.4 %
Scratch (N = 1070)	Never	46.2 %	42.9 %	49.3 %	44.8 %	45.8 %
	Occasional	52.0 %	55.3 %	46.5 %	52.2 %	51.5%
	Regular	1.8 %	1.8 %	4.2 %	3.0 %	2.7 %
Sports* (N = 1066)	Never	91.0 %	85.5 %	82.0 %	83.1 %	85.2 %
	Occasional	7.6 %	12.1 %	15.4 %	13.9 %	12.5%
	Regular	1.4 %	2.4 %	2.6 %	3.0 %	2.3 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson Chi-Square analysis.

Recency of Lottery Product Participation/Purchases

Self-reports indicated that 16.8% of adolescents purchased or played a lottery product within the past week, 38.9% within the past month, and 44.3% reported playing/purchasing the lottery more than six months ago. Of those who gamble on the lottery, males were more likely to have purchased or played a lottery product within the past week than females (21.1% vs. 12.2% respectively). Females were more likely to report their most recent play during the past month or more than 6 months ago. Older participants (grades 8-12) reported more often playing lottery products during the past week and past month than younger participants (Grades 6-7).

Lottery Product Participation and Purchases

Age of Onset

The mean age of onset for the entire sample for *playing* lottery draws is 10.69 (SD = 3.22), mean age for scratchcard tickets is 9.86 (SD = 3.16), and mean age for sports tickets is 11.78 (SD = 2.91). The mean age of onset for participants who had indicated *purchasing* lottery products was 12.73 (SD = 3.05) for lottery draws, 12.12 (SD = 3.37) for scratch tickets, and 12.74 (SD = 3.15) for sports tickets. An important distinction is

made between playing and purchasing tickets. As can be seen in Table 9, children are playing the lottery though tickets purchased for them at an earlier age than when they begin purchasing their own tickets. Although no statistically significant gender differences were noted for age of onset, males (M = 11.90, SD = 3.54) reported purchasing scratchcard tickets at a slightly younger mean age than females (M = 12.50, SD = 3.09) (Table 9).

Significant developmental differences were found for the age at which participants reported first *playing* lottery draws (F (230) = 31.25, $p<.001$), scratchcards (F (551) = 66.13, $p<.001$), and sports tickets (F (156) = 34.92, $p<.001$). In addition, significant developmental differences were found for the age at which participants reported they first *purchased* lottery draws (F (119) = 51.64, $p<.001$), scratchcards (F (266) = 109.26, $p<.001$), and sports tickets (F (87) = 109.26, $p<.001$). As participants increase in age their reported age of onset for lottery participation and purchases increases, specifically for scratchcard tickets and sports lotteries. The youngest participants in the sample (grades 6-9) yielded the earliest mean ages of participation and purchasing of lottery products. While this may simply be an artifact (since the children who will start at later ages have not yet been factored into the average), it is still clear that age of onset is considerably young (see Table 9).

Table 9: Mean Ages of Onset for Playing and Purchasing Lottery Products by Developmental Level

	Mean age at which first played					
	Draws**		**Scratchcards****		**Sports****	
N = 940	M	SD	M	SD	M	SD
Grade 6/7 (N = 164)	8.48	1.92	7.95	2.16	9.63	1.92
Grade 8/9 (N = 313)	9.73	2.42	9.24	2.25	10.25	2.05
Grade 10/11 (N = 274)	10.70	2.73	9.85	2.98	12.09	2.40
Grade 12 (N = 189)	13.79	3.55	12.88	3.45	14.91	2.53
Total	10.69	3.22	9.86	3.16	11.78	2.91

	Mean age at which first purchased					
	Draws**		Scratch**		Sports**	
N = 475	M	SD	M	SD	M	SD
Grade 6/7 (N = 45)	10.50	1.29	9.03	1.88	9.87	1.89
Grade 8/9 (N = 153)	10.45	2.18	10.28	2.10	9.71	1.88
Grade 10/11 (N = 135)	12.08	2.38	11.84	2.70	13.10	2.20
Grade 12 (N = 142)	15.90	1.45	15.82	2.16	16.00	1.41
Total	12.73	3.05	12.12	3.37	12.74	3.15

**Developmental differences statistically significant (p<.01).

Reasons for Initiation and Maintenance of Lottery Play

The reasons underlying adolescent lottery playing are presented in Table 10. Overall, participants reported beginning to play lottery products for the following reasons: to win money (64.5%), because their parent's play (47.7%), for enjoyment (37.5%), excitement (30.7%), and curiosity (28.3%). Participants reported similar reasons for maintaining their playing behaviour (Table 11); to win money (66.3%), for enjoyment (36.7%), because their parent's play (31.7%), and for excitement (30.0%). Money, parental participation in lottery activities, and excitement are the predominant reasons for which adolescents begin and continue to purchase and play the lottery.

The reported reasons for initiation into lottery play revealed significant gender differences concerning parent's play (χ^2 (600)=17.73, p<.001), boredom (χ^2 (600)=8.24, p<.004), and to win money (χ^2 (600) = 6.60, p<.010). As can be seen in Table 11, females report beginning to play primarily because their parents play (56.6%), for curiosity (31.4%), and as a way of minimizing boredom (24.5%). Males indicated playing as a way to win money more than females (69.4% vs. 59.3%). Gender differences were noted for reasons of maintenance of lottery participation with respect to parents play (χ^2 (597)=12.64, p<. 001) and winning money (χ^2 (597)=6.19, p<.013). A larger percentage of females (20.0%) compared to males (14.3%) indicated engaging in lottery play because of parental playing behaviour. Conversely, a greater percentage of males (71.0%)

reported continuing to play for money compared to females (61.4%). It appears that for females, parental participation in lottery products is an important factor in the initiation and continuation lottery play, while money appears to be the primary motivation for males.

Table 10: Reasons for Initiation and Maintenance of Lottery Playing Behaviour by Gender

		Male	Female	Total
Reasons began playing lottery (N = 600)	Parents play**	39.4 %	56.6 %	47.7 %
	Friends Play	9.7 %	10.0 %	9.8 %
	Impress friends	1.0 %	0.7 %	0.8 %
	Boredom*	15.2 %	24.5 %	19.7 %
	Challenge	17.1 %	13.8 %	15.5 %
	Win $*	69.4 %	59.3 %	64.5 %
	Enjoyment	36.1 %	39.0 %	37.5 %
	Excitement	31.6 %	29.7 %	30.7 %
	Curiosity	25.5 %	31.4 %	28.3 %
Reasons continue playing lottery (N = 597)	Parents play**	14.3%	20.0 %	31.7 %
	Friends Play	17.9 %	16.9 %	6.0 %
	Impress friends	0.7 %	0.0 %	0.3 %
	Boredom	14.3 %	20.0 %	17.1 %
	Challenge	17.9 %	16.9 %	17.4 %
	Win $*	71.0 %	61.4 %	66.3 %
	Enjoyment	33.6 %	40.0 %	36.7 %
	Excitement	33.2 %	26.6 %	30.0 %
	Curiosity	15.3 %	17.3 %	16.3 %

*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.
**Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.

Significant developmental differences (Table 11) were found with respect to the initiation of lottery activities for the following reasons: for the challenge (χ^2 (600) =16.45, $p<.001$) and to win money (χ^2 (600) =14.86, $p<.002$). Youth in grades 6-7 reported beginning gambling activities as a challenge (27.3%) more than older participants. Older adolescents, those in grade 12, reported beginning to play lottery activities because of boredom (22.9%) and curiosity (31.4%). Reported initiation in lottery activities to win money increased with grade level.

Furthermore, developmental differences were noted for the maintenance of lottery participation for the following reasons: parent's play (χ^2 (597)=18.03, p<.001), for the challenge (χ^2 (597)=18.13, p<.001), and to win money (χ^2 (597)=7.96, p<.047) (see Table 11). Continuation of lottery participation for the challenge it presents and because of parents playing behaviour decreased as grade levels increased, whereas the importance of winning money increased with participants' grade level. Younger participants (grades 6-9) were likely to report that they continue to play because of parental playing behaviour. Parental participation appears to be a more important influence for younger adolescents, whereas winning money is the primary motivation to play amongst the older adolescents.

Table 11: Reasons for Initiation and Maintenance of Lottery Playing Behaviour by Developmental Level

		Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Reasons began playing lottery (N = 600)	Parents play	52.1 %	51.8 %	39.6 %	47.5 %	47.7 %
	Friends Play	9.1 %	6.6 %	11.6 %	13.6 %	9.8 %
	Impress friends	2.5 %	0.5 %	0 %	0.8 %	0.8 %
	Boredom	17.4 %	19.3 %	10.9 %	22.9 %	19.7 %
	Challenge**	27.3 %	12.2 %	14.0 %	11.0 %	15.5 %
	Win $*	50.4 %	65.5 %	72.0 %	66.9 %	64.5 %
	Enjoyment	42.1 %	34.5 %	40.2 %	33.9 %	37.5 %
	Excitement	38.8 %	25.9 %	35.4 %	23.7 %	30.7 %
	Curiosity	28.1 %	25.9 %	29.3 %	31.4 %	28.3 %
Reasons continue playing lottery (N = 597)	Parents play**	39.8 %	40.4 %	22.7 %	21.2 %	31.7 %
	Friends Play	8.5 %	5.1 %	4.3 %	7.6 %	6.0 %
	Impress friends	0.8 %	0 %	0.6 %	0 %	0.3 %
	Boredom	17.8 %	17.7 %	14.1 %	19.5 %	17.1 %
	Challenge**	30.5 %	14.6 %	15.3 %	11.9 %	17.4 %
	Win $*	56.8 %	65.2 %	71.8 %	70.3 %	66.3 %
	Enjoyment	41.5 %	38.4 %	36.2 %	29.7 %	36.7 %
	Excitement	36.4 %	27.4 %	35.0 %	21.2 %	30.0 %
	Curiosity	18.6 %	16.8 %	17.2 %	11.9 %	16.3 %

*Statistically significant (p<.05) as tested by Pearson chi-square analysis.
**Statistically significant (p<.01) as tested by Pearson chi-square analysis.

Knowledge and Beliefs Regarding Legal Age Restrictions for the Lottery

Overall, a large percentage of youth do not perceive scratchcard tickets (30.9%), lottery draws (20.3%), and bingo (41.9%) to be a form of gambling. For more detailed

information on participants' perceptions of what constitutes a gambling activity, see Tables B4 and B5, Appendix B.

In order to ascertain adolescent's knowledge of current laws pertaining to lottery ticket purchases, participants were asked whether or not there was a legal age to purchase lottery tickets, and if so, to indicate the age. Overall, the majority of participants (90.3%) reported the mean age to be 18.08 (SD = 1.04). Knowledge of the legal age to purchase lottery products varied significantly across grade level (χ^2 (1053)= 27.46, p<.001) with older participants being more aware of legal restrictions. The grade 6/7 students were the least informed about the legal age for ticket purchasing (Table 12). Although, the majority of participants are aware that there is a legal age restriction to purchase lottery products, only 66.2% of youth agreed with the need for an age restriction. No significant developmental differences were found for the belief that there should be an age restriction to purchase tickets. However, of those that agreed that there should be an age restriction, the reported mean recommended age of restriction increased as children got older (although the average recommended age is still below the current legal age requirement).

Table 12: Awareness and Beliefs Regarding Legal Age Restrictions to Purchase Lottery Tickets by Developmental Level

	Grade 6/7		**Grade 8/9**		**Grade 10/11**		**Grade 12**		**Total**	
Awareness of current legal age	82.2 %		89.5 %		93.4 %		96.0 %		90.3 %	
*Should be an age restriction***	66.8 %		64.2 %		66.4 %		68.3 %		66.2 %	
	M	SD	M	SD	M	SD	M	SD	M	SD
Current legal age	17.70	1.39	18.10	0.79	18.30	1.16	18.10	0.64	18.08	1.04
Recommended age	16.10	3.34	16.60	2.59	17.40	4.94	17.90	3.95	16.99	3.84

**Statistically significant at p<. 01 as tested by Pearson Chi-Square

With respect to gender, significant differences were found (χ^2 (1058)=11.78, p<.001) with females (71.0%) endorsing the need for a legal age restriction more than males (61.0%).

Lottery Ticket Purchases

The majority (64.7%) of adolescents reported that in spite of legal age restrictions most found it easy to purchase tickets from the local convenience/corner store. No meaningful gender differences were apparent. However, significant developmental differences were found between adolescents in their reported ease of under-age purchases (χ^2 (536)=29.53, p<.001). As one would expect, a linear trend was noted, with those in grades 10 through 12 reporting that they find it less difficult to purchase tickets than those in grades 6 and 7. Even though it becomes easier to purchase tickets for older adolescents, more than half (55.3%) of those in grades 6 and 7 reported ease in purchasing lottery tickets as well (Table 13).

Table 13: Ease of Purchasing Lottery Products

N = 536	Ease with which underage youth purchase lottery tickets	
Gender	Easy	Difficult
Male	66.0 %	34.0 %
Female	63.3 %	36.7 %
Grade Level		
Grade 6/7	55.3 %	44.7 %
Grade 8/9	55.3 %	44.7 %
Grade 10/11	63.8 %	36.3 %
Grade 12	83.3 %	16.7 %
Total	64.7 %	35.3 %

*Statistically significant (p<.05) as tested by Pearson chi-square analysis.

As can be seen in Table 14, 32.9% of youth reported going to the convenience store specifically to purchase lottery tickets with males (35.7%) reporting so more often than females (30.0%). A linear trend was found such that there was an increase in regular trips to the store to specifically purchase lottery tickets, with age. For additional information on lottery purchases by grade and gender see Tables B6 and B7, Appendix B.

Table 14: Participants Who Go to the Convenience Store Specifically to Purchase Lottery Tickets

N = 601	Participants who go to the store specifically to purchase tickets		
Gender	Never	Occasional	Regular
Male	64.3 %	32.5 %	3.2 %
Female	70.0 %	27.9 %	2.1 %
Grade Level			
Grade 6/7	71.1 %	27.2 %	1.7 %
Grade 8/9	72.7 %	24.8 %	2.5 %
Grade 10/11	62.3 %	34.6 %	3.1 %
Grade 12	60.0 %	36.7 %	3.3 %
Total	67.1 %	30.2 %	2.7 %

Occasional: Less than once a week
Regular: Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Borrowing Money and Purchasing Tickets for Friends

To acquire tickets, 7.9% of adolescents (7.7% of males, 8.1% of females) reported borrowing money in the past year to purchase tickets. The number of times money was borrowed increases, as participants get older, ranging between 7.0% for grade 6/7 students to 10.1% for grade 12 students. With respect to purchasing a ticket for a friend, 21.1% of participants reported doing so, with older adolescents being more prone to purchase tickets for friends than younger participants (see Tables B8 and B9, Appendix B for more detailed information).

Gambling Activity Preferences

Participants' Spending Preferences

Participants were asked to indicate how they would spend $5 (e.g., lottery draws, scratchcards, sports lottery, movies, food, videogames). Overall, students indicated they would spend the most money on food (49.5%) followed by movies (28.6%), videogames (13.6%), and lottery tickets (8.3%). With respect to lottery products, those in grades 6 and 7 (11.5%) prefer to spend their money on scratchcard tickets to any other age group and any other lottery product. Those in grades 8 through 12 reported they were willing to

spend their money on sports tickets more than the younger participants. More detailed information can be found in Table B10, Appendix B.

Gambling Activity Preferences

To investigate participants like and/or dislike of a variety of gambling activities, they were required to rate their impressions on a 7-point Likert scale. A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group (severity), gender and grade as fixed variables and how much they like scratchcards, lottery draws, sports betting, video games, slot machines, bingo, and the horse track as dependent variables. A main effect was found for gender, grade, and gambling severity. No significant interaction between gender by grade was found. Multivariate and univariate results are presented in Tables B11 and B12, Appendix B.

Overall, the highest mean ratings for gambling activity preferences was for wagering on videogames ($\underline{M}$ = 4.23, SD = 2.11), scratchcards ($\underline{M}$ = 4.07, SD = 1.91), bingo ($\underline{M}$ = 3.60, SD = 2.03), and card playing ($\underline{M}$ = 2.82, SD = 1.95).

A significant gender effect was found for sports betting ($F(972) = 34.52$, $\underline{p}<.001$), wagering on cards ($F(927) = 11.96$, $\underline{p}<.001$), video games ($F(972) = 7.90$, $\underline{p}<.005$), and bingo ($F(972) = 8.76$, $\underline{p}<.003$). Males reported a stronger preference for most of the activities when compared with females. Specifically, more males reported a preference for cards and sports betting, whereas, females reported a preference for bingo and scratchcards (Table 15).

Table 15: Mean Ratings of Gambling Activities by Gender

N = 1070	Male		Female		Total	
	M	SD	M	SD	M	SD
Scratchcards	3.99	1.98	4.14	4.14	4.07	1.91
Lottery draws	2.77	1.72	2.57	1.42	2.67	1.57
Sports betting**	3.10	2.12	1.80	1.27	2.43	1.85
Cards**	3.31	2.16	2.34	1.59	2.82	1.95
Video games*	4.82	2.15	3.68	1.92	4.23	2.11
Slot machines	2.22	1.68	1.88	1.35	2.05	1.52
Bingo*	3.35	2.07	3.84	1.97	3.60	2.03
Horse track	2.45	1.91	2.07	1.61	2.25	1.77

Based on 7-point Likert scale from *"do not like at all" to "like very much."* Range of scores is 1-7.

*Statistically significant ($p<.05$) as tested by Pearson Chi-Square analysis.

**Statistically significant ($p<.01$) as tested by Pearson Chi-Square analysis.

Developmental increases were found, in general, for many gambling activities (Table 16). It is interesting to note that while linear trends were evident, the oldest adolescents seem to have provided the lowest ratings for many of the gambling activities (the exception being sports wagering). Post-Hoc analyses can be found in Table B13, Appendix B.

Table 16: Mean Ratings of Gambling Activities by Developmental Level

N = 1070	Grade 6/7		Grade 8/9		Grade 10/11		Grade 12		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Scratchcards	3.74	1.95	3.99	1.88	4.35	1.91	4.13	1.87	4.07	1.91
Lottery draws	2.17	1.39	2.59	1.55	2.96	1.58	2.89	1.66	2.67	1.57
Sports betting	1.82	1.44	2.37	1.76	2.83	1.58	2.89	1.92	2.43	1.85
Betting on cards	2.29	1.79	2.70	1.88	3.17	2.04	3.05	1.97	2.82	1.95
Video games	4.50	2.11	4.40	2.11	4.17	2.05	3.78	2.15	4.23	2.11
Slot machines	2.00	1.73	1.78	1.22	2.39	1.60	2.01	1.53	2.05	1.52
Bingo	3.74	1.91	3.53	2.10	3.64	2.02	3.52	2.08	3.60	2.03
Horse track	2.16	1.84	1.87	1.49	2.56	1.83	2.52	1.91	2.25	1.77

Based on 7-point Likert scale from *"do not like at all" to "like very much."* Range of scores is 1-7.

Parental Influences

Parental Knowledge of Adolescent Lottery Use

The previous results suggest that one of the predominant reasons for initiating or continuing lottery play was whether or not a parent was an active participant. To investigate parental knowledge of their children's participation in lottery activities,

adolescents were asked to indicate if they believed their parents are aware that they play and purchase lottery tickets and if they were afraid of getting caught participating in this activity. It is important to note that no parental information was used to corroborate these reports. Nevertheless, of those adolescents who had reported playing any form of lottery, the majority (83.9%) of adolescents (82.7% of males, 85.1% of females) reported that their parents were aware of their lottery playing and 93.9% reported not being afraid of getting caught (94.4% of males, 93.4% of females) (Table 17).

Significant developmental differences were found for perceived parental knowledge of lottery use (χ^2 (560)=9.81 p<.020). Percentages varied by developmental level (Table 17) with participants in grades 6/7 and 10/11 reporting that they believed their parents were the least aware that they participated in lottery games. However, it is important to note that a large percentage of youth report that their parents are aware of their lottery playing behaviour. The participants in grades 6/7 were the most afraid of getting caught playing lottery products (9.9%), as compared to the grade 12 group (2.8%).

Table 17: Parental Awareness of Lottery Activities and Fear of Being Caught

Gender	Parental awareness of lottery play	Afraid of getting caught
Male	82.7 %	5.6 %
Female	85.1 %	6.6 %
Grade level	*	
Grade 6/7	76.7 %	9.9 %
Grade 8/9	88.0 %	6.3 %
Grade 10/11	78.7 %	6.6 %
Grade 12	89.2 %	2.8 %
Total	83.9 %	6.1 %

*Statistically significant (p<.05) as tested by Pearson chi-square analysis.

Perceived Parental Lottery Product Participation

The direct question of whether or not adolescents were aware of their parents' lottery playing behaviour was asked. Categories of perceived participation (no parental corroboration was ascertained) were regrouped to examine whether parents *ever played* the lottery and how *frequently* they played. Overall, adolescents reported parental participation rates of 82.0%, with 26.7% of adolescents reporting that their parents regularly (weekly and daily participation) purchased lottery products. While there was no significant developmental difference in perceptions of parental participation, the frequency at which they perceived their parents to gamble with lottery products differed according to the participants' age groups (χ^2 (1064)=14.78, $p<.002$). There was linear increase, with older adolescents reporting that their parents participated more regularly in lottery activities than younger adolescents. Additional information is provided in Tables B14 and B15, Appendix B.

Parental Purchases of Lottery Products for their Children

Adolescents were explicitly asked to report the frequency at which their parents purchased lottery products for them (Table 18). Of the adolescents who indicated playing lottery products, 38.2% reported that their parents occasionally purchased lottery draws, scratchcards (72.1%), and sports tickets (19.4%) for them. With respect to the type of ticket, significant gender differences were found only for sports tickets (χ^2 (583)=12.93, $p<.001$) with males (24.2%) reporting receiving these tickets from their parents more often than females (14.2%). Although no significant gender differences were found for frequency of parental purchases, males reported receiving all three types of tickets, on a regular basis, more often than females.

Table 18: Parental Purchases of Lottery Products for their Children by Gender

	Parental purchase	Male	Female	Total
Draws (N = 587)	Never	48.8 %	51.1 %	49.9 %
	Occasional	37.3%	39.0%	38.2%
	Regular	13.9%	9.9 %	11.9 %
Scratch (N = 605)	Never	26.1 %	20.3 %	23.3 %
	Occasional	68.4%	96.0%	72.1%
	Regular	5.5%	3.7%	4.6 %
Sports** (N = 583)	Never	70.8 %	83.3 %	76.8 %
	Occasional	24.2%	14.2%	19.4%
	Regular**	5.0%	2.5%	3.8 %

Occasional = less than once a week
Regular = weekly & daily
**Statistically significant ($p<.01$) as tested by Pearson Chi-Square analysis.

Significant developmental differences were found for parental purchases of scratch cards (χ^2 (605)=17.86, $p<.001$) and sports tickets (χ^2 (5836=11.39, $p<.010$). As can be seen in Table 19, participants reported that both occasional and regular scratch ticket purchases by parents decreased with the age of the participants. This is likely due to the fact that older adolescents were perceived to be more capable of purchasing tickets themselves. Additional information concerning parental purchases of lottery tickets is presented in Tables B16, B17 and B18, Appendix B.

Table 19: Parental Purchases of Lottery Products for their Children by Developmental Level

	Parental Purchase	Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Draws (N = 587)	Never	55.8 %	46.3 %	50.9 %	48.2 %	49.9 %
	Occasional	33.4%	41.1%	36.8%	40.4%	38.2%
	Regular	10.8 %	12.6 %	12.3 %	11.4 %	11.9 %
Scratch** (N = 605)	Never	18.7 %	18.7 %	22.0 %	37.9 %	23.3 %
	Occasional	74.8%	75.7%	73.8%	60.4%	72.1%
	Regular	6.5 %	5.6 %	4.2 %	1.7 %	4.6 %
Sports** (N = 583)	Never	83.9 %	76.4 %	68.5 %	82.1 %	76.8 %
	Occasional	12.7%	21.0%	24.7%	16.1%	19.4%
	Regular	3.4 %	2.6 %	6.8 %	1.8 %	3.8 %

Occasional = less than once a week
Regular = weekly & daily
**Statistically significant ($p<.01$) as tested by Pearson Chi-Square analysis.

Lottery Products Received as Gifts

As another way to tap into the social acceptability of lottery playing for underage youth, participants were asked if they had ever received a lottery ticket as a gift, and the occasion for which they received the ticket. For those who reported having participated in lottery activities, 70.1% reported having received a ticket as a gift. They indicated receiving a ticket primarily as a gift for holidays (44.8%) and birthdays (41.8%) and other special occasions (14.4%). Significant gender differences were found for receiving a ticket as a birthday present (χ^2 (596)=4.09, p<.043), with females (45.9%) having received more lottery tickets than males (37.7%).

Significant developmental differences were also noted for having received a ticket as a present (χ^2 (603)=13.93, p<.003). The number of times adolescents reported receiving a ticket as a present and the number of tickets received increased linearly with age (Table 20).

Table 20: Participants Reporting Receiving Lottery Tickets as Gifts by Developmental Level

		Grade 6/7		Grade 8/9		Grade 10/11		Grade 12		Total	
Received ticket as a present* (N = 603)		60.3 %		66.5 %		74.9 %		80.0 %		70.1%	
Occasion	Holiday**	32.5 %		36.2 %		55.7 %		56.6 %		44.8 %	
	Birthday	35.8 %		37.8 %		46.1 %		48.7 %		41.8 %	
	Other	24.2 %		9.7 %		15.6 %		10.6 %		14.4 %	
		M	SD	M	SD	M	SD	M	SD	M	SD
Mean number of tickets received (N= 430)		3.12	3.48	3.36	2.68	4.65	9.05	4.67	4.24	3.97	5.71

*Statistically significant (p<.05) as tested by Pearson chi-square analysis.
***Statistically significant (p<.01) as tested by Pearson chi-square analysis.*

Lottery Advertisements

Exposure Impact

Lottery corporations spend considerable amounts of money advertising their products (in Ontario, $25 million was directly spent advertising their products during the last calendar year). As such, it was believed to be necessary to determine the impact of

advertisements on the purchasing and playing behaviour of underage youth. Adolescents were asked if they had seen any lottery product advertising and whether such advertisements encouraged them to play and/or purchase lottery products.

Overall, the majority of the sample reported having seen lottery advertisements. The medium for which participants reported seeing the most advertisements was TV (90.3%), billboards (68.8%), newspaper (68.2%), and magazines (54.7%). Of those viewing such advertisements 39.0% reported that they would be more likely to purchase a ticket because they had seen the advertisement (Table 21).

With respect to gender, no statistically significant differences were noted between males and females in their susceptibility to such advertisements, however, females (41.5%) tended to report being more influenced than males (36.3%). More detailed information by gender is provided in Table B19, Appendix B.

Developmental differences were found for exposure to TV (χ^2 (1071)=13.31, $p<.004$), and newspaper (χ^2 (1070)=11.33, $p<.010$) advertisements. Examination reveals that more than half of the sample, regardless of age and type of medium, had seen an advertisement for a lottery product (Table 21). Fifteen year-olds (92.5%) (grades 10/11) and17-year-olds (92.1%) (grade 12) reported viewing the most TV lottery commercials, whereas 13-14 year-olds (72.6%) (grades 8/9) reported observing the most newspaper adds for lottery products. Although no significant differences were found, older adolescents were more likely to report they would purchase a ticket due to having seen an advertisement for it (42.9%).

Table 21: Participants' Reported Exposure to Lottery Advertisements by Developmental Level

	Type of media advertising				More likely to buy a ticket due to advertising
N = 1072	TV*	Newspaper*	Magazine	Billboards	
Grade 6/7	83.9 %	59.4 %	54.5 %	61.6 %	38.7 %
Grade 8/9	91.4 %	72.6 %	55.2 %	69.4 %	36.0 %
Grade 10/11	92.5 %	69.1 %	55.4 %	71.2 %	40.0 %
Grade 12	92.1 %	69.5 %	53.2 %	72.1 %	42.9 %
Total	90.3%	68.2%	54.7%	68.8%	39.0%

*Developmental differences statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Impulsivity of Lottery Purchases

The lottery industry is aware that lottery ticket purchases often occur on impulse. To examine this phenomenon, we included only the participants who had reported purchasing lottery tickets and asked them if they are more likely to purchase a ticket because of its visibility and placement on the store counter. Of those who reported purchasing lottery products, the majority (57.4%) reported that they would be more likely to purchase a ticket that is displayed on the store counter. Gender differences were also found (χ^2 (411)=8.10, $p<.004$) with males (65.1%) reporting more than females (51.1%) that they would be more likely to purchase a ticket seen on the counter. Furthermore, developmental differences were found (χ^2 (411)=65.87, $p<.001$). There was a linear increase across developmental levels, with 15-year-olds (75.0%) and 17-year-olds (83.6%) reporting that they would be more willing to purchase a ticket after seeing it on the store counter (Table 22).

Table 22: Effects of Counter Placement of Lottery Tickets in Stores

	Likelihood of purchasing a ticket seen on store counter* (N = 411)	
Gender	More Likely	Less Likely
Male	65.1 %	34.9 %
Female	51.1 %	48.9 %
Grade Level		
Grade 6/7	32.7 %	67.3 %
Grade 8/9	46.1 %	53.9 %
Grade 10/11	75.0 %	25.0 %
Grade 12	83.6 %	16.4 %
Total	57.4 %	42.6 %

To examine impulsivity of lottery ticket playing we asked participants if they scratch tickets immediately after purchase or wait until they get home. Overall, 51.0% of participants who typically purchase scratchcards indicated that they scratch their tickets immediately. No gender differences were found between males and females. Both males (52.1%) and females (49.7%) equally reported they scratch tickets immediately. Significant developmental differences were found (χ^2 (599)=7.570, $p<.056$) with grade 10/11 (60.7%) endorsing scratching tickets immediately more than any grade level.

Table 23: Participants' Scratch Ticket Behaviour: Immediate vs. Delayed

	Scratch ticket playing behaviour	
Gender (N = 394)	Immediately	Wait to get home
Male	52.1 %	47.9 %
Female	49.7 %	50.3 %
Grade Level* (N = 599)		
Grade 6/7	53.8 %	46.2 %
Grade 8/9	46.5 %	53.5 %
Grade 10/11	60.7 %	39.3 %
Grade 12	43.7 %	56.3 %
Total	51.0 %	49.0 %

*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Importance of Familiarity

To investigate the importance of familiarity in lottery ticket choices, participants were asked how often they play/purchase the same lottery ticket. Categories were

regrouped to determine how regularly participants played the same type of game. Of those who reported purchasing lottery products, 26.8% reported regularly playing the same lottery game. Gender differences approached statistical significance (χ^2 (597)=3.60, p<.058) with males more frequently (30.2%) reporting playing the same lottery game than females (23.3%). Furthermore, significant developmental differences were noted (χ^2 (597)=11.69, p<.009) with adolescents in grades 10/11 (30.7%) and those in grade 12 (36.5%) more frequently (weekly and daily) playing the same lottery game than younger participants (Table 24).

Table 24: Familiarity as an Important Factor in Lottery Ticket Selection

N= 597	Play same lottery game		
Gender*	Never	Occasional	Regular
Male	15.1 %	54.7 %	30.2 %
Female	18.5 %	58.2 %	23.3 %
Grade Level*			
Grade 6/7	20.0 %	58.3 %	21.7 %
Grade 8/9	19.6 %	59.3 %	21.1 %
Grade 10/11	15.3 %	54. 0 %	30.7 %
Grade 12	10.4 %	53.1 %	36.5 %
Total	16.8 %	56.4 %	26.8 %

Occasional Use = Less than once per week
Regular Use = Weekly & Daily
*Statistically significant (p<.05) as tested by Pearson chi-square analysis.

To examine if the type of lottery game was more important than the cost of the ticket, participants were asked to report if they would still purchase their favorite lottery ticket even if the price increased. Of those that reported purchasing lottery tickets, the majority (62.8%) reported they would *not* purchase a ticket with an increased price. No significant gender or developmental differences were found, however adolescents in grades 8 though 12 reported that they were more willing to purchase their favorite lottery ticket even if the price increased (likely because they have access to more disposable money).

Knowledge of the Game

Of those adolescents who reported purchasing lottery products, 34.9% reported that they would purchase a ticket they did not know how to play. No gender differences were noted. However, significant developmental differences were found (χ^2 (1052)=35.46 $p<.001$). As participants age increased so did their willingness to purchase a ticket they did not know how to play.

Adolescents in grades 10/11 (15 year olds) (41.3%) and grade 12 (17-year-olds) (46.3%) were more willing to purchase an unknown lottery product than younger participants. It appears that familiarity is more important for participants who are younger, while, excitement and novelty are more important for older adolescents.

Structural Characteristics

Structural Preferences

To examine the importance of structural characteristics, participants were asked if they would select a prize (some form of tangible item) over money, if they have a preference for larger scratchcard tickets, and if a larger jackpot is more important than longer playtime. As can be seen in Table 25, overall, 87.3% chose money over a prize, 62.8% selected a larger scratch ticket, and 66.9% reported a preference for a larger jackpot compared to longer playtime. No gender differences were noted.

Significant developmental differences were found for the preference of money over a prize (χ^2 (1052)=63.59, $p<.001$) and for larger tickets (χ^2 (1000)=30.72, $p<.001$). As can be seen in Table 25, preference for money and for larger scratch tickets linearly increased with grade. Larger tickets cost more money than smaller scratch cards, therefore, it makes sense that older youth in grades 10-12, would prefer larger tickets

because they are more financially accessible to them, offer opportunities for more play value and increased size of prizes. Interestingly, participants in grades 6/7 reported that they preferred a larger jackpot, whereas play value of the ticket became more important as participants got older. Perhaps this is due to the fact that children in grades 6/7 (approximately age 11-12) are less knowledgeable about the odds of winning playing lottery products.

Table 25: Structural Preferences of Lottery Tickets by Developmental Level

	Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Ticket Winnings					
Prize	27.9 %	12.6 %	7.2 %	5.0 %	12.7 %
Money**	72.1 %	87.4 %	92.8 %	95.0 %	87.3 %
Ticket Size					
Larger**	48.0 %	61.1 %	70.0 %	70.5 %	62.8 %
Smaller	52.0 %	38.9 %	30.0 %	29.5 %	37.2 %
Win Ratio					
Larger Jackpot	72.3 %	65.7 %	66.9 %	63.4 %	66.9 %
Play Value	27.7 %	34.3 %	33.1 %	36.6 %	33.1 %

**Developmental differences statistically significant ($p<.01$) as tested by Pearson chi-square analysis

The Most Important Characteristic in Selecting a Ticket

As can be seen in Table 26, in general, adolescents reported prize (30.2%) to be the most important characteristic, followed by knowing how to play the game (25.0%), cost of ticket (20.5%), and type of game (17.0%). Females indicated that prize (23.9%) and ticket cost (30.4%) were more important for males (16.8% and 19.4% respectively), however, more males (38.6%) than females (22.3%) reported that the number of activities on the card was an important feature. The importance of prize and type of game increased with age, however the importance of the number of activities on the card and knowing how to play the game decreased.

Table 26: Single Most Important Characteristic When Selecting a Ticket

N = 1054	Size	Colour	Prize	# of games	Type of game	Cost	Know how to play
Gender							
Male	0.8 %	2.9 %	16.8 %	38.6 %	4.5 %	19.4 %	17.0 %
Female	0.4 %	1.8 %	23.9 %	22.3 %	4.2 %	30.4 %	16.9 %
Grade Level							
Grade 6/7	0.9 %	3.2 %	23.9 %	4.6 %	12.4 %	19.7 %	35.3 %
Grade 8/9	0.9 %	2.1 %	26.4 %	6.3 %	17.4 %	21.6 %	25.2 %
Grade 10/11	0 %	1.7 %	37.0 %	3.3 %	15.5 %	21.5 %	21.1 %
Grade 12	0.5 %	3.0 %	33.0 %	2.5 %	23.5 %	18.0 %	19.5 %
Total	0.6 %	2.4 %	30.2 %	4.4 %	17.0 %	20.5 %	25.0 %

Mean Ratings of Structural Characteristics

To investigate the importance of a variety of structural characteristics in choosing a scratchcard, participants were required to rate these characteristics on a 7-point Likert scale. Qualitative examination of this data revealed that the highest mean rating was for prize (M=4.68, SD=2.07), type of game (M=4.67, SD=1.77), price (M= 4.40, SD=1.72), and number of activities on the card (M= 3.76, SD=1.81). A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group (severity) and grade as fixed variables and the importance of price, colour, type of game, number of games on the scratchcard, name of scratchcard, prize, and size of ticket as dependent variable. A significant main effect for grade level was found (multivariate and univariate analyses can be found in Tables B20 and B21, Appendix B).

In general, males reported higher mean ratings than females for the importance of size, prize, number of games, and cost, whereas females reported higher mean ratings than males for the importance of color, and name/title. It appears that males have a preference for structural characteristics that involve tickets they perceive increase their chances of winning. For example, males prefer larger tickets, which cost more money, but also have more games. These more costly tickets also have a greater perceived chance

of winning a larger prize. Females, on the other hand, appear to be more concerned with the appearance of the ticket (Table 27). However, it is important to note that the mean differences are quite negligible.

Table 27: Mean Ratings of Structural Characteristics by Gender

N = 1070	Male		Female		Total	
	M	SD	M	SD	M	SD
Size	2.30	1.62	1.99	1.41	2.14	1.52
Colour	1.72	1.30	1.88	1.33	1.80	1.32
Prize	4.92	2.08	4.45	2.04	4.68	2.07
# of games	3.90	1.94	3.63	1.67	3.76	1.81
Type of Game	4.66	1.83	4.68	1.70	4.67	1.77
Cost	4.45	1.86	4.37	1.58	4.40	1.72
Name/Title	2.37	1.77	2.42	1.60	2.40	1.68

Based on 7 point Likert scale from "not at all important" to "extremely important"

A main effect of grade was found for cost ($F(981) = 3.05$, $p<.028$), type of game ($F(981) = 3.63$, $p<.013$), number of activities ($F(981) = 3.06$, $p<.027$), and prize ($F(981) = 3.50$, $p<.015$). Table 28 reveals that regardless of the age of the participant, the type of game is reported to be one of the most important features in choosing a ticket. Furthermore, the youngest participants reported that the cost of the ticket is important. However, for the older participants (children in grades 8-12), the most important structural characteristics aside from the type of game, is the prize. Post hoc Scheffe comparisons revealed many significant differences across developmental levels between the items with those in grades 6/7 reporting the lowest mean ratings for all of the structural characteristics (post-hoc results are presented in Table B22, Appendix B).

Table 28: Mean Ratings of Structural Characteristics by Developmental Level

N = 1070	Grade 6/7		Grade 8/9		Grade 10/11		Grade 12		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Size	1.77	1.39	2.23	1.63	2.28	1.52	2.19	1.45	2.14	1.52
Colour	1.54	1.22	1.79	1.37	1.90	1.31	1.98	1.31	1.80	1.32
Prize	3.65	2.19	4.79	2.06	5.17	1.88	4.79	1.92	4.68	2.07
# of games	3.09	1.81	3.76	1.86	4.25	1.67	3.77	1.69	3.76	1.81
Type of Game	4.02	1.85	4.64	1.82	5.11	1.54	4.79	1.69	4.67	1.77
Cost	3.94	1.85	4.45	1.76	4.62	1.59	4.51	1.62	4.40	1.72
Name/Title	2.06	1.58	2.50	1.79	2.48	1.58	2.47	1.70	2.40	1.68

Based on 7 point Likert scale from "not at all important" to "extremely important" Range 1-7.

Ticket Pair Ratings

To investigate the degree to which adolescents liked a variety of the different lottery tickets they were asked to rate each ticket on a 7-point Likert scale. A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group (severity), gender and grade as fixed variables and each of the 32 ticket pairs as dependent variables. Significant main effects were found for gender, grade, and gambling group. Significant two-way and a three-way interactions were found for gender x grade, gender x gambling group, grade x gambling group, and gender x grade x gambling group (multivariate and univariate analyses are presented in Tables B23 and B24, Appendix B).

Generally, the tickets with the highest mean rating in order of preference are as follows: *Bingo, Cash for life, Battleship, Millennium, Mouse Maze, Cross Word, Holiday Greetings*, and *Mini Monopoly*. It makes sense that these tickets were the most preferred given that *Bingo, Cash for Life, Battleship, Crossword,* and *Mini Monopoly* are highly advertised and well-known games, whereas Holiday Greetings and Mouse Maze are colourful theme cards.

Examination of the ticket pair means (Table B25, Appendix B) revealed that males and females rated several tickets differently from one another. Males gave higher ratings to *Battleship, Instant Millions, Grand Slam, Pro-Line, Football Fever,* and

Doubling Red 7s. These tickets emphasize the gambling theme and prize structure, which is important to males. However, females reported higher mean ratings for *Bingo, Red Hot Cash, Lucky O'Instant, Bingo Express,* and *Holiday Greetings*, which are more colourful tickets, are "cuter" (i.e., *Mouse Maze*) and where the emphasis was on the type of game more than the prize structure.

A linear increase in ratings across developmental level was found *for Lucky O'Instant, Bingo, Lucky Dice, Jokers Wild, Lotto 6/49, Grad Slam,* and *Bingo Express*. The youngest participants (grades 6/7) in general reported the lowest mean ratings for all tickets compared to the other groups, whereas, participants in grades 10-12 almost always reported the highest mean ratings, independent of the ticket. Games that mention money, like *Red Hot Cash* or *Instant Millions* increase in popularity, as participants get older due to the emphasis on the prize. Furthermore, sports oriented tickets (i.e., *Pro-Line, Grand Slam*) and *Lotto 6/49* increase with the age of participants. This probably due to the fact that the games appear to be more complex, therefore, younger participants do not rate them as high (see Table B26 and B27, Appendix B for more detailed information).

Choice of Lottery Tickets and Structural Reasons

Participants were presented with lottery tickets pairs and asked to choose one ticket over the other (forced choice paradigm). Overall, the top choice of tickets was *Mini Monopoly* (82%), *Bingo* (78.7%), and *Cash for Life* (71.5%) (Table 28). Given that it was forced choice, *Mini Monopoly*, was likely chosen frequently because participants did not like the ticket that it was paired against (e.g., *Jokers Wild*). Unfortunately, a true-paired comparison technique in which each ticket is paired with every other ticket was impossible as it would have entailed an innumerable number of paired matchings and

time constraints prohibited this type of methodology. *Cash for Life* was reportedly chosen because of the prize, whereas *Bingo* was selected because of the type of game. Generally, the main reason adolescents reported choosing a ticket was due to the prize or the type of game. Significant gender differences were found for pair 1 (*Lucky O'Instant* and *Cash of the Day*) (χ^2 (1045)=15.06, p<.001); pair 3 (*Lucky Dice* and *Instant Millions*) (χ^2 (1031)=4.73, p<.030); Pair 4 (*Battleship* and *Bingo*) (χ^2 (1040)=62.14, p<.001) with males choosing *Battleship* and females choosing *Bingo*; pair 5 (*Red Hot Cash* and *Instant Millions*) (χ^2 (1032)=24.17, p<.001) with males choosing *Instant Millions* and females selecting *Red Hot Cash*; pair 7 (*Mouse Maze* and *Viva Las Vegas*) (χ^2 (1017)=4.68, p<.031); pair 8 (*Jokers Wild* and *Mini Monopoly*) (χ^2 (1023)=6.46), p<.011; pair 10 (*Lucky O'Instant* and *Grand Slam*) (χ^2 (1017)=82.57, p<.001); pair 11 (*Bingo Express* and *Football Fever*) (χ^2 (1016)=127.19, p<.001) with males choosing *Football Fever* and females choosing *Bingo Express*; pair 12 (*Holiday Greetings* and *Doubling Red 7s*) (χ^2 (1011)=35.99, p<.001); pair 13 (*Crossword* and *Viva Las Vegas*) (χ^2 (1017)=5.46, p<.019); pair 14 (*6/49* and *Mini Monopoly*) (χ^2 (1024)=20.57, p<.001) with males choosing Lotto 6/49 and females choosing Mini Monopoly; pair 15 (*Grand Slam* and *Pro-Line*) (χ^2 (1005)=29.51, p<.001) with males desiring *Pro-Line* and females choosing *Grand Slam*; and pair 16 (*Red Hot Cash* and *Bingo Express*) (χ^2 (1014)=5.92, p<.015) with males choosing *Red Hot Cash* and females preferring *Bingo Express*.

Data presented in Table 28 reveals that males preferred tickets that were more sports oriented (i.e., *Pro-Line*), that placed more of an emphasis on the prize (tickets with titles such as *Red Hot Cash*), and resembled casino style games (i.e., *Viva Las Vegas*). On the other hand, females chose tickets that resemble popular/well known board games (i.e.,

Mini Monopoly, *Crossword, Bingo*), and that are colourful and cute (such as *Mouse Maze, Holiday Greetings, Golden Ticket*).

Table 29: Participants' Choices of Lottery Tickets and the Structural Reasons they Selected One Ticket Over Another by Gender

		Male	Female	Total Sample
Pair 1 N = 1045 **				
Lucky O'Instant		61.5 %	72.8 %	67.3%
Cash Day		38.5 %	27.2 %	32.7%
Imp Reason	**1**	Prize = 42.0 %	Prize = 30.1 %	Prize = 35.8%
	2	Type = 22.0 %	Type = 23.2 %	Type = 22.6%
	3	Cost = 11.2 %	Colour = 20.3 %	Colour = 14.5%
Pair 2 N = 1046				
Bingo		80.4 %	77.1 %	78.7 %
Golden Ticket		19.6 %	22.9 %	21.3 %
Imp Reason	**1**	Type = 33.3 %	Type = 34.6 %	Type = 34.0 %
	2	Prize = 26.4 %	Activities = 13.9 %	Prize = 17.8 %
	3	Activities = 12.2 %	Colour = 11.2 %	Activities = 13.1 %
Pair 3 N = 1031*				
Lucky Dice		31.0 %	37.4 %	34.2 %
Instant Million		69.0 %	62.6 %	65.8 %
Imp Reason	**1**	Prize = 47.1 %	Prize = 30.2 %	Prize = 38.3 %
	2	Type = 16.5 %	Type = 21.1 %	Type = 18.9 %
	3	Cost = 11.8 %	Cost = 15.9 %	Cost = 13.9 %
Pair 4 N = 1040**				
Battleship		62.7 %	38.3 %	50.1 %
Bingo		37.3 %	61.7 %	49.9 %
Imp Reason	**1**	Type = 50.2 %	Type = 55.4 %	Type = 52.9 %
	2	Prize = 15.8 %	Activities = 8.3 %	Prize = 11.3 %
	3	Name = 7.8 %	Other = 8.1 %	Activities = 8.9 %
Pair 5 N = 1032**				
Red Hot Cash		39.7 %	55.0 %	47.6 %
Instant millions		60.3 %	45.0 %	52.4 %
Imp Reason	**1**	Prize = 43.9 %	Prize = 24.6 %	Prize= 33.9 %
	2	Type = 16.0 %	Cost = 19.2 %	Type = 16.7 %
	3	Cost = 11.6 %	Type = 17.3 %	Name = 13.8 %
Pair 6 N = 1027				
Cash for Life		74.0 %	69.1 %	71.5 %
Millennium		26.0 %	30.9 %	28.5 %
Imp Reason	**1**	Prize = 52.7 %	Prize = 31.4 %	Prize = 41.7 %
	2	Type = 12.6 %	Type = 17.4 %	Type = 15.1 %
	3	Name = 7.2 %	Colour = 13.3 %	Colour = 9.9 %
Pair 7 N = 1017*				
Mouse maze		56.8 %	63.4 %	60.2%
Viva Las Vegas		43.2 %	36.6 %	39.8%
Imp Reason	**1**	Type = 41.7 %	Type = 35.8 %	Type = 38.7 %
	2	Prize = 16.6 %	Colour = 17.5 %	Colour = 13.9 %
	3	Name = 12.0 %	Name = 13.8 %	Prize = 11.6 %
Pair 8 N = 1023				
Jokers Wild		21.1 %	15.0 %	18.0 %

Mini Monopoly		78.9 %	85.0 %	82.0 %
Imp Reason	**1**	Type = 53.2 %	Type = 60.7 %	Type = 57.1 %
	2	Name = 14.0 %	Name = 14.4 %	Name = 14.2 %
	3	Prize = 12.4 %	Colour = 6.4 %	Prize = 8.3%
Pair 9 N = 1027				
Mouse maze		33.7 %	33.5 %	33.6 %
Bingo		66.3 %	66.5 %	66.4 %
Imp Reason	**1**	Type = 48.4 %	Type = 52.1 %	Type = 50.3 %
	2	Prize = 18.6 %	Colour = 9.3 %	Prize = 11.9 %
	3	Name = 7.5 %	Activities = 8.4 %	Colour = 8.1 %
Pair 10 N = 1017**				
Lucky O'Instant		51.5 %	78.6 %	65.5 %
Grand Slam		48.5 %	21.4 %	34.5 %
Imp Reason	**1**	Type= 37.6 %	Type = 42.6 %	Type = 40.2 %
	2	Prize = 27.5 %	Colour = 17.1 %	Prize = 21.1 %
	3	Name = 11.7 %	Prize = 15.3 %	Colour = 12.5 %
Pair 11 N = 1016**				
Bingo Express		49.6 %	83.0 %	66.7 %
Football fever		50.4 %	17.0 %	33.3 %
Imp Reason	**1**	Type = 53.5 %	Type = 57.9 %	Type = 55.7 %
	2	Prize = 16.7 %	Name = 9.8 %	Prize = 12.4 %
	3	Name = 11.8 %	Colour = 8.7 %	Name = 10.7 %
Pair 12 N = 1011**				
Holiday Greetings		53.5 %	71.7 %	62.9 %
Doubling Red 7s		46.5 %	28.3 %	37.1 %
Imp Reason	**1**	Prize = 30.2 %	Type = 28.4 %	Type = 27.2 %
	2	Type = 26.0 %	Colour = 26.9 %	Prize = 22.6 %
	3	Colour = 13.3 %	Prize = 15.4 %	Colour = 20.4 %
Pair 13 N = 1017*				
Crossword		55.9 %	63.1 %	59.7 %
Viva Las Vegas		44.1 %	36.9 %	40.3 %
Imp Reason	**1**	Type = 52.7 %	Type = 65.2 %	Type = 59.2 %
	2	Prize = 17.0 %	Activities = 8.8 %	Prize = 10.3 %
	3	Name = 7.9 %	Colour = 7.5 %	Activities = 8.3 %
Pair 14 N = 1024**				
6/49		51.5 %	37.4 %	44.2 %
Mini Monopoly		48.5 %	62.6 %	55.8 %
Imp Reason	**1**	Prize = 36.8 %	Type = 43.2 %	Type = 36.3 %
	2	Type = 28.9 %	Prize = 16.7 %	Prize = 26.3 %
	3	Name/Other = 6.7 %	Choose #'s = 10.7 %	Choose #'s = 8.7 %
Pair 15 N = 1005**				
Grand Slam		43.7 %	60.8 %	52.4 %
Pro-Line		56.3 %	39.2 %	47.6 %
Imp Reason	**1**	Type = 34.9 %	Type = 37.4 %	Type = 36.2 %
	2	Choose Team = 19.0 %	Choose Team =14.5 %	Choose Team = 16.6 %
	3	Prize = 15.4 %	Other = 12.8 %	Other = 10.2 %
Pair 16 N = 1014*				
Red Hot Cash		53.1 %	45.4 %	49.1 %
Bingo Express		46.9 %	54.6 %	50.9 %
Imp Reason	**1**	Type= 36.7 %	Type = 48.3 %	Type = 42.7 %
	2	Prize = 24.4 %	Prize = 14.1 %	Prize = 19.1 %
	3	Colour = 11.0 %	Colour = 12.7 %	Colour = 11.8 %

*Statistically significant ($p<.05$) and ** Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.

Significant developmental differences (see Table 30) were found for pair 1 (*Lucky O'Instant* and *Cash of the Day*) (χ^2 (1045)=10.86, p<.013); pair 3 (*Lucky Dice* and *Instant Millions*) (χ^2 (1031)=8.07, p<.045); pair 12 (*Holiday Greetings* and *Doubling Red 7s*) (χ^2 (1011)=11.89, p<.008); pair 14 (6/49 and *Mini Monopoly*) (χ^2 (1024)=13.23, p<.004); and pair 15 (*Grand Slam* and *Pro-Line*) (χ^2 (1005)=9.36, p<.025). The percent of adolescents who selected *Bingo, Millennium, Jokers Wild, Football Fever, Pro-Line* and *Bingo Express* increased, as they got older (see Table 36). Older adolescents chose *Pro-Line* and *Lotto 6/49* were younger participants chose *Grand Slam* and *Mini Monopoly*. This is probably due to the fact that *Pro-Line* and *Lotto 6/49* are more complex games that require players follow teams and consult newspapers. Post-hoc analyses are presented in Table B28, Appendix B.

Table 30: Participants' Choices of Lottery Tickets and the Structural Reasons they Selected One Ticket Over Another by Developmental Level

		Grade 6/7	Grade 8/9	Grade 10/11	Grade 12
Pair 1 N = 1045*					
Lucky O'instant		63.6 %	64.8 %	66.2 %	77.0 %
Cash Day		36.4 %	35.2 %	33.8 %	23.0 %
Imp Reason	1	Prize= 32.6 %	Prize = 35.4 %	Prize = 42.2 %	Prize= 30.2 %
	2	Type = 26.7 %	Type = 22.4 %	Type = 19.6 %	Colour = 24.2 %
	3	Cost = 15.0 %	Colour = 11.6 %	Colour = 15.9 %	Type = 23.1 %
Pair 2 N = 1046*					
Bingo		74.2 %	78.7 %	78.6 %	83.9 %
Golden Ticket		25.8 %	21.3 %	21.4 %	16.1 %
Imp Reason	1	Type = 32.1 %	Type = 32.3 %	Type = 34.5 %	Type = 38.1 %
	2	Prize = 20.0 %	Prize = 21.1 %	Prize = 17.2 %	Activities = 17.6 %
	3	Cost = 14.2 %	Activities = 10.9 %	Activities = 13.9 %	Prize = 10.3 %
Pair 3 N = 1031*					
Lucky Dice		27.3 %	33.3 %	36.8 %	39.7 %
Instant Million		72.7 %	66.7 %	63.2 %	60.3 %
Imp Reason	1	Prize= 35.8 %	Prize = 37.9 %	Prize = 40.6 %	Prize = 38.1 %
	2	Type = 25.4 %	Type = 19.3 %	Type = 17.7 %	Name = 14.9 %
	3	Cost = 15.8 %	Cost= 14.1 %	Cost = 12.2 %	Cost = 14.4 %
Pair 4 N = 1040					
Battleship		51.2 %	50.2 %	51.0 %	47.4 %
Bingo		48.8 %	49.8 %	49.0 %	52.6 %
Imp Reason	1	Type = 44.0 %	Type = 53.3 %	Type = 53.7 %	Type = 60.2 %
	2	Prize = 17.0 %	Prize= 13.2 %	Prize = 10.4 %	Activities = 9.9 %
	3	Activity/Cost = 10.4%	Other = 7.7 %	Activities = 9.6 %	Name = 7.7 %

Pair 5 N = 1032					
Red Hot Cash		51.4 %	46.0 %	47.8 %	45.5 %
Instant millions		48.6 %	54.0 %	52.2 %	54.5 %
Imp Reason	1	Prize = 28.7 %	Prize= 33.8 %	Prize= 38.1 %	Prize = 33.1 %
	2	Type = 26.6 %	Cost = 17.4 %	Type = 14.3 %	Name = 16.6 %
	3	Cost = 14.4 %	Type = 14.6 %	Name/Cost = 13.3 %	Cost = 16.6 %
Pair 6 N = 1027					
Cash for Life		74.4 %	72.3 %	69.6 %	69.6 %
Millennium		25.6 %	27.7 %	30.4 %	30.4 %
Imp Reason	1	Prize= 37.6 %	Prize = 41.8 %	Prize = 43.6 %	Prize = 43.0 %
	2	Type = 20.4 %	Type = 14.4 %	Avert = 13.2%	Type = 14.5 %
	3	Cost = 11.3 %	Colour = 10.5 %	Type = 12.4 %	Advert = 11.7 %
Pair 7 N = 1017					
Mouse maze		58.6 %	59.8 %	61.3 %	60.8 %
Viva Las Vegas		41.4 %	40.2 %	38.7 %	39.2 %
Imp Reason	1	Type = 34.2 %	Type = 36.3 %	Type =44.8 %	Type =38.1 %
	2	Prize = 14.2 %	Prize= 16.8 %	Colour = 13.1 %	Colour = 17.1 %
	3	Activities = 12.1 %	Colour = 15.1 %	Name = 12.7 %	Name = 16.0 %
Pair 8 N = 1023					
Jokers Wild		15.3 %	17.8 %	18.6 %	20.4 %
Mini Monopoly		84.7 %	82.2 %	81.4 %	79.6 %
Imp Reason	1	Type = 50.8 %	Type = 55.7 %	Type = 64.7 %	Type = 54.8 %
	2	Prize= 13.0 %	Name = 11.1 %	Name = 14.5 %	Name = 19.9 %
	3	Name = 12.4 %	Prize = 11.1 %	Prize = 5.2 %	Colour = 7.0 %
Pair 9 N = 1027					
Mouse maze		35.5 %	36.5 %	30.8 %	30.7 %
Bingo		64.5 %	63.5 %	69.2 %	69.3 %
Imp Reason	1	Type = 45.3 %	Type = 47.2 %	Type = 54.0 %	Type = 55.4 %
	2	Prize = 16.3 %	Prize = 14.3 %	Name = 10.2 %	Name = 9.7 %
	3	Cost = 8.4 %	Colour = 10.8 %	Prize= 9.1 %	Activities = 8.0 %
Pair 10 N = 1017					
Lucky O'Instant		64.1 %	65.2 %	65.7 %	67.2 %
Grand Slam		36.9 %	34.8 %	34.3 %	32.8 %
Imp Reason	1	Type = 38.2 %	Type = 41.1 %	Type = 36.8 %	Type = 45.8 %
	2	Prize = 21.5 %	Prize = 22.6 %	Prize = 25.6 %	Colour = 14.0 %
	3	Name = 12.0 %	Colour = 13.7 %	Colour = 13.5 %	Prize = 11.7 %
Pair 11 N = 1016					
Bingo Express		71.8 %	64.9 %	63.5 %	68.9 %
Football Fever		28.2 %	35.1 %	36.5 %	31.1 %
Imp Reason	1	Type = 46.1 %	Type = 54.1 %	Type = 58.3 %	Type = 65.0 %
	2	Prize = 16.6 %	Prize= 14.7 %	Name = 13.2 %	Name = 10.6 %
	3	Name = 9.8 %	Name = 9.2 %	Prize = 9.8 %	Prize = 7.8 %
Pair 12 N = 1011*					
Holiday Greetings		52.8 %	66.0 %	64.6 %	66.5 %
Doubling Red 7s		47.2 %	34.0 %	35.4 %	33.5 %
Imp Reason	1	Type = 33.2 %	Type = 27.3 %	Type = 25.9 %	Type = 22.6 %
	2	Prize= 25.8 %	Prize = 26.3 %	Prize= 22.9 %	Colour = 24.9 %
	3	Colour =14.2 %	Colour = 20.1 %	Colour = 22.2 %	Name = 16.9 %
Pair 13 N = 1017					
Crossword		62.2 %	58.4 %	60.5 %	57.8 %
Viva Las Vegas		37.8 %	41.6 %	39.5 %	42.2 %
Imp Reason	1	Type = 49.7 %	Type = 57.1 %	Type = 64.3 %	Type = 65.3 %
	2	Prize = 13.6 %	Prize = 14.2 %	Activities= 9.1 %	Activities= 9.1%**

	3	Other = 7.9 %	Activities = 8.3 %	Prize/Name = 7.2 %	Colour = 8.5 %
Pair 14 N = 1024*					
6/49		34.3 %	46.5 %	44.5 %	51.3 %
Mini Monopoly		65.7 %	53.5 %	55.5 %	48.7 %
Imp Reason	**1**	Type = 37.8 %	Type = 36.7 %	Type = 36.5 %	Type = 33.9 %
	2	Prize = 20.7 %	Prize = 25.9 %	Prize = 27.0 %	Prize = 32.2 %
	3	Name/Cost = 7.8 %	Chose Team = 10.4%	Chose team = 8.0 %	Chose team = 9.0%
Pair 15 N = 1005*					
Grand Slam		62.1 %	52.2 %	49.7 %	47.3 %
Pro-Line		38.8 %	47.8 %	50.3 %	52.7 %
Imp Reason	**1**	Type = 33.0 %	Type = 35.2 %	Type = 39.7 %	Type = 36.0 %
	2	Name = 12.6 %	Choose Team = 17.9 %	Choose Team = 17.2 %	Choose Team= 20.9 %
	3	Prize = 12.0 %	Prize = 12.2 %	Other = 10.1 %	Other = 11.6 %
Pair 16 N= 1014					
Red Hot Cash		50.5 %	50.6 %	49.5 %	44.4 %
Bingo Express		49.5 %	49.4 %	50.5 %	55.6 %
Imp Reason	**1**	Type = 40.1 %	Type = 42.1 %	Type = 44.1 %	Type = 44.6 %
	2	Prize = 19.3 %	Prize = 20.3 %	Prize = 20.6 %	Prize = 14.3 %
	3	Name = 10.9 %	Colour = 12.4 %	Colour = 12.1 %	Colour= 14.3 %
TOTAL		N = 224	N = 338	N = 307	N = 203

*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

RESULTS: GAMBLING SEVERITY

Gambling Behaviour

Prevalence

The DSM-IV-MR-J criteria for probable pathological gambling was met by 2.8% (scores of $\geq$4) for the entire sample, with 6.8% of adolescents categorized as at-risk for pathological gambling (scores of 2-3) and 65.2% considered social gamblers (scores of 0-1) (experiencing few negative gambling related problems). It is important to note that the original DSM-IV-J (Fisher, 1992) scale was found to be the most conservative measure of identifying probable pathological gamblers (Derevensky & Gupta, 2000) and that another recent province-wide study using the SOGS-RA has reported higher rates of probable pathological gambling (5.8%) amongst adolescents in Ontario (Adalf & Ialomiteanu, 2000).

Within the current sample, more males were identified as having gambling problems (4.7% probable pathological gamblers; 10.7% at-risk gamblers) than females (1.0% probable pathological gamblers; 3.7% at-risk gamblers). Regular gambling behavior (once a week or more) was fairly constant across developmental level. However, as one would expect, significant increases in the frequency of gambling was found as the level of gambling severity increased, from social gamblers to probable pathological gamblers (Table 31).

Table 31: Gambling Severity by Gender and Grade Level

(N = 1000) Gender	Non Gambler (N = 252)	Social Gambler (N = 652)	At-Risk Gambler (N = 68)	Probable Pathological Gambler (N = 28)
Male	21.1 %	64.2 %	10.0 %	4.7 %
Female	29.2 %	66.1 %	3.7 %	1.0 %
Grade Level				
Grade 6/7	31.2 %	59.9 %	6.4 %	2.5 %
Grade 8/9	24.4 %	68.8 %	5.5 %	1.3 %
Grade 10/11	22.4 %	65.0 %	7.8 %	4.8 %
Grade 12	24.4 %	65.3 %	7.8 %	2.6 %
Total	25.2 %	65.2 %	6.8 %	2.8 %

Participation in Gambling Activities During the Past 12 Months

Adolescents were asked about their gambling activities and rates of participation during the past 12 months (Table 32). Of those that reported engaging in the various activities, social gamblers preferred playing cards, scratchcards, and bingo; at-risk gamblers showed a preference for card playing, scratch/lottery draws, and games of skill; while probable pathological gamblers prefer playing lottery draws/scratchcards, sports lottery, and wagering on sporting events.

Significant differences in participation rates were found across levels of gambling severity for card playing (χ^2 (444)=35.35, $p<.001$), purchasing draws/scratchcard tickets (χ^2 (411)= 37.77, $p<.001$), video games/poker (χ^2 (147)=14.04, $p<.001$), bingo (χ^2 (309)=15.62, $p<.001$), and wagering on games of skill (χ^2 (280)=15.53, $p<.001$). As can be seen in Table 31, a linear increase was found across gambling severity for *once a week or more* participation for draw/scratchcard purchases, video game/poker, and wagering on games of skill. Chi-square analyses conducted on regular gambling participation could not be reliably computed due to small cell sizes for slot machine playing for the at-risk (N = 4) and probable pathological (N = 4) groups.

Table 32: Participation in Various Gambling Activities During the Past Year by Gambling Severity:

	Social Gambler			At-Risk Gambler			Probable Pathological Gambler		
	Never	Occasional	Regular	Never	Occasional	Regular	Never	Occasional	Regular
Cards**	42.8 %	48.7 %	8.6 %	17.6 %	47.1 %	35.1 %	25.9 %	37.1 %	37.0 %
Wager on sports	71.3 %	21.3 %	7.3 %	5.2 %	36.8 %	20.6 %	21.4 %	46.4 %	32.1 %
Sports lottery	86.0 %	10.5 %	3.6 %	68.7 %	20.9 %	10.4 %	22.2 %	51.9 %	25.9 %
Draws/scratch**	46.4 %	48.1 %	5.6 %	39.7 %	47.1 %	13.2 %	11.1 %	40.7 %	48.1 %
VG/Poker**	84.5 %	13.3 %	2.2 %	54.4 %	32.4 %	13.2 %	37.0 %	29.6 %	33.3 %
Bingo**	59.2 %	36.4 %	4.4 %	54.4 %	32.4 %	13.2 %	38.5 %	38.5 %	23.1 %
Slot machine	88.3 %	9.9 %	1.7 %	74.6 %	19.4 %	6.0 %	59.3 %	14.8 %	25.9 %
Games of skill**	66.7 %	27.0 %	6.3 %	36.8 %	47.1 %	16.2 %	14.3 %	39.3 %	46.4 %
Another form	85.2 %	11.1 %	3.6 %	62.7 %	20.3 %	16.9 %	40.9 %	13.6 %	45.4 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
Occasional: Less than once a week
Regular: Weekly & daily
** Statistically significant at $p<.01$

Lottery Product Participation

Of those adolescents who indicated playing the lottery, differences in participation rates by gambling severity were found for lottery draws (χ^2 (994)=79.32, $p<.001$), scratchcards (χ^2 (999)=170.03, $p<.001$), and sports tickets (χ^2 (995)=103.40, $p<.001$). As can be seen in Table 33, there is increasing linear trend with the probable pathological group indicating the highest use (combined occasional and regular categories) of lottery draws (59.3%), scratchcards (75.0%), and sports tickets (60.7%) compared with at-risk (34.3%, 62.3%, 18.1% respectively) and social gamblers (26.9%, 66.7%, 18.1% respectively). Frequency of use also differed according to gambling severity, with regular weekly participation occurring more often among those falling within the at-risk and probable pathological groups (chi-square analyses could not be reliably computed due to small cell sizes). For additional information concerning lottery participation and gambling severity see Tables C1, Appendix C.

Table 33:Participation in Lottery Products by Gambling Severity

		Lottery Product Participation				
		Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Draws** (N = 994)	Never	95.2 %	73.1 %	64.7 %	40.7 %	77.6 %
	Occasional	4.8 %	25.5 %	33.8 %	44.5 %	21.0 %
	Regular	0.0 %	1.4 %	1.5 %	14.8 %	1.4 %
Scratch** (N = 999)	Never	80.6 %	33.3 %	38.2 %	25.0 %	45.8 %
	Occasional	19.4 %	63.8 %	54.9 %	57.1 %	51.5 %
	Regular	0.0 %	2.9 %	7.4 %	17.9 %	2.7 %
Sports** (N = 995)	Never	100 %	81.9 %	70.6 %	39.3 %	85.2 %
	Occasional	0.0 %	15.3 %	10.7 %	53.6 %	12.5 %
	Regular	0.0 %	2.8 %	7.4 %	7.1 %	2.3 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
Note: Several of the non-gamblers (as defined by not gambling within the past year) responded to these items according to their participation in the lottery prior to the one-year cut-off.
** Statistically significant at $p<.01$

Recency of Lottery Product Participation/Purchases

Overall, 44.3% of adolescents reported playing/purchasing a lottery ticket more than six months ago, 38.9% reported doing so within the past month, and 16.8% within the past week. While the at-risk group reported the highest percentage (43.5%) of lottery participation/purchases in the past month, the probable pathological group reported the highest percentage (45.5%) of lottery participation/purchases within the past week (see Table 34). In general, 68.2% of the probable pathological group, 78.3% of the at-risk gamblers, and 55.5% of the social gamblers played within the past month.

Table 34: Most Recent Experience with the Lottery by Gambling Severity

	Last time participants either bought or played the lottery		
N = 560	More than 6 months	Past Month	Past Week
Social Gambler	44.5 %	39.2 %	16.3 %
At-Risk Gambler	21.7 %	43.5 %	34.8 %
Probable Pathological Gambler	31.8 %	22.7 %	45.5 %
Total	44.3 %	38.9 %	16.8 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥ 4

Lottery Product Participation and Purchases

Age of Onset

The mean age at which adolescents first participated in scratchcards and sports tickets differed significantly across groups based upon gambling severity (F (520) = 3.09, $p<.027$ and F (153) = 4.13, $p<.008$ respectively). Table 34 reveals that probable pathological gamblers had the youngest mean age of onset for participation in lottery draws (M = 9.94, SD = 3.34), scratch tickets (M = 8.10, SD = 3.35), and sports tickets (M = 10.56, SD = 3.12). Social gamblers reported the oldest mean age of onset for *playing* lottery products, however the reported ages for lottery draws (M = 11.02, SD = 3.16), scratch (M = 10.09, SD = 3.13), and sports lotteries (M = 11.67, SD = 2.85) remain considerably young, below 12 years of age. It is important to note that the differences while statistically significant are relatively small (approximately 1 year).

With respect to mean age of *first purchase*, probable pathological gamblers reported purchasing draws at a mean age of 13.00, scratchcards at age 11.94, and sports lotteries at age 12.09. Overall the mean age onset for purchasing lottery tickets was 12.24 (for social gamblers it was 12.48, for at-risk gamblers it was 12.71, and for probable pathological gamblers it was 12.34). No appreciable differences between the groups were found. Of greatest importance is that all groups reported purchasing tickets when they were significantly below the legal age required in Ontario (Table 35).

Table 35: Mean Ages of Onset for Playing and Purchasing Lottery Products by Gambling Severity

		Social Gambler		At-Risk Gambler		Probable Pathological Gambler		Total	
		M	SD	M	SD	M	SD	M	SD
Draws	Mean age of first play*	11.02	3.16	10.29	3.68	9.94	3.34	10.69	3.22
	Mean age of first purchase	12.90	2.89	11.50	4.54	13.00	2.40	12.73	3.05
Scratch	Mean age of first play*	10.09	3.13	9.54	3.64	8.10	3.35	9.86	3.16
	Mean age of first purchase	12.13	3.39	12.36	3.56	11.94	3.14	12.12	3.37
Sports	Mean age of first play*	11.67	2.85	13.48	2.50	10.56	3.12	11.78	2.91
	Mean age of first purchase	12.41	3.06	14.27	3.03	12.09	3.29	12.74	3.15

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥ 4
* Statistically significant at $p<.05$

Reasons for Initiation and Maintenance of Lottery Play by Gambling Severity

Significant differences according to gambling severity were found for the reasons why adolescents reported initially engaging in the lottery. Differences were noted for the following reasons: parents' playing behavior (χ^2 (515)=10.20, $p<.017$), friends' playing behavior (χ^2 (515)=9.39, $p<.024$), winning money (χ^2 (515)=12.45, $p<.006$), and for curiosity (χ^2 (515)=12.19, $p<.007$). Overall, the most cited reason for beginning to play and continuation of playing the lottery was to win money (Table 36). Social gamblers reported initially becoming interested in lottery because of parental influences and curiosity, whereas at-risk adolescents reported playing for enjoyment and excitement, and the probable pathological gamblers reported playing with friends and to win money as the primary reasons why they were initiated into gambling activities.

Significant differences for the continuation of lottery activities for gambling groups were found for parents' play (χ^2 (513)=12.96, $p<.005$), friend's play (χ^2 (513)=12.60, $p<.006$) and to win money (χ^2 (513)=14.60, $p<.002$). Social gamblers reported continuing to play because their parents play, enjoyment and curiosity; at-risk gamblers reported maintaining playing because of the challenge and excitement it brings,

and probable pathological gamblers reported continuing to play to win money and relieve boredom (Table 36).

Table 36: Reasons for Initiation and Maintenance of Lottery Playing Behavior by Gambling Severity

		Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Reasons began playing lottery (N = 515)	Parents play*	49.7 %	36.2 %	21.7 %	47.7 %
	Friends play*	9.9 %	17.0 %	21.7 %	9.8 %
	Impress friends	0.7 %	0.0 %	4.3 %	0.8 %
	Boredom	20.7 %	19.1 %	21.7 %	19.7 %
	Challenge	15.1 %	19.1 %	17.4 %	15.5 %
	Win $*	64.9 %	78.7 %	87.0 %	64.5 %
	Enjoyment	38.0 %	42.6 %	30.4 %	37.5 %
	Excitement	30.6 %	42.6 %	34.8 %	30.7 %
	Curiosity*	27.9 %	25.5 %	13.0 %	28.3 %
Reasons continue playing lottery (N = 513)	Parents play*	33.0 %	12.8 %	13.0 %	31.7 %
	Friends Play*	5.9 %	17.0 %	8.7 %	6.0 %
	Impress friends	0.2 %	0.0 %	4.3 %	0.3 %
	Boredom	18.3 %	12.8 %	21.7 %	17.1 %
	Challenge	16.0 %	27.7 %	21.7 %	17.4 %
	Win $*	67.9 %	78.7 %	82.6 %	66.3 %
	Enjoyment	39.1 %	31.9 %	26.1 %	36.7 %
	Excitement	29.8 %	44.7 %	30.4 %	30.0 %
	Curiosity	15.3 %	17.0 %	8.7 %	16.3 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score $\geq$4
*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Knowledge and Beliefs Regarding Legal Age Restrictions for the Lottery

Overall, a large proportion of youth do not perceive scratchcards (30.9%), lottery draws (20.3%), and bingo (41.9%) to be a form of gambling. In addition, the majority of adolescents (90.3%) were aware of the legal age to purchase tickets. While not a major deterrent, probable pathological gamblers (92.6 %) and social gamblers (92.1%) seem to be the most aware of the legal age to purchase tickets. Significant differences as a function of gambling severity were found for the belief that there should be an age restriction to purchase lottery products (χ^2 (992)=36.44, $p<.001$) with the majority of

social gamblers (63.3%), at-risk (52.2%) and probable pathological gamblers (50.0%) reporting that there should be no age restriction. When asked to indicate an appropriate age for purchasing lottery tickets, differences were found across the gambling severity groups (F (648) = 3.22, p<.022) (see Table 37). The proposed age range was found to between 15 ½ - 17 ½ years, with non-gamblers being the most conservative.

Table 37: Awareness and Beliefs Regarding Legal Age Restrictions to Purchase Lottery Tickets by Gambling Severity

	Non Gambler		Social Gambler		At-Risk Gambler		Probable Pathological Gambler		Total	
Awareness of current legal age*	87.5 %		92.1 %		85.3 %		92.6 %		90.3 %	
Should be an age restriction*	79.8 %		63.3 %		47.8 %		50.0 %		66.2 %	
	M	SD	M	SD	M	SD	M	SD	M	SD
Current legal age**	18.10	0.95	18.11	0.83	17.62	1.70	18.75	2.85	18.08	1.04
Recommended age restriction **	17.60	2.49	16.88	4.24	15.65	2.61	16.07	8.56	16.99	3.84

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
*Statistically significant (p<.01) as tested by Pearson chi-square analysis.
**Statistically significant (p<.05) as tested by one-way ANOVA.

Lottery Ticket Purchases

Adolescents were asked about the ease or difficulty they have experienced in purchasing lottery tickets. As can be seen, the majority of adolescents (65.7%) reported that it was not difficult to purchase tickets, in spite of current legal age restrictions. No appreciable differences were found by level of gambling severity.

Of significance were the differences between groups who reported *specifically* going to the corner convenience store to purchase lottery tickets (χ^2 (516)=41.19, p<.001) with the at-risk (61.2%) and probable pathological (60.9%) reporting the highest rates for occasional and regular visits (see Table 38). In addition, 13% of probable pathological gamblers reported going to the corner store specifically to purchase tickets. Chi-square

analyses could not be reliably computed due to small cell sizes, however percentages of reported visits increase across levels of gambling severity, with probable pathological gamblers reporting engaging in this behavior the most frequently. Additional detailed information is provided in Table C2, Appendix C.

Table 38: Participants Who Go to the Convenience Store Specifically To Purchase Lottery Tickets by Gambling Severity

N = 516	Participants who go to the store specifically to purchase ticket		
	Never	Occasional	Regular
Social Gambler	68.0 %	29.5 %	2.5 %
At-Risk Gambler	38.8 %	57.1 %	4.1 %
Probable Pathological Gambler	39.1 %	47.9 %	13.0 %
Total	67.1 %	30.2 %	2.7 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
Occasional = less than once a week
Regular = weekly & daily

Borrowing Money and Purchasing Tickets for Friends

Adolescents were asked if they had borrowed money in the past year to purchase lottery tickets. Of the total sample, 7.9% reported borrowing money during the past year to purchase lottery tickets. Significant differences were found (χ^2 (516)=45.26, $p<.001$) across gambling severity groups. Examination of the data reveals that 42.9% of pathological gamblers reported borrowing money in the past year to purchase lottery tickets, which is significantly higher than the at-risk gamblers (17.0%) and social gamblers (6.4%).

Gambling Activity Preferences

Participants' Spending Preferences

Participants were asked if they had $5 would they prefer to spend their money on movies, food, video games or the lottery. Social and at-risk gamblers preferred spending their money on movies or food rather than lottery products. In contrast, 35% of probable

pathological gamblers reported that they would spend their money on some form of lottery ticket. The number of youth willing to purchase lottery tickets (combining draw, scratchcard and sports lottery tickets) exceeded those reporting to spend their money on food (30.0%), movies (25.0%) and video games (10%). Willingness to spend money on scratchcards and sports tickets increased with gambling severity (Table 39).

Table 39: Participants' Spending Preferences by Gambling Severity

	Entertainment			Lottery products		
N = 566	Movies	Food	Video Games	Draw	Scratch	Sports
Social Gambler	26.4 %	53.0 %	13.4 %	0.7 %	5.1 %	1.3 %
At-Risk Gambler	17.0 %	53.2 %	12.8 %	2.1 %	8.5 %	6.4 %
Probable Pathological Gambler	25.0 %	30.0 %	10.0 %	0.0 %	25.0 %	10.0 %
Total	28.6 %	49.5 %	13.6 %	0.7 %	5.8 %	1.8 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥ 4

Gambling Activity Preferences

To investigate how much participants like or dislike a variety of gambling activities they were asked to rate their feelings on a 7-point Likert scale. A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group, gender and grade as fixed variables, and measures of how much they like scratchcards, lottery draws, sports betting, video games, slot machines, bingo, and horse track wagering as dependent variables. Main effects were found for gender, grade, and gambling group, and an interaction effect of gender and grade was obtained (Tables B11 and B12, Appendix B).

Overall, the highest subjective ratings for gambling activities were found for scratch tickets ($M = 4.07$, $SD = 1.91$), bingo ($M = 3.60$, $SD = 2.03$), and card playing ($M = 2.82$, $SD = 1.95$). Activity ratings differed according to gambling severity; scratchcards ($F(972) = 58.63$, $p<.001$), lottery draws ($F(972) = 13.45$, $p<.001$), sports betting (F (972)

= 14.77, p<. 001), betting on cards (F (972) = 28.62, p<.001), video games (F (972) = 5.03, p<.002), slot machines (F (972) = 16.98, p<.001), bingo (F (972) = 26.75, p<.001), and horse track wagering (F (972) = 13.73, p<.001). As can be seen in Table 40, the preference for each of the gambling activities increased linearly by gambling severity, with probable pathological gamblers reporting the highest mean ratings for most activities compared to the other groups. All adolescents, regardless of gambling severity, reported that their most preferred gambling activity was scratchcards and bingo, except for probable pathological gamblers who reported a greater preference for card playing than bingo.

Table 40: Mean Ratings of Gambling Activities by Gambling Severity

N = 997	Non Gambler		Social Gambler		At-Risk Gambler		Probable Pathological Gambler		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Scratchcards**	2.78	1.67	4.46	1.77	4.82	2.03	5.57	1.60	4.07	1.91
Lottery draws**	2.22	1.47	2.69	1.51	3.51	1.77	4.26	1.70	2.67	1.57
Sports betting**	1.72	1.20	2.58	1.90	3.63	2.34	3.86	2.10	2.43	1.85
Betting on cards**	1.96	1.42	2.93	1.92	4.22	2.15	5.29	1.82	2.82	1.95
Video games**	3.72	2.15	4.36	2.05	4.82	2.14	4.96	1.84	4.23	2.11
Slot machines**	1.52	1.01	2.11	1.50	2.94	2.15	3.56	2.01	2.05	1.52
Bingo**	2.70	1.79	3.85	1.99	4.32	2.24	4.43	2.23	3.60	2.03
Horse track**	1.69	1.26	2.34	1.79	3.01	2.14	3.82	2.36	2.25	1.77

Based on 7-point Likert scale from *" do not like at all"* to *"like very much."* Range 1-7.
** Statistically significant at p<.01

To examine the difference within each item for gambling groups, Scheffe post-hoc analyses were computed and can be found in Table C3, Appendix C. Non-gamblers gave lower mean ratings and differed significantly from all other groups in how much they reported to like the various gambling activities. Social gamblers reported a lower mean rating on lottery draws, sports betting, betting on cards, slot machines, and horse track than the at-risk and probable pathological gambling groups.

Parental Influences

Parental Knowledge of Adolescent Lottery Use

Of those adolescents who had reported playing the lottery, the vast majority (83.9%) reported that their parents were aware of their playing and 93.9% reported not being afraid of getting caught. It is important to note that these reports represent adolescent perceptions and no parental corroboration was ascertained. Although no significant differences by level of gambling severity was found, it is interesting to note that participants reported being more afraid of getting caught as their level of gambling severity increased with the probable pathological gamblers indicating that their parents are the least aware of their lottery participation and that they are the most afraid (9.1%) of getting caught compared to the other groups. It is likely that they are not afraid of their parents learning about their lottery playing as much as the severity of their gambling problems in general.

Table 41: Parental Awareness of Lottery Activities and Fear of Being Caught by Gambling Severity

	Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Parental awareness of lottery play	84.7 %	85.7 %	72.7 %	83.9 %
Afraid of getting caught	5.4 %	7.1 %	9.1 %	6.1 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4

Perceived Parental Lottery Product Participation

In order to examine familial influences, adolescents were asked to indicate if their parents played the lottery and their perceived frequency of participation and purchases. Significant gambling severity differences were noted for parental participation in lottery activities (χ^2 (996)=21.35, p<.001) with non-gamblers indicating that their parents

participate the least (73.1%) on lottery activities compared with social gamblers (85.6%), at-risk gamblers (88.2%), and probable pathological gamblers (85.7%) (χ^2 (996)=17.10, p<.001). At-risk (33.8%) and probable pathological gamblers (35.7%) perceive their parents to play the lottery more frequently (weekly and daily) as compared to the other social and non-gamblers. Similar to the previous question, this information represents adolescent perceptions and no parental corroboration was ascertained (Table 42).

Table 42: Perceptions of Parental Lottery Playing by Gambling Severity

N = 996		Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Parents who play lottery products**		73.1 %	85.6 %	88.2 %	85.7 %	82.0 %
Frequency of play	Never	26.9 %	14.4 %	11.8 %	14.3 %	18.0 %
	Occasional	55.4 %	55.2 %	54.4 %	50.0 %	55.5 %
	Regular	17.7 %	30.4 %	33.8 %	35.7 %	26.7 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
**Statistically significant (p<.01) as tested by Pearson chi-square analysis.

Parental Purchases of Lottery Products for their Children

Adolescents were asked to report if their parents purchased lottery tickets for them and the frequency at which they did so. Significant differences between the gambling severity groups were found for parental purchases of lottery draws (χ^2 (507)=17.72, p<.001) and sports tickets (χ^2 (481)=22.06, p<.001). Examination of the data presented in Table 43 reveals that there is a linear increase for parental purchases for all three types of lottery activities across levels gambling participation, with probable pathological gamblers reporting that their parents most frequently (weekly and daily) purchase lottery draws (26.1%), scratchcard tickets (13.0%), and sports tickets (13.0%) for them, as compared to the other groups. The fact that parents continue to purchase lottery tickets for their children is consistent with the perception that gambling is a

relatively harmless activity for youth and that lottery playing in particular has no negative consequences (Table C4, Appendix C, provides more detailed information).

Table 43: Parental Purchases of Lottery Products for their Children by Gambling Severity

	Parental Purchase	Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Draws** N = 507	Never	47.7 %	46.7 %	26.1 %	49.9 %
	Occasional	39.5 %	42.2 %	47.8 %	38.2 %
	Regular	12.8 %	11.1 %	26.1 %	11.9 %
Scratch N = 518	Never	22.5 %	25.5 %	17.4 %	23.3 %
	Occasional	73.0 %	66.0 %	69.6 %	72.1 %
	Regular	4.5 %	8.5 %	13.0 %	4.6 %
Sports** N = 481	Never	76.3 %	64.4 %	47.8 %	76.8 %
	Occasional	20.0 %	28.9 %	39.2 %	19.4 %
	Regular	3.7 %	6.7 %	13.0 %	96.2 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
Occasional = less than once per week
Regular = weekly & daily
** Statistically significant at $p<.01$

Lottery Products Received as Gifts

A significant difference by gambling severity was found for youth receiving a lottery ticket as a present (χ^2 (567)=10.52, $p<.015$). At-risk gamblers (82.6%) reported receiving a ticket as a gift most frequently, with social gamblers (71.6%), with many probable pathological gamblers (68.2%), and non-gamblers (53.8%) also receiving tickets. Although, no significant difference was found by level of gambling severity for having received a ticket as a gift for a holiday, probable pathological gamblers (63.6%) reported this more often than either the social or at-risk gamblers.

Lottery Advertisements

Exposure Impact

Adolescents were asked if they had seen any lottery advertisements and whether these advertisements encouraged them to play and/or purchase lottery products.

Gambling severity differences were found for exposure to TV commercials (χ^2 1000)=26.34, p<.001) and billboards (χ^2 (977)=12.96, p<.005). Non-gamblers (85.3%) and social gamblers (93.9%) reported viewing TV lottery advertisements more than at-risk (82.4%) and probable pathological gamblers (78.6%). Nevertheless, it is important to note that the penetration of lottery advertisements viewed by adolescents, ranging from 78.6%-93.3%, is quite high. Significant differences were also noted between gambling groups in their likelihood that they would be more likely to purchase a ticket due to advertising (χ^2 (988)=9.23, p<.026) with a greater percentage of probable pathological gamblers (60.7%) reporting willing to do so more than any other group.

Impulsivity of Lottery Purchases by Gambling Severity

To examine whether adolescents are susceptible to impulsive purchasing of lottery tickets they were asked if they were more likely to purchase a ticket if it was readily observable on the check-out counter of the local corner store. Gambling severity differences were noted (χ^2 (284)=18.59, p<.001) in response to this question. As level of gambling severity increased, participants were more likely to report purchasing a ticket as a result of seeing it on the store counter, with 85.7% of probable pathological gamblers reporting that they were more likely to purchase a ticket if displayed on the sales counter (Table 44).

Table 44: Effects of Placement of Lottery Tickets in Stores by Gambling Severity

	Likelihood of purchasing a ticket seen on store counter	
N = 284	More Likely*	Less Likely
Social Gambler	60.8 %	39.2 %
At-Risk Gambler	73.3 %	26.7 %
Probable Pathological Gambler	85.7 %	14.3 %
Total	57.4 %	42.6 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
*Statistically significant (p<.05) as tested by Pearson chi-square analysis.

To examine the impulsivity of playing behavior, participants were asked if they scratch their lottery tickets immediately once in their possession. Of those who reported having purchased a lottery ticket, significant differences across levels of gambling involvement were found (χ^2 (366)=16.81, p<.001) with at-risk (71.1%) and probable pathological gamblers (81.1%) reporting that they would immediately scratch their lottery tickets (compared with 46.7% of. social gamblers) (Table 45).

Table 45: Scratchcard Ticket Behavior: Immediate vs. Delayed Playing

N = 383	Scratch ticket playing behavior	
Gambling Severity*	Immediately	Wait to get home
Social Gambler	46.7 %	53.3 %
At-risk Gambler	71.1 %	28.9 %
Probable Pathological Gambler	81.1 %	18.2 %
Total	51.0 %	49.0 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
*Statistically significant (p<.05) as tested by Pearson chi-square analysis.

Importance of Familiarity

Familiarity is likely an important factor influencing gambling acquisition. To examine whether participants would consider type and familiarity of a lottery ticket as more important than the ticket price, adolescents were asked to report if they would still purchase their favorite lottery ticket even if the price increased. A significant difference in participants' willingness to purchase a ticket with an increased price was found across levels of gambling severity (χ^2 (492)=40.88, p<.001). A linear trend was noted such that the greater the gambling severity, the more adolescents reported being willing to purchase their favorite ticket even if the price increased. Probable pathological gamblers (78.3%) and at-risk gamblers (65.1%) reported being the most willing to purchase a more expensive ticket, as compared to social gamblers (35.5%) (Table 46).

To investigate the importance of familiarity in lottery ticket choices, adolescents were asked how often they play/purchase the same lottery ticket. Significant group differences were noted across levels of gambling severity with respect to how often they report playing the same lottery game (χ^2 (510)=19.29, p<.001). In particular, a linear trend across groups was noted for regular lottery play of the same ticket game, with 59.1% of probable pathological gamblers, 36.7% of at-risk gamblers, and 26.7% of social gamblers doing so.

Table 46: Familiarity as an Important Factor in Lottery Ticket Selection by Gambling Severity

N= 510	Play same lottery game**		
Gambling Severity	Never	Occasional	Regular
Social Gamblers	15.0 %	58.3 %	26.7 %
At-Risk Gamblers	6.1 %	57.5 %	36.7 %
Probable Pathological Gamblers	13.6 %	27.3 %	59.1 %
Total	16.8 %	56.4 %	26.8 %

Occasional Use = Less than once per week
Regular Use = Weekly & Daily
Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score >4
** Statistically significant at p<.01

Knowledge of the Game

A significant (χ^2 (984)=57.31, p<.001) difference by gambling severity was found for adolescents' willingness to purchase a ticket with which they are unfamiliar. A linear increase was found across levels of gambling severity with probable pathological gamblers (64.3%) reporting being the most willing to purchase an unfamiliar ticket and non-gamblers (16.7%) the least willing to try a novel ticket. While the previous reported data suggests that probable pathological gamblers most regularly play the same lottery game, they seem undeterred if presented with an unknown game that may be particularly attractive (see Table C5, Appendix C, for more detailed information).

Structural Characteristics

Structural Preferences

To examine the importance of structural characteristics of lottery products as a function of gambling severity, adolescents were asked if they would prefer a prize or money, if they have a preference for larger scratchcards, and whether a larger jackpot was more important than longer playtime. A significant difference among gambling severity groups was found for preference of larger tickets (χ^2 (946)=30.59, $p<.001$) and larger jackpot (χ^2 (992)=13.11, $p<.004$). As can be seen in Table 47, at-risk (75.4%) and probable pathological gamblers (75.0%) reported a preference for a larger ticket (possibly because larger tickets usually have larger jackpots). Given that at-risk (74.6%) and probable pathological gamblers (82.1%) report playing lotteries for monetary reasons, it makes sense that they reported a preference for a larger jackpot more than social gamblers (63.0%) and non-gamblers (72.9%).

Table 47: Structural Preferences of Lottery Tickets by Gambling Severity

Ticket Winnings	Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler	Total
Prize	15.9 %	12.5 %	8.8 %	0.0 %	12.7 %
Money	84.1 %	87.5 %	91.2 %	100 %	87.3 %
Ticket Size					
Larger**	48.9 %	67.2 %	75.4 %	75.0 %	62.8 %
Smaller	51.1 %	32.8 %	24.6 %	25.0 %	37.2 %
Win Ratio					
Larger Jackpot*	72.9 %	63.0 %	74.6 %	82.1 %	66.9 %
Play Value	27.1 %	37.0 %	25.4 %	17.9 %	33.1 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4
*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.
**Statistically significant ($p<.01$) as tested by Pearson chi-square analysis

The Most Important Characteristic in Selecting a Ticket

Participants were required to select their preferred tickets among a multiple number of forced choice comparisons. In addition to asking them to select their preferred ticket of each pair, they were also required to identify which ticket characteristic resulted in their choice. Overall, the participants in the different gambling severity groups attributed different levels of importance to ticket colour, prize, and knowledge of the game. The importance of colour, prize, and knowing how to play a particular game all differed with degree of gambling severity. Ticket prize seems to be more important to at-risk and probable pathological gamblers whereas knowledge of the game decreases in importance as gambling severity increases (Table 48).

Table 48: Single Most Important Characteristic When Selecting a Ticket, by Gambling Severity

N = 994 Gambling Severity	Size	Colour	Prize	# of games	Type of game	Cost	Know how to play
Non Gambler	0.4 %	0.8 %	31.2 %	2.4 %	12.1 %	16.6 %	36.4 %
Social Gambler	0.6 %	2.5 %	28.6 %	4.9 %	20.0 %	22.1 %	21.4 %
At-Risk Gambler	0.0 %	5.9 %	42.6 %	8.8 %	8.8 %	16.2 %	17.6 %
Probable Pathological Gambler	0.0 %	11.1 %	40.7 %	3.7 %	14.8 %	22.2 %	7.4 %
Total	0.6 %	2.4 %	30.2 %	4.4 %	17.0 %	20.5 %	25.0 %

Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4

Mean Ratings of Structural Characteristics

A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group, gender and grade as fixed variables, and the importance of price, colour, type of game, number of games on the scratchcard, name, prize, and size of ticket as dependent variables. Significant main effects for grade and gambling severity were found (see Table B20 and B21, Appendix B, for univariate and multivariate analyses). To investigate the importance of a variety of structural characteristics in

choosing scratchcard tickets, participants were required to rate specific structural characteristics on a 7-point Likert scale.

An examination of the structural characteristics revealed group differences across gambling severity groups for ticket colour (F (981) = 2.78, p<.040), type of game (F (981) = 3.75, p<.011), number of activities (F (981) = 8.90, p<.001), name/title (F (981) = 5.21, p<.001), prize (F (981) = 3.21, p<.022), and size of ticket (F (981) = 15.86, p<.001). A grade by gambling group interaction was noted for ticket cost (F (981) = 2.13, p<.024). Mean ratings are presented in Table 49.

A linear increase with gambling severity was found for colour, type of game, title, prize, and size of ticket, with those in the at-risk and probable pathological groups reporting the highest mean ratings. All gambling severity groups reported that prize is the most important structural characteristic followed by type of game. Furthermore, non-gamblers and social gamblers reported that the cost of the ticket is important, however, at-risk and probable pathological gamblers reported that the number of activities on the card was also an important determinant. For non-gamblers and social gamblers, the cost of the ticket is more important, whereas adolescents who are heavily involved in gambling activities prefer scratchcards with more activities as they perceive their chances of winning are improved.

Table 49: Mean Ratings of Structural Characteristics by Gambling Severity

N = 998	Non Gambler		Social Gambler		At-Risk Gambler		Probable Pathological Gambler		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Size	1.69	1.12	2.21	1.55	3.00	1.88	3.21	1.99	2.14	1.52
Colour	1.59	1.10	1.88	1.38	1.93	1.39	2.36	1.77	1.80	1.32
Prize	4.35	2.14	4.75	2.00	5.19	2.15	5.29	1.98	4.68	2.07
# of games	3.31	1.64	3.85	1.81	4.71	1.92	4.29	1.88	3.76	1.81
Type of Game	4.33	1.95	4.75	1.67	5.03	1.76	5.00	1.85	4.67	1.77
Cost	4.31	1.83	4.43	1.62	4.35	1.87	4.32	2.26	4.40	1.72
Name/Title	2.33	1.65	2.38	1.66	2.74	1.91	3.07	1.84	2.40	1.68

Based on 7 point Likert scale from "not at all important" to "extremely important"
Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥4

Ticket Pair Ratings by Gambling Severity

To investigate adolescents' perceptions of a variety of scratchcards, they were asked to rate multiple scratchcards on a 7-point Likert scale. A 4 X 4 X 2 multivariate analysis of variance (MANOVA) was performed, including gambling group, gender and grade as fixed variables and each of the 32 tickets as dependent variables. Significant main effects were found for gender, grade, and gambling severity. Significant two way and a three way interactions were obtained for gender x grade, gender x gambling severity, grade x gambling severity, and gender x grade x gambling severity (see Tables B24 and B25, Appendix B, for multivariate and univariate analyses).

A linear increase in ratings across gambling severity groups were found for almost every ticket. In addition, social gamblers, at-risk, and probable pathological gamblers differed from non-gamblers in their ratings for all ticket pairs. This may be due to the fact that non-gamblers lack the experience and knowledge concerning scratchcards that the other gambling groups possess. The mean ratings are presented in Table C6 and Post-Hoc Table C7, Appendix C.

Choice of Lottery Tickets and Structural Reasons

Participants were presented with lottery ticket pairs and were asked to select their preferred ticket (forced choice). Significant gambling group differences were found for pair 1 (*Lucky O'Instant* and *Cash of the Day*) (χ^2 (978)=11.35, p<.010), pair 2 (*Bingo* and *Golden Ticket*) (χ^2 (981)=9.49, p<.023), pair 7 (*Mouse Maze* and *Viva Las Vegas*) (χ^2 (959)=11.55, p<.009), pair 8 (*Jokers Wild* and *Mini Monopoly*) (χ^2 (963)=8.98, p<.030), pair 9 (*Mouse Maze* and *Bingo*) (χ^2 (966)=9.78, p<.021) pair 10 (*Lucky O'Instant* and *Grand Slam*) (χ^2 (959)=11.93, p<.008), pair 12 (*Holiday Greetings* and *Doubling Red 7s*) (χ^2 (952)=12.18, p<.007), and pair 15 (*Grand Slam* and *Pro-Line*) (χ^2 (949)=22.39, p<.001) (see Table 50).

For pair 1, pair 4, pair 10, and pair 12, probable pathological gamblers made a different selection from the other three groups preferring *Cash of the Day* (60.7%) to *Lucky O'Instant* (39.3%), *Grand Slam* (54.2%) to *Lucky O'Instant* (45.8%), and *Doubling Red 7s* (61.5%) to *Holiday Greetings* (38.5%). For pair 15, both at-risk (62.1%) and probable pathological gamblers (73.1%) prefer *Pro-Line* to *Grand Slam* and pair 7 at-risk prefer *Viva Las Vegas* (54.7%) to *Mouse Maze* (45.3%). Probable pathological gamblers appear to prefer tickets that are sports oriented (probably because there are more male pathological gamblers than females) and tickets that emphasize the opportunity to win a lot of money (e.g., *Doubling Red 7s*) (see Table 50 for percentages and reasons).

No differences across gambling severity groups were found for the reported reasons adolescents selecting one ticket over another. As can be seen in Table 51, for all gamblers, type of game was the reported top reason for selection of a scratchcard ticket. The second most endorsed reason was prize, for all groups (except for non-gamblers) who chose colour. Non-gamblers selected prize as the third most endorsed reason, whereas social gamblers selected the title of the

game, and at-risk and probable pathological selected colour. Title of the ticket was the fourth most endorsed reason a ticket was chosen for non-gamblers, at-risk, and probable pathological gamblers, whereas social gamblers selected colour. Ultimately the main reasons participants reported choosing a scratchcard evolved around the type of game, prize, colour, and title.

Table 50: Participant's Choices of Lottery Tickets and the Structural Reason they Selected One Ticket Over Another by Gambling Severity

*Pair 1 N= 987		Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler
Lucky O'Instant		67.8 %	68.9 %	73.5 %	39.3 %
Cash of the Day		32.2 %	32.0 %	26.5 %	60.7 %
Imp Reason	**1**	Prize = 35.8 %	Prize = 36.4 %	Prize = 38.5 %	Type = 40.9 %
	2	Type = 19.7 %	Type = 23.2 %	Type = 21.1 %	Prize = 27.3 %
	3	Colour = 14.7 %	Colour = 14.6 %	Colour = 17.5 %	Colour/Cost = 9.1 %
***Pair 2 N= 981**					
Bingo		73.4 %	81.1 %	75.0 %	70.4 %
Golden Ticket		26.6 %	18.2 %	25.0 %	29.6 %
Imp Reason	**1**	Type =33.2 %	Type= 35.4 %	Type = 28.1 %	Type = 44.0 %
	2	Prize = 14.0 %	Prize = 18.3 %	Prize = 22.8 %	Prize = 36.0 %
	3	Activities = 14.0 %	Activities = 11.8 %	Activities = 22.8 %	Colour = 12.0 %
Pair 3 N= 969					
Lucky Dice		36.3 %	32.1 %	35.8 %	33.3 %
Instant Million		63.8 %	67.9 %	64.2 %	66.7 %
Imp Reason	**1**	Prize = 33.6 %	Prize = 38.6 %	Prize = 52.6 %	Prize = 50.0 %
	2	Type = 19.5 %	Type = 19.1 %	Type = 15.8 %	Type = 20.8 %
	3	Name = 11.8 %	Cost = 14.2 %	Activities = 10.5 %	Colour = 12.5 %
Pair 4 N = 977					
Battleship		49.4 %	49.0 %	48.5 %	55.6 %
Bingo		50.6 %	51.0 %	51.5 %	44.4 %
Imp Reason	**1**	Type = 50.0 %	Type = 54.5 %	Type = 57.4 %	Type = 50.0 %
	2	Activity = 10.7 %	Prize = 11.5 %	Prize = 13.0 %	Prize = 29.2 %
	3	Name = 8.0 %	Activities = 8.7 %	Colour = 9.3 %	Colour/Name = 8.3 %
Pair 5 N = 972					
Red Hot Cash		51.0 %	47.2 %	39.7 %	37.0 %
Instant Millions		49.0 %	52.8 %	60.3 %	63.0 %
Imp Reason	**1**	Prize = 30.8 %	Prize = 34.1 %	Prize = 47.4 %	Prize = 45.8 %
	2	Cost = 18.6 %	Type = 17.9 %	Type = 15.8 %	Colour=16.7 %
	3	Name = 15.4 %	Name = 14.8%	Colour = 14.0 %	Type = 16.7 %
Pair 6 N = 966					
Cash for Life		70.5 %	70.8 %	70.6 %	65.4 %
Millennium		29.5 %	29.2 %	29.4 %	34.6 %
Imp Reason	**1**	Prize = 37.8 %	Prize = 42.4 %	Prize = 50.0 %	Prize= 48.0 %
	2	Type = 13.5 %	Type= 15.2 %	Type = 14.3 %	Type = 24.0 %
	3	Colour =13.1 %	Advert = 11.6 %	Colour = 10.7 %	Colour = 12.0 %
***Pair 7 N= 959**					
Mouse Maze		67.1 %	59.4 %	45.3 %	52.0 %
Viva Las Vegas		32.9 %	40.6 %	54.7 %	48.0 %

Imp Reason	**1**	Type = 36.5 %	Type= 40.1 %	Type= 33.9 %	Type = 39.1 %
	2	Colour = 17.6 %	Colour/Name=12.7 %	Prize = 16.1 %	Prize = 34.8 %
	3	Name = 14.0 %	Prize = 12.4 %	Colour = 16.1 %	Colour/Activity=8.7%
***Pair 8** N= 963					
Jokers Wild		19.8 %	15.6 %	29.2 %	22.2 %
Mini Monopoly		80.2 %	84.4 %	70.8 %	77.8 %
Imp Reason	**1**	Type = 55.1 %	Type = 60.8 %	Type = 45.8 %	Type = 37.5 %
	2	Name = 16.9 %	Name = 12.8 %	Name = 15.3 %	Prize = 29.2 %
	3	Colour = 7.1 %	Prize = 7.7 %	Colour = 10.2 %	Name = 12.5 %
***Pair 9** N= 966					
Mouse Maze		40.7 %	29.7 %	35.8 %	32.0 %
Bingo		59.3 %	70.3 %	64.2 %	68.0 %
Imp Reason	**1**	Type = 52.3 %	Type= 52.2 %	Type = 38.6 %	Type = 41.7 %
	2	Name = 10.5 %	Prize = 12.0 %	Prize = 21.1 %	Prize = 37.5 %
	3	Colour = 8.6 %	Activities = 7.7 %	Colour = 15.8 %	Colour = 12.5 %
***Pair 10** N = 959					
Lucky O'Instant		70.6 %	64.9 %	52.2 %	45.8 %
Grand Slam		29.4 %	35.1 %	47.8 %	54.2 %
Imp Reason	**1**	Type = 37.3 %	Type = 42.8 %	Type/Prize = 28.1 %	Prize = 34.8 %
	2	Prize = 18.0 %	Prize = 21.3 %	Colour = 14.0 %	Type = 26.1 %
	3	Colour =17.1 %	Colour = 10.5 %	Name = 12.3 %	Colour = 21.7 %
Pair 11 N = 957					
Bingo Express		71.1 %	65.7 %	60.6 %	68.0 %
Football Fever		28.3 %	34.3 %	34.3 %	32.0 %
Imp Reason	**1**	Type= 51.8 %	Type = 58.6 %	Type = 52.2 %	Type = 39.1 %
	2	Prize = 11.8 %	Prize = 11.7 %	Prize = 16.9 %	Prize = 26.1 %
	3	Name = 10.5 %	Name = 10.4 %	Name = 13.6 %	Colour = 13.0 %
***Pair 12** N= 952					
Holiday Greetings		67.9 %	62.8 %	52.4 %	38.5 %
Doubling Red 7s		32.1 %	37.2 %	47.6 %	61.5 %
Imp Reason	**1**	Colour = 26.5 %	Type = 28.5 %	Type = 30.5 %	Prize = 32.0 %
	2	Type = 22.8 %	Prize = 22.9 %	Prize = 28.8 %	Type = 28.0 %
	3	Prize = 16.9 %	Colour = 18.6 %	Colour = 18.6 %	Colour/Cost = 12.0 %
Pair 13 N= 958					
Crossword		63.0 %	59.2 %	49.2 %	65.2 %
Viva Las Vegas		37.0 %	40.8 %	50.8 %	34.8 %
Imp Reason	**1**	Type = 56.1 %	Type = 60.2 %	Type = 69.0 %	Type = 47.8 %
	2	Name = 9.0 %	Prize= 10.7 %	Prize = 17.2 %	Prize = 30.4 %
	3	Colour = 9.0 %	Activities = 9.3 %	Activities = 6.9 %	Colour/Name = 8.7 %
Pair 14 N = 964					
6/49		46.7 %	42.6 %	43.9 %	58.3 %
Mini Monopoly		53.3 %	57.4 %	56.1 %	41.7 %
Imp Reason	**1**	Type = 35.4	Type = 38.2	Prize = 41.1	Prize = 50.0 %
	2	Prize = 26.0	Prize = 24.4	Type = 29.3	Type = 18.2 %
	3	Choose numbers = 9.4 %	Choose numbers = 11.7 %	Choose numbers = 8.6 %	Name/Choose #'s/Time = 9.1 %
****Pair 15** N = 949					
Grand Slam		62.3 %	50.3 %	37.9 %	26.9 %
Pro-Line		37.7 %	49.7 %	62.1 %	73.1 %
Imp Reason	**1**	Type = 33.5 %	Type = 38.2 %	Type = 37.3 %	Prize = 37.5 %
	2	Name = 12.4 %	Chose Team=18.2%	Chose Team=25.4%	Type = 29.2 %
	3	Colour/Choose Team=11.9 %	Other = 11.7 %	Prize = 18.6 %	Choose Teams = 16.7 %

Pair 16 N= 957					
Red Hot Cash		54.0 %	45.9 %	53.8 %	50.0 %
Bingo Express		46.0 %	54.1 %	46.2 %	50.0 %
Imp Reason	**1**	Type = 37.1 %	Type = 45.7 %	Type = 36.2 %	Prize = 41.7 %
	2	Prize= 19.0 %	Prize = 16.9 %	Prize = 27.6 %	Type = 37.5 %
	3	Colour = 15.4 %	Name = 11.2 %	Colour = 20.7 %	Colour = 12.5 %

*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.
** Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.

Table 51: Structural Characteristics Influencing Ticket Selection: Gambling Severity

		Non Gambler	Social Gambler	At-risk Gambler	Probable Pathological Gambler
Structural reasons for ticket pair choices	1st Choice	Type of game	Type of game	Type of game	Type of game
	2nd Choice	Colour	Prize	Prize	Prize
	3rd Choice	Prize	Name/Title	Colour	Colour
	4th Choice	Name/Title	Colour	Name/Title	Name/Title

Non-Gambler
Social Gambler: DSM-IV-MR-J score 0-1
At-Risk Gambler: DSM-IV-MR-J score 2-3
Probable Pathological Gambler: DSM-IV-MR-J score ≥ 4

CHAPTER 5

DISCUSSION

The primary purpose of this study was to explore the differential gambling patterns of underage adolescents in order to identify the specific characteristics and determinants that influence the appeal of the lottery and their lottery playing behavior. The structural characteristics of lottery products that are particularly appealing to youth (e.g., monetary value, attribute of the ticket, type of game, prize structure, advertisements, colour of the ticket, etc.) were examined.

Prevalence of gambling activities

While participation in provincially regulated gambling venues in Ontario is restricted to individuals over the age of 18 for lottery playing and bingo, and 19 for other forms of gambling including casinos, 74% of youth under age 18 reported having gambled for money in the past year, with 21% reportedly having gambled once a week or more. These findings are consistent with other research studies (Huxley & Carrol, 1992; Jacob, 2000; Ladouceur & Mireault, 1998; Lesieur & Klein, 1987; NRC, 1999). Playing the lottery was found to be the most popular gambling activity for youth, with 39% of underage youth reported playing the lottery within the past week and 17% indicated doing so within the past month. Past week participation in gambling activities increased with gambling severity with probable pathological gamblers reporting the greatest frequency.

The results clearly indicate that a small but identifiable number of adolescents (2.8%) have a significant gambling problem. While these prevalence rates are lower than normally reported in the literature, the present study used the most conservative measure

(DSM-IV-MR-J) of adolescent pathological gambling (Derevensky & Gupta, 2000). Consistent with other research, more males were identified as having gambling problems (4.7% probable pathological gamblers; 10.7% at-risk gamblers) than females (1.0% probable pathological gamblers; 3.7% at-risk gamblers). While some developmental differences were noted, the distribution of adolescents based upon the degree of gambling problems was found to be relatively consistent across grade levels (grade 6-12). The prevalence rates of serious gambling problems, while somewhat lower than typically found, nevertheless, remain a significant concern.

In spite of legal restrictions, adolescents reported purchasing all forms of lottery tickets including draws (22.4%), scratchcards (54.2%), and sports lottery tickets (14.8%). Playing of scratchcards was found to be the most popular form of lottery ticket for both males and females. The only activity in which males participate more than females are sports lotteries. Furthermore, the frequency of participation in lottery activities increased by level of gambling severity.

Age of onset

The average age at which adolescents reported having started playing lottery tickets was approximately age 12 despite legal prohibitions. Developmentally, the results revealed that younger students reported gambling at even younger ages than older students (for all three types of lottery products). These result are disconcerting as research has shown that early onset of gambling behavior is predictive of more severe future problems (Custer & Milt, 1985; Dell, Ruzicka, & Palisi, 1981). Furthermore, retrospective studies of problem gamblers report the onset of their pathological behaviors to have initially begun between the ages of 10-11 (Gupta & Derevensky, 1998a; Wynne,

Smith, & Jacobs, 1996). Results of this study demonstrate that those who meet the criteria for pathological gambling reported the youngest mean ages for first starting to play lottery draws (10 years), scratch tickets (8 years), and sports tickets (11 years). As suggested by Shaffer and Hall (1994), these lottery products may well be a "gateway" activity for other risk taking (gambling) activities.

Ticket purchases

The vast majority of youth were aware of the legal age to purchase tickets with an increase in accurate knowledge across developmental levels. Although, they indicated being aware of legal age restrictions to purchase lottery tickets, a third of respondents believed that there should be no age requirement to purchase any form of lottery ticket. For those who indicated there should be an age restriction, the reported age range was between 13 and 21 with most suggesting no legal age restriction to purchase lottery tickets. Adolescents who met the at-risk and probable pathological gambler criteria were the least likely to report that there should be an age requirement to purchase lottery tickets.

Consistent with previous research findings in many jurisdictions (e.g., Canadian Foundation on Compulsive Gambling, 1994; Govoni et al.1996; Gupta &Derevensky, 1998a; Wood & Griffiths, 1998), adolescents reported few if any difficulties in purchasing lottery tickets even by the youngest children in spite of legal prohibitions. A number of students reported attempting to purchase tickets at a convenience store and had been refused. However, other students remarked that their local store "will sell tickets to anyone." Even though it becomes easier to purchase tickets as adolescents become older, more than half of the children in grades 6-9 (11-13-year olds) reported that they were

able to purchase lottery tickets with little difficulty. The majority (83%) of 17-year-olds reported finding it relatively easy to purchase tickets. A third of underage adolescents reported going to the store specifically to purchase lottery tickets. This behaviour increased with the age of the participants and gambling severity. Older youth (15 to 17-year-olds) and those with greater gambling problems reported going to the store more frequently specifically to purchase tickets. These results are alarming considering it is illegal for minors to purchase lottery tickets and given that research has shown gambling can potentially be a highly addictive activity. Many youth reported not perceiving the lottery (and bingo) to be a form of gambling. This is consistent with Wood and Griffiths' (2001) contention that lottery products are perceived primarily as a form of entertainment. Participation of minors in these perceived *innocuous* forms of gambling is of particular concern.

Gambling activity preferences

Consistent with Ladouceur and Mireault's (1998) findings, the most preferred gambling activity was scratch tickets, bingo, and betting on cards. Examination of the frequency of adolescents who participated in the various gambling activities revealed that youth most often play cards for money, play scratch/draw tickets, bingo, and wager on games of skill. Females reported primarily participating in scratchcard and bingo activities, whereas males reported playing cards for money more than any other gambling activity. Purchasing scratch/draw tickets increased as children got older, probably since it is easier for older youth to access lottery tickets and they have more money.

Parental influences

The most often cited reason for beginning and continuing to play the lottery was to win money, because parents play, for enjoyment, and excitement. These findings are consistent with previous research (Derevensky, Gupta, & Della Cioppa, 1996; Gupta & Derevensky, 1996; 1998a). Interestingly, younger individuals (11-12-year-olds) and social gamblers reported initiation and continuation of lottery product participation because parents play, whereas older youth (15-17-year-olds) and probable pathological gamblers reported initiation and continuing to play in order to win money. Social modeling of gambling as an acceptable form of recreational activity is demonstrated by the fact that elementary school children and social gamblers play primarily as a result of parental lottery participation.

Of significant concern are the large numbers of adolescents (84%) who reported that their parents were aware of their gambling activities and 94% reported not being afraid of getting caught gambling by their parents. Moreover, adolescents reported that when they had difficulty purchasing tickets for themselves, parents readily purchased the products for them. They revealed that their parents are "ok" with them purchasing tickets illegally. Children in grade 6-7 (11-13-year-olds) were the most afraid of getting caught purchasing lottery products (10%), with adolescents in grade 12 (17-year-olds) reporting that they were the least afraid (3%). Similar to previous findings, by the time children leave elementary school less than 10% fear getting caught gambling (Derevensky & Gupta, 1998a; Gupta & Derevensky, 1997). Surprisingly, the greater the level of gambling severity, the fewer number of youth who reported that their parents were aware of the playing behavior and the more they reported being afraid of getting caught by their

parents. It is likely that these youth were not afraid that their parents would become aware of their lottery playing per se, but rather that they would become aware of the severity of their gambling problems.

Equally concerning is the large number of youth who reported having received a lottery ticket as a gift for holidays, birthdays, and other occasions from parents and friends. This increased with age and gambling severity. It is alarming that more than half of 11-year-olds (60%) and 13-year-olds (67%) reported receiving a ticket as a present. Boys reported receiving more sports lottery tickets as gifts, whereas girls tended to receive more scratchcard tickets. Interestingly, youth with severe gambling problems tended to receive the most lottery tickets as gifts.

Not only are youth receiving lottery tickets as gifts, parents are regularly purchasing tickets for their children Adolescents reported that their parents purchase lottery draws (50%), scratch tickets (77%), and sports tickets (23%) for them. The amount of times scratch tickets are purchased by parents for their children decreased by developmental level (e.g., 11 to 13-year-old participants reported that their parents purchase tickets for them more 15 to 18-year olds). A likely cause for this would be that 15 to 18-year-olds appear old enough to purchase their own tickets. Lottery ticket purchases by parents for their children increased by levels of gambling severity with parents whose children have the greatest gambling problems, also receiving the most tickets as gifts.

The vast majority (82%) of youth reported that their parents play lottery products and 27% of parents play weekly or daily. Developmentally, the reported amount of parental lottery participation decreased with age, however the frequency of use increased

by the age of the participant. Previous research has found that youth with gambling problems were more likely to have parents with gambling problems and that parent's own gambling behavior seems to have adverse consequences on their children (Ladouceur, Boudreault, Jacques & Vitaro, 1999). This study found that the reported parental level of lottery participation increased by participant's level of gambling severity.

Advertising

The results clearly show that underage youth are not immune to lottery advertisements. Most adolescents reported viewing advertisements on TV, billboards, and in the print media. All students could readily recite popular lottery commercials/slogans and revealed that the "catchy tunes" go through their head when they see the ticket. In general, while 39% of adolescents reported that they would be more likely to purchase a ticket because they had seen an advertisement, they indicated not necessarily purchasing *the* ticket being advertised. Probable pathological gamblers reported being the most susceptible to be influenced by lottery advertisements. Not only were probable pathological gamblers more aware of these advertisements, but they also reported that they were more likely to purchase a ticket because of such advertisements. Given the impulsivity of most lottery ticket purchases, adolescents with gambling problems were more likely to purchase a lottery ticket placed on the checkout counter due to it's visibility and easy accessibility.

Familiarity of gambling products is important in terms of gambling acquisition (Griffiths & Dunbar, 1997; Parke & Griffiths, 2001). The gambling industry creates familiarity for products by associating tickets with celebrity images, using brand or licensed names and building upon player's previous experiences (Parke & Griffiths,

2001). Students reported that if they had to choose between a lottery ticket that had a greater probability of winning a prize and a ticket in which they were familiar (e.g., a ticket with the title of a board game such as *Monopoly*), they would select the ticket most familiar to them. More importantly, the majority of adolescents reported that they would not purchase a ticket they do not know how to play. Familiarity with the lottery product appears to be less important as the individual matures and with youth who have more severe gambling problems. Of those youth who reported playing lottery products, 37% of participants reported that they would still purchase their favorite lottery ticket even if the price increased, and this was particularly true for probable pathological gamblers.

Structural characteristics

Youth reported that they prefer money to a prize, larger tickets to smaller, and a larger jackpot to longer playtime. Adolescents' preference for money and larger jackpots can be explained by their focus on the amount of prize money rather than the probability of winning. This is further confirmed by previous research that the larger the jackpot the more people gamble despite that the odds of winning are lower (Camelot 1995). Larger tickets are more costly than smaller scratchcards, therefore it is reasonable that older adolescents (15-18-year-olds) would prefer larger tickets since they have more financial resources than younger youth. Interestingly, 11-13-year-olds reported a preference for a larger jackpot, whereas the play value of the ticket was more important for older participants. It is hypothesized that this finding is a result of 11-13-year-olds being less realistic about the odds of winning.

The structural characteristics deemed most important by adolescents on scratchcard tickets were the prize, cost of the ticket, familiarity with the game, and type

of game. Males reported higher mean ratings on characteristics concerning the size of the ticket, prize, number of games, and cost, whereas females reported a greater importance for colour, type of game, and name/title. Males perceive that larger scratch tickets increased their probability of winning a prize given the greater number of activities per card. Females on the other hand, were more concerned with the look of the ticket and the actual type of game. Regardless of age, the type of game was reported to be one of the most important features in selecting tickets (e.g., *Mini Monopoly, Bingo, Cash for Life*, and *Battleship* were the most preferred tickets). Most students preferred *Bingo* to other lottery products, indicating that *Bingo* is popular because "everyone knows how to play the game." Generally, adolescents indicated that the most essential quality of a lottery ticket is that it is "fun," it provides entertainment, and it enhances their opportunity to "dream" (e.g., escape).

Some developmental differences were found with respect to the importance of the structural characteristics on scratchcards. The price of the ticket, type of game, number of games on the ticket, and prize increased in importance by age, with participants in grades 10-11 (15-16-year-olds) reporting the highest rating on all items. Familiarity of the game was an important determinant for youth in general, however, this was found to become less important for older adolescents. Knowing how to the play the game was reported as more important for younger individuals (11 to 13-years of age) and for social gamblers. The importance of the various structural characteristics increased by level of gambling severity for all characteristics except for price and number of games, with the at-risk gamblers reporting the highest ratings. This may be due to the fact that adolescent non-gamblers and social gamblers in grades 6-9 (11-14-year-olds) tend to purchase tickets

more indiscriminately, without much consideration as to the reasons they actually selected one ticket over another. More importantly, youth prefer scratchcards to other forms of the lottery primarily because of the low cost, reinforcement contingencies and properties, immediate knowledge of the outcome, and their relative ease of being purchased.

At-risk and probable pathological gamblers similarly preferred scratchcards and reported a preference for larger tickets, money compared to prizes, and a larger jackpot. The importance of money increased with the degree of gambling problems. Some differences were found for *the most important* structural characteristics reported by adolescents depending upon their degree of gambling severity. However, all adolescents reported that the type of game, size of prize, colour of ticket, and name of the ticket were the most important characteristics and determinants when purchasing scratchcards. Furthermore, non-gamblers and social gamblers reported that the cost of the ticket is their third choice for the *most important* structural characteristics, however at-risk and probable pathological gamblers reported that the number of activities on the card was their third choice. This difference in third choice of structural characteristic is likely a result of the cost of the ticket being a more important factor in ticket selection for adolescents who do not gamble frequently (non and social gamblers). Moreover, adolescents who are very involved in gambling activities preferred a ticket with more activities on the card since the greater the number of activities on the scratch ticket, the greater the probability of winning. Probable pathological gamblers preferred tickets that were sports oriented and those stressing the opportunity to win large sums of money.

The tickets that received the highest mean ratings in order of preference were *Bingo, Cash for Life, Battleship, Millennium.* These tickets are widely advertised and youth are familiar with these games. Males reported a higher mean rating for *Football Fever, Red Hot Cash, Battleship, Grand Slam,* and *Pro-Line* than females. Females however, reported a higher mean rating to *Bingo, Golden Ticket, Mouse Maze,* and *Holiday Greetings*. Males preferred tickets that were more sports oriented (i.e., *Pro-Line*), that placed greater emphasis on the prize (tickets with titles such as *Red Hot Cash*), and that resembled casino style games (e.g., *Viva Las Vegas*). However, females choice of tickets highlight the importance of color, games which are "cuter" (i.e., *Mouse Maze*), that resemble popular board games (e.g., *Crossword and Bingo*), and emphasize the type of game more than how much money can be won.

Developmentally, there was an increase with age in the amount adolescents like specific tickets (e.g., *Lotto 6/49).* Generally, 11 to 13-year olds reported lower ratings on all tickets pairs than 15 to 17-year-old individuals. This may be the result of greater ticket accessibility to older youth, who have had more experience playing lottery products and therefore resulting in different preferences. Games that mention money, like *Red Hot Cash* or *Instant Millions* increase in popularity as participants get older which is likely due to the emphasis on the size of prize. Furthermore, the preference for sports oriented tickets (i.e., *Pro-Line, Grand Slam*) and *Lotto 6/49* increased with the age of participants. It is likely that older adolescents preferred these types of lottery activities since these games are more complex and challenging.

At-risk and probable pathological gamblers reported a preference for all tickets more than non-gamblers and social gamblers. Many differences were found among levels

of gambling severity in their choice of ticket pairs. Probable pathological gamblers reported a preference for *Cash of the Day, Battleship, Grad Slam, Doubling Red 7's*, and *Lotto 6/49*. On the two occasions *Viva Las Vegas* was presented, at-risk youth chose this ticket over *Crossword* and *Mouse Maze*. Youth at-risk for gambling problems seem to prefer the tickets that have the illusion of a greater probability winning a prize, whereas non-gamblers and the social gamblers preferred games that were more colourful, had cartoons on the ticket, and had multiple activities on the ticket.

No other research study has empirically examined the structural characteristics of lottery products and the appeal of lottery products for youth. The presentation of the actual lottery tickets to youth in a paired comparison format aided in our understanding of the structural characteristics youth find important when choosing a lottery ticket. Given that many youth with gambling problems begin by playing and purchasing a variety of lottery products, this research may provide clinicians and researchers with additional information as to why certain individuals are susceptible to develop a gambling problem.

Due to the difficulty gaining samples of students in grade 12, the age distribution is slightly skewed. While this is a limitation, on the other hand, the fact that we found such high rates of gambling behavior and lottery ticket participation among younger students points to the fact that it is a serious concern.

Unfortunately, a true-paired comparison technique in which each ticket is paired with every other ticket was impossible as it would have entailed an innumerable number of paired matching and time constraints prohibited this type of methodology.

A recent change in the types of games employed by the lottery corporations has transformed what typically began as a passive draw with a large prize, to more engaging,

challenging and active lottery products. Lotteries today are now promoted as a form of entertainment, of fulfilling one's dreams, proving an enjoyable, and challenging past time. Similar to adults, the lottery has become a way for adolescents to solve current and future financial problems. The current research supports the premise that lottery products are highly popular with youth and are easily accessible. Gambling, specifically lottery playing (e.g., scratch tickets), is one of the few potentially addictive behaviors that youth are exposed to on a daily basis that is supported, endorsed, and promoted by the government with few parents being aware of the potential short-term and long-term negative consequences.

The fact that many adolescents reported having little difficulty purchasing lottery tickets is of particular concern. The present research study supports the premise that lottery products are highly popular and accessible to underage youth.

Generally, the perception is that legal sanctions (e.g., age restriction to purchase tickets) will discourage any "really serious" gambling among those under 18 years of age. Greater societal awareness of the number of youth who have access to lottery products, and other gambling venues, and the potential harm associated with such activities may lead to stricter enforcement of existing laws. Governmental acknowledgement of youth gambling problems may generate more vigorous and effective methods for discouraging lottery play by underage youth. We have found in the current research program that youth are indeed attracted to colorful tickets, tickets that are modeled after popular board games (e.g., *Monopoly, Battleship, Bingo*), and tickets that offer the possibility of a large prize for a low entry cost. Given the findings that lottery products are quite appealing to youth, are easily accessible, and have been hypothesized to be a "gateway" to other gambling

venues, policy makers are strongly encouraged to rigorously enforce existing statutes prohibiting underage youth from purchasing lottery tickets. With the advent of new high tech and licensed lottery products under development (e.g., *Treasure Tower*), specific safeguards must be put in place to curb and monitor the introduction of products particularly attractive to youth.

Further funding for the development and implementation of a widespread prevention program must begin at the elementary school level. Youth gambling problems, often referred to as the *hidden addiction,* have not received the same attention in schools as other potentially addictive behaviors (e.g., alcohol abuse, cigarette smoking, and drug use). Efforts must be made to ensure that school administrators, members of psychological services, and teachers are aware of this growing problem. Any prevention program must be accompanied by a public education-awareness program encouraging parents and adults to be attentive to the types of gambling-related problems experienced by adolescents. Further research efforts and prevention programs need to be initiated in trying to modify the lottery purchasing and playing behavior of youth. With the advent of new games and formats being developed by Lottery corporations, careful monitoring of this situation is imperative.

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APPENDIX A:

Geographic distribution

	School Board
York Region District	59.2 %
Niagara Catholic District	12.2 %
Durham-Catholic District	2.3 %
Grand-Erie District	9.5 %
Thunder Bay-Catholic District	12.9 %
Keewatin Public District	3.8 %
TOTAL SAMPLE	N = 1072

Breakdown of sample by school

	Percent per school
Elementary (grade 6/7)	
Maple Leaf Public School	5.1 %
Coppard Glen Public School	4.8 %
Randall Public School	3.8 %
High view Public School	4.7 %
Bogart Public School	1.0 %
Morning Glory Public School	3.3 %
16th Avenue Public School	1.9 %
St-Nicholas Elementary	.9 %
St-Patrick Elementary	1.1 %
Father Hennepin Elementary	1.9 %
St-Joseph Elementary	2.3 %
Russell Reid Coronation	2.6 %
Cederland Elementary	2.1 %
Bishop Jennings Elementary	3.2 %
Bishop Gallagher Elementary	2.3 %
Sacred Heart Elementary	3.3 %
St – Edward Elementary	.8 %
Evergreen Elementary	.5 %
Keewatin Elementary	.7 %
Lakewood Elementary	2.1 %
High School (grade 8 – 12)	
Markville Secondary	1.9 %
King City Secondary	7.1 %
Langstaff Secondary	14.1 %
Thornlea Secondary	11.7 %
St-Michaels Secondary	8.3 %
Pauline Johnson	4.8 %
St-Patrick High School	.7 %
St-Ignatius High School	2.5 %
Beaver Brae Secondary	.6 %
TOTAL SAMPLE	N = 1072

APPENDIX B

Gender and Developmental Differences: Additional Tables

Table B1: Percentage of Youth Who Play Lottery Products: Total Sample

N = 1065	Lottery Product Participation		
Total Sample	**Draws**	**Scratchcards**	**Sports**
Never	77.6 %	45.8 %	85.2 %
< 1 a month	15.5 %	33.3 %	7.5 %
1 a month	4.3 %	10.2 %	2.6 %
2-3 times a month	1.2 %	8.0 %	2.3 %
Every week	1.3 %	2.4 %	2.2 %
Every day	0.1 %	0.3 %	0.2 %

Table B2: Percentage of Youth Who Play Lottery Products by Gender

	Lottery Product Participation					
N = 1065	**Draws**		**Scratchcards**		**Sports**	
GENDER	Male	Female	Male	Female	Male	Female
Never	71.1 %	82.7 %	43.3 %	48.2 %	76.6 %	93.2 %
< 1 a month	18.2 %	13.0 %	32.3 %	34.2 %	10.0 %	5.1 %
1 a month	5.6 %	3.1 %	11.3 %	9.1 %	4.1 %	1.3 %
2-3 times a month	1.7 %	0.7 %	9.2 %	6.9 %	4.4 %	0.4 %
Every week	2.1 %	0.5 %	3.5 %	1.5 %	4.4 %	0.0 %
Every day	0.2 %	0.0 %	0.4 %	0.2 %	.04 %	0.0 %

Table B3: Percentage of Youth Who Play Lottery Products by Developmental Level

	Lottery Product Participation											
N = 1065	**Draws**				**Scratchcards**				**Sports**			
GRADE	6/7	8/9	10/11	12	6/7	8/9	10/11	12	6/7	8/9	10/11	12
Never	83.3 %	76.6%	76.1 %	75.1%	46.2%	42.9%	49.3 %	44.8%	91.0 %	85.5%	82.0 %	83.1 %
< 1 a month	11.8 %	16.9%	14.7 %	18.4%	33.6%	37.3%	28.8 %	33.0%	4.5 %	8.0 %	7.8 %	9.5 %
1 a month	3.2 %	3.9 %	5.2 %	5.0 %	8.5 %	13.0%	9.2 %	8.9 %	2.3 %	2.7 %	2.9 %	2.5 %
2-3 times a month	0.9 %	0.9 %	2.0 %	1.0 %	9.9 %	5.0 %	8.5 %	10.3%	0.9 %	1.5 %	4.6 %	2.0 %
Every week	0.9 %	1.8 %	1.6 %	0.5 %	1.8 %	1.8 %	3.3 %	3.0 %	1.4 %	2.1 %	2.3 %	3.0 %
Every day	0.0 %	0.0 %	0.3 %	0.0 %	0.0 %	0.0 %	1.0 %	0.0 %	0.0 %	0.3 %	0.3 %	0.0 %

Table B4: Knowledge of What Constitutes a Gambling Activity by Gender

	Activities believed to be a form of gambling		
N = 1068	Male	Female	Total
Lottery Draws	81.1 %	78.4 %	79.7 %
Bingo *	61.8 %	54.7 %	58.1 %
Video Games	16.0 %	14.5 %	15.3 %
Slot machines *	74.3 %	67.6 %	70.9 %
Betting on Cards**	89.6 %	91.8 %	90.7 %
Scratch tickets	73.9 %	64.5 %	69.1 %
Horse track	90.2 %	88.4 %	89.2 %
Sports betting	85.7 %	86.7 %	86.3 %
Casino computer games	74.6 %	75.8 %	75.2 %

Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.
**Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.

Table B5: Knowledge of What Constitutes a Gambling Activity by Developmental Level

	Activities believed to be a form of gambling				
N = 1068	Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Lottery Draws *	73.1 %	83.1 %	79.8 %	81.1 %	79.7 %
Bingo	55.2 %	60.2 %	54.1 %	64.2 %	58.1 %
Video Games	13.9 %	14.2 %	16.6 %	16.4 %	15.3 %
Slot machines	66.8 %	74.2 %	69.7 %	71.6 %	70.9 %
Betting on Cards**	82.1 %	93.5 %	90.9 %	95.5 %	90.7 %
Scratch tickets	61.0 %	71.5 %	69.9 %	72.6 %	69.1 %
Horse track**	79.8 %	92.3 %	89.9 %	93.5 %	89.2 %
Sports betting**	77.6 %	87.8 %	88.6 %	90.0 %	86.3 %
Casino computer games	70.0 %	78.3 %	74.4 %	77.1 %	75.2 %

Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.
****Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.***

Table B6: Participants Who Go to the Store Specifically to Purchase Lottery Tickets by Gender

	Participants who go to the store specifically to purchase tickets		
N = 601	Male	Female	Total
Never	64.3 %	70.0 %	67.1 %
< 1 a month	20.9 %	21.4 %	21.1 %
1 a month	6.1 %	4.1 %	5.2 %
2-3 times a month	5.5 %	2.4 %	4.0 %
Every week	2.6 %	2.1 %	2.3 %
Every day	0.6 %	0.0 %	0.3 %

Table B7: Participants Who Go to the Store Specifically to Purchase Lottery Tickets by Developmental Level

	Participants who go to the store specifically to purchase tickets			
N = 601	Grade 6/7	Grade 8/9	Grade 10/11	Grade 12
Never	71.1 %	72.7 %	62.3 %	60.0 %
< 1 a month	21.5 %	18.2 %	23.5 %	22.5 %
1 a month	4.1 %	3.5 %	4.3 %	10.0 %
2-3 times a month	1.7 %	3.0 %	6.8 %	4.2 %
Every week	1.7 %	2.5 %	2.5 %	2.5 %
Every day	-	-	0.6 %	0.8 %

Table B8: Percentage of Participants Borrowing Money in the Past Year to Buy Lottery Tickets and Indicated Purchasing a Lottery Ticket for a Friend by Gender

	Male	Female	Total
Borrowed money (N = 585)	7.7 %	8.1 %	7.9 %
Bought for friend (N = 598)	18.9 %	23.4 %	21.1 %

Table B9: Percentage of Participants Borrowing Money in the Past Year to Buy Lottery Tickets and Indicated Purchasing a Lottery Ticket for a Friend by Developmental Level

	Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Borrowed money (N = 585)	7.0 %	7.3 %	7.5 %	10.1 %	7.9 %
Bought for friend** (N = 598)	12.7 %	13.2 %	20.0 %	44.1 %	21.1 %

**Statistically significant ($p<.01$) as tested by Pearson chi-square analysis.

Table B10: Spending Preferences

N = 602	Entertainment			Lottery products		
Gender	**Movies**	**Food**	**Video Games**	**Draws**	**Scratch**	**Sports**
Male	47.7 %	17.6 %	25.1 %	1.0 %	5.9 %	2.9 %
Female	39.7 %	51.9 %	1.7 %	0.3 %	5.8 %	0.7 %
Grade Level						
Grade 6/7	34.1 %	31.7 %	22.0 %	0.8 %	11.4 %	0.0 %
Grade 8/9	39.7 %	34.2 %	18.6 %	0.5 %	5.5 %	1.5 %
Grade 10/11	21.8 %	61.2 %	8.5 %	0.6 %	4.8 %	3.0 %
Grade 12	13.0 %	78.3 %	3.5 %	0.9 %	1.7 %	2.6 %
Total	28.6 %	49.5 %	13.6 %	0.7 %	5.8 %	1.8 %

Table B11: Gambling Activity Preferences (MANOVA)

Effect	Value	F	df	p	Observed Power
Gender Wilks Lambda	9.27	.9150	8, 934	<.001	1.000
Grade Wilks Lambda	.927	2.997	24, 2709	<.001	1.000
Gambling Severity Wilks Lambda	.783	9.961	24, 2709	<.001	1.000
Gender x Grade Wilks Lambda	.954	1.835	24, 2709	. 008	.989
Gender x Gambling Severity Wilks Lambda	.966	1.351	24, 2709	.118	.936
Grade x Gambling Severity Wilks Lambda	.910	1.230	72, 5688	.092	.994
Gender x Grade x Gambling Severity Wilks Lambda	.933	1.011	64, 5393	.451	.943

Table B12: Univariate Analyses for Gambling Activity Preferences

EFFECT	F	df	P	OBS. POWER
Gender				
Sports betting	34.520	1, 972	<.001	1.000
Betting on cards	11.962	1, 972	<.001	.933
Video games	7.900	1, 972	<.005	.802
Bingo*	8.764	1, 972	<.003	.841
Grade				
Sports betting	4.359	3, 972	<.005	.871
Slot machines	6.716	3, 972	<.001	.975
Gambling Severity				
Scratchcard Ticket	58.626	3,972	<.001	1.000
Lottery draws	13.446	3, 972	<.001	1.000
Sports betting	14.772	3, 972	<.001	1.000
Betting on cards	28.618	3, 972	<.001	1.000
Video game	5.025	3, 972	<.002	.917
Slot machines	16.980	3, 972	<.001	1.000
Bingo	26.745	3, 972	<.001	1.000
Horse track	13.732	3, 972	<.001	1.000
Gender x Grade				
Horse track	2.742	3, 972	.042	.666
Gender x Gambling Severity				
Sports betting	6.930	3, 972	<.001	.979

Note: For brevity purposes only statistically significant differences are reported.

Table B13: Lottery Activity Preferences by Developmental Level: Post-Hoc Comparisons

	Scheffe Post-Hoc Tests		
	Grade Comparison	**Mean Difference**	**p**
Scratch Tickets			
	Grade 6/7 versus grade 10/11	-.53	<.005
	Grade 6/7 versus grade 12	-.66	<.001
Lottery Draws			
	Grade 6/7 versus grade 8/9	-.50	<.005
	Grade 6/7 versus grade 10/11	-.89	<.001
	Grade 8/9 versus grade 10/11	-.84	<.001
Sports Betting			
	Grade 6/7 versus 8/9	-.62	<.001
	Grade 6/7 versus 10/11	-1.10	<.001
	Grade 6/7 versus 12	-.88	<.001
	Grade 8/9 versus 10/11	-.47	<.006
Betting on Cards			
	Grade 6/7 versus 10/11	-.88	<.001
	Grade 6/7 versus 12	-.80	<.001
	Grade 8/9 versus 10/11	-.45	<.023
Video Games			
	Grade 6/7 versus 12	.69	<.010
	Grade 8/9 versus 12	.58	<.020
Slot Machines			
	Grade 6/7 versus 10/11	-.45	<.011
	Grade 8/9 versus 10/11	-.62	<.001
Bingo			
	No significant grade differences		
Horse Track			
	Grade 8/9 versus 10/11	-.69	<.001
	Grade 8/9 versus 12	-.67	<.001

Table B14: Percentage of Parents Who Play the Lottery by Gender

N = 1064		**Male**	**Female**	**Total**
Parents who play lottery products*		79.4 %	84.3 %	82.0 %
Frequency of play	Never	20.6 %	15.7 %	18.0 %
	Occasional	51.4 %	58.8 %	55.5 %
	Regular	28.0 %	25.5 %	26.7 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Table B15: Percentage of Parents Who Play the Lottery by Developmental Level

N = 1064		Grade 6/7	Grade 8/9	Grade 10/11	Grade 12	Total
Parents who play lottery products		83.2 %	82.1 %	82.0 %	80.3 %	82.0 %
Frequency of play*	Never	16.8 %	17.9 %	18.0 %	19.7 %	18.0 %
	Occasional	60.5 %	61.0 %	50.5 %	47.3 %	55.5 %
	Regular	22.7 %	21.1 %	31.5 %	33.0 %	26.7 %

Occasional Use = Less than once per week
Regular Use = Weekly & daily
*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Table B16: Parental Purchases of Lottery Products for their Children

Parental Purchases	Draws	Scratchcards	Sports
Never	49.9 %	23.3 %	76.8 %
< 1 a month	22.1 %	45.5 %	12.2 %
1 a month	8.3 %	15.2 %	4.8 %
2-3 times a month	7.7 %	11.4 %	2.4 %
Every week	10.9 %	4.5 %	3.3 %
Every day	1.0 %	.2 %	.5 %

Table B17: Parental Purchases of Lottery Products for their Children by Gender

	Draws		Scratchcards		Sports	
Parental Purchases	Male	Female	Male	Female	Male	Female
Never	48.8 %	51.1 %	26.1 %	20.3 %	70.8 %	83.3 %
< 1 a month	19.5 %	25.0 %	41.9 %	49.2 %	14.0 %	10.3 %
1 a month	8.6 %	8.1 %	14.5 %	15.9 %	6.3 %	3.2 %
2-3 times a month	9.2 %	6.0 %	11.9 %	10.8 %	4.0 %	0.7 %
Every week	12.9 %	8.8 %	5.5 %	3.4 %	4.3 %	2.1 %
Every day	1.0 %	1.1 %	0.0 %	0.3 %	.7 %	0.4 %

Table B18: Parental Purchases of Lottery Products for their Children by Developmental Level

	Draws				Scratchcards				Sports			
Grade	6/7	8/9	10/11	12	6/7	8/9	10/11	12	6/7	8/9	10/11	12
Never	55.8%	46.3%	50.9%	48.2%	18.7%	18.7%	22.0%	37.9%	83.9%	76.4%	68.5%	82.1%
< 1 a month	18.3%	23.2%	23.3%	22.8%	43.9%	48.5%	44.6%	43.1%	9.3%	12.0%	15.4%	10.7%
1 a month	9.2%	7.9%	7.4%	9.6%	14.6%	17.2%	18.5%	7.8%	1.7%	5.8%	6.2%	4.5%
2-3 times a month	5.8%	10.0%	6.1%	7.9%	16.3%	10.1%	10.7%	9.5%	1.7%	3.1%	3.1%	0.9%
Every week	10.0%	12.1%	10.4%	10.5%	5.7%	5.6%	4.2%	1.7%	3.4%	2.1%	5.6%	1.8%
Every day	0.8%	0.5%	1.8%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.5%	1.2%	0.0%

Table B19: Reported Exposure to Lottery Advertisements by Gender

	Type of media advertising				More likely to buy a ticket due to advertising*
N = 1072	TV	Newspaper	Magazine*	Billboards*	
Male	91.5 %	68.4 %	59.0 %	71.8 %	36.3 %
Female	89.1 %	68.1 %	50.6 %	66.0 %	41.5 %
Total	90.3 %	68.2 %	54.7 %	68.8 %	39.0 %

*Statistically significant ($p<.05$) as tested by Pearson chi-square analysis.

Table B20: Results of MANOVA for Structural Characteristic Preferences

Effect	Value	F	df	p	Observed Power
Gender Wilks Lambda	.988	1.574	7, 945	.139	.661
Grade Wilks Lambda	.959	1.916	21, 2714	<. 007	.984
Gambling Group Wilks Lambda	.920	3.807	21, 2714	<.001	1.000
Gender x Grade Wilks Lambda	.968	1.467	21, 2714	.078	.933
Gender x Gambling Group Wilks Lambda	.968	1.467	21, 2714	.078	.933
Grade x Gambling Group Wilks Lambda	.920	1.262	63, 5328	.080	.994
Gender x Grade x Gambling Group Wilks Lambda	.935	1.150	56, 5094	. 207	.970

Table B21: Univariate Analyses for Structural Characteristic Preferences

EFFECT	F	df	p	Observed Power
Grade				
Cost of ticket	3.052	3 , 981	<.028	0.718
Type of game	3.630	3 , 981	<.013	0.798
Number of activities	3.059	3 , 981	<.027	0.719
Prize	3.501	3 , 981	<.015	0.782
Gambling Group				
Colour	2.779	3 , 981	<.040	0.672
Type of game	3.754	3 , 981	<.011	0.812
Number of activities	8.902	3 , 981	<.001	0.996
Title of game	5.208	3 , 981	<.001	0.927
Prize	3.212	3 , 981	<.022	0.742
Size of ticket	15.863	3 , 981	<.001	1.000
Grade x Gambling Group				
Cost	2.137	9 , 981	<.024	0.886

Note: For brevity only statistically significant differences are reported.

Table B22: Structural Characteristic Preferences by Developmental Level: Post-Hoc

	Scheffe Post-Hoc Tests		
	Grade Comparison	**Mean Difference**	***P***
Cost	Grade 6/7 versus 8/9	-0.55	<.005
	Grade 6/7 versus 10/11	-0.69	<.001
	Grade 6/7 versus 12	-0.66	<.002
Color			
	Grade 6/7 versus 12	-0.42	<.020
Type of Game			
	Grade 6/7 versus 8/9	-0.71	<.001
	Grade 6/7 versus 10/11	-1.12	<.001
	Grade 6/7 versus 12	-0.86	<.001
	Grade 8/9 versus 10/11	-0.41	<.036
Number of activities			
	Grade 6/7 versus 8/9	-0.71	<.001
	Grade 6/7 versus 10/11	-1.20	<.001
	Grade 6/7 versus 12	-0.79	<.001
	Grade 8/9 versus 10/11	-0.48	<.009
Title of game			
	Grade 6/7 versus 8/9	-0.50	<.012
	Grade 6/7 versus 10/11	-0.43	<.049
Prize			
	Grade 6/7 versus 8/9	-1.11	<.001
	Grade 6/7 versus 10/11	-1.47	<.001
	Grade 6/7 versus 12	-1.10	<.001
Size of ticket			
	Grade 6/7 versus 8/9	-0.45	<.012
	Grade 6/7 versus 10/11	-0.49	<.005
	Grade 6/7 versus 12	-0.44	<.036

Table B23: Results of MANOVA for Ticket Pairs

Effect	Value	F	Df	*p*	Observed Power
Gender Wilks Lambda	.889	3.296	32 , 849	<.001	1.000
Grade Wilks Lambda	.835	1.649	96 , 2542	<.001	1.000
Gambling Severity Wilks Lambda	.733	2.890	96 , 2542	<.001	1.000
Gender x Grade Wilks Lambda	.829	1.712	96 , 2542	<.001	1.000
Gender x Gambling Severity Wilks Lambda	.825	1.760	96 , 2542	<.001	1.000
Grade x Gambling Severity Wilks Lambda	.627	1.420	288 , 7394	<.001	1.000
Gender x Grade x Gambling Severity Wilks Lambda	.676	1.334	256 , 6621	<.001	1.000

Table B24: Univariate Analyses for Ticket Pair Ratings

Effect	F	df	*p*	Observed Power
Gender				
Bingo (pair 2)	7.321	1,911	<.007	.771
Bingo (pair 4)	6.191	1,911	<.013	.700
Mouse Maze (pair 7)	4.427	1,911	<.036	.556
Bingo (pair 9)	5.021	1,911	<.025	.610
Bingo Express (pair 11)	11.415	1,911	<.001	.921
Football Fever (pair 11)	9.985	1,911	<.002	.884
Holiday Greetings (pair 12)	4.038	1,911	<.045	.519
Doubling Red 7s (pair 12)	6.446	1,911	<.011	.718
Pro-Line (pair 15)	9.655	1,911	<.002	.874
Bingo Express (pair 16)	5.628	1,911	<.018	.659
Grade				
Lucky O'Instant (pair 1)	3.941	3,911	<.008	.832
Mini Monopoly (pair 14)	3.031	3,911	<.029	.714
Gambling Group				
Lucky Instant (pair 1)	12.899	3,911	<.001	1.000
Cash of the Day (pair 1)	12.951	3,911	<.001	1.000
Bingo (pair 2)	41.002	3,911	<.001	1.000
Golden Ticket (pair 2)	11.060	3,911	<.001	.999
Lucky Dice (pair 3)	23.877	3,911	<.001	1.000
Instant Millions (pair 3)	22.318	3,911	<.001	1.000

Battleship (pair 4)	26.042	3,911	<.001	1.000
Bingo (pair 4)	35.741	3,911	<.001	1.000
Red Hot Cash (pair 5)	22.77	3,911	<.001	1.000
Instant Millions (pair 5)	25.114	3,911	<.001	1.000
Cash for Lie (pair 6)	23.102	3,911	<.001	1.000
Millennium (pair 6)	30.467	3,911	<.001	1.000
Mouse Maze (pair 7)	9.905	3,911	<.001	.998
Viva Las Vegas (pair 7)	26.814	3,911	<.001	1.000
Jokers Wild (pair 8)	11.995	3,911	<.001	1.000
Mini Monopoly (pair 8)	29.125	3,911	<.001	1.000
Mouse Maze (pair 9)	13.313	3,911	<.001	1.000
Bingo (pair 9)	34.043	3,911	<.001	1.000
Lucky Instant (pair 10)	27.623	3,911	<.001	1.000
Grand Slam (pair 10)	19.407	3,911	<.001	1.000
Bingo Express (pair 11)	31.436	3,911	<.001	1.000
Football Fever (pair 11)	20.065	3,911	<.001	1.000
Holiday Greeting (pair 12)	13.859	3,911	<.001	1.000
Doubling Red 7s (pair 12)	17.593	3,911	<.001	1.000
Crossword (pair 13)	23.418	3,911	<.001	1.000
Viva Las Vegas (pair 13)	26.656	3,911	<.001	1.000
Lotto 6/49 (pair 14)	13.388	3,911	<.001	1.000
Mini Monopoly (pair 14)	24.389	3,911	<.001	1.000
Grand Slam (pair 15)	16.448	3,911	<.001	1.000
Pro-Line (pair 15)	22.635	3,911	<.001	1.000
Red Hot Cash (pair 16)	24.278	3,911	<.001	1.000
Bingo Express (pair 16)	30.835	3,911	<.001	1.000
Gender x Grade				
Cash of the Day (pair 1)	2.972	3,911	<.031	.705
Grand Slam (pair 10)	2.990	3,911	<.030	.707
Doubling Red 7s (pair 12)	3.405	3,911	<.017	.769
Crossword (pair 13)	3.879	3,911	<.009	.826
Gender x Gambling Severity				
Cash of the Day (pair 1)	3.715	3,911	<.011	.808
Battleship (pair 4)	3.880	3,911	<.009	.826
Mini Monopoly (pair 8)	2.708	3,911	<.044	.660
Grand Slam (pair 10)	4.680	3,911	<.003	.896
Football Fever (pair 11)	3.557	3,911	<.014	.590
Grand Slam (pair 15)	3.533	3,911	<.014	.798
Pro-Line (pair 15)	5.969	3,911	<.001	.957
Bingo Express (pair 16)	2.846	3,911	<.037	.684
Grade x Gambling Severity				
Lucky O'Instant (pair 1)	3.285	9,911	<.001	.984
Lucky O'Instant (pair 10)	1.933	9,911	<.044	.844
Gender x Grade x Gambling Severity				
Doubling Red 7s (pair 12)	2.899	8,911	<.003	.952
Crossword (pair 13)	2.915	8,911	<.003	.954

Note: For brevity only significant differences are reported.

Table B25: Mean Rating of Each Lottery Ticket Pair by Gender

	Male		Female		Total	
Pair 1	M	SD	M	SD	M	SD
Lucky O'Instant	3.17	1.76	3.40	1.60	3.29	1.68
Cash of the Day	2.85	1.69	2.82	1.56	2.84	1.63
Pair 2						
Bingo	4.59	2.06	4.86	1.78	4.73	1.93
Golden Ticket	3.36	2.00	4.06	1.88	3.72	1.97
Pair 3						
Lucky Dice	3.20	1.72	3.15	1.48	3.17	1.60
Instant Millions	4.19	2.01	3.69	1.70	3.93	1.87
Pair 4						
Battleship	4.71	2.02	4.16	1.89	4.43	1.97
Bingo	4.59	2.03	4.74	1.74	4.66	1.89
Pair 5						
Red Hot Cash	3.68	1.82	3.73	1.69	3.70	1.76
Instant Millions	4.26	1.98	3.66	1.69	3.95	1.86
Pair 6						
Cash for Life	4.86	2.09	4.45	1.93	4.65	2.02
Millennium	4.42	1.99	4.22	1.72	4.32	1.86
Pair 7						
Mouse Maze	3.94	2.02	4.40	1.81	4.17	1.93
Viva Las Vegas	3.83	1.91	3.85	1.71	3.84	1.81
Pair 8						
Jokers Wild	2.85	1.69	2.90	1.41	2.87	1.55
Mini Monopoly	4.01	1.90	4.05	1.67	4.03	1.79
Pair 9						
Mouse Maze	3.92	2.00	4.28	1.80	4.11	1.91
Bingo	4.60	2.06	4.72	1.79	4.67	1.92
Pair 10						
Lucky O'Instant	3.61	1.83	3.76	1.62	3.69	1.73
Grand Slam	3.56	1.92	2.70	1.64	3.12	1.83
Pair 11						
Bingo Express	3.62	1.87	3.84	1.71	3.74	1.79
Football Fever	3.62	2.00	2.49	1.55	3.04	1.87
Pair 12						
Holiday Greetings	3.80	1.99	4.33	1.86	4.07	1.94
Doubling Red 7s	3.73	1.89	3.44	1.62	3.58	1.76
Pair 13						
Crossword	3.95	2.00	4.21	1.82	4.09	1.91
Viva Las Vegas	3.90	1.95	3.85	1.71	3.88	1.83
Pair 14						
Lotto 6/49	3.70	2.18	3.07	1.88	3.37	2.05
Mini Monopoly	4.01	1.86	4.00	1.66	4.00	1.76
Pair 15						
Grand Slam	3.24	1.87	2.64	1.58	3.02	1.77
Pro-Line	3.82	2.26	2.58	1.74	3.18	2.11
Pair 16						
Red Hot Cash	3.78	1.87	3.66	1.67	3.72	1.77
Bingo Express	3.79	1.89	3.85	1.71	3.82	1.80

Table B26: Mean Rating of Each Lottery Ticket Pair by Grade Level

	Grade 6/7		Grade 8/9		Grade 10/11		Grade 12		Total	
Pair 1	M	SD	M	SD	M	SD	M	SD	M	SD
Lucky O'Instant	2.90	1.84	3.18	1.62	3.54	1.59	3.53	1.63	3.29	1.68
Cash of the Day	2.59	1.68	2.83	1.65	3.04	1.60	2.81	1.53	2.84	1.63
Pair 2										
Bingo	4.29	2.01	4.62	1.91	4.96	1.88	5.06	1.84	4.73	1.93
Golden Ticket	3.26	2.02	3.72	1.97	4.04	1.91	3.71	1.92	3.72	1.97
Pair 3										
Lucky Dice	2.61	1.60	3.16	1.53	3.42	1.59	3.47	1.57	3.17	1.60
Instant Millions	3.75	1.98	3.93	1.94	4.06	1.80	3.94	1.72	3.93	1.87
Pair 4										
Battleship	4.17	2.11	4.29	1.93	4.67	1.92	4.59	1.91	4.43	1.97
Bingo	4.23	2.00	4.61	1.84	4.84	1.89	4.97	1.77	4.66	1.89
Pair 5										
Red Hot Cash	3.41	1.96	3.70	1.78	3.87	1.63	3.78	1.66	3.70	1.76
Instant Millions	3.64	2.03	3.86	1.90	4.20	1.77	4.07	1.68	3.95	1.86
Pair 6										
Cash for Life	4.52	2.23	4.64	2.05	4.74	1.94	4.68	1.83	4.65	2.02
Millennium	4.06	2.13	4.25	1.90	4.53	1.72	4.41	1.63	4.32	1.86
Pair 7										
Mouse Maze	3.82	2.02	4.07	1.98	4.46	1.86	4.31	1.80	4.17	1.93
Viva Las Vegas	3.58	2.01	3.80	1.78	4.00	1.74	3.96	1.70	3.84	1.81
Pair 8										
Jokers Wild	2.67	1.69	2.79	1.51	3.01	1.54	3.03	1.46	2.87	1.55
Mini Monopoly	3.97	1.93	3.92	1.77	4.21	1.73	4.03	1.70	4.03	1.79
Pair 9										
Mouse Maze	3.74	2.03	4.06	1.94	4.35	1.85	4.23	1.75	4.11	1.91
Bingo	4.39	2.07	4.57	1.93	4.83	1.84	4.90	1.81	4.67	1.92
Pair 10										
Lucky O'Instant	3.63	2.08	3.58	1.72	3.77	1.57	3.84	1.52	3.69	1.73
Grand Slam	2.98	1.96	3.06	1.84	3.24	1.78	3.19	1.72	3.12	1.83
Pair 11										
Bingo Express	3.72	1.98	3.69	1.82	3.76	1.69	3.81	1.69	3.74	1.79
Football Fever	2.92	2.04	3.04	1.84	3.14	1.90	3.02	1.65	3.04	1.87
Pair 12										
Holiday Greetings	3.76	2.09	4.15	1.93	4.18	1.85	4.12	1.89	4.07	1.94
Doubling Red 7s	3.55	2.02	3.54	1.84	3.86	1.60	3.52	1.52	3.58	1.76
Pair 13										
Crossword	3.76	1.99	4.10	1.93	4.28	1.86	4.15	1.82	4.09	1.91
Viva Las Vegas	3.85	2.05	3.84	1.87	4.07	1.69	3.98	1.64	3.88	1.83
Pair 14										
Lotto 6/49	3.08	2.08	3.41	2.14	3.45	1.98	3.52	1.97	3.37	2.05
Mini Monopoly	3.97	1.90	3.90	1.77	4.15	1.71	4.00	1.67	4.00	1.76
Pair 15										
Grand Slam	2.95	1.93	3.02	1.79	3.01	1.67	3.08	1.70	3.02	1.77
Pro-Line	2.81	1.96	3.20	2.06	3.41	2.23	3.20	2.09	3.18	2.11
Pair 16										
Red Hot Cash	3.63	2.05	3.80	1.82	3.80	1.60	3.56	1.61	3.72	1.77
Bingo Express	3.68	1.90	3.81	1.84	3.85	1.69	3.95	1.79	3.82	1.80

Table B27: Developmental Differences for Ticket Pair Ratings: Post-Hoc Differences

	Developmental Comparisons	Mean Difference	p
Lucky O'Instant (pair 1)	Grade 6/7 versus 10/11	-.69	<.001
	Grade 6/7 versus 12	-.59	<.006
	Grade 8/9 versus 10/11	-.46	<.008
Cash of the Day (pair 1)			
	Grade 6/7 versus 10/11	-.51	<.008
Bingo (pair 2)			
	Grade 6/7 versus 10/11	-.77	<.001
	Grade 6/7 versus 12	-.91	<.001
	Grade 8/9 versus 12	-.49	<.043
Golden Ticket (pair 2)			
	Grade 6/7 versus 10/11	-.84	<.001
Lucky Dice (pair 3)			
	Grade 6/7 versus 8/9	-.51	<.005
	Grade 6/7 versus 10/11	-.79	<.001
	Grade 6/7 versus 12	-.87	<.001
Battleship (pair 4)			
	Grade 6/7 versus 10/11	-.55	<.020
Bingo (pair 4)			
	Grade 6/7 versus 10/11	-.71	<.001
	Grade 6/7 versus 12	-.86	<.001
Red Hot Cash (pair 5)			
	Grade 6/7 versus 10/11	-.46	<.039
Instant Millions (pair 5)			
	Grade 6/7 versus 10/11	-.70	<.001
	Grade 6/7 versus 12	-.56	<.027
Millennium (pair 6)			
	Grade 6/7 versus 10/11	-.61	<.004
Mouse Maze (pair 7)			
	Grade 6/7 versus 10/11	-.77	<.001
	Grade 6/7 versus 12	-.65	<.014
	Grade 8/9 versus 10/11	-.46	<.038
Viva Las Vegas (pair 7)			
	Grade 6/7 versus 10/11	-.52	<.017
Mouse Maze (pair 9)			
	Grade 6/7 versus 10/11	-.63	<.005
Bingo (pair 9)			
	Grade 6/7 versus 10/11	-.58	<.012
	Grade 6/7 versus 12	-.60	<.023
Holiday Greetings (pair 12)			
	Grade 6/7 versus 10/11	-.56	<.019
Crossword (pair 13)			
	Grade 6/7 versus 10/11	-.65	<.003
Viva Las Vegas (pair 13)			
	Grade 6/7 versus 10/11	-.57	<.008
Pro-Line (pair 15)			
	Grade 6/7 versus 10/11	-.63	<.007

APPENDIX C

Gambling Severity: Additional Tables

Table C1: Lottery Product Use by Gambling Severity

	Percentage of youth who have ever played lottery products											
	Draws				Scratchcards				Sports			
Gambling Severity	NG	SG	At-Risk	PPG	NG	SG	At-Risk	PPG	NG	SG	At-Risk	PPG
Never	95.2 %	73.1%	64.7 %	40.7%	80.6%	33.3%	38.2 %	25.0%	0.0 %	81.9%	70.6%	39.3%
< 1 a month	4.4 %	19.0%	22.1 %	25.9%	17.5%	40.9%	25.0 %	17.9%	0.0 %	9.1 %	13.2%	28.6%
1 a month	0.4 %	5.1 %	8.8 %	11.1%	0.8 %	13.1%	14.7 %	21.4%	0.0 %	3.6 %	1.5 %	14.3%
2-3 times a month	0.0 %	1.4 %	2.9 %	7.4 %	1.2 %	9.8 %	14.7 %	17.9%	0.0 %	2.6 %	7.4 %	10.7 %
Every week	0.0 %	1.4 %	1.5 %	11.1%	0.0 %	2.8 %	7.4 %	10.7%	0.0 %	2.6 %	7.4 %	3.6 %
Every day	0.0 %	0.0 %	0.0 %	3.7 %	0.0 %	0.2 %	0.0 %	7.1 %	0.0 %	0.2 %	0.0 %	3.6 %

NG=Non-Gambler; SG=Social Gambler; At-Risk=At-Risk Gambler; PPG=Probable Pathological Gambler

Table C2: Participants Who Go to the Store Specifically to Purchase Lottery Tickets by Gambling Severity

	Participants who go to the store specifically to purchase tickets		
N = 516	Social Gamblers	At-Risk Gamblers	Probable Pathological Gamblers
Never	68.0 %	38.8 %	39.1 %
< 1 a month	21.6 %	34.7 %	21.7 %
1 a month	5.0 %	8.2 %	13.0 %
2-3 times a month	2.9 %	14.3 %	13.0 %
Every week	2.5 %	2.0 %	8.7 %
Every day	0.0 %	2.1 %	4.3 %

Table C3: Differences for Gambling Activity Preferences by Gambling Severity: Post-Hoc Analyses

	Scheffe Post-Hoc Tests		
	Gambling Group Comparison	Mean Difference	*p*
Scratch Tickets			
	NG versus SG	-1.66	<.001
	NG versus at-risk	-2.04	<.001
	NG versus PPG	-2.76	<.001
	SG versus PPG	-1.10	<.020
Lottery Draws			
	NG versus SG	-.48	<.001
	NG versus at-risk	-1.32	<.001
	NG versus PPG	-2.03	<.001
	SG versus at-risk	-.84	<.001
	SG versus PPG	-1.56	<.001
Sports Betting			
	NG versus SG	-.85	<.001
	NG versus at-risk	-.1.91	<.001
	NG versus PPG	-2.05	<.000
	SG versus at-risk	-1.06	<.001

	SG versus PPG	-1.20	<.004
Betting on Cards			
	NG versus SG	-.97	<.001
	NG versus at-risk	-2.26	<.001
	NG versus PPG	-3.27	<.001
	SG versus at-risk	-1.29	<.001
	SG versus PPG	-.230	<.001
Video Games			
	NG versus SG	-.64	<.001
	NG versus at-risk	-1.12	<.001
	NG versus PPG	-1.25	<.027
Slot Machines			
	NG versus SG	-.59	<.001
	NG versus at-risk	-1.42	<.001
	NG versus PPG	-2.06	<.001
	SG versus at-risk	-.83	<.001
	SG versus PPG	-1.47	<.001
Bingo			
	NG versus SG	-1.12	<.001
	NG versus at-risk	-1.61	<.001
	NG versus PPG	-1.67	<.001
Horse Track			
	NG versus SG	-.64	<.001
	NG versus at-risk	-1.31	<.001
	NG versus PPG	-2.14	<.001
	SG versus at-risk	-.66	<.026
	SG versus PPG	-.150	<.001

Table C4: Parental Purchases of Lottery Products for their Children by Gambling Severity

	Parental Purchases of Lottery Products								
Gambling Severity	**Draws**			**Scratchcards**			**Sports**		
	SG	At-Risk	PPG	SG	At-Risk	PPG	SG	At-Risk	PPG
Never	47.7 %	46.7 %	26.1 %	22.5 %	25.5 %	17.4 %	76.3 %	64.4 %	47.8 %
< 1 a month	23.2 %	26.7 %	17.4 %	45.5 %	31.9 %	30.4 %	12.8 %	20.0 %	17.4 %
1 a month	8.5 %	2.2 %	17.4 %	15.8 %	17.0 %	21.7 %	4.9 %	2.2 %	17.4 %
2-3 times a month	7.8 %	13.3 %	13.0 %	11.6 %	17.0 %	17.4 %	2.3 %	6.7 %	4.3 %
Every week	12.2 %	8.9 %	17.4 %	4.2 %	8.5 %	13.0 %	3.5 %	6.7 %	4.3 %
Every day	0.7 %	2.2 %	8.7 %	0.2 %	0.0 %	0.0 %	0.2 %	0.0 %	8.7 %

NG=Non-Gambler; SG=Social Gambler; At-Risk=At-Risk Gambler; PPG=Probable Pathological Gambler

Table C5: Percent of Youth Who Indicated They Would Purchase a Ticket They Do Not Know How to Play by Gambling Severity

	Purchase Unfamiliar Ticket
Gambling Severity**	
Non Gambler	16.7 %
Social Gambler	41.1 %
At-Risk Gambler	41.2 %
Probable Pathological Gambler	64.3 %
Total	34.9 %

**Statistically significant ($p<.01$) as tested by Pearson chi-square analysis

Table C6: Mean Rating of Each Lottery Ticket Pair by Gambling Severity

	Non Gambler		Social Gambler		At-Risk Gambler		Probable Pathological Gambler		Total	
Pair 1**	M	SD	M	SD	M	SD	M	SD	M	SD
Lucky O'Instant	2.75	1.50	3.46	1.63	3.87	1.90	3.57	2.03	3.29	1.68
Cash of the Day	2.37	1.45	2.96	1.60	3.10	1.60	3.71	2.09	2.84	1.63
Pair 2**										
Bingo	3.65	1.89	5.14	1.77	5.29	1.67	4.93	2.40	4.73	1.93
Golden Ticket	3.14	1.90	3.87	1.92	4.35	1.99	4.36	2.11	3.72	1.97
Pair 3**										
Lucky Dice	2.56	1.42	3.36	1.56	3.93	1.74	3.92	1.60	3.17	1.60
Instant Millions	3.17	1.74	4.14	1.79	4.73	1.86	5.22	1.91	3.93	1.87
Pair 4**										
Battleship	3.58	2.01	4.75	1.83	4.61	2.15	4.96	1.93	4.43	1.97
Bingo	3.67	1.87	5.01	1.74	5.29	1.78	5.19	2.33	4.66	1.89
Pair 5**										
Red Hot Cash	2.98	1.70	3.91	1.67	4.43	1.82	3.96	1.91	3.70	1.76
Instant Millions	3.08	1.73	4.18	1.79	4.91	1.75	5.40	1.55	3.95	1.86
Pair 6**										
Cash for Life	3.72	2.14	4.92	1.86	5.13	1.86	5.50	1.96	4.65	2.02
Millennium	3.39	1.89	4.65	1.69	5.12	1.74	4.42	1.81	4.32	1.86
Pair 7**										
Mouse Maze	3.64	1.98	4.39	1.86	4.45	2.07	4.19	1.90	4.17	1.93
Viva Las Vegas	3.11	1.70	4.00	1.75	4.97	1.77	5.04	1.48	3.84	1.81
Pair 8**										
Jokers Wild	2.42	1.41	3.01	1.50	3.25	1.84	3.78	1.91	2.87	1.55
Mini Monopoly	3.26	1.71	4.30	1.67	4.33	1.93	5.69	1.69	4.03	1.79
Pair 9**										
Mouse Maze	3.50	1.98	4.27	1.82	4.77	1.91	4.80	1.71	4.11	1.91
Bingo	3.71	1.91	5.04	1.76	5.27	1.78	5.12	2.30	4.67	1.92
Pair 10**										
Lucky O'Instant	2.95	1.58	3.92	1.66	4.30	1.74	4.72	1.79	3.69	1.73
Grand Slam	2.47	1.57	3.29	1.80	4.06	2.00	4.25	1.98	3.12	1.83
Pair 11**										
Bingo Express	2.94	1.64	4.04	1.71	4.04	1.78	4.57	2.13	3.74	1.79
Football Fever	2.29	1.50	3.26	1.87	3.79	1.96	4.16	1.86	3.04	1.87
Pair 12**										
Holiday Greetings	3.49	1.90	4.27	1.88	4.26	2.03	4.60	1.85	4.07	1.94
Doubling Red 7s	2.88	1.64	3.78	1.69	4.18	1.86	4.42	1.88	3.58	1.76

Pair 13**										
Crossword	3.24	1.82	4.43	1.81	4.30	2.05	4.79	1.96	4.09	1.91
Viva Las Vegas	3.07	1.78	4.09	1.74	4.88	1.69	4.63	1.84	3.88	1.83
Pair 14**										
Lotto 6/49	2.72	1.80	3.54	2.06	4.06	2.14	5.08	1.98	3.37	2.05
Mini Monopoly	3.27	1.68	4.26	1.67	4.44	1.91	5.00	1.79	4.00	1.76
Pair 15**										
Grand Slam	2.45	1.58	3.14	1.74	3.81	1.99	4.27	1.89	3.02	1.77
Pro-Line	2.24	1.58	3.41	2.13	4.34	2.25	5.08	1.93	3.18	2.11
Pair 16**										
Red Hot Cash	2.96	1.66	3.94	1.70	4.37	1.77	4.62	1.60	3.72	1.77
Bingo Express	2.95	1.59	4.13	1.73	4.34	1.75	4.50	2.30	3.82	1.80

** Statistically significant at p<.01

Table C7: Gambling Severity Differences for Ticket Pair Ratings: Post-Hoc Analyses

	Scheffe Post-Hoc Tests		
	Group Comparisons	**Mean Difference**	***p***
Lucky O'Instant (pair 1)	NG versus SG	-.68	<.001
	NG versus at-risk	-1.17	<.001
Cash of the Day (pair 1)	NG versus SG	-.63	<.001
	NG versus at-risk	-.80	<.005
	NG versus PPG	-1.46	<.001
Bingo (pair 2)	NG versus SG	-1.47	<.001
	NG versus at-risk	-1.68	<.001
	NG versus PPG	-1.50	<.004
Golden Ticket (pair 2)	NG versus SG	-.74	<.001
	NG versus at-risk	-1.31	<.001
Lucky Dice (pair 3)	NG versus SG	-.78	<.001
	NG versus at-risk	-.141	<.001
	NG versus PPG	-1.45	<.001
	SG versus at-risk	-.63	<.020
Instant Millions (pair 3)	NG versus SG	-1.00	<.001
	NG versus at-risk	-1.65	<.001
	NG versus PPG	-2.39	<.001
Battleship (pair 4)	NG versus SG	-1.23	<.001
	NG versus at-risk	-1.14	<.001
	NG versus PPG	-1.57	<.004
Bingo (pair 4)	NG versus SG	-1.33	<.001
	NG versus at-risk	-1.56	<.001
	NG versus PPG	-1.55	<.003
Red Hot Cash (pair 5)	NG versus SG	-.93	<.001
	NG versus at-risk	-.160	<.001
	NG versus PPG	-1.17	<.029
	SG versus at-risk	-.66	<.034
Instant Millions (pair 5)	NG versus SG	-1.11	<.001
	NG versus at-risk	-1.84	<.001
	NG versus PPG	-2.28	<.001
	SG versus at-risk	-.73	<.018
	SG versus PPG	-1.17	<.031
Cash for Life (pair 6)	NG versus SG	-1.17	<.001
	NG versus at-risk	-1.60	<.001

	NG versus PPG	-1.86	<.001
Millennium (pair 6)	NG versus SG	-1.24	<.001
	NG versus at-risk	-1.82	<.001
	NG versus PPG	-1.19	<.035
Mouse Maze (pair 7)	NG versus SG	-.72	<.001
	NG versus at-risk	-.96	<.005
Viva Las Vegas (pair 7)	NG versus SG	-.89	<.001
	NG versus at-risk	-1.96	<001
	NG versus PPG	-1.94	<001
	SG versus at-risk	-1.07	<001
Jokers Wild (pair 8)	NG versus SG	-.60	<.001
	NG versus at-risk	-.90	<.001
	NG versus PPG	-1.45	<.001
Mini Monopoly (pair 8)	NG versus SG	-1.02	<.001
	NG versus at-risk	-1.08	<.001
	NG versus PPG	-2.48	<.001
	SG versus PPG	-1.47	<.002
	At-risk versus PPG	-1.41	<.015
Bingo (pair 9)	NG versus SG	-.79	<.001
	NG versus at-risk	-.138	<.001
	NG versus PPG	-1.41	<.012
Lucky O'Instant (pair 10)	NG versus SG	-.96	<.001
	NG versus at-risk	-1.43	<.001
	NG versus PPG	-2.00	<.001
	SG versus PPG	-1.04	<.049
Grand Slam (pair 10)	NG versus SG	-.83	<.001
	NG versus at-risk	-1.60	<.001
	NG versus PPG	-2.04	<.001
	SG versus at-risk	-.77	<.009
	SG versus PPG	-1.21	<.020
Bingo Express (pair 11)	NG versus SG	-1.14	<.001
	NG versus at-risk	-1.05	<.001
	NG versus PPG	-1.80	<.001
Football Fever (pair 11)	NG versus SG	-1.04	<.001
	NG versus at-risk	-1.55	<.001
	NG versus PPG	-2.21	<.001
	SG versus PPG	-1.17	<.027
Holiday Greeting (pair 12)	NG versus SG	-.78	<.001
	NG versus at-risk	-.83	<.022
Doubling Red 7s (pair 12)	NG versus SG	-.91	<.001
	NG versus at-risk	-1.38	<.001
	NG versus PPG	-1.72	<.001
Crossword (pair 13)	NG versus SG	-1.19	<.001
	NG versus at-risk	-1.12	<.001
	NG versus PPG	-1.71	<.001
Viva Las Vegas (pair 13)	NG versus SG	-1.04	<.001
	NG versus at-risk	-1.83	<.001
	NG versus PPG	-1.53	<.002
	SG versus at-risk	-.79	<.009
Lotto 6/49 (pair 14)	NG versus SG	-1.01	<.001
	NG versus at-risk	-1.18	<.001
	NG versus PPG	-1.70	<.001

	SG versus PPG	-1.19	<.005
Mini Monopoly (pair 14)	NG versus SG	-1.01	<.001
	NG versus at-risk	-1.18	<.001
	NG versus PPG	-1.70	<.001
Grand Slam (pair 15)	NG versus SG	-.70	<.001
	NG versus at-risk	-1.27	<.001
	NG versus PPG	-2.02	<.001
	SG versus PPG	-1.32	<.008
Pro-Line (pair 15)	NG versus SG	-1.13	<.001
	NG versus at-risk	-2.13	<.001
	NG versus PPG	-2.60	<.001
	SG versus at-risk	-.99	<.002
	SG versus PPG	-1.47	<.009
Red Hot Cash (pair 16)	NG versus SG	-.99	<.001
	NG versus at-risk	-1.47	<.001
	NG versus PPG	-1.86	<.001
Bingo Express (pair 16)	NG versus SG	-1.16	<.001
	NG versus at-risk	-1.34	<.001
	NG versus PPG	-1.63	<.001

APPENDIX D

Questionnaire and Lottery Ticket Booklet

: M_____ F_____ Grade: _____ Age: _____ Research ID _____

ase answer the following questions as honestly as possible. All information is confidential. Your answers will not be shown ny teachers, your principle, or parents. You do not need to write your name.

nk you for participating.

lo you ever play the following? (Please put an *X* next to your answer for *each* type of lottery ticket)

A) Lottery Draws (6/49 - not instant scratch tickets):

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

B) Instant scratch tickets:

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

C) Sports tickets (sports select – pro-line):

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

ou answered *Never* to all three types of lottery tickets please go straight to question # 26

low old were you when you first played: (Fill in your age for *each* activity)

lottery draws (6/49) _____ instant scratch tickets _____ sports tickets (sports select-pro-line) _____

low old were you when you first bought: (Fill in your age for *each* activity)

lottery draws (6/49) _____ instant scratch tickets _____ sports tickets (sports select-pro-line) _____

When was the **last time** you bought or played the lottery? (Choose 1 answer)

more than 6 months ago _____ past month _____ past week _____

Are your parents aware that you buy lottery tickets or instant scratch tickets? Yes ____ No _____

Are you afraid of getting caught buying lottery tickets? Yes ____ No _____

low much money (on average) do you usually spend each week on: (Fill in the amount of money for *each* activity)

lottery draws (6/49) _____ instant scratch tickets _____ sports tickets (sports select – pro-line) _____

What is the **most** money you have ever spent in **one week** on: (Fill in the amount of money for *each* activity)

lottery draws (6/49) _____ instant scratch tickets _____ sports tickets (sports select – pro-line) _____

f you had 5$ in your pocket at this moment what would you prefer to spend it on? (Choose 1 answer)

lottery draws (6/49) _____ movie _____ food _____ video games _____ instant scratch tickets _____ sports ticket (pro-line) _____

In the past year have you borrowed money to buy lottery tickets? Yes ___ No ___ If yes, approximately how many times? ____

How often do you go to the store **only** to buy lottery tickets or instant scratch tickets? (Choose 1 answer)

never _____ less than once a month _____ once a month _____ 2-3 times a month_____ every week_____ every day_____

Why did you **first begin** playing lottery draws or instant scratch tickets? (Check as many answers that apply)

parent's play_____ friend's play_____ impress friends _____ boredom _____ for a challenge _____

to win money _____ to meet friends _____ enjoyment _____ excitement _____ curiosity _____

Why do you play lottery draws or instant scratch tickets **now**? (Check as many answers that apply)

parents play _____ friends play _____ impress friends _____ boredom _____ for a challenge _____

to win money _____ to meet friends _____ enjoyment _____ excitement _____ curiosity _____

When you buy instant scratch tickets do you: (Choose 1 answer)

scratch tickets right away _____ wait until I get home _____ I don't buy tickets _____

If you win money do you immediately buy more lottery tickets? (Choose 1 answer)

never _____ rarely _____ sometimes _____ often_____ always _____

If you lose, do you immediately buy more lottery tickets? (Choose 1 answer)

never _____ rarely _____ sometimes _____ often_____ always _____

When you buy lottery draws (6/49) do you choose the numbers or do you let the computer choose them for you?

Computer chooses the numbers _____ I choose the numbers _____

What is the **most** amount of money you have **spent on one** ticket? _____

If the cost of your favourite instant scratch ticket increased in price would you still buy it? Yes _____ No _____

How often do your parent/s buy the following lottery tickets for you: (Choose 1 answer for *each* question)

A) lottery draws (6/49 - not instant scratch tickets):

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

B) instant scratch tickets:

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

C) Sports tickets (sports select – pro-line):

never _____ less than once a month _____ once a month_____ 2-3 times a month_____ every week_____ every day_____

What is the **most** amount of money you have ever **won** playing lottery draws or instant scratch tickets?_____

Have you ever bought a lottery draw (6/49) or an instant scratch ticket for a friend? Yes _____ No _____

Have you ever received a lottery ticket or instant scratch card as a present? Yes _____ No _____

If so, for which occasion: birthday _____ holiday _____ other _____

What is the largest number of tickets you have received as a present at one time? _____

How often do you play the same lottery game? (Choose 1 answer)

never _____ rarely _____ sometimes _____ often _____ always _____

Please circle how you feel about *each* of the activities listed below : (Activities A – H)

A) instant scratch tickets

1 2 3 4 5 6 7
don't like at all like like very much

B) lottery draws (6/49)

1 2 3 4 5 6 7
don't like at all like like very much

C) sports betting (pro-line)

1 2 3 4 5 6 7
don't like at all like like very much

D) betting on cards

1 2 3 4 5 6 7
don't like at all like like very much

E) video games

1 2 3 4 5 6 7
don't like at all like like very much

F) video lottery terminals (VLT'S)

1 2 3 4 5 6 7
don't like at all like like very much

G) bingo

1 2 3 4 5 6 7
don't like at all like like very much

H) horse track

1 2 3 4 5 6 7
don't like at all like like very much

Please make a tick next to all the activities that you believe are a form of gambling?

lottery draws (i.e.: 6/49) _____ bingo _____ video games _____ video lottery terminals (vlt's) _____ betting on cards _____

Instant scratch tickets _____ horse track_____ sports betting (i.e.: pro-line) _____ casino computer games _____

Would you buy a ticket that you do not yet know how to play? Yes _____ No _____

If you could win a prize or money from playing lottery tickets which would you choose? Prize _____ Money _____

Do you think that larger instant scratch tickets necessarily have more games on them? Yes _____ No _____

In choosing a ticket how important is:

A) Price of ticket: _____

1 2 3 4 5 6 7
Not at all important important extremely important

B) Colour: _____

1 2 3 4 5 6 7
Not at all important important extremely important

C) Type of game: _____

1 2 3 4 5 6 7
Not at all important important extremely important

D) Number of games on the card: _____

1 2 3 4 5 6 7
Not at all important important extremely important

E) Name of the game: _____

1 2 3 4 5 6 7
Not at all important important extremely important

F) Type or size of prize: _____

1 2 3 4 5 6 7
Not at all important important extremely important

G) Size of ticket: _____

1 2 3 4 5 6 7
Not at all important important extremely important

Is there a legal age to purchase lottery draw tickets or instant scratch tickets? Yes____ No ____ If yes, what age _____

Do you think there should be an age restriction for buying lottery draw and instant scratch tickets?

Yes ____ No _____ If yes, what _____age

Would you be you more likely or less likely to buy a lottery ticket if you see it on the store counter? (Choose 1 answer)

more likely to buy a ticket _____ less likely to buy a ticket _____ doesn't matter _____

Have you ever seen: (Fill in the blank for *each* question)

Television commercials advertising lottery draws or instant scratch tickets? Yes _____ No _____

Newspapers advertising lottery draws or instant scratch tickets? Yes _____ No _____

Magazines advertising lottery draws or instant scratch tickets? Yes _____ No _____

Billboards advertising lottery draws or instant scratch tickets? Yes _____ No _____

Are you more likely to buy a lottery ticket or instant scratch ticket if you have seen an advertisement for it? Yes ____

__

Which do you prefer, larger instant scratch tickets or smaller ones? Smaller tickets _____ Larger tickets _____

How often does either of your parents buy lottery draws or instant scratch cards? (Choose 1 answer)

never _____ less than once a month _____ every month _____ every week _____ every day _____

How much skill is involved in: (Please circle a number for *each* activity)

A) lottery draws (6/49) :

1 2 3 4 5 6 7
no skill some skill all skill

B) instant scratch tickets:

1 2 3 4 5 6 7
no skill some skill all skill

C) sports tickets (pro-line):

1 2 3 4 5 6 7
no skill some skill all skill

What are the chances of winning a lot of money for *each* of the following activities?

A) lottery draws (6/49): never _____ rarely _____ sometimes _____ often _____ always _____

B) instant scratch tickets: never _____ rarely _____ sometimes _____ often _____ always _____

C) sports tickets (pro-line): never _____ rarely _____ sometimes _____ often_____ always _____

How easy is it to buy a lottery ticket from the corner store? (Choose 1 answer)

very difficult ___ difficult ___ somewhat difficult ___ somewhat easy ___ easy ____ very easy ____ I don't buy tickets ____

In choosing a ticket the **single most important** quality to me would be: (Choose 1 answer)

size ____ colour ____ price of ticket ___ prize ____ number of games____ type of game ____ know how to play the game _____

If you could choose a ticket that takes longer to play or one with a larger jackpot which one would you choose?

A ticket that takes longer to play _____ A larger jackpot _____

In the past year how often have you found yourself thinking about gambling or planning to gamble?

never_____ once or twice_____ sometimes_____ often_____

During the course of the past year have you needed to gamble with more and more money to get the amount of excitement you want? Yes_____ No_____

In the past year have you ever spent much more than you planned to on gambling?

never_____ once or twice_____ sometimes_____ often_____

In the past year have you felt bad or fed up when trying to cut down or stop gambling?

never_____ once or twice_____ sometimes _____ often_____ never tried to cut down_____

Please check the following types of gambling **(for money)** you have done in the past 12 months. Please mark only one answer for each item.

Never	less than once a week	once a week or more	
_____	_____	_____	play cards
_____	_____	_____	wager on sports (i.e. sports pools) with friends
_____	_____	_____	purchase sports lottery tickets (pro-line)
_____	_____	_____	purchase lottery tickets or scratch tickets
_____	_____	_____	wager on video games or video poker for money
_____	_____	_____	play bingo
_____	_____	_____	play slot machines
_____	_____	_____	wager on sports, pool, bowling, other games of skill
_____	_____	_____	another form of gambling not listed above

Please list_____

In the past year how often have you gambled to help you escape from problems or when you are feeling bad?

never_____ once or twice_____ sometimes_____ often_____

In the past year, after losing money gambling, have you returned another day to try and win back money you lost?

never_____ less than half the time_____ more than half the time_____ every time_____

In the past year have you ever taken money from the following without permission to spend on gambling:

A) School dinner money or fare money? *B) Money from your family?* *C) Money from outside the family?*

never_____ once or twice_____ sometimes_____ often_____

In the past year has your gambling ever led to:

A) Arguments with family/friends or others? *B) Missing school?* *C) Lies to your family*

never_____ once or twice_____ sometimes_____ often_____

r this next section please use the accompanying booklet of tickets to answer the lowing questions. Mark your answers directly on this questionnaire. <u>Please do not rk the booklet:</u>

ıet Pair #1: Please rate each instant scratch ticket: (page 1 booklet)

ucky O'Instant:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

:ash of the Day:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket to play please make a mark next to the one you would choose:

A) Lucky O'Instant _____ **B) Cash of the Day** _____

ıse put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

---

ket Pair # 2: Please rate each instant scratch ticket: (page 1 booklet)

ɜingo:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ɔolden Ticket:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ıu could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:

A) Bingo _____ **B) Golden Ticket** _____

ıse put an X next to the **one most important** reason you chose this ticket over the other?

ı of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

---

et Pair # 3: Please rate each instant scratch ticket: (page 2 booklet)

ıcky Dice:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

stant Millions:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ı could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Lucky Dice _____ **B) Instant Millions** _____

se put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

e of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

---

et Pair # 4: Please rate each instant scratch ticket: (page 2 booklet)

attleship:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ingo:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Battleship _____ **B) Bingo**_____

ise put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ıet Pair # 5: Please rate each instant scratch ticket: (page 3 booklet)

ed Hot Cash:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ıstant Millions :

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Red Hot Cash _____ **B) Instant Millions** _____

ise put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ket Pair # 6: Please rate each instant scratch ticket: (page 3 booklet)

Cash for Life:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

Millennium:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ou could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Cash for Life _____ **B) Millennium** _____

ase put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ne of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ket Pair # 7: Please rate each instant scratch ticket: (page 4 booklet)

Mouse Maze:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

Viva Las Vegas:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ou could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Mouse Maze _____ **B) Viva Las Vegas** _____

ase put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ne of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ket Pair # 8: Please rate each instant scratch ticket: (page 4 booklet)

Joker's Wild:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

Mini Monopoly:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ou could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Joker's Wild _____ **B) Mini Monopoly** _____

ase put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ne of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ɜt Pair # 9: Please rate each instant scratch ticket: (page 5 booklet)

ouse Maze:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ingo:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Mouse Maze_____ **B) Bingo**_____

ɜe put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

e of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

et Pair # 10: Please rate each instant scratch ticket: (page 5 booklet)

ucky O'Instant:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

rand Slam:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ɹ could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Lucky O'Instant _____ **B) Grand Slam** _____

se put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

e of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ɛet Pair # 11: Please rate each instant scratch ticket: (page 6 booklet)

ingo Express:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ootball Fever:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ɹ could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Bingo Express _____ **B) Football Fever**_____

se put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

e of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

et Pair # 12: Please rate each instant scratch ticket: (page 6 booklet)

oliday Greetings:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

oubling Red 7's:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ı could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Holiday Greetings _____ **B) Doubling Red 7's** _____

se put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

e of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ket Pair # 13: Please rate each instant scratch ticket: (page 7 booklet)

rossword:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

iva Las Vegas:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket to play please make an X next to the one you would choose:
A) Crossword _____ **B) Viva Las Vegas** _____

ise put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

ket Pair # 14: Please rate each instant scratch ticket or lottery ticket: (page 7 booklet)

.otto 6/49:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

lonopoly:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ıu could choose **only one** instant scratch ticket or lottery ticket to play please make an X next to the one you would choose:
A) Lotto 6/49_____ **B) Monopoly** _____

ase put an X next to the **one most important** reason you chose this ticket over the other?

of the prize _____ Can choose your own numbers ____ Colour of the ticket ____ Type of game _____ Have seen the commercial _____

ıe of the game _____ Number of activities on the card _____ Cost of the ticket ___ Time before knowing winnings ____ Other _____

et Pair # 15: Please rate each instant scratch ticket or lottery ticket: (page 8 booklet)

rand Slam:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ro-Line:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ı could choose **only one** instant scratch ticket or lottery ticket to play please make an X next to the one you would choose:
A) Grand Slam_____ **B) Pro-Line**_____

se put an X next to the **one most important** reason you chose this ticket over the other?

of the prize ____ Can choose your own teams ____ Colour of the ticket ____ Type of game ____ Have seen the commercial ____

e of the game ____ Number of activities on the card ____ Cost of the ticket ___ Time before knowing winnings ____ Other _____

ɛet Pair # 16: Please rate each instant scratch ticket or lottery ticket: (page 8 booklet)

ɛed Hot Cash:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

ɨingo Express:

1 2 3 4 5 6 7
Not interesting somewhat interesting very interesting

u could choose **only one** instant scratch ticket or lottery ticket to play please make an X next to the one you would choose:
A) Red Hot Cash _____ **B) Bingo Express** _____

ɪse put an X next to the **one most important** reason you chose this ticket over the other?

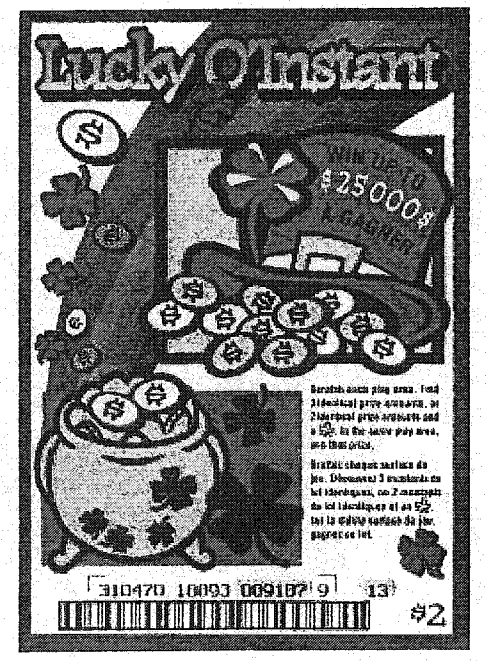
of the prize _____ Colour _____ Type of game _____ Have seen the commercial _____

ɨe of the game _____ Number of activities on the card _____ Cost of the ticket _____ Other (please specify) _____

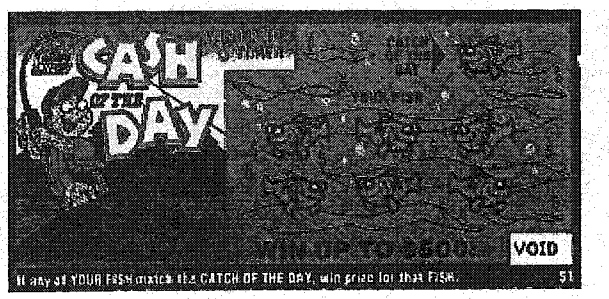
Thank you for helping us.

Ticket Pair #1

A)



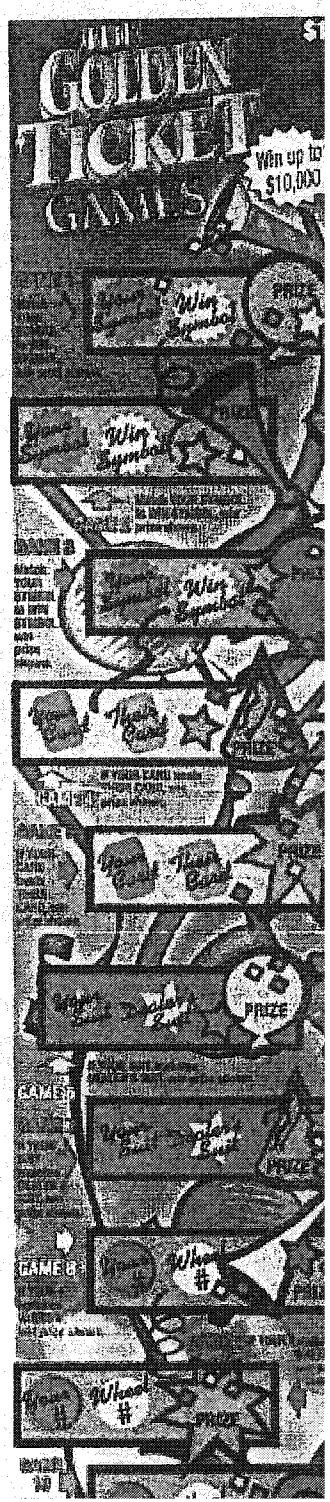
B)



Ticket Pair #2

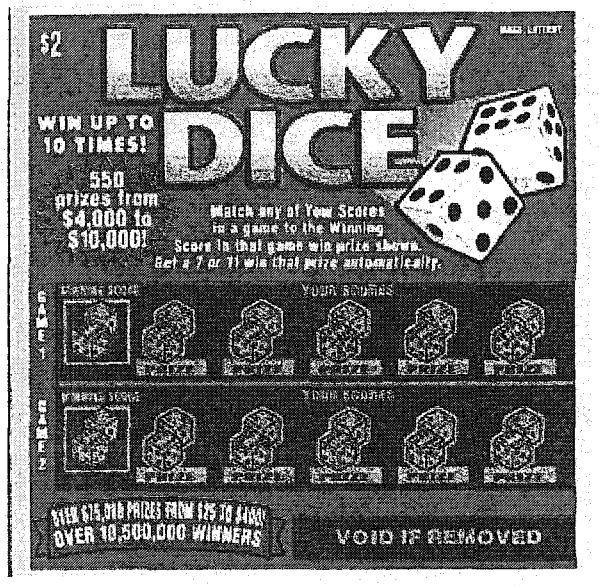
A)

B)

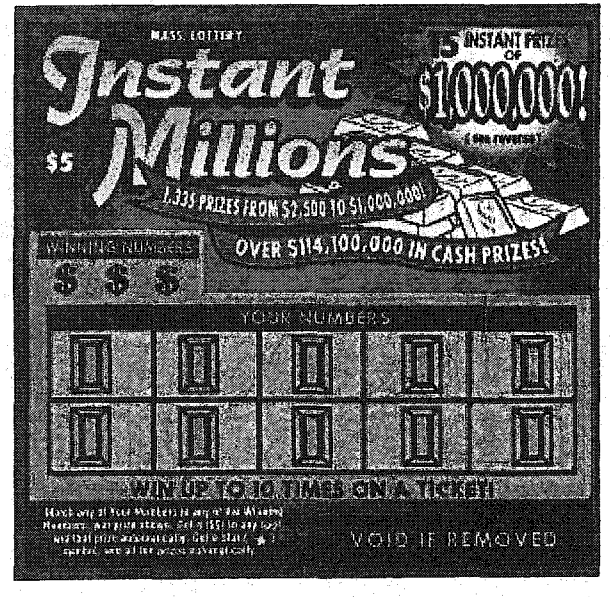


Ticket Pair #3

A)

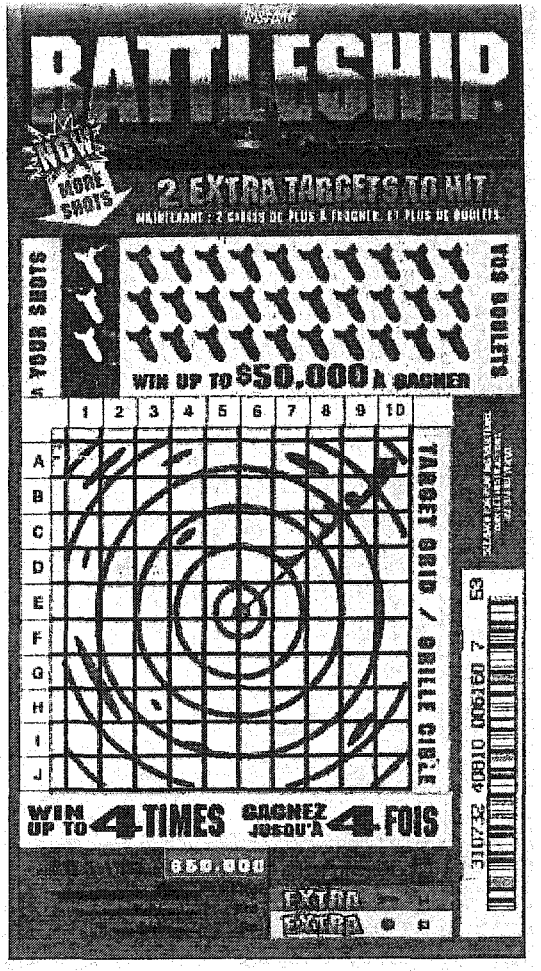


B)



Ticket Pair #4

A)

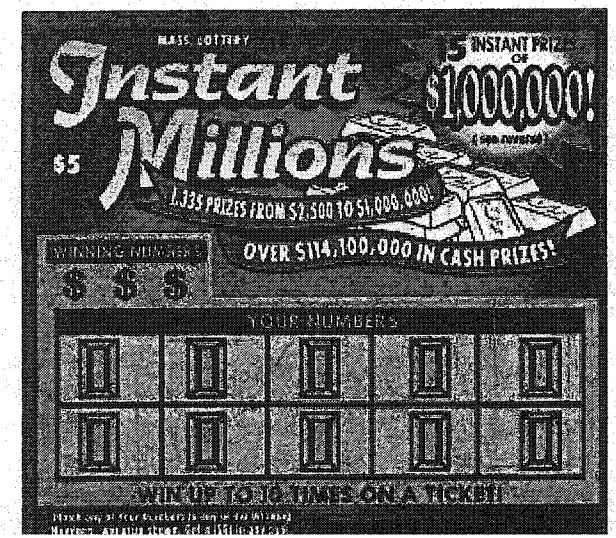


B)

Ticket Pair #5

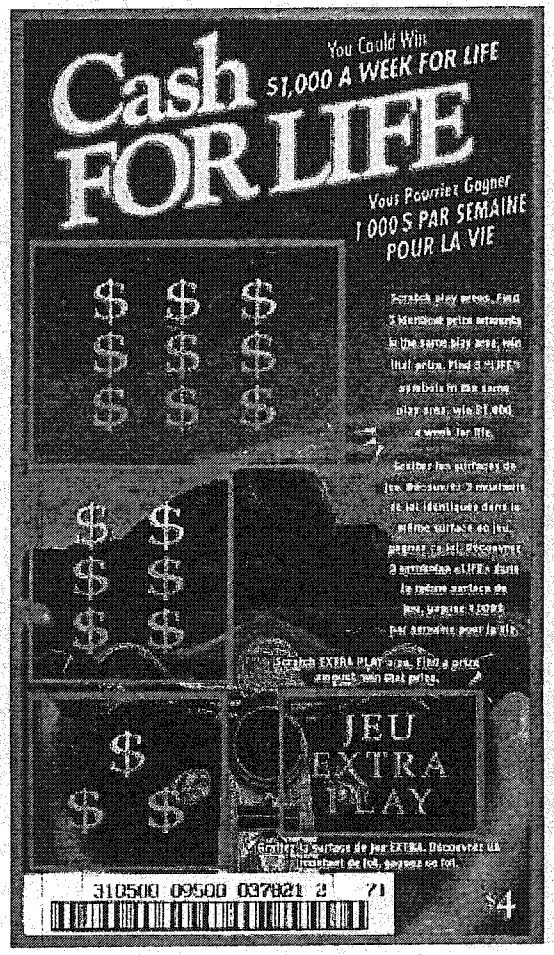
A)

B)

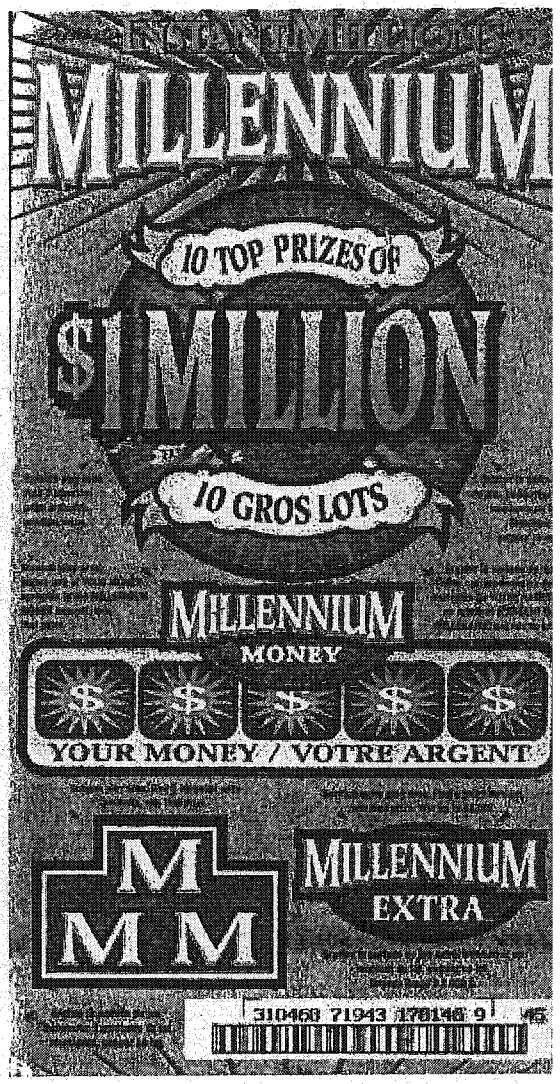


Ticket Pair #6

A)

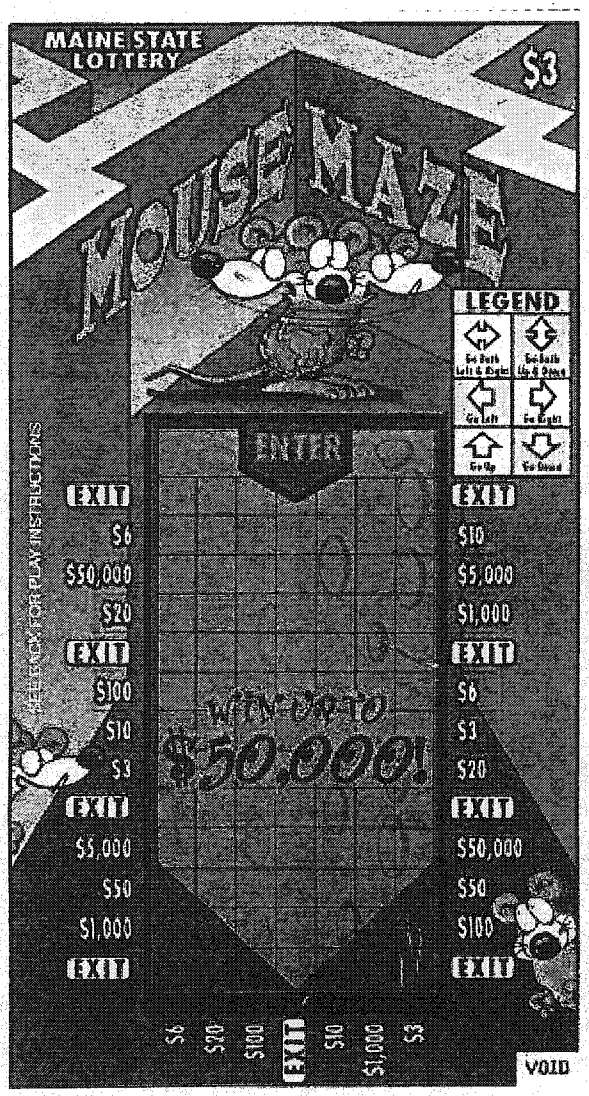


B)

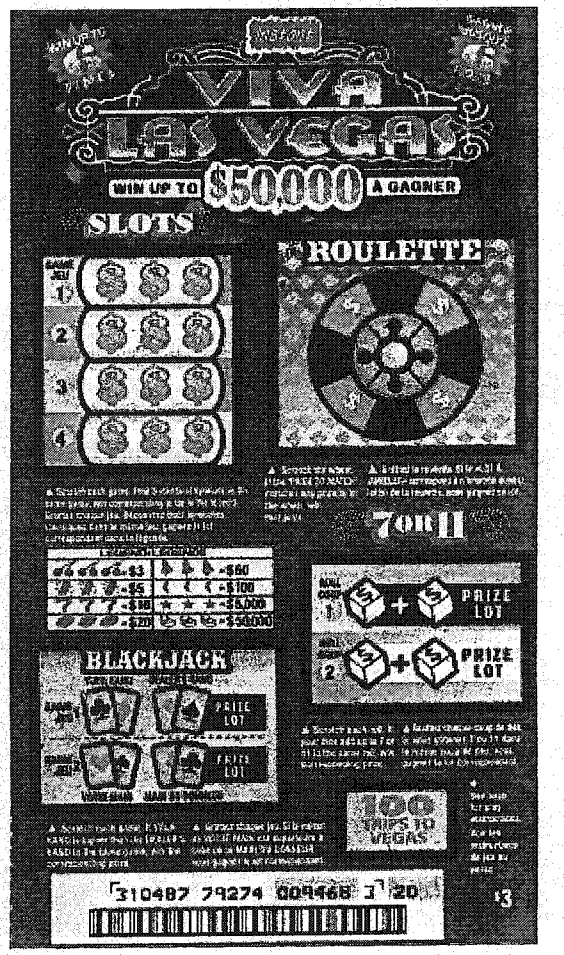


Ticket Pair #7

A)

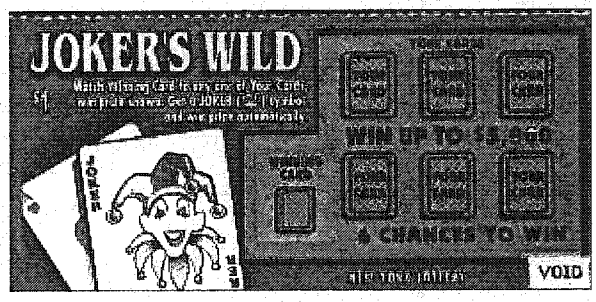


B)



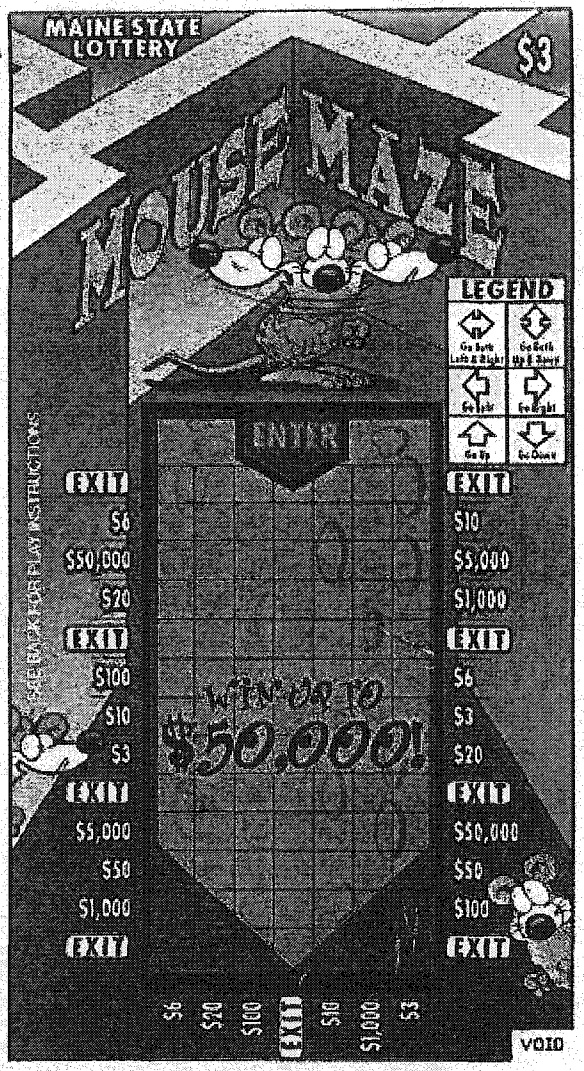
Ticket Pair #8

A)



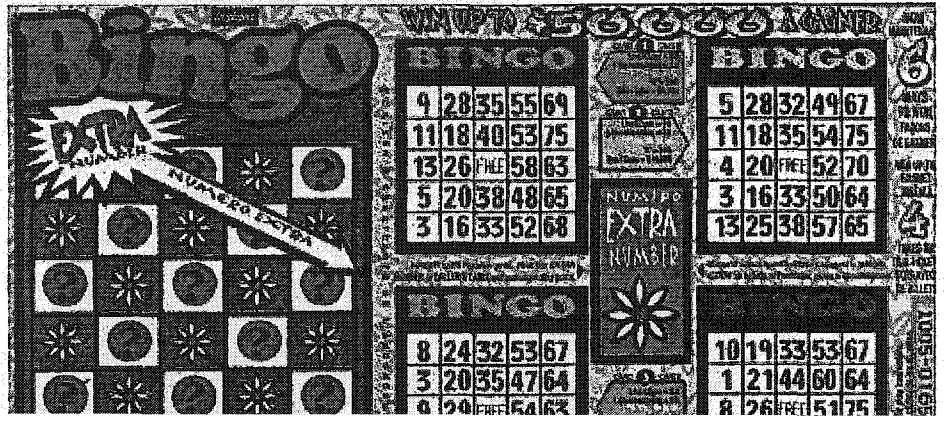
B)

A)



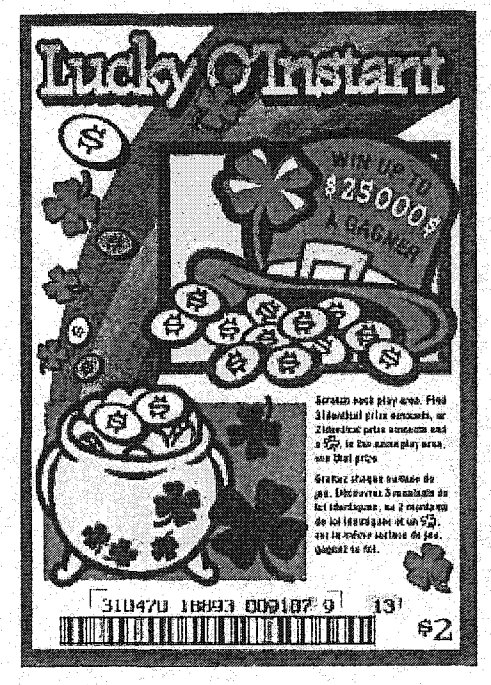
Ticket Pair #9

B)

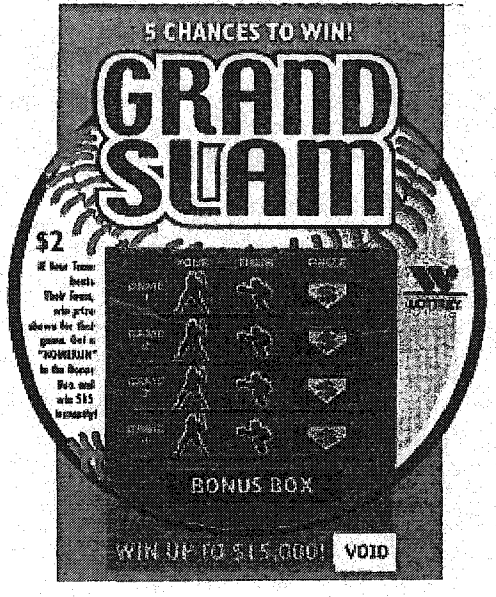


Ticket Pair #10

A)



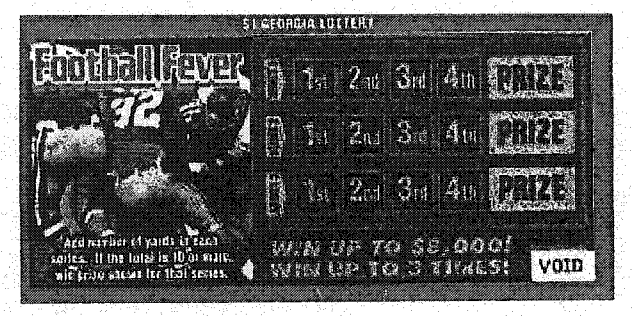
B)



Ticket Pair #11

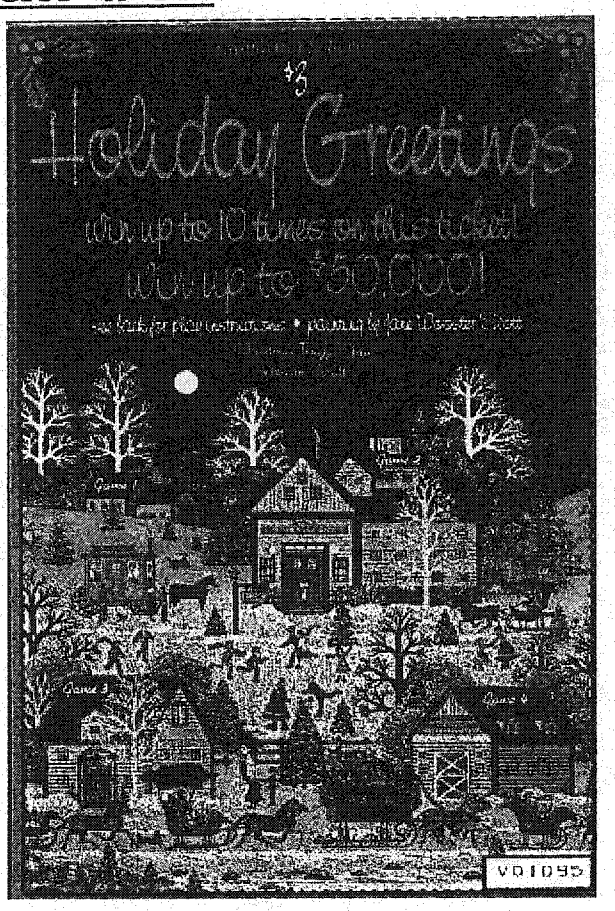
A)

B)



Ticket Pair #12

A)



B)

Ticket Pair #13

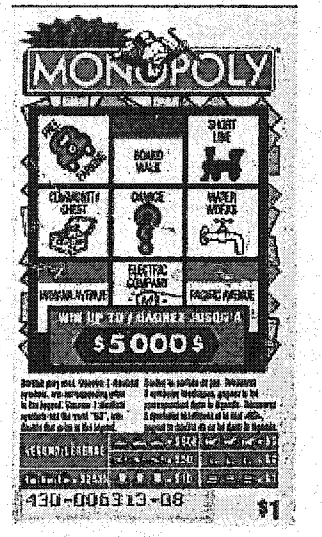
A)

B)

Ticket Pair #14

A)

B)



Ticket Pair #15

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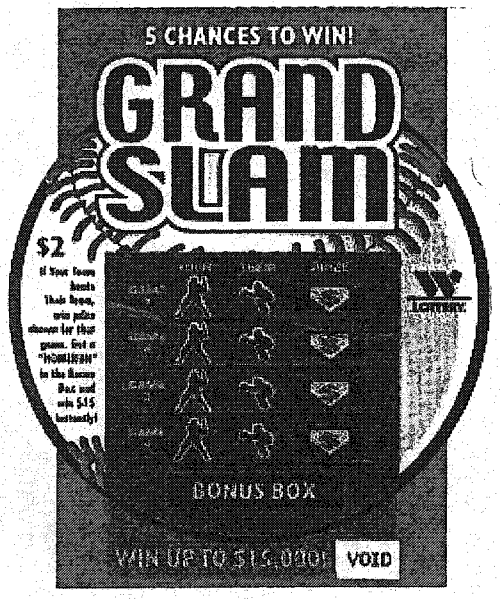
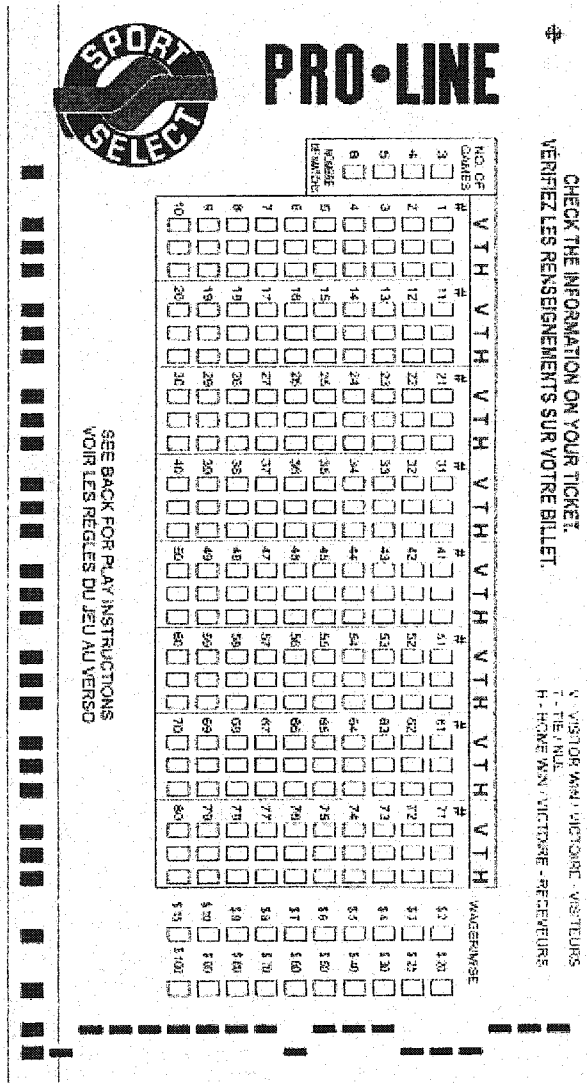


B)



Ticket Pair #16

A)

B)

APPENDIX E

Ethics Approval and Consent Form