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Using Winpoker 6.0 To Study Gambling Behavior

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Previous technical efforts have described how custom computer programs for the study of gambling behavior may be created to allow for the manipulation of variables not readily available in natural gambling contexts, however many people may lack the technical repertoires necessary to make such efforts feasible. The current paper discusses how a commercially available Video-Poker simulation and training software package, WinPoker 6.0, may be employed to study gambling behavior.

Keywords: video-poker, computer software, WinPoker 6.0, gambling

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It is difficult to ignore the growing emergence of gambling activity in our culture at large in recent years. Over the past three decades an increase in the legalization of gambling in some form throughout the US has been observed, with now 48 states offering some type of legal wagering, where 30 years ago only two did (Ghezzi, Lyons, & Dixon 2000). Advances in technology, namely the Internet, have also increased accessibility and familiarity with gaming activities for most individuals (Griffiths, 1999; Griffiths & Parke, 2002). In addition, increasing television coverage of gambling activities such as the World Series of Poker on ESPN or the World Poker Tour on the Travel Channel could be moving traditional viewpoints of gambling from a harmless vice or recreational activity to an accepted form of sport (Wilstein, 2005). This increasing popularity and acceptance does not come without a price however, with reports of the rate of pathological gambling at between 1-2% of the population worldwide (Petry 2005).

While in relative terms this may seem like a small number, it represents millions of people who fall within the strictest terms of the clinical criteria for pathological gambling, and does not include many others who may still suffer problems from their gambling, yet fail to display the criteria for a pathological diagnosis.

While pathological or problem gambling represents a significant social concern, research on gambling as a whole has occurred within a relatively narrow scope. Research in the field of gambling as a whole has focused primarily on the assessment of pathological gambling and the maintaining variables of forms of gambling such as video lottery terminals, slot machines, horse racing, Video-Poker, and table games such as craps and roulette (Black & Moyer, 1998: Cox, Lesieur, Rosenthal, & Volberg, 1997: Dickerson & Adcock, 1987: Kallick, Suites, Dielman, & Hybels, 1976). Research into the controlling variables of gambling behavior has focused on various theories including cognitive mediated theories, biological or psychobiological theories, and operant theories (Dickerson & Adcock, 1987; Dixon & Schreiber, 2004; Friedenberg, Blanchard, Wulfer, & Malta, 2002; Griffiths, 1989; Ladouceur, Sevigny, Blaszczynski, O'Conner, & Lavoie, 2003, Sharpe, 2004).

While there is certainly massive need for basic experimental research on gambling, the experimental analysis of gambling behavior

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presents many challenges. First of all, from a behavioral perspective, there are a severely limited number of researchers who would identify themselves as primarily interested in the study of gambling. In addition, based on governmental regulation of gambling and basic ethical concerns in research, it is difficult to conduct studies on gambling behavior with a reasonable amount of internal or external validity (Weatherly & Phelps, 2006).

Legal provisions against owning and operating actual gaming machines that can be found in US casinos as well as their prohibitively high cost make the purchase and use of actual gaming machines such as slot machines and Video-Poker terminals for research generally infeasible. In addition, if one can procure such machines there are provisions regarding tampering with how they work, which can severely limit one's ability to program specific outcomes that may be needed for the level of experimental control necessary to answer a given research question.

Some researchers have tried to work around these issues with varying degrees of success. For example, MacLin, Dixon, and Hayes (1999) and MacLin, Dixon, Robinson and Daugherty (2006) have written on how to create a computerized slot machine simulation for conducting behavioral research. Simulation software for both Video-Poker and roulette have been created and offered free of charge to anyone willing to conduct research into these games (Dixon, MacLin, & Hayes 1999; MacLin, & Dixon, 2004). To date most of the research that has employed these software solutions has been primarily focused on slot machines (Christopherson & Weatherly, 2006; Weatherly, McDougall, & Gillis, 2006; Weatherly, Sauter, & King, 2004), with only one published study presenting data either using the published roulette or Video-Poker software (Dixon & Schreiber, 2002).

Another potential solution is to make use of commercially available gambling simulation software. This paper will describe one such piece of software, WinPoker 6.0 (Zamzow Software Solutions, 2007), a commercially available Video-Poker simulation and trainer which can be purchased for approximately $30. The purpose of the current paper is to describe this software and to discuss how it may be employed to study gambling from a behavioral perspective. This paper will describe the multitude of potential independent and dependent variables that can be studied using WinPoker 6.0.

WinPoker 6.0

WinPoker 6.0 is a commercially available Video-Poker simulation and trainer that sells for approximately $30 (Zamzow Software Solutions, 2007). Video-Poker is an electronic game based on variations of standard 5 card draw poker using a standard 52 card deck. Like slot machines, Video-Poker is a single player game with a relatively simple interface that most anyone with any level of experience can play. Where Video-Poker differs from other single player games such as slot machines is that based on the specific Video-Poker game variation being played and the payout structure for that game, an actual strategy may be employed which can result in rates of return of greater than 100% over the long run. In addition, even the least favorable configurations of Video-Poker offer rates of return of greater than 90%, when played correctly. The above mentioned software is advertised as training software to help improve your return on your gambling investments in actual casinos. WinPoker 6.0 offers various training modes to help users learn to make the statistically correct decision based on the specific game and payout structure employed. From a research perspective, however, this software can be put to more academic uses. The nature of the structure of the software offers many potential avenues for research in to gambling behavior.

Potential Independent Variables.

Formal Properties

Prior research in gambling has examined the effects of contextual stimuli and discussed the impact that formal properties of gambling machines may have on behavior (Hoon, Dymond, Jackson, & Dixon, in press; Parke and Griffiths, 2006; Zlomke & Dixon, 2006). WinPoker 6.0 offers the ability to manipulate various formal properties of the game structure including sound, deck color, card back style, and coin drop display. By clicking on the "Options" tab on the Main Menu, one can see many of these options.

Credits and Betting Amounts

The software also offers the user the ability to start with a predetermined number of credits between 1 and 1000. By clicking on the "Player" tab on the Main Menu and selecting from the available options one can choose to reset the current number of credits to zero or to buy a specific number of credits. What these credits are "worth" depend on what the coin drop display is set at or what instructions are given to whoever is playing the game. The coin drop display can be set at 6 levels including 5¢, 25¢, 50¢, $1, $5, and $25.

Like most casino versions of Video-Poker, players can choose the number of credits they wish to wager at the start of a hand up to a maximum limit. In the case of this software players can wager from 1 to 5 credits per hand in single line play. One potential manipulation that could be employed could consist of limiting the amount that a player may wager on a given hand. While the software does not offer specific settings to limit amount bet, this could be accomplished either through instructions or experimenter monitoring or a combination of the two.

Games and Payout Tables

WinPoker 6.0 features many manipulable features that in a research context can be put to use as potential independent variables for study. First and foremost amongst all of these features are the number of different specific and user defined Video-Poker variations built into the software. WinPoker 6.0 features 22 preset Video-Poker variations. These games feature many of the most popular variations of Video-Poker that may be found in real casinos, including Jacks or Better, Deuces Wild, Bonus Poker and many others. To choose from the many variation of Video-Poker offered one needs to simply click on the "Games" tab on the Main Menu and select from the game options. The left panel of Figure 1 displays the included games. In addition the software offers the ability to create up to 10 user defined games, by clicking on the "Games" tab and selecting the "Define" option.

WinPoker 6.0 also offers information on the Total Return for all of the included games when played perfectly as well as the Game Variance for each game. This information can be accessed by clicking on the "Analyze" tab from the main menu and selecting the "Game" option. In addition to this information for the preset games, the Total Return for a User defined or custom game can be calculated from this screen by clicking on the "Run Analysis" button.

In addition to defining whole games the software also features the ability to modify the payout tables on existing games. One can change existing pay tables by clicking on the "Options" tab on the main menu and selecting the "Change Pay Tables…" option. From the resulting screen, the pay rate for each hand for all available games can be modified as displayed in the right panel of Figure 1.
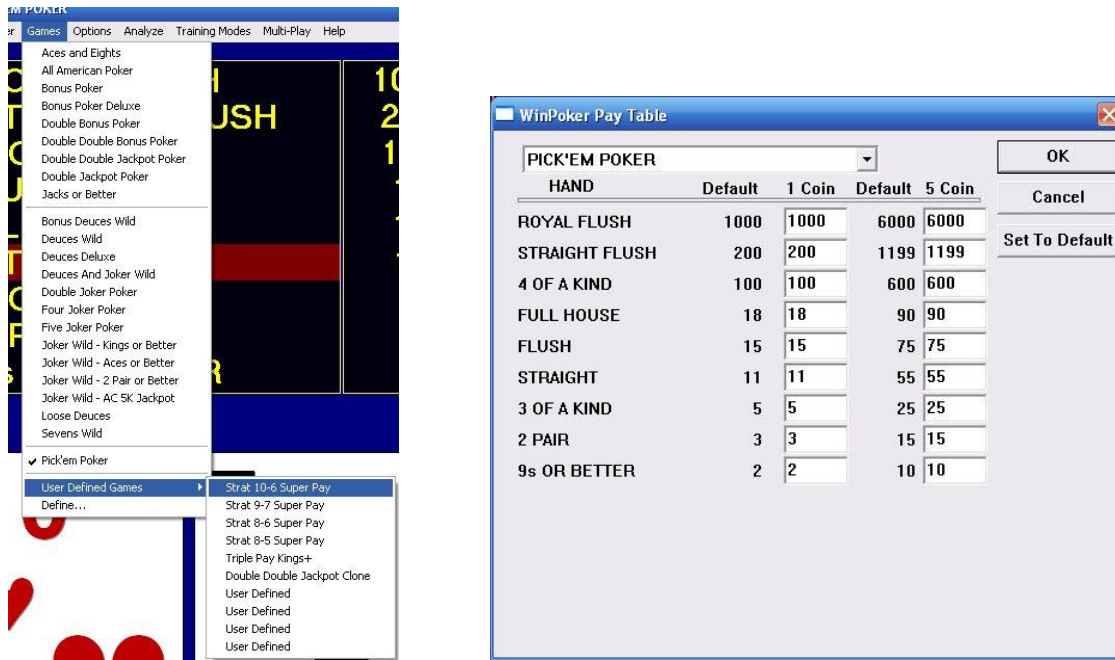
Figure 1.The left panel of Figure 1 displays the available Video-Poker Gamer variations in WinPoker 6.0. The right panel of Figure 1 displays the modification of a pay table in the Win-Poker Pay Table screen.

Multiple line play

One variation of Video-Poker that can be found in most casinos allows players to play multiple hands at the same time. WinPoker 6.0 offers multiple Multi-Play options, allowing players to play 3, 4, 5, or 10 hands at a time, which can be accessed by clicking on the "Multi-Play" tab on the main menu. In this type of variation, a player chooses an amount to wager per hand (1-5) credits, and is then dealt a hand. The player chooses which cards they would like to keep, and then gets to see the results of a number of different draws depending on which Multi-Play game is chosen. For example in a 10-play version of Jacks or Better a player could choose to wager the max of 5 credits on a hand, which when multiplied by the number of hands in this variation would mean that he/she is wagering 50 credits total. The player would then be dealt a hand and would choose which cards to keep as displayed in Figure 2. The player would then get 10 separate draws based on the card kept and cards remaining in the deck, and would earn all of the credits won across all 10 draws. These Multi-Play variations might offer a potential to study variations in betting patterns and decisions in multiple line games.

Training Modes

First and foremost this software is marketed as Video-Poker training software. WinPoker 6.0 offers 5 different training modes to alert players of errors in play and to teach the correct play based on the given Video-Poker variation. These different modes can be toggled on and off by clicking on the "Training Modes" tab on the main menu or by clicking on the bottom gray button above the "Bet 1 Coin" button on the main game play screen, and are discussed below.

Figure 2. A 10 Play version of Jacks or Better

Figure 3. The warning pop up box and the Hand Details screen available under the Warn Training Mode.

Warn

One training mode is called the Warn mode. In this training format players are alerted every time they make an error by a pop up window in the middle of the screen as displayed in Figure 3. This pop up window informs the player of the severity of the error in play (minor, moderate, or major) and gives them specific information on how much the error is costing them in the long run. The window also informs the player of the expected value or return of the correct play as well as the expected return of the play the player is currently attempting to make. The pop up window gives the player the option of continuing with the chosen play or returning to the game to change cards currently held. This mode, does not easily display what the correct play is, unless one clicks on the "Details…" button on the pop up. The Hand Details screen as displayed in figure 3 shows the expected returns for each of the 32 possible hold combinations in descending order, with the best play displayed at the top. The Hand Details screen also displays the total number of possible hands that could result based on the cards held as well as the number of those possible hands that will result in no winning combinations, and the number of those possible hand combinations that will result in any of the winning combinations listed in the payout table.

Autohold

The Autohold training mode automatically chooses the correct cards to hold for the player. If the player chooses to change the cards held and play the hand differently, the same "Statistical Error" pop up warning as described for the Warn mode will be displayed.

Test

As with the Warn and Autohold modes, the Test training mode will inform a player of a playing error, however, it differs in that it does not allow the player to correct that error. As displayed in Figure 4, the software informs the player of what cards should be held and which ones should not, by the display of the text "Hold" or "Draw" beneath the card as well as the severity of the error (Major, Moderate, or Minor). In addition the Test mode offers access to the Hand Details screen described previously for the Warn mode. The player may only continue with the hand play as chosen however, and cannot correct the error.

Show

The Show training mode is very similar to the Test training mode. As with the Test training mode, the Show training mode displays the correct cards to hold and offers access to the details screen; however it does not inform the player of the severity of the error.

Advanced Training Mode

WinPoker 6.0 also offers an Advanced Training mode with allows the user to practice with various types of hands or "Deal Types". This mode can be turned on by clicking on the "Training Modes" tab on the main menu and selecting the "Advanced" option. This mode differs from the other training modes in that it only allows players to choose which cards to hold and does not actually allow them to see real outcomes. From a behavioral standpoint, this mode offers the most potential to study patterns of play while controlling for the effects of reinforcement or under extinction conditions. While in the Advanced Training mode players do not see the result of the decisions made, this mode can be combined with the previously described training modes to provide players with additional feedback on errors being made.

The Advanced Training mode offers the ability to analyze play with multiple types of hands or "Deal Types". This mode can be set

Figure 4 The feedback offered under the Test Training Mode.

to display "Normal (Random)" hands. It can also be set to only display "Hard Hands". What defines a "Hard Hand" is customizable, but by default is set to any hand where the differential of the Expected Value of the best play and the second best return Expected Value is less than 2 coins/credits. This training mode also features the ability to allow the player to set the specific hand dealt. Finally this mode features a setting to choose hands from an error log of the last 100 errors.

Figure 5 shows the display under the default settings of the Advanced Training Mode. This mode by default displays an Advanced Window which displays many of the settings and results from play in the Advanced Training Mode. From this window one can choose from the Deal Types described above, view a log of all errors that are currently saved to the error log, set the parameters of what qualifies

as a "Hard Hand", or clear the current statistics. From this window one can also see the number of hands played as well as the number of errors committed. This window also displays the expected return based on play thus far as well as the overall cost of the errors committed. The visibility of this window can be toggled on and off so that players may either see constant feedback on these results or can continue to play with no feedback. To toggle the visibility of this window one can click on the "Training Modes" tab on the main menu and select the "Hide Advanced Window" option.

Error Thresholds

Throughout the description of the various training components of WinPoker 6.0 described here, how the software can report on the severity of playing errors, by labeling

Figure 5. The feedback provided in the Advanced Training Mode with the Advanced Window displayed.
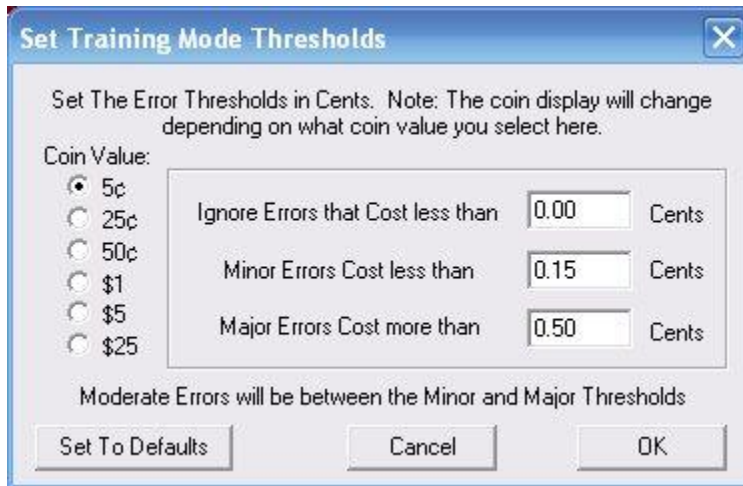

Figure 6. The Set Training Mode Thresholds window for setting the thresholds of Minor, Moderate and Major Errors.

Figure 7. Multiple instances of WinPoker 6.0 opened on a single computer with the game on the left featuring the Autohold Training Mode and the game on the right with no Training Mode.

errors on a 3 level continuum including Major, Moderate, and Minor errors has been mentioned. Another customizable feature of this software that could serve as a potential independent variable consists of the thresholds for these error labels. Under the "Training Modes" tab of the main menu is an option for Error Settings. These error continuums are based on the cost in cents that each error represents per play, and can be individually set for each different coin value setting for the game as can be seen in Figure 6.

Options for Concurrent Responding

A final feature of WinPoker 6.0 makes it a very attractive option for studying gambling behavior under conditions where concurrent responding options are made available. With WinPoker 6.0 you can open multiple instances of the game on a single computer. In addition you can apply completely different settings to each open instance of the game on a given computer. For instance, as displayed in Figure 7, you could open 2 instances of WinPoker 6.0 where the settings differ along a single dimension (in the case of the Figure 7, the game in the left panel has the Autohold

Training mode turned on displaying the correct play, while the game in the right panel has no training mode turned on). Such variations offer opportunities to measure the allocation of responses on two concurrently available games.

This ability to open multiple instances of the software to present multiple games in some sort of array on a single computer may offer certain considerations along the lines of external validity when noted that actual casinos often present banks or arrays of similar but different games from which casino patrons may choose to allocate their gambling dollars to.

Dependent Variables

Thus far we have discussed how many of the built in options and elements of WinPoker 6.0 may be potentially manipulated to serve as potential independent variables for study. However, more importantly we need to consider what type of behavioral measures we can get from this software that may serve as dependent variables of study.

Win Poker 6.0 offers many built in analysis features that are intended to give the

Figure 8. Two methods of accessing the available Hand Counters

user feedback as they learn to improve their play on each type of Video-Poker game played. While these features may be intended for the improvement of an individual's play, they can also serve the purposes of a creative researcher when it comes to measuring the behavior of a gambler.   In the measurement of behavior of any kind, we are often interested in a number of features of behavior, namely, frequency, rate, duration, and in the study of gambling behavior this is no different.

When it comes to potential elements of behavior we may wish to study within the context of an individual playing Video-Poker, there are many options that are available to us. We may simply be interested in the frequency or number of hands an individual plays over a given period of time. We may want to translate this information into a calculation of their rate of play. We may have some interest in the amount that an individual bets under various conditions of play. We may wish to measure the number of coins played, amount bet per hand, etc. In discussing the training options available with WinPoker 6.0 errors

have been described in some detail. We ultimately may wish to examine frequency or rate of errors for a given individual under various game conditions. We may also be interested in recording the specific errors that an individual makes for further analysis. In addition, any gambling activity is an activity of probabilistic reinforcement, and we may wish to record the actual outcomes of an individuals' play in regards to rates of return, coins won, or Payback percentage. The built in feedback options in WinPoker 6.0 give us direct access to many of the potential dependent variables described above, and one may also be creative and employ additional measures or direct observation when the built in features lack the specificity necessary for a given research question.

Hands Played

Win Poker 6.0 has a couple of built in features for keeping track of the number of hands played. In the upper right of the main playing screen, WinPoker 6.0 features a running counter of hands played as can be seen in

Figure 8. This counter can easily be reset by clicking on the red button to its right. In addition to this counter, WinPoker 6.0 keeps a separate count of hands played in a detailed session history screen which may be accessed by either clicking on the "Session" button in the middle right of the main game play screen, or by clicking on the "Analyze" tab on the main menu and selecting the resulting "Current Session" option. The hand counter in the "Current Session Analysis" screen and the one featured on the main playing screen are independent of one another and one may be reset without affecting the other.

Current Session Analysis

Above it was discussed that the hand information available in the "Current Session Analysis" screen which may either be accessed via the "Session" button on the right of the main playing screen or through the "Analyze" tab on the Main Menu. This screen, as displayed in Figure 9, offers a wealth of information that can be used for data collection. Specifically this screen reports information on Hand Results, Playing Errors, Coin Results, and the Error Effect on Total Return.

Hand Results

The Hand Results section of the "Current Session Analysis" screen offers information regarding the number of hands played during the current session, the duration of the current session can be seen in the Session Time box, and the rate of play can be seen in the Hands per Hour box.

Coin Results

The Coin Results section of the "Current Session Analysis" screen offers information regarding the amount wagered and the results of those wagers overall. The number of credits wagered or coins played can be seen in the "Coins Played" box. This information could be combined with the number of hands played or the session time in order to calculate average wagers per hand or the rate of wagering. This section also gives information regarding the overall outcome of the hands played and credits wagered over the current session. The number of coins won can be seen in the "Coins Won" box and this is translated into an overall percentage return that is displayed in the "Payback %" box. Overall the number of coins either won or lost is seen in the "You Lost" box (if a profit had been earned for the given session this would be displayed as a "You Won" box).

Playing Errors

The accuracy of game play decisions can be seen in the "Playing Errors" section of the "Current Session Analysis" screen. The total number of playing errors can be seen in the "Total Errors" box with the number of errors of each level of severity seen in the "Minor", "Moderate", and "Major" error boxes. Based on the number of hands played these errors translate in an overall percentage of correct play that is displayed in the "% Correct" box.

Error Effect on Total Return

The effect of errors made on the overall rate of return of all of the wagers made in the current session is displayed in the "Error Effect on Total Return" section. The best return possible for the current session if no errors were made is displayed in the "Best Return" box, while the actual return for the current session based on the actual plays made is displayed in the "Your Return" box. These numbers translate in a percentage of possible return for the current session that is displayed in the "Return %" box. Subtracting the actual return from the best return results in an overall cost of the errors made in the current session in coins that is displayed in the "Cost in Coins" box.
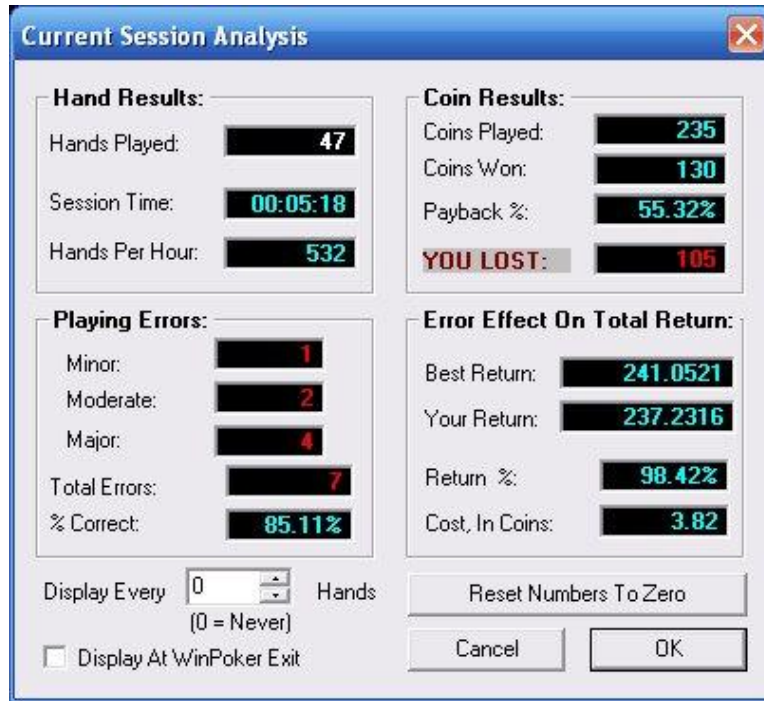
Using the Current Session Analysis

Figure 9. The Current Session Analysis screen displays Hand Results, Coin Results, Playing Errors, and the Error Effect on Total return for the current session.
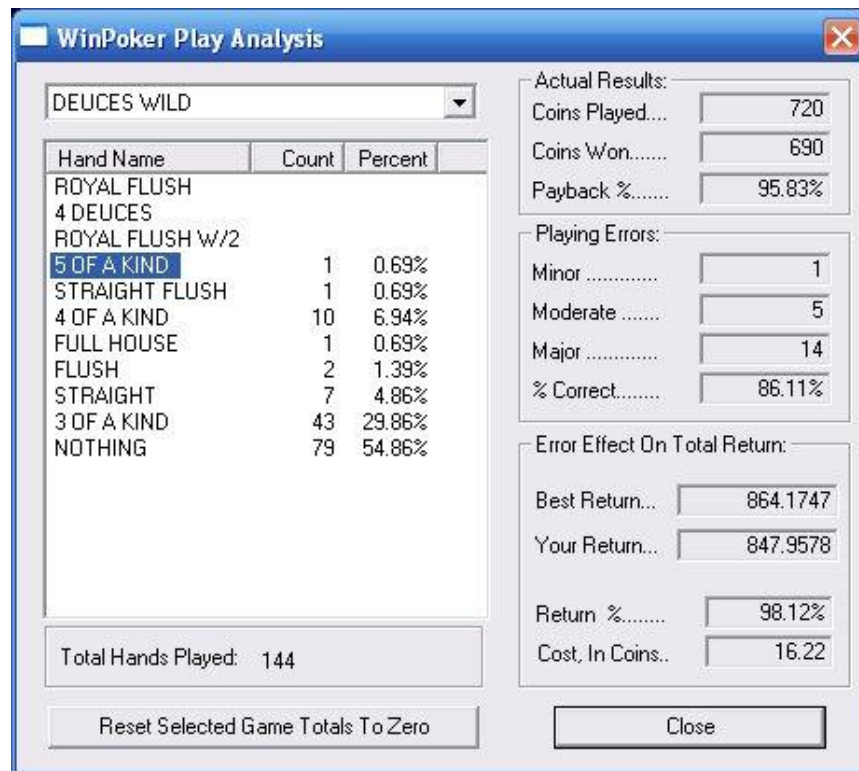

Figure 10. The WinPoker Play Analysis screen displays the overall results for each game.

The different pieces of information described above that are displayed in the Current Session Analysis are potentially the most important potential sources of data. Weatherly, Austin, and Farwell (2007), examined the effects of self reported poker "experience" on playing errors and amount wagered in three different Video-Poker games using the WinPoker 6.0 software described in this article. In this study the authors examined differences between experienced and inexperienced poker players on a number of dependent variables including number of hands played per session, error rates as measured by the % Correct statistic, credits wagered per session, and bet size per hand. All of these variables were recorded from the Current Session Analysis screen.

While Weatherly et al. (2007) employed a group design which required recording data from the Current Session Analysis one time per subject; this screen could also be employed to collect repeated measures in a single subject design study. For example, if one wished to conduct a study measuring the effects of some type of training program on percentage correct play, one could have a participant play for either a preset amount of time or number of hands. The Current Session Analysis screen could then be opened and data recorded. One could then reset all information to zero by clicking on the "Reset Numbers to Zero" button, close the screen, and let the participant continue playing. This pattern could be continued until stable responding is assessed and then the training program could be employed and repeated measures could be taken to observe the effects of the training program.

WinPoker Play Analysis

While the Current Session Analysis screen described above may offer the best method for recording more immediate or molecular levels of behavior, the "WinPoker Play Analysis" screen may offer a method for recording

more molar data of overall play. The WinPoker Play Analysis screen as seen in Figure 10 can be accessed by clicking on the "Analyze" tab on the main menu and selecting the "Overall Play" option. This screen displays results for all available games. Each available game can be selected from the drop down box in the upper left of the screen as displayed in Figure 10. Each type of possible outcome in the chosen game as well as the number of times they have occurred over the "Total Hands Played" for the given game as well as the resulting percentage of outcomes are displayed on the left of the screen. In addition many of the pieces of information described previously for the Current Session Analysis screen such as the Coin Results, Playing Errors, and Error Effect on Total Return are displayed on the right side of the screen.

View Playing Errors

The final source of potential dependent variables that we would like to mention is displayed under the Advanced Training Window described previously. As described previously, you can turn on the Advanced Training mode by clicking on the "Training Modes" tab on the main menu and selecting the "Advanced" option. If the Advanced Training Window is toggled on, you can view a log of the last 100 errors for each game by clicking on the "View…" button to the right of the "From Error Log" button. This will open the "View Playing Errors" window as seen in Figure 11.

This window allows you to see detailed results for the currently chosen game including a detailed view of the last 100 playing errors that were made. This screen displays the cards that were dealt for each error across the top, with the cards that actually were held indicated by the text "Held" above the cards, and the cards that should have been held indicated by the text "Hold" beneath the cards. One can cycle through the last 100 errors by clicking on the left and right arrows on the

Figure 11. The View Playing Errors window under the Error Log in the Advanced Training Mode displays detailed information on the last 100 errors and total history for the currently chosen game.

left side of the "For the error displayed" area in the middle of the window. This area also displays the classification of the severity of the error, the best Expected Value for the hand dealt if the correct play was made, the actual Expected Value of the hand given the way it was played, as well as the cost in cents of the error that was made.

Beneath this area the window displays a summary for the history of the currently selected game beyond the last 100 errors including all errors that have ever been made and their classification, the overall number of hands that have been played in the current game, as well as the best expected return given perfect play, the actual return based on the errors made, as well as the calculated return percentage and overall cost of the errors that have been made.

Limitations of WinPoker 6.0

While all of the above mentioned potential dependent measures can serve many purposes, there are other possible variables of interest that WinPoker 6.0 does not keep track of that many potential researchers could have some interest in. While the software does not keep track of these measures, a creative researcher may still find ways to record additional variables of interest through direct observation or other means.

One specific limitation of WinPoker 6.0 is that it does not keep a direct record of each hand that an individual plays. While as mentioned previously it is possible to access records of the last 100 errors made on the

Table 1
Potential Research Questions That Can Be Addressed Using WinPoker 6.0

Potential Research Questions
Which training format offers the best method of increasing percent correct responding to a specified criterion?
Do "experienced" video-poker players make different types of errors than "inexperienced players?
Which game variations do players show the highest rates of errors879 on?
Does experiencing the outcome of game play decision facilitate or decrease the length of training necessary to decrease error rate to a specified criterion?
Does training on one game format effect play on other game formats?
What effect does error feedback have on number of hands played?
What effect does error feedback have on total coins bet?
What effect does error feedback have on average credits bet per hand?
What effect does the amount of money credits are worth have on total amount bet, hands played, error rate, or amount bet per hand?
Does training differentially affect the rates of different types of errors?
What effect do adjustments to the payout table on a given game have on "experienced" players?

game, however, if a researcher wished to examine every hand that a participant had played over the course of a session including the specific cards dealt, cards help, and amount bet, methods to do so would have to come from outside of the existing software. One possible solution may be to employ any of a number of software options for taking screen capture video (i.e. Camtasia Studio (Techsmith Corporation); CaptureWizPro (PixelMetrics), ACA Screen Recorder (ACA Systems)). Direct recordings of variables of interest could then be made from these videos at the leisure of the researcher.

Another potential variable of interest which WinPoker 6.0 has not method to record is latency between responses. The latency between gambles in both Video-Poker and other games of chance such as slot machines have been examined by researchers and have been found to differ based on the outcome of the gamble (Dixon & Schreiber, 2002: Dixon& Schreiber, 2004). In addition, using the software developed by Dixon, MacLin and Hayes (1999), Dixon and Schreiber (2002) recorded the mean decision time between deals and draws in Video-Poker. While WinPoker 6.0 does not record these variables, it is not hard to envision how one could employ direct observation either with an actual observer, through the use of screen capture video recording as described previously, or through a camcorder set up to record the actual screen display to create a direct record of behavior from which latency can be measured.

While the two above mentioned areas of limitation described above for WinPoker 6.0 do not exhaust all of the potential shortcomings of this software, they do represent two areas in which WinPoker 6.0 falls short of

previously described video-poker software solutions when it comes to dependent measures (i.e. Dixon, MacLin, & Hayes, 1999). Additional areas of concern or limitations that might arise are going to depend on the specific research question being asked. However a wealth of research questions could be addressed using WinPoker 6.0 and make it a very attractive and available tool for the study of gambling behavior. In addition the wealth of manipulable features available with this piece of software dwarf those offered in previously described pieces of software (i.e. Dixon et al, 1999), and make the limitations mentioned seem less significant. Table 1 displays a list of potential research question that could be addressed using WinPoker 6.0. This list in no way exhausts all of the possible questions this software could be employed to address, but should serve as an indicator of the potential contribution of WinPoker 6.0 to a research program interested in studying gambling.

Overall WinPoker 6.0 offers a readily available and relatively inexpensive (approximately $30) option for studying gambling behavior. The fact that it is specifically designed to simulate and train individuals to play many of the more popular versions of Video-Poker found in actual casinos, make it a very attractive option for studying Video-Poker gambling. As described in the current paper many of the built in features intended to help individuals better their Video-Poker strategy lend themselves well towards both dependent and independent variables of interest in the study of gambling behavior.

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