Australian Journal of Parapsychology
2003,Volume 3, Number 2, pp. 140-146.

The *I Ching* and the Lotto Game: Trying to Beat the Odds Using an Ancient Chinese System of Divination

LANCE STORM

ABSTRACT: The *I Ching* (or Book of Changes) is an ancient Chinese form of divination. A numbered hexagram (or six-line symbol) and its associated reading or forecast, is generated using the modern 'coin-throwing' method (three coins are thrown, six times). In the present study, the coin-throwing method was adopted for the sole purpose of establishing a consistent means of generating 'lucky' numbers to be used in a form of gambling known as 'Lotto'—a televised game in which eight ping-pong balls with winning numbers printed on them are drawn every Saturday night from a pool of 45 such balls. Participants in the present study took turns throwing coins to generate their own hexagram numbers. A total of eight numbers were entered for each Lotto game. Over a period of months, ten games were played. Half the games played (5 games) independently produced significant amounts of winning numbers ($p < .05$). Individual hit-rates for key players ranged from approximately 17% up to 36% over the ten games. It was concluded that such high success rates might bode well for the system, but a 'control' condition would be necessary in a replication study to confirm the viability of the procedure.

Lotto is a form of gambling that originated in West Germany in 1955. Introduced into Australia in 1972, the simplest way of playing the game requires of the lotto player that s/he first pre-select 6 numbers from a field of 45 numbers, and then pay a fee to enter the draw. At a later date, on a designated night of the week (different games are televised on Saturday, Monday, and Tuesday nights), eight numbered ping-pong balls are drawn at random from a total pool of forty-five numbered balls. A winning number is a drawn number that matches a number that the player has selected. The eight drawn numbers include two supplementary numbers, which are used to award prizes in Division 2 and Division 5. The smallest prize (a Division 5 prize) is awarded to the player if three correct numbers, plus one correct supplementary number, are pre-selected by the player. The biggest prize (a Division 1 prize) is awarded if all six of the player's numbers are correct (as

long as they are not supplementary numbers). Various combinations of matched numbers constitute prizes in Divisions 2, 3 and 4.

A so-called 'Systems' entry allows a player to select as few as 4 numbers, or 5 numbers ('System 4' and 'System 5', respectively), or as many as 7 ('System 7'), or 8 ('System 8'), and so on up to 20 numbers ('System 20'). The bigger the system number, the more expensive it is to play because of the improved chances of winning. For example, a single 'System 20' entry on a Saturday night in South Australia will cost $18,754.85 (AUD). As with a standard entry of six numbers, system prizes are paid out in accordance with the Division system.

Lotto players tend to use their own personal 'systems' to select numbers, and numbers in birth dates, or street addresses, etc., are often seen as 'lucky'. It was the aim of the present study to develop a more consistent system for selecting numbers for use in Lotto games. The *I Ching* (or Book of Changes), which is an ancient Chinese form of divination, was deemed a suitable starting point because it had already been used (with success) in an unorthodox manner in four studies (see Storm & Thalbourne, 1998-1999; 2001a, 2001b; Storm, 2002). All four studies produced above-chance effect sizes indicating that participants could anticipate hexagram outcomes in advance of their generation using the modern 'coin-throwing' method. The present study used the *I Ching* in an equally unorthodox way.

Ordinarily, the *I Ching* is used to seek advice, or obtain an answer to a question that is posed by the user. By throwing three coins, six times, the user generates one of 64 *I Ching* hexagrams (numbered 1 to 64), each of which has a corresponding reading. The reading is regarded as a forecast of future events, or a solution to a problem, or an answer to the user's question. However, for the present study, it was theorised by the author and his colleague (M. A. Thalbourne, personal communication, March, 2003) that the hexagram number itself (regardless of the associated reading) might be indicative of a future 'event', such as the up-coming number on a ping-pong ball drawn in a future Lotto game. It was hypothesised that Lotto players, while focusing on the aforementioned future event, can generate *I Ching* hexagram numbers between 1 and 45 that match the numbers on ping-pong balls drawn as winning numbers in a Lotto draw. (Note that hexagram numbers between 46 and 64 inclusive were necessarily rejected since there are only 45 numbers to choose from in the Lotto field.)

METHOD

Participants

Initially, five members—Jeff Fausch (JF), Ashley Harbutt (AH), Cheryl Hyland (CH), Colin Mitchell (CM), and Lance Storm (LS)—of the defunct Spenser group (see Storm & Mitchell, 2003) agreed to meet every fortnight on a Sunday afternoon at the author's house. Only these five key players met at the first four meetings (Games 1 to 4). Other players joined the group at subsequent meetings (Games 5 to 10)—one ex-Spenser group member played in five games (Mikele Barrett-Woodbridge; MBW), a new player played in two games (Keeley Fausch; KF), and a further two new players (Francis Fausch; FF, and a guest who prefers to remain anonymous; SX) each played in one game only. One key player, CM, did not participate in Game 10.

Procedure

It was decided in advance that ten games would be played. The ten games were played over a period of eight months (April 5, 2003 to November 22, 2003). To simplify the procedure, and keep costs down, a 'Systems' entry was used. 'System 8' was decided upon, which required of the players that eight numbers be selected on each Lotto form (probability of one number correct, $P = 8/45 = .178$). Only one game requiring eight numbers was played each Saturday night. Each player generated his/her own hexagram number. Turns were taken to generate hexagram numbers so that no player would be over-represented at the end of the ten games. Some players were required to generate two numbers per game, but again, the turn-taking procedure ensured that no player was over-represented in the long run.

If the hexagram number was greater than 45, it had to be discarded, as there are only 45 numbers to choose from in Lotto. Consequently, the second hexagram was used, assuming that it was 45 or smaller (second hexagrams are generated automatically if there are any coin throws of three-of-a-kind). If there were no throws of three-of-a-kind, or if the second hexagram was larger than 45, the participant threw coins again to generate another first hexagram. Note that the probability of getting a hexagram number that is 45 or smaller is 45/64 = .70 (about 70% of the time), so that re-throwing was only necessary about 30% of the time.

When eight numbers (i.e., eight trials) had been generated for each game, the numbers were marked off on the Lotto form, and monies were collected from the players. The form was submitted that week by the author

(usually on a Monday). Tallies of winning numbers, and who threw them, were kept for all ten games. Collected data were analysed by the author.

RESULTS

A total of ten games were played using a 'System 8' entry, which therefore produced 80 numbers in total (i.e., 80 trials). Five of the ten games had a sufficient amount of winning numbers in each game to reach significance independently. Specifically, (i) Game #6 had three winning numbers (p = 8/45 x 7/44 x 6/43 = .004), (ii) Game #10 had three winning numbers (p = .004), (iii) Game #1 had two winning numbers (p = 8/45 x 7/44 = .028), (iv) Game #4 had two winning numbers (p = .028), and (v) Game #8 had two winning numbers (p = .028). Unfortunately, no prizes were won for any of these five games because a minimum of four numbers was required to win a Division 5 prize (p = 8/45 x 7/44 x 6/43 x 5/42 = .00047).

Table 1 lists the five initial players (JF, AH, CH, LS, and CM) and their respective hit-rates. The 'Trials' column (see Column 2) refers to the number of hexagram numbers generated by the players.

TABLE 1
HIT-RATES FOR THE FIVE INITIAL LOTTO PLAYERS

Player	Total Trials	Hits	Hit-Rate (%)
CH	14	5	35.7
LS	14	3	21.4
AH	15	3	20.0
CM	12	2	16.7
JF	12	1	6.7
Totals	70	14	20.0

Note: The remaining 10 of the 80 trials were played by MBW (6 games); KF (2 games); FF and SX (one game each). Total number of hits for these 10 trials was 1 only.

As can be seen from the table, hit-rates varied for the five key players, with three of the five fairing at, or above, the average hit-rate of 20% over the 10 games. However, one player (CM) did not contribute as

many trials (i.e., hexagram numbers) on average as the other four players because he was not present at the tenth and final game. We can only conjecture that his average may have been higher if he had contributed two or three more trials. The same reasoning applies to the other players: MBW, KF, FF, and SX.

DISCUSSION

The present study used a 'system' for generating Lotto numbers that was essentially an adaptation of the *I Ching* coin-throwing method. Five out of ten games played (exactly half) had a sufficient number of winning numbers to produce significant hit-rates each time, though none of those five games paid cash prizes. Nevertheless, in statistical terms, the 50% success rate outside chance (as set by a critical $\alpha = 5\%$) suggests outcomes that may not be the result of pure chance or luck, but may have a paranormal explanation. Furthermore, individual hit-rates for key players ranged from approximately 17% up to an impressive 36% over the ten games.

As a quasi-experiment, however, the present study lacked a suitable control condition. As difficult as it might be to believe, it is possible that the seemingly 'high' effects achieved in this study might be indicative only of the normal run of events over a ten-game run. It may be that control conditions such as the 'Easy-Pick' system (which lets the Lotteries Commission computer randomly pick the numbers for the player), or the personal systems described above (e.g., using numbers in birth dates, etc.), produce just as many 'lucky' numbers as the *I Ching* method we used.

However, in defence of the findings in the present study, we are still left with the statistical fact that the relatively 'high' hit-rates of some key players do suggest that they would be *guaranteed* winners of cash prizes if their performances were consistent in the long run (or preferably, were to improve, even only slightly), *and* they deployed their skills in other more cost-effective Lotto systems. For example, CH produced a hit-rate of approximately 36%. If she were a regular 'System 5' player, and she performed at the same 36% success rate, she would, in the long run, be guaranteed 2 winning numbers in any one game (actually 1.8 winning numbers), with three chances left to get one more winning number (three numbers are sufficient to win a cash prize in 'System 5', which is 3 times the Division 4 prize, *plus* 2 times the Division 5 prize). The probability of getting that winning number would be $P = (3/43 + 2/42 + 1/41) = .142$ (or 1 in 7).

So, to be *statistically* certain of winning a prize, CH would have to play seven games in Saturday Lotto, at a total cost of $134.75 (7 times the cost of an individual 'System 5' game of $19.25 each), which would yield her a pay-out of approximately $149.00 (based on estimated pay-outs for the period 1997 to 2000—see In2play, 2003). CH would be ahead by $14.25. However, pay-outs vary from week to week. For example, if CH played a 'System 5' game on Saturday, March 1, 2003, she would win $166.85, and be ahead by $17.85. Of course, for a quicker yield, she can play more games per week, requiring bigger investments.

Alternatively, CH could invest $301.00 (7 x $43.00) in the more expensive Australia-wide OZ Lotto played on Tuesday nights, and win $322.00 (again, see In2play, 2003). CH would then be ahead by $21.00. But ultimately, there is no absolute guarantee that she would win at all because the Division pay-outs can vary quite dramatically, and she might, just as likely, sustain heavy losses in the long run. Such a gamble may be too risky to be worth all the time, effort, and money that would be needed to ensure only an occasional, possibly small, win.

At this early stage, however, the *I Ching* method used in the present study shows promise, but we need to make one major improvement to the experimental design should we consider conducting a replication study. Specifically, a control condition must be implemented, so that performance comparisons can be made. This addition to the procedure would make possible the validation of the *I Ching* coin-throwing method as a consistent procedure for generating winning numbers in games of chance such as Lotto. Skeptics, though, may say that significant results are one thing, winning cash prizes is another. They may choose to believe that the only acceptable validation of the coin-throwing method is a demonstrated effect that ensures players will not be out of pocket in the long run, and are, in fact, consistent winners of cash prizes. For the skeptic, only if we achieve that end, would we turn a *gamble* into a *guarantee*. Fortunately, for the parapsychologist, and for science in general, a paranormal effect doesn't have to be bought to prove it is real.

REFERENCES

In2play (2003). *Useful lotto information: Facts and figure about Tattslotto, OZ Lotto, NSW Lotto.* <http://www.in2play.com.au/LottoInfo.htm> [April 11, 2003].

Storm, L., & Mitchell, C. Are you there, Spenser? Attempts at 'PK by committee' in a séance-like situation. *Australian Journal of Parapsychology, 3,* 3-19.

Storm, L. & Thalbourne, M. A. (1998-1999). The transliminal connection between paranormal effects and personality in an experiment with the *I Ching*. *European Journal of Parapsychology*, *14*, 100-124.

Storm, L., & Thalbourne, M. A. (2001a). Studies of the *I Ching*: I. A replication. *Journal of Parapsychology*, *65*, 105-124.

Storm, L., & Thalbourne, M. A. (2001b). Studies of the *I Ching*: II. Additional Analyses. *Journal of Parapsychology*, *65*, 291-309.

Storm, L. (2002). A parapsychological investigation of the *I Ching*: Seeking psi in an ancient Chinese system of divination. *Australian Journal of Parapsychology*, *2*, 44-62.

Anomalistic Psychology Research Unit
Department of Psychology
University of Adelaide
Australia
E-mail: lance.storm@adelaide.edu.au