鑽鑫最幸運龍百家樂
Zuan Xin Lucky Dragon Baccarat™ mobile Chinese gaming expert app

ICGRT 2013

Baccarat Solved?

David Sofer
Chief Game Designer
Zuan Xin Lucky Dragon

Zuan Xin Lucky Dragon Chinese Mobile Phone Entertainment Enterprises
Zuan Xin Lucky Dragon Chinese Mobile Phone Entertainment Enterprises

Baccarat should be more interactive, global and mobile, expert says
To Bill Eadington

Thank you!

Zuan Xin Lucky Dragon Chinese Mobile Phone Entertainment Enterprises
About me

Harvard educated philosophy of science focus
Neuropharmaceutical background
Worked on Alzheimer’s and addiction programs
Gambling addiction expertise led Zuan Xin to me
Baccarat Solved? Impossible!
Ed Thorp said no way
Von Neumann didn’t finish it

Baccarat Solved! How?
Someone came along who needed to
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G2E Conference 2008

Landmark Session
Blackjack vs. Baccarat

My humble prediction for Baccarat
Baccarat’s pure, Blackjack isn’t.
Blackjack’s peaked,
Baccarat hasn’t.

In fact, it’s going to double, triple, and even quadruple!
Baccarat the biggest game in history

2012 estimated global Baccarat handle
At least $2 trillion US probably even more

Against Global GDP of about $70 trillion US
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Baccarat the biggest game in history

2020 estimated Macau Baccarat win

At least $80 billion US maybe even $100 billion US
Baccarat Solved? Impossible!
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Necessity is the mother of invention

Zuan Xin’s starting point

The mother of the solving of Baccarat was Zuan Xin’s mother
She ordered her son to solve the game
Zuan Xin’s solution spec

Solution had to be simple, useable, verifiable
Verifiable in casino, in simulation, in theory

USEABLE! USEFUL! USEABLE! USEABLE! USEFUL!
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Chinese gambling god Dai Zilang said the only strategy for Baccarat is pure luck.
Why the mathematical geniuses didn’t solve the game of Baccarat

Anchored in mathematical purity
Anchored in cards and card counting
Anchored in the industry wisdom
Anchored in Thorp and Walden
A FAVORABLE SIDE BET IN NEVADA BACCARAT*

EDWARD O. THORP
New Mexico State University
(Presently at University of California at Irvine)

AND

WILLIAM F. WALDEN
Los Alamos Scientific Laboratory
University of California
(Presently at University of Omaha)

A winning strategy is developed for the nine to one side bet on a Banker natural nine. Let \( n \) be the number of cards that remain for play. Let \( t \) be the number of nines that remain for play. If \( p(n, t) \) is the probability of a natural nine when \( n \) and \( t \) are given, then \( p(n, t) \) is greater than 0.1 frequently enough to make the counting of \( n \) and \( t \) the basis for a practical winning strategy. The Kelly criterion (play to maximize the expected value of the log of capital) is used to determine bet sizes for favorable situations. Similar strategies are developed for the side bets on Banker natural eight, Player natural nine, and Player natural eight. The relationships between the four side bets are analyzed. It is shown that the main (roughly 1:1) bets on Banker and Player occasionally favor the player. There are theoretical favorable strategies but none exists which is currently practical.
The endless Baccarat roads
About $2^{72}$ or $10^{21}$ different shoes

路 大路 小路
大眼路 甲由路 珠盘路
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Terminology

Decisions (B or P only)
Runs (BB or PP simplest)
Sequences (BPBPBP simplest)
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Simplification Step

Banker/Player 50/50 simplification
Simplifies the math dramatically
Essential step to useability

Enables exploitation of \((1/2)^x\) cascade
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Typical Shoe

80 Hands
8 Ties
72 Decisions
Decisions

36 Banker
36 Player
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Runs

36 Total
18 Runs of 1
18 Runs of More Than 1

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Sequences

18 Sequences of Runs
Meta Sequences

18 Meta Sequences
Containing All Sequences
And out pops

The pattern of the patterns
<table>
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<tbody>
<tr>
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<td>T</td>
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<tr>
<td>72</td>
<td>D</td>
</tr>
<tr>
<td>36</td>
<td>R1 C</td>
</tr>
<tr>
<td>18</td>
<td>R2 S</td>
</tr>
<tr>
<td>9</td>
<td>R3 D, F(S)</td>
</tr>
<tr>
<td>4 1/2</td>
<td>R4 T, F(D)</td>
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<tr>
<td>2 1/4</td>
<td>R5 4, F(T)</td>
</tr>
<tr>
<td>1 1/8</td>
<td>R6 5, F(T)</td>
</tr>
<tr>
<td>9/16</td>
<td>1.78 R7 6</td>
</tr>
<tr>
<td>9/32</td>
<td>3.56 R8 7</td>
</tr>
</tbody>
</table>

| 9/64 | 7.11 R9 8 | F(T) | 1x6, 2x6, 3x4, 4xT, 5xD, 6xS |
| 9/128 | 14.22 R10 9 | F(D) | 1x7, 2x6, 3x5, 4x4, 5xT, 6xD, 7xS |
| 9/256 | 28.44 R11 10 | F(S) | 1x8, 2x7, 3x6, 4x5, 5x4, 6xT, 7xD, 8xS |
| 9/512 | 56.89 R12 11 | F(10) | 1x9, 2x8, 3x7, 4x6, 5x5, 6xT, 7xD, 8xD, 9xS |
| 9/1024 | 113.78 R13 12 | F(11) | 1x10, 2x9, 3x8, 4x7, 5x6, 6xT, 7xD, 8xD, 9xS |
| 9/2048 | 227.56 R14 13 | F(12) | 1x11, 2x10, 3x9, 4x8, 5x7, 6xT, 7xD, 8xD, 9xT, 10xD, 11xS |
| 9/4096 | 455.12 R15 14 | F(13) | 1x12, 2x11, 3x10, 4x9, 5x8, 6x7, 7x6, 8x5, 9xS |
| 9/8192 | 910.24 R16 15 | F(14) | 1x13, 2x12, 3x11, 4x10, 5x9, 6x8, 7x7, 8x6, 9x5, 10xD, 11xT, 12xD, 13xS |
| 9/16384 | 1820.44 R17 16 | F(15) | 1x14, 2x13, 3x12, 4x11, 5x10, 6x9, 7x8, 8x7, 9x6, 10xD, 11x4, 12xD, 13xD, 14xS |
| 9/32768 | 3640.89 R18 17 | F(16) | 1x15, 2x14, 3x13, 4x12, 5x11, 6x10, 7x9, 8x8, 9x7, 10xD, 11x5, 12xD, 13xD, 14xD, 15xS |
And then

The pattern of the pattern of the patterns
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<tbody>
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栩栩四槱™
The Four Vivid Ritual Bonfires
The Xuxu Siyou

1 of 1 = A = Ox and >1 of 1 = B = Sheep
1 of >1 = C = Goat and >1 of >1 = D = Bird
栩栩四槓™

Every shoe simplifies to

A/B C/D A/B C/D …
C/D A/B C/D A/B …
栩栩四槱™

Useable playing method pops right out

Wait for three fires to light then focus on fourth
Overwhelming probability fourth will light too
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栩栩四樑™

D13 A1 D11 B2+1 XXSY LIGHTS 6TH TRY

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栩栩四槓™
Outcome patterns

On order of \((1/2)^x\) cascade
First twice second twice third etcetera
Casino success negative second standard deviation
Playing the Xuxu Siyou

One betting cycle per shoe
Extraordinary patience required
Improbability enabled betting progression
栩栩四槱™
Implications of the Xuxu Siyou

Xuxu Siyou solution of the game of Baccarat
Validates Baccarat as ultimate gaming construct
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Exclusively contained in our mobile app
Zuan Xin Lucky Dragon Baccarat™
First mobile Chinese gaming expert app
Zuan Xin Lucky Dragon Baccarat™ mobile Chinese gaming expert app
Zuan Xin Lucky Dragon Baccarat™ mobile Chinese gaming expert app

Conclude watch Ultra High Speed Simulator Xuxu Siyou simulated at >5 hands per second

But you all check for yourselves…
DON’T TAKE IT FROM ME!
YOU ALL CHECK FOR YOURSELVES!
BEGIN IT TONIGHT AT THE BACCARAT ROOM!
PREPARE TO BE AMAZED!
Some of my students did that for real
Watched and watched and watched
Watched in the Baccarat rooms of Asia then

They backed Zuan Xin Lucky Dragon Gaming!
If Ed Thorp had solved Blackjack today he would have released a mobile app!
Anyone interested in formalizing Xuxu Siyou mathematics
For academic publication
Please see me or contact me

COMMERCIAL SPONSORS WANTED
Email me dsofer888 at gmail or yahoo
Voice and text 702 858 7558
Thank you!

Now let’s look at the Xuxu Siyou…
And then you all check for yourselves…
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Zuan Xin’s Ultra High Speed Simulator™
Very fun way to understand Xuxu Siyou
Also Patent Pending
Novel treatment for Baccarat gambling addiction
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你贏了！請啟動新鞋
You have won! Please start new shoe

sectors elapsed : 3.0s