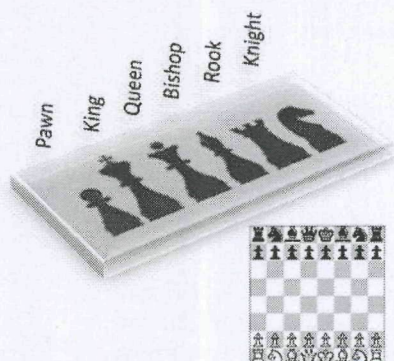


## Chess Piece Names and Starting Positions



According to *Business Insider* (Wai, 2012), Peter Thiel, a Chess Master and billionaire resident in Silicon Valley, uses Chess analogies often during his CS183 class at Stanford University.

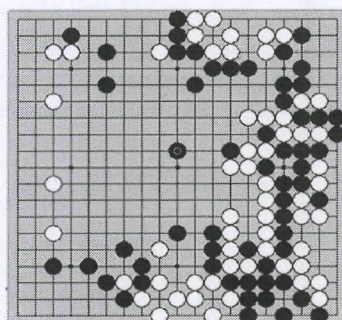
In order to bridge the gap between scholarship and entrepreneurship, to improve *flux*<sup>1</sup> capacity, mental acuity and vision for spotting unknown potential; to develop better leadership skills that distinguish oneself from the rest of the crowd and meet fast-approaching future demands, the authors of this article recommend an ancient practice known as the *Game of Kings – Chess*.

In recent years there have been riots in streets protesting the ‘one percent’ of the world’s wealthiest individuals. There may be a connection between Chess, leadership, business, and being in that one percent group. The *road less traveled* to becoming a better leader may be as simple as becoming interested in, and a regular participant in, the *Game of Kings*. There is a good chance the person who is outperforming others currently is, or has been, an active Chess player. A leading question for education and business: how can education develop a professional class of entrepreneurs and organizational leaders who will be capable of predicting, managing, and interpreting complexities that, as yet, uninvited technologies will change in the future?

Hoffjan (2003) described the European game of Chess and how it dominates strategic business practices of Europeans, in comparison with the Asian game of *Go*<sup>2</sup> and its strategic effects on how Asians conduct business. Hoffjan demonstrated how rules and strategies within the two most important games in the world, *Go* and *Chess*, subconsciously controlled the business cultures of Europe and Asia, where those who became *captains of industry* and *commerce* had been practicing since childhood. However, this doesn’t just apply to industry and commerce, but to all fields of endeavor. For instance, in WWII Germany, Field Marshall Erich Von Manstein, considered Germany’s greatest commander, “could out-think and out-manuever opponents *with the focus of a Chess player*, and indeed Chess was one of his obsessions” (Citino, 2013, emphasis added). Even more recently, the President-elect of Mexico, Enrique Peña Nieto, who credits his success to his Chess playing ability (Archibold & Zabludovsky, 2012), was said to have delayed a strategy meeting simply in order to finish a Chess game, according to the *New York Times*. Apparently, playing the game of Chess is that important to elite leaders; even presidents!

What does the reported strategy of a Chess-playing World War II German general, presidents, and billionaires have to offer to today’s leaders? Carland and Carland

## Go Game Board and Pieces





(2003) succinctly described the problem of today's leadership: "Far too often people just decide upon a strategy, then follow it step by step, even when it becomes obvious the situation has changed; even when it becomes obvious the plan cannot work" (p.98). So what do leaders need in today's endeavors? Leaders need to be able to *think like Manstein* and develop the flux capacity that can address the continual flexibility of today's rapidly changing environments such as business, education, the military, etc.

**The Object of Chess and its Potential to Develop Superior Creative Ability**

The object of the game of Chess is *checkmate* (See Table 1) and it can happen in as few as four moves or less. Most checkmates, however, occur within an average of 20-40 moves. In order to obtain a checkmate, a player must recognize two fundamental principles:

1. One must take away all space from the opposing King.
2. Finally, one must attack the King.

The critical thinking/planning process to arrive at a successful conclusion involves a few logical steps:

- How much space do I already control?
- What space do I need to control?
- What barriers inhibit my advance?
- How can they be removed in order to execute the process of *checkmate*?

The correlate here, for example in business, is that bringing a product to market requires the same methodology and skilled execution. Usually, a company only gets one chance to bring a product to market correctly, and so often in the game of Chess, a player may only get one chance to checkmate the opponent. Chess develops the skill of making

Table 1. The Value of Chess for Developing Leadership Skills

What chess is observed to be	The true value of chess
Capturing pieces	Control, interpretation, manipulation of real/perceived threats, gains/losses
Making moves on a game board	Planning/execution; maintaining equilibrium and building strong foundations for implementing relevant change
Manipulating pieces	Leadership, sacrifice, and knowing the strengths/weaknesses of key personnel for various situations
Defeating your opponent	Overcoming self-doubt, personal inadequacy, and becoming self-actualized through victory and defeat
Playing against someone else	Relationship building and collaboration; taking responsibility for one's own actions
Checkmate	Achieving mastery of the field/position, and turning potential victory into real victory



every move count *three moves in advance* because if one misses the opportunity, it can cost the whole game.

Half-way into this first quarter-century there is one prediction; as we look forward there needs to be improvement in the ability of leaderships' 'flux capacity'. Business environments, especially now, are in continual flux due to the celerity of technological and informational change in response to consumer diversity and demand. Technologically induced business-model change is occurring in many industries, particularly education, the print industry, trading, and shipping, to name a few. For example, the education industry today is experiencing increased flux and, due to many factors, according to Peterson (2003), is becoming endangered. In our present time and in the future, there will be increasing demand for leaders advanced in the *art* of thinking, as practiced in Chess. Chess is not just a game; *Chess represents a well-researched methodology for developing some of the most advanced, creative, thought-leaders an organization can hire.*

### Correlates between Leadership and Chess

Benjamin Franklin, in the 18<sup>th</sup> century, understood the power of Chess to transform minds and became the first celebrity proponent of the game (Franklin, 1786). Consider the following as a description of the value Chess has for developing one's leadership ability (See Table 2). An important correlation between chess and leadership skill, that must be considered, is the comparison of *piece values* and *people values*. There are specific numerical values associated with each Chess piece that every beginner learns. These are the *static* values of the pieces and there are many factors that determine their value. However, there also are *relative* values of each piece when observed in various positional circumstances. There are an additional set of *wholly different* factors that determine the value of pieces when found in various positions. Relative value can also be termed *positional* value of the piece. *One cannot be a leader without followers.* Those followers also will have *static* and *relative* value to leaders and the venue in which they lead. In turn, there are a multitude of factors that differentiate an individual's static value when hired as compared to the

individual's relative value in certain positional circumstances. A famous chess game demonstrates this principle well.

The Polish Immortal, as the game between Glucksborg and Najdorf has become known (Kasparov, 2005), demonstrated the *relative* values of Chess pieces perfectly. In that game, Najdorf brilliantly sacrificed<sup>3</sup>

Table 2. Piece Values vs. People Values

Piece	Value	People
King	None, the King cannot be captured, only checkmated	Corporation
Queen	9	Chief Officers
Rook	5	Vice-presidents
Bishop	3	Professionals
Knights	3	Marketing/PR
pawns	1	Entry-level/sales force



four minor pieces to lead to one of the most brilliant checkmates in history. On the last move of the game, the major pieces, the *Queen* and the *Rook*, stand silently, working together indirectly in the background while the *pawn*, the piece of lowest static value – *but highest relative value in that circumstance*, was allowed to deliver the killer checkmate to the enemy King. This game demonstrates a critical leadership strategy: it is the duty of those in leadership positions to ascertain the *relative value* of the people in their organization and to determine the relative value of *their potential contribution in any position*. In addition, it is the duty of leadership to make open opportunities for those in *lower static value positions* to achieve their highest potential and not block/diminish their ability to contribute to the overall organization *in ways perhaps unimagined*. The point here is, typically, only rank beginners hold fast to static values, while Masters of the game are deeply critical of relative values of pieces in various positions, including the sacrifice<sup>4</sup> of even a Queen.

Leaders should take a serious look at Chess competency as part of their deliberate practice in their quest for improvement (Unger, Keith, Hilling, Gielnik, & Frese, 2009). Chess has received a long, diverse experimental inquiry into its ability to develop the mental capacity of its participants. This is important because the literature supports mental ability as being a quality necessary (for example, Spearman's *g*) for exceptional leadership (Schmidt & Hunter, 1998). In fact, based on 85 years of research, Schmidt and Hunter concluded, "... for hiring employees without previous experience in the job the most valid predictor of future performance and learning is general mental ability" (p.262). In addition, according to Thompson (2007), IQ appears to be a predictor of leadership level in an organization: the higher the IQ, the higher the level. However, intelligence *alone* is *not* as

significant as *IQ plus high emotional intelligence (EQ)*. IQ may be a threshold for getting into senior leadership, but EQ demonstrates the presence of other factors such as "motivation, self-awareness, empathy and social skills" (Carpenter, Bauer, & Erdogan, 2009; Cangemi, 2011). Because of the general implications that Chess improves mental ability, scientists doing cognitive research have been studying the effects Chess has on psychological performance since the late 1800's in areas such as perception, memory, thinking ability, visual imagination, and brain activation (Hunt & Navalta, 2012). Research clearly supports that Chess has the potential to *develop* superior creative capability (Kazemi, Yektayar, & Abad, 2012).

#### *Chess and Entrepreneurship*

Carland and Carland (2003) stated, "If the pursuit of economic success is a game, it most certainly resembles a Chess game, because Chess is a game of moves and countermoves" (p. 100). Entrepreneurs tend to take major risks at the wisp of an opportunity in order to realize a typically incomplete vision, while corporate behemoths play the game utilizing long-term strategies and defensive positions seeking small competitive advantages. The first mover advantage, described by Rice (2008) in terms of *Metcalfe's Law*<sup>5</sup>, is *with the player who uses the White pieces*. According to the rules, White moves into the field first and dictates the structure and flow of the game. Rice used this metaphor to relate how a new product may enter a virgin market. Entrepreneurs are astute at using *first-mover* effect to their advantage and the risks taken appear to be leveraged by the mass potential of getting a novelty into market first --increasing potential users/consumers. Ford Motor Company, Paypal, Ebay, and Skype, have emulated this process. On the other hand, in Chess, the opponent also gets its first move of the game in response to White's play.



According to Rice, there is a *second-mover* advantage. The second-mover has the distinct advantage of being able to observe what White has played and takes the opportunity to improve on it. If an opponent enters the market with the *same* moves, the opponent will *lose*. But, if the second-mover comes into the market with an improved product at a new angle, then such strategies may help the second-mover overtake the field. Rice compares such an angle to a famous opening called the *Sicilian Defense*<sup>6</sup>.

Entrepreneurial types are pressuring long-term planning business giants to redefine dynamic processes, potentially changing the rules of the game. In the Chess world the most famous names for such kinds of novelty are Bobby Fischer and Mikhail Tal, while in the business world, for instance, these names would be Facebook, Google, and Coursera, among others. They are all fundamental game changers amid acknowledged giants like Houghton-Mifflin, Texas Instruments, Apple, and General Electric, to name a few. Obviously, the increase in flux has created a new class of entrepreneurs, individuals who envision what is *not* there, and then *execute the vision*. This is the same process as obtaining *checkmate* in a complex Chess position. The multiple facets and methodologies of Chess model multiple business practices, and the pursuit of Chess-Mastery has the capacity to develop necessary skills that increase chances for mastery in leadership (Graber, 2007; Rice, 2008). This can be visualized by asking the following question: "How many squares are on a chessboard?" Count the squares on the chessboard and hold your answer for a moment (See Figure 1).

*Controlling the Game by Controlling Space:  
The Case of Coca-Cola*

Former Cuban-born, Coca-Cola CEO, Roberto Goizueta, suspected a complacency

problem and gathered various subordinates to a meeting to discuss Coke's share in the marketplace. He asked a simple question: What percent of the beverage market is Coke's? The answer, which came quite confidently from the group, based on the company's measures, was 45%. His subordinates demonstrated they were proud of this accomplishment and seemed satisfied with this measure, suggesting the market was saturated and a higher percentage was not very pragmatic, considering the rest of the beverages on the market. The attitude they exhibited was *Coke essentially owned the beverage market*. Goizueta, ever the perceptive CEO, recognized *his subordinates' sense of overconfidence* was the problem and was limiting the company's growth. He knew the solution: he *had* to change their perception.

Goizueta then asked another probing question: how many ounces of liquid does the average person need to consume a day? The answer given: 64 ounces. Using 64 ounces as a guide, he then asked *how many ounces of Coca-Cola products a day does the average person consume?* Becoming somewhat perplexed, his subordinates' over-confident attitudes began to diminish and someone in

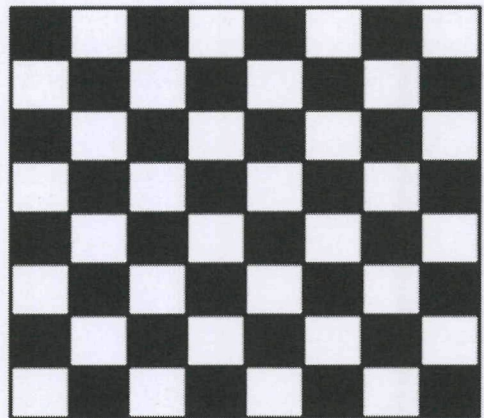


Figure 1. How many squares are on the chess board?



Table 3. Squares on a Chess Board

Number of squares	Type of squares
1	8 x 8
4	7 x 7
9	6 x 6
16	5 x 5
36	3 x 3
49	2 x 2
64	single

the group replied: *two percent (2%)*. Goizueta then replied, “*And you think the market is saturated?*” He clearly and effectively demonstrated an inaccurate visualization/perceptual problem in his subordinates. This change in perception - a *paradigm shift* - became the springboard that positively affected and increased Coke’s leadership in the beverage market.

In Chess, every move changes the space and increases the flux. What Goizueta asked was, really, “How many Squares are on the chessboard?” Samuel Hunt constantly asks this question to interested individuals and they nearly always answer 64. Goizueta’s subordinates made the same mistake. Their calculation was based solely on figures, not utilizing the addition of *intuition*. When looking at a chessboard most people cannot see anything else but  $8 \times 8 = 64$ . However, according to Table 3, we can see *clearly* there are 204 squares on a Chess board. It is fairly obvious, if one understands the board itself is a single square composed of 64 smaller

squares, which makes the board the 65th square (See Figure 1). Thus, following the same pattern (i.e.  $7 \times 7$ ,  $6 \times 6$ ,  $5 \times 5$ , etc.); the actual squares on a chessboard becomes apparent. This is akin to how Goizueta changed his subordinates’ perception in order to increase company market share. Matzler, Bailom, and Mooradian (2007) described a key leadership trait being *pattern recognition*, a skill that leads to better intuition. Better intuition and visualization would obviously improve a leader’s flux capacity.

#### *Parallels between Chess Practice and Business Practice*

Graber (2009) added some concrete additional parallels between Chess practice and business practices. Chess teaches that capturing the opposition’s piece, even though possible, *may be a bad move*; a player should only capture a piece if, in acquiring the piece, one receives a benefit in time, resources, or position. It may appear one is gaining a short-term material advantage, but it may cost the game if employed. Such vivid examples include Enron and Madoff, and recently the banking industry, whose short-term gains moved into unethical waters. The capturing of the opponent’s piece also may *not* be smart because a player is reducing resources available for enabling checkmate, if the opponent recaptures.

Graber related the following in relation to opportunity costs in leadership and chess, including:

1. over-extending resources toward an opponent in an untenable position; over-extended/overworked pieces in Chess become easy targets to exploit;
2. accepting gifts *en prise*<sup>7</sup> without reading the fine print (in chess, such *en prise* pieces are known as *poisoned pieces*).

Long-term thinking is important in education, business, and other venues. The obvious point here speaks to leadership: not sacrificing long-term thinking for seemingly short-term



outcomes. Chess is not only about knowing the next three moves in the short-term outcomes of the game, but how those combinations will alter the game as a whole to one's advantage or disadvantage. Does the move create exploitable weaknesses? On the other hand, in Chess, a *gambit* is a short-term, deliberate material loss -- a sacrifice<sup>8</sup>, which attempts to gain long-term advantages in time, resources, or development/space. This *tactic* likewise takes place in business. For example, a corporate behemoth may sell off a subsidiary in order to consolidate its position in the marketplace, or a new entrepreneur may sell off a company to a behemoth in order to bring a new idea into the marketplace and expand the entrepreneur's influence. In Chess and leadership, timing and visualization of potential opportunity is quintessential to success.

Such correlates, which have not been exhausted in this article, leave little doubt the game of Chess models leadership practices that are extremely important in the flux of the millennial economy. Future entrepreneurial and/or leadership classes of tomorrow could profit from supporting and teaching Chess at an early age to develop/strengthen students' mental acumen.

### Conclusion

The authors have endeavored to demonstrate the potential applicability of learning Chess as a tool, especially at an early age, to increase skills essential to more successful leadership. From these findings we can conclude the *Game of Kings - Chess* is a field of development of the most critical and necessary skills required by leaders across every endeavor. It appears to be the missing element in education practice that goes beyond lecture and assessment, rote memorization of facts, and into pure mental and psychological development that American school systems are currently struggling to provide students.

The knowledge economy in America needs more Chess practitioners. For the enhancement of education in any nation, the most cost-effective and simplest change that can be made is to put Chess in every school and university, side-by-side with current practices, to actively increase the development of the flux capacity required of present and future leaders and entrepreneurs. Have these gaming methodologies, as Hoffjan (2003) brought to light, been controlling business practices of leaders in both Europe and Asia for generations? Would it not make sense for today's youth -- and today's leaders -- to join this unheralded society of masterminds? What would be the harm?

In summary, the timing could not be better to begin learning the *Game of Kings* and using this powerful tool to transform mental capacity necessary for becoming a more successful leader. Incorporating Chess into the early grade curriculum, as well as in graduate leadership/business/industrial/educational programs, etc., could be an essential catalyst for enhancing the skills of graduates and leaders as they enter the new, millennial, global, competitive workforce.

### Notes

1. *Flux*, in our context, has to do with the spontaneous, often intuitive, necessary change required to maintain forward progress, regardless of preconceived and well-laid plans: just the opposite of what Carland and Carland described as the failure of so many leaders (p.98).

2. The object of *Go* is to occupy a larger portion of space than your opponent, using pieces called *stones* to surround them.

3. A *sacrifice* is an exchange of a piece with *higher static value* for a piece of *lower static value*.

4 *Sacrifice* is not a metaphor for firing an individual. It is a metaphor for necessary use of personnel in various roles during various circumstances.

5. *Metcalf's Law* is described as the square of the number of users being proportional to the value of the network.



6. *The Sicilian Defense* is an opening for the black pieces that has the highest winning percentage against the most common first move for white: pawn to e4. One of the most studied Grandmaster's of all time (Philidor, 1777) stated, "...it is a very good [opening] to try the strength of an adversary with whose skill you are unacquainted" (p.201).

7. *En prise* is a French chess term meaning 'in a position to be taken' or more commonly 'for free'.

8. A *blunder* is an accidental and unforeseen/unplanned loss in resources. A *gambit/sacrifice* is a well-planned strategic endeavor; a *tactic*, not a blunder.

### Author Note:

Samuel J. Hunt, College of Education and Behavioral Science, is completing his Educational Leadership Doctoral degree at Western Kentucky University.

Joseph P. Cangemi is Emeritus Professor of Psychology, Scholar-in-Residence at Western Kentucky University.

Correspondence concerning this article should be addressed to Samuel J Hunt, 1906 College Heights Blvd, GRH 3048, Bowling Green, KY 42101

Contact: samuel.hunt1@topper.wku.edu

### References

- Archibold, R. C., & Zabludovsky, K. (2012, July 2). For Mexico's president-elect, a strategic journey. *New York Times*. Retrieved from [http://www.nytimes.com/2012/07/03/world/americas/pena-nieto-savors-long-plotted-victory-in-mexico.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/07/03/world/americas/pena-nieto-savors-long-plotted-victory-in-mexico.html?pagewanted=all&_r=0)
- Cangemi, J. P. (2011). Peak performance through emotional intelligence. Paper presented at Bridgestone/Firestone Credit First National Association, Brook Park, OH.
- Carland, J. W., & Carland, J. C. (2003). Pawn takes Queen: The strategic gameboard in entrepreneurial firms. *Academy of Strategic Management*, 2, 97-109.
- Carpenter, M., Bauer, T., & Erdogan, B. (2009). *Principles of management*. Irvington, NY: Flat World Knowledge. Retrieved from: <http://www.web-books.com/eLibrary/ON/B0/B58/000Title.html>
- Citino, R. M. (2013, March/April). The limits of genius. *World War II*, 27(6), 29-35.
- FIDE. (2012, August 9). *AGON releases new chess player statistics from YouGov*. Retrieved from <http://www.fide.com/component/content/article/1-fide-news/6376-agon-releases-new-chess-player-statistics-from-yougov.html>.
- Franklin, B. (1786, December). On the morals of chess. *Columbian Magazine*. In R. Hagedorn. (1958). *Benjamin Franklin and chess in early America: A review of the literature*. Philadelphia, PA: University of Pennsylvania Press.
- Giang, V. (2012, July 16). Exclusive: Entrepreneur challenges Peter Thiel to million dollar chess game. *Business Insider*. Retrieved from <http://www.businessinsider.com/steigman-challenges-thiel-to-million-dollar-chess-game-2012-7>.
- Graber, R.S. (2007). Chess Strategy and Business Strategy. *Proceedings for the Academy of Economics and Economic Education*, 10(2). Retrieved from: <http://www.alliedacademies.org/Public/Proceedings/Proceedings21/AEEE%20Proceedings.pdf>
- Graber, R. S. (2009). Business lessons from chess: A discussion of parallels between chess strategy and business strategy, and how chess can have applications for business education. *Academy of Educational Leadership Journal*, 13, 79-85.
- Hoffjan, A. (2003). *Go and Chess* as prognosis instruments for understanding competitive positions. *Strategic Change*, 12, 435-442. Doi:10.1002/jsc.647.
- Kazemi, F., Yektayar, M., & Abad, A. M. B. (2012). Investigation of the impact of chess play on developing meta-cognitive ability and math problem-solving power of students at different levels of education. *Procedia-Social and Behavioral Sciences*, 32, 372-379.
- Matzler, K., Bailom, F., & Mooradian, T. A. (2007). Intuitive decision making. *MIT Sloan Management Review*, 49(1), 13-15.
- Peterson, P. E. (2003, January 30). The decline and fall of American education. *Hoover Digest*, 1. Retrieved from: <http://www.hoover.org/publications/hoover-digest/article/6325>
- Philidor, F. D. (1777). *Analysis of the game of chess*. London: P. Elmsley.
- Rice, B. (2008). *Three moves ahead: What chess can teach you about business*. San Fransisco, CA: Jossey-Bass.
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124(2), 262- 274.
- Stone, B. (2009, March 28). Is Facebook growing up too fast? *New York Times*. Retrieved from [http://www.nytimes.com/2009/03/29/technology/internet/29face.html?ref=business&\\_r=0](http://www.nytimes.com/2009/03/29/technology/internet/29face.html?ref=business&_r=0)



- Thompson, H. (2007). *A summary analysis of IQ and EQ by leader level*. High Performing Systems, Inc., Technical Report 15-10.
- Unger, J. M., Keith, N., Hilling, C., Gielnik, M. M., & Frese, M. (2009). Deliberate practice among South African small business owners: Relationships with education, cognitive ability, knowledge, and success. *Journal of Occupational and Organizational Psychology*, 82(1), 21-44. DOI: 10.1348/096317908X304361
- Wai, J. (2012). The chess concepts Peter Thiel used to become a billionaire. *Business Insider*. Retrieved from <http://www.businessinsider.com/the-chess-concepts-that-taught-peter-thiel-how-to-become-a-billionaire-2012-6>.



Copyright of Education is the property of Project Innovation, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.