



**National College of Ireland (NCI)**

**MA in Finance Research Thesis**

**Sun Tzu, a Top Investor?**

**Study of Sun Tzu's Art of War as Applied to Investing**

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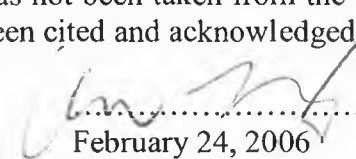
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I hereby certify that this material, which I now submit for assessment of the programme of study leading to the award of Master of Arts in Finance is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

Signed:  .....

Date: February 24, 2006

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# **Sun Tzu, a Top Investor?**

## **Study of Sun Tzu's Art of War as Applied to Investing**

### **Abstract**

Are there relationships between Sun Tzu's Art of War and modern common investing strategy? How to use them if the relationships do exist? The thesis is going to identify the similarities and differences between Sun Tzu's Art of War and current common investing methods; pay special attention to the differences, because here is their value for future potential usages; classify the differences as beneficial, harmful or irrelevant to investing; use those beneficial differences to aid investing strategy and avoid those harmful differences.

The researcher used a hybrid of quantitative, qualitative, case study and classical 'positivistic' design with which nine top investors were selected as micro cases and their correlation with eight Sun's useful differences from common investing practices (from literature review) were scored and analysed. From the study of t-test, pattern, trend and causation, the research proves that there are significant relationships between them and between some of the individual categories (ethics and self defence; human centeredness; reliable sources and materials).

So we may use Sun's different strategy to aid our investing process just like what some of the top investors are partially doing and profiting from consciously or subconsciously. According to my findings, generally speaking Sun Tzu is more human centred and has deeper understanding of phenomena. Some of them are harmful to investing we should avoid while others are beneficial we should use. The researcher also found a few interesting anomalies during the research process.

# **1. Introduction**

## **1.0 Interest in Research Area**

Siegel (2002) points out that the world stock markets have only about 200 years history. The data for their long period cycle performance is rare or nonexistent, so sometimes we have to rely on other methods or resources for the analytical purposes. Modern investing is relatively new subjects with a relatively short life span. However the military strategies and philosophies have a very long life span with very complicated and accomplished history accumulated by generations of generations of think tanks that influence our lives to this day that we can learn lessons and gain inspiration from. Military strategy and philosophies have more space, time and chances to be experimented, tested and verified in real world due to their long history.

The relationship between them is not remote. The strong military tendency subconscious language such as “beat” the market; “attack” the financial and investment target; “hostile takeover” etc. implies their kinship. And the military strategy’s emphasis on financial blockade, financial sanction, logistics, supplies and comprehensive national competitive power reinforced this impression.

The systematic study of their relationship and how to use this relationship is comparably rare if not nonexistent. It’s from different angles, perspectives and degrees to think about and view modern investing again refreshingly. How to fight the financial war is an interesting, attractive yet serious and practical research area. This research might enhance the communication between the military community and the financial community.

Because the topic of military strategy is too broad for this thesis, so at this stage the researcher focuses on one of the most famous representatives – Sun Tzu’s Art of War.

## **1.1 Research Objectives**

- 1 - To identify the similarities and differences between Sun Tzu’s Art of War and current common investing methods; pay special attention to the differences, because here is their value for future potential usages.
- 2 - Classify the differences as beneficial, harmful or irrelevant to investing.
- 3 - Use those beneficial differences to aid investing strategy and avoid those harmful differences.

## **1.2 Research Questions**

1. What are the similarities and differences between Sun Tzu’s Art of War and current common investing methods?

2. Which differences are beneficial to investing? Which are harmful to investing? Which are irrelevant?

3. How to use those beneficial differences between Sun Tzu's Art of War and current investing methods to aid investing strategy? How to avoid those harmful differences?

### **1.3 Research Contribution**

It is envisaged that the findings of this research will be of particular interest to Ministries of Finance, finance researchers, financial strategists, Finance Research Institutes, Finance Legislatures, Military academies, Political, Military and Business Strategy Research Institutes, general investors.

### **1.4 Literature Review**

A literature review capturing the concepts of Sun Tzu, Art of War, investing, military strategy, finance, the relationship between Sun Tzu's Art of War and investing, the relationship between military strategy and investing, how to use these relations to aid investing and financial decisions, investing psychology, business and Sun Tzu, risk, growth, risk management, intelligence, ethics, strategic management will be documented.

It is anticipated that the literature review will utilize the following authors' texts: Acharya (2002); An (2000); Ardalan (2005); Armour (2002); Bose (2003); Brealy & Myers (2003); Calandro & Flynn (2005); Campbell (1975); Cassidy & McGrady (2001); Chen (2001); Chong (2003); Confucius (2003); Estrada (2005); Feldman (2005); Fisher (2004); Foo & Foo (2003); Gallagher (2005); HAGSTROM (2006); Hansen & Smith (2006); Hill, C. W. L. & Jones (2003); Ho & Choi (1997); Hoskin, Macve & Stone (1997); Ko & Lee (2000); Kroll & Goldman (2006); Laise (2004); Langford & Brown (2004); Lascelles (2004); Lee & Ko (2000); Marren (2005); Miles & Huberman (1984); Murali (2003); Nan Kai University (2003); Navin (2005); NIST (2002); Pecenikov (2003); Porter (1985); Puplava (2002); Rothery (2003); Russell, Reynolds & Chadalavada (2004); Siegel (2002); Skousen (2005); Stake (1995); Steenbarger (2005); Strategic Direction (2005); Sun (1988); Sun (2003); To (2006); Tsang & Lee (2002); Unknown1 (2006); Unknown2 (2006); Unknown3 (2006); Unknown4 (2006); Unknown5 (2006); Unknown6 (2006); Unknown7 (2006); Unknown8 (2006); Unknown9 (2006); Unknown10 (2006); Unknown11 (2006); Unknown12 (2006); Unknown13 (2006); Unknown14 (2006); Unknown15 (2006); Unknown16 (2006); Unknown17 (2006); Unknown18 (2006); Unknown19 (2006); Unknown20 (2006); Unknown21 (2006); Unknown1 (2005); Unknown2 (2005); Unknown3 (2005); Unknown4 (2005); Unknown (2004); Unknown (2002); Unknown (2000); Walliman (2001); Watts (1975); Wu, Chou & Wu (2004); Yin & Moore (1987); Yin (1994); Yin (1989); Yu (2006).



The literature review is initiated around key variables of the research objectives and research questions using the above texts. The headings are documented below.

### **1.4.1 Background of Sun Tzu and the Art of War**

Sun Tzu was born in the state of Ch'i at the end of the Chinese Spring and Autumn period (551-479 BC). He is a contemporary of Confucius and Lao Tzu. His Art of War is the oldest military classic in Chinese literature and one of the most revered and well-known military texts. Although it was complete about 2,500 years ago, the book remains a compulsory text in major military schools around the world, and its influence on today's military thinking is undisputed. (Wu, Chou & Wu 2004)

Sun Tzu and his Art of War are not from thin air.

#### **1.4.1.1 Others influenced Sun Tzu's Art of War**

Confucius (2003) promotes the ideas of human considerations, human centeredness and the significance of using people's deeds other than their words to test and analyse their characters and true motives. These are in accordions with Sun Tzu's emphasis on human psychology, training and mental competitions. (Nan Kai University 2003)

"The best soldier is not soldierly; The best fighter is not ferocious; The best conqueror does not take part in war; The best employer of men keeps himself below them." (Watts 1975, p.108) The ancient Taoist philosopher La-tzu's naturalist teachings with the key points on following and harmonising with the natural way with minimum artificial intervention, taking oneself as a part of the whole commonwealth system and corporate instead of as a detached or opposite of the system, thinking mutual beneficially about the consequences of one's action rather than one's own momentous advantages and profits without long term and wholesome consideration. All these echo Sun Tzu's ultimate goal of conquering enemy's heart, soul and strategy instead of mindless slaughtering. (Sun 2003)

### **1.4.2 The Similarities between Sun Tzu's Art of War and Modern Common Investing Methods**

#### **1.4.2.1 General Similarities between Military and Business Strategies**

"This historical framework positions 'strategy' as a power-knowledge regime - comprising both disciplinary power relations and disciplinary expert knowledge and constituted through practices and discourse - that is inherent in modern military and business organizations. It is through strategy - and within its inherent limitations - that they both now inevitably utilize formalized internal structures and meticulous accounting of their past to evaluate ends and means and thereby strive to objectify and rationally control what lies externally and in the future." (Hoskin, Macve & Stone 1997) Modern military and business strategies are like twins with same roots,

background, structure, gene pool, history and evolving interchangeably and reciprocally.

Finance and investment strategy is about fair competition, mutually beneficial strategy, social progress, social development, commonwealth, correct predictions, initialisation, adaptability and flexibility that is similar to the ultimate goal of the world renowned military strategist Sun Tzu (Sun 2003; An Ping 2000).

Modern financial management emphasize the thin and efficient management layers and hierarchy, the communication, understanding and mobility between the layers. Bose (2003, p.14) points out that more than 2000 years ago Alexander the Great and his father Philip's army had been trained and fought according to this model and became an invincible force on the Earth. Sun Tzu has the same idea of speediness, cost saving and efficiency. (Sun 2003)

Advertisement and propaganda are vital for financial activities with enormous pressure (Cassidy & McGrady 2001, pp.7-10). Sun Tzu did the same as well. (Sun 2003)

Marren (2005) promotes and urge anticipatory strategic thinking and the dictum of looking "from the outside in". This means strategic planners must not only focus on the entire sphere of possible strategic actions available to them, but also they should master the often far larger universe of outside conditions and contingencies that they cannot influence but may be forced to react to. These ideas liken Sun (2003)'s view of anticipation, outside conditions and contingencies.

Financial investment promotes the idea of diversification to minimize risks that was taught by ancient military strategists more than 1000 years ago – it is a poor mouse that has only one hole (Unknown 2004, Chapter 3).

Strategic direction (2005) tells the stories of hi-tech giants such as Microsoft, IBM, HP etc who are competing everywhere from living rooms to emerging markets. They resemble Sun (2003) views on emerging competing area, total war and global war while in the military terms.

#### **1.4.2.2 Weyerhaeuser Business Case**

One very successful story and case of applying military strategy to business usages is the Weyerhaeuser business unit's use of the military's methodologies of the famous Desert Storm strategy (hardware and software) executed by the US and its alliances' armed forces in Iraq to develop and execute strategies in a complex, rapidly changing business environment, when timely implementation is an important key to success.

The goal of the industrial segment of Weyerhaeuser Building Materials (WBM) division was to accelerate innovation and growth in a stagnant market after previous failed attempts. The complexity of the task was large: 70 geographically dispersed locations and decision makers, new matrix organization, and a multi-market environment in 12 regions. The industrial segment of WBM developed a revenue-growth initiative and accelerated its execution by applying the fast-cycle methodology

of Desert Storm strategists in the 1991 military air campaign. The new strategy completely repositioned the business. (Russell, Reynolds & Chadalavada 2004)

Ho & Choi (1997) also propose Sun Tzu's Art of War's or its slightly business oriented version's systematic usage and applications in spite of its military strategy status.

#### **1.4.2.3 MBNQA and Sun Pin's Art of Warfare**

Tsang & Lee (2002) testify that MBNQA (stands for Malcolm Baldrige National Quality Award (MBNQA) (NIST, 2002) and Sun Tzu's successor Sun Pin's Art of Warfare are highly correlated and can supplement each other.

For example, the MBNQA's leadership requirements consist of organisational leadership as well as public responsibility and citizenship. For organisation leadership, it further expands into the following criteria:

- (a) set and deploy value;
- (b) set and deploy short- and longer-term direction;
- (c) set and deploy performance expectations;
- (d) balance the expectations of customers and stakeholders;
- (e) review organisation performance;
- (f) drive improvement and innovation;
- (g) drive improvement in leaders' effectiveness.

Sun Pin emphasises the very similar categories as the MBNQA system.

#### **1.4.2.4 SWOT, BSC, QFD and Sun Tzu's Art of War**

According to Lee and Ko (2000), there are significant and substantial relationships among Sun Tzu's Art of War's 13 strategies and the SWOT (Strength, weakness, opportunities and threats) analytical method, the key performance indicators (KPI) balanced scorecard (BSC) system and QFD (Quality function deployment) method. SWOT, BSC and QFD are efficient, effective, systematic and holistic business strategic management systems.

“Having understood the Sun Tzu's philosophies, it is essential to identify how and in what ways these philosophies could be applied in business strategies. People in the organization have to face all kinds of competition. Competitors may come within the organizational constituents as well as individual constituents. Winning or losing in battle is very much based on how effectively they manipulate the perceptions and opinions of constituents. Those who have the most accurate and up-to-date information will win. Information will help in the analysis process and decision making. The wisdom for the traditional competition can equally be applied in information competition.” (Lee & Ko 2000) Sun Tzu's Art of War can supplement and improve SWOT, BSC and DFQ's functionality, efficiency, effectiveness and accuracy.

Feldman (2005) claims that Sun Tzu's theory that the outcome of any battle can be predicted accurately by comparing the two competing forces in five key aspects can be used for international investing analysis and predictions. These aspects are solidarity, weather, terrain, leadership, and discipline. Solidarity means support of the army by the people. Weather means the external conditions that affect the battle. Terrain, in this context, means the specifics of the issues at hand -- whether favourable to one side or the other. Leadership means the quality and strategic ability of the top leaders in each force. Discipline means the fighting spirit and willingness of the troops in each force to follow their leaders.

#### **1.4.2.5 M & A and Sun Tzu's Art of War**

Armour (2002) proposes the four-part framework that can help directors better focus their time and energy to provide substantial value to the M&A assessment and integration processes - high standards for value creation; grounded, quantified strategic benefits; an integration focus on HVOs with clear accountability for delivering them; and a common management model are the key determinants of a successful deal. This framework can also help top executives to be more effective in evaluating and managing deals and more efficient in interacting with their boards in order to consistently add value to the mergers and acquisition process.

The aforesaid framework is similar to Sun Tzu's 13 strategies that are mostly pre engagement analysis, calculation, assessment, benefits creation, integration and management models. (Sun 2003)

Langford & Brown (2004) counter public opinions that most mergers and acquisitions destroy values by showing that every industry has acquisitive exemplars and describes how they extract value from acquisitions for their shareholders. They are enthusiastic about the future perspectives of big M&A waves. CEOs and their corporate development teams would do well to learn from past lessons if they are to avoid the mistakes that have destroyed so much value for shareholders and marred the reputation of M&A.

This resembles Sun Tzu (2003)'s point of view that M & A could be a winning edge and weapon if well executed with sound information, analysis, timing and right expertise.

#### **1.4.2.6 Risk Management and Sun Tzu's Art of War**

The Centre for the Study of Financial Innovation, a city think tank funded by some 60 major financial institutions, for a number of years has been running its "banana skins" survey to rank financial risks by people's impressions and opinions. Top of the list are complex financial instruments, specifically credit derivatives. People also worried about the political outlook. (Lascelles 2004)

Sun (2003) also tells about how to reduce risk by creating complex instruments and processes to confuse opponents and how to use political environment to one's advantages.

#### **1.4.2.7 Five Steps and Sun Tzu's Art of War**

Unknown3 (2005) credits Sun Tzu's Art of War (2500 years ago)'s contribution to modern investing strategy. Strategic thinking in an industrial context, developed from the 1950s onwards, concerns understanding strategy as much as developing strategies for a business.

There are several steps in building a corporate plan. Such an exercise will typically include the following:

1. Setting targets - corporate objectives
2. Gap analysis – extrapolate current performance, find gaps between target and forecast
3. Strategy Appraisal – look at all the angles, own competitive advantages and weaknesses. Refine targets
4. Strategy Formulation – generate and evaluate options for achieving your targets, and select an option
5. Strategy Implementation – Draw up plans, monitor and control

#### **1.4.2.8 Five elements, Three Assessments, Five Rules and Sun Tzu's Art of War**

“Apparently Sun Tzu's militaristic strategies and the financial markets are two different topics that can be correlated by similar principles. The Art of War is a text that can guide you through the art of investing, juxtaposing analogous aspects that contribute towards a successful investing procedure.” (Pecenikov 2003)

Pecenikov (2003) is a loyal fan of Sun Tzu's Art of War. For him the use of a military like strategy is imperative in finance and investing. An investor should be clearly aware of his future expectations and the only way in reaching such targets is to follow a strategy that gives you a fundamental guideline to success. The strategy adopted in his dissertation is a reformulation of Sun Tzu's theories that ties closely together with investing procedures and military strategies.

<b>Five Elements of Measure before War</b>		
	1.The Way	Financial Markets
	2.The Weather	Business Cycle & GDP
	3.The Terrain	Globalization
	4.Leadership	Leadership
	5.Discipline	Discipline
<b>Attacking advices</b>		
	1.Winning without fighting	Treasury Bills
	2.Attack when schemes are laid	Arbitrage & Hedging
	3.Attack Alliances	Short Selling
	4.Attack	Risk
<b>Last Assessment to Victory</b>		
	1.Measurement	Economic outlook
	2.Assessment	Equity market strategy
	3.Calculation	Valuations
	4.Comparison	Stock selection, sector views
	5.Victory	Victory

### Summary

Table 7

### Five Elements of Measure before War



### Three Assesments

Figure 3

Sun Tzu	Kudelski
Measurement	long term growth in cable TV, contract with DirecTV
Assessment	subscriber growth in U.S and Asia
Calculation	solid net cash balance sheet, positive mid term earnings
Comparison	Swiss Technology Sector
Victory	Victory

### Sun Tzu's five rules and Kudelski's potentials

Table 6

All above graphics from Pecenikov (2003).

Three main features are chosen that directly correlate financial aspects to military strategy; the five elements of war; attacking advices; the last assessment to victory. These three theories go along well with financial properties and investing procedures.

On the basis of him there are two elements in the first of the three theories that have not been put next to investing activities, because they remain unexplored in the general context of the investment procedures and business sphere. In the five elements of war the two last components are leadership and discipline. Leadership is a vital virtue that few people can achieve; it implies intelligence, trustworthiness, humanness, courage and sternness as defined by Sun Tzu. Discipline in Sun Tzu's Art of War revolves around the means of organization, chain of command and logistics.

*Every general has heard of these five things. Those who know them prevail; those who do not know them do not prevail – Sun Tzu*

Among all the elements in the three theories, these two elements have not been considered to be on a par with any investing or financial aspect. This has been purposely done because these two elements should not be considered for a single opportunity or practice, but ought to be the main aspects in the reoccurring life of an investor as well as any professional involved in the winning battles. A battle should not only refer to the main warring activities, but also ought to be revolving around the entire investing scenario for an investing war.

Investing is a war that needs to be meticulously calculated in order to capture the victory. It won't cost life, but it can definitely squander an investor's wealth, reputation and confidence. That is the reason for risk's unmatched high value and status in investing and in war. One depletes a person's living commodities and the other can take away a person's right of living, so risk needs to be evaluated through detailed assessments. The concern for low risks pushes a general in engaging a battle.

High risks evaluated through assessments make you understand the main theory of the Art of War: "winning without fighting is best". The alternatives available in the investing markets are economic indicators, globalization, treasury bills, arbitrage, hedging, short selling, and financial analysis are a few aspects that make you choose a secondary path towards victory and therefore "winning without fighting".

### **1.4.3 Differences between Sun Tzu's Art of War and Modern Common Investing Methods**

The similarities between Sun Tzu's Art of War and modern investing methods may indicate the strong and tight relationship between them, but because they are mostly the same, Sun Tzu's strategy may only adjust modern common investing practice to some extent with limited values. Therefore the differences are more important.

#### **1.4.3.1 Harmful Differences between Sun Tzu's Art of War and Modern Common Investing Methods**

##### ***1.4.3.1.1 Harmful Ethical Differences***

Sun (2003) describes the military strategy as ghosts' way and survivors' way due to the skin-deep differences between life and death, existence and non-existence, meaningful and meaningless. In most cases the results are irrecoverable and irremediable.

The perished will be perished forever; the forgotten will be forgotten forever. It is a one-way ticket and a winners and survivors' trickery game, so there is nearly no rules for military manoeuvrings with nearly no enforceable ethical codes for conducts. It is the dirtiest of the dirtiest. The Geneva Convention is only an empty decoration even



to this day. Although the researcher believes there is very slow development, it can be reversed at any point of time.

#### **1.4.3.1.1.1 Global Investing Ethical Crisis**

Unknown2 (2005) criticizes Sun Tzu's Art of War's ethical and moral problems, his modern follower George W. Bush 43 and run amuck Wall Street in the late 80's and most of the 90's. Sun Tzu's undue emphasis on deception, treachery and spies created a fluid moral standard welcoming manipulation and abusing, so the application of Sun Tzu's strategy and moral standards should be with extreme cautions.

Generally speaking modern investing methods have comprehensively restricted enforceable law and ethical codes. (Breal & Myers 2003; Cassidy & McGrady 2001).

#### **1.4.3.1.1.2 "Business as War", "Value Capture" and "Value Creation"**

Hansen & Smith (2006) examines the linkage between strategy and ethics, particularly in the American business environment. They compare a strategy model based on an assumption of "business as war" versus a model on the basis of an assumption of "business as value creation" and contend that ethical reforms are unlikely to success if regulators simply apply harsher penalties without changing "the game itself" that CEOs are playing. The vital and effective way is a healthy, ethical and strategic mindset.

They find that the "business-as-war" mindset sees companies as sovereign states engaged in battle against other sovereign states, while the "value creation" mindset sees companies as institutions engaged in an continuous journey toward realizing capability and service potential. They further match a "guardian syndrome" for the "business-as-war" mindset and a "commercial syndrome" for the "value creation" mindset. They conclude that the recent financial trust crises in American are not due to the lack of morality or ethics, but because of an inappropriate morality/ethic and wrong model of business strategy conducted by Americans.

The problem is not that executives lack ethics, but there is something wrong with the ethics itself. They argue that there is inseparable relationship between this ethic and the implicit assumptions about how the business should be conducted. They believe effective change in business ethics cannot be achieved apart from business strategy. Rather, business strategy is a key link between business ethics and business practice.

Firms approach strategy by applying mental model. At the same time this mental model influences organizational members, especially executives' consideration of ethically acceptable behaviour. The different approaches to strategy have to be addressed. The first approach is a "value capture" approach. The second is a "value creation" approach.

According to Porter (1985, p 9), the value to be captured is the difference between what buyers are willing to pay for the products or services produced in an industry

and the cost of performing the activities involved in creating those products and services.

On the contrary the “value creation” approach refers to a firm achieves and maintains above average profitability by delivering unique value to customers. Rather than an industry margin to be captured, value is the benefit to be created and delivered to customers. As a result, a firm is considered to be a value creating, as opposed to a value capturing entity. (Hansen & Smith 2006)

This mindset of US industry that shapes the way in which many executives define reality is closer to the “value capture” approach. This is why Sun Tzu’s Art of War is considered indispensable reading for business leaders and is the most referenced book in discussions of business strategy. In fact, you would be difficult to find a book on business strategy without quoting or referencing from The Art of War somewhere in the text.

#### *Historical Reasons for Sun Tzu’s Art of War’s Ethical Problems*

Hansen & Smith (2006) let us look closer at the implications of the business-as-war metaphor. In most translations, the opening line of The Art of War reads something like this:

"The art of war is of vital importance to the state. It is a matter of life and death, a road either to safety or ruin. Hence under no circumstances can it be neglected (Sun Tzu 1988)."

The Art of War was a product from ancient China known as the Warring States period with clear definition that it is the state, not the military, that wages war. This is quite important because it means that the granted assumptions for Sun Tzu’s war and the modern financial competition might be different.

The notion of “a state” for sociologists, political scientists and historians means a very distinct and unique entity that possesses sovereignty. Sociologist Max Weber (1965) defined a state as a human community that claims the monopoly of the legitimate use of physical force within a given territory. A state is sovereign means that it does not defer to a higher worldly authority and it can exercise supreme power within a given realm. Corporations are viewed as sovereign states under the business-as-war model and sovereign states have no obligation to defer to a higher human authority, have a right to exercise supreme power, and may legitimately use physical force. As “ruler” of a “sovereign” state entitled to exercise supreme authority within a given realm, the crisis is looming. (Hansen & Smith 2006)

#### *Investor’s Mindset and Attitude are More Important than Rules and Penalties*

Hansen & Smith (2006) points out that treating business as a war cannot be justified as being more realistic or more bottom line oriented. In reality, engaging in a head-to-head battle with competitors is often at the expense of profitability. Those business as war supporters and followers are not divined by their courage to face reality head on. Their firm stand is not the resolute acceptance of reality, but a subjective choice hiding behind the claim that “I am just facing reality. I didn’t make it this way.” No

one has to view business as war. It is a subjective choice, and as such, the individual is accountable for the actions, consequences and fallout that result from that choice.

More rules and stiffer penalties have been in place for the preventing, avoiding or minimizing the potential for unethical behaviour and for the curbing of current ethic crisis in US. Its success is in doubt, though it is necessary, because there is no measurement system or set of rules that cannot be beaten. More importantly this approach addresses the symptoms but not the cause. It tries to change how people play the game rather the game itself.

For the sake of US brighter future, US business needs to possess the business as value creating mindset instead of only the business as war one for the purpose of effecting real change. “We need to remind ourselves that we can make this shift without sacrificing accountability to profitability and shareholder return. If we can do that, we might be able to design business reforms that do more than rein in business. Rather than only asking “how do we prevent this from happening again?” we might also ask “how do we help organizations more fully realize their potential to create value for society?”” (Hansen & Smith 2006)

#### **1.4.3.2 Beneficial Differences between Sun Tzu's Art of War and Modern Common Investing Methods**

##### ***1.4.3.2.1 Beneficial Ethical Differences***

Gallagher (2005) states that ethical codes and conducts higher than current existing laws and rules may serve as insurance or “strategic shock absorber” for companies’ long term benefits, profits and reputation.

For Sun Tzu, the use of spies is undoubtedly one of the most effective and efficient way of collecting top secrets from competitors in war, but in business, this has been considered unethical. Nevertheless, organizations can modify the use of the model in order to fit their particular needs. (Ho & Choi 1997)

##### ***1.4.3.2.2 More Human Centered Differences***

Sun Pin's perspective on leadership has a broader view of addressing not only how people do the jobs but also their ethical, moral, mental, relational and spiritual concerns, so it is more human and human centred and concerned than the MBNQA (stands for Malcolm Baldrige National Quality Award) system. (Tsang & Lee 2002)

##### ***1.4.3.2.3 Risk Management, Information and Technology Differences***

###### **1.4.3.2.3.1 Information and Technology's Importance for Risk Management**

Another testimony for Sun Tzu's risk management relevance to investing is provided by Acharya (2002)'s research - a world of modern technology and information with ever changing, developing and innovating in computer-generated actuarial models,

breakthroughs in medical research etc. reassure us that risk is manageable and knowledge is power, knowledge is more powerful today than ever before. The ability to manage information and transform it rapidly into actionable intelligence, Intelligence sharing, the pooling of human resources, competitive environment and human interactivities are the right ingredients for the success formula.

Sun (2003) indicates the same importance for information and intelligence analysis, verification, accumulation, communication, manipulation and protection.

“Sun Pin believes that organisations should have hardware or software systems to keep information confidential from their competitors, and that the entire objective of information management and analysis is to secure the business with a favourable geographical position, support of customers and opportunities such that there is always a clear future for investment.” (Tsang & Lee 2002)

#### **1.4.3.2.3.2 P/E, PEG and PERG Differences**

Estrada (2005) verifies that his PERG ratio that adjusts the P/E ratio by both growth and risk outperforms, on a risk-adjusted basis, both simple PEG ratio and P/E ratio regardless of whether portfolios are not rebalanced or rebalanced regularly. This is due to the fact that his model and formula is closer to investing reality with due consideration and care for the two most important factors of investing – growth and risk.

Sun (2003) not only teaches the importance of risk and growth, but also explores their origin, location, exchanges, formats, human influence, timing and tradeoffs that warrants further research and experiments.

#### **1.4.3.2.3.3 Operational Risk Management Differences**

According to Chong (2003), up to now many companies has focused on market risk and credit risk from many mainstream risks, but this conduct might not necessarily be the most important risk factors that have caused most problems or financial damage within recent corporate history. Instead they should concentrate more on the real important risk – the operational risk that lacks a well defined business standard and are neglected by industry standard.

Yet, with Basel II regulations’ financial incentives to improve a company’s OpRisk management, key risk managers have been giving wake-up calls for the signalling recognition of the importance of the operational risk management. Basel II offers guidelines for greater publication of company’s performance and relative operating risk level, plus driving for market transparency.

This moves us closer to a more efficient, equal and fairer market with more shareholder initiatives for real leadership value and good operational risk management. Operational risk management involves identifying the relevant risk factors, and deploying the appropriate risk countermeasures. The most important aspect of operational management risk is the organic risk management and its forensic

investigation component that is expressively for assessing and controlling the business hazards posed by human beings.

As a matter of fact the most dangerous and risky area is from within, and these possible damages may not even be deemed criminal. The best way to prevent it is to have the skills to separate the true financial skills from the background noise, and to distinguish the specious SeemsGood management abilities from those skills that enable the investor to SleepWell at night.

They all echo Sun (2003)'s ideas of human and organisational risk management, leadership characters, qualities, training and analysis; espionage prevention, intelligence analysis and management etc that have been ignored to some extent for modern investing entities.

#### **1.4.3.2.3.4 Information Security Differences**

“If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.” (Sun 2003)

Navin (2005) used above Sun Tzu's quote to urge top and senior managers to take the information security more seriously, to coordinate with, communicate with and understand the information security hardware and software experts and professionals more effectively and give those experts more respect, because they should understand that they are working for the same mission/vision of the organization and its business purpose. Vice versa, the information security experts should do the same as the managers in order to better understanding of the business domain to pursue their common goals and target without any retardation.

Not many CEOs are interested in security technology at the code level, so the information expert should learn from those CEOs to gain the essential understanding of the risks and threats to their business plan so as to transcend a purely technical one to business level.

“Conclusive it's the businesses that run the company and InfoSec should look at business domain first and than move to IT domain to implement the business plans.” (Navin 2005)

#### **1.4.3.2.4 Psychological Differences**

##### **1.4.3.2.4.1 Sun Tzu Style Psychology**

Murali (2003) comforts the amateur investors by the fact that approximately nine out of every 10 professional money managers — the so-called smart money — have not

even matched the overall market return over long periods of time despite their technological and other advantages.

According to Murali (2003), this is due to their lack of Sun Tzu style mentality, strategy and methodology. For example, the Sun Tzu-style investor won't follow the crowd to rush to buy an initial public offering (IPO), because they are overvalued as surface beauty by undiscerning public passionate eyes and hormones and tricky makeup experts.

“Sun Tzu-style investors often buy when others are afraid, and sell when others are excited and overly optimistic. They don't prevail by overpowering anyone else, but by moving quietly and subtly against the prevailing emotional currents. As Master Sun said, they become "formless to the point of invisibility". In the long-term, investing success comes from remaining detached and avoiding emotional involvement in prevailing market trends.” (Murali 2003)

#### **1.4.3.2.4.2 Different Weaknesses Identification**

Unknown4 (2005) classifies investor's main 6 psychological weaknesses according to Sun Tzu's Art of War's psychological explanations:

1. Arrogance. Many new investors rush into the markets by following general public trends, mentality and “experts” advices without enough basic financial investing knowledge and experiences.
2. Greed and fear. Greed and fear may mislead the investors to lose composure, cool head and self-confidence that are the main obstacles, difficulties and traps of investing strategies.
3. Lack of patience. Patience and calmness are the critical qualities and characters of successful investors, because lack of them investors may discard the most valuable timing opportunities, long-term perspective, global analytical angles, solid calculation, logical inductions and deductions.
4. Lack of tolerance, endurance and forbearance. Market and investors are like miniature micro-worlds, so they have their highs, lows, trough, peak, success, failure, sadness, happiness, irregularity, unexpectedness, unfairness, etc. Always straightforward clean cut winning performance is nearly impossible in limited time, space and scope. Even the best investing performers have their utter failures but they learn their lessons; bear the unbearable; grow with their tolerance; start afresh.
5. Too ambitious and perfectionism. Knowledge is unlimited while life is limited; investing opportunities are infinite while individual investors' energy, resources, time and capitals are finite. So we have to be ready to compromise, to sacrifice and to balance in the pursuing of the best available historical timing, speed, breadth, depth, scope and feedbacks for investment.
6. Waiting for the strike of luck and the gambling attitude. The investing market is not a casino or lotto that only requires gambling impulse and winning hopes. It needs

years of education, training, experience, home works and talent with a small weights of luck.

7. Survival is not first. Investor should always put survival first. If no known, secure opportunity available, do nothing is an option.

#### ***1.4.3.2.5 Competitive Intelligence Differences***

“Competitive intelligence” (CI) is the process of monitoring the competitive environment. CI enables senior managers in companies of all sizes to make informed decisions about everything from marketing, R&D, and investing tactics to long-term business strategies. Effective CI is a continuous process involving the legal and ethical collection of information, analysis that doesn't avoid unwelcome conclusions, and controlled dissemination of actionable intelligence to decision makers.” (Unknown 2000) CI is vital for any investing entity's very survival and success. How to use and budget all human, hardware, software, new technological resources, especially the effective usage of internet are crucial for CI and information gathering, accumulating, filtering, classifying, analysing, verifying and applying.

Business is war; you should know your enemies. Unknown (2000) believes that most valuable CI and information are from many neglected and unseeingly areas such as public domains, competitor's information and company's own internal information resources. The company's right organisational structures may help gauge the precious and useful CI from the vast internal resources and the right knowledgeable persons.

Knowledge and application of new technology, new competitors, competitors' actions, new Legislation, marketplace changes and new markets may enhance ethical and legal gathering of useful information.

“Effective information gathering - also called collection planning - requires redundancy and mix. Redundancy simply means ensuring that your information can be verified by several different sources. Mixing your sources helps ensure that they are not all simply repeating information from the same primary source.” (Unknown 2000)

Nan Kai University (2003) also priorities the importance of intelligence, tight and united organisational structure, staff mutual understanding, internal information collection, human capital, hardware, software investment, enemy information gathering and manipulation that on a par with aforesaid CI technology.

#### ***1.4.3.2.6 Qualitative, Quantitative, Forecasting, Foreknowledge and Sourcing Differences***

Foo & Foo (2003) certify that western and eastern business mentality, strategy and methods are quite different. Generally speaking westerners' methods are modern quantitative methods and forecasts focused while easterners' are more foreknowledge and qualitative methods centred. The East is a more bureaucratic, fluid, flexible, adaptable, organic and top-down approach. It lacks accuracy, formality and

straightforwardness and suits unstable, unpredictable, violently changing, crisis like situation. The West is a more quantitative, absolute, tight and rigid approach. It lacks fluidity, flexibility, and adaptability and suits stable, predicable, normal, standard situation.

Because the world is the mixture of stability and chaos, predictable and unpredictable, peace and violence and the degrees of forecasting accuracy, reliability and relevance is ever changing due to the volatile environment and situation, Foo & Foo suggest the combining and supplementing of the aforementioned methods with respect to different environment and situation.

While absolute, quantifiable reduction in uncertainty (e.g. exchange rates) through forecasts may be unrealizable, there still remains a role for forecasters. A role almost reminiscent of I Ching: ancient Chinese tribal chiefs (equivalent to CEOs) learned to consult this five thousand years old oracle to explore the future. The I-Ching does not tell you what the future exchange rate will be but through divination paints a probable, alternative future scenario. In a cryptic language, I Ching tells the inquirer what had to be observed to bring about the new situation. The main purpose of I Ching is to provide the inquirer with deeper insights to his current dilemma and if not some deeper foresight. Interestingly, Sun Tzu did not believe in any form of forecasting but only on the gaining of foreknowledge through reliable sources – spies!

Ultimately how well the corporation or organization is able to cope with uncertainty depends not on forecasting per se but on whether the CEOs possess the foresight. In the Asian context, popular beliefs are that only the wise, long experienced and seasoned CEOs may anticipate and peer into the future. ( Foo & Foo 2003 )

#### ***1.4.2.3.7 Different View on Current Illusory and Sham Investing Environment***

Puplava (2002) confirms that the "new era" of the 90's wasn't a new era at all, because most of the earnings numbers that companies reported were financially engineered and manipulated. They were more the product of creative accounting than they were earnings miracles. Wall Street is still playing with smoke and mirrors with doubtful earnings numbers portraying the company in the most favorable light rather than revealing actual conditions.

The problematic conducts of selling paper assets by many companies and Wall Street in order to hide asset writedowns of the 1990's merger mania are more than evident. Most senior managers and executives received their major source of compensation from stock options, so they accelerate a merger wave in order to drive earnings growth with the goal of driving up share prices. Managers of companies took on debt, issued additional shares of stock that were dilutive and creatively cooked the books to meet growing expectations by analysts and investors. (Puplava 2002)

The huge writedowns of estimated \$1 trillion dollars in 2002 and the deteriorating business conditions, higher interest expense from all of the debt taken on during the last decade forced companies to absorb most of these costs by lowering profit margins on sales and services, so we can only see the fiction of pro forma earnings without



any profit miracles this year and the near future. That's why they confuse operating earnings with real earnings with their accomplices of analysts and media.

For the purpose of stabilizing and salvaging the tumbling financial system, we have to extirpate the mal-investments in technology, telecoms, and real estate, repair the corporate and consumer balance sheets, balance the Fed credit-creating mechanisms, but the Fed is doing none of these.

The United States is very vulnerable and has very limited options to defend itself, because as the sole military superpower on the planet with its open society and borders, its leveraged economy and financial system, dependence on foreign capital, energy and manufacturing, the attacks on USA could be subtler from anywhere and by any forms judged by military history stand point of view.

In "The Art of War", Sun-Tzu advised, "The place we have chosen to give the enemy battle must be kept from him. If he cannot anticipate us, the positions the enemy must prepare to defend will be many. And if the positions he must prepare to defend are many, then any unit we engage in battle will be few in number. The ultimate skill in taking up a strategic position (hsing) is to have no form. If your position is formless, the most carefully concealed spies will not be able to get a look at it. Just as the water avoids high ground and rushes to the lowest point, so on the path to victory avoid the enemy's strongest points and strike when he is weak." (Puplava 2002)

Sun-Tzu wrote in The Art of War, "He who knows the enemy and himself will never in a hundred battles be at risk." Do we know the real enemy that is before us? Do we really know ourselves? Is Puplava (2002) ready for what he knows will surely come? That question is the sum of his fears. (Puplava 2002)

#### ***1.4.2.3.8 Different Training Scheme***

Steenbarger (2005) demonstrates that successful investing trading requires superior military like strategic prowess, so trading is a military activity, rather than a psychological one. Systematic "combat" training is superior than through traditional self-help exercises. This framework informs a research project already under way, in which researchers from the Massachusetts Institute of Technology (Andrew Lo and Dmitry Repin) are working with a successful investing trader (Linda Bradford Raschke) and a clinical psychologist (Brett Steenbarger) to explore the effects of emotions and training on the real-time investing trading results of over 100 traders.

Viewing trading as mental warfare opens the door to learning from the study of all warfare and the moral elements that contribute to successful campaigns. "Combat experience" - OODA (observe, orient, decide, act) framework is the only lubricant that will reduce uncertainty and doubt from the best-laid plans. Training and experience may be the most effective therapy of all for traders operating with their own frictions, since by expecting the unexpected, we can create proper schemas for guiding our decisions and actions, taking the advantage of surprise away from the adversary.

Intensive drilling under practice conditions – Nearest neighbor statistical methods are techniques that allow one to identify past markets that are similar to the current market on one or more dimensions. A soldier trained in survival by rapid drilling under practice conditions may be deposited into unfamiliar terrain and then observed to see how well he copes. A soldier with rapid observation, orientation, decision, and action will not fall victim to hostile environmental conditions, predators, or enemy action. Correspondingly, the trader can deposit himself in an unfamiliar market drawn from a historical database and rapidly execute trades. (Steenbarger 2005)

It is the intensity of instruction that facilitates its internalization to the point at which learning is automatic and implicit. There are 3 elements forming the core of training successful traders:

Education – Teaching traders what to look for under different market conditions.

Drilling – Performing regular exercises to build specific skills.

Practice – Rehearsing trading under realistic conditions to assemble the skills into superior performance.

“The hallmark of successful trading is the reduction of the amount of time in which traders feel confused, surprised, or otherwise disoriented and an increase of the amount of time in which they feel confident, in control, and otherwise familiar with the market terrain.” (Steenbarger 2005)

A team of investigators from the Massachusetts Institute of Technology’s Sloan School of Management led by Andrew Lo, Ph.D., Dmitry Repin, Ph.D. and Linda Bradford Raschke will evaluate the emotional functioning and trading performance of over 100 frequent traders. For the first time, we will be able to put aforesaid ideas to work in a real time trading framework and see if expertise can be cultivated in the markets, as it is on the battlefield. (Steenbarger 2005)

## ***1.5 Theory and Hypotheses***

Developed from the research objectives, research questions and literature review, the hypotheses are:

### **1.5.1 The Similarities between Sun Tzu’s Art of War and Modern Common Investing Methods**

There are substantial relationships between Sun Tzu’s Art of War and modern investing methods. The similar aspects are MBNQA (Malcolm Baldrige National Quality Award); SWOT (Strength, weakness, opportunities and threats), BSC (balanced scorecard); QFD (Quality function deployment); merger and acquisition strategy; risk management; investing strategy steps, procedures and assessment. Sun Tzu’s Art of War may adjust or modify these aspects. Some are business management models, but we may still use them indirectly for valuing investing targets’ soundness of management.

## **1.5.2 The Harmful Differences between Sun Tzu's Art of War and Modern Common Investing Methods That We should Avoid**

The harmful differences between current common investing practices and Sun Tzu's Art of War that we should avoid are no ethics, law breaking espionage and totally 'value capture' mindset and attitude.

## **1.5.3 The Beneficial Differences between Current Common Investing Practices and Sun Tzu's Art of War**

The beneficial differences between current common investing practices and Sun Tzu's Art of War are Sun Tzu's ideal ethical standard; human centeredness; the importance of risk management, information and technology; growth and risk concerns; operational risk management; information security; Sun Tzu type psychology; Sun's emphasis on first hand materials and reliable sources; intelligence analysis; military type training; too much diversification; real environment and situation identification; concentration of attacks.

## **1.5.4 How to Avoid These Harmful Differences. How to Use These Beneficial Differences.**

### **1.5.4.1 Use Sun Tzu's Way Only for Self Defense. Promote High Ethical Standard.**

Sun Tzu is contradictory to his ethical standards. His ideal and admiring ethical and moral standard is no harm to anyone or anything mentally or physically, fair competition, peace keeping, fighting without war and damages, law abiding and commonwealth creating, but for the very cruel reality; own mere survival; unpredictable, unruly and untrustworthy opponents; the historical conditions he had to use whatever means including double agents, espionages, treacheries, law breaking, inside information, political and economical manipulations, blackmailing and kidnapping to play and win the ruthless games in real situations.

On the basis of the literature review, in normal environment and for the long run high ethical standard is helpful for investing and business entities with the extra protection of ethical cushions, so the researcher promote high ethical standard and law-abiding actions to avoid Sun Tzu's unethical elements especially for attacking purposes. However the current unreliable financial, investing, business, economical, political, propaganda, accounting state in accordions with the literature review doesn't warrant a thoroughly straightforward sincerity and frankness at least for the defensive measures, so we may use Sun Tzu's methods to fend possible vicious, unethical and unlawful attacks. Though we are never unethical ourselves.

### **1.5.4.2 Human Centeredness and Psychological Considerations**

Sun Tzu considers human beings ourselves; our psychology; our emotions; our hearts; our desires; our ages; our experiences; our backgrounds; our training and education;

our political, social, economical and familial conditions and status; our morale; our bring-ups etc as the most important part and essence for strategy applications, so the importance of the comprehensive collections of all the relevant information and materials is second to none.

#### ***1.5.4.2.1 Self Importance and All the People Involved***

Sun Tzu stresses the importance of self-assessments. We should pay due attention to those normally neglected components such as the psychological and general conditional analysis of oneself and the comparison between oneself with one's opponent and between oneself with general average investors; the psychological and general conditional analysis of the investing targets' senior managers, stakeholders, workers, competitors and allies. "He who knows the enemy and himself will never in a hundred battles be at risk." (Puplava 2002)

#### ***1.5.4.2.2 Classification of All the People Involved***

One other negligent area but not ignored by Sun Tzu is the classifications of all the people involved. Who are opponents? Who are friends? Who are supporters? Who are competitors? All need to be answered. The researcher thinks most time the potential buyers and sellers of your shares of your investing targets (shares, properties, options, futures, bonds, etc) are your direct opponents or competitors. Most time the targets' managers and workers are your indirect friends or supporters. The targets' market competitors are your indirect opponents. The targets' suppliers and consumers are your indirect allies. The government, politicians and lawyers are your regulators. The average investors could be your specimen for the experiment and study of the general mentality that might have financial, economical, political and other influences. The general population may have its should be influences as well.

But all these people's status is fluid and changing depending on different situation. For example, if you are short selling, some of their status has to be altered. Therefore the general conditions and psychology (age, gender, etc) of all the involving people should be tested and explored; all the relevant materials, information and intelligence should be collected and double-checked; their reliability should be tested.

#### ***1.5.4.2.3 The Originality, Reasons and Causes of Investor's Losses, Profits or One's Decisions***

The purpose of the above classification, exploration and testing is to seek the real reasons, originalities, causes of investor's losses, profits or one's decisions in order to have pre-investment analysis, investing reasoning and post-investing evaluation. This deeper layer understanding of reasons may be advantageous for discerning investors. Just like calculating the selection, allocation, policy and management effect for performance evaluation and analysis, we may use similar tactics for the calculation of investors' originality, reasons and causes of losses and profits.

Allocation:  $\Sigma [ \{ \text{Portfolio Wgt} - \text{B/mark Wgt} \} \times \{ \text{Benchmark Return} - \text{Total B/mark Return} \} ]$

Selection :  $\Sigma [ \text{Portfolio Wgt} \times \{ \text{Portfolio Return} - \text{B/mark Return} \} ]$

Policy Effect : Return on Long-Term Strategic Portfolio – Return on Benchmark Portfolio

**[Enhancement in return thru index choice]**

Management Effect: Actual Return on Portfolio - Return on Long-Term Strategic Portfolio

**[Enhancement in return through active management]**

#### 1.5.4.2.3.1 No Efficient Market

First of all, according to Sun Tzu and the researcher, there is no efficient market at all and will never be such thing, because logically it is impossible. Assume that the market is efficient and most people agree with, then some investors start buying stocks randomly at will because the rewards are all the same according to efficient market theory. With more and more investors doing this random picking, the market will be chaotic and totally inefficient. Now most investors agree that it is inefficient and start doing their analytical homework again. The market is moving closer to an efficient one, but before it reaches efficiency, the cycle starts afresh and may go forever.

So as long as investors' attitudes and thinking are different towards market and efficiency, it is inefficient; as long as most investors think it is efficient, it is inefficient; as long as most investors think it is inefficient, it is also inefficient. Therefore there has never been a chance for the market to be efficient.

#### 1.5.4.2.3.2 Find Weak Opponents and Weak Points

After investors analysed their potential target's shareholders or their shares' potential buyers' conditions and intelligence – age, gender, education, background, emotion, desire, experiences, psychology etc and compared their opponents with themselves to see any advantages or disadvantages, they may decide if opponents are weak enough for them to handle. Because the market could be a zero sum game, try to find stocks with inexperienced, incompetent and weak shareholders and stocks with potential inexperienced, incompetent and weak buyers to enhance the odds of winning as well as try to avoid intelligent, astute, capable and vigorous top players.

All these are relative speaking compared with yourself instead of absolute terms. By this way, investors may have the chance to identify the real origins, causes and reasons of their losses and profits, so investors may know who bought their shares so dearly or sell share to them so cheaply and their causes and reasons historically, strategically and practically.

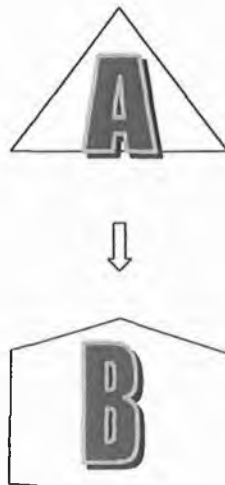
#### 1.5.4.2.3.3 Crisis is Opportunity

Sun Tzu agrees with the researcher at this point. Investors should buy stocks at very deep crisis that it very likely will end the whole world. The logic is that if the world is finished, holding any property – money, house, futures, commodity or whatever is meaningless; if the world survived, stocks are likely the most rewarding. Anyway the world has never ended at least for human beings, so the risk is the same but the return is very different. That is a bargain.

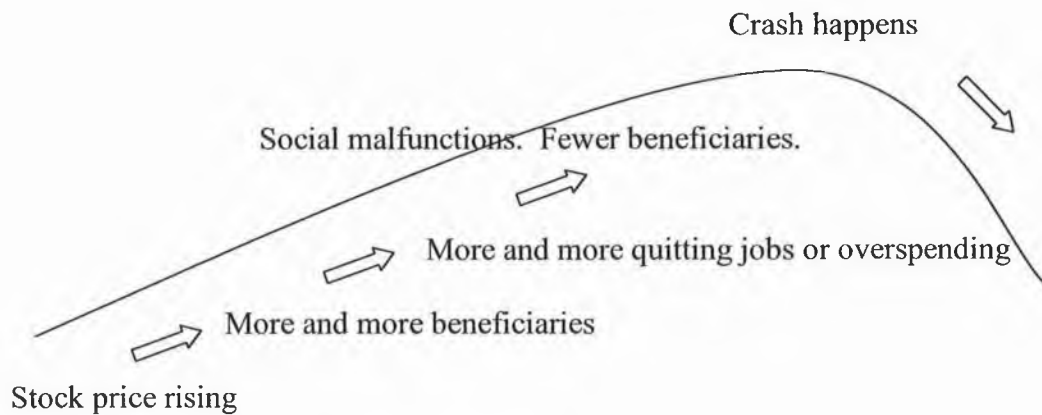
#### 1.5.4.2.3.4 Timing the Crisis and Crash

Most people know mean reversion, but the timing of crisis and crash is difficult. The researcher believes that most very serious market crises or crashes happen under two circumstances:

1. The bubble is so severe that many average small investors start quitting their full time productive jobs that affects the normal functions of society. The world just can't afford so many full time investors. The researcher estimates that the critical point is the annual return for average small investors reaches 3 times of their annual salaries and accumulated return reaches more than 10 times.
2. Because the current market price is not equal to the market value of all shares – most shares are not currently traded, the discrepancy could burst when investors use higher percentage of their imagined wealth for consuming – the world's real wealth is limited.



When the social class shape starts changing from A to B, society starts breaking down and the crisis is looming.



The above is from the social beneficiaries' angle to analyse how crash happens.

#### **1.5.4.3 First Hand Materials and Reliable Sources**

The above are part of the first hand materials and reliable sources that Sun Tzu advocates that are more important than other second hand and indirect materials and sources such as accounting records or financial reports. Due to the current tricky, unreliable and unstable general investing environment, using these reliable materials to cross-check the accounting records, financial reports and their likes is more important and urgent than ever before. It is helpful for real environment and situation identification.

#### **1.5.4.4 The Tradeoff between Diversification and Concentration**

Sun Tzu supports concentration instead of diversification, because anyone's resources, space, time, knowledge, intelligence and energy are limited. If investors want to be advantageous over their competitors, they have to concentrate more resources, space, time, knowledge, intelligence and energy on the same or even smaller focal vital point to increase their mobility, flexibility, initiative, dynamicity, cost-saving and secrecy. This contradicts the general practice of diversification – selecting at least 35+ stocks for a portfolio.

The solution is to understand the deeper reasons of reduced risk by diversification. For example, some low correlations may be mutually destructive and some may not, so an individualistic, case-by-case and realistic approach is more suitable. The real reasons are very complicated, but the deeper we understand the reasons, the more likely we may grasp the chance of concentration instead of simple and passive diversification. As a matter of fact the tradeoff between diversification and concentration is quite obvious and self-evident.

#### **1.5.4.5 Modern Technology (Hardware & Software) and Risk management**

The use of modern technology (hardware & software) may be helpful for risk management especially operational risk management, information security.

#### **1.5.4.6 Military Type Training for Investors**

An interesting experiment is being done by MIT. We may wait and see how it is going.

## **2. Methodology**

### ***2.1 Four Different Views of the Nature of Mathematics***

There are four different views with respect to the nature of mathematics and its role in sciences. The functionalist paradigm views mathematics as discoveries about a special realm of objects that exist prior to our knowledge of them. The interpretive paradigm views mathematics as a social invention and mathematical proofs as only one part of a larger social process whereby mathematicians come to feel confident about a theorem. The radical humanist paradigm views mathematics as constituting the core of science and that the rationality of science and technology is immanently one of control: the rationality of domination over nature and man. The radical structuralist paradigm views mathematics as being historically specific and class determined, that is, to satisfy the requirements of a social class in an historical period. (Ardalan 2005)

The researcher's methods are the mixture of the above four views, but more weights have been located to the first three paradigms.

Viewing the investing strategy from different subject, area, time, space, angles and perspective might give researchers fresh thinking about the same subject by temporarily relaxing taking-for-granted assumptions and point of views.

“Knowledge of finance is ultimately a product of the researcher's paradigmatic approach to this multifaceted phenomenon. Viewed from this angle, the pursuit of financial knowledge is seen as much an ethical, moral, ideological, and political activity, as it is a technical one.” (Ardalan 2005)

### ***2.2 Quantitative, Qualitative, Classical ‘Positivistic’ Design and Case Studies***

A research methodology will be decided upon which at this point in time is likely to be a hybrid of quantitative, qualitative, case study and classical ‘positivistic’ design with which data will be gathered by reliable sources and as objective as possible means. Walliman (2001)'s and Stake (1995)'s book will be used. The gathered information will be quantified and analysed. Its trends, pattern and peculiarity will be explored. Reliability will be tested. The data will be collected using all the safeguards exercised by researchers with respect to reliability, validity and sensitivity of the questions.



Explanatory cases are proper for doing causal studies. In very complicated and multivariate cases, the analysis can make use of pattern-matching methods. (Yin and Moore 1988) It is suitable for my study.

Yin (1994, p. 20) identified five components of research design that are important for case studies:

1. A study's questions
2. Its hypotheses
3. Its unit(s) of analysis
- 4 The logic linking the data to the hypotheses
5. The categories for explain the findings

I used this procedure for my research.

### **2.2.1 Select Nine Top Investors as Nine Micro-Cases**

(Yin, 1989) recommended the selection that offers the opportunity to maximize what can be learned if knowing that time is not enough. Hence the cases that are selected should be easy and willing subjects. A good instrumental case does not have to defend its typicality.

Nine top well-known world-class investors have been relatively randomly and objectively selected from well-known sources such as [www.wikipedia.com](http://www.wikipedia.com) or multiple sources (general, medias and academic world) if possible. These are some of the greatest investors in the world that have helped shaped the world of investing analysis.

The selection standards are the very famous, well known, richest, self-made, long tracked and investing focused. Only use the very famous, long tracked and well known, because their information is relatively available, accessible, reliable, fair, crosschecked, verified, researched, studied, criticized, undisputed and neutral. The richest is to keep the selecting process as objective and relevant as possible. The self-made, long tracked and investing focused are to address the relevancy and accuracy. These categories also ensure that these top investors are selected and verified fairly and randomly by mother of nature, general public, medias and academic world.

### **2.2.2 Collect Nine Top Investors' Data and Draw Tables of Their Correlation With Sun Tzu's Differences**

Analytic methods of rearranging the arrays, placing the evidence in a matrix of categories, creating flowcharts or data displays, tabulating the frequency of different events, using means, variances and cross tabulations to examine the relationships between variables etc are suitable for case studies. (Miles & Huberman 1984)

Accordingly the 9 top investors are Warren Buffett, Peter Lynch, Benjamin Graham, John Bogle, John Templeton, George Soros, Li Ka-shing, Jesse Livermore and Philip Fisher. Their words and deeds that related to the aforementioned Sun Tzu's 8 harmful

and beneficial differences to common investing methods are collected. A table is drawn for these purposes. Below is table 1. The information is from the following sources.

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Sun Tzu's Differences	Promote high ethics; use Sun's way only for self defense	Self analysis and all the involving people's assessment	Classification of all the involving people	Origins, reasons, causes of investor losses or profits	First time materials and reliable sources	More concentration instead of diversification	Modern technology and intelligence for risk managing	Military type training for investors
Names								
Warren Buffett	Never lose. thrifty to himself and family. plan fortune for charity. modest. Green Party nominee for President. highest credit rating lowest cost rate.	not to lose. If past history was all here was to the game, the richest people would be librarians. risk comes from not knowing what you're doing. 10yrs from now. discipline. Patience. buy after reading autobiography by company founder. different mental habits practice. religiously oppose academic theories. never read Wall street. noticing Graham was a director and had a large position in it. unwavering underwriting discipline and cost consciousness throughout their careers. Track record of management. we	If past history was all there was to the game, the richest people would be librarians. buy after reading autobiography by company founder. noticing Graham was a director and had a large position in it.	If past history was all there was to the game, the richest people would be librarians. Risk comes from not knowing what you're doing. profit from folly rather than participate in it. refuse to invest in not well know stocks. Wall Street is the only place that people ride to in a Rolls Royce to get advice from those who take the subway. buy after reading autobiography by company founder. oppose academic theories. never read Wall street. Bargains. talk with CEOs. downturn	If past history was all there was to the game, the richest people would be librarians. stocks trading near their tangible asset value. avoids companies that have excess debt. value consistent. refuse to invest in not well know stocks. Wall Street is the only place that people ride to in a Rolls Royce to get advice from those who take the subway. visited GEICO's head office on a weekend to investigate further. talk with CEOs solid economics behind it. we	don't diversify. buy as much as they can. Controls: build sizable holdings, ally with other shareholders or employ proxies to effect changes in companies. Due to a fraud scandal, American Express shares fell to \$35. While the world was selling the stock, Buffett began to buy shares en masse. focused strategy with a medium to long term horizon. diversification increases rather than reduces risk.	not to lose. Value. avoids companies that have excess debt. value consistent. refuse to invest in not well know stocks. Wall Street is the only place that people ride to in a Rolls Royce to get advice from those who take the subway. far more focused on not losing money than on making it. undervalued securities that possess margin of safety and meet expected risk/return characteristics. Arbitrages: company events that are not related to broader market.	Discipline. first stock age 11.

		believe that our formula – the purchase at sensible prices of businesses that have good underlying economics and are run by honest and able people – is certain to produce reasonable success. acts like a business owner. becomes an expert in that field.		opportunity. Track record of management. we believe that our formula – the purchase at sensible prices of businesses that have good underlying economics and are run by honest and able people – is certain to produce reasonable success. acts like a business owner. becomes an expert in that field. Long term. consistent operating history. Price less than net worth.	believe that our formula – the purchase at sensible prices of businesses that have good underlying economics and are run by honest and able people – is certain to produce reasonable success. acts like a business owner. becomes an expert in that field. consistent operating history.		changes such as mergers and acquisitions, liquidation, etc. purchase or build insurance or reinsurance companies and use them as super margin accounts to buy equities. we believe that our formula – the purchase at sensible prices of businesses that have good underlying economics and are run by honest and able people – is certain to produce reasonable success.	
Peter Lynch	focuses a great deal of time on philanthropy.	in what you know. Go for a business that any idiot can run - because sooner or later, any idiot probably is going to run it. he talked to company	in what you know. go for a business that any idiot can run - because sooner or later, any idiot probably is going to run it. good	Go for a business that any idiot can run - because sooner or later, any idiot probably is going to run it. in what you know. able	in what you know. strong cash position. less debt. he talked to company managers, brokers and	adjust to whatever investment style worked at the time. always be fully invested Invest in what you know.	adjust to whatever investment style worked at the time. profitability, price, and a good business	

		managers, brokers and analysts every day. able to spot good investments in their day-to-day lives, your Circle of Competence. reasons why own a stock. Patient. good management is very important be flexible and humble. good investing is not the brain/intellect, its having the stomach. Behavioral Finance.	management is very important.	to spot good investments in their day-to-day lives. reasons why they own a stock. Focus on the "facts" now at hand. avoiding Speculations and focusing on Investments rather than predictions about the future. human misjudgments and failings.	analysts every day. long-term Focus on the "facts" now at hand rather than predictions about the future. avoiding speculations and focusing on Investments.	taking plenty of risks. wide diversification and opportunistic. flexibility to buy any company be flexible and humble.	model. Wait for the Perfect Pitch.	
Benjamin Graham	Criticize obfuscated and irregular financial reporting.	he is right because his facts and a good analysis of the business's actual financial condition analysis are right.	a good analysis of the business's actual financial condition.	technical approaches is wrong. a good analysis of the business's actual financial condition. assets on the cheap. stable growth. low debt with a high earnings yield. Wall street is no use.	Value investing companies that pay out dividends. a good analysis of the business's actual financial condition. assets on the cheap. wall street is no use.	large companies with strong sales.	Margin of Safety. below their historical P/E average and trading below 1.2 times book value. assets on the cheap. stable growth. low debt with a high earnings yield.	

John Bogle		If you have trouble imagining a 20% loss in the stock market, you shouldn't be in stocks. back to basics strategy	interests of shareholders ahead of the interests of managers and distributors.	back to basics" strategy.	back to basics" strategy.		creator of the first S&P 500 index fund. low cost low maintenance.	
John Templeton	one of the world's greatest philanthropists. John Templeton Foundation. You have the most powerful weapons on earth — love and prayer. thrift and hard work. renounced his U.S. citizenship and move to the Bahamas, where there is no income tax or investment tax.	open-mindedness. The long-range view requires patience. Help people. When people are desperately trying to sell, help them and buy. When people are enthusiastically trying to buy, help them and sell. people will not reelect leaders who want them to be thrifty. Positive mental attitude helps in every way. It helps you physically, mentally, financially - in every way. In fact, I think you ought to focus on that, write articles on it we read about all the problems.	macro view of the world Help people. When people are desperately trying to sell, help them and buy. When people are enthusiastically trying to buy, help them and sell. Invest in nation where people were desperately trying to sell	Made fortune from war and crisis. open-mindedness. 9/11, the burgeoning deficits, and the latest inflation scares have not deterred him from a rosy future. The man who is a bear on the United States will eventually go bankrupt. Take Calculated Risks. Macro view of the world. bargain-hunting. rejects the "technical" method. Fundamentalist. Help people. When people are desperately trying to sell, help them and	Take Calculated Risks. avoided consumer debt. Shop for Value Investments. Fundamentalists . sound fundamentals in sales and earnings. I bought for myself is a company called Kia Motors. I bought one of their automobiles and it gives me better value than any other car I have ever owned.	pioneer of the global mutual fund industry. explore the world. strongest proponents of diversification. taking significant risks. Take Calculated Risks. 14% annualized return.	innovative approach to investing. Take Calculated Risks avoided consumer debt. sound fundamentals in sales and earnings.	works hard, putting in 60 hours a week



				buy. When people are enthusiastically trying to buy, help them and sell. Contrarians. buy stocks that are not well known. What is the risk that somebody might do something stupid?				
George Soros	Insider trading conviction. Soros Foundations. have no problem working to further his own self interest economically, while at the same time lobbying for a drastic overhaul of the global financial system. responsible for many financial collapses. keep something in reserve. Be willing to go for the win or ace if survivorship is guaranteed. have	Reflexivity.	Reflexivity.	Soros' comments on the Russian economy contributed to its stocks plunging 12% in the first hour of trading. Five days later, the currency had devalued 25%. Dynamic disequilibrium, static disequilibrium, and near-equilibrium conditions. Reflexivity. see tremendous imbalance in the world. uneven playing field.	broke the Bank of England. bringing down the ringgit. have a false picture.	Soros' comments on the Russian economy contributed to its stocks plunging 12% in the first hour of trading. Five days later, the currency had devalued 25%. It's not whether you're right or wrong that's important, but how much money you make when you're right and how much you lose when you're wrong. mainly in currency	dynamic disequilibrium, static disequilibrium, and near-equilibrium conditions. keep something in reserve. Be willing to go for the win or ace if survivorship is guaranteed. see tremendous imbalance in the world. uneven playing field.	traded currencies at 14 years old.

	a false picture.					speculation.		
Li Ka-shing	A known philanthropist, Li has donated more than \$450 million to educational causes and medical care. leading a no-frills lifestyle. wear cheap shoes and old watches. integrity and adaptability. hard work. remaining true to his internal moral compass. involving the People's Liberation Army of China. Li Ka Shing Foundation in Hong Kong. self defense and privacy keeping.	remaining true to his internal moral compass. some of his closest associates are members of the Chinese communist government. use your superiority to be ahead of others, even slightly but vital.	some of his closest associates are members of the Chinese communist government.	always making calculations to ensure his profit would be satisfactory and not get carried away by the heat of the moment. buying land is not like buying antique, it is not the only deal available. buying good parcels of land at rock-bottom prices. raced ahead of Jardines. let users help you.	following up on orders and learning the manufacturing business. read trade publications and business news religiously. Li visited Europe to learn the sophisticated technique of mixing colour with plastics. buying land is not like buying antique, it is not the only deal available. Know all the concrete details. pre-engagement preparation.	Centered on the conglomerates Hutchinson Whampoa and Cheung Kong Holdings, business interests spanning many industries and more than 90 countries.	pyramid structure, dual-class equities and cross-holdings. Innovation, initiative and speed. use reserve. pre-engagement preparation.	hard work started own business at 20
Jesse Livermore	mysterious trader, he worked out of a secure office penthouse where	manic depressive, erratic behavior may lead to his failure. Livermore sometimes did not	stock market is not for the lazy nor the uninitiated. evolving one's	increasing the size of one's position as it goes in the right direction and	He violated many of his key rules; he listened to another person's advice	sold the market short before the crash in 1929. following trends in market prices.	timing techniques, money management systems, and	Started trading at 15 years old. always willing to learn, study and open to new

	<p>he traded in secrecy. Do not depend your analysis solely on "insider information. his gullibility and his succumbing to another man's sale skills even though he practically knew all the facts of a product. never tell anyone what he was doing or ask otherwise.</p>	<p>follow his rules strictly. This lack of adherence was the main reason for his losses after making his 1907 and 1929 fortunes. always gaining an advantage over all other traders and investors. one will need to put in the necessary time and effort - not only in the studying of the stock market, but in the studying of one's own psychology and tolerances as well. The greatest amount of money is made following the major trends - not in the day-to-day fluctuations of a stock or in a particular commodity. evolving one's style to not only fit one's personality, but evolve to the point so that it will fit the market's personality as well.</p>	<p>style to not only fit one's personality, but evolve to the point so that it will fit the market's personality as well. made friends with very successful people.</p>	<p>cutting losses quickly following trends in market prices. He would choose a particular stock or commodity to buy or short based on its price and volume action Then, he would establish relatively small initial positions. He would then add to his positions if they made him money or sell them if they were unprofitable. This technique resulted in large gains and small losses. He also bucked the trends of prevailing sentiment of the markets at critical points. lack of capital existed to buy stock, he short sold</p>
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<p>(he preferred working alone) and added to a losing position. sound, fundamental studies. Do not depend your analysis solely on insider information. made friends with very successful people.</p>	<p>He would choose a particular stock or commodity to buy or short based on its price and volume action.</p>	<p>high-momentum approach to trading was innovative. mysterious trader, he worked out of a secure office where he traded in secrecy. Then, he would establish relatively small initial positions. He would then add to his positions if they made him money or sell them if they were unprofitable. This technique resulted in large gains and small losses. unfortunate development only motivated Livermore to study his mistakes more carefully.</p>	<p>ideas. It took Livermore literally years to nearly perfect his system and methods, and it requires intensive studying and effort in order to execute and to stay disciplined. Within six months of opening his account in a legitimate brokerage firm, he had lost all his money. unfortunate development only motivated Livermore to study his mistakes more carefully.</p>
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Philip Fisher	management talk freely to investors about its affairs when things are going well but "clam up" when troubles and disappointments occur? management of unquestionable integrity	management have a determination to continue to develop outstanding labor and personnel relations. outstanding executive relations. depth to its management. management of unquestionable integrity. According to Phil Fisher these questions should be posed to suppliers, competitors, and consumers. Don't try to be Phil Fisher. Or Warren Buffett or Peter Lynch or anyone else. Be yourself, but be more energetic and imaginative than you thought you could be. Dream bigger. What is the management doing that the competition is not doing? Great managements live the answer and in	outstanding labor and personnel relations. outstanding executive relations. depth to its management. management of unquestionable integrity. According to Phil Fisher these questions should be posed to suppliers, competitors, and consumers. What are you doing your competitors aren't doing yet? What is the management doing that the competition is not doing? Great managements live the answer and in the process create great stocks.	What is the company doing to maintain or improve profit margins. outstanding labor and personnel relations. outstanding executive relations. not require sufficient equity financing so that the larger number of shares won't dilute returns. According to Phil Fisher these questions should be posed to suppliers, competitors, and consumers. Buy what you understand. What are you doing your competitors aren't doing yet? What is the management doing that the competition is not doing? Great managements live the answer
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<p>sufficient market potential to increase in sales.</p> <p>management talk freely to investors about its affairs when things are going well but "clam up" when troubles and disappointments occur? Buy what you understand.</p> <p>interview vendors, competitors and consultants.</p>	<p>Buy what you understand not too many stocks</p> <p>In his prime Dad owned about 30 stocks. And diversify into different types, and not only your favorite types, so you have ones that work when your favorites fail.</p> <p>Hold a few good instead lots of average.</p>	<p>research and development no equity financing required.</p>	<p>career spanned 74 years</p>
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		the process create great stocks. customers, interview vendors, competitors and consultants.		and in the process create great stocks. No equity financing required.				
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Table 1

The researcher gives each cell an estimated correlation score from 1 to -1. The estimations are as objective and fair as possible. Below is table 2. This table is imported from Excel with means calculated.

Sun Tzu's Differences	Promote high ethics; use Sun's way only for self defense	Self analysis and all the involving people's assessment	Classification of all the involving people	Origins, reasons, causes of investor losses or profits	First hand materials and reliable sources	More concentration instead of diversification	Modern technology and intelligence for risk managing	Military type training for investors	Mean
Names									
Warren Buffet	0.8	0.55	0.3	0.5	0.7	0.75	0.25	0.45	0.5375
Peter Lynch	0.7	0.55	0.2	0.5	0.75	0.2	0.1	0	0.375
Benjamin Graham	0.4	0.3	0.1	0.3	0.4	0.7	0.1	0	0.2875
John Bogle	0	0.2	0.2	0.2	0.3	0	0.1	0	0.125
John Templeton	0.7	0.65	0.5	0.5	0.7	-0.9	0.1	0.1	0.29375
George Soros	0.55	0.4	0.3	0.5	0.3	0.8	0.2	0.5	0.44375
Li Ka-shing	0.8	0.4	0.2	0.45	0.8	-0.2	0.3	0.4	0.39375
Jesse Livermore	0.65	0.7	0.55	0.6	0.6	0.8	0.65	0.5	0.63125
Philip Fisher	0.6	0.65	0.65	0.65	0.6	0	0.1	0.2	0.43125
Mean	0.577777778	0.488888889	0.333333333	0.466666667	0.572222222	0.238888889	0.211111111	0.238888889	0.390972222

Table 2



Each Sun Tzu's Difference's Correlation

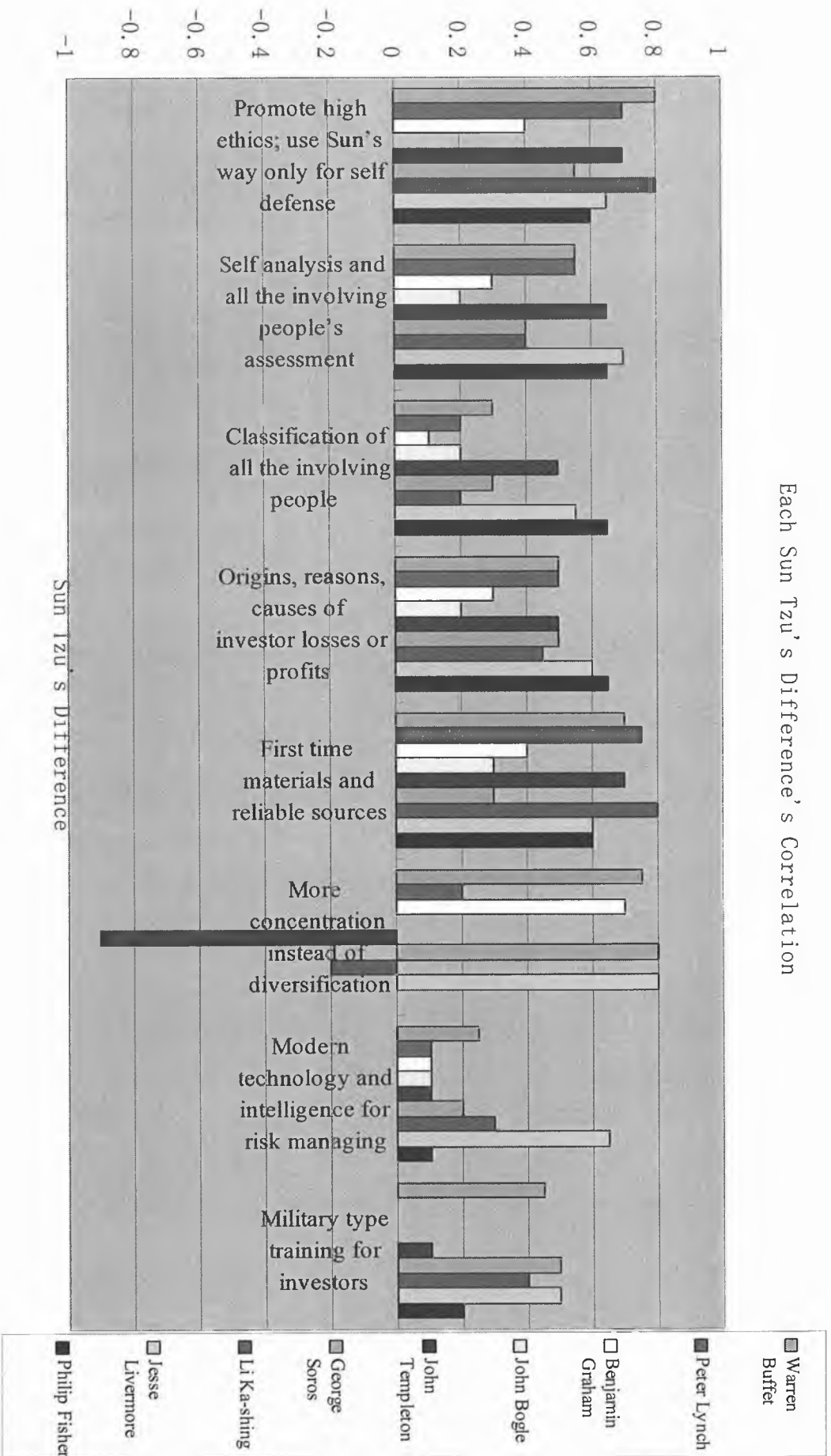


Chart 1 Each Sun Tzu's Difference's Individual Correlation

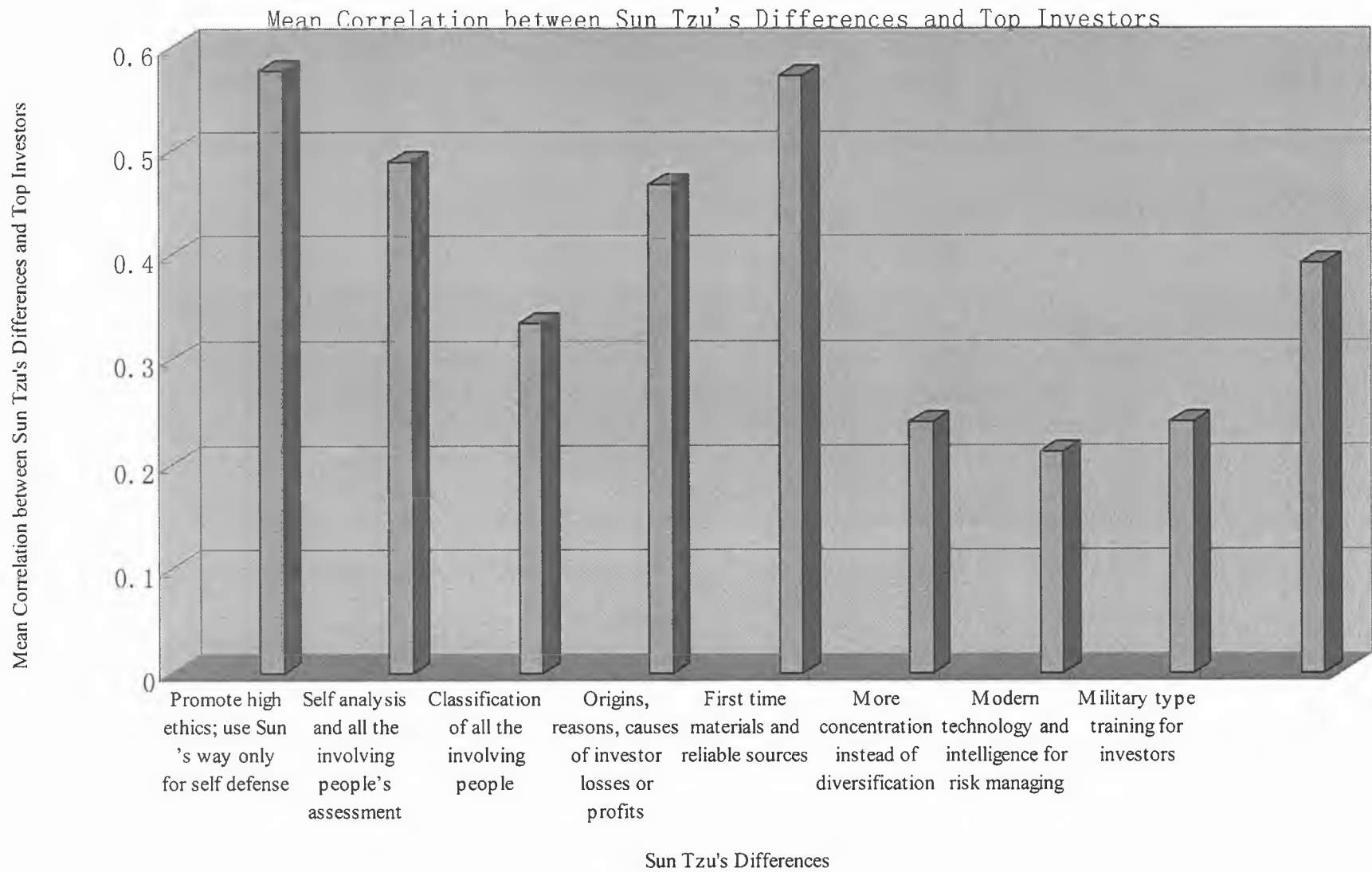


Chart 2 Mean Correlation between Sun Tzu's Differences and Top Investors (The last column (9<sup>th</sup>) is the mean correlation)

### **2.2.3 Analyse Table1, 2 (Main Tables) and Chart 1 and 2 (the Correlation from Sun's Differences' Angle)**

From the above tables and chart we can see that the means of all the scores in the table is 0.390972222 that is the total average correlation between top investors and Sun Tzu's differences. It is a relatively significant correlation number that means the relationship between them is comparatively strong. The ethical and self-defense's differences of Sun Tzu has the highest score (0.577777778) of correlation with the top investors among 8 categories of Sun's differences. The reliable sources and materials comes the second place with a score of 0.572222222. Self and people analysis lists the third with 0.488888889. Origins and causes of investing has the fourth score of 0.466666667. These four categories are above the mean of 0.390972222. The four rankings below the mean are classification of people (0.333333333), more concentration and military training (equal scores of 0.238888889) and the last modern risk management (0.211111111).

So top investors seem to take ethical, moral reputation and lawful considerations very seriously. 5 of them are well known philanthropists and most of them are law-abiding citizens, only Soros had minor conviction. Jesse Livermore is on his own for using Sun type self defense and protection methods. This area could be unexplored or still not very important for top investors under current situation. Another possibility is that most of them shy away from mentioning it.

Following is the reliable sources and materials category. Nearly all top investors use this method one way or another. The correlation is evenly distributed. The standard deviation is relatively low, so it is a quite concrete, solid and undisputed correlation.

Next is the self and people analysis. It is also a reliable and undisputed correlation with small standard deviation, but the usage is not as comprehensive and detailed as Sun Tzu and the researcher's proposition.

The fourth is the origins and causes of investing. The correlation is constant though not the highest, because what the top investor doing is not exactly the same thing as Sun's. Correlation is very reliable, however it is not very precise and accurate. The above are all higher than the mean correlation that implying their high correlation quality.

Classification of people is more median and mode like, because it lonely stands at middle. It has slightly higher standard deviation, notwithstanding the correlation is still valid. The more concentration and military training have same correlation yet different stories. More than half of the top investors did launch their careers at a fairly tender age through a rather long-term track. This sole phenomena may partially prove that their long time, real time, live, actual and pragmatic experiences, working and lessons are partly resembling military type training.

The researcher focuses more on the more concentration correlation though its correlation is not very high and with two negative scores, but we can't ignore the fact that only one serious diversified top investor – John Templeton among nine cases. The researcher is puzzled for this result, because according to standard diversification theory well-diversified investors have lowered risks and not so lowered return. This return over risk advantage will, in the long term and for large scope and population, benefits diversified investors significantly and substantially, but we can't see the significance and substantiality here. Most top investors are counter diversifying and in line with Sun Tzu's teaching. The researcher has another evidence – the world's richest 30 people list from [http://en.wikipedia.org/wiki/List\\_of\\_billionaires\\_\(2005\)](http://en.wikipedia.org/wiki/List_of_billionaires_(2005)) and [www.forbes.com](http://www.forbes.com).

Bill Gates - USA - \$51.5 billion

Warren Buffett - USA - \$44.0 billion

Lakshmi Mittal - India - \$25.0 billion (lives in UK) (was No. 62 in 2004)

Carlos Slim Helú - Mexico - \$23.8 billion

Alwaleed Bin Talal Bin Abdulaziz Al Saud - Saudi Arabia - \$23.7 billion

Ingvar Kamprad1 - Sweden - \$23.0 billion (living in Switzerland)

Paul Allen - USA - \$21.0 billion

Karl Albrecht - Germany - \$18.5 billion

Larry Ellison - USA - \$18.4 billion

S. Robson Walton2 - USA - \$18.3 billion

Jim Walton2 - USA - \$18.2 billion

Alice Walton2 - USA - \$18.0 billion

Helen Walton2 - USA - \$18.0 billion

The Lord Thomson of Fleet and family - Canada - \$17.9 billion

Liliane Bettencourt - France - \$17.2 billion

Bernard Arnault - France - \$17.0 billion

Michael Dell - USA - \$16.0 billion

Sheldon Adelson - USA - \$15.6 billion (was 311 in 2004)

Theo Albrecht - Germany - \$15.5 billion  
Roman Abramovich - Russia - \$13.3 billion (lives both in Russia and UK)  
Li Ka-shing - Hong Kong - \$13.0 billion  
Amancio Ortega Gaona - Spain - \$12.6 billion  
Steven Ballmer - USA - \$12.1 billion  
Silvio Berlusconi - Italy - \$12.0 billion  
Abigail Johnson - USA - \$12.0 billion  
Barbara Cox Anthony - USA - \$11.7 billion  
Anne Cox Chambers - USA - \$11.7 billion  
Stefan Persson - Sweden - \$11.2 billion  
John Kluge - USA - \$11.0 billion  
Walter, Thomas and Raymond Kwok - Hong Kong

Among the top 10 only Alwaleed Bin Talal Bin Abdulaziz Al Saud is slightly diversified. Among 10 to 20 only the Lord Thomson of Fleet and family is diversified. Among the 20 to 30 only Abigail Johnson is really diversified. So the diversification percentage is consistently at 10% for the top 10, top 20 and top 30 and very close to the researcher's statistics. Most of the richest people are highly specialized and focused. The reasons might be unsymmetrical information, expertise and knowledge. It seems not so risky for specialization and concentration. It is possible that there is something wrong with the traditional diversification model and calculations.

Modern risk management category scored the lowest correlation. Jesse Livermore is the sole user of some of Sun Tzu like risk management ideas. Most top investor almost ignored these ideas. Maybe they are too cost conscious or self-reliance. The risks especially those operational risks might be not too serious under current situation. This correlation could be invalid, but it can't rule out future study and exploration. There is another possibility that most top investors are not willing to talk about it.

### Individual Top Investor's Categorized Correlation

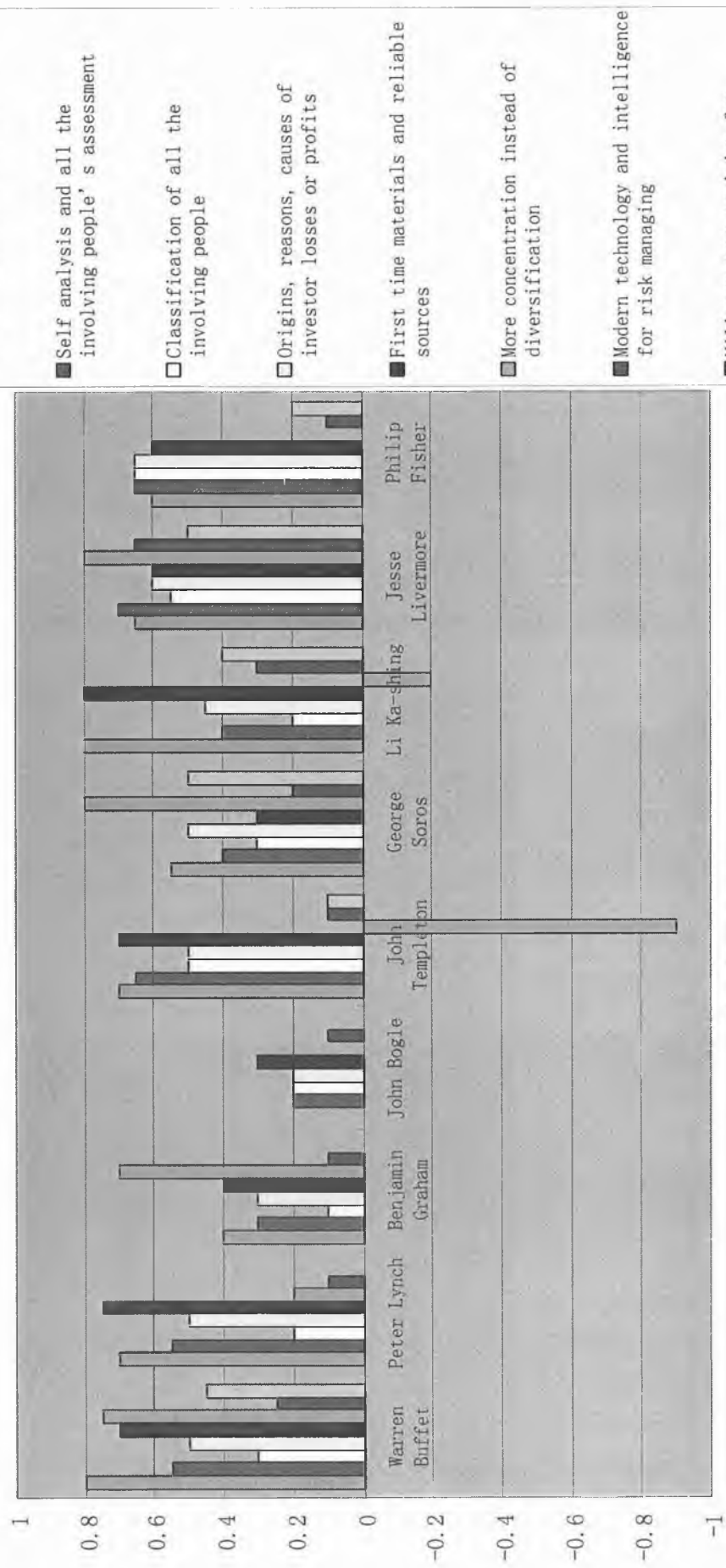


Chart 3 Individual Top Investor's Categorized Correlation

Mean Correlation between Top Investors and Sun Tzu's Differences

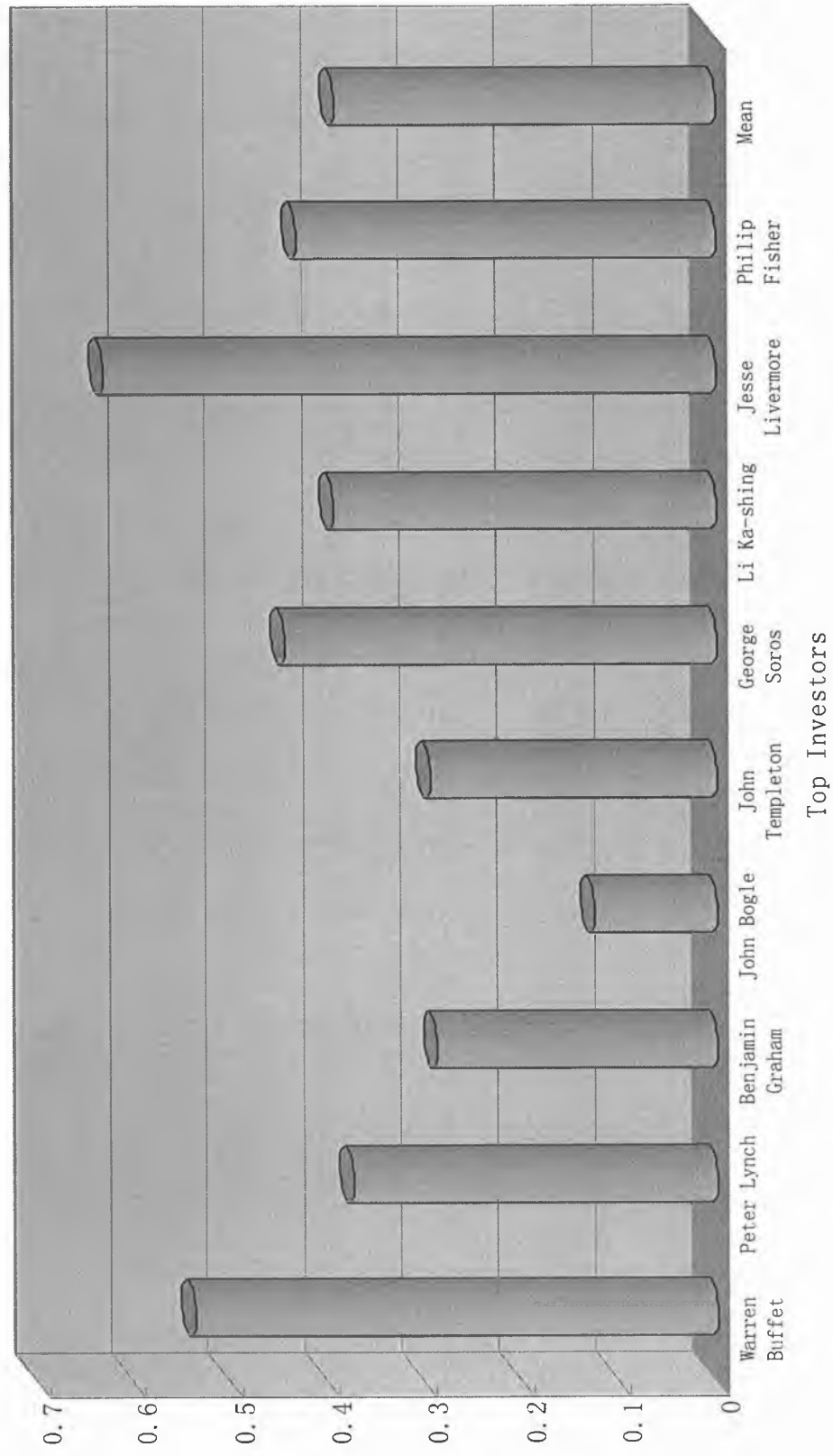


Chart 4 Mean Correlation between Top Investors and Sun Tzu's Differences (The last column (10<sup>th</sup>) is the mean correlation)

### 2.2.4 Analysis of Chart 3 and 4 (From Top Investor's Perspective for the Correlation Table)

Jesse Livermore has the highest correlation (0.63125) due to his strong performance at self-defence, self and people analysis, origins and causes of investing, more concentration, modern risk management and military type training sectors. These may contribute to his very speedy and shocking success in quite short time period. His practise is very consistent and the standard deviation is very small. His failures are mostly due to the violations of his own rules and theories.

Warren Buffett is at the second place (0.5375) with high scores at ethics and self-defence, reliable sources and materials and more concentration. His pattern is quite stable as well with quite low standard deviation. He is an even and reliable player, so his long-term, steady, well above average and concrete performance record is not a surprise.

George Soros is the third top investor with probably the third lowest standard deviation. His low marks at modern risk management, Classification of people and reliable sources and materials hold him back from the front runners that even could be the main reasons for his Russia fiasco, France conviction, Hong Kong defeat and his early retirement. His high correlation with more concentration could attributes to his relatively quick successes.

4<sup>th</sup> place is Philip Fisher (0.43125). His standard deviation is quite high. His highs at self and people analysis, classification of people, origins and causes of investing guaranteed his long term above average returns, but his lows at more concentration, modern risk management and mediocre record on ethics and self defence may be a drag on him that he is mainly a theorist rather than an extremely successful practitioner.

Li Ka-shing (0.39275) is very close to the mean (0.390972222) at 5<sup>th</sup> place. He has one of the highest standard deviation with highs at ethics and self-defence and reliable sources and materials and lows at more concentration and classification of people. These might be the reasons for his steady long-term performance and not yet joining the top richest club at a very old age.



Next is Peter Lynch at 6<sup>th</sup> place (0.375). He is an odd that he is low at more concentration, military training, modern risk management, classification and the standard deviation, yet has extremely successful and quite fast successes on theory and practice. The highs at reliable sources and materials may explain why. This is a chance for emphasising the importance of reliable source and materials.

The 6<sup>th</sup> belongs to John Templeton (0.29375). His standard deviation is quite high that is corresponding to his relatively unstable performance and early retirement. He is strong at ethics and self-defense, self and people analysis and reliable sources and materials and weak at more concentration, modern risk management and military training. His recent unrewarding performance and early retirement are due to his global diversification.

Benjamin Graham and John Bogle's correlations with Sun Tzu are quite weak with scores of 0.2875 and 0.125. Benjamin is chiefly an academic then investor. His track record is not so outstanding among the top investors. His strong mark at more concentration may help him maintaining status in the top investors. John Bogle is nearly irrelevant to Sun Tzu, but it is reasonable that he is mostly a creator and pioneer of new products instead of extremely successful performer.

## **2.2.5 Detailed Quantitative Analysis**

### **2.2.5.1 DISTRIBUTION PARAMETER ESTIMATES (8 Sun's Differences)**

8 = 8 Sun's Differences; 9 = 9 Top Investors as 9 Micro-cases. The analysis is for the correlations between 8 and 9.

#### DISTRIBUTION PARAMETER ESTIMATES

1 (N = 9) Sum = 5.200  
Mean = 0.578 Variance = 0.063 Std.Dev. = 0.250  
Std.Error of Mean = 0.083  
Range = 0.800 Minimum = 0.000 Maximum = 0.800  
Skewness = -1.772 Std. Error of Skew = 0.717  
Kurtosis = 3.488 Std. Error Kurtosis = 1.400

Ethics and self-defence have the second largest standard deviation and standard error implying discrepant attitudes to and applications for it by top investors. It has the highest means, so the correlation relation is unquestionable. Range is the broadest that is due to some extreme numbers (John Bogle = 0). It is negatively skewed (-1.772 > -0.5) with the biggest skewness number that means the actual mean for a larger sample could be higher that is to say the actual correlation relation might be even stronger. The Kurtosis is the second largest, so it is leptokurtic with peaked centre and fatter tails pointing to its uneven distribution. These might due to the disagreement with standards and applications of ethics and self defence among top investors.

2 (N = 9) Sum = 4.400  
Mean = 0.489 Variance = 0.030 Std.Dev. = 0.173  
Std.Error of Mean = 0.058  
Range = 0.500 Minimum = 0.200 Maximum = 0.700  
Skewness = -0.437 Std. Error of Skew = 0.717  
Kurtosis = -1.049 Std. Error Kurtosis = 1.400

All the numbers for self and people analysis is in the ideal and normal range. This is to say that it approaches normal distribution. The correlation for it is substantial and reliable. We could expect similar results from repeating experiments, so top investors mostly agree with this point to some degree.

3 (N = 9) Sum = 3.000  
Mean = 0.333 Variance = 0.036 Std.Dev. = 0.189  
Std.Error of Mean = 0.063  
Range = 0.550 Minimum = 0.100 Maximum = 0.650  
Skewness = 0.637 Std. Error of Skew = 0.717

Kurtosis = -0.995 Std. Error Kurtosis = 1.400

Because classification of people has slightly higher number for standard deviation and positive skewness, it's actual correlation for larger sample could be slightly smaller suggesting slightly weaker relationship. Conclusively its correlation is well below the mean, but still relevant. Top investors don't totally agree with its functions and application.

4 (N = 9) Sum = 4.200  
Mean = 0.467 Variance = 0.019 Std.Dev. = 0.139  
Std.Error of Mean = 0.046  
Range = 0.450 Minimum = 0.200 Maximum = 0.650  
Skewness = -0.889 Std. Error of Skew = 0.717  
Kurtosis = 0.623 Std. Error Kurtosis = 1.400

Origins and causes of investing are thinly negatively skewed (John Bogle = 0.2) indicating its meagrely higher correlation potential for larger samples and its necessity for all top investors.

5 (N = 9) Sum = 5.150  
Mean = 0.572 Variance = 0.037 Std.Dev. = 0.192  
Std.Error of Mean = 0.064  
Range = 0.500 Minimum = 0.300 Maximum = 0.800  
Skewness = -0.539 Std. Error of Skew = 0.717  
Kurtosis = -1.414 Std. Error Kurtosis = 1.400

Reliable sources and materials has close to perfect correlation and normal distribution hinting at strong and reliable correlation relation, but Kurtosis is slightly negatively high implying less peaked distribution. So in a limited scope, top investors reach complete agreement.

6 (N = 9) Sum = 2.150  
Mean = 0.239 Variance = 0.339 Std.Dev. = 0.582  
Std.Error of Mean = 0.194  
Range = 1.700 Minimum = -0.900 Maximum = 0.800  
Skewness = -0.819 Std. Error of Skew = 0.717

Kurtosis = 0.189 Std. Error Kurtosis = 1.400

The negative skewness credits more concentration's potential stronger correlation relation for larger samples. The very large standard deviation, standard error and range are all pointing at the obvious and severe disagreement towards it among top investors, but the correlation relationship is not ignorable.

7 (N = 9) Sum = 1.900  
Mean = 0.211 Variance = 0.033 Std.Dev. = 0.182  
Std.Error of Mean = 0.061  
Range = 0.550 Minimum = 0.100 Maximum = 0.650  
Skewness = 2.104 Std. Error of Skew = 0.717  
Kurtosis = 4.766 Std. Error Kurtosis = 1.400

Lowest mean, very large positive skewness and Kurtosis indicate that the modern risk management's correlation relationship is very weak to nonexistent. The distribution is abnormal with a few extreme large numbers (Jesse Livermore) at the positive tail and very peaked centre and very fat tails. It is ugly.

8 (N = 9) Sum = 2.150  
Mean = 0.239 Variance = 0.050 Std.Dev. = 0.223  
Std.Error of Mean = 0.074  
Range = 0.500 Minimum = 0.000 Maximum = 0.500  
Skewness = 0.080 Std. Error of Skew = 0.717  
Kurtosis = -2.190 Std. Error Kurtosis = 1.400

Military type training's mean is quite low with a slightly high standard deviation and fairly high negative Kurtosis that means its correlation relation is not strong and its measurement is not accurate and reliable and top investor's conduct and application of it is not in harmony.

Treatments by Subjects (AxS) ANOVA Results.

SOURCE	DF	SS	MS	F	Prob. > F
SUBJECTS	8	1.398	0.175		
WITHIN SUBJECTS	63	4.933	0.078		
TREATMENTS	7	1.485	0.212	3.445	0.004
RESIDUAL	56	3.448	0.062		
TOTAL	71	6.332	0.089		

TREATMENT (COLUMN) MEANS AND STANDARD DEVIATIONS

VARIABLE	MEAN	STD.DEV.
1	0.578	0.250
2	0.489	0.173
3	0.333	0.189
4	0.467	0.139
5	0.572	0.192
6	0.239	0.582
7	0.211	0.182
8	0.239	0.223

RELIABILITY ESTIMATES

TYPE OF ESTIMATE	VALUE
Unadjusted total reliability	0.552
Unadjusted item reliability	0.133
Adjusted total (Cronbach)	0.648
Adjusted item reliability	0.187

## 2.2.5.2 Covariance and Correlation

### BOX TEST FOR HOMOGENEITY OF VARIANCE-COVARIANCE MATRIX

#### COVARIANCE MATRIX

	1	2	3	4	5	6
1	0.063	0.030	0.014	0.026	0.039	-0.007
2	0.030	0.030	0.026	0.022	0.021	-0.013
3	0.014	0.026	0.036	0.020	0.008	-0.024
4	0.026	0.022	0.020	0.019	0.014	0.003
5	0.039	0.021	0.008	0.014	0.037	-0.043
6	-0.007	-0.013	-0.024	0.003	-0.043	0.339
7	0.014	0.012	0.011	0.010	0.007	0.044
8	0.028	0.013	0.013	0.016	0.006	0.057

#### Covariances

	7	8
1	0.014	0.028
2	0.012	0.013
3	0.011	0.013
4	0.010	0.016
5	0.007	0.006
6	0.044	0.057
7	0.033	0.029
8	0.029	0.050

#### ASSUMED POPULATION COVARIANCE MATRIX

Variables	1	2	3	4	5	6
1	0.063	0.030	0.014	0.026	0.039	-0.007
2	0.030	0.030	0.026	0.022	0.021	-0.013
3	0.014	0.026	0.036	0.020	0.008	-0.024
4	0.026	0.022	0.020	0.019	0.014	0.003
5	0.039	0.021	0.008	0.014	0.037	-0.043
6	-0.007	-0.013	-0.024	0.003	-0.043	0.339
7	0.014	0.012	0.011	0.010	0.007	0.044
8	0.028	0.013	0.013	0.016	0.006	0.057

1	0.076	0.013	0.013	0.013	0.013	0.013	0.013
2	0.013	0.076	0.013	0.013	0.013	0.013	0.013
3	0.013	0.013	0.076	0.013	0.013	0.013	0.013
4	0.013	0.013	0.013	0.076	0.013	0.013	0.013
5	0.013	0.013	0.013	0.013	0.076	0.013	0.013
6	0.013	0.013	0.013	0.013	0.013	0.076	0.013
7	0.013	0.013	0.013	0.013	0.013	0.013	0.013
8	0.013	0.013	0.013	0.013	0.013	0.013	0.013

Variables 7 8

1	0.013	0.013
2	0.013	0.013
3	0.013	0.013
4	0.013	0.013
5	0.013	0.013
6	0.013	0.013
7	0.076	0.013
8	0.013	0.076

Determinant of variance-covariance matrix = 0.000  
 Determinant of Population Covariance Matrix = 0.000  
 ChiSquare = 608.001 with 34 degrees of freedom  
 Probability of larger chisquare = 0.000

CORRELATION MATRIX

		Correlations					
	1	2	3	4	5	6	
1	1.000	0.702	0.289	0.748	0.818	-0.045	
2	0.702	1.000	0.808	0.905	0.620	-0.129	
3	0.289	0.808	1.000	0.773	0.218	-0.218	
4	0.748	0.905	0.773	1.000	0.522	0.033	
5	0.818	0.620	0.218	0.522	1.000	-0.386	
6	-0.045	-0.129	-0.218	0.033	-0.386	1.000	
7	0.316	0.393	0.307	0.387	0.189	0.418	

8	0.510	0.328	0.306	0.530	0.130	0.437
	Correlations					
	7	8				
1	0.316	0.510				
2	0.393	0.328				
3	0.307	0.306				
4	0.387	0.530				
5	0.189	0.130				
6	0.418	0.437				
7	1.000	0.720				
8	0.720	1.000				
No. of valid cases = 9						

The strong correlation relationship among self and people analysis; classification of people; origins and causes of investing (2, 3, 4) is expected, because they are all about human centeredness and psychological consideration and from the same origin. Ethics and self defence has strong correlation with self and people analysis; origins and causes of investing. This is probably due to the fact that the very person thinks deeply, profoundly and reflectively may be more anxious for spiritual salvation and self-realisation. Modern risk management is a loner with nearly no any correlation relationship with anyone else. This might be because of his irrelevance to top investors and current investing environment, or this area is largely unexplored.

Ethics and self-defence has strong correlation relation with reliable sources and materials. One plausible explanation could be that ethical and careful people tend to believe in reliability, accuracy, dependability and punctuality. The quite significant negative correlation relationship between classification of people and more concentration is unknown and awaiting further study. There is significant correlation relation between modern risk management and military type training that might be due to the fact more experience, training and practising provoke more risk consciousness.



t-test Values for prob.  $|\text{corr.}| > 0$  test

Variables	1	2	3	4	5	6
1	0.000	2.609	0.799	2.981	3.756	0.119
2	2.609	0.000	3.629	5.632	2.090	0.344
3	0.799	3.629	0.000	3.225	0.592	0.591
4	2.981	5.632	3.225	0.000	1.618	0.089
5	3.756	2.090	0.592	1.618	0.000	1.107
6	0.119	0.344	0.591	0.089	1.107	0.000
7	0.880	1.130	0.853	1.112	0.509	1.218
8	1.568	0.920	0.852	1.652	0.348	1.284

Variables 7 8

1	0.880	1.568
2	1.130	0.920
3	0.853	0.852
4	1.112	1.652
5	0.509	0.348
6	1.218	1.284
7	0.000	2.745
8	2.745	0.000

Probability of greater t

Variables	1	2	3	4	5	6
1	0.000	0.035	0.451	0.020	0.007	0.909
2	0.035	0.000	0.008	0.001	0.075	0.741
3	0.451	0.008	0.000	0.015	0.573	0.573
4	0.020	0.001	0.015	0.000	0.150	0.932
5	0.007	0.075	0.573	0.150	0.000	0.305
6	0.909	0.741	0.573	0.932	0.305	0.000
7	0.408	0.296	0.422	0.303	0.626	0.263

8	0.161	0.388	0.422	0.143	0.738	0.240
Variables	7	8				
1	0.408	0.161				
2	0.296	0.388				
3	0.422	0.422				
4	0.303	0.143				
5	0.626	0.738				
6	0.263	0.240				
7	0.000	0.029				
8	0.029	0.000				

### 3. Results

#### 3.1 General Statistics Testing

0.8	0.55	0.3	0.5	0.7	0.75	0.25	0.45
0.7	0.55	0.2	0.5	0.75	0.2	0.1	0
0.4	0.3	0.1	0.3	0.4	0.7	0.1	0
0	0.2	0.2	0.2	0.3	0	0.1	0
0.7	0.65	0.5	0.5	0.7	-0.9	0.1	0.1
0.55	0.4	0.3	0.5	0.3	0.8	0.2	0.5
0.8	0.4	0.2	0.45	0.8	-0.2	0.3	0.4
0.65	0.7	0.55	0.6	0.6	0.8	0.65	0.5
0.6	0.65	0.65	0.65	0.6	0	0.1	0.2

Above is the correlation sample numbers table.  $n = 72$ . sample mean = 0.390972. standard deviation = 0.298627. CV = 0.7638. standard error = 0.03519. Because the population variance is unknown, the researcher uses the t-test. Skewness = -1.183. The negative skewness is quite significant, but this will not affect my t-test because  $n > 30$ . The mean correlation potentially could be higher for larger samples or population due to negative skewness.

Kurtosis = 3.359 is very peaked and fatter tailed, but  $n > 30$  the researcher may still uses t-test. The t-test critical value for 0.001 significance level and 99.9% test power is 3.46. The test statistic is 11.11 that is well above the t-test, so the researcher 99.9% certain that there is a correlation relationship between Sun Tzu's differences and top investors.

#### 3.2 Individual Sun Tzu's Difference's Statistics Testing

##### 3.2.1 Ethics and Self-defence.

Mean = 0.578 Variance = 0.063 Std.Dev. = 0.250  
Std.Error of Mean = 0.083  
Range = 0.800 Minimum = 0.000 Maximum = 0.800  
Skewness = -1.772 Std. Error of Skew = 0.717  
Kurtosis = 3.488 Std. Error Kurtosis = 1.400

Test statistic = 6.96 Critical value of t-test = 5.041 (0.001 significance level)

The high skewness and kurtosis affect test validity and power, but because of very high mean and the test statistic's well above 0.001 significance t-test value, there is a correlation relation for ethics and self-defence but with increased significance and reduced test power. The same considerations will be given for all the below individual Sun Tzu's difference.

### 3.2.2 Self and People Analysis

Mean = 0.489 Variance = 0.030 Std.Dev. = 0.173  
Std.Error of Mean = 0.058  
Range = 0.500 Minimum = 0.200 Maximum = 0.700  
Skewness = -0.437 Std. Error of Skew = 0.717  
Kurtosis = -1.049 Std. Error Kurtosis = 1.400

Test statistic = 8.43 Critical value of t-test = 5.041 (0.001 significance level)

There is correlation relation for self and people analysis.

### 3.2.3 Classification of People

Mean = 0.333 Variance = 0.036 Std.Dev. = 0.189  
Std.Error of Mean = 0.063  
Range = 0.550 Minimum = 0.100 Maximum = 0.650  
Skewness = 0.637 Std. Error of Skew = 0.717  
Kurtosis = -0.995 Std. Error Kurtosis = 1.400

Test statistic = 5.29 Critical value of t-test = 5.041 (0.001 significance level)

There is correlation relation for classification of people.

### 3.2.4 Origins and Reasons of Investing

Mean = 0.467 Variance = 0.019 Std.Dev. = 0.139  
Std.Error of Mean = 0.046  
Range = 0.450 Minimum = 0.200 Maximum = 0.650  
Skewness = -0.889 Std. Error of Skew = 0.717  
Kurtosis = 0.623 Std. Error Kurtosis = 1.400

Test statistic = 10.15 Critical value of t-test = 5.041 (0.001 significance level)

There is correlation relation for origins and reasons of investing.

### 3.2.5 Reliable Sources and Materials

Mean = 0.572 Variance = 0.037 Std.Dev. = 0.192  
Std.Error of Mean = 0.064  
Range = 0.500 Minimum = 0.300 Maximum = 0.800  
Skewness = -0.539 Std. Error of Skew = 0.717  
Kurtosis = -1.414 Std. Error Kurtosis = 1.400

Test statistic = 8.9375 Critical value of t-test = 5.041 (0.001 significance level)

There is correlation relation for reliable sources and materials.

### **3.2.6 More Concentration**

Mean = 0.239 Variance = 0.339 Std.Dev. = 0.582  
Std.Error of Mean = 0.194  
Range = 1.700 Minimum = -0.900 Maximum = 0.800  
Skewness = -0.819 Std. Error of Skew = 0.717  
Kurtosis = 0.189 Std. Error Kurtosis = 1.400

Test statistic = 1.23 Critical value of t-test = 5.041 (0.001 significance level)

There is no correlation relation for more concentration.

### **3.2.7 Modern Risk Management**

Mean = 0.211 Variance = 0.033 Std.Dev. = 0.182  
Std.Error of Mean = 0.061  
Range = 0.550 Minimum = 0.100 Maximum = 0.650  
Skewness = 2.104 Std. Error of Skew = 0.717  
Kurtosis = 4.766 Std. Error Kurtosis = 1.400

Test statistic = 3.46 Critical value of t-test = 5.041 (0.001 significance level)  
t-test = 3.355 (0.01 significance level)

There is no or very weak correlation relation for modern risk management.

### **3.2.8 Military Type Training**

Mean = 0.239 Variance = 0.050 Std.Dev. = 0.223  
Std.Error of Mean = 0.074  
Range = 0.500 Minimum = 0.000 Maximum = 0.500  
Skewness = 0.080 Std. Error of Skew = 0.717  
Kurtosis = -2.190 Std. Error Kurtosis = 1.400

Test statistic = 3.229 Critical value of t-test = 5.041 (0.001 significance level)  
t-test = 2.896 (0.02 significance level)

There is no or very weak correlation relation for military type training.

## **4. Discussion**

### **4.1 Patterns, Trends and Causation**

Campbell (1975) described "pattern-matching" as a helpful method for linking data to the hypotheses.

There are many similarities and differences between Sun Tzu's Art of War and modern common investing strategies. The similarities attest their close relationship. Some differences are irrelevant; some are beneficial; some are harmful. How to use those beneficial ones and avoid those harmful ones is an interesting and practical question. From the above qualitative, quantitative and micro case study and analysis, we know that top investors used some beneficial differences and avoided some harmful differences, so we may use them to aid our investing decision making process.

The results show that there is no correlation relation between more concentration and top investors. There is no or very weak correlation relation for modern risk management and military type training. The rest all have significant and substantial correlation relation with top investors. Generally the statistics shows that Sun Tzu's differences have effective correlation relation with top investors.

The 3 differences' (more concentration, modern risk management and military type training) no or very weak correlation relation with top investors don't warrant their irrelevance with the investing strategy, because this may be due to their unexplored or neglected status by top investors. There is possibility that they are really unhelpful for investing strategy. However their real relationship with investing strategy is uncertain at this stage and point that requires further study and research. But the hypothesis have to be adjusted by deleting the above 3 uncertain differences.

Analysis has been done from the different angles of the general, top investors and Sun Tzu's differences. The strong correlation relationship among self and people analysis; classification of people; origins and causes of investing (2, 3, 4) is expected, because they are all about human centeredness and psychological consideration and from the same origin. Therefore potential users may consider them collectively. Modern risk management is a loner with nearly no any correlation relationship with anyone else. This might be because of his irrelevance to top investors and current investing environment, or this area is largely unexplored.

The selection standards of samples and micro cases are the very famous, well known, richest, self-made, long tracked and investing focused, because these can guarantee to some degree the representative, fairness, reliability and truthfulness of data collecting. Although the samples and micro cases are quite small (only 9) owing to limited time and resources, the above qualities served as effective filters for the efficient and reliable sample collection. Because only the fittest can survived the fierce investing competition, the mother of nature selects these top investors fairly, randomly and reasonably. Secondly the selecting results have been verified, examined and criticized by general public, medias and academic circle, so their fame and validity are not in doubt.

Since the researcher focus on Sun Tzu' differences and general common investing strategy, only top investors more likely have the possibilities of using such differences. They must have done something very different from general average investors in order to constantly outperform the market. If select the general average investors'

samples, the correlation relationship between them and Sun Tzu must be very weak or nonexistent.

The researcher has found one anomaly that standard diversification theory can't explain that most top investors are counter diversifying and in line with Sun Tzu's teaching. The researcher also found that diversifying rate for top 10, top 20 and top 30 of the world richest list is consistently around 10%. You may check the forbes website and above analysis. The reasons might be unsymmetrical information, expertise and knowledge. It seems not so risky for specialization and concentration. It is possible that there is something wrong with the traditional diversification model and calculations.

## **4.2 Research Limitations**

Sun Tzu and his Art of War are not perfect. There are many obvious shortcomings and weaknesses even for military strategy texts' standards. First it is very ancient with possibility of being outdated, so its historical time beings; environment; conditions; ethical, social and political background; human mentality; legal system; scientific development (no advanced science, psychology, medicine, finance etc at that time) determine its limitations and cautions even for military usage and applications due to its limited relevance. It also lacks quantitative methods and its logic is not seamlessly deduced or induced.

Secondly it's written in ancient Chinese languages, so unsurprisingly it is prone to different interpretations, vagueness and ambiguity. Thirdly there is obvious gap between military strategies and investing, Sun Tzu and his Art of War have to be modified or adapted for its modern investing usage, so there are chances that it may lose its original accuracy and meanings to manipulations.

The sample size is quite small at nine that may represent large bias. Some of the individual difference's correlation distribution is not or not close to normal, so this may discount and compromise the t-test validity. The classification of Sun Tzu's differences has not enough depth and breadth. The nuance and details of the sample have not been totally dug. The estimation of correlation scores might not be fair, objective and consistent enough.

Initially the researcher planned to use historical and real time trading data to test Sun Tzu's differences' effectiveness for investing and their relationship with common investing methods, but at this stage the time and resources are limited. Therefore it can only be done while ideal condition prevails.

## **5. Future Perspectives**

The correlation marks can be estimated by many professionals and/or computer software, so their pattern and trend can be found and fairness, objectivity, reliability and validity maintained. Sample size could be enlarged and extended to increase t-test or z-test validity and test power. The increased size and materials will enhance the

chance of finding new patterns, layers, nuance and subtlety and closer to normal distribution. The classification of Sun's differences could have more depth and breadth with more categories, hierarchies, layers and causal links.

The multivariate regression relationship among individual top investors, individual Sun Tzu's difference and the mean correlations may be studied in details if time allows. The quite significant negative correlation relationship between classification of people and more concentration is unknown and awaiting further study.

The researcher only did passive and secondary data analysis. If time and resource allow, more activity and initiation oriented approaches may be taken. For example, we may take the pro and post education and training approach to analyze the differences before and after Sun Tzu type training as same as what the MIT is doing. We may use survey or interview to gauge investors' attitude to, application and knowledge of Sun's War of Art. We may also use other research methods such as action research, focus group, etc.

Top investors' information could be further divided into their deeds and their words that may be evaluated and compared separately to find out any discrepancies and their reasons in order to increase the research's reliability and depth by preventing tampering. If possible, the original top investors themselves could do the scoring and estimating of the correlation to increase relevance and to see any differences. If permissible real time and historical trading data can be used to test Sun Tzu's differences' effectiveness for investing and its relationship with common investing methods in the future.

The researcher believes that the hypotheses of efficient market; find weak opponents and weak points; crisis is opportunity; timing the crisis and crash is the most interesting and useful aspects. Unfortunately at this stage the time and resources are not enough for further exploration and exploitation of these precious areas. Hope it can be fulfilled in the near future.



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I used [www.refworks.com](http://www.refworks.com) to automatically generate my Harvard style bibliography.

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## Appendices

The researcher used OPENSTAT4 Version 8, Revision 10 for data analysis, following is its introduction and instruction.

OPENSTAT4 Version 8, Revision 10 (02/04/06)

OpenStat4 (OS4) is written in C++ using the Borland C++ Developer package version 5.0. In the spirit of "Open Source" software, this copy written program is available for free and may be redistributed to others as long as it is not for commercial purposes or resale and credit is given to the author(s).

OpenStat was originally written as an aid to students and teachers for introductory and advanced statistics courses, primarily in the social sciences. To insure that students and professionals, particularly in developing countries with very limited funding resources, have access to a package that completes nearly all of the analyses required in statistics courses, the package contains a wide variety of procedures for data analysis:

A spreadsheet-type of user interface in which variable labels are created (columns of a grid), and observed values are inserted into cells of rows for each case.

Descriptive statistics including central tendency and variability indexes, x-y plots, frequency distributions, breakdown, cross-tab, 3D rotation.

Pearson product-moment correlations and partial correlations.

Multiple Regression including stepwise forward and backward, simultaneous, block entry, best fit, Cox, Logistic, Weighted, 2-Stage

Analyses of variance including 1, 2 and 3 way ANOVAs, mixed design ANOVAs, Latin Square ANOVAs, Multivariate ANOVA and Analysis of Covariance.

Two and Three Way Cross-Classification analysis.

Multivariate analyses including Hierarchical, Factor Analysis, Canonical Correlation, and a least-squares General Linear Model procedure.

Non-Parametric analyses including Runs Test, Chi-Square, Fisher's Exact test, Kruskal-Wallis ANOVA, etc.

Measurement programs including Classical Reliability, Rasch 1-parameter scaling, 3-parameter IRT scaling, Successive Interval Scaling, etc.

Financial programs.

Simulation programs (random no. generators, correlations, 2-way ANOVA, distributions, z power and sample size estimates, etc.

A Neural Network program.

A matrix manipulation program.

Because the author has created this program as a hobby and is not a professional statistician, it is important that the user first tests the procedures with known textbook examples or compares (when possible) the output of an analysis to other commercial packages. No warranty can be made or implied that the results are correct. Sample data files (stored as TAB separated values) are available for experimentation. Users that have Excel or other software packages that can export tab, comma or space separated values files can import such files into OpenStat and make comparisons.

Updates are posted from time-to-time to correct known errors, add new procedures or improve user interface for the package. Check this site from time to time to insure that you are using the most current version. Report any problems or errors to the author so that updates can be made to correct the problems. If you are a frequent user of computer software, you are well aware that nearly all software packages have "bugs" or errors of some type that require maintenance or new versions to reduce these problems (e.g. Windows itself!) Send your "bug" reports and suggestions to:

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