

Choosing Money Managers

Ernst W. Gronblom

December 10, 2009

Abstract

Assuming active management can produce superior investment returns (i.e. assuming absence of strong-form EMH), two critical factors largely determine future returns; (a) the investment strategy, and; (b) portfolio manager skill. Investment strategy is a widely researched and discussed subject, but manager skill is not. Active managers are chosen based on their (implicitly) assumed skill. Based on available evidence, good investment returns seem to be correlated with a handful of qualities and/or traits, including: (1) relevant education; (2) business experience; (3) age and portfolio management experience; (4) intelligence; (5) rational temperament; (6) self-confidence and independent thinking; (7) patience; (8) competitiveness and a passion for investing; (9) "strong nerves", and; (10) creativity. This paper discusses anecdotal and other evidence claiming correlation between manager characteristics and investment skill, and the possibility and means (if any) to identify, objectively and *a priori*, such skill. The question of manager integrity and its implications is also discussed.



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

Contents

Introduction	3
Hypotheses.....	3
Sources.....	3
Key findings	3
Methodology.....	3
Relevant education.....	4
Business experience.....	4
Age and portfolio management experience	5
Intelligence	5
Rational temperament.....	5
Self-confidence and Independent thinking	6
Patience.....	6
Competitiveness and a passion for investing.....	7
”Strong nerves”.....	7
Creativity	8
Summary and discussion	8
Postscript: Integrity.....	8
Endnotes	10



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy ▪ Y-tunnus: 2154336-2 ▪ www.helsinkicapitalpartners.fi ▪ Tallberginkatu 1 C 136, 00180 Helsinki Finland ▪ puh. 09 689 88 470 ▪ faksi 09 689 88 475 ▪ Kauppakatu 28 A 22, 40100 Jyväskylä Finland ▪ puh. 09 689 88 474 ▪ faksi 09 689 88 475

Introduction

The overwhelming majority of equity investment funds fail to beat their respective benchmarks.¹ This (at least for laymen) puzzling fact² is often presented by finance academics as additional proof of perfectly or at least highly efficient markets.³

Hypotheses

Assuming that the Efficient Market Hypotheses (EMH) does *not* hold (at least not in its *strong* form), the most critical two components of successful active investing are: (a) the investment *strategy* (broadly encompassing the investment philosophy, strategy and process), and; (b) the *skill* of the portfolio manager. Considerable research has been made to establish what constitutes a sensible investment strategy, but the question of manager skill has received much less attention. Of special interest to any investor is the question whether it is possible to identify superior investing talent *a priori* (i.e. on beforehand, through logic and deduction), or if such judgment is possible only *a posteriori* (i.e. empirically, after the fact). This paper examines the issue by summarizing and synthesizing some findings and thoughts by prominent researchers and thinkers in the field.

Sources

I have identified only limited material directly or indirectly discussing the nature and identification of investing skill. These include five books,⁴ two academic research papers,⁵ three investment newsletters,⁶ four articles⁷ and one keynote speech transcript.⁸ I have also used other, more anecdotal sources (e.g. interviews and quotes by acclaimed investors).

Key findings

Summarizing the findings from the above sources, the following manager traits and characteristics (in no particular order) were claimed to correlate with good investment returns:⁹

1. Relevant education¹⁰
2. Business experience¹¹
3. Age¹² and portfolio management experience¹³
4. Intelligence^{14 15 16 17 18}
5. Rational temperament^{19 20} (as measured by the MBTI²¹)
6. Self-confidence²² and independent thinking²³
7. Patience²⁴
8. Competitiveness²⁵ and a passion for investing²⁶
9. "Strong nerves"²⁷
10. Creativity^{28 29 30}
11. (Integrity)

That was quite a motley crew of idiosyncrasies - let's take a look at these qualities and see if we can find some order in the chaos. After all, the purpose of this paper is to hopefully be of some help when choosing money managers.

Methodology

The first question we should ask ourselves is "*what?*" What does the word actually mean? A fancier term for the analysis of meaning is "semantics", and sometimes it's used pejoratively (e.g. "*That's*



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

only semantics!” as being more or less synonymous with “hair-splitting”) However, ambiguity is a source of risk, and in the context of investments risk is, *ceteris paribus*, something negative to be minimized (or rather *optimized*; the only way to *eliminate* risk altogether is to do nothing, which entails risks of its own) Therefore, before we can discuss e.g. why patience may or may not be a good thing for investors, we must come to a satisfying agreement as to what the term “patience” actually means.

Another important question anyone presented with any claim should ask is “*why?*” Why should patience, for example, be a desirable trait in an investor? Actually that sounds somewhat counter-intuitive, doesn’t it – considering the hectic pace of modern financial markets, one would think that persons on the opposite side of the scale, the restless and hyper-active, would be the ones to thrive!

If and when we have found a satisfying answer to the question “*why?*” the next question should be “*how?*” It doesn’t help knowing that a certain quality is desirable if there’s no reliable way to identify it. Let’s say that we manage to establish with a sufficient degree of certainty that patience actually is a desirable quality in a portfolio manager. Is it possible to *a priori* effectively diagnose potential managers with the purpose of identifying patience? Or is patience a quality the presence of which is possible to determine only after the fact or based on very intimate personal acquaintance?

Below we will walk through the list of qualities and examine them through the looking-glasses of “*what?*”, “*why?*” and (where relevant) “*how?*”.

Relevant education

What: In this context, a relevant education could be interpreted as any formal education providing tools that could be useful in the context of investing. Traditionally, a majority of professional investors have had degrees in economics or finance, but many successful investors have less traditional educational backgrounds.³¹

Why: self-explanatory; as mentioned above, a relevant education provides *some* of the knowledge and intellectual tools that can be useful in the context of investing. However, it should be noted that most commentators stressed the point that a relevant education is “*necessary to play but not sufficient to win*”.³²

How: education (degree, subjects, grades etc.) is readily verifiable by diplomas and other documentation.

Business experience

What: self-explanatory; business experience in this context should probably be interpreted as having first-hand experience of running or managing businesses *other than* portfolio management (i.e. “*real work*”).

Why: the most important skill of a (value) investor is the ability to correctly value businesses. In order to successfully value businesses, one must first have a good sense of what businesses are all about. Many CEO’s lament sell-side equity analysts for having no understanding of what it’s like to really run a business, a condition most likely a result of lack of first-hand experience. First-hand experience of running a business gives a tacit knowledge that no amount of theory can provide.³³



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

How: business experience (if any) is readily verifiable by CV's and other documentation.

Age and portfolio management experience

What: age could be interpreted both as meaning: (a) chronological age, or; (b) professional age (i.e. work experience). Portfolio management experience naturally means the amount of time spent managing a portfolio.

Why: it seems intuitively self-evident that investing capability, like skill at other complex tasks, should be positively correlated with experience. However, only two sources present age as a factor effecting investment returns, and their claims are rather counter-intuitive – in one paper (Chevalier et al.), *chronological age* (past a certain point) was said to correlate *negatively* with returns,³⁴ and in the other (Sellers) *professional age* (i.e. work experience) was said to have *no correlation* with returns.³⁵ However, to counter these claims, it should be noted that many legendary investors (e.g. Buffett) claim the opposite; that professional experience matters and that good investors do become better over time.

How: both age and business experience is readily verifiable by CV's and other documentation.

Intelligence

What: The word “intelligence” comes from the Latin verb *intellegere*, which means “to understand”. Intelligence is a broad term, encompassing multiple qualities. In a recent opinion piece signed by a group of intelligence researchers,³⁶ intelligence was defined as “[a] very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings – “catching on”, “making sense” of things, or “figuring out” what to do.”

Why: Investing is an inherently complex and cognitively challenging endeavor, requiring at least a basic mastery of a multitude of scientific and cultural factors and disciplines, including, but not limited to, economics, finance, business, law, statistics, science, technology, politics, sociology, history and psychology. However, it should be noted that most sources stressed the point that intelligence is “necessary to play but not sufficient to win”.^{37 38 39}

How: Admission to and graduating from most relevant academic programs (e.g. business schools) requires in itself a relatively high level of intelligence. Consequently, for an investor looking for a competent money manager, a relevant academic degree (especially if completed with good grades) should probably be considered sufficient proof of intelligence, and subjecting the prospective managers to a standardized intelligence test⁴⁰ is probably not necessary.

Rational temperament

What: the word “rational” derives from the Latin word “*ratio*”, which means “reason” or “computation,” and to be rational means having or exercising the ability to reason. “Rationality” is thus defined as the quality or state of being rational. However, here we are discussing a more specific type of rationality, namely that associated with a specific personality type (Rational⁴¹), as



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

measured by the MBTI,⁴² a psychological profiling tool widely used in business and HR management.

Why: a rational way of looking at the world and making decisions seems to be a common trait in most successful long-term investors.⁴³ Psychological profiling verifies that most legendary investors (Buffett, Munger, Miller, Wanger) can be classified as Rationals.^{44 45 46 47}

How: temperament (as defined above) can be reliably assessed by applying the MBTI or the Keirsey Temperament Sorter (KTS) psychological profiling instruments in a clinical setting. (Caveat: psychological profiling test such as the MBTI or KTS are naturally much more easily "gamed" than e.g. standardized intelligence tests; a person intimately familiar with the dynamics of the instrument could manipulate the outcome by giving the "correct" answers.)

Self-confidence and Independent thinking

What: at least partially related and mutually correlated, self-confidence could be described as confidence in one's personal judgment and ability. Independent thinking could be described as the capability to formulate opinions *independent of* (and, as the case may be, *contrary to*) the opinions of peers, the general public or – in the case of investing – "the market" (i.e. the aggregate of one's investing peers and competitors).⁴⁸ A lack of self-confidence is, per definition, preclusive to independent thinking. (Caveat: self-confidence that is unfounded and/or extreme constitutes *hubris* or arrogance, primers to recklessness and anathema to all sound investment policies.)

Why: the philosophical foundation of all active investment strategies (or at least all *value* investing strategies) is the assumption of edge; one takes a position if – and only if! – one has a founded reason to believe that one has an edge; that one knows or understands something about the asset that "the market" (i.e. the aggregate of all other investors) does not (yet) know or understand. At its core, all active investing is thus more or less contrarian – going against the crowd. To have a fighting chance of producing good returns, an active investor must possess the ability to: (1) form ideas or convictions that are *independent*, and (2) act upon those convictions, *even if it requires going against the crowd*. The former requires intelligence and independent thinking, and the latter requires strong nerves and self-confidence.⁴⁹

How: not objectively verifiable. Nevertheless, the presence of self-confidence may probably be established with a sufficient degree of reliability by observation⁵⁰ and deduction.⁵¹ However, it is much harder to reliably judge a person's ability of independent thinking. Most people honestly believe themselves capable of it,⁵² but both scientific research⁵³ and most great thinkers⁵⁴ seem to think otherwise.⁵⁵ At the end of the day, the only available gauges are probably history (i.e. track-record) and intuition (i.e. "gut feeling").

Patience

What: the dictionary defines "patience" as "the quality of being patient; content to wait if necessary; not losing one's temper while waiting; not bothered with having to wait; not unwilling to wait."

Why: Patience is integral to value investing on many levels. Whenever a position is taken, one can never know *when* (or even *if*, for that matter!) it will reach our estimate of "fair" (intrinsic) value.⁵⁶ Systematically buying undervalued stocks generally generate good *long-term* returns, but tells us



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

nothing about the short-term prospects. (please note: in this context, "short-term" is defined as anything less than 1 - 2 years) In the short term, cheap stocks can always get cheaper, and expensive stocks can always get more expensive. Thus patience is required.

How: just as with independent thinking, patience is hard to identify objectively,⁵⁷ and here too we must probably resort to more intuitive and subjective sources of deduction. Once again, the best available gauges are history (i.e. track-record) and intuition (i.e. "gut feeling").

Competitiveness and a passion for investing

What: although practically self-explanatory, we may summarize the concepts as indicators of a real emotional interest in the endeavor and its outcome; in the case of investing, a subjective feeling on behalf of the manager that investing is interesting, fun and worth pursuing primarily for the intellectual challenge and stimulation (as opposed to doing it just for the economic benefits).

Why: investing, especially active investing with the express goal to "beat the market", is a challenging endeavor, requiring a level of mental effort not readily deployable unless backed by not just intelligence and knowledge, but also real passion and subjective interest. The active investor competes against "the market", i.e. the aggregate of all other active investors, and it's thus an inherently competitive activity.

How: neither manager competitiveness nor passion are objectively measurable. The best and only methods of inquiry are the intuitive and subjective sources of deduction described above.

"Strong nerves"

What: in this context, the idiom "strong nerves" may be considered as synonymous with "courageous", "stoic" or "calm in the midst of turmoil"; indicating a willingness and ability to persevere in the face of distress.

Why: successful active investing involves potentially nerve-grating risks and requires overcoming several psychological biases and quirks. The new discipline of behavioural finance⁵⁸ is just beginning to chart the ways that humans actually make economic decisions, but so far it has become clear that reality is far removed from the abstraction of "homo economicus", the rational calculating machine assumed by classical economics. It appears that the human mind, developed over millennia of evolution, is not hard-wired for optimal economic decision-making. We are instead ridden by fears, irrationalities and inconsistencies⁵⁹ that require tremendous self-insight and self-mastery (i.e. "nerves") to overcome. Many investment thinkers consider this the single most important quality of an investor.^{60 61}

How: manager "nerves" are not readily objectively measurable. However, by studying past behavior (especially during crises or other stressful periods) we may draw several conclusions. Did the manager panic and sell out at the bottom? Did the manager panic and change his or her investment strategy in mid-flight? Like self-confidence, strong nerves cannot really be bluffed.



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

Creativity

What: the dictionary defines creativity as: "the quality or ability to create or invent something." Creativity is an even more ambiguous concept than intelligence, and much effort has been made to come up of a general definition, without much success.⁶² However, most thinkers and researchers of creativity seem to agree that in order for an idea or concept to be considered truly creative, it must fulfill at least the requirements of: (1) *originality* (i.e. newness, broadly defined), and; (2) *appropriateness* (i.e. utility, broadly defined).

Why: at its most basic level active investing in listed securities involves the analyzing of assets based on publicly available data in pursuit of an informational advantage (edge) over the market (i.e. the aggregate of all active investors). Barring the use of insider information (which is illegal in most advanced jurisdictions) all investors have to do with an *identical set* of data. Since no competitive edge is to be gained from privileged *access* to more or better data, the best, or actually, the *only* way to gain an edge is to *utilize* (analyze, organize, weigh, interpret etc.) the *available* data in a creative (i.e. different, original⁶³ and possibly more useful) way. Consequently, in order for an active strategy to have a fighting chance of producing superior returns, the strategy and process must, per definition, be at least to some degree creative.

How: several attempts have been made to develop an objective creativity quotient of an individual similar to the Intelligence quotient (IQ), however these attempts have largely been unsuccessful. Most measures of creativity are dependent on the subjective judgment of the tester, so a standardized measure is difficult, if not impossible, to develop. Here too, history (past behavior) and intuition (i.e. "gut feeling") are probably the best and only measurement tools available. Some authors suggest that creativity usually correlates with other, possibly more easily identifiable traits.⁶⁴

Summary and discussion

Both anecdotal evidence and research suggest that certain manager traits, qualities and characteristics seem to predict good investment returns. Based on current understanding, good investment returns seem to be correlated with a handful of qualities and/or traits, including: (1) relevant education; (2) business experience; (3) age and portfolio management experience; (4) intelligence; (5) rational temperament; (6) self-confidence and independent thinking; (7) patience; (8) competitiveness and a passion for investing; (9) "strong nerves", and; (10) creativity. Most of these idiosyncrasies are probably identifiable with a satisfying degree of accuracy *a priori*, both objectively (e.g. through psychological testing) or subjectively (i.e. through reason, judgment and intuition).

Postscript: Integrity

One final point needs stressing. Although not a prerequisite for investment performance as such, integrity should nevertheless always be of high priority when choosing a money manager.

What: the word "integrity" evolved from the Latin adjective "integer", meaning whole or complete. Integrity is the quality of being honest and having strong moral principles; moral uprightness. It is generally a personal choice to uphold oneself to consistently moral and ethical standards. According to author and philosopher C.S. Lewis: "*Integrity is doing the right thing, even when no one is watching.*"



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

Why: a brilliant – but dishonest and unscrupulous – manager may well produce stellar returns, but what is there to guarantee that he will not use his brilliance (and the returns) to line his own pockets at the expense of his clients? History is rife with examples of highly intelligent con-man managers that used their intelligence and skills not *for* their clients, but *against* them. Sometimes the method is outright large-scale fraud, but far more common is the exploitation of trust through discreet, low-key methods such as a scheme of charging hidden (and excessive) fees under a disguise of opacity and complexity.

How: although there exists sophisticated integrity testing and screening tools and methods, these are in practice the reserve of the HR departments of large organizations, and out of reach of most individual investors. Consequently and as with creativity, history (past behavior) and intuition (i.e. "gut feeling") are probably the best and only measurement tools available for the layman.



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

Endnotes

¹ Jensen: *"The Performance of Mutual Funds in the Period 1945-1964"*, Journal of Finance 1968

Malkiel: *"Returns from Investing in Equity Mutual Funds 1971 to 1991"*, Journal of Finance 1995

Carhart: *"On Persistence in Mutual Fund Performance"*, Journal of Finance 1997

Wermers, *"Mutual Fund Performance: An Empirical Decomposition into Stock-Picking Talent, Style, Transactions Costs, and Expenses"*, Journal of Finance 2000

² At closer examination, it is of course not surprising that the majority of active funds fail to beat the benchmark. After all, what is the benchmark but a representation of the market, and what is the market but the *aggregate* of all investors. Consequently, the *average* fund must, per definition, do exactly as the market. Subtract costs and the lag is explained. However, looking at the implicit and explicit promises made by marketing, it seems that the financial industry is the only place besides the mythical Lake Wobegon where *"all the women are strong, all the men are good looking, and all the children are above average!"* What this paper tries to do is not to find general explanations to this problem but to creatively examine why so few *consistently* outperform in a probabilistic endeavor.

³ In finance, the efficient-market hypothesis (EMH) asserts that financial markets are "informationally efficient", or that prices on traded assets, e.g., stocks, bonds, or property, already reflect all known information. The efficient-market hypothesis states that it is impossible to consistently outperform the market by using any information that the market already knows, except through luck. Information or news in the EMH is defined as anything that may affect prices that is unknowable in the present and thus appears randomly in the future. The question of market efficiency is one of the most important (if not *the* most important!) question any investor (both professional and non-professional) must address before deciding upon his or her investment philosophy and strategy. If the market is, as many academics claim, perfectly efficient, then the conclusion is crystal-clear; all active investment management is a futile exercise - a foolish and tragic waste of time and money. All apparent outperformance, both long term and short, are results, not of hard work or superior talent, but luck, randomness and the law of large numbers. If the EMH holds, the rational investor should invest only in passive index funds. But here we are struck by an exquisite paradox: in order for the market to be efficient *in the first place*, it must of course be populated by a large number of hard-working, smart and profit seeking active investors who, by definition, do *not* believe that the markets are efficient! If we all suddenly "converted" to EMH, sacked our active managers, and parked all of our assets in index funds, any efficiency of the market would suddenly vanish! The dog is chasing it's own tail!" (This curious phenomena is sometimes called the "Grossman and Stiglitz paradox", after the two economists who first made the observation).

⁴ Peter Tanous, *"The Wealth Equation"*, New York Institute of Finance, 1999

Jim Ware, *"The Psychology of Money"*, Wiley Finance, 2001

Ch. 19 from David Blenkhorn, Craig Fleisher (ed.), *"Controversies in Competitive Intelligence: The Enduring Issues"*, Praeger 2003, Robin Lahey, *"What Types of People Perform Competitive Intelligence Best? A Type-Indicator Approach"*

Ware & Dethmer, *"High Performing Investment Teams"*, Wiley 2006

⁵ Judith A. Chevalier and Glenn Ellison, *"Are Some Mutual Funds Managers Better Than Others? Cross-Sectional Patterns in Behavior and Performance"*, Journal of Finance, June 1999

Haitao Li, University of Michigan - Stephen M. Ross School of Business, Rui Zhao, BlackRock Inc., Xiaoyan Zhang, Cornell University - Samuel Curtis Johnson Graduate School of Management, *"Investing in Talents: Manager Characteristics and Hedge Fund Performances"*, Working Paper, March 2008

⁶ Michael Mauboussin, *"The Consilient Observer: A Process for Outperformance"*, Credit Suisse First Boston, March 26, 2002

Michael Mauboussin, *"The Consilient Observer: Investing with Style"*, Credit Suisse First Boston, November 19, 2003

Michael Mauboussin, *"Mauboussin on Strategy: "Turtles on Omaha; The Mindset of Great Investors"*, Legg Mason Capital Management

⁷ Arthur Ziekkel, *"Organizing for Creativity"*, Financial Analysts Journal, November – December 1983

Whitney Tilson, *"Traits of Successful Money Managers"*, July 17, 2001, The Motley Fool

Kenneth Sawka, *"Finding Intelligence Analysts"*, Fuld & Co. Inc.

Justin Menkes, *"Hiring for Smarts"*, Harvard Business Review, November 2005

⁸ Mark Sellers, *"So You Want To Be The Next Warren Buffett? How's Your Writing?"* Keynote speech at Harvard in 2007 (transcript) Note: Sellers is the founder and manager of Sellers Capital, a fund following a so-called Focus Investing strategy (i.e. a concentrated portfolio (5-15 holdings) and long holding period). Since its inception (August 1, 2003) to October 14, 2008, the fund had an annualized return of 19,86 % (against 5,16 % of the S&P500).

⁹ Author note: (a) since the findings are an amalgamation from several sources, some concepts may overlap, and: (b) where the overlap is significant, I have taken the liberty to organize them by e.g. bundling or grouping them together or omitting obvious duplicates.



HELSINKI CAPITAL PARTNERS

Helsinki Capital Partners Rahastoyhtiö Oy • Y-tunnus: 2154336-2 • www.helsinkicapitalpartners.fi • Tallberginkatu 1 C 136, 00180 Helsinki Finland • puh. 09 689 88 470 • faksi 09 689 88 475 • Kauppakatu 28 A 22, 40100 Jyväskylä Finland • puh. 09 689 88 474 • faksi 09 689 88 475

¹⁰ One study (Chevalier et al.) found that managers with an MBA had higher average returns than managers without an MBA. I have taken the liberty to treat the findings in the Chevalier study as mainly supporting the hypotheses of the positive correlation between *any* relevant education and investment returns.

¹¹ Tilson

¹² Chevalier et al., Zhao et al.

¹³ Sellers

¹⁴ Tilson, Menkes

¹⁵ One study (Chevalier et al.) found that managers from higher-SAT undergraduate institutes had higher returns. The SAT Reasoning Test (formerly Scholastic Aptitude Test and Scholastic Assessment Test) is a standardized test for college admissions in the United States. The SAT is used to determine whether or not a person is ready for college. SAT consists of three major sections: Critical Reading, Mathematics, and Writing. Certain high IQ societies, like Mensa, use scores as part of their admission tests. Since SAT –scores are probably very highly correlated with general intelligence, I have taken the liberty to treat the findings in the Chevalier study as mainly supporting the hypotheses of the positive correlation between general intelligence and investment returns.

¹⁶ One source (Sellers) separately mentioned “Willingness to learn from past mistakes” as a quality necessary for successful investing. I have taken the liberty to group this trait under ”Intelligence”.

¹⁷ One source (Sellers) separately mentioned “Good writing skills” as a quality necessary for successful investing. Thus Sellers: *“I believe you need to be a good writer. Look at Buffett; he’s one of the best writers ever in the business world. It’s not a coincidence that he’s also one of the best investors of all time. If you can’t write clearly, it is my opinion that you don’t think very clearly. And if you don’t think clearly, you’re in trouble. There are a lot of people who have genius IQs who can’t think clearly, though they can figure out bond or option pricing in their heads.”* Consequently, and in line with Sellers’ reasoning, I have taken the liberty to group this trait under ”Intelligence”.

¹⁸ One source (Tilson) separately mentioned numeracy (i.e. “Good with numbers”) as a quality necessary for successful investing. I have taken the liberty to group this trait under ”Intelligence”.

¹⁹ Tanous, Ware, Sawka, Lahey, Mauboussin, Ware & Dethmer

²⁰ One source (Tilson) separately mentioned “Analytical decision making style” as a quality necessary for successful investing. Since this implies a trait inherent to the MBTI Rational temperament, I have taken the liberty to group this trait under ”Rational temperament”.

²¹ The MBTI or Myers-Briggs Type Indicator assessment is a psychometric questionnaire designed to measure psychological preferences in how people perceive the world and make decisions. The Myers-Briggs typology model regards personality type as similar to left or right handedness: individuals are either born with, or develop, certain preferred ways of thinking and acting. The MBTI sorts some of these psychological differences into four opposite pairs, or “dichotomies,” with a resulting 16 possible psychological types. Source: Wikipedia

²² Tilson

²³ Tilson, Sellers

²⁴ Tilson

²⁵ Sellers

²⁶ Tilson, Sellers

²⁷ According to Sellers, the most critical quality is strong nerves. Thus Sellers: *“And finally the most important, and rarest, trait of all: The ability to live through volatility without changing your investment thought process. This is almost impossible for most people to do; when the chips are down they have a terrible time not selling their stocks at a loss. They have a really hard time getting themselves to average down or to put any money into stocks at all when the market is going down. People don’t like short-term pain even if it would result in better long-term results. Very few investors can handle the volatility required for high portfolio returns. They equate short-term volatility with risk. This is irrational; risk means that if you are wrong about a bet you make, you lose money. A swing up or down over a relatively short time period is not a loss and therefore not risk, unless you are prone to panicking at the bottom and locking in the loss. But most people just can’t see it that way; their brains won’t let them. Their panic instinct steps in and shuts down the normal brain function.”* I have taken the liberty to translate this trait to “Strong nerves”.

²⁸ Ziekkel, Mauboussin.

²⁹ One source (Sellers) separately mentioned “Inherent sense of risk based on common sense” as a quality necessary for successful investing. Since this implies an intuitive ability, I have taken the liberty to group this trait under ”Creativity”.

³⁰ One source (Sellers) separately mentioned “Balance of ”Left side” (analytical) and ”Right side” (intuitive) – thinking” as a quality necessary for successful investing. Since this implies an intuitive ability, I have taken the liberty to group this trait under ”Creativity”.

³¹ In a survey of 100 professional investors with superior long-term track records, the participants reported the following undergraduate majors (% of respondents): economics (39 %), business (19 %) and finance (19%). Less traditional backgrounds included: biology (5 %), philosophy (4 %), english (3 %), history (2 %), psychology (1 %) and religion (1 %). Reported graduate majors included: finance/investments (40 %), business (17 %), economics (6 %), law (2 %), chemistry (1 %), east-asian studies (1 %) and english (1 %). Source: Peter Tanous, *"The Wealth Equation"*, New York Institute of Finance, 1999

³² Sellers

³³ The argument for business experience is captured in two quotes by Buffett: *"I am a better investor because I am a businessman and a better businessman because I am an investor."*

and *"Can you really explain to a fish what it's like to walk on land? One day on land is worth a thousand years of talking about it, and one day running a business has exactly the same kind of value."*

³⁴ According to the study by Chevalier et al., younger managers outperformed older managers; a manager that was 12 years older than the mean (44 years) lagged the mean manager by one percentage point per year. As one possible explanation for these findings it was speculated that younger managers possibly work harder. However, at least some of the difference was attributable to differences in fee structure and survivorship bias. Source: Judith A. Chevalier and Glenn Ellison, *"Are Some Mutual Funds Managers Better Than Others? Cross-Sectional Patterns in Behavior and Performance"*, Journal of Finance, June 1999

³⁵ Thus Sellers: *"But you can't compound money at 20% forever unless you have that hard-wired into your brain from the age of 10 or 11 or 12. I'm not sure if it's nature or nurture, but by the time you're a teenager, if you don't already have it, you can't get it. By the time your brain is developed, you either have the ability to run circles around other investors or you don't. Going to Harvard won't change that and reading every book ever written on investing won't either. Neither will years of experience. All of these things are necessary if you want to become a great investor, but in and of themselves aren't enough because all of them can be duplicated by competitors....And the reason is that it doesn't much matter what your IQ is, or how many books or magazines or newspapers you have read, or how much experience you have, or will have later in your career. These are things that many people have and yet almost none of them end up compounding at 20% or 25% over their careers."* Source: Mark Sellers, *"So You Want To Be The Next Warren Buffett? How's Your Writing?"* Keynote speech at Harvard in 2007

³⁶ *"Mainstream Science on Intelligence"* was an opinion piece published in the Wall Street Journal on December 13, 1994. It was written by psychology professor Linda Gottfredson, and signed by Gottfredson and 51 other professors specializing in intelligence and related fields. It listed 25 statements which claimed to uphold findings on the subject of intelligence research discussed in the controversial book, *"The Bell Curve"*.

³⁷ *"Success in investing doesn't correlate with IQ -- once you're above the level of 125. Once you have ordinary intelligence, what you need is the temperament to control the urges that get other people into trouble in investing."*-- Warren Buffett

³⁸ Sellers

³⁹ The claim that high intelligence is positively correlated with good investment returns may sound so naively self-evident as being almost a truism. However, considering the complexities involved, beginning with the (still open) question of market efficiency, we must be careful not to jump to conclusions. Nevertheless, some researchers have looked into the problem. For example, see: M. Grinblatt, M. Keloharju and J. Linnainmaa, *"IQ, trading behavior, and performance"*, Journal of Financial Economics, 2011

⁴⁰ The measurement of intelligence has long been a controversial subject, with opinions regarding standardized tests ranging from seeing them as almost useless to being relatively reliable tools of measuring general cognitive capability. The debate has often been highly politicized. However, most researchers probably agree that there is a relatively strong correlation between performance in standardized intelligence tests and a persons' ability to solve problems and perform complex tasks.

⁴¹ The Rational temperament is one of the four temperaments defined by psychologist David Keirsey. The Rational temperament correlates with the NT (intuitive thinking) Myers-Briggs types. Rationals trust reason implicitly, relying on objective observations and factual analysis in any given situation. Keirsey identified the following key traits of the Rational temperament: abstract in communicating and pragmatic in pursuing their goals. Rationals are unconventional thinkers when deciding on a task or solving a problem. Individualistic, eccentric and non-conformist by nature, Rationals observe their own interests as a response to action, free from societal conformity or traditional thinking. Rationals are relatively scarce, comprising approximately 5 to 10 percent of the population. Source: Wikipedia

⁴² The MBTI or Myers-Briggs Type Indicator assessment is a psychometric questionnaire designed to measure psychological preferences in how people perceive the world and make decisions. The Myers-Briggs typology model regards personality type as similar to left or right handedness: individuals are either born with, or develop, certain

preferred ways of thinking and acting. The MBTI sorts some of these psychological differences into four opposite pairs, or "dichotomies," with a resulting 16 possible psychological types. Source: Wikipedia

⁴³ Once during a Berkshire Hathaway shareholders' meeting, Warren Buffet was asked to reveal the secrets of success of Charlie Munger. Warren Buffet's reply to the audience was as follows: "*Well, one time some attractive woman sat next to Charlie and asked him what he owed his success to, and, unfortunately, she insisted on a one word answer. He had a speech prepared that would have gone on for several hours. But when forced to boil it down to one word, he said that was "rational". You know, he comes equipped for rationality, and he applies it in business. He doesn't always apply it elsewhere, but he applies it in business and that has made him a huge business success.*"

⁴⁴ Jim Ware, "*The Psychology of Money*", Wiley Finance, 2001

⁴⁵ Michael Mauboussin, "*The Consilient Observer: Investing with Style*", Credit Suisse First Boston, November 19, 2003

⁴⁶ Peter Tanous, "*The Wealth Equation*", New York Institute of Finance, 1999

⁴⁷ Ware & Dethmer, "*High Performing Investment Teams*", Wiley 2006

⁴⁸ As Benjamin Graham, the father of value investing has famously said, "*You are neither right nor wrong because the crowd disagrees with you. You are right because your data and reasoning are right.*"

⁴⁹ Caveat: although self-evident, it bears stressing that for an investment idea to be any good, it isn't sufficient for it to be *original* (i.e. different or contrarian), it must also be *true* (i.e. more in line with "reality" than is the "majority view", if not obviously at the time of formulation, at least after the lapse of some time, and thus more useful). Even if one, as an active manager, doesn't believe that markets are *perfectly* efficient, one certainly would do wisely in believing that markets are *for the most part* efficient (i.e. *most* securities are correctly priced *most of the time*) – to claim anything else would be monumentally arrogant and foolish. That markets are for the most part efficient means that *mispriced securities are the exception, not the rule*. The knack is to pick one's battles; to spot the rare mispricings and act upon them. Since the market (i.e. "the crowd") is correct in the overwhelming majority of instances, simply going against the crowd (without any real edge) is a recipe for disaster. Self-confidence not sufficiently backed by intelligence, experience and skill is *arrogance*, one of the root causes of recklessness.

⁵⁰ Self-confidence is, almost per definition, difficult to bluff, and by simply observing demeanor one should be able to reliably gauge the presence or absence of self-confidence. However, correctly diagnosing *hubris* (i.e. self-confidence that is unfounded and extreme) may be more tricky.

⁵¹ One could well reason that e.g. simply graduating from a prestigious business school requires a level of self-confidence that should be sufficient for most investment jobs.

⁵² Just as allegedly 80 % of drivers consider themselves better-than-average drivers, most people honestly think that they are independent thinkers. However, if we define independent thinking as thinking that is free from the influence of peers and the surrounding culture and, as the case may be, *in opposition to generally held beliefs*, it is almost by definition impossible that the majority of people be independent thinkers (since going against the crowd is, by definition, something that only a small minority can do).

⁵³ One of the very few scientific experiments to test the human ability of independent thinking was conducted in the 40's by Yale psychologist Solomon Asch. The goal of the experiment was to establish the degree to which people succumb to implicit peer pressure. The experiment was conducted using 123 male participants. Each participant was put into a group with 5 to 7 "confederates" (People who knew the true aims of the experiment, but were introduced as participants to the naive "real" participant). The participants were shown a card with a line on it, followed by another card with 3 lines on it labelled a, b, and c. The participants were then asked to say which line matched the line on the first card in length. Each line question was called a "trial". The "real" participant answered last or next to last. For the first two trials, the subject would feel at ease in the experiment, as he and the other "participants" gave the obvious, correct answer. On the third trial, the confederates would start all giving the same *wrong* answer. There were 18 trials in total and the confederates answered incorrectly for 12 of them, these 12 were known as the "critical trials". The aim was to see whether the real participant would change his answer and respond in the same way as the confederates, despite it being the wrong answer. Asch had anticipated that the majority of people would not conform to something obviously wrong, but the results showed that participants conformed to the majority on 37% of the critical trials. Only 25% of the participants did not conform on any trial. Fully 75% conformed at least once, and 5% conformed every time. The Asch experiment showed that most of us prefer to adjust our opinions and behaviour to that of the majority, even in cases where it is more or less obvious that the majority is wrong! Source: S.E. Asch, "*Effects of Group Pressure Upon the Modification and Distortion of Judgments*" Harold Guetzkow, ed., Groups, Leadership and Men, Pittsburgh, PA: Carnegie University Press, 1951. For an interesting discussion on the implications of Asch's study to investing, see Michael Mauboussin; "*Aver and Aversion*", Legg Mason Capital Management, August 9, 2005. For those readers who feel that 37 % isn't that high a number, it should be pointed out that: (a) the subjects were students at an elite university (i.e. presumably persons of higher than average intelligence and self-confidence); (b) the task was simple and



unambiguous, and (c) the subjects had nothing to win or lose by accommodating. Consequently it's probably not jumping to conclusions to say that the percentage of "independent thinkers" would probably drop dramatically with "real" people in a "real" setting, in which: (i) the problems are usually more complex and ambiguous (e.g. the choice between stocks X and Y), and; (ii) the social pressure is more intense and concrete (e.g. the pressure facing a portfolio manager who justifiably fears losing his job if he chooses stock X that "everybody knows" is a risky investment, and therefore opts for stock Y that is generally considered a "good" (read: popular) investment). A further advantage of going for the popular stock is that if it actually tanks, one doesn't have to take the blame alone – since "everybody else" has done the same mistake, the blame is diluted. (to quote J.K. Galbraith: *"In any great organization it is far, far safer to be wrong with the majority than to be right alone."*) The problem for investors with this line of reasoning is of course that one doesn't produce superior returns by investing in assets that "everybody knows" are good investments; if "everybody" knows it, it's already discounted in the price. At its core, all active investing is (or should be) more or less contrarian – going against the crowd. The problem is captured in the quote by Keynes: *"It is the long term investor who will in practice come in for the most criticism. For it is the essence of his behaviour that he should be eccentric, unconventional and rash in the eyes of the average opinion. If he is successful, that will only confirm the general belief in his rashness; and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."*

⁵⁴ Many famous thinkers have commented on the apparent difficulty of genuine independent thinking. Here's a small sample:

- *"Copernicus did not publish his book on the nature of the solar system until he was on his deathbed. He knew how dangerous it is to be right when the rest of the world is wrong."* (Thomas Brackett Reed)
- *"When 'everybody' knows that something is true, nobody knows nothin'!"* (Andy Grove)
- *"All truth passes through three stages: First, it is ridiculed; Second, it is violently opposed; and Third, it is accepted as self-evident."* (Arthur Schopenhauer)
- *"When everyone is against you, it means that you are absolutely wrong--or absolutely right."* (Albert Guinon)
- *"All the important human advances that we know of since historical times began have been due to individuals of whom the majority faced virulent public opposition."* (Bertrand Russell)
- *"The fact that an opinion has been widely held is no evidence whatever that it is not utterly absurd; indeed in view of the silliness of the majority of mankind, a widespread belief is more likely to be foolish than sensible."* (Bertrand Russell)
- *"Eccentricity is not, as some would believe, a form of madness. It is often a kind of innocent pride, and the man of genius and the aristocrat are frequently regarded as eccentrics because genius and aristocrat are entirely unafraid of and uninfluenced by the opinions and vagaries of the crowd."* (Edith Sitwell)
- *"Few people are capable of expressing with equanimity opinions which differ from the prejudices of their social environment. Most people are even incapable of forming such opinions."* (Albert Einstein)
- *"In economics, the majority is always wrong."* (John Kenneth Galbraith)

⁵⁵ Paul Graham is a programmer, venture capitalist, and essayist, known for his work on Lisp (a computer programming language). In one of his more (thought) provoking essays ("What You Can't Say"), he discusses the strange fact that most people seriously believe themselves to be independent thinkers when it's apparent that they are not. *"It seems to be a constant throughout history: In every period, people believed things that were just ridiculous, and believed them so strongly that you would have gotten in terrible trouble for saying otherwise. Is our time any different? To anyone who has read any amount of history, the answer is almost certainly no. It would be a remarkable coincidence if ours were the first era to get everything just right. It's tantalizing to think we believe things that people in the future will find ridiculous. What would someone coming back to visit us in a time machine have to be careful not to say? That's what I want to study here. But I want to do more than just shock everyone with the "heresy du jour". I want to find general recipes for discovering what you can't say, in any era. Let's start with a test: Do you have any opinions that you would be reluctant to express in front of a group of your peers? If the answer is no, you might want to stop and think about that. If everything you believe is something you're supposed to believe, could that possibly be a coincidence? Odds are it isn't. Odds are you just think whatever you're told."* Source: Paul Graham, *"Hackers & Painters: Big Ideas from the Computer Age"*, O'Reilly Media, Inc. 2004

⁵⁶ At the stock level, a value investment can have one of three possible outcomes: (1) a stock may re-rate to reflect its "true" (intrinsic) value as the market corrects the underpricing; (2) The stock may stay depressed, but potentially generate a return through higher dividend payments, or; (3) The stock may never appreciate (so-called "value trap"). So patience is a prerequisite for value managers as long as he or she is dealing with the first two types of stocks (and a potential problem when it comes to the third type of stock).

⁵⁷ One of the most famous psychological experiments measuring patience was the so-called "marshmallow experiment", conducted by Walter Mischel at Stanford University and discussed by Daniel Goleman in his popular



work on emotional intelligence. As interesting as it is, such testing is probably not applicable to adults in a way that would give relevant data for investing purposes. In the experiment, a group of four-year olds were given a marshmallow and promised another, provided they could wait 20 minutes before eating the first one. Some children could wait and others could not. The researchers then followed the progress of each child into adolescence, and demonstrated that those with the ability to wait were better adjusted and more dependable (determined via surveys of their parents and teachers), and scored an average of 210 points higher on the Scholastic Aptitude Test (SAT). Source: Shoda, Y., Mischel, W., Peake, P. K. (1990). *“Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions.”* Developmental Psychology

⁵⁸ Behavioural economics and behavioral finance are closely related fields that have evolved to be a separate branch of economic and financial analysis which applies scientific research on human and social, cognitive and emotional factors to better understand economic decisions by consumers, borrowers, investors, and how they affect market prices, returns and the allocation of resources. The field is primarily concerned with the bounds of rationality (selfishness, self-control) of economic agents. Behavioural models typically integrate insights from psychology with neo-classical economic theory. There are three main themes in behavioural finance and economics:

- Heuristics: People often make decisions based on approximate rules of thumb, not strictly rational analysis.
- Framing: The way a problem or decision is presented to the decision maker will affect their action.
- Market inefficiencies: There are explanations for observed market outcomes that are contrary to rational expectations and market efficiency. These include mispricings, non-rational decision making, and return anomalies.

⁵⁹ Such mental mistakes include e.g. overconfidence, projecting, herding, commitment- and consistency biases, anchoring, asymmetric loss-aversion and mental accounting, just to name a few.

⁶⁰ *“Success in investing doesn't correlate with IQ -- once you're above the level of 125. Once you have ordinary intelligence, what you need is the temperament to control the urges that get other people into trouble in investing.”* (Warren Buffett)

⁶¹ *“And finally the most important, and rarest, trait of all: The ability to live through volatility without changing your investment thought process. This is almost impossible for most people to do; when the chips are down they have a terrible time not selling their stocks at a loss. They have a really hard time getting themselves to average down or to put any money into stocks at all when the market is going down. People don't like short-term pain even if it would result in better long-term results. Very few investors can handle the volatility required for high portfolio returns. They equate short-term volatility with risk. This is irrational; risk means that if you are wrong about a bet you make, you lose money. A swing up or down over a relatively short time period is not a loss and therefore not risk, unless you are prone to panicking at the bottom and locking in the loss. But most people just can't see it that way; their brains won't let them. Their panic instinct steps in and shuts down the normal brain function.”* (Mark Sellers)

⁶² Creativity eludes rigorous definition and analysis. Nevertheless, many famous thinkers have commented on originality and creativity and what constitutes it. Here's a small sample:

- *“If all your peers understand what you've done, it's not creative.”* (H. Heimlich)
- *“Originality implies being bold enough to go beyond accepted norms.”* (Anthony Storr)
- *“Originality is a by-product of sincerity.”* (Marianne Moore)
- *“The world in general doesn't know what to make of originality; it is startled out of its comfortable habits of thought, and its first reaction is one of anger.”* (W. Somerset Maugham)
- *“The principle mark of genius is not perfection but originality, the opening of new frontiers.”* (Arthur Koestler)
- *“Proximity to the crowd, to the majority view, spells the death of creativity. For a soul can create only when alone, and some are chosen for the flowering that takes place in the dark avenues of night.”* (Abraham Joshua Heschel)
- *“There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.”* (Edward de Bono)
- *“Creativity involves breaking out of established patterns in order to look at things in a different way.”* (Edward de Bono)
- *“Creative people who can't help but explore other mental territories are at greater risk, just as someone who climbs a mountain is more at risk than someone who just walks along a village lane.”* (R.D. Laing)
- *“All good things which exist are the fruits of originality.”* (John Stuart Mill)
- *“Originality does not consist in saying what no one has ever said before, but in saying what you think yourself.”* (James Stephens)



-
- “The creative individual has the capacity to free himself from the web of social pressures in which the rest of us are caught. He is capable of questioning the assumptions that the rest of us accept.” (John W. Gardner)

⁶³ Caveat: although self-evident, it bears stressing that for an investment idea to be any good, it isn’t sufficient for it to be *original* (i.e. different or contrarian), it must also be *true* (i.e. more in line with ”reality” than is the ”majority view”, if not obviously at the time of formulation, at least after the lapse of some time, and thus more useful). Even if one, as an active manager, doesn’t believe that markets are *perfectly* efficient, one certainly would do wisely in believing that markets are *for the most part* efficient (i.e. *most* securities are correctly priced *most of the time*) – to claim anything else would be monumentally arrogant and foolish. That markets are for the most part efficient means that *mispriced securities are the exception, not the rule*. The knack is to pick one’s battles; to spot the rare mispricings and act upon them. Since the market (i.e. ”the crowd”) is correct in the overwhelming majority of instances, simply going against the crowd (without any real edge) is a recipe for disaster. Self-confidence not sufficiently backed by intelligence, experience and skill is arrogance, one of the root causes of recklessness.

⁶⁴ According to Ziekkel, creative people are typically:

- intellectually curious
- flexible and open to new information
- able to recognize problems and define them clearly and accurately
- able to put information together in many different ways to reach a solution
- responsive to recognition and praise from colleagues
- anti-authoritarian and unorthodox
- mentally restless, intense and highly motivated
- highly intelligent
- goal-oriented

Source: Arthur Ziekkel, ”Organizing for Creativity”, Financial Analysts Journal, November – December 1983