How to make (good) decisions

Paul Moroz, CFA, Chief Investment Officer, Portfolio Manager
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Discussion summary

CIO Paul Moroz unpacks the foundational components to better decision making for investing, business, and life.

Highlights:

- Objective reality, the evolution of the brain, and why humans aren't great at making decisions
- How decision making is really an "invisible product"—one that most companies are actually in the business of making
- The value of North Stars: Paul shares a personal decision-making framework (HAPPY C)
- Why building an "information collage" is key and what this looks like in investing—Paul's 3 Cs, plus a bonus:
    - Context
    - Cognitive diversity
    - Communication
    - Clarity and decision rights
- How "magic tricks" can help in dealing with uncertainty and change
- On the flipside: How to make (bad) decisions

Introducing the invisible

Here's a provocative statement: investing isn't actually about picking stocks. Nor is it really about executing on an investment philosophy, process, or risk management framework. In our view, these only tangentially brush up against the more elemental product of an investment management organization: decisions.

To drive the point home, our research team at Mawer provides a simple product for our clients: repeatable, value-added decisions. And we are not alone. Consultants? Decision-making firm. Software company? Decision-making firm. Corporate board? Decision-making body. Government? Decision makers. Parents? Decision makers.

The goal of this paper is multi-purpose:

> First and foremost, to elevate the consideration of decision making itself. For the most part, the processes and circumstances that shape how decisions are made are largely invisible and subconscious. The simple act of moving decisions from the invisible into the limelight may add significant value for most organizations.
>
> Second, in recognizing that the core product of many organizations is decisions, leaders may then choose very different paths for determining how they are made. Our epistemic belief is that the environment in which an organization operates plays an outsized role in the quality of decisions made.
>
> Third, to inspire thought with regards to ideas and processes that lead to better decisions; ones that can be applied to business and life, just as much as investing.

One final note: the concepts discussed in this paper largely aggregate the works of others. It is not this paper's purpose to explore the fascinating details behind these concepts, such as behavioural finance. For readers seeking greater background, we have included a list of books that have been influential in our thinking and that we'd highly recommend to those curious about decision making.

The fragility of knowledge

In *Atlas Shrugged*, Ayn Rand popularizes a world based on objective reality, one where there are fixed reference points on which to base information for decisions: truth independent from subjectivity. The concept of objectivism has long been an idealistic model for decision-making capitalists, and to be sure, leads to conclusions for how one might optimize decision making. However, there are many indications that suggest the real world operates quite differently.

Long before the publication of *Atlas Shrugged*, Scottish philosopher David Hume cast doubt on objectivism and inductive reasoning. Hume ultimately suggests that since our body of knowledge is chiefly acquired through what we perceive, any series of observations—no matter how consistent—at best represent a probability rather than an objective truth. Our world requires skepticism as observations cannot translate into irrefutable proof.

More recently, in *The Alchemy of Finance*, George Soros puts another bullet in Rand's world of objective reality by suggesting a constraint to human knowledge. Soros posits that as humans, it is unreasonable to assume one could ever have complete and perfect information. In other words, the entire body of available knowledge, interpreted without error or distortion, is unlikely to ever be contained in a single human brain.

Further, in an area of disagreement with his intellectual hero Karl Popper, Soros suggests a line of demarcation between natural sciences (e.g., chemistry, physics) and social sciences (e.g., economics, psychology) given that the latter are comprised of thinking participants. The inherent reflexivity in the social sciences in which participants' moods, views, and actions both shape and are shaped by a course of events implies a much more nuanced world for decision making.

Figure 1: Reflexivity

Source: Kevin Kallaugher

Indeed, our physical world is strange enough itself. Pick up a copy of Gary Zukav's *The Dancing Wu Li Masters*, a non-technical journey into the natural world. Simple experiments will send shivers up your spine. One well-known example in physics is the double-slit experiment, in which visible light is shown to have both the properties of waves and particles, depending on how it is observed. Physicist Richard Feynman calls this wave-particle duality both the "heart" and the "only mystery" of quantum mechanics; something that can be observed rather than explained.

Finally, Professor Donald Hoffman of the University of California refutes the idea that our sensory systems evolved through natural selection to provide us with a true representation of our objective reality. Rather, evolutionary theory is about fitness, adaptive behaviour, and ultimately the ability to successfully reproduce. During a recent appearance on the Tim Ferriss Show (podcast), Hoffman describes it as follows: "Natural selection didn't shape us to see the truth, but it shaped us with sensory systems that are like a user interface to the truth. Right now, we're both sitting in front of laptops, and we're able to—I've got gigabytes of memory and all this circuitry inside my laptop. I have no idea about the truth of that."

The results of Hoffman's work in cognitive function borders on the now widely recognized view of the limitations of the human brain. As humans, we are constantly battling our lizard brains designed for survival, defending against a host of behavioural errors that are well documented in the landmark work of Daniel Kahneman and Amos Tversky.

To summarize, the real world in which we make decisions is surely different than the one described in *Atlas Shrugged*. Far from an environment of objective reality and truth, Hume reasons that we can't prove most of our knowledge. Soros reminds us that as humans, our knowledge is imperfect and incomplete, and that our own actions can influence the outcomes. Quantum physics questions a static framework for knowledge, and academia increasingly suggests that our sensory perceptions of the external environment didn't evolve to provide us with objective truths, resulting in significant behavioural shortcomings.

In the real world, you don't know very much. And it's a strange world to think you can know much. What you know is incomplete, imperfect, subject to an often bizarre physical world and human manipulation. In short, it is a world of uncertainty.

What, then, can we do to make repeatable, value-added decisions in such a world?

North Stars

To begin, a single, clear philosophy and frameworks may serve as guiding lights. Not only do these North Stars shift the focus to the appropriate subject matter, but they also serve to mitigate a host of behavioural errors.

In *Thinking, Fast and Slow*, Kahneman describes how he introduced a novel methodology for evaluating candidates for combat duty in the Israeli military. His simple framework focused on a handful of key attributes required for the job and reduced the potential for other biases to creep in. This produced tangibly better results than the prior methodology that relied on vague intuition. Oakland Athletics' general manager Billy Beane used a similar approach for evaluating baseball talent, bucking the conventional wisdom in scouting that proved to be rife with bias, a story popularized in Michael Lewis' *Moneyball*.

Philosophy and process help us slow down and engage what Kahneman describes as our System 2 thinking—conscious, rational, and purposeful—rather than the System 1 thinking that emphasizes speed and survival.

For many in the investment community, this isn't news. However, there's a risk that industry participants short-cut the link between investment philosophy and consistency of performance. A better way to think about this might be to evaluate philosophy as an element of decision making:

- What content is being considered to frame the decision-making process?
- How does the philosophy mitigate and manage error?
- In executing the philosophy, what trade-offs occur in making decisions?

Beyond investing, there are many places where these simple tools can be used to elevate decisions. One of the more starved applications for North Stars in decision making comes in the home. Consider the difficult role of parenting: there is no official textbook and lots of emotions. Parents ultimately make a series of decisions, often with lack of sleep, and—surprise!—many errors.

How many parents have gone through the process of formally establishing a philosophy to lean on? The same techniques apply. In our house, my wife Carla and I came up with the following set of guiding principles that represent our values (dubbed "HAPPY C") that we can turn to when making decisions with our children:

- Honesty
- Always be learning
- (be) Proactive
- Pursue Passions
- (do) Your best
- Care

We still make plenty of errors, and these guidelines don't provide answers.

But over time, better decisions are made when frameworks are established and followed.

Process and checklists

There are old pilots and there are bold pilots. But there are no old, bold pilots.

If North Stars establish frameworks for conceptual error mitigation, processes and checklists are the nuts and bolts that can help us avoid errors and improve the odds of good decision making.

Boeing first introduced a pre-flight checklist for their pilots in the 1930s following a deadly crash in which the pilots had neglected to disengage the aircraft's gust locks. Over time, this practice has been widely adopted to ensure that even the most experienced pilots—who may feel the urge to shortcut mundane checks—complete them.

The investment community has done a good job of recognizing the importance of a clear and repeatable process, with a continued need for refinements to improve decision making.

A decade ago, following an investment decision that resulted in capital impairment, we realized that we had failed to identify that a management team had been improperly capitalizing some expenses. In response, we introduced a forensic accounting checklist as a dedicated step in our research process. Simply put, this checklist is designed to slow analysts down and ensure appropriate depth and completeness of diligence before making an investment decision. As shown below, the elements involved are simple: cash flow conversion, trends in days payable, changes in amortization, etc. But the results are powerful in catching peculiarities that may influence our evaluation of business management quality and/or the character of management.

Figure 2: Mawer forensic accounting snapshot

Potential Accounting OR Operating Concerns	Min	Max	Ave		
Has COGS been an unstable percentage of sales OR changed structurally over the years?	83.2%	84.6%	83.9%	no	
Has Operating Cost Margins been an unstable percentage of sales OR changed structurally over the years?	12.1%	13.8%	12.9%	no	
Has EBIT Margins been an unstable percentage of sales OR changed structurally over the years?	1.7%	4.5%	3.2%	no	
Do extraordinary expenses/Income occur frequently and represent a large percentage of EBIT?			-0.7%	no	The company faced restructuring charges due to its Denmark operations which the new CEO divested
Is the CF tax rate continually lower then the IS tax paid?			88.3%	no	
Is the effective tax rate Inconsistent over time?	9.1%	38.3%	21.1%	no	
Does DSO trends suggest a red flag? Is it above 100 days?	8.48	15.27	12.84	no	
Does DSI trends suggest a red flag? Is it above 100 days?	43.13	63.85	53.80	no	
Does DPO trends suggest a red flag? Is it above 100 days?	16.66	31.05	25.87	no	
How many days does it take for revenue to convert into cash?	35.84	52.22	40.77	no	Cash conversion took 52 days in FY2020 and averaged 41 days over the last 11 years.
Build up in Finished while Raw has dropped?				no	
Are net fixed assets declining as a percentage of Sales and of gross tangible fixed assets?				no	
Gross plant and equipment Increases OR Decreases sharply relative to total assets				no	
Accumulated depreciation declines as gross plant and equipment rises				no	
Are Capex spending below maintenance spending?			47.9%	no	
Is goodwill a high percentage of total assets? Is goodwill rising?				no	
Are there significant other intangibles?				no	Increase in FY2016 relates to acquisitions (not capitalized costs)
Are any other Asset or Liability an unstable percentage of Sales				no	
Are provisions unstable as a percentage of Sales or in absolute numbers?				no	
Are they managing Revenue or Earnings through Reserve Accounts?				no	
Has the financial year Changed?				no	
Revenue Recognition - is Inappropriate? Needs to be when service has been rendered and payment is reasonably assured.				no	

Yet, while most investment managers have a clearly defined process, the risk is that a good process doesn't get followed, or that it deteriorates into a mindless exercise…particularly during periods of stress or volatility when System 1 thinking tends to dominate. In the military, pre-flight checks are done out loud. Process needs to be brought alive, with effort in the execution. Leaders should ask themselves:

- Is my team appropriately trained in the process?
- How are stories and experiences shared to bring the process alive?
- How do people lead by example?

Philosophy and process don't rest on a plaque on the wall. Both must be brought to life.

The 3 Cs: Creating an information collage

It is difficult enough to manage a bad lizard brain, keep one's focus on the right areas, and use processes to slow down and mitigate behavioural errors when making decisions. But in our industry, managing the feedstock of information is an entirely different matter.

To do so, consider the following three questions:

1. Context: Do we have appropriate context in evaluating the options?

Thomas Hobson was an English liveryman who, despite having many horses in his stable, only offered his customers the horse in the stall closest to the door to avoid the overuse of his best assets. This Hobson choice—i.e., take it or leave it—underlines that a choice of one isn't a real choice, and can't lead to better decisions.

Deliberately seeking appropriate context supports a better decision-making environment. Ben Graham reinforces this in the *Intelligent Investor* with examples that contrast individual companies through an examination of history, relative attributes vs. industry peers, financial metrics, and the broad stock market overall.

Ultimately, as opposed to Hobson's "false" choice, context provides options. At Mawer, we've deliberately chosen to organize ourselves as generalists within asset classes. While there are certainly trade-offs to consider versus a more focused approach, the generalist model encourages exposure to the entire market to promote context and options, rather than having one's view narrowed to a particular industry.

2. Cognitive diversity: Does our team have enough different viewpoints?

It is increasingly well-understood that diverse teams tend to make better decisions. A team comprised of individuals who all grew up in the same country, went to the same school, majored in the same discipline, or read the same newspaper narrows the information collage rather than widening it.

A cognitively diverse team means that people think differently as a result of their backgrounds and life experiences. Discussions within our research team on Chinese technology giant Tencent serve to illustrate how this can provide for a better decision-making environment. Debate on the merits of Tencent's investment case have included team members with the following backgrounds:

- A lawyer, whose academic focus emphasized the nature of property rights and the role of government in maintaining and shaping rules and regulations. This is material for Tencent given the variable interest entity (VIE) structure through which the stock is listed.
- An entrepreneur with a history of incorporating companies and navigating the impact of associated regulations.
- Another entrepreneur who launched an internet company in university, with a first-hand appreciation for the merits of a virtual business model.
- An investor who grew up in China, is a daily user of Tencent's WeChat platform, and plays many of Tencent's online games.

Three of these four investors have lived in Asia. Two of the four experienced the dot-com bubble and subsequent crash. Given that Tencent's investment case rests on property rights in China, a robust valuation, a new age, and a scalable business model, this combination of viewpoints creates a better information collage on which to base investment decisions.

3. Communication: Can the information collage be effectively distributed to decision makers?

It is not enough to put in place an information collage. Information must be distributed so that sender-receiver friction can be mitigated.

In his recent book on the U.S. government's response to the COVID-19 pandemic, *The Premonition*, Michael Lewis introduces the concept of an L6: an individual who, despite sometimes sitting six levels down in the organizational hierarchy, has specific knowledge that may be vital to solving a problem. Lewis's book serves as a critique of government bureaucracy wherein L6 individuals are ignored, or whose input doesn't surface to those making decisions.

Put differently, context and cognitive diversity are meaningless unless individuals have the humility to hold their stories lightly, welcome ideas that challenge their own, engage in respectful debate, and have access to the communication structures that can distribute relevant information.

The starting point is a culture that puts emphasis on being open to different information. This implies a hierarchy and communication structure that recognizes that no one has a lock on knowledge. A culture of candour that teaches people how to provide feedback and how to listen are vital. Developing an appropriate lexicon to challenge ideas without triggering the receiver's lizard brain are helpful too. Mawer has worked for over 20 years with Jim Ware and the Focus Consulting team, and we recommend that all investors and leaders read his influential *High Performing Investment Teams*. (And then read it again.)

Perhaps the most important element in communication is trust. In a high-trust environment, communication is easy. When trust breaks down, so does communication. As a result, a chief goal in creating an excellent decision-making organization is building and maintaining trust levels.

What does your organization do to build and maintain trust?

A 4th C: Clarity and decision rights

One of the greatest wins in improving decision-making is providing transparency around who makes decisions and how they are made. These decision rights are established and clarified across all areas of our organization, whether it be buying a stock, hiring a new employee, or determining a new vendor.

Plenty of models exist and may be suitable for different organizations: consensus, majority vote, leader decides. The model we use is "leader decides with input." This promotes the use of the 3Cs while providing clarity and accountability. While the various decision-rights structures available have different trade-offs—notably with respect to speed and the level of buy-in desired—the main point is to establish clarity.

One final thought on clarity and decision rights: a hidden influence on decision making is an individual's incentives. Incentives can have a powerful influence on the direction of decision making. Leaders should ask themselves whether the incentive structures at their organizations foster a supportive decision-making environment.

The GROW model

To help leaders process the input and execute on their decision rights, we often lean on a problem-solving tool called the GROW model, originally introduced by Sir John Whitmore at Performance Consultants International. As the acronym suggests, there are four key steps:

- Goals: What are we trying to achieve?
- Reality: What is the situation today, including an evaluation of potential obstacles?
- Options: What's possible? (with an emphasis on thinking wide)
- Way forward: Clear agreements on who will do what and by when

In fact, when my wife and I were considering whether to move our family to Singapore to open an office, we went through the GROW model exercise to help us reach the decision. In this case, clarifying the reality of the situation—that our kids were young, and we might not have the same opportunity when they developed roots in middle and high school—was a key deciding factor.

Uncertainty + change

"When the facts change, I change my mind. What do you do, sir?"

~John Maynard Keynes[1]

We recently re-introduced a stock to our Canadian equity portfolio that we had eliminated only a few years earlier. In retrospect, it had been a mistake to eliminate this holding as it had performed well—both fundamentally and in stock price terms—in the interim. More importantly, we realized that we had misjudged the investment case. In adding the stock back to the portfolio, the lead portfolio manager confessed it was one of the most difficult and uncomfortable investment decisions he'd made in his career.

But as circumstances evolve, decisions need to be revisited. Foundationally, an open culture plays an outsized role. As part of culture, lexicon can help too. During our post-mortem process this past January, in which every member of the research team shares their mistakes and learnings from the prior year, one of our analysts was discussing a stock in which the investment thesis broke, and for which we had been too slow to respond to new information. Since he had been primarily responsible for the research on that company, the analyst was describing it as "my

[1] Or maybe not? https://www.wsj.com/articles/BL-MB-32547

stock." It was quickly pointed out to the analyst that this choice of language—in which the analyst tied himself to the idea—is dangerous. The stock doesn't know that you own it, and it doesn't care. Avoiding association makes it easier to change your mind.

Process and math should be leaned on, both in slowing to System 2 as well as in thinking probabilistically. Bayes' theorem provides a critical framework to help weigh new information. On the other hand, when evaluating decisions, a probabilistic world implies that sound decision making doesn't always work out. The world is indeed stochastic, and we only experience one of its possible iterations.

Finally, there is a time and place for decisions. Be aware of your HALTs (emotions tied to being hungry, angry, lonely, or tired). I'm not an advocate of tough decisions made past 3:00 p.m., and we often coach that it's okay to defer a decision that lacks a hard and fast timeline. Returning to our Canadian equity team, they've developed a practice over the past year to start the week with a meeting focused on situational awareness. This involves a review of relevant company-specific or world events, but also includes a discussion of any emotional factors that may impact their respective mindsets (e.g., lack of sleep due to a sick child). This vulnerability requires a high trust environment but may incrementally help shift the odds.

Magic tricks

Some good news: plenty of structures exist to help make decision making easier. We call these "magic tricks."

Options: Consider how to create options, whether in financial markets, business, or life. A convertible security is a wonderful invention as it defers the actual decision to the future without giving up the upside. But optionality is a mindset. Does a student have to choose a career path by the end of high school, or can they use more of their time to explore? Do you need to buy a summer cottage, or can you find an option to use one? What options can you develop in your organization?

- Two-way doors: This is a concept popularized by Amazon's Jeff Bezos. Some decisions are one-way doors; once made, they are incredibly difficult to reverse. Once you've made toast, you can't easily reverse the chemistry to go back to having bread. Big bets are more likely to be one-way doors than two-way doors.
- Off-ramps: Are there natural decision points in the future once a decision has been made to reverse course? Put differently, if an idea isn't working, can you change your mind?
- Black turtlenecks: Free up your decision-making bandwidth. Steve Jobs' choice of the iconic black turtleneck served to eliminate a decision from his busy day. Blue shirts are popular at Mawer. Speed readers will know that not all sentences are equal (spend more time on topic sentences) while the same concept applies to decisions: what you wear is not as important as who you marry.
- Redundancies: Ensure that key components of a decision have alternatives in case of failure. Mistakes can compound when investors don't have anything to act with. When planning a vacation, ensure that you have activities you can do regardless of the weather.

Postscript

Here's how to make (bad) decisions. Treat the world as an objective reality in which information is complete and perfect, without room for diversity of perspective and thought. Introduce bold hierarchy while eschewing costly philosophy and processes that seek context, cognitive diversity, and communication of those perspectives. Skip the math. When working as a team, avoid clarity in how decisions are made. When there are unconventional ideas, tie them to the identities of the individuals involved. Once a decision has been made, put your head in the sand and cast shame on those that change their minds. Create a culture of fear for sharing information; punish those who claim they don't know. Flog failure. Focus on speed. Measure and create incentives on short-term metrics outside of one's control. Avoid structures like options and off-ramps. And above all, remember that decisions are about winning, as opposed to avoiding errors. Bet big.

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