Panellists – Prof. Gerd Gigerenzer, Prof Madhu Veeraraghavan, Dr Sagneet Kaur, Prof Sanjay Kallapur, Prof Shyam Sunder (on video conferencing).
Moderator – Shreenivas Kunte

Proposed format:

**Total time: 90 minutes, panel starts 16.30 on Day 2 (Jan 15)**

I have budgeted about 30 minutes for each of the three rounds. We could introduce an optional round for audience Q&A before the final round. Given 90 minutes duration and five panelists, each panelist is likely to get about 15 to 20 minutes of speaking time.

As a moderator I propose to introduce the panellists and the subject matter.

**Round 1: Introductory round**
Prof Gerd - What is the meaning of heuristics, how has the field evolved
Prof Sanjay: Importance or lack of importance of heuristics, are there boundary areas
Dr Sagneet: What are you seeing in practice?
Prof Shyam: What are your views on heuristics as applicable to macro economics?
Prof Madhu: View on heuristics? Are heuristics influenced by mood swings?

**Round 2: Contours & Use case round**
Topics:
1. What are the most prominent use cases for using heuristics?
2. Are there areas that are beyond heuristics?
3. What are the types of heuristics that need to be unlearned?
4. Can a heuristic be learned?
5. What is the role of skill and that of luck?
6. What can we learn from Prospect theory? What needs to be dealt with caution?

**Round 3 - Closing round**
1. What are the areas of practice that need immediate attention?
2. Which areas will have the biggest impact? What about regulators?
3. What is the role of machines?
4. What academic work needs to be done?

Introductory Comments by Shyam Sunder, Yale University

A good theory in any discipline helps explain what we observe, and helps us guide to better achieve our goals through action. Finance should be no exception.
We can look at six pillars of oft-mentioned modern theory of finance—portfolio selection (Harry Markowitz 1952), dividend irrelevance theory of Miller and Modigliani (1961), capital structure irrelevance theory of Modigliani and Miller (1958), capital asset pricing model of Lintner (1965) and Sharpe (1964), efficient market theory of Fama (1965), and options theory of Black and Scholes (1973).

The dirty secret of finance is that, with the exception of the sixth—option theory—none of the other five theories do much to either explain the observed phenomena in finance, or provide useful guidance to action in making the respective financial decisions.

I do not know of people outside graduate classes in universities who uses quadratic programming to construct efficient portfolios, ignores dividend or capital structure as irrelevant to corporate finance, believe that beta of equity securities determines their average return, or that stock picking is a waste of time for professionally trained people.

If these five theories of finance fail the basic test of a theory, how do finance professionals make their decisions. As Professor Gerd Gigerenzer has already pointed out, they use tried and tested heuristics that economize on scarce information about (1) the relevant model, (2) value of parameters in the model, and (3) strategy of other players in the game.

All mathematical modeling, finance included, is based on assumption of common knowledge priors—a condition which is almost impossible to meet even in relatively simple situations. We are supposed to live in a world in which everything that can possibly happen has already been conceived of by the decision maker, and therefore there are NO SURPRISES. I would like to see a show of hands in the room of people who have never been surprised, i.e., have never seen something happen that they had not already imagined could happen. If you raised your hand, you have no option but to use heuristics, and I would think that you already do.

Even if we put the matter of common priors aside, decision making requires knowledge of parameters of the model. This is not easily obtained, and is subject to errors under the best of circumstances. Knowing that our knowledge of parameters is prone to errors almost all the time, we have no option but to resort to heuristics.

Third is the problem of knowing what others are going to do in various circumstances. Any interaction among a handful of people with a handful of options falls well outside the range of formal analysis, and decision makers must again resort to heuristics.

While scientific theories are focused on explanation and prediction, it seems likely that “theories” in social sciences may not fulfil these criteria. Instead, these theories may be a means to provide a language for discourse in the field, without being tested or being testable. In financial literature, empirical testing has a strong tradition, but theories are rarely rejected even when they fail the tests repeatedly. The failures are just set aside as “anomalies” in a different box, and discourse continues in terms defined by theory even after it has been soundly rejected.

Let me stop at this simple case for heuristics.
Questions by CFA Participants

Amit Chakrabarty, CFA, Director, Institutional Relations India, CFA Institute

1. “Herd” mentality – while finance professionals globally are considered smart people AND deal with one of the most important aspects of life (money/savings), there is a tendency to “follow-the-herd”, and which eventually leads to regional/global crises where everyone is a loser. If you agree, why is this the case and, more importantly, what can be done to address.

**SS.** As a label, the “herd mentality” has become a synonym for foolishly and blindly following others towards ruin. If we set this strong negative connotation associated with this term aside for a moment, it is easy to see that life, for animals as well as humans, would be a great deal more difficult without the “herd mentality.” Why?

When a member of a species deals with a situations, others who follow can ignore the actions of the predecessors, either because their situation has changed, or the earlier members did not deal with it as they should have. But when situations have significant similarities, and/or the following members believe the preceding ones to be capable of dealing with the situation in a competent manner, an individual saves much effort and energy by not trying to “reinvent the wheel” in every step of his/her life, believing every predecessor to be an uninformed fool. Walking on a footpath or a mountain trail would be painfully slow if each person had to test if the ground might give way under the next step. It is our herd mentality that allows us to walk, or board a plane without checking the credentials of the pilot or maintenance record of the plane, and so on in just about every moment of our lives. It works most of the time, saving us much time and effort; except when it doesn’t. Finance professionals are paid well to find out and decide when to follow the herd, and when not to.

2. (Lack of) trust – in the global world we live in, trust around decision making in the finance world still seems to depend on the colour of the skin. There is an implied trust in a white person’s (with very limited knowledge about the situation) decision/perspective vis-à-vis a brown person’s decision/perspective. I see this particularly in developing/emerging countries, including in India (and I have seen this in my professional life). Why is this the case, and what can be done practically to address.

**SS:** In statistics, this is called the base-rate problem. Most of us are exposed to a limited sample of people of any given race (or other easily visible attributes), and not to the entire population with that attribute. Since Indian immigrants to the U.S. are a selected sample biased in favour of people with degrees in higher education—engineers and doctors, etc.,—it is not uncommon for some people in the US, exposed to this biased sample, to think that Indians tend to be good at math or medicine, etc. This ideas sounds ridiculous to Indians themselves since
they are exposed to the broader population. It seems likely that the problem you raise also arises from exposure to biased limited samples.

3. Walk-the-talk – most people are good people, with good intentions. And that’s true for finance professionals as well. While we all talk about ethics and higher standards of conduct, that does not necessarily reflect in the decision making and conduct in the “real” world. E.g. “client interests always come first”, conformity to group decisions, complying with authority. From a practical perspective, what can be done to improve upon these aspects – beyond just talking about them and putting in policies.

SS: You seem to ask: how to get someone to take seriously and implement the slogans of another person. People will implement your slogans if (1) they believe in sincerity of the slogans, (2) implementing them is in their interest, and (3) they believe the slogan writer also implements them. Most such implementation requires trade-offs among various factors, and slogans rarely have room for spelling out the trade-offs, and are therefore largely ignored by busy and serious people.

Shreyans Mehta, CFA, Associate, BlackRock, Gurgaon

Using machine learning we try to forecast or predict the outcomes, however as we know human behavior is constantly changing, how can we find a common ground between data science and behavioral science so that they complement each other and help making a robust and adaptable data & behavioral science model?

SS: In his book, Sciences of the Artificial, Herbert A. Simon wrote that the most difficult part of design and engineering is the interface between natural and artificial domains. In your question, natural part is the human mind, and the artificial is what you call machine learning or data model. We do not know what the relationship, if any, is between human and machine learning, although the same term “learning” is now freely used in both contexts. How do I know my mother loves me, even as she denies me the chocolate I am crying for?

As my friend Prof. Dhananjay Gode has rightly pointed out, we also have to be careful in distinguishing systems that follow fixed laws of nature—e.g., physics and chemistry—from human and social system which are endowed with consciousness and ability to choose a course of action. Forecasting the rainfall, for example, has no effect on it, but forecasting the stock prices can affect those prices.
In my investment management career, I have seen various biases in the investment decision making. For instance, when people saw a rapid increase in price of cryptocurrencies, they went ahead and started buying them, making such investments a sizeable portion of their assets. But to their dismay, they saw its price rattling down all the way. This was a perfect example of herd instinct, which leads people to follow popular trends without understanding the risks involved. Another thing common among Indian investors is investing in gold, real estate or making bank deposits without understanding what other alternatives exist such as equity or balanced mutual funds. Many biases, such as those mentioned above, often lead to irrational investment decisions. Once we connect all these dots, we can figure out why bubbles generally occur, including the most famous 2008 financial crisis. Hence, it’s imperative for investment professionals such as me to understand behavioral biases to make informed decisions while devising an investment strategy.

SS: See my answer above on the “herding” part of your question.

Using the behavioural biases in devising investment strategy: If you were a heart surgeon, you will use YOUR own best judgment to decide what kind of treatment/surgery is best for your patient. In case there are more than one options, and they carry different risks and costs etc., you will lay down these options before the patient for his/her guidance. You would use your knowledge of psychology and patient biases to gently educate the patient with careful communication to make sure that the options available are well-understood. What you would not do, if you are an ethical surgeon, to allow your knowledge of psychological biases (or surgical fees) to affect your judgment about the appropriate treatment(s). If you do, you are not a professional but a scam artist.

Now put the investment professional in the surgeon’s shoes, and you are done.

People do many silly things with their money. If they ask your advice, you can advise them against making decisions which are bad for them. I have seen far too many cases in which investment advisors lead their clients to decisions which are designed simply to transfer money from the pockets of the clients to the pockets of the advisors.

While the above reasoning is more for a general investment management professional, something that is more personal to me is to understand how to change the behavior of people around me, investors and friends alike. The most pressing issue in today’s generation is global warming. During the Morningstar Investment Conference 2018, when my team showcased different strategies related to sustainability, the most common reaction that I heard was – “Is it really important? Will it work in India? Isn’t it
early for us to follow what our western counterparts are adapting?”. Many of these questions stem from our behavioral biases. So, I’d like to understand how I, as an investment professional, can contribute to the society in changing the behavior of people so that our future generations can live in an equally good condition, if not better.

SS: This is a much broader question, and anticipating limited patience, here is my brief answer in the form of some examples. In India vast numbers of people suffer and die from lack of clean air, water, food, as well as lack of nutrition. I have to think that investment in sanitation and other industries which help mitigate these challenges have a bright future in India. Given the severe shortage of water in many parts of India, development of water-economizing irrigation systems (instead of flood irrigation that now prevails) will yield high returns. Investment in sewage treatment plants is needed at a massive scale by PPE organizations working with municipal governments.

Since we consume non-trivial amounts of non-renewable resources, my suggestions above will not help unless the size of population (N) is brought into balance with our (per capita) desires to consume (C) and the time horizon (T) for which we wish to continue the consumption. We are not free to choose any N, C, and T that we want; they are mutually dependent. Since India’s independence, N grew about four times, C about 5-10 times; it is not hard to see what has happened to the number of future generations at this size and rate of consumption.

Only a couple of years ago, there was much brouhaha about whether some popular packaged noodles were contaminated with lead or some such thing. Surprisingly, I never saw any serious discussion by producers, media, government or analysts about the fact that this major corporation was selling junk food—zero nutrition—and getting children and adults hooked on it through colourful packaging, heavy fancy advertising and promotion. Finance professionals only seemed to care about the corporate profits and how they fought the PR battle, not building a better world. What happened to CSR? What is the duty of the professionals here?

My examples may or may not appeal to you, but I am sure you can brainstorm to come up with your own lists.