Understanding decision-making

Thinking with mental models

South Africa | 06 June 2015 | Insight

Authors and contributers

Anne Cabot-Alletzhauser

Some mental models may be innate (why we see events that happen more than three times successively as the emergence of a pattern) and others are idiosyncratic (evolved out of an individual's or population's historic experience). Mental models can exist at broad societal levels or at very specific, even individualised levels.

Heuristics, for example, is an important subset of mental models that we use throughout financial planning. These rules of thumb invariably spark heated debate around which are old-school mental models and which are viable into the future.

Other mental models can be problematic because they may have served a purpose at one point in time that is no longer relevant. Think of gender or ethnic biases. Think of the legacies of apartheid on our mental models. In some cases, mental models may outlive their usefulness – or they may persist in spite of never being useful in the first place – but the harsh reality is that they are extremely persistent.

Four factors are important to note in the context of this persistence:

1. Mental models influence how we perceive or recall things.
2. Some beliefs cannot be tested. An effective test would be one that would lead large numbers of people to question old beliefs (the belief that smoking isn't harmful, for example). But if we cannot definitely prove or disprove a given mental model (think active or passive investment philosophies) then sometimes the best mental model to nudge people towards is one that provides a rational means of accepting both.
3. Confirmation bias leads people to ignore, suppress or forget information that might lead them to more rational conclusions. We may say over and over again that performance histories simply are not dependable gauges of the future – and then Manager X wins the Raging Bull Award and we are off to the performance races again.
4. Some beliefs that people hold on to in one area may transcend to others. If people believe that alternative investments are risky, they may be reluctant to invest in impact investing, even though it has obvious direct benefits to that individual's community.

USING MENTAL MODELS TO ENHANCE FINANCIAL PLANNING INITIATIVES

Case study/lesson

Creating an effective financial empowerment programme requires understanding which mental models we need to help individuals abandon and which mental models we need individuals to embrace, particularly if they help individuals navigate the complex world of money. We can actively change a person's mental model, but to do so means that we have to be clear about the potential for impact such a change might have on other decisions an individual might make.

The World Bank study argues that we can test the influence of a mental model on a behaviour by experimentally manipulating the salience (its prominence or importance as an influence) of a mental model. What exactly do we mean? An example of how we can manipulate outcomes to student test scores is instructive. When students were asked to reveal whether they went to public or private primary schools before they took a test, there would be decided variations in test scores. When the same population revealed nothing about their backgrounds before the test, the variation in results was indistinguishable.

Let's use another concrete example of how an understanding of mental models (and who in a given population possesses what kind of mental model) allowed a group of economic development specialists to formulate a savings programme that boosted savings an average of 82% once the appropriate candidate had been identified[2].

The exercise that was conducted in the Philippines targeted commitment programmes – programmes that encourage people to commit to locking away their savings until they reach a predefined target to service a predetermined need (for example the education of a child). In spite of research that suggests that these programmes can be effective in getting people to save above and beyond what they would typically accumulate in a standard savings account (where they would be free to take their money when they wish), many financial institutions weren't offering these devices for the simple reason that they couldn't identify the appropriate market.

What the research team was able to establish was that a targeted series of questions could be used to help establish what kind of financial consumers would find these products attractive. The mental model that the team zeroed in on was what behavioural economists identify as 'hyperbolic discounting'. This is just a complex way of saying that there appears to be a general tendency for people to be more focused on their immediate needs than on longer-term distant needs. But some individuals can be aware of this hazard and recognise that the value of a commitment programme is that it keeps you from falling into that trap.

In the Philippines, it turned out that one segment of the population scored particularly well on this account. These were, typically, married women – or, more specifically, married women who were held responsible for managing household accounts.

In all likelihood, there was as much a sociological reason as a psychological reason for why commitment devices were particularly attractive to this segment. Locking away funds until they reached a pre-specified target also meant that troublesome spouses couldn't prematurely bully the women out of their hard-earned accumulated savings. Either way, a targeted consumer translated into a successful savings campaign.

From savings to investments
How could we apply a similar strategy to manipulating salience around investment strategies?

Goals-based investing is definitely one mental model we would like to see more investors adopt. There is an inherent logic in getting people to set out their personal financial goals and then helping them identify the investment strategies that have the highest probability of meeting that goal. Investment management as a professional enabler is far more capable of delivering on that promise to clients than it is capable of consistently winning the performance sweepstakes. But before this is likely to succeed, we need to address the current mental model that outperformance of the peer group or some benchmark is the most important criteria for success in investing.

To affect a mental model shift we would have to increase the 'salience' of goals-based solutions by:

- demonstrating how effective these strategies can be in terms of potentially reducing the amount people need to save to meet their requirements or address their utility
- proving that high returns alone are not a suitable strategy for matching the variability of your targeted liability. Example: an individual seeking to replace their income in retirement
- getting rid of performance surveys as they are currently formulated and replacing them with surveys that help investors evaluate which asset managers do the best job of delivering on a specific goal
- or, if all else fails, we could muster a roster of influential individuals in the global investment community, such as a Nobel laureate in finance, to lobby hard for acceptance in an influential forum.

After all is said and done, are we likely to attract all investors to a goals-based framework? The answer is most decidedly not everyone. But for a certain segment of investors, fiduciaries and advisers for example, goals-based investing represents a distinct improvement on the traditional returns-based strategies. That means we need to take a lesson from our Philippines commitment scheme example. By identifying which type of client would be most disposed to this particular mental model and by doing as much as possible to remove blockages for those kinds of clients, we stand a much better chance of success.

By identifying which type of client would be most disposed to this particular mental model and by doing as much as possible to remove blockages for those kinds of clients we stand a much better chance of success.

SO WHAT ARE SOME VIABLE APPROACHES TO CHANGING MENTAL MODELS?

Case study/lesson

Self-help groups can have a significant impact on getting individuals to change their mental models, particularly their perceptions of themselves and their place in the world.

Media and role-modelling provide a powerful way of changing mental models.

Education and early childhood interventions can have long-term effects.

Cost/benefit projections and **present value projections** can change mental models around certain financial trade-offs.

Decreasing economic dependence can be an important way of changing an individual's mental model.

Global evidence of successful strategies

Type	Strength of the evidence	Retail sector
Reminders	73 papers, appearing in 6 domains	Regular text-message reminders to save money increased savings balance by 6 percent (Karlan and others 2010).
Social influence	69 papers, appearing in all 8 domains	Homeowners received mailers that compared their electricity consumption with that of neighbours and rated their household as great, good or below average. This led to reduction in power consumption equivalent to what would have happened if energy prices had been raised 11-20 percent (Allcott 2011).
Feedback	60 papers, appearing in 5 domains	A field experiment provided individualised feedback about participation in a curbside recycling programme. Households that were receiving feedback increased their participation by 7 percentage points, while participation among the control group members did not increase at all (Schultz 1999).
Channel and hassle factors	43 papers, appearing in 8 domains	Providing personalised assistance in completing the free Application for Federal Student Aid (FAFSA) led to a 29 percent increase in two consecutive years of college enrolment among high school seniors in the programme group of a randomised controlled trial, relative to the control group (Bettinger and others 2012).
Micro-incentives	41 papers, appearing in 5 domains	Small incentives to read books can have a stronger effect on grades than incentives to get high grades (Fryer Jr. 2010).
Identity cues and identity printing	31 papers, appearing in 5 domains	When a picture of a woman appeared on a math test, female students were reminded to recall their gender and performed worse on the test (Shih, Pittinsky and Ambady 1999).
Social proof	26 papers, appearing in 5 domains	Phone calls to voters with a 'high turnout' message-emphasising how many people were voting and that the number was likely to increase were more effective at increasing voter turnout than a 'low turnout' message, which emphasised that election turnout was last time and likely to be lower this time (Gerber and Rogers 2009)
Physical environment cues	25 papers, appearing in 5 domains	Individuals poured and consumed more juice when using short, wide glasses than using tall, slender glasses. Cafeterias can increase fruit consumption by increasing visibility of the fruit with more prominent displays by making fruit easier to reach than unhealthy alternatives (Wansink and van Ittersum 2003).
Anchoring	24 papers, appearing in 7 domains	In New York City, credit card systems in taxis automatically suggested a 30, 25 or 20 percent tip. This caused passengers to view 20 percent as the low tip, even though it was double the previous average. Since the installation of the credit card systems, average tips have risen to 22 percent (Grynbaum 2009).
Default rules and automation	18 papers, appearing in 7 domains	Automatically enrolling people in saving plans dramatically increased participation and retention (Thaler and Benartzi 2004).
Loss aversion	12 papers, appearing in 7 domains	In a randomised controlled experiment, half the sample received a free mug and half did not. The groups were then given the option of selling the mug or buying a mug, respectively, if a determined price was acceptable to them. Those who had received a free mug were willing to sell only at a price that was twice the amount the potential buyers were willing to pay (Kahneman, Knetsch and Thaler 1990).
Public or private commitments	11 papers, appearing in 4 domains	When people promised to perform a task, they often completed it. People imagine themselves to be consistent and will go to lengths to keep up this appearance in public and private (Bryan, Karlan and Nelson 2010).

PART 1Chapter 2Source: Richburg – Hayes and others (2014). Behavioural Economics and Social Policy: Designing Innovative Soultions to Programs supported by the Administration for Children and Families.

Any time one wants to introduce a change or utilise an insight to improve outcomes, one has to dig down any number of layers of consideration to appreciate the potential knock-on effect – both intentional and potentially unintentional.

Concluding thoughts

"Because of the interplay of these different dimensions the net effect is not an arithmetic or even geometric addition of complexity. Rather we need to think of it as logarithmic[3]."

The complexity comes from the fact that each factor has variable interactions with each additional factor. If there is one lesson that the World Bank is trying to impart to their readers it is that any time one wants to introduce a change or utilise an insight to improve outcomes, one has to dig down any number of layers of consideration to appreciate the potential knock-on effect – both intentional and potentially unintentional. If there is one fault that development policies are often guilty of it is this failure to dig deep enough to understand both the true roots of a problem and to anticipate the potential knockon effects of the outcome.

But there is one further phenomenon that plays an important role in financial decision-making that the World Bank study doesn't explicitly touch on. This is an individual's mindset towards money. At some level, money mindset and mental models are interrelated. But the money mindset factor demands that we place a much stronger spotlight on the way an individual engages with money and whether it might be suboptimal or dysfunctional. This we deal with in our next section.

References

1 World Bank (2015)
2 Ashraf, Karlan & Wesley (2006)
3 World Bank (2015)

Article tags

MENTAL MODELS | FINANCIAL HEURISTIC | SOCIAL NORMS | HYPERBOLIC DISCOUNTING | GOALS-BASED INVESTING