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SPOTLIGHT ON THE ART OF DECISION MAKING

Beyond the Echo Chamber

When making decisions, seek ideas from diverse sources and test them with a wide network of contacts. *by Alex "Sandy" Pentland*

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The rap on decision making is that it’s hard. Sure, there may be a few super-bright people with an almost magical ability to consistently do it well, but the rest of us just get by. That is not what my colleagues and I have discovered in our research, however. We have seen that almost anyone can learn to be a good decision maker—and that the key to it is carefully and continually engaging in something we call *social exploration*.

Social explorers spend enormous amounts of time searching for new people and ideas—but not necessarily the *best* people or ideas. Instead, they seek to form connections with many different kinds of people and to gain exposure to a broad variety of thinking.

Explorers winnow down the ideas they’ve gathered by bouncing them off other people to see which ones resonate. Generally, those ideas are microstrat-

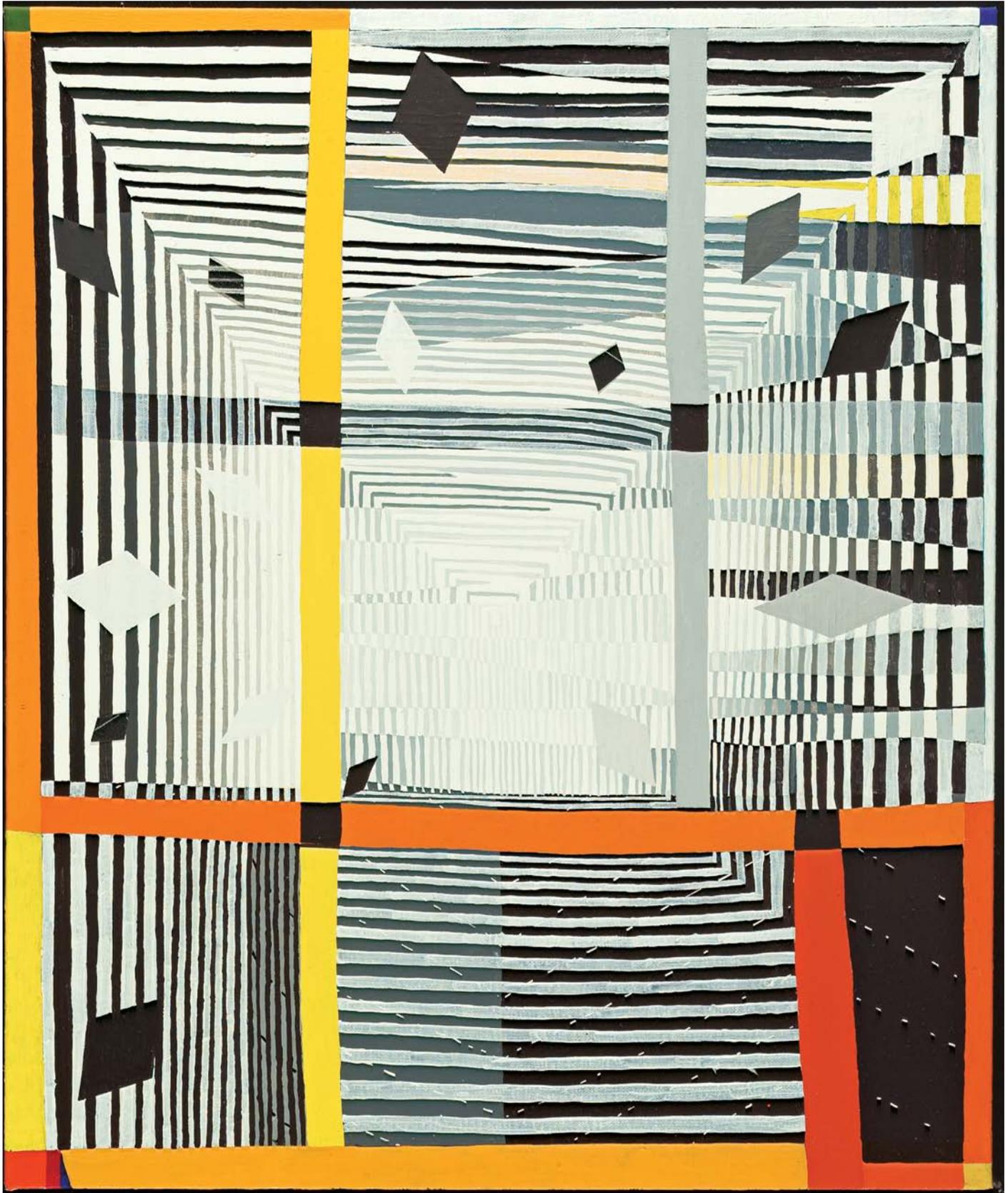
egies—examples of actions that might be taken, circumstances conducive to the action, and possible outcomes. Then, by assembling a great set of micro-strategies, social explorers make good decisions.

But how exactly does the exploration process generate ideas that lead to the right decisions? And are certain techniques critical to successful exploration? In this article, we’ll attempt to answer those two questions.

Patterns of Social Learning

Studies of primitive peoples reinforce the idea that social interactions are central to how humans gather information and make decisions. Ethnologists have found that almost all decisions affecting groups as a whole are made in social situations. (The major exception is during battles or other emergencies, when extremely rapid decision making is required.) This tendency evolved in humans because pooling

ARTWORK Matt Phillips, *Untitled*
2010, oil on canvas, 20" x 14"



ideas from many different people gave you an advantage: You got a “wisdom of the crowd” take on things that was better than individual judgment.

When field biologists observe animal populations, they see that social learning—which takes place primarily through the imitation of successful individuals—can improve success in foraging decisions, mate choice, and habitat selection. In both animals and humans, however, this effect occurs only as long as the individuals in the group have diverse strategies. Indeed, one key to good decision making is learning from the successes and failures of others—frequently and in a range of situations.

To understand how patterns of social learning work in a modern business environment, MIT post-doctoral associate Yaniv Altshuler and PhD student Wei Pan and I did a research project involving eToro, an online trading platform. eToro allows individual day traders to observe and copy one another’s moves, portfolios, and past performance. Information on the site is extremely transparent, so it’s easy to see and precisely measure how interactions affect decisions and results. On eToro, investors can do two

whether or not each action was profitable. There are few (if any) other data sets where you can see social exploration so clearly and determine which patterns of it work best.

If you look at a chart of investor behavior on eToro (see “Finding the Decision-Making Sweet Spot”), you can see that people fall along a continuum. One group of investors works in almost total isolation: Its members follow few other traders and come up with most investment ideas on their own. At the other end of this spectrum lies a group of hyperconnected traders who follow (and are followed by) many others, and social learning guides a lot of their strategies. Many of the investors using eToro fall somewhere in the middle—they engage in a moderate level of social learning but behave with a degree of independence that makes it clear that they’re not just following the herd.

What pattern of exploration and social learning produced the best outcome? We discovered the answer when we plotted the return on investment each trader got against the diversity of ideas he or she harvested through social learning. An analysis

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main types of trades. A “single trade” is a normal stock purchase a user makes on his own. A “social trade” is when a user places a trade that exactly copies another user’s single trade. Users can also “follow” all of another user’s trades automatically and review all real-time trades and choose which ones to copy.

All users have to open up their trading decisions, share their strategies and ideas, and let other people follow them. Most users select several other traders to follow. Each time someone decides to copy another trader, that trader gets paid a small amount. Traders with a lot of imitators can make quite a bit of money.

During 2011, we collected data about euro/dollar trading from 1.6 million eToro users. In total we were able to examine almost 10 million financial transactions. The fascinating thing was that we could actually see social learning happen, track the effect it had on people’s actions, and measure

of the results reveals that the effect of social learning is enormous. The traders who had the right balance and diversity of ideas in their network—meaning that their social learning was neither too sparse nor too dense—had a return on investment that was 30% higher than the returns of both the isolated traders and those in the herd. In this digital trading environment, the sweet spot resides between the two extremes. This intermediate zone is where social learning—that is, copying successful people—yields real rewards. And though this study looked only at financial decision making, we believe the principle holds true for all kinds of decisions.

Idea Flow and Decision Making

The eToro study makes it very clear that the rate of idea flow is a critical measure of how well a social network functions in collecting and refining decision strategies. In my April 2012 HBR article, “The

Idea in Brief**THE THEORY**

The best decisions result from constant social exploration—the process of gathering, winnowing, and testing out ideas from other people. It allows decision makers to tap into the “wisdom of the crowd.”

THE RESEARCH

The author and his colleagues studied decision making on eToro, a social investment platform where traders can follow and copy one another’s moves. They found that investors who paid attention to the trading strategies of a wide group of people (without following the herd) achieved the highest returns.

THE BOTTOM LINE

Decision makers need to tap diverse social networks. If your circle is too tight and the members of it are too similar, you risk being trapped in an echo chamber where the same ideas keep circulating, limiting the payoff of social learning.

New Science of Building Great Teams,” I showed that idea flow has two essential components—engagement *within* a group and exploration *outside* the group—and that it can predict both productivity and creative output.

But what can a single individual do to increase her rate of idea flow? A 1985 study that Robert Kelley of Carnegie Mellon University did at Bell Laboratories offers some insights. AT&T’s famous research lab wanted to understand what separated a star performer from an average performer. Was it something innate, or could star performance be learned? Bell Labs already hired the best and the brightest, but only a few lived up to their apparent potential for brilliance. Most hires developed into solid performers but did not contribute substantially to AT&T’s competitive advantage in the marketplace.

Kelley found that the best researchers engaged in “preparatory exploration”—that is, they proactively developed relationships and connections with other experts and later tapped them for help with completing critical tasks. Moreover, the social networks of the star performers were more diverse than the networks of the middling performers. Middling performers saw the world only from the viewpoint of their jobs and limited their social learning to people in similar roles—say, engineers. Stars, on the other hand, reached out to people from a broader set of work roles, so they understood the perspectives of customers, competitors, and managers. Because the stars could see the situation from a variety of viewpoints, they could develop better solutions to problems.

Organizations have ways of increasing idea flow, too. In studies of dozens of organizations, I have found that the number of opportunities for social learning (which usually involve informal face-to-face interactions among employees) is often the largest single factor in company productivity. In our

research we assess the extent of such opportunities by measuring a group’s engagement, or how much its members communicate with one another and whether all or just a few members are involved in the exchanges.

The findings show that simple tricks to increase group engagement often have enormous payoffs. In one case a change in the coffee break timing allowed employees to talk more easily with one another, which resulted in productivity improvements that saved the company \$15 million a year. Another company made its lunch tables longer, thus encouraging people who didn’t know one another to interact more. That move alone increased productivity by an estimated 5%.

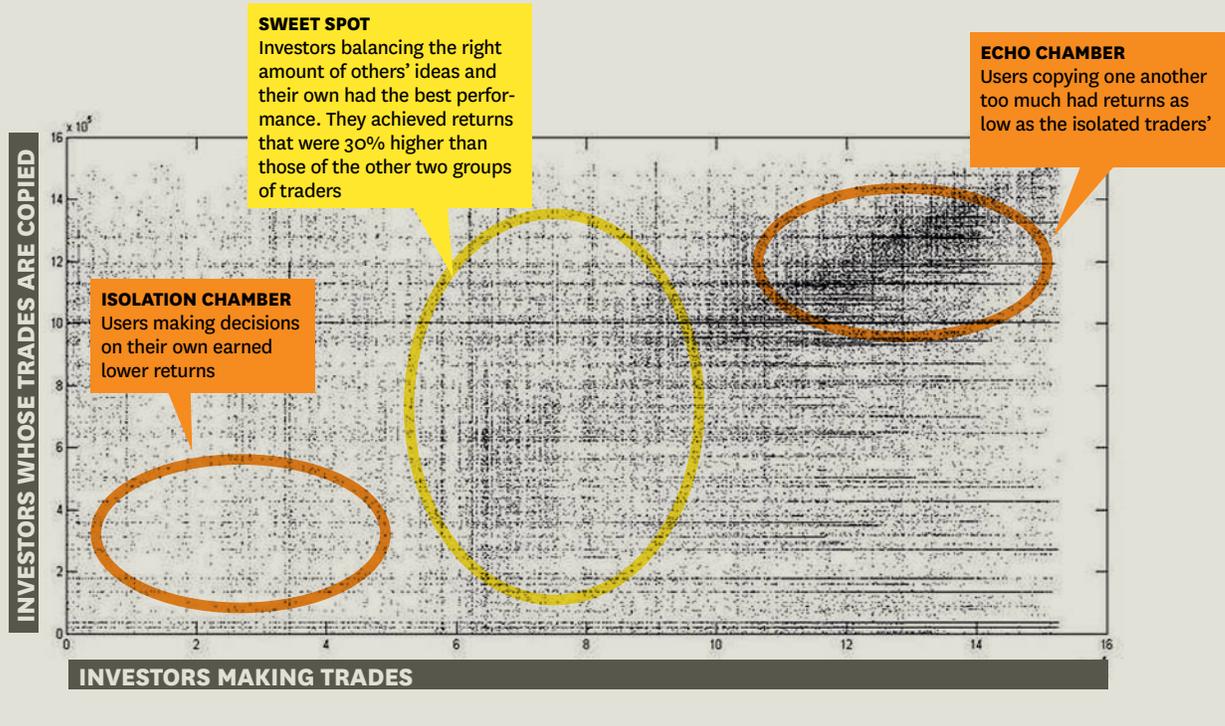
Idea flow is also affected by the way social learning interacts with individual learning. Decisions are a blend of personal and social information, and when personal information is weak, people tend to rely more on social information. When investors are uncertain about the market’s direction, for instance, the effects of social learning become larger. Investors spend more time looking at what others are doing. And when people see others adopt trading strategies similar to their own, they often become more confident and are then likely to increase the amount they invest in those particular strategies.

This effect has a downside, however: It can lead to overconfidence and groupthink. Social learning improves decision making only when individuals each have different information. When the information from outside sources (such as magazines, TV, and radio) became too similar, we observed, social trading became reliably *unprofitable*. In such circumstances, not only does groupthink not pay, but betting against groupthink becomes a great trading strategy.

Similarly, when engagement is high and intensely concentrated within a group, the same ideas often

Finding the Decision-Making Sweet Spot

Each dot on this map represents a trade made by one of 1.6 million investors on eToro—10 million trades in all. The same investors are represented on both the x axis, as traders, and the y axis, as people whose decisions were copied by other investors. The high density shows a cluster of people copying one another so much that the same ideas kept recirculating: investor A followed B, who followed C, who followed A. Low density shows investors who made their own investment decisions and didn't copy many others. The investors in the middle drew ideas from a wide variety of other traders but didn't follow the herd.



circle around to you again and again. But because ideas usually change slightly as they go from person to person, you may not recognize them as mere repetitions of ideas. You may think that everyone has independently arrived at a similar strategy, which might make you more sure of those ideas than you should be. This “echo chamber” effect often leads to financial bubbles.

If you're aware of the echo chamber, though, you can avoid falling victim to it. You can observe how much influence people have on one another and watch for dependencies between people. Does team member A always vote the same way that team member B does? People who regularly have similar opinions probably have similar sources of information; the opinions of such “birds of a feather” can't really be considered independent. Tight social groups often experience echo chambers, since their members tend to share information, and there may be social pressure to hold the same opinions. By paying attention to idea flow within your network, you can discount repeated ideas and

integrate opinions that are more likely to be truly independent.

Fine-Tuning a Network

A social network's structure, the degree of influence people have on one another, and individuals' susceptibility to new ideas all affect idea flow and thus the performance of the people in the network. By adjusting any of these variables, you can fine-tune social networks to produce better decisions and better results.

What can be done when, for example, the flow of ideas becomes either too sparse and slow, or too dense and fast? Among the members of eToro, we have found that we can alter the flow of ideas by providing small incentives or nudges to individuals, to encourage isolated traders to engage more with others, or traders who are too interconnected to engage less with the same group and explore outside their current contacts.

In one experiment with the eToro investors, Yaniv Altshuler and I used this approach to tune the social

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network so that it remained in the healthy “wisdom of the crowd” sweet spot—the range where traders had diverse opportunities for social learning but avoided the echo chamber. As a result, we were able to increase the profitability of all social traders by more than six percentage points—essentially doubling it. In fact, by managing idea flows, we were able to turn average traders—often the losers in our current financial system—into winners.

This tuning concept is applicable to all kinds of networks. Getting the right idea flow is critical in journalism (so reporters talk to enough sources to get all sides of a story), financial controls (to ensure that all sources of fraud have been considered), and ad campaigns (so companies sample a sufficiently diverse set of customer opinions). That’s why Yaniv and I have created a spin-off company, called Athena Wisdom, that is now helping financial and decision-making networks around the world.

Our eToro research shows how social learning works in a very specific context: stock trading. But social learning also plays a key role in a wide variety of other managerial decisions. We are now examining its effects in organizational contexts like product planning, risk auditing, and information services, though that work is still in its infancy.

DECISIONS DON’T happen in a vacuum; the best ones rarely come from deep pondering in isolation. They happen when people learn from and draw on the experiences of others. In this process, success depends greatly on the quality of social exploration—and on whether your information and sources of ideas are diverse and independent. ♥ **HBR Reprint R1311E**

 **Alex “Sandy” Pentland** is a professor at MIT and the director of MIT’s Human Dynamics Laboratory and the MIT Media Lab Entrepreneurship Program. He is the author of *Social Physics* (Penguin Press, 2014).



“We just need to make sure you didn’t take it with you.”