HONEST SIGNALS

How They Shape Our World

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PREFACE: A GOD'S EYE VIEW

The group of rising-star business executives gathered at MIT for an important task: each executive would present a business plan to the group, and then the group would choose the best ideas to recommend to a team of venture finance experts. It was a great opportunity. The skills they each required—the ability to clearly formulate ideas, effectively communicate to a group of peers, and then persuade others to pursue those ideas—are indispensable in business as well as everyday life. These executives had each spent more than a decade building their strengths.

Not only the other group members were watching and evaluating the business plan pitches, however. A sensitive, specially designed digital device was also monitoring each presentation. This device— we'll call it a *sociometer*—wasn't recording *what* each person said in their presentation but rather *how* they said it.[1] How much variability was in the speech of the presenter? How active were they

physically? How many back-and-forth gestures such as smiles and head nods occurred between the presenter and the listeners? This device was measuring another channel of communication that works without spoken language: our social sense.

At the end of the meeting, the group selected the ideas that they agreed would sell the best. At least that is what they thought. When the venture finance experts were given the plans to evaluate—this time on paper, rather than via a live presentation—there was little similarity between the two groups' judgments. Each group had a different opinion of which business plans were most likely to succeed. Why?

Our up-and-coming executives didn't pick different business plans simply because they weren't as seasoned as the venture finance experts. Remember our other observer in the room—the sociometer? As it turns out, the sociometer was able to predict which business plans the executives would choose with nearly perfect accuracy. Both the sociometer and our executives (even though they didn't know it at the time) were busy measuring the *social* content of the presentations, quite apart from the spoken, informational part.[2] And which channel of communication—social or spoken—informed more of their final decision? Yes, the social channel.

The executives thought they were evaluating the plans based on rational measures, such as: How original is this idea? How does it fit the current market? How well developed is this plan? While listening to the pitches, though, another part of their brain was registering other crucial information, such as: How much does this person believe in this idea? How confident are they when speaking? How determined are they to make this work? And the second set

of information—information that the business executives didn't even know they were assessing—is what influenced their choice of business plans to the greatest degree.

When the venture finance experts saw the business plans, however, this social channel of communication was purposely removed. They saw the plans written on paper only—with no live presentation. With the social sense disconnected from the decision, the venture finance experts had to evaluate the plans based on rational measures alone. Unfortunately for them, research has shown that investments made without that "personal connection" are far more likely to fail.[3] This is why venture capital firms normally only invest in companies they can visit regularly in person, and why many investors pay more attention to the face-to-face interaction among the company's founders than they do to the business plan itself.

This study, along with many others, leads us to a surprising yet illuminating conclusion: people have a second channel of communication that revolves not around words but around *social relations*. This social channel profoundly influences major decisions in our lives *even though we are largely unaware of it.*[4] This idea lies at the heart of this book. My goal is to show you how powerful and pervasive this form of communication is in our daily lives, how it changes the way we think of ourselves and our organizations, and how you can make use of this information to better manage your life.

WHAT THIS BOOK IS ABOUT

Honest Signals comes from a new and emerging science, called *network science*, that tries to understand people in the context of their

social networks rather than viewing them as isolated individuals. Historically, our understanding of human society has been limited to relatively sparse observations of individuals or small groups because we have had only simple measurement tools. Recent advances in wireless communications and digital sensors have made it now possible to observe natural, everyday human behavior at a level of detail that was previously unattainable. The result has been revolutionary measurement tools, such as the sociometer mentioned above, that provide us with a "God's eye" view of ourselves.[5]

For the first time, we can precisely map the behavior of large numbers of people as they go about their normal lives. By using cell phones and electronic badges with integrated sensors, my students and I have observed hundreds of participants for periods of up to a year. In the process we amassed hundreds of thousands of hours of detailed, quantitative data about natural, day-to-day human behavior—far more data of these kind than have ever been available before.[6]

A new measurement tool such as this often brings with it a new understanding of what you are measuring. What we have found is that many types of human behavior can be reliably predicted from biologically based *honest signaling* behaviors. These ancient primate signaling mechanisms, such as the amount of synchrony, mimicry, activity, and emphasis, form an *unconscious* channel of communication between people—a channel almost unexplored except in other apes.[7]

These social signals are not just a back channel or complement to our conscious language; they form a separate communication network that powerfully influences our behavior. In fact, these

honest signals provide a quite effective window into our intentions, goals, and values. By examining this ancient channel of communication, for instance—paying no attention to words or even who the people are—we can accurately *predict* outcomes of dating situations, job interviews, and even salary negotiations.[8]

We have shown that people's behavior is much more a function of their social network than anyone has previously imagined. Humans are truly social animals, where individuals are best likened to musicians in a jazz quartet, forming a web of unconscious reactions tuned to exactly complement the others in the group. What the sociometer data demonstrate is that this immersion of self in the surrounding social network is the *typical* human condition, rather than being isolated examples found in exceptional circumstances.

Why does this ancient communication channel exist? What does it do? Data from biology show that honest signals evolved to co-ordinate behavior between competing groups of individuals.[9] For instance, honest signals form a communication channel that helps to create family groups and hunting teams. The *social circuits* formed by the back-and-forth pattern of signaling between people shapes much of our behavior, as our ancient reflexes for unconscious, social coordination work to fuse us together into a co-ordinated (but often contentious) whole.

In a family, a work group, or even an entire organization, the pattern of signaling within the social network strongly influences the behavior of both the individuals and the group as a whole.[10] Healthy signaling patterns result in good decision making, while bad patterns result in disaster. The social circuitry of a work group, for instance, can insulate the group from problems like groupthink and polarization. Even for large networks of humans, such as

companies or entire societies, the pattern of social circuitry influences the "intelligence" of the network.

By paying careful attention to the pattern of signaling within a social network, we can harvest tacit knowledge that is spread across all of the individual members of the network. This *network intelligence* approach to capturing the "wisdom of the crowd" produces surprisingly good results and is often many times better than traditional decision-making methods. I will examine this idea of network intelligence carefully, and see how to harness it to improve group decision making.

PLAN FOR THE BOOK

The goal of this book is to show how these honest signals influence critical activities such as negotiation, group decision making, and project management, and to demonstrate how powerful and pervasive this form of communication is in our lives. Throughout, I will present new science backing many intuitive ideas that were previously thought to be just folk wisdom. By refining these intuitions with scientific measurements and explanatory mechanisms, readers will discover a new and powerful way to understand and manage human groups, corporations, and even entire societies.

The first order of business will be to explain how social circuits work, and how to be more aware of them. Drawing from research into animal behavior, we find that animals communicate by signals, with honest signals being of particular interest. Honest signals are behaviors that are so expensive or so directly connected to the underlying biology that they become reliable indicators that others use to guide their own behavior. People possess these same signals

in addition to conscious language. They are so essential for people, in fact, that infants rely on these signals in order to learn language. Even from the beginning, our two channels of communication—social and linguistic—are intertwined.

A startling finding is that the social circuits formed by back-and-forth signaling between people is a major factor in even the most important decisions in our lives. Using the sociometer mentioned earlier, we will see that in many situations—including negotiation, sales, dating, and teamwork—people's signaling can accurately predict how they are going to act and what the eventual outcome will be.

Some people are experts at reading these social signals and using them to influence others, even though most are unaware of how they do it. We can begin to understand how they manage this by examining how social signaling can be used to control behavior. By looking at characteristic types of social tasks—such as pitching a new idea, networking, and closing a deal—we find that particular kinds of signals are associated with success. We can also see how to change our personal style to become more effective.

The same social circuits that form between pairs of people are also active in groups. By examining the signaling of groups making various types of decisions, I will show how signaling works to shape the behavior of human social groups. By comparing the performance of groups with different patterns of signaling, I will demonstrate how some patterns of signaling improve the decision-making capacity of groups and aid the flow of information within our social networks.

We will see that the ability to "read" the social signaling within one's social network provides a mechanism for group decision making that is different than the standard theory of rational

decision making. Instead of logic or argument, this is a marketlike mechanism that aggregates information and minimizes risk to achieve maximum expected results. The behavior of groups, organizations, and entire cultures can be analyzed in terms of this new network intelligence theory of rational decision making. By looking at examples of real organizations, we will gain surprising insights and practical methods for managing and governing ourselves.

Finally, the book will look to the future, where digital tools like the sociometer may become common in everyday life. The futuristic capability to read the social side of life can revolutionize how we live as well as how we manage ourselves. It can let us screen for depression, x-ray an organization's health, or allow a company to "tune" itself to maximize employee happiness. It could even be forged into a new sort of nervous system that could span all of humanity. At the same time, these new technologies present unprecedented threats to privacy and social liberty, and so must be carefully used and controlled. The debate about how to harness this new human nervous system is one of the most important going on today.

READING HONEST SIGNALS

Honest Signals is written to be accessible to a broad audience, not just managers and academics, but also anyone curious about how new science might change their lives. As a consequence, experimental details, statistical analysis, and examination of the academic literature have been confined to the appendixes of the book.

Don't assume, however, that these appendixes are purely academic, because they also provide detail useful for applying this information in everyday life. The appendixes are:

- *Social science background* The social science background, the sociometer, and an explanation of the experimental and analysis methods
- *Succeeding* Assessing interest, pitching business plans, selling, negotiation, and deception
- *Connecting* Getting hired, getting a date, and social networking
- *Social circuits* Understanding identity, work groups, friends, and your position in the network
- *Unconscious intelligence* A new understanding about how our minds work gives hope that we can act with greater intelligence

In addition to the summary descriptions in the appendixes, there are the original papers, theses, experimental data, and computer codes available at <http://hd.media.mit.edu>.

Because of the large number of coauthors and papers summarized in this book, it proved difficult to name each coauthor and paper in the main text and still maintain an ease of readability. Consequently my research group will just be referred to as "we," but will be accompanied by a specific citation. Members of my research group include current and former graduate students: Sumit Basu, Ron Caneel, David Chilongo, Tanzeem Choudhury, Brian Clarkson, Wen Dong, Nathan Eagle, Jon Gips, Taemie Kim, Anmol Madan, Akshay Mohan, Daniel Olguin, Will Stoltzman, Mike Sung, and Ben Waber as well as postdoctoral, adjunct, and visiting researchers Koji Ara, Joost Bonsen, and M. C. Martin.

Biologically based "honest signaling," evolved from ancient primate signaling mechanisms, offers an unmatched window into our intentions, goals, and values. How understanding the signaling within social networks can change the way we make decisions, work with others, and manage organizations. Hardcover $24.95 T £20.00. Paperback $17.95 T £14.99. HONEST FOREX SIGNALS: Whenever there is any sort of demand, there is bound to be a supply. In the forex industry, there is a huge demand on how to trade the forex market. In a bid to fill out those demands, some people design fake forex signals and sell them out to unsuspecting newbies in the forex market. This inferior information does not help the trader, not even one bit. So at the end of the day, the trader gains nothing from using the signal, or may even lose money trading with it.