



# **SOCIAL PHYSICS**

HOW GOOD  
IDEAS SPREAD—  
THE LESSONS FROM  
A NEW SCIENCE

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# Social Physics



**FROM IDEAS TO ACTION**

**EXPLORATION AND IDEA FLOW**

**COLLECTIVE INTELLIGENCE**

**SHAPING ORGANIZATIONS**

**DESIGN FOR HARMONY**



# From Ideas To Action



## A PRACTICAL SCIENCE

- Social physics: growth processes within networks, information and idea flow plus people's behavior.
- Social physics helps us understand how ideas flow from person to person through the mechanism of social learning and how this flow of ideas ends up shaping the norms, productivity, and creative output of our companies, cities, and societies.
- It enables us to predict the productivity of small groups, of departments within companies, and even of entire cities.
- It helps us tune communications networks so we can reliably make better decisions and become more productive.
- The goal of the book is to develop a social physics that extends economic and political thinking by including not only competitive forces but also exchanges of ideas, information, social pressure and social status, in order to more fully understand human behavior.
- The key to better systems is real time monitoring of conditions, continuous exploration for the best response ideas, and then engagement around these to obtain a coordinated consistent response.

## HABITS VS BELIEFS

- The engine that drives social physics is big data now available on all aspects of human life. Analyzing patterns within the digital breadcrumbs we all leave behind is called reality mining.
- Who we actually are is trackable by where we spend our time, the things we do, and what we buy, not from what we post on social media.
- Data has provided scientist with a new lens that allows us to examine society in fine grained detail.
- A socioscope (microscope for society) gives a view of life in all its complexities and revolutionize the study of human behavior.
- Once we develop a precise visualization of the patterns of human life, we can hope to understand and manage modern society.



# Exploration and Idea Flow



## HOW CAN WE FIND GOOD IDEAS AND MAKE GOOD DECISIONS?

- “Creativity is just connecting things.” - Steve Jobs
- The most creative and insightful people are explorers. They seek out people with different views, experiences, and ideas.
- “We can consciously reason about which flow of ideas we want to swim in, but then exposure to those ideas will work to shape our habits and beliefs subconsciously.” - Daniel Kahneman
- We have two ways of thinking: fast – automatic and largely unconscious mode that drives habits and intuitions; and slow - reasoning and largely conscious.

## SOCIAL LEARNING

- Our behavior can be predicted from our exposure to example behavior of other people.
- Most of our public beliefs and habits are learned by observing the attitudes, actions and outcomes of peers, rather than by logic or argument.
- People influence other people, which results in panics, bubbles, and fads.
- As the pattern of connections between learners becomes optimal, the performance of the entire crowd improves dramatically.
- Idea flow depends on the susceptibility of the people involved. A person’s behavior will change when a new idea has appeared in their extended social network, similar to the spread of the flu virus.
- The most productive people in the world are continuously engaging with others in order to gain new ideas.
- Increasing your reach and network diversity makes it more likely that you can find the best strategies.
- Success depends greatly on the quality of your exploration and that relies on the diversity and independence of your information and idea sources.



# Collective Intelligence



## HOW CAN WE ALL WORK TOGETHER?

- It is not simply the brightest who have the best ideas. It is those who are best at harvesting ideas from others.
- It is not the most determined who drive change. It is those who most fully engage with like minded people.
- Idea flow is the real story of community and culture, the rest is just surface appearance and illusion.
- The flow of ideas is key to the development of traditions and ultimately of cultures. It facilitates the transfer of habits and customs from person to person and generation to generation.
- The largest factor in predicting group intelligence is the equality of conversational turn taking. Groups where a few people dominate the conversation are less collectively intelligent than those with equal conversations.
- The whole concept of shared cultural norms is based on the coordination of individual behaviors.

## SOCIAL PRESSURE

- Social learning and social pressure are primary forces that drive the evolution of culture and govern much of the hyper connected world.
- Without the obligations amongst social ties, capitalism often turns rapacious and its politics turn poisonous. In our new hyper connected world, most ties are weak and the invisible hand no longer functions.
- Cooperation, implicit and explicit agreements about how to coordinate our behavior with our peers, defines competitive interactions.
- To survive systemic risks we need to have a diverse set of systems instead of one so-called best system.
- We need a diverse set of social systems each with its own way of doing things together with fast methods of spreading them when required.

# Shaping Organizations



## SOCIAL NETWORK INCENTIVES

- Companies have different levels of ideas flow, therefore different abilities to learn from inside and outside of their communities.
- Engagement (idea flow) is the central predictor in a work environment of productivity.
- Being “in the loop” allows employees to gain advantage from tricks of the trade moving from novices to experts more quickly.
- Creative output depends highly on two processes: idea discovery exploration and the integration of those ideas into new behaviors.
- Better rewards for work that reinforces our social fabric would allow to find a better, more sustainable blend between individual ambitions and the health of society.
- Influence of the pattern of conversation is an accurate measure of individuals Influence in their surrounding social network.
- Social network incentives enable us to recruit many people to solve a problem in a very short period of time.
- With stability and trust comes the ability to increase social pressure and sellers can customize their offers for each particular buyer.

## SOCIALLY INTELLIGENT CHARISMATIC CONNECTORS

- Socially intelligent charismatic connectors are key to making organizations successful.
- People who are always curious and ask questions are the connectors in their organization.
- They are the ones who move ideas across group boundaries and keep everyone in the loop.
- By making group members more aware of their patterns of communication within and between groups, we can improve their social intelligence leading to greater productivity and greater creative output.





# Shaping Organizations



## EXPLORATION

- Exploration for new ideas tends to be most fruitful. While the common experiences of everyday life become social norms.
- Communities who's people spend more time exploring, wandering and traveling tend to grow their local ecology at a higher rate: higher GDP, higher population growth, and greater variety of stores and restaurants.
- More exploration which results in greater number of interactions between current norms and new ideas drives innovative behavior.
- Greater exploration begets greater opportunities for exploration.
- The wealthiest segments of society are the most curious and their rate of exploration is hugely greater.
- High levels of engagement within a community combined with low levels of exploration outside usually leads to rigid and insular societies.
- Managers need to visualize the patterns of exploration and take steps to ensure ideas flow in and between all of their work groups.

## TRUST

- It is not wealth or prestige that best motivates people. It is respect and help from peers.
- High levels of trust are the bedrock which flexible cooperation is built.
- The right sort of idea flow leads to all of the group members making better decisions than they could have made if they were making them on their own. As a result, a community can develop a collective intelligence that is greater than the individual.
- Relationships in an exchange network quickly become stable. We go back again and again to the person that gives us the best deal, and with stability comes trust – the expectation of a continued valuable relationship.

# Design For Harmony



## EXCHANGES NOT MARKETS

- We need to think of the economy as a complex network of specific exchange relationships.
- Groups that can read each other's social signals accurately perform better and have a higher collective intelligence. Since women can do this better than men, groups with more women tend to do better.
- Cities are idea factories. When they are segregated by function in zoning, this causes the exact wrong affect to social ties by decreasing engagement.
- Modern society is based on the idea that markets can distribute resources efficiently and on the assumption that humans are relentless competitors, however this is not a good description of how our society lives and functions.
- Many earlier societies operated much more like an exchange network than a market. There was no price setting authority for establishing the value of goods or ideas. Reputations were earned one-on-one.
- If we want to have a fair stable society, we need to look to a network of exchanges between people and not market competition.

## HUMAN-CENTRIC SOCIETY

- The most critical questions for any society: Where do new ideas come from? How do they get put into action? How can we create social structures that are cooperative, productive, and creative?
- Political or economic labels (high/low/middle class and republican/democrat) are often inaccurate stereotypes of people who actually have widely varying individual characteristics and desires. Reasoning about society in terms of classes and parties is imprecise and leads to over generalizations.
- Our long-term resilience depends on our ability to quickly and stably adapt to rapid changes in society and even to rare and extreme events.