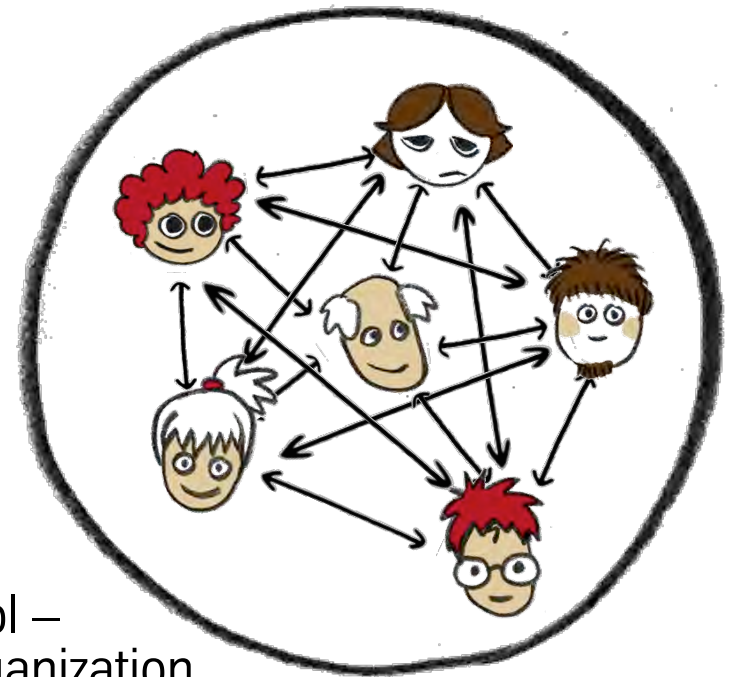




Make it real!

# ORGANIZE FOR COMPLEXITY



**Part 1.** How to make work work again.  
How to break the barrier of command-and-control –  
and create the peak-performance, networked organization

## BetaCodex Network Associates

Niels Pflaeging & Silke Hermann & Lars Vollmer & Valérya Carvalho  
Illustrations by Pia Steinmann

BetaCodex Network White Paper No. 12, June 2012

# 12

# This paper addresses fundamental questions of interest to business owners, managers, professionals and change agents

Don't we all ask ourselves **questions** like:

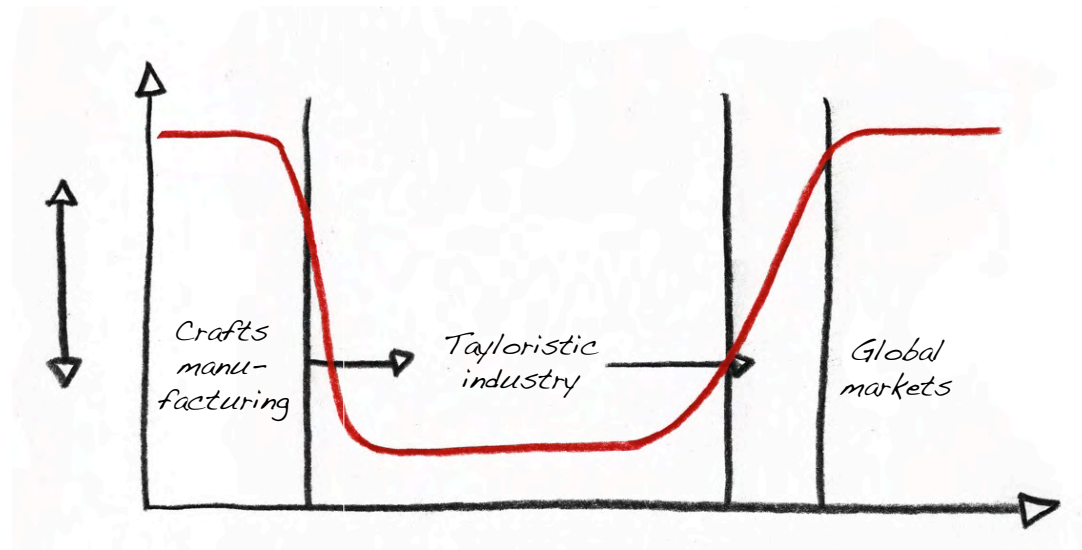
- How can organizations deal with growing complexity?
- How to adjust a growing organization, without creating falling into the bureaucracy trap?
- How to become more capable of adapting to new circumstances?
- How to overcome existing barriers to performance, innovation and growth?
- How to become an organization more fit to human beings, and achieve higher engagement?
- How to produce profound change, without hitting the barrier?

In this paper, we argue that in order to address these issues, we must **create organizations that are truly robust for complexity, as well as fit for human beings**. We also discuss how that can be done. You will learn about concepts that allow to design entire organizations for complexity, regardless of size, age, industry, country or culture.



## Part 1.

**Complexity: it matters to organizations. Big time.**



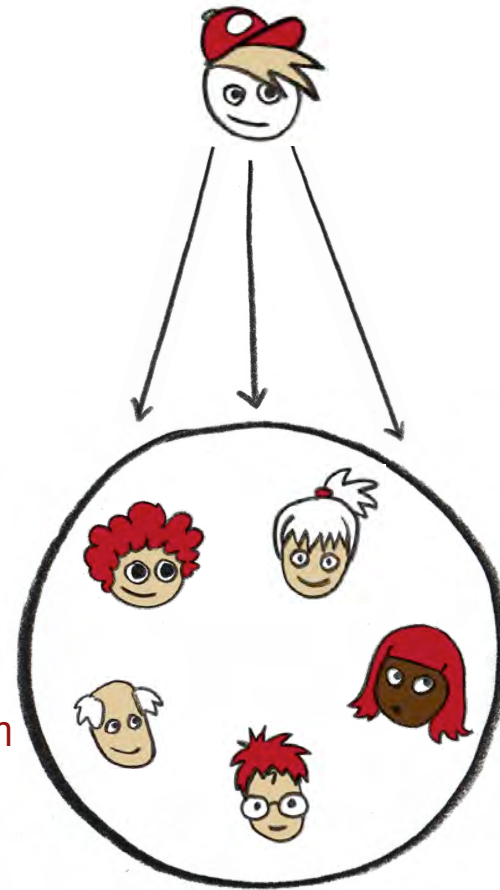
# Frederick Taylor's grand idea and how management was invented: The division between **thinkers** and **doers**

In 1911, Frederick Taylor published his landmark book **The Principles of Scientific Management**. He proposed management as a “revolution” that would solve the productivity constraints of the industrial-age organization. Taylorism achieved just that. What Taylor pioneered was the idea of **dividing an organization between thinking people (managers) and executing people (workers)** – thus legitimating the management profession as that of “thinking principals of the non-thinking human resources”. Taylor also introduced functional division to shop-floor work.

Taylor's concepts were soon decried as inhumane and non-scientific, his consulting methods as ineffective. But hierarchical/functional division became widely adopted after his death, in 1915, his principles were applied to non-industrial, non-shop-floor work.

**Management, as we know it, is not much different from what Taylor proposed** a century ago. In dynamic and complex markets, however, command-and-control turns toxic for both organizational performance and human/social advancement.

We call tayloristic management **Alpha**.



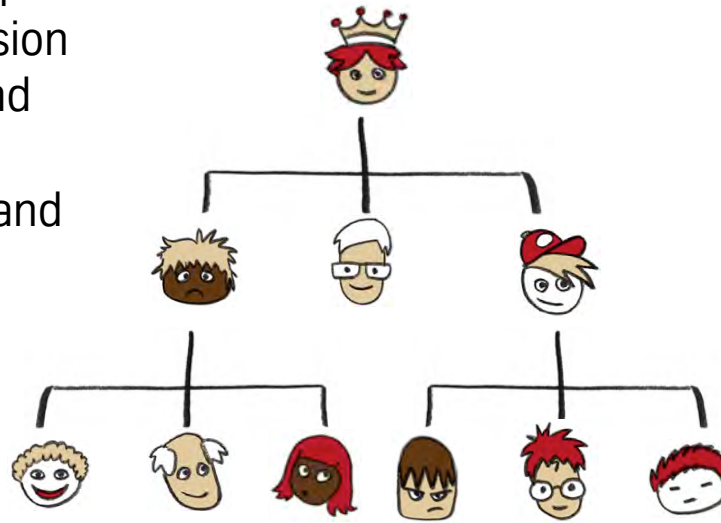
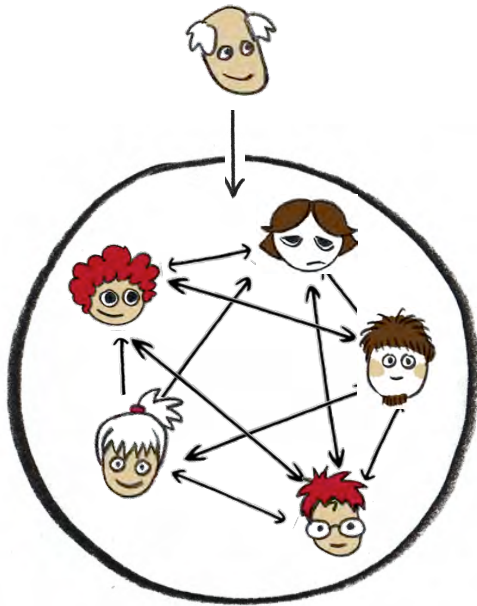
**“Thinkers”/  
Managers**  
strategize, steer,  
control, decide

**“Doers”/  
Workers**  
execute, obey,  
follow

# The price of simplicity: Tayloristic division causes “managed” organizations to experience **three systemic “gaps”**

## 1 The Social Gap

Hierarchical division and top-down control cause an erosion of social/group pressure and dialog, and a bias towards management by numbers and leadership by fear



## 2 The Functional Gap

Functional division produces a need of managed/imposed coordination through process control, interfaces, planning, rules, standards, hierarchic power etc.

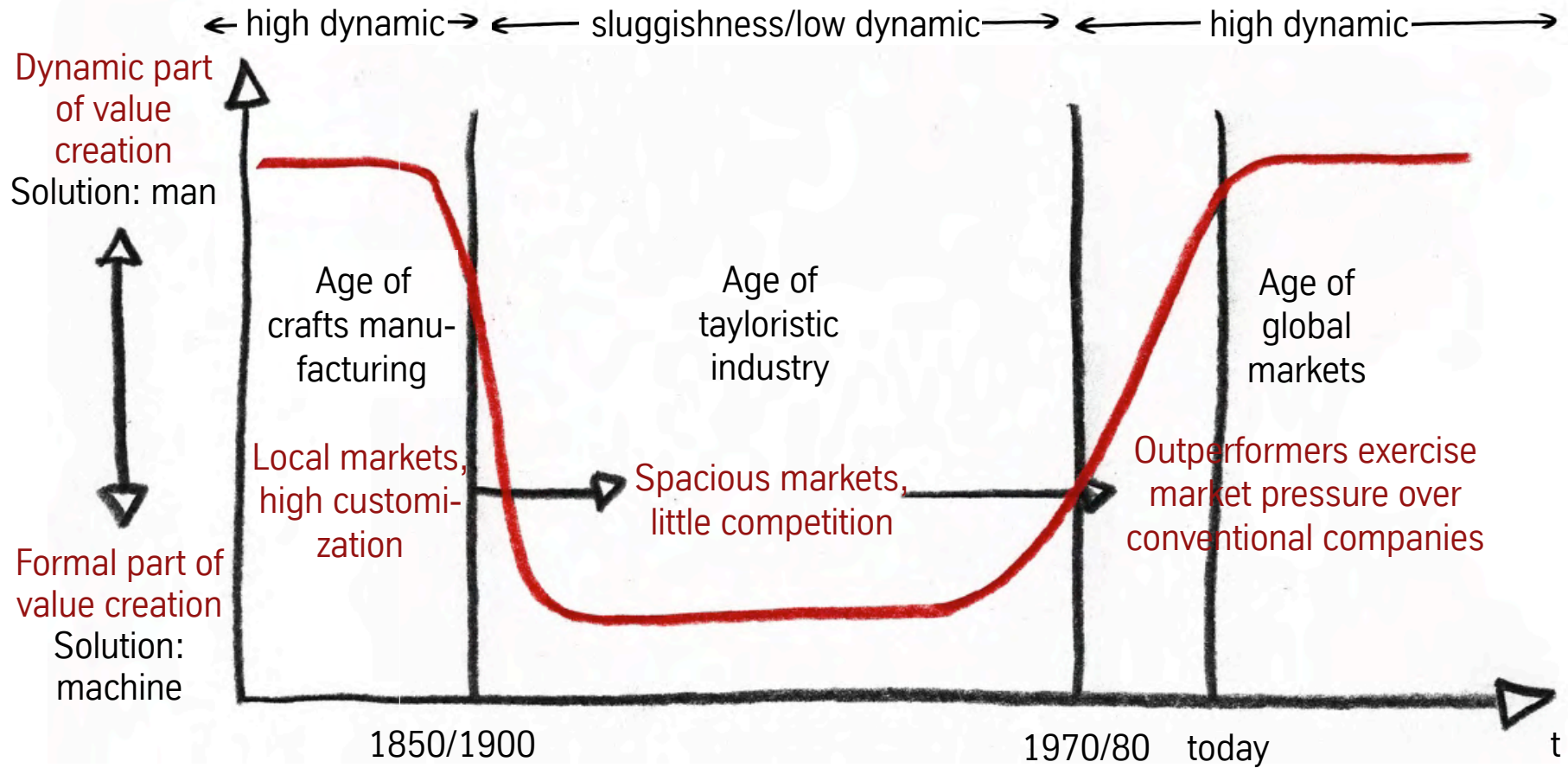
## 3 The Time Gap

Personal division between thinking thinkers and non-thinking doers causes need for managed/imposed roles, complicated IT, strategy, forecasting, and planning



None of this feels good. None of this is value-creating. The three gaps all lead to waste.

# The historical course of **market dynamics** and the recent rise of highly dynamic and complex markets

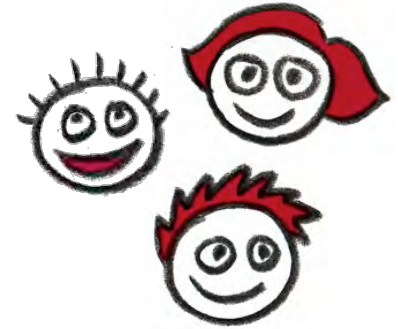


The dominance of high dynamics and complexity is neither good or bad. **It's a historical fact.** We call the graph shown here the "Taylor Bathtub".

# The difference between **the complicated** and **the complex**



- **Complicated systems** operate in standardized ways. Here, imprecision is diminished, non-objectivity and uncertainty are reduced as far as possible. Can be described through non-ambiguous cause-and-effect chains Are externally controllable.
- Any high-precision machine is complicated: Everything is done to avoid imprecision/to increase precision. A watch, for example, is calibrated to diminish mistakes, uncertainty and illusion. It is configured to supply objective data, certainty and a minimum of illusion.



- **Complex systems** have presence or participation of living creatures. They are living systems - that's why they may change at any moment. Such systems are only externally observable – not controllable.
- A complex systems' behavior is non-predictable. Here, it's natural that there is a level of error, uncertainty and illusion that is much higher than in complicated systems.  
A complex system may possess elements that can operate in standardized ways, but their interaction would be constantly changing, in discontinuous ways

# Consequences of complexity:

## The importance of **mastery for problem-solving**

The only “thing” capable of effectively dealing with complexity is human beings. What matters in complexity, thus, as far as **problem-solving** is concerned, is neither tools, nor standardization, nor rules, nor structures, nor processes – all those things that used to serve us well in the industrial age and its dull markets.

In complexity, the question isn't **how** to solve a problem, but **who** can do it. What matters now, thus, is skilful people, or **people with mastery**.  
People with ideas.

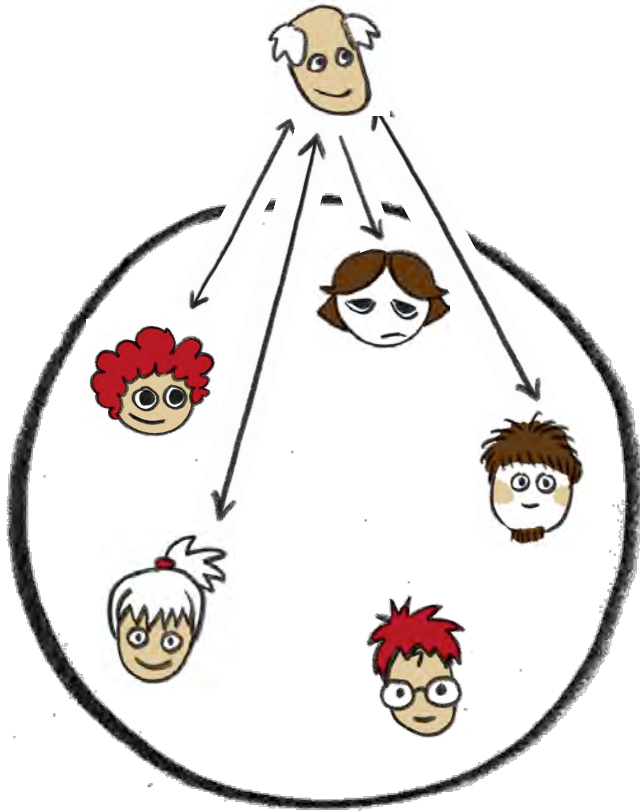
Problem-solving in a life-less system is about instruction. Problem-solving in a living system is about communication.



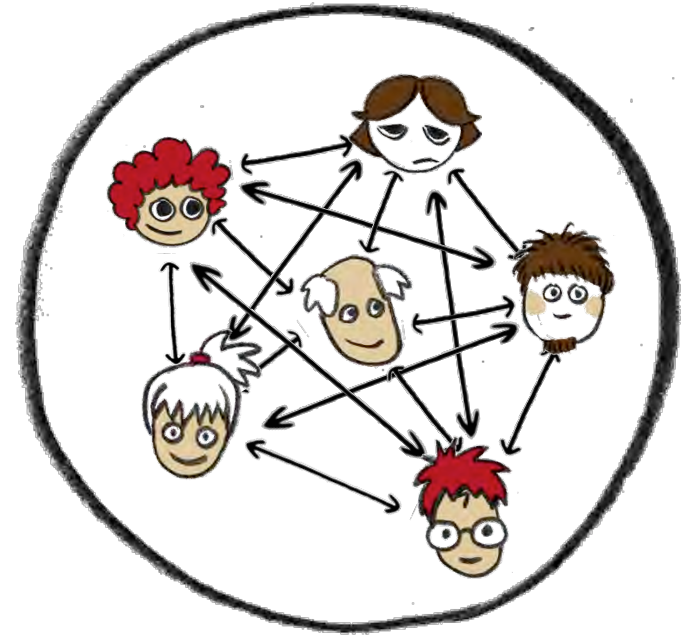
Complexity can neither be managed, nor reduced. It can be confronted with human mastery.



The improvement paradox: In complexity, **working on separate parts doesn't improve the whole**. It actually damages the whole



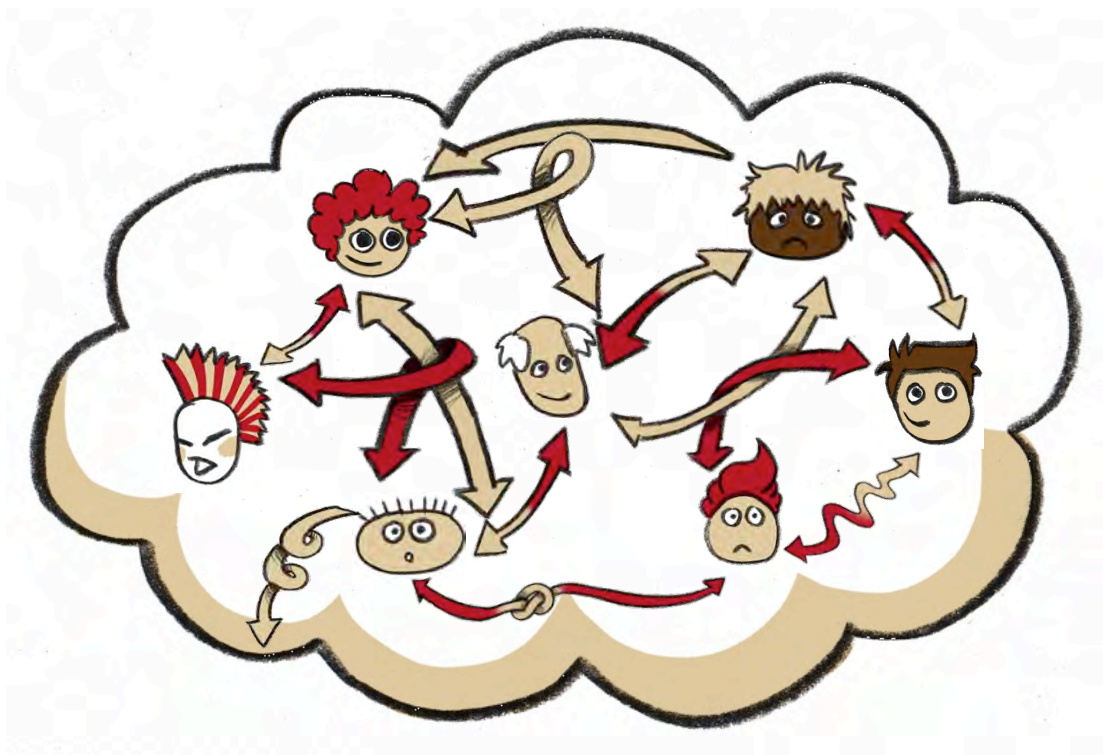
**Working on individual parts of the system** does not improve the functioning of the whole: Because in a system, it is not so much the parts that matter, but **their fit**.



What really improves a system as a whole is working not on the parts itself, but **on the interactions between the parts**. You might call this attitude “leadership”.

Systems are not improved by tinkering with the parts, but by working on their interactions.

## Part 2. People and work



# Human nature at work - McGregor's critical distinction.

Ask yourself: which theory describes me, and people around me?



## Theory X

### Attitude

**People dislike work,** find it boring, and will avoid it if they can

**People need to work** and want to take an interest in it. Under right conditions, they can enjoy it

### Direction

**People must be forced or bribed** to make the right effort

**People will direct themselves** towards a target that they accept

### Responsibility

**People would rather be directed** than accept responsibility, (which they avoid)

**People will seek and accept responsibility,** under the right conditions

### Motivation

**People are motivated mainly by money** and fears about their job security

**Under the right conditions, people are motivated** by the desire to realize their own potential

### Creativity

**Most people have little creativity** - except when it comes to getting round rules

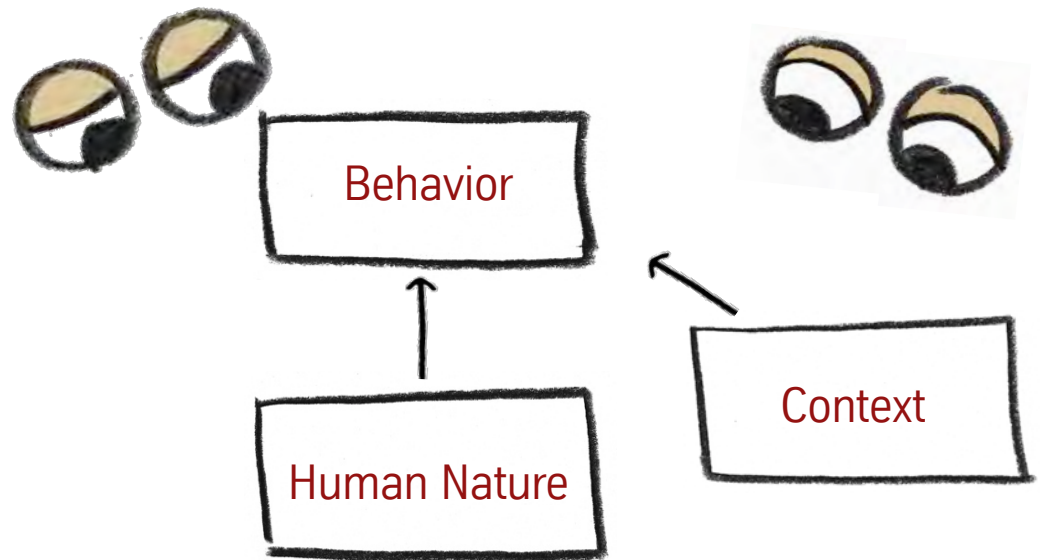
**Creativity and ingenuity are widely distributed** and grossly underused



## Theory Y

# Human nature at work: McGregor's critical distinction

Asked which theory about human nature – X or Y – describes us, everyone immediately knows: “I am a Theory Y sort of person!” When asked about other people, however, the answer is usually not as clear cut. Haven't we all experienced Theory X people many times in our lives? At work? In our organizations?



Douglas McGregor, in his seminal work from 1960, distinguished between two images of human nature, of which only one is “true”, in that it holds up to science and available theory. The other one, **Theory X, is nothing more than a prejudice that we have about other people.** There are two reasons why this theory, besides being a superstition, is commonplace. Firstly, it reflects common thinking from our pre-democratic, pre-enlightenment past. Secondly, while observing other people's behavior, we tend to make conclusions about their human nature – frequently ignoring behavior-shaping context.

This matters. Because assumptions we have in our minds about other people shape our behavior, and the way we tend to design and run organizations: if you believe in the existence of Theory X humans, then command-and-control systems design will follow. In order to build complexity-robust organizations, a shared view of human nature is needed.

# The nature of **motivation** and why leaders cannot motivate

People are driven by **motives**. It is safe to say that everyone carries all kinds of motives, to a certain degree. Everyone thus is a “carrier of motives”, or “intrinsically motivated”. The **specific levels or the dominance** of different motives, however, vary greatly among individuals.

What this means for organizations, or employers, is: they cannot motivate. Because motivation *is*. The main thing that organizations can do to stimulate performance is facilitating options for connection between individuals and the organization, through purpose and work. We call the phenomenon, when an individual connects itself voluntarily to work and an organization, **connectedness**.

Unfortunately, belief in the myth of motivational power of leadership is still widespread. Truth is: because of motivation's intrinsic nature, leaders, through their behavior, can only de-motivate.



# Appreciating behavioral distinctiveness: People and preferences

An individual's behavior is also strongly influenced by preferences. The concept of “preferences” was introduced by Carl G. Jung in his pioneering work “Psychological Types”.

Introversion



Extraversion

**Attitude.** Jung differentiated types firstly according to their general attitude: Attitude describes people's way of reacting more to outer or inner experiences.

Thinking



Feeling

**Decision-making “functions”.** 'Heady' individuals, who prefer to make decisions by thinking things through, rationally using the 'thinking function'. 'Heart' people prefer to evaluate and make decisions subjectively using the 'feeling' function.

Sensing



Intuition

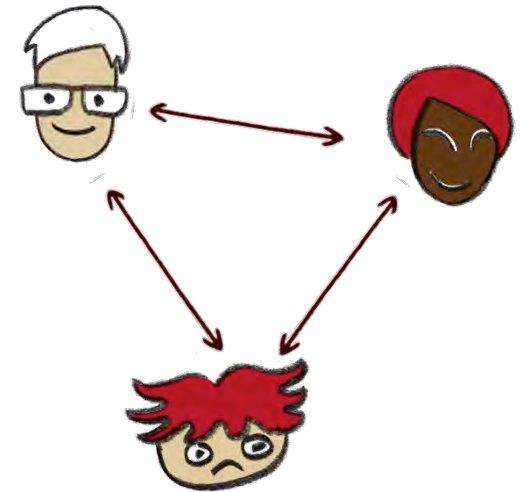
**Perceiving “functions”.** We view the world using a combination of 'sensing' to record the sensory details, and 'intuition' to see patterns, make connections and interpret meaning.

# Making use of distinctiveness in preference to deal with complexity

There is **great variety of behavior** within the three categories of preferences, depending on which position on each of the three bi-polar scales the person's behavior is plotted. The majority of people will not be extreme, demonstrating a close balance – as such they can be more difficult to read.

Every person has the ability to use **either side** of the bi-polar scales, although we will all have preferences for one side more than the other – most of the time.

When people with different preferences work together, **they can compliment each other.**



In complexity, distinctiveness in motivations and preferences can be an asset – or a liability

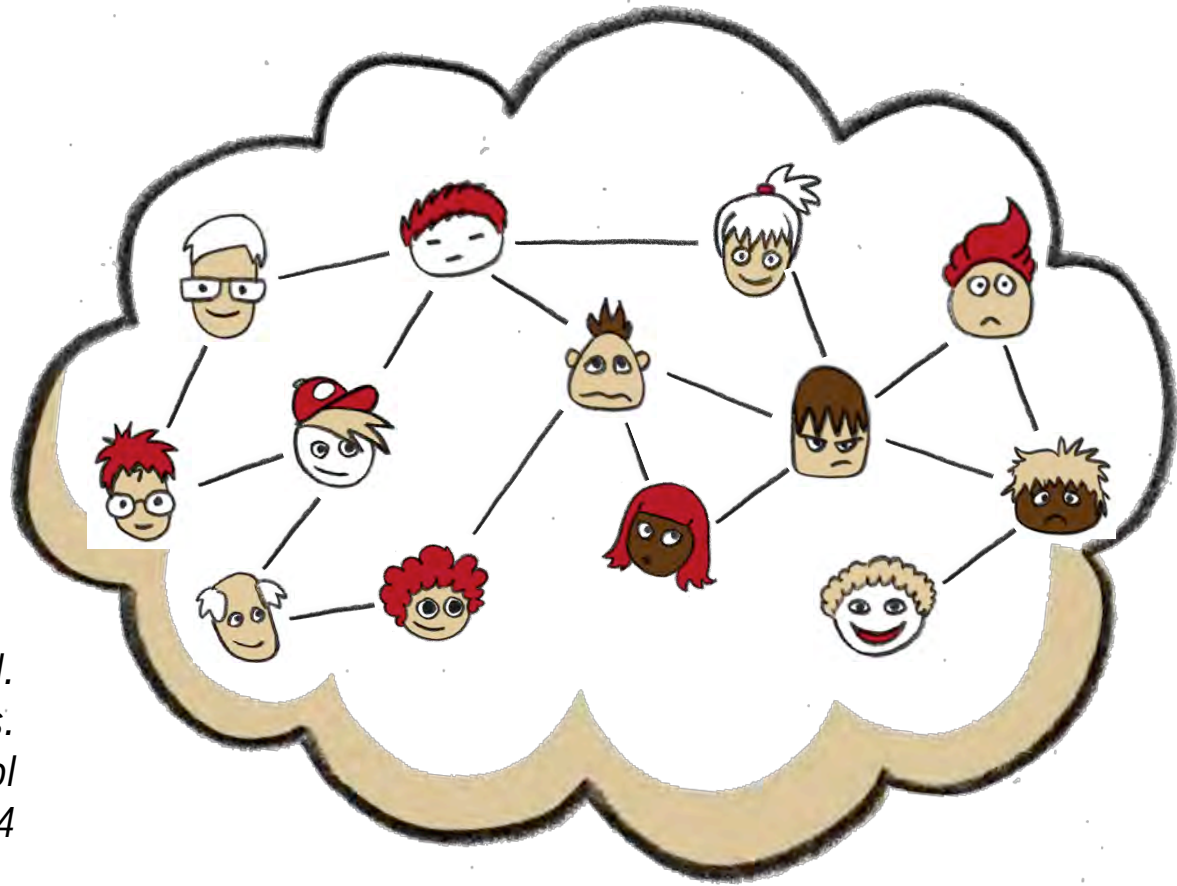
# Individual competence vs. collective competence

“We learned that individual expertise did not distinguish people as high performers. What distinguished high performers were larger and more diversified personal networks.”

“Engineers are roughly five times more likely to turn to a person for information as to an impersonal source such as a database.”

*Cross, Rob et.al.*

*The Hidden Power of Social Networks.  
Boston: Harvard Business School  
Press, 2004*





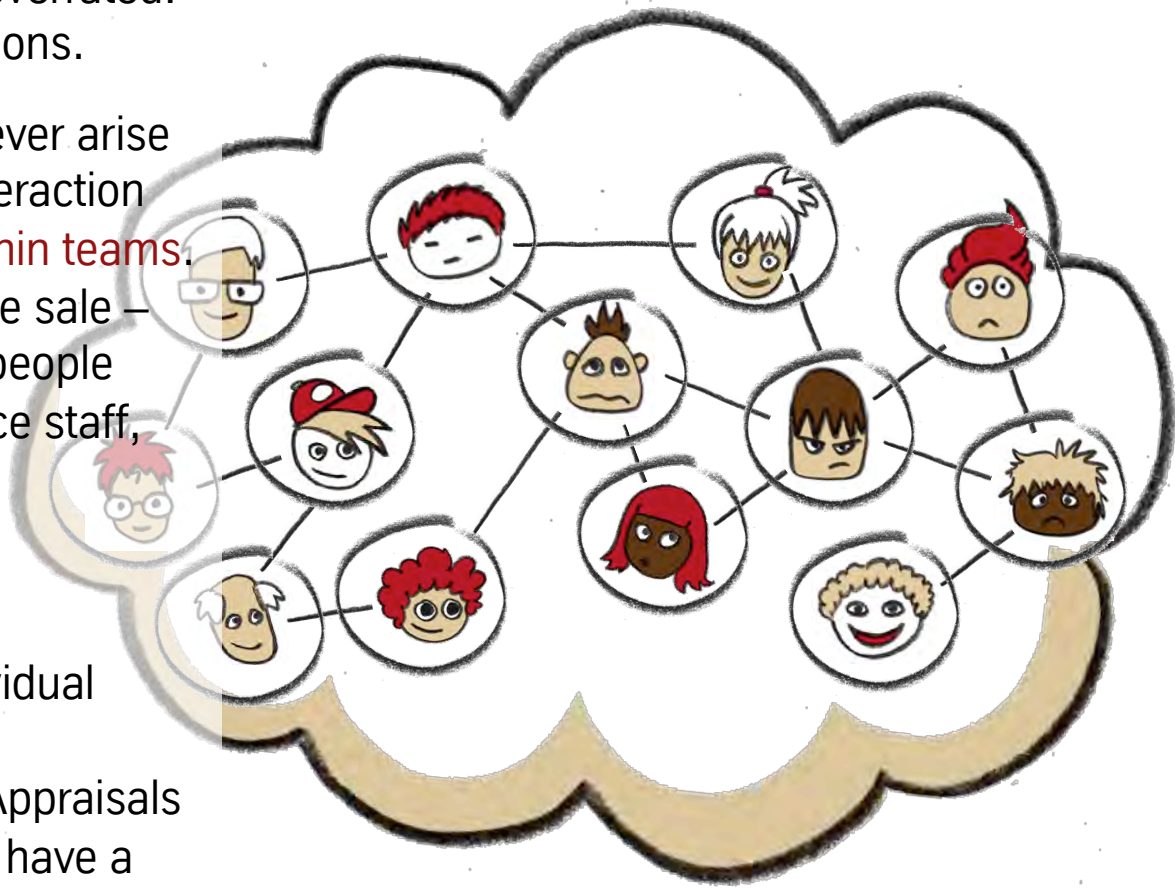
# Most organizations are obsessed with individual performance. But **individual performance is actually a myth**

Individual performance is not just overrated. It simply doesn't exist, in organizations.

Why? Because value, or results, never arise from individual action, but from interaction **between various individuals, or within teams.**

A sales person only does part of the sale – the other parts are being done by people who may call themselves back office staff, production and procurement staff, accountants and HR professionals.

Because interdependency is in organizations, trying to define individual targets, or to measure individual performance, leads to deception. Appraisals of individual performance can only have a de-spiriting and de-motivating effect on people and damage team spirit.

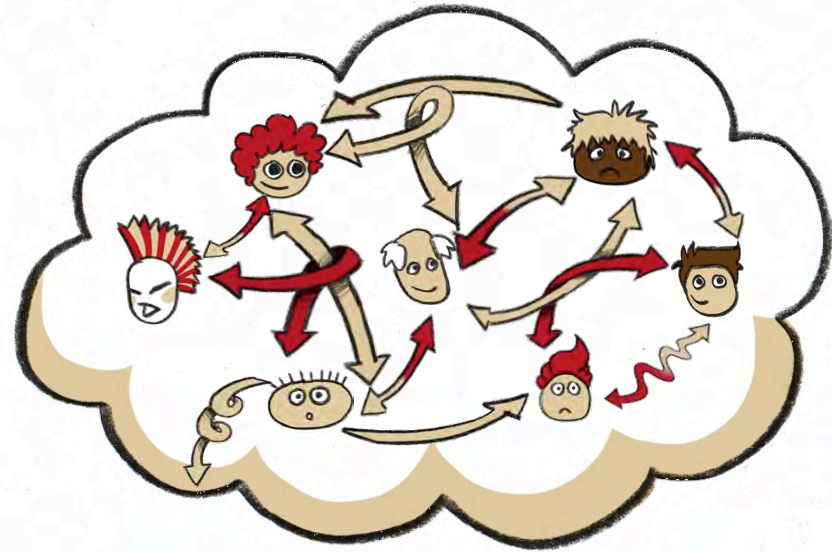


# People communicate & connect in wildly different manners.

## About the “archetypes” of communicators

- Hubs** draw information and broadcast it
- Gatekeepers** carefully manage information flow
- Pulsetakers** great observers of people

Karen Stephenson, *Quantum Theory of Trust*.  
Harlow: Pearson Education Ltd, 2005



- Connectors** exchange information with many people
- Mavens** invest more time in people
- Salesmen** masters of interpersonal communication

Malcolm Gladwell, *The Tipping Point*.  
Boston: Back Bay Books, 2002

It is not important which of these concepts is “true” or “better”:  
There is potential in making use of social patterns and these varied ways of acting.  
Make use of them, or ignore them at your peril!

# What makes people complex: putting it all together

Behavior (visible)

Competencies

Preferences

Motives

Nature

An individual's **behavior is shaped by motives, preferences and competencies**. Motives as personal characteristics are quite stable over time – they describe how important certain goals are for the individual. Preferences, by contrast, can partly evolve during the course of a lifetime - depending on environment, challenges and personal goals. Motives and preferences, combined, influence our interest to acquire certain competencies: There are abilities that are present or that can be learned. Competencies, thus, are directly related to **learning**.

As we saw, only behavior is easily and readily observable. It is still quite easy to describe an individual's competencies. With a little more effort yet, preferences can be mapped and described. Proper identification of someone's motives require even more effort and delicacy. Human nature

cannot be observed at all: it is a matter of conviction, or part of the social theories that we hold. Problem is: observing behavior seduces us to (mis)judge others' competencies, motives, or even their nature. Organization for complexity requires more reflection!

## Part 3.

# Self-organizing teams and the networked organization: From the old design principles to new, and better ones



# Forming teams

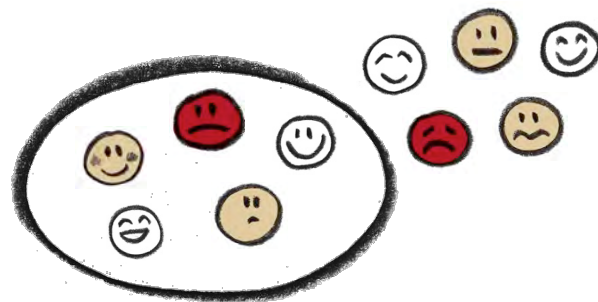
“The idea of “**chunking**”: a group of items is perceived as a single “chunk”. The chunk’s boundary is a little like a cell membrane or a national border. It establishes a separate identity for the cluster within. According to context, one may wish to ignore the chunk’s internal structure or take it into account.”

*Hofstadter/Douglas. Gödel, Escher, Bach. New York: Basic Books, 1979*

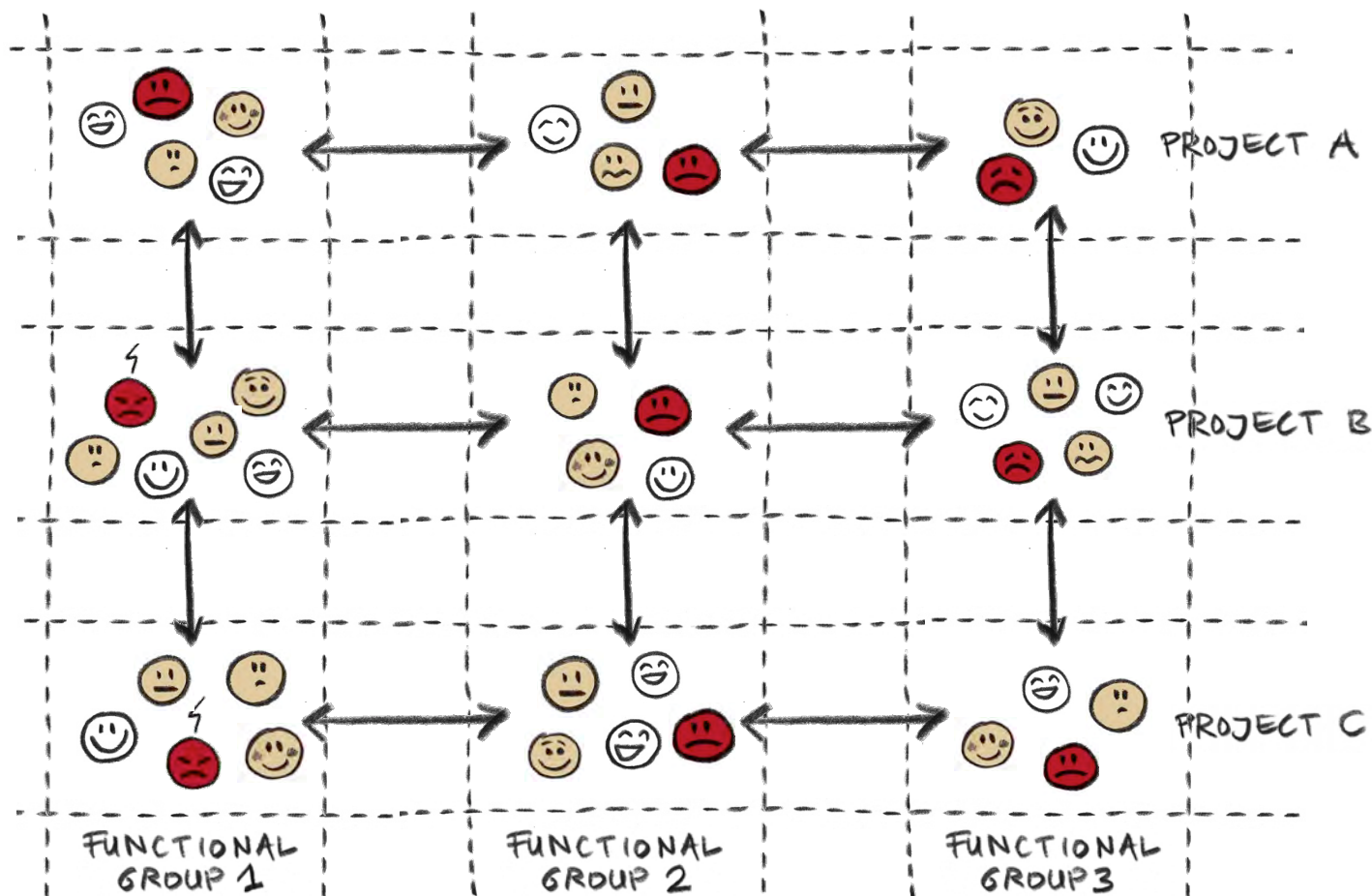
We call the individual chunk a **cell**, and its boundary the **cell membrane**.

We call the cluster of cells (the system), a **cell-structure network**.

We call the system's boundary or membrane the **sphere of activity**.



# Organizing the work: Common forms of team segmentation – and where the difference lies



## Design principle "Beta":

*Teams* are cross-functional, or functionally integrated.

“Diverse individuals who work interconnected, with each other” - individuals who commit to work together to reach a common goal

## Design principle "Alpha":

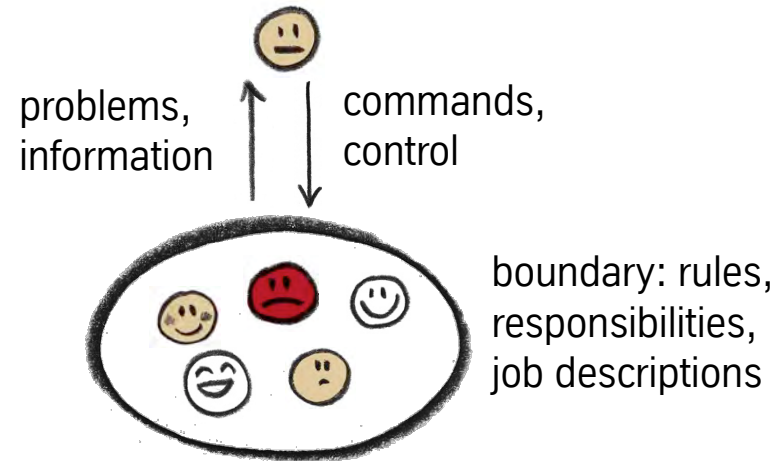
*Groups* are uni-functional, or functionally divided.

“Similar Individuals who work next to each other, in parallel”, eventually competing against each other

# Top-down command-and-control versus self-organization

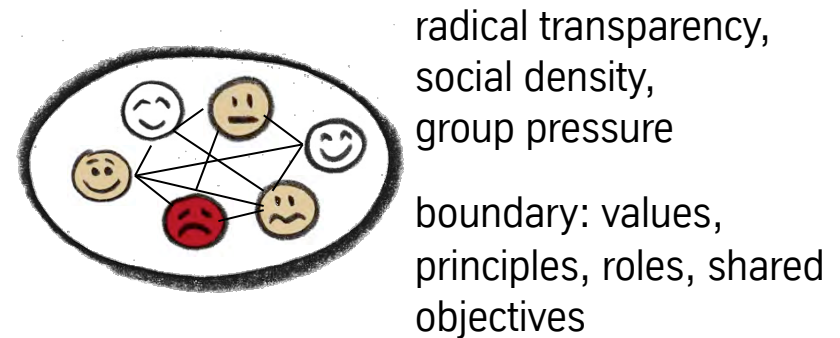
## Design principle "Alpha":

*Control through bosses. Information flows up, commands flow down. Top-down decision-making. Use of rules for containment.*



## Design principle "Beta":

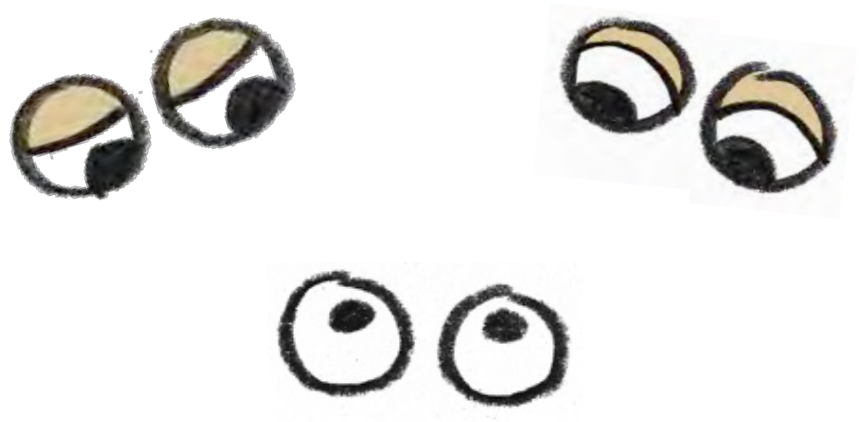
*Self-regulation within the team. Control through peer pressure and transparency. Principles and shared responsibility.*



Self-organization is not the "right" term: Better would be: Socially dense market-organization.

# Making use of **social pressure**

1. Let people identify with a **small group**.
2. Give them **shared responsibility** for shared goals.
3. Make all information open and **transparent** to the team.
4. Make performance information comparable **across** teams.



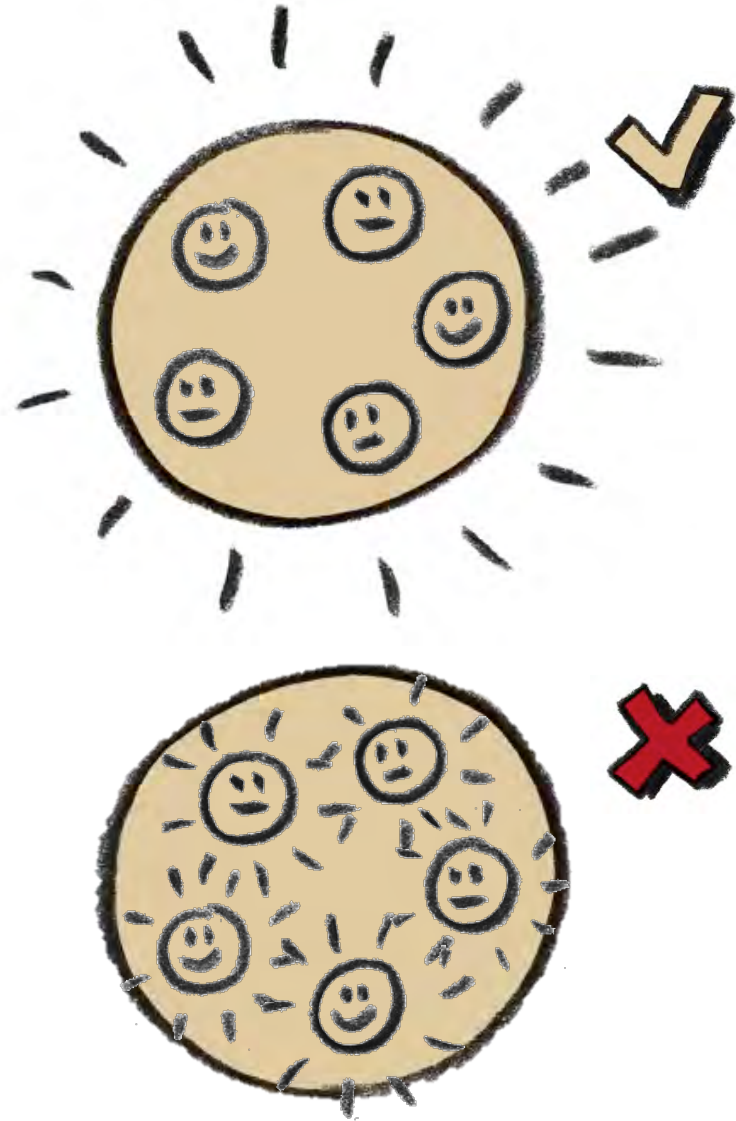
Social pressure, used right: far more powerful than hierarchy, no damaging side-effects.



# Self-organization **must** be team-based

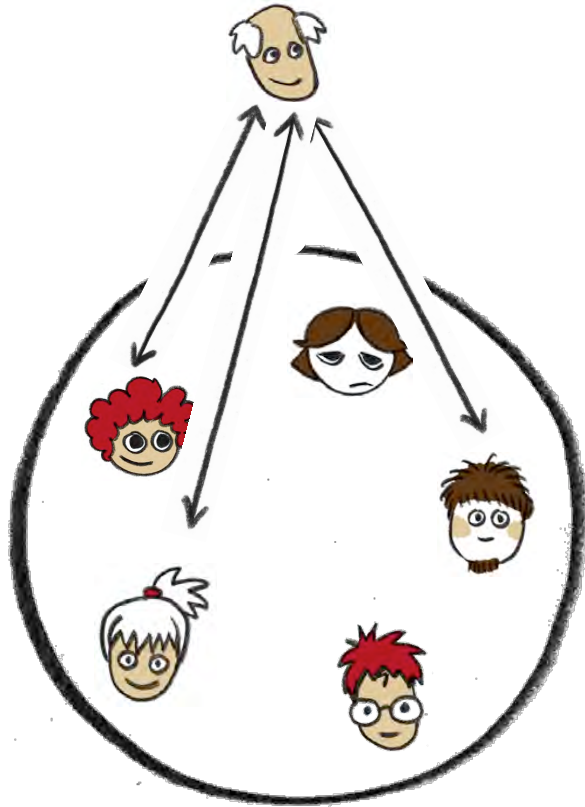
Ultimately, organizing for complexity and self-organization is always **about empowering teams...**

... **not** about empowering individuals

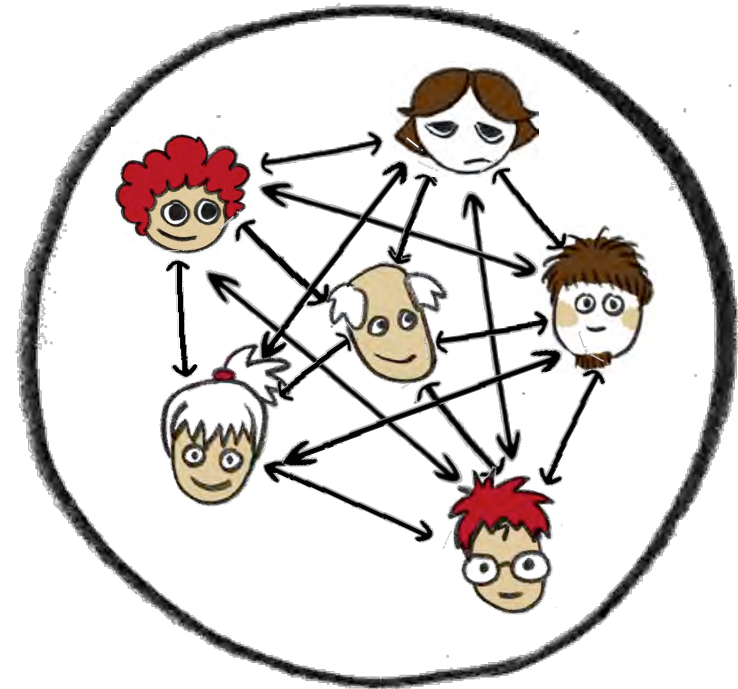


The empowerment movement of the 1990's also missed this point.

# A seeming paradox: Giving up power and decentralizing decision-making back to teams actually **increases** status



> Low, or average performance



> High, or superior performance

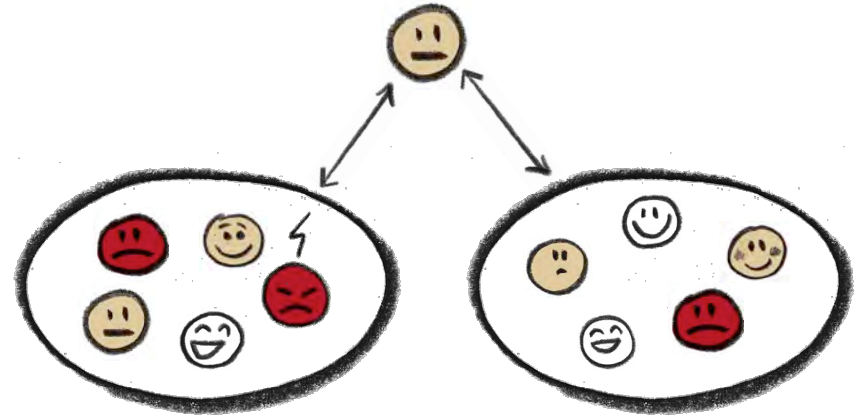
Success is not a zero-sum game.

# Communication across teams

## Design principle "Alpha":

*Coordination/communication through a manager, usually combined with functional division; Taylorism*

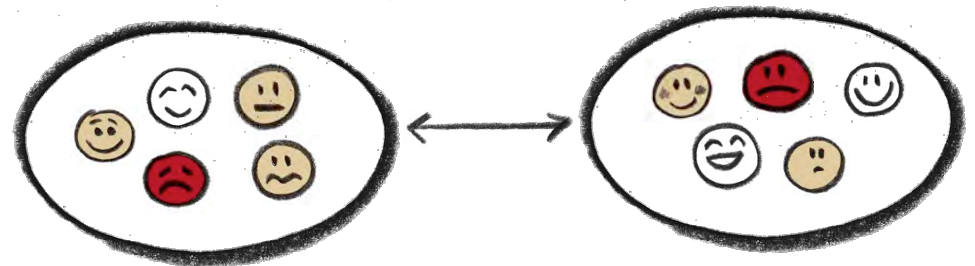
> Sufficient in dull markets



## Design principle "Beta":

*not through a manager, but laterally*

> Superior in complex markets

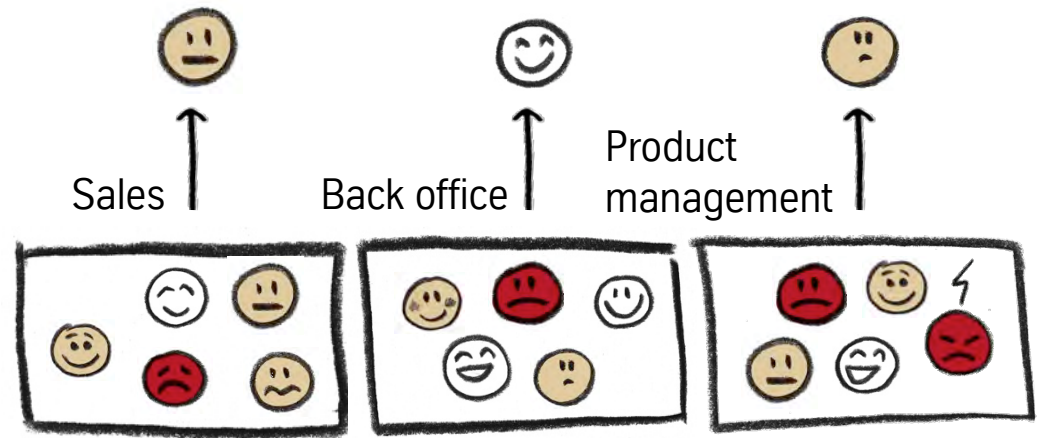


Centralized coordination is a luxury organizations in complex markets cannot afford.

# The difference between a “department” and a “cell”

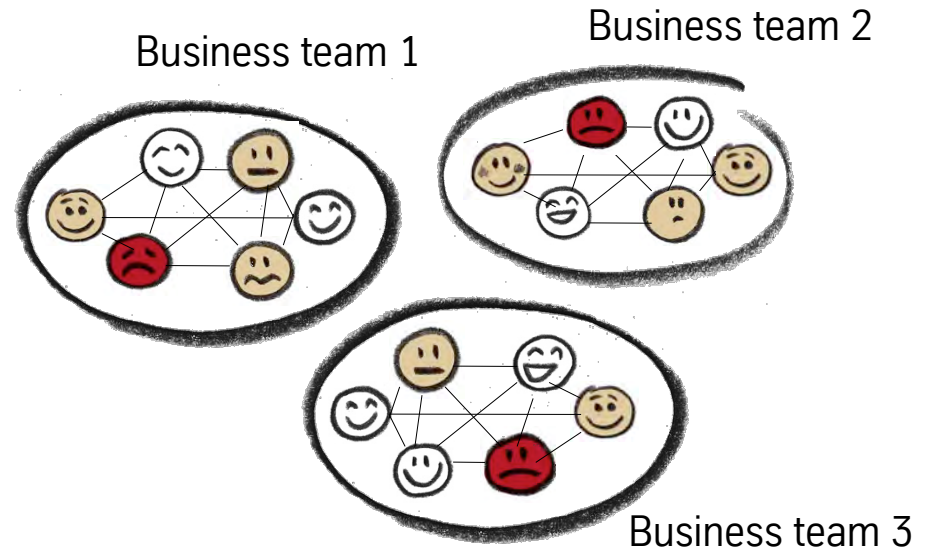
## Design principle "Alpha":

*A department implies functional differentiation and thus the grouping of functional specialists - marketers with marketers, sales people with sales people, etc., all of which have to be coordinated horizontally. Business processes cross different departments. Result: groups of people working in parallel, not teams*



## Design principle "Beta":

*A cell implies functional integration, or cross-functional teams. Coordination occurs laterally, among peers. Business processes flow within teams. Result: actual teams of people working for and with each other*



Complex markets require decentralization, combined with market-like coordination.

# More reading and resources

For more about **organizational structures**, see our white paper no. 11.

For more about **cell-structure design**: see our white papers no. 8, 9 and 11.

For more about **“relative“ performance management**: see our white paper no. 10.

For more about **problem-solving in complexity**, see our white paper no. 7.

For more about the **BetaCodex**, see our white papers no. 5 and 6.

All papers can be accessed from this page: [www.betacodex.org/papers](http://www.betacodex.org/papers)

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We **welcome your suggestions** to improve future versions of this paper.

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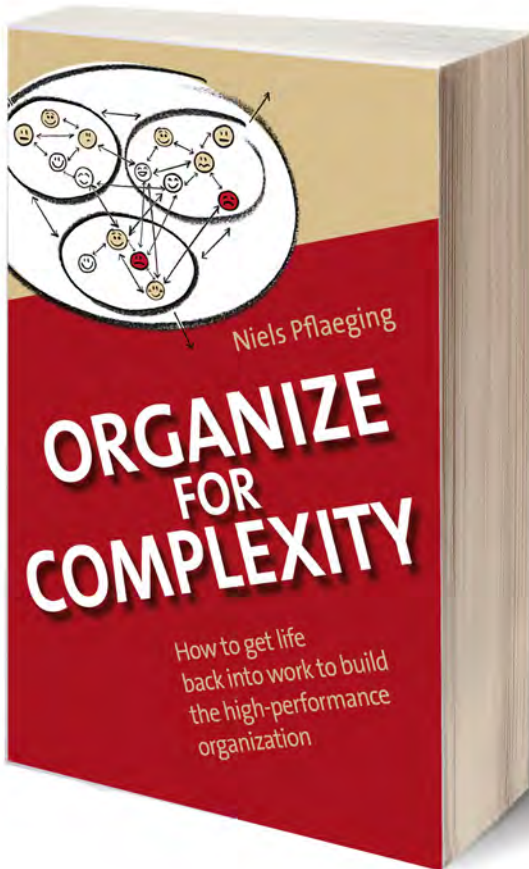
Thanks to **Pia Steinmann**, who crafted all illustrations used in this paper, and to **Jurgen Appelo**, whose drawings originally inspired it.

# The BetaCodex Network white papers - so far

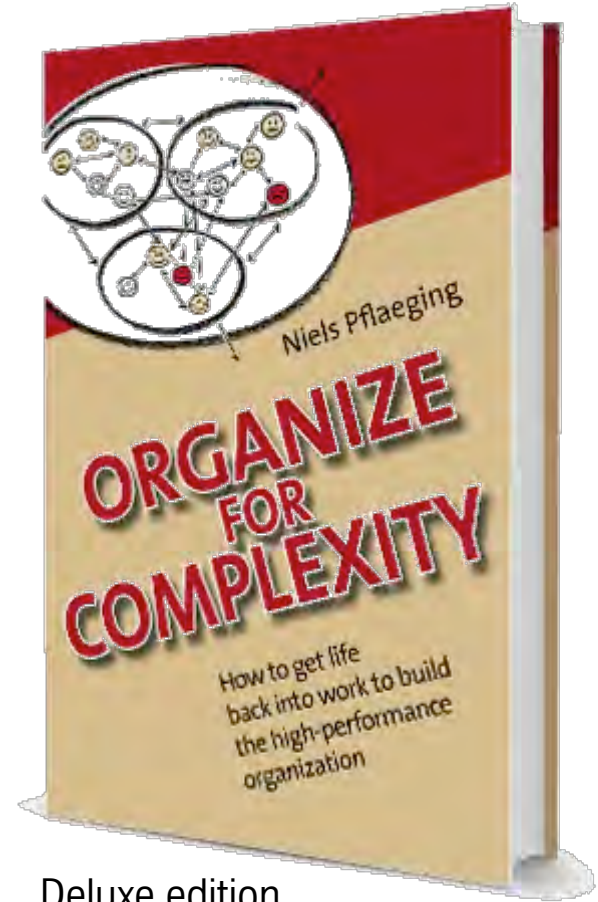


Find all BetaCodex Network white papers on [www.betacodex.org/papers](http://www.betacodex.org/papers) and on Slideshare.

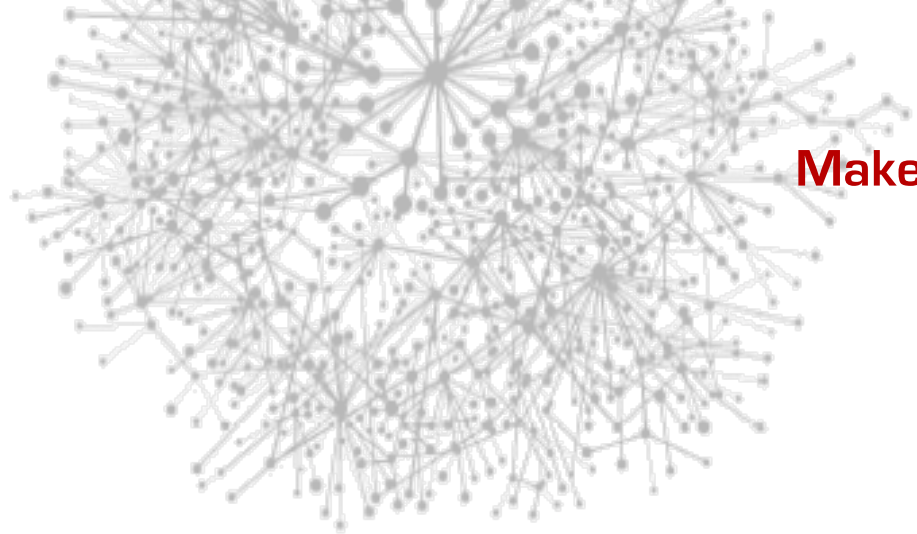
# The “Organize for Complexity” book



Paperback edition



Deluxe edition  
(with bonus chapter)



**Make it real!**



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