

The biological concept of *chreods* and a *fitness landscape* in *organisms* is a useful thinking tool for approaching the design of performance in *organisations*.

Great sporting achievements demonstrate ‘determined’ teams designing a ‘pathway’ to ‘peak performance’, key ideas inherent in chreods.

This is achieved by cohesion. Most human enterprises fall short of biological design and performance because people are disconnected.

Yet, even small teams like Celtic and Bradford can beat mighty teams when they achieve coherence.

We believe that this is a necessity (another chreod concept) for companies to succeed.

It requires navigating the ‘fitness landscape’.

Running an enterprise is a practical matter. The results, in terms of finance, emotion and meaning, are equally practical. The practical flows through energy, emotional connections and wise choices. And these depend on design decisions.

In one client enterprise I asked staff: “What is the company’s vision of the future?”

“Nothing,” was the reply. “We do not have a vision of the future. The future is the next quarter. Often less.” Well, it is a cheap point, but one sadly all too common.

On the other hand, what happens if there is real cohesion across the company around a shared vision? The answer is: ‘Something Magical.’

Virtuous Coherence.

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Sporting examples.

On 8 November, 2012, Celtic, in their 125th anniversary year, beat possibly the best football team ever, Barcelona. Here is what Roddy Forsyth reported for the Telegraph: *“It was the product of a mighty communal effort, a symbiosis of the fans and their latest generation of hooped idols... Charlie Mulgrew’s delivery was pitched perfectly beyond the back post into the unguarded spot filled by Wanyama as he timed his run perfectly... Barca were relentless but not wholly convincing, a tribute to Celtic’s concentration.”*

And on 11 December, 2012, The Bantams, lowly Bradford City in the English second division, overtopped 65 league places to beat big team Arsenal in the quarter-final of the Capital One Cup. Most of the commentary was focused on criticising Arsenal and its manager (and his use of his coaches). But watching both Bradford and Celtic, they shared the same quality that I saw in Alastair Cook’s recent test match team: determination allied with cohesion.

At the time of writing, during the fourth test between England and India (2013), the commentator described the rooted Joe Root on debut in the English team as saying (to himself): “You are not going to get me out”.

These are all examples of *chreods*.

Master Goals: Chreods.

Every sports team along with every company has goals and they have to organise themselves and their actions to achieve these goals. For this reason, they would do well to understand *chreods*, even if they have never heard the word before. It is one of the most important scientific concepts of the 20th century.

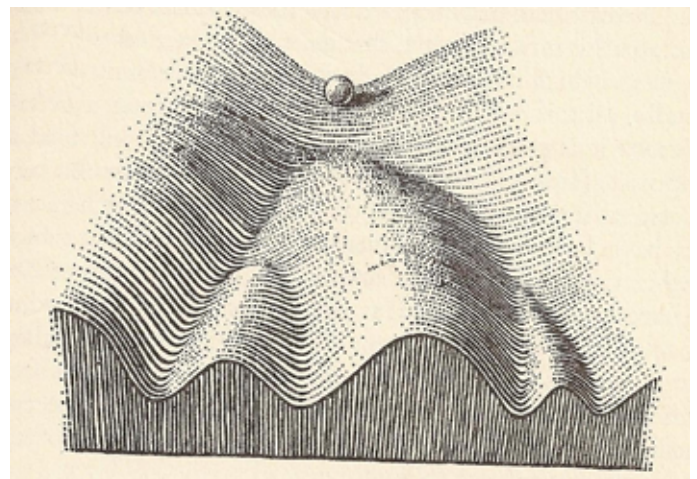
The term was coined by biologist C.H. Waddington and combines the Greek words for “determined” or “necessary” and for “pathway.”

The problem that biologists have is to understand how living organisms grow into their forms from first cell and how these forms come to look like optimum design: the wonderful way that our liver or shinbone has evolved to do the job it does. Trillions of cells organise themselves or are organised into coherent biological forms.

One of the foremost researchers was mathematician René Thom, who modelled the process by which cells evolve into final end organs, or *chreods*.

Imagine a landscape: water flows from some high point by its optimum path through the topography of hills and valleys and plain towards the sea. The river takes a left turn, or a right, at a certain point according to the topography of the landscape. The final destination is a kind of optimum point for the pathway. (In biology, the topology is usually reversed: the goal is to get to the “top of the mountain” using the available energy in the best way possible.)

Stuart Kauffman used this metaphor to come up with the concept of a *fitness landscape*: each biological form evolves by a series of choice points to its optimum design.



Choice paths in a fitness landscape

Let us apply this to business.

First, a quick revisit to football, because its great virtue is that you can see what is happening in a very short space of time. There is a very clear outcome that is intended: ball in the back of the other team’s net. Now the team is configured in action to achieve that in opposition to the other team, doing the same thing, on the space of the football pitch.

When scientist Christopher Alexander considered fitness landscapes, he described them as configurable spaces that contain all possible outcomes and points of decision within the design for a structure or the growth of an organism or system.

In human organisations, most possible outcomes will be poor outcomes.

A footballer runs down the wing, or passes forward, or sideways, to someone who is themselves moving in anticipation. Everything is being played into a forward timespace in a forward-looking physical space in which players observe each other and continuously respond in dynamic feedback loops. There are endless choices towards chosen outcomes.

To achieve the really optimum point means following a rare and specialised path. Very few of the possible outcomes will be good ones. Yet, paths, or “chreods”, to the infinitesimally rare available good solutions appear to be followed automatically in the biological world. By Alexander’s theory, because conscious human design decisions do not need to follow these chreods, conscious human design can lead to mixed results.

We humans often don’t get it together.

Finding the rare path to cohesive success is one of our key roles for clients.

Creative cohesion leads to success.

For the aim of leadership, whether of a football team or a bank, is to bring the whole enterprise (and not just those on the pitch or meeting the customer) to a point of cohesion and coherence where it is aligned to the organization’s purpose while enabling local creative skills in the situation. This is the high point of a team, whether of two or two hundred thousand.

Sport routinely witnesses what happens when this cohesion is present, or not. The stories, the experiences, are legion. No regular team player can ever say that they do not know what it means. And it does not have to be in sport: choirs utterly depend on it.

What happens to enable a choir to work with coherence? The answer is that people have to listen to others more than to themselves. Their task is to merge into the overall sound. When this merger of voices takes place, coherence exists.

Similarly, when “a mighty communal effort”, a symbiosis across the team organisation and its fans really unites, then delivery becomes pitch perfect to an empty goal, as with Celtic.

Just a clever analogy?

Is this all it is? Playing with some fancy science in order to be impressive? I think not. Because organisations are also living organisms, of a kind. We are unlike natural organisms, whose parts really work beautifully together, but there are nevertheless some very precise lessons to be learned, which we use.

Chreods are endpoints; design goals, centres of attraction, and as a René Thom has demonstrated, the optimum design pathway is achieved by working backwards from them.

Similarly, in management performance, the greatest success is achieved by starting with the end in mind and then finding the simplest, easiest way to achieve it.

There is little use in looking at what is going wrong now (gap closing) and a great deal of good achieved by clarifying what is needed to reach the required outcomes (the desired present), a task for which Virtuoso® is beautifully designed.

This is a very specific kind of analytical task that requires a rich combination of synthetic and analytical ‘ecologic thinking’ with close observation of the real world.

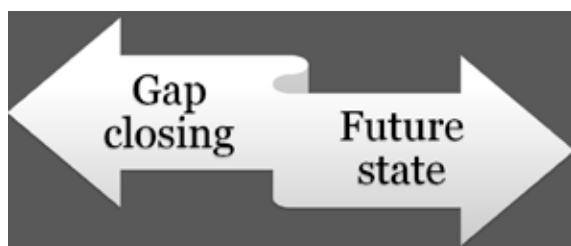


Virtuoso® offers a path to achieve coherence across the 12 strategic identity systems of the company.

Some Applications

We have proved that Virtuoso and related applications work for example, these six fields.

- **Mergers and acquisitions.** Most mergers create dissonance and division, indeed dissidence. But when beautiful mergers take place something magical happens.
- **Integrated marketing** is when the whole organisation unites to create great customer experiences.
- **Designing change:** when you design the right interventions, change flows effortlessly through the organization (our light touch change methodology).

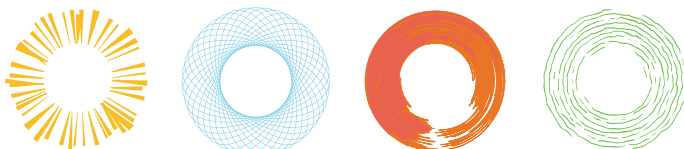


- **Innovation.** Innovation is most successful when aligned with the organisational purpose, competence and goals.
- **HR leadership.** Transcompany cohesion with people collaborating with each other around values, competence and performance objectives.
- **Decision-making, connected performance and organisation structure.** How do you ensure decision making flows to the lowest possible point in the organization, involves all the key players with all the right information configured to arrive in a usable form on time for the decision? Another key task we help with.

Configuring the company for peak performance requires the art of making the right decisions on key choice points. Good executives do this often; great ones even more. But all sometimes need outside help.

Sometimes you just need a new way of seeing. And Thinking.

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About Thinking.

We are your Thinking Partner meeting client requirements since 1991.

We work with the wholeness of enterprise identity, with the lightest of touches. Ease constraints so that your company flows—alive—at its best.

Thinking projects are supported by an exceptional IP co-created over a quarter of a century. Its coherent design offers complete performance.

Move fast. Connect enterprise decisions. Design rich value. Respond in time. Channel risk. Be joyful. Our powerful trust-building process dissolves problems and unlocks success across the enterprise.

Applications include identity system alignment using Virtuoso®, light touch change, breakthroughs in innovation, governance and risk resilience, adaptive structuring, and cost savings.

One of our clients described the outcome of our process as “for the first time having everything on one page”. Another said that never before have all the key leadership groups become aligned.

Our approach to contracting is flexible: spanning the gamut from coaching to design, facilitation and operational fixed-length contracts.

May we partner?

Offer your challenge, big or small.

Or invite us to brief you on our credentials.

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