High Performance

It's all about entropy

By Richard Barrett

Abstract

This paper examines a) the impact of the personal entropy of the leaders of an organisation on the cultural entropy of their organisations, and b) the impact of the cultural entropy on the organisation's performance. In order to improve the performance of an organisation it is necessary to reduce personal entropy of the leaders.

Entropy in mechanical systems

Anyone who has studied physics knows that the amount of energy you get out of a mechanical system is equal to the amount of energy you put into it, minus the amount of energy that is needed to keep the system functioning. When parts become worn, fall out of alignment and friction increases, the system falls below its optimum performance and more energy is needed to keep the system functioning. This additional energy requirement is called entropy. It is the energy required to overcome the disorder in the system. Thus, we can determine the amount of energy available for doing useful work in a mechanical system from the following equation:

$$E_o = E_i - E_n - E$$

E_o is the energy available for doing useful work.
E_i is the input energy.
E_n is the normal amount of energy needed to keep the system functioning when it is operating at high performance.
E is the amount of entropy in the system.

When entropy is low the energy available for doing useful work is at its maximum and the system operates at its highest performance. When entropy is high, the energy available for doing useful work is low, resulting in low performance.

Entropy in human systems

It turns out that this is also true for human systems such as organisations. The amount of energy you get out of an organisation (value-added work) is equal to the amount of energy you put in, minus the amount of energy needed to keep the organisation functioning.

When the degree of dysfunction or disorder in an organisation is high, due to factors such as excessive control, caution, confusion, bureaucracy, hierarchy, internal competition, blame, silo mentality, etc., the amount of energy employees have to expend in getting their jobs done increases. This additional energy is called "cultural entropy" because it is caused by factors that are endemic to the culture of the organisation. The energy that is involved in overcoming cultural entropy is energy that is unavailable for value-added work.

Therefore we can state that the amount of useful energy you get out of an organisation—the energy that makes a positive contribution to the development and delivery of products and services (value-added energy)—is equal to the amount of energy you put in, minus the amount of energy needed to keep the organisation functioning—the energy involved in managing overhead functions.

Thus, the amount of value-added energy that employees can contribute to an organisation is equal to the amount of energy that they bring to their work, minus the amount of energy required to keep the organisation functioning, minus the cultural entropy.

When cultural entropy is high, the energy available for value-added work falls, and performance is low. When the cultural entropy is low, the energy available for value-added work increases, and performance is high.

Thus, we can determine the amount of energy available to an organisation by the following equation:

$$E_o = E_i - E_n - CE$$

E_o is the energy available for doing value-added work (output energy).
E_i is the energy employees normally bring to work (input energy).
E_n is the normal amount of employee energy needed to keep the system functioning when everything is going well (overhead energy).
CE is the amount of cultural entropy (dysfunctional energy).

To complete this equation we need to add an additional factor that represents the amount of *discretionary energy* released by employees when they are highly motivated by their work: when they feel aligned with the values of the organisation and are

inspired by the mission or vision of the organisation—a high level of employee engagement.

Thus, the total amount of energy available for useful work in an organisation is given by the following equation:

$$E_o = E_i - E_n - CE + E_d$$

E_d is the amount of discretionary energy released when employees are highly motivated.

When people are not highly motivated by their work they channel any discretionary energy they may have into their private lives, and they expend the minimum amount energy they can at their place of work. They take long breaks, they surf the internet, and do whatever they can to stop from being bored or make time pass quickly.

When people are highly motivated, they spend extra hours at work, and think about their contribution even when they are not in the workplace. The output from a motivated person can be twice as much as output from someone who is not motivated.

People are motivated differently. There are seven unique groups of factors that unleash discretionary energy in employees:

- Service

- Making a difference

- Finding meaning by contributing to an inspiring vision

- Intellectual and operational challenges

- Pride in performance and doing a good job

- Friendship, collegiality and recognition

- Benefits and financial rewards

These are the factors that relate to the seven levels of human motivation.

Amongst all these motivators, the most important is "contributing to implementing an inspiring vision". This is important for two reasons:

- An inspiring vision focuses the energy of all employees in the same direction.

- The pursuit of the inspiring vision gives employees an opportunity to make a difference and be of service in a way that brings meaning to their lives.

A highly motivated person is committed, enthusiastic and passionate, and taps into his or her deepest levels of creativity.

To even stand a chance of unleashing people's discretionary energies, employees need to feel at home in the organisation so they can be authentic—bring their whole selves to work (values alignment), *and* they must also feel that the organisation is on the right track—the current and desired culture values are aligned and they resonate with the organisation's purpose (mission alignment).

Cultural Entropy (CE)

Cultural entropy is comprised of three elements:

- Factors that slow the organisation down and prevent rapid decision-making— bureaucracy, hierarchy, confusion, fire-fighting, and rigidity

- Factors that cause friction between employees—internal competition, blame, manipulation, rivalry, and intimidation

- Factors that prevent employees from working effectively—control, caution, micro-management, short-term focus, job-insecurity, risk-aversion, and territorialism.

The Cultural Values Assessment (CVA) of the Barrett Values Centre enables organisations to measure the level of cultural entropy, the degree of values alignment, and an indication of the level of mission alignment in an organisational culture.

Cultural entropy in an organisation is calculated by finding the proportion of votes for potentially limiting values that employees pick in answer to the question about how their organisation currently operates. The level of cultural entropy usually falls in the range five to forty-five percent. We have found from our experience of measuring the cultures of more than 2,000 organisations that when cultural entropy reaches the upper end of this range bankruptcy, implosion or aggressive takeovers that strip the assets of an organisation frequently occur.

The most frequently occurring potentially limiting values in organisations at the different levels of consciousness are shown in Table 1.

Level 3: **Self-esteem**	Bureaucracy, Long hours, Silo-mentality, Hierarchy
Level 2: **Relationship**	Blame, Internal competition Empire building
Level 1: **Survival**	Control, Caution Short-term focus

Table 1: Most frequently occurring potentially limiting values in organisations

Based on our experience, we have identified the corrective measures associated with various levels of cultural entropy (See Table 2).

Cultural Entropy	Corrective Measures
0%-10%	**Healthy Culture:** This is a low and healthy level of cultural entropy.
11-20%	**Minor Issues:** This level of cultural entropy reflects issues requiring cultural or structural adjustment.[1] It is important to reduce the level of cultural entropy to improve performance.
21-30%	**Significant Issues:** This level of cultural entropy reflects significant issues requiring cultural and structural transformation and leadership coaching. It is important to reduce the level of cultural entropy to improve performance.
31-40%	**Serious Issues:** This level of entropy reflects serious problems requiring cultural and structural transformation, leadership development and coaching. It is important to reduce the level of entropy to improve performance.
41%+	**Critical Issues:** This level of cultural entropy reflects critical problems requiring cultural and structural transformation, selective changes in leadership, leadership development and coaching. It is important to reduce the level of cultural entropy to improve performance.

Note1: Cultural and structural adjustment refers to a selective focus on reducing pockets of high entropy in divisions or departments, or specific entropic values that are found throughout the organisation.
Note 2: Cultural and structural transformation refers to an organisation-wide programme of whole system change.

Table 2: Cultural entropy corrective measures

Where does cultural entropy come from?

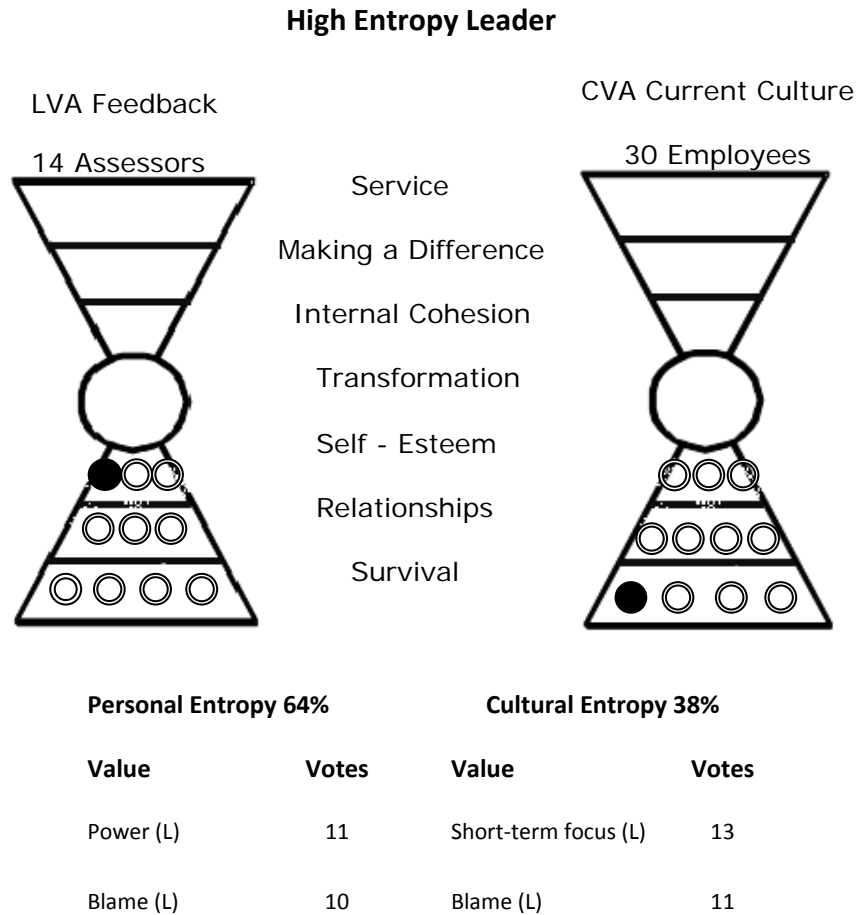Why would one organisational culture be more entropic than another?

Cultural entropy is a function of the personal entropy of the current leaders of an organisation and the institutionalised legacy of the personal entropy of past leaders. Personal entropy can become institutionalised in an organisation through the introduction of bureaucratic systems and processes requiring hierarchical decision-making or rigid silo-driven structures. The cultural entropy caused by current leaders usually shows up as excessive control and caution, blame and internal competition, confusion, and long hours.

Current leaders

The cultural entropy caused by current leaders is a direct reflection of their personal entropy. It is the amount of fear-driven energy that a leader expresses in his or her day-to-day interactions with people in the organisation. Personal entropy can be regarded as a measure of the "degree of disorder" in an individual due to the presence of limiting values/behaviours. The principal cause of personal entropy is subconscious fear-based decision-making. The remedy is personal mastery, supported by the learning of self-leadership skills to create personal alignment.

The following two tables compare the cultural values of a team (right-hand columns) measured using a Cultural Values Assessment (CVA), with the values displayed by the team's leader (left-hand columns) measured using a Leadership Values Assessment (LVA). Matching values are shown in italics. The symbol (L) designates a potentially limiting value.

Figure 1 presents the results from a high entropy leader and a low-performing team. The personal entropy of the leader of the low performing team is extremely high at 64 percent, and the team's cultural entropy is also high at 38 percent.

High Entropy Leader

LVA Feedback

14 Assessors

CVA Current Culture

30 Employees

Service

Making a Difference

Internal Cohesion

Transformation

Self - Esteem

Relationships

Survival

Personal Entropy 64%		Cultural Entropy 38%	
Value	**Votes**	**Value**	**Votes**
Power (L)	11	Short-term focus (L)	13
Blame (L)	10	Blame (L)	11

Demanding (L)	10	Manipulation (L)	10
Manipulation (L)	10	Caution (L)	7
Experience	9	Cynicism (L)	7
Control (L)	8	Bureaucracy (L)	6
Arrogant (L)	7	Control (L)	6
Authoritarian (L)	6	Cost reduction	5
Exploitive (L)	6	Empire building (L)	5
Ruthless (L)	6	Image (L)	5

Figure 1: High Entropy Leader, Low Performing team

Figure 2 presents the results from a low entropy leader and a high-performing team. The personal entropy of the leader of the high performing team is relatively low at 9 percent, and the team's cultural entropy is also low at 7 percent.
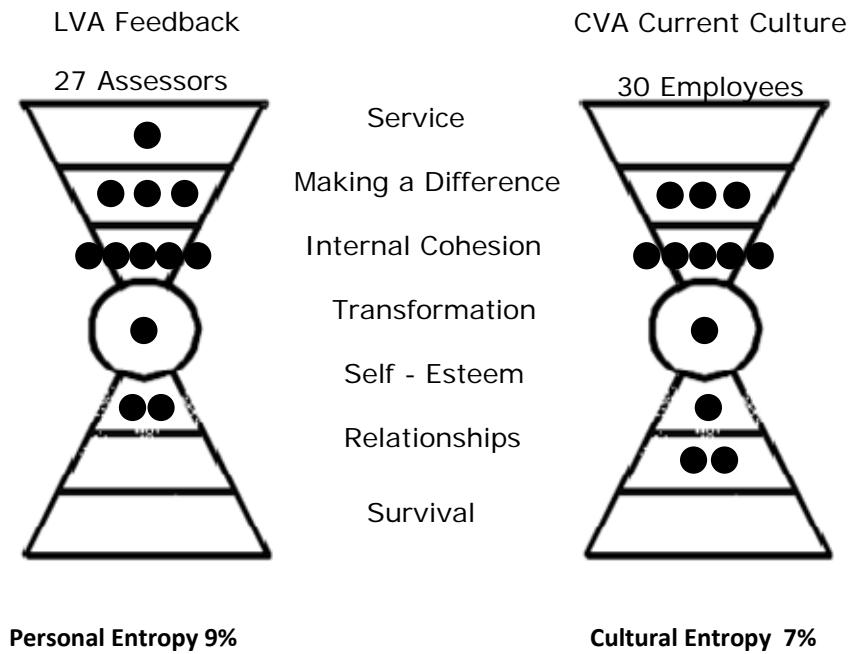
Low Entropy Leader

LVA Feedback

27 Assessors

CVA Current Culture

30 Employees

Service

Making a Difference

Internal Cohesion

Transformation

Self - Esteem

Relationships

Survival

Personal Entropy 9%

Cultural Entropy 7%

Value	Votes	Value	Votes
Continuous learning	11	Customer satisfaction	16
Generosity	11	Commitment	11
Commitment	10	Continuous learning	11
Positive attitude	10	Making a difference	11
Vision	10	Global perspective	9
Ambitious	9	Mentoring	8
Making a difference	8	Enthusiasm	8
Results focus	7	Integrity	7
Honesty	7	Open communication	7
Integrity	7	Optimism	7

Figure 2: Low Entropy Leader, High Performing Team

The most frequently occurring potentially limiting values of managers and leaders, at the different levels of consciousness, are shown in Table 3.

Level 3: Self-esteem	Long hours, Power Image
Level 2: Relationship	Being liked, Demanding Internally competitive
Level 1: Survival	Controlling, Authoritarian Caution

**Table 3**: Most frequently occurring potentially limiting values

The corrective measures associated with different levels of personal entropy are shown in the following table.

Personal Entropy	Corrective Measures
0 – 6%	Healthy: Authentic individual. Decision-making not driven by fears.
7-10%	Minor Issues: Requiring leaders to examine how their behaviours and actions are affecting people around them, their decision-making processes or their degree of work/life balance.
11-15%	Moderate Issues: Requiring leaders to examine how their behaviours may be compromising relationships with peers and subordinates, and negatively impacting their goals.
16-20%	Significant Issues: Requiring leaders to examine how their behaviours may be compromising their relationships with peers and subordinates, and negatively impacting their goals.
21%+	Critical Issues: Requiring leaders to examine how their behaviours might be compromising their personal integrity and their ability to inspire and lead the people around them.

The way to reduce the entropic legacy of past leaders is to focus directly on the potentially limiting values that are linked to bureaucracy, hierarchy, and silos. Usually these are organisational issues rather than the personality issues of the present leaders. These are issues that have been institutionalised by past leaders. Organisations deal with these issues by: de-layering, restructuring, and de-bureaucratisation.

Entropy and Performance

The results of a study of 163 organisations in Australia carried out by Hewitt Associates and Barrett Values Centre as part of the 2008 Best Employer Survey in Australia and New Zealand (BEANZ) showed a strong correlation between the level of entropy in an organisation and the level of staff engagement (See Figure 3).
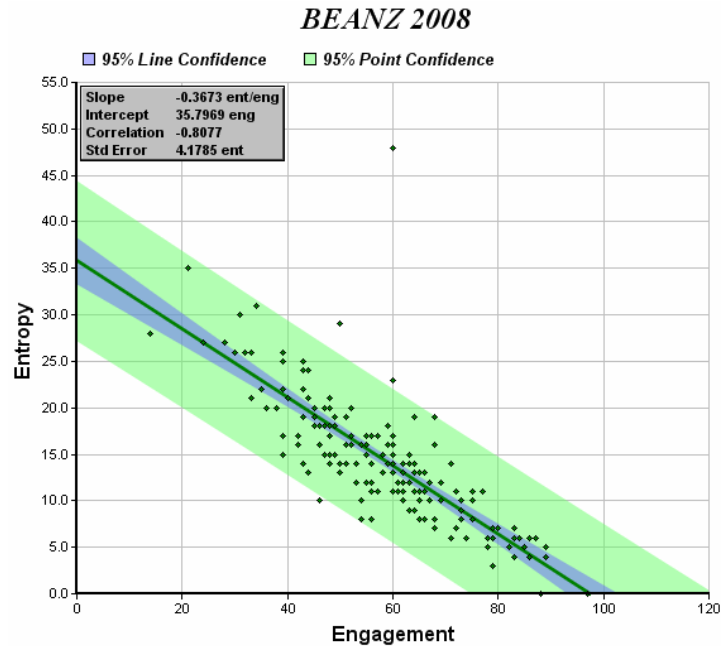
Figure 3: Engagement/entropy correlation among 163 organisations in Australia

In the same study, we found that in organisations with employee engagement in excess of 65 percent and entropy below 10 percent, revenue growth exceeded 35 percent over a three-year period. Organisations with engagement scores in the range 40-65 percent and entropy greater than 22 percent had a three-year revenue growth of only 7 percent.

Conclusion

The level of cultural entropy significantly influences the performance of an organisation by impacting the level of employee engagement and the amount of discretionary energy that employees are willing to make available to the organisation.

The level of cultural entropy in an organisation is a function of the personal entropy of the leaders. Therefore, to improve the performance of an organisation the leaders should work on reducing their level of personal entropy by improving their level of personal mastery.

Anecdotes from working with Cultural Entropy in Nations

In August 2008, the Barrett Values Centre mapped the personal values of the people of Iceland, their perception of the current culture of the nation, and their aspirations for the nation. We found the cultural entropy in Iceland to be highly elevated at 54%. In my interview for the television evening news on September 6th, 2008, I stated that the findings of our research showed that there were significant leadership issues in the

country, and that if the country were an organisation it would be going bankrupt very soon. Two weeks later, Iceland had an economic collapse.

In August 2007, we measured the values of Latvia. The cultural entropy was 54%. In October of that year, there were street riots and the Government was dissolved.

In February 2001, we measured the values of Argentina using a very small sample of business men. The level of cultural entropy was 60%. In October of that year, Argentina declared itself bankrupt.

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