



# ENTROPY

A FACTOR FOR CHANGE

## ENTROPY: A FACTOR FOR CHANGE

### GOALS

1. Understand the implications of entropy within the work setting.
2. Develop leadership methods that will help prevent excessive entropy.

### KEYWORDS FOR APPLICATION

1. Erosion
2. Inevitable Change
3. Disorder
4. Documented Control
5. Employee Non-compliance
6. In-service Reminders
7. Mastery of a "Rolling Ship"
8. Nurse Administrator (DON)
9. Nurse Leader (RN)

Erosion of everything occurs. The term for this uncontrollable change is called "entropy." Everything in the world goes through the entropy process; that is, everything decays-- a replacement to be less or different than the original. The understanding of the concept of irreversibility is the central theme. The idea involves a scattering in various directions, which causes dispersion of all things. In thermodynamics, entropy is represented by the symbol "S" as a measurement of the molecular disorder.

Initially, the word "entropy" was a physics thermodynamics construct. That is, the concept took into consideration the change related to heat and mechanical energy/work and the conversion into one or the other. The idea is used, but not limited to, most disciplined areas. Entropy includes psychodynamics, economics, evolution, health care, and informational theory.

The term (entropy) emphasizes uncontrollable disorder. Things do not remain in the original state or cannot return to the normal state. It is inevitable in all things because nothing ever stays the same, whether it is a choice or a natural happening. It is seen every day in the work and expectations of others.

Why should there be concern over uncontrollable change and disorder? Because it can change drastically the desired and intended direction of an organization due to the randomness and confusion associated with the changing of organizational behavior! It is the same with human relationships over time.

*Prevention and the control of the extent and rapidity of unwanted change* is the only hope for the curtailment of entropy. We are living, breathing, responding to individuals that are dynamic in the way we react to the world. Through our knowledge of this process and our appropriate response to entropy, we, as nurses, have the key to stabilizing organizational success and associated human behaviors.

## **METHODS TO SLOW ORGANIZATIONAL ENTROPY**

Every organization should have documented expectations of employees known as job descriptions, policies, and or procedures. Whatever the expectations are known to be, the nurse administrator is responsible for making sure that every nurse knows these expectations and follows them. These expectations are safety valves that permit employees to practice safely and accurately within the organization with diminished health, organizational, and legal concerns.

Every nurse will experience excessive entropy in the work setting (including the nurse leader) unless there is a determination as to a process that reinforces expected work behaviors. The more employee *non-compliance* to these organizational expectations, the more effort is needed/required to slow the entropy process.

*Statements/Documents/Behaviors that Help Hold Entropy in Check are---*

1. Policies and procedures
2. Rules and regulations
3. Accreditation requirements
4. Job descriptions/Performance standards
5. Mission statements
6. Organizational and personal philosophy
7. Organizational and personal objectives and goals
8. Scheduling of employees
9. Observation of performance
10. In-service meetings
11. On-call staff
12. Family support and expectations
13. Physical repairs on equipment and building
14. Satisfaction surveys

## **AND SO IT GOES—ON AND ON—NEVER ENDING**

In-service meetings reinforce expectations of job-related behaviors that could or are currently experiencing significant entropy.

*Topics Discussed with Employees at an In-service Meeting---*

1. Recognize the definition and occurrence of entropy.
2. Verbally identify the unwanted occurrence(s) that relate to entropy.
3. Collectively commit as a person/group to their future successful job performance.
4. Updating job descriptions.

Because time changes everything (even an organization), there should be a concern that the existing mission, goals, policies, and procedures represent the *current* organizational needs and their relevancy to the organization. Ongoing changes in employee job descriptions, policies, mission statement, philosophy, objectives, goals, and bylaws are frequently required. Administrative changes require a review with employees and a signed recognition by the employees that they understand and are committed to the new changes.

Meeting or in-service minutes should have documentation of all concerns regarding organizational entropy, and the teaching/reminding method(s) used to accommodate the change(s). A signature by the employees that they have participated in and clarified information presented should be required and maintained with the minutes of the meeting.

Evidence of an informed employee's noncompliant behavior to follow a required organizational behavior intended to control entropy changes should be stated as such on his/her employee evaluation and dealt with accordingly. Reminders (whether in writing or verbal) given to employees keep employees from wandering from the expected behaviors or attitudes required of an employee.

### **THE FORGETTING CURVE IN THE ENTROPY PROCESS**

Hermann Ebbinghaus (1850-1909 German psychologist) performed an experimental study on memory. Even though the research presents a weak *external* validity, the study was considered "good" by psychologists due to his conscientious efforts to control *internal* validity. The study measures what it purports to measure. Regardless of the total questionable validity of this memory study, it gives an example of entropy by comparing it to the process of forgetting.

The process of forgetting occurs exponentially along a curve. That is, the *fastest loss of any recall* occurs within the first few days and then tapers off, after that, to a slower rate. This process of entropy (forgetfulness) is encouraged, enhanced, and increased by stress!! Therefore, the reduction of stressful situations maximizes learning. Positive reinforcement (*positive feedback*) to employees through a leader's verbal recognition of employees remembering to perform job expectations (instead of their forgetting) will help, also, to curtail entropy. Continual *reinforcement* of the same or updated content regularly decreases the chance of excessive entropy.

### **"ENTROPY"—A ROLLING SHIP TO BE CONTROLLED!**

The leader's role is like being at the helm of a rolling ship and trying to hold the ship steady through the rolling waves. Figuratively speaking, there is a constant attempt to keep the boat in an upright position to prevent sinking. The mission, goals, and job descriptions are like the compass of that rolling ship, keeping the organization on the right course.

Just when you think everything is under control—think again! Evidence of disrupting entropy is just a few minutes away. Your mastery of nursing leadership skills and knowledge of entropy can control the *extent and rapidity* of negative change as it occurs and will keep the changes from literally redirecting the mission and goals of the organization.

## LAST THOUGHTS

**\*ANYONE CAN HOLD THE HELM STEADY WHEN THE SEA OF LIFE IS CALM. THE PROBLEM IS THAT THE SEA (LIFE AND ITS HAPPENINGS) IS NEVER CALM! – HENCE, WE EXPECT TO SEE ENTROPY.**

**\* “PEOPLE BELIEVE THEMSELVES TO BE DEPENDENT ON WHAT HAPPENS FOR THEIR HAPPINESS, THAT IS TO SAY, DEPENDENT ON FORM. THEY DON’T REALIZE THAT WHAT HAPPENS IS THE MOST UNSTABLE THING IN THE UNIVERSE. IT CHANGES CONSTANTLY.” (ECKHART TOLLE)**

**\*SHH—THE SECRET IS THAT YOU NOW KNOW THAT EVERYTHING CHANGES AND KEEPS CHANGING, NEVER TO RETURN TO ITS ORIGINAL FORM. IT GIVES YOU AND OTHERS A LEGITIMATE POWERFUL REASON TO KEEP APPROPRIATELY CHANGING YOUR MIND---AND UPDATING JOB DESCRIPTIONS TO MEET THE CURRENT NEEDS OF THE FACILITY/ORGANIZATION.**

## CRITICAL THINKING QUESTIONS

1. What are some changes in a work situation that are a result of entropy?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What did/can you do to positively accommodate the entropy you have observed in yourself and other employees?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. What are you doing to reinforce positive behavior in the nursing staff?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. What are you currently doing as a nurse leader when you recognize negative changes (entropy) in behavior relative to a nurse’s job description?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What is the content of existing job descriptions that accommodates entropy?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. If you are employed, what do you need to do/have done to accommodate entropy in your job and other employee’s jobs?

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_