



Opinion

The Conditions for a Functional Society are No Longer Present

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Abstract - People observe a tightening of information flows used or even allowed to be used by authorities. They are not aware about the Mass-Energy-Information equivalence principle. People are in a crisis of perception wrote Fritjof Capra years ago, which in fact is the first cause of a dysfunctional society. This paper is based on my PhD research which attempts to list the conditions needed for a functional society. Information is key here. Without optimal information functionality of everything is compromised. Yet, more censorship, propaganda or gaslighting dissipates not just the information but an equal amount of energy. This then causes the information deficit paradox, which states that the action of lying to gain competitive advantage displaces (dissipates) the energy to achieve the competitive advantage and is a zero sum game. In other words, based on social interdependence theory: a goal can only be achieved if others can't. I propose two algorithms to measure and predict the probabilities of entropy or negentropy in man-made living systems.

Keywords - Information; Information deficit; Disorder.

1 Introduction

We are living in a society which finds itself in a death spiral (Schippers et al, 2023) largely due to false perception (p)(Capra, Fritjof 1991) [1]. People believe they can control complexity, or complex systems such as society, the weather, climate, geopolitics, trade or business. The best definition for society I find is the one in Dutch, 'samenleving' which means 'living together', equivalent to Symbiosis, living together of different species with the purpose to evolve'(Margulis, Lynn, 1998) [2]. People do not seem to understand how nature and reality function. They have been taught in school that nature is competitive, and that survival of the fittest is key, but that is an outdated, Cartesian and destructive perception. A false perception (p) carries a worldview of negative social interdependence (Johnson, Johnson, 2007) [3] in which people believe that personal competitive advantage can only be achieved if others can't and that lying or cheating therefore is naturally condoned. It means that they are unaware or negate the significance and meaning of information. They have not learned, are unaware that information is equivalent to the required energy to do useful work. Information is not yet understood and accepted as physical, a substance, entity or a thing of significance and not just a message, a lie or an email (Campbell, Jeremy, 1982) [4]. This Baconian (Bacon, Francis 1620) [5] of man's 'mastery over the world' perception prevents people to understand that only an optimal quantity and quality of information 'in forms', builds and maintains order, safeguarding non harmful functionality in living systems: natural, biological, our bodies, flora, fauna and the universe. Less than optimal information is equal to deformation, a living system (society) is being deformed, no longer functional.

< information \Rightarrow deformation

When we observe how disinformation is used to manipulate reality into a competitive advantageous surreality, it is highly probable and physically possible that such actions turn harmful as they have and are still today. By determining the universal criteria for harmless, anthropogenic (man-made), evolutionary (in line with life) functionality, it will become demonstrable that ideological goals which depend on information deficit can't ever be achieved. The lack of information which is equivalent to a lack of energy results in an incapacity to function. Harmful goals have been and still are being enforced causing harm to living systems. Such goals are unachievable because they lack the information (energy) needed to do the physical work. Information deficit accelerates disorder (entropy) both for the enforcer and the enforced. Entropy in the context of this article means 'the information we don't have or use', a.k.a. uncertainty and disorder. This means that the disorder in a living system accelerates, but cannot be regulated by linear control (enforcement, violence).

2 Cup of Coffee

Compare our society to a cup of coffee and add milk. At first the milk is swirling during the mixing process. It is still moving around. Soon after the milk is absorbed, blended in. The liquid changes its color from black to brown. The movement stops. This means that maximum equilibrium is reached: entropy, it means that nothing moves anymore. Entropy is universal. Our universe is on a journey (Carrol, Sean, 2023) [6], just like the coffee cup towards maximum entropy, called a heat death in about 5-100 billion years (they don't know). The movement of blending, the very process of changing from a black coffee to a brown coffee state, allows functionality. As long as there is movement from order to disorder, e.g. metabolism, breathing, photosynthesis, heart beating, etc. living systems remain in a living condition, because high entropy nurture (sunlight or food) is changed into low entropy nurture (energy, oxygen) all the time. Universal entropy is being slowed down by life itself creating an enclave, a pocket of negentropy, which is the order in which life thrives (Wiener, Norbert, 1954) [7].

3 Social Entropy Theory

The work by Kenneth D. Bailey [8] supports limitless application potential. In his book 'Social Entropy Theory' (1991) he explores the relationship of the first and second law of thermodynamics with social systems which are not just physical 'closed systems' such as gas containers, but so called open systems. Closed systems where laws of physics apply can't be separated from open social systems, because the same laws of nature apply to both. There is unity, interdependence, interconnectedness, interrelatedness. Laws of nature in the form of laws of physics portray Realimiteit (the limitations of reality) which are the boundaries of and for functionality, which people have trespassed resulting in historically demonstrable misery. Social Entropy is accelerating because since 6000 years civilization (Osborne, Roger, 2007) [9] began, man-made living systems are dysfunctional (rise and fall of empires, perpetual war, violence). This is because man is dissipating energy, unaware that optimal information is a requisite for societal living together (Samenleving). Social Entropy is progressively approaching, just like the coffee, maximum equilibrium, entropy, this means that nothing can move or works any longer. Man-made systems won't function. This is due to the suppression of the required information \equiv energy in an effort to escape reality (\equiv symbol for equivalence). The energy to function just not be available.

Cognition, according to research by Humberto Maturana and Francisco Varela (1972-1980) [10], means in short that communication is the coordination of behavior between living organisms through mutual structural coupling. Maturana and Varela found that cognition is inseparable from autopoiesis, or self-maintenance, self-preservation, in cooperation with environment for which optimal information is required. In Social Cognition, Niklas Luhmann, sociologist argued that the basic idea of autopoiesis also applies to non-biological, social systems of communication, producing their own elements (Seidl, David, 2004) [11] He understood human made organisations and society as polycentric collections of interacting social systems (Monkelbaan, Joachim, 2019) [12] through communication (i.e., cognition), and distinguished three types of social systems:

- a. interaction (conversation)
- b. organisations
- c. function systems (systems of communication).

Therefore the proposed equations below, based on the ‘information deficit $\hat{=}$ entropy’ theory (Gassner, Josef, 2019) [13] ($\hat{=}$ symbol for per definition) can also be applied to open systems such as society, organizations, industries, products or governments i.e., all living systems of communication. Restricting the entry of entropy, Bailey writes, basing it on work Ilya Prigogine (1977) [14]; ‘although internal entropy production increases or remains constant within a system, imported entropy can be decreased by importation of energy (note: read information) from the environment, thus resulting in an overall decrease of system energy or the increase of order’. Imported energy consists of information which reduces the uncertainty or the equivalence of increase or decrease of variety according to Ross Ashby (1957) [15]. ‘Information is the resolution of uncertainty.’ (Shannon, Claude, 1948) [16].

4 Twenty Questions

Let’s play the game of 20 questions, mentioned by Carl Sagan in his series Cosmos Part 11, (1980) [17]. This is a method to quantify the information, by reducing the number of choices after each question to reach an answer, for example: ‘is it alive or not alive?’ ‘Is it an animal?’ ‘Is it big enough to see?’ ‘Does it grow on the land?’ This method of questioning is a form of information or data collection to reach a solution or find an answer to the question: ‘what is it?’ After discovering the answer, it must be interpreted by human perception through all of the human senses, not just by the brain, in order to process the information into an experience of viable reality. After each question and answer one ends up with 1 bit of information which allows one to make a choice between 2 equally probable alternatives (yes or no, 1 or 0). When one finds 2 bits of information, one can choose between 4 probable alternatives, 3 bits means 8 probable options and so on. Increasing different probabilities also increases the quantity of information and thus the prospects to finding an answer.

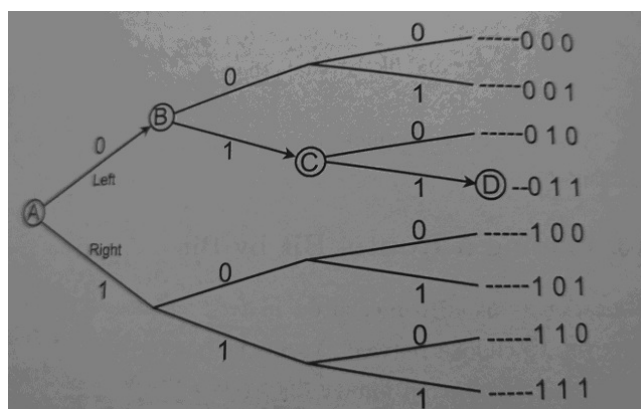


Figure 1: Source book ‘Information Theory’ James Stone (2015) [18].

In twenty questions one can obtain 20 bits of information. This allows for the probable ability to narrow down the range of possible words from 1 million to one. As mentioned earlier the issue with the commonly accepted empirical scientific method is that it does not ask all the questions but limits itself to test scientifically by allowing only the use of the physical human senses like ‘sight, touch, smell, taste and sound, which are outdated, mechanistic, analytic and reductionistic. They won’t allow ‘optimal information’ nor synthesis, which renders the results, although usable, no longer scientific due to a paradigm change in science. Hence, optimal information collection, asking the maximum number of questions (to find and choose our direction) is relevant. (Von Foerster, Heinz, 1973) [19].

At the University of Portsmouth during an interview with Dr. Melvin Vopson he talked about his work on this newly proposed law of physics, he elaborated on the ‘mass-information-energy equivalence’(2019) principle he works on [20]. In 2021 he wrote an article; ‘Estimation of the information contained in the visible matter of the universe’ and in 2023 he published his book ‘Reality Reloaded, the scientific case for a simulated universe [21]’ He states that information is the fifth state

of matter next to liquid, gas, solid and plasma, which makes information fundamental to and in all living systems. He talks about atomic and subatomic particles and that cells carry information in themselves about themselves. This suggests that information is indeed physical (Landauer, Rolf 1991) [22] who created the so called Landauer Limit which states that the minimum energy to erase one bit of information is proportional to the temperature at which the system is operating. Simplified this means that information erasure releases heat (energy). This makes information being part of all living matter and that information has mass. Vopson's research through his perception confirms that information is indeed a substance (Wheeler, J. A. 1990) [23] which is used by all living systems in order for them to be sustained.

5 The Unified Field

Quantum particles in various forms a.k.a. atoms or subatomic elements. These are fundamental building blocks of all matter, energy and information (including us). They are not separately acting, but form a unity, a unified field which proposes itself as a unifying theory, encompassing all major theories in physics, with and through human consciousness by observation and perception (symbol 'P'). The world is a display of information. (Hagelin, John, 2011) [24].

6 Thermodynamics

We can work with two laws of thermodynamics of closed systems by Rudolph Clausius [25] and apply them to open systems.

- a. The energy of the universe is a constant -Energy can neither be created nor destroyed - 1st Law
- b. The entropy of the universe tends to a maximum – 2nd Law: which holds for an isolated or closed system that does not exchange energy, matter or information with its environment. Changes in entropy of the universe can never be negative. Note: what is currently being observed in the physics community is that this 2nd law of thermodynamics is allowing for negentropy (order) provided by life which slows thermodynamic entropy down by living.

7 Two proposed Algorithms

By developing two algorithms order or disorder can be demonstrated by them in the format of metaphysical equations: The starting point is man himself, human perception is key. A person who believes that only reductionistic science is correct, would only allow empirical test methods. Another person who believes the planet provides natural resources which only have to be exploited to make him rich has different perception of reality. A guideline offered by Niklas Luhmann [26] would help, because he described social reality, society, as something people must agree upon. Society can't be regulated, but rules of cooperation can be agreed upon to allow people to live in peace. In this context, people would need to learn and copy how nature works and keeps life alive and apply this to their own lives. This can be taught to children from the youngest age.

P : perception is the required axiom.

Introducing 'Realimiteit': limitations of reality.

They are to be adapted to the findings, by including $i \equiv e$, i.e. information \equiv energy, and m for matter/mass, as follows:

$$\neg p(m-(i \equiv e)) > r \rightarrow \Delta S$$

Where ΔS is social entropy / disorder / dysfunctionality. The first symbol is the negation symbol; p stands for false perception; m is the symbol for living systems as matter/mass; i is information; \equiv is the equivalence symbol; e is energy; r is reality and $r >$ is beyond reality \rightarrow results in, ΔS , social entropy/disorder or probability of dysfunctionality.

$$\forall p(m+(i \equiv e)) \leq r \rightarrow J$$

Where J is social negentropy / order / functionality P is perception = axiom and the first symbol is the correct perception; When e, energy is \leq to within r, reality \rightarrow results in J, social negentropy / order or probability of functionality. Ted St.John, member of the information physics institute suggested that this equation would also describe entropy (St. John, Ted, 2024) [27]:

$$p(m-i) > r \rightarrow \Delta S > 0$$

Perception (mass minus information) beyond r- reality leads to entropy of which the probability is larger than zero (0).

8 Conclusion

What this paper attempted to describe is that the matter-energy-information trinity (equivalence principle) can't be broken but is disturbed by man's perception i.e., observation of what is real or surreal. The algorithms do not contradict Einsteins $E = mc^2$ equation for the special relativity theory which states and expresses that energy and mass are the same physical entity and can be changed into each other.

To make this article easy to understand ask yourself this question. 'When you cross a street and only look to the left, how far will you get?' Information is probably THE fundamental substance which ensures non harmful functionality in all communicating living systems allowing them to evolve. The Information Deficit Paradox: Lying to obtain the undesired displaces the energy needed to obtain the undesired.

At this moment in time a societal death spiral is inevitable, because the conditions for purposeful functionality (information & energy) are dissipated or displaced (ignored, suppressed, gaslighted by enforcement) . However, designing a sustainable, non harmful (Society) 'Samenleving' (living together) is easy, all we need to use is optimal information in the form of feedback.

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