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RESEARCH ARTICLE

HOW WORDS ARE FORMING

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ABSTRACT

In this paper equations for words formation were derived. Information processing and treatment was defined. The law of frequencies interaction and transposition was defined. Equations of frequency dependence of time and space were derived. Quality of information, letters, vowel, consonant, length of word, pause and the others attributes (insertion, deletion) determine frequency variability and interactions between different frequencies. Diffusivity effect to the information formation was defined. In this paper information value of word was derived.

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INTRODUCTION

The general term for all types of subatomic particles which are of the smallest possible size allowed by Nature is "quanta." "Quanta" is the plural; "quantum" is the singular. The term "quantum" comes from the Latin quantus which means "how much." In its original meaning, a "quantum" is the tiniest particle of a substance that Nature allows. However, often people call any tiny particle that follows the laws of quantum physics a "quantum" even when it's not the smallest allowed by Nature (1)-(6). Light waves don't physically shatter when they hit objects. They interact with the objects and due to the laws of quantum physics, the waves transform into tiny energy-bearing particles, that is, photons. The physical nature of waves at the subatomic level is difficult to describe. It's still under debate due, in part, to the odd ways in which these waves behave in experiments. One view, for example, is that they are no more than mathematical expressions in the form of a wave equation which somehow create physical.

A photon is a tiny particleof light. It is the tiniest particle of light possible in nature. A photon can also be described as a type of quantum, that is, a tiny particle. Some other types of quanta (plural) are electrons, neutrinos, and the Higgs boson. A quantum is the tiniest particle possible of a particular substance. For example, in the case of an electron, it's the tiniest particle possible of negatively-charged matter, just as a photon is the tiniest particle possible of light.

In this paper quant processing for word formation was studied.

Wave and particles: Carbon molecules emitting a photon (in green). Yes, the photon looks like it's moving towards the molecules - no accounting for the whims of artists (7). This description is saying something interesting that nature does not allow us to cut matter and energy into smaller pieces indefinitely. Let's say that we could cut a rock down into tiny grains of sand, but there were some natural law that a grain of sand is as small as can get. If this were true, a grain of sand would be a quantum of rock. But, of course, can cut a grain of sand into ever smaller grains. Only when get down to the level of electrons and other subatomic particles, does Nature call a halt to the cutting. That's when we hit the quantum level (8)-(10). A single photon of light is too dim for a human being to see. It takes a few photons for us to detect light. Frogs, however, are able to see a single photon. In summary, a photon is the tiniest possible particle of light, a quantum of light. A quantum, on the other hand, is the tiniest possible particle of

any substance at the subatomic level and includes, for example, electrons and neutrinos. To see how light can be divided into photons, it's necessary to understand a bit more about light. Light travels as a wave. Specifically, it travels as an electromagnetic wave. An electromagnetic wave is an electrical wave and a magnetic wave traveling together and interacting. Physicists call all electromagnetic waves "light." This includes visible light, the kind that see with our eyes, but also X-rays, ultraviolet rays, infrared, microwaves, radio waves (which carry TV and radio signals), and others. Electrons are the quanta associated with electron waves; neutrinos are the quanta associated with neutrino waves; etc. Just like photons, electrons cannot be further divided into something smaller, nor can neutrinos.

The difference between the various types of electromagnetic waves is their wavelength. Electromagnetic waves of various types is light. So, the term "photon" can mean a particle of visible light but also a particle associated with X-rays, microwaves, or any other part of the electromagnetic spectrum.This paper revisits the quantum mechanics for one photon from the modern viewpoint and by the geometrical method. Especially, besides the ordinary (rectangular) momentum representation, we provide an explicit derivation for the other two important representations, called the cylindrically symmetrical representation and the spherically symmetrical representation, respectively. These other two representations are relevant to some current photon experiments in quantum optics. In addition, the latter is useful for us to extract the information on the quantized black holes. The framework and approach presented here are also applicable to other particles with arbitrary mass and spin, such as the particle with spin 1/2 ring final disposal. In this work quant, photon formation and electromagnetic waves were examined.When light, that is, an electromagnetic wave, strikes an object, it immediately collapses into tiny bits or particles of energy. Please don't take this literally; it's meant only metaphorically. Each of these particles is a photon. It's as if an ocean wave hits a rock and shatters into a gazillion tiny droplets. Each "droplet" of the light wave is a photon, and each carries a bit of energy. If a wave of visible light were to strike a piece of photographic film, we would be able to see the traces of all the photons which struck it. Each photon creates a tiny dot, a bit of the photo, usually a small fraction of a pixel. Together, the photons form the image.

Waves, including light waves, are spread out in space. When it strikes the film, the light is no longer acting as a wave; it's acting as a particle. Particles differ from waves in that they are localized, that is, they have a small and definite position.Light acts as both a wave and a particle. When traveling, it's an electromagnetic wave (11),(12). But upon striking objects, it acts as a particle. While "photon" is the name given to light only when it acts as a particle, people may neglect the distinction. They often use the term "photon" for light at all times, whether it's in wave form or particle form.

How quant form word: Energy of quant can form on the probabilistic manner. The quant energy term can be derived according to following equation:

$$\Delta p \Delta q = \varepsilon \Delta t \tag{1}$$

where p - probability of position, q - probability of time, ε - quant energy, J and t - time, s.

Like other waves, electromagnetic waves have properties of speed, wavelength, and frequency. Velocity of electromagnetic waves can defined:

$$v = f\lambda \tag{2}$$

where f - frequency $1/s$, λ wave length of electromagnetic waves which emitted, m and v - waves velocity, m/s.

To set the start ***frequency is very important.*** The maximum *stop frequenc*y can measure by the measurement hardware.

Interaction the electromagnetic waves various frequencies produce information - word. Quality of information, letters, length of word, pause and the others attributes (insertion, deletion) determine frequency variability and interactions between different frequencies.

Interference equations: The electromagnetic waves various frequencies forming information words. Different frequencies can change in time, space and some attributes.

Let consider for the first frequency:

x-direction

$$\frac{\partial f_x^1}{\partial t} + v_x \frac{\partial f_x^1}{\partial x} + v_y \frac{\partial f_x^1}{\partial y} + v_z \frac{\partial f_x^1}{\partial z} + \frac{\partial (v_i f_x^1)}{\partial \xi_i} = D\left(\frac{\partial^2 f_x^1}{\partial x^2} + \frac{\partial^2 f_x^1}{\partial y^2} + \frac{\partial^2 f_x^1}{\partial z^2}\right) + f_x^1 g_x \tag{3}$$

y-direction

$$\frac{\partial f_y^1}{\partial t}+v_x\frac{\partial f_y^1}{\partial x}+v_y\frac{\partial f_y^1}{\partial y}+v_z\frac{\partial f_y^1}{\partial z}+\frac{\partial(v_i f_y^1)}{\partial \xi_i}=D(\frac{\partial^2 f_y^1}{\partial x^2}+\frac{\partial^2 f_y^1}{\partial y^2}+\frac{\partial^2 f_y^1}{\partial z^2})+f_y^1 g_y \tag{4}$$

z-direction

$$\frac{\partial f_z^1}{\partial t}+v_x\frac{\partial f_z^1}{\partial x}+v_y\frac{\partial f_z^1}{\partial y}+v_z\frac{\partial f_z^1}{\partial z}+\frac{\partial(v_i f_z^1)}{\partial \xi_i}=D(\frac{\partial^2 f_z^1}{\partial x^2}+\frac{\partial^2 f_z^1}{\partial y^2}+\frac{\partial^2 f_z^1}{\partial z^2})+f_z^1 g_z \tag{5}$$

For the second frequency:

x-direction

$$\frac{\partial f_x^2}{\partial t}+v_x\frac{\partial f_x^2}{\partial x}+v_y\frac{\partial f_x^2}{\partial y}+v_z\frac{\partial f_x^2}{\partial z}+\frac{\partial(v_i f_x^2)}{\partial \xi_i}=D(\frac{\partial^2 f_x^2}{\partial x^2}+\frac{\partial^2 f_x^2}{\partial y^2}+\frac{\partial^2 f_x^2}{\partial z^2})+f_x^2 g_x \tag{6}$$

y-direction

$$\frac{\partial f_y^2}{\partial t}+v_x\frac{\partial f_y^2}{\partial x}+v_y\frac{\partial f_y^2}{\partial y}+v_z\frac{\partial f_y^2}{\partial z}+\frac{\partial(v_i f_y^2)}{\partial \xi_i}=D(\frac{\partial^2 f_y^2}{\partial x^2}+\frac{\partial^2 f_y^2}{\partial y^2}+\frac{\partial^2 f_y^2}{\partial z^2})+f_y^2 g_y \tag{7}$$

z-direction

$$\frac{\partial f_z^2}{\partial t}+v_x\frac{\partial f_z^2}{\partial x}+v_y\frac{\partial f_z^2}{\partial y}+v_z\frac{\partial f_z^2}{\partial z}+\frac{\partial(v_i f_z^2)}{\partial \xi_i}=D(\frac{\partial^2 f_z^2}{\partial x^2}+\frac{\partial^2 f_z^2}{\partial y^2}+\frac{\partial^2 f_z^2}{\partial z^2})+f_z^2 g_z \tag{8}$$

For the third frequency:

x-direction

$$\frac{\partial f_x^3}{\partial t}+v_x\frac{\partial f_x^3}{\partial x}+v_y\frac{\partial f_x^3}{\partial y}+v_z\frac{\partial f_x^3}{\partial z}+\frac{\partial(v_i f_x^3)}{\partial \xi_i}=D(\frac{\partial^2 f_x^3}{\partial x^2}+\frac{\partial^2 f_x^3}{\partial y^2}+\frac{\partial^2 f_x^3}{\partial z^2})+f_x^3 g_x \tag{9}$$

y-direction

$$\frac{\partial f_y^3}{\partial t}+v_x\frac{\partial f_y^3}{\partial x}+v_y\frac{\partial f_y^3}{\partial y}+v_z\frac{\partial f_y^3}{\partial z}+\frac{\partial(v_i f_y^3)}{\partial \xi_i}=D(\frac{\partial^2 f_y^3}{\partial x^2}+\frac{\partial^2 f_y^3}{\partial y^2}+\frac{\partial^2 f_y^3}{\partial z^2})+f_y^3 g_y \tag{10}$$

z-direction

$$\frac{\partial f_z^3}{\partial t}+v_x\frac{\partial f_z^3}{\partial x}+v_y\frac{\partial f_z^3}{\partial y}+v_z\frac{\partial f_z^3}{\partial z}+\frac{\partial(v_i f_z^3)}{\partial \xi_i}=D(\frac{\partial^2 f_z^3}{\partial x^2}+\frac{\partial^2 f_z^3}{\partial y^2}+\frac{\partial^2 f_z^3}{\partial z^2})+f_z^3 g_x \tag{11}$$

where v- wave velocity, m/s, x,y,z- space directions, m, ξ-attribute, D-diffusivity, m/s, g - gravity acceleration, m/s^2 and t-time.As can see various frequencies have interactions in the various space and time.

Information value of word will be:

$$I_v=\sum_n p_i(output/input)\log_2 p_i(output/input) \tag{12}$$

where p_i probability of word forming.

DISCUSSION

Information is forming from electromagnetic waves.The law forming of words with change frequency of electromagnetic waves and interaction various frequencies was derived.Equations of frequency dependence of time and space were defined.Influence diffusivity to variability of wave frequency have shown.Word insertion and deleting were defined by the new independent variables. Information value of word have given.Velocity of electromagnetic waves was defined.

CONCLUSION

In this paper frequency processing and treatment for words formation were examined. Step by step operations were defined.The information dependence from wave frequency was derived. The law words forming with change frequency of electromagnetic waves was state that waves vibration determines information. The law of frequencies interaction and transposition was defined. Interaction the electromagnetic waves various frequencies produce information. Quality of information, letters, vowel, consonant, length of word, pause and the others attributes (insertion, deletion) determine frequency variability and interactions between different frequencies. Diffusivity variability effect to the information value was defined.

Notation

g - gravity acceleration, m / s^2

f - frequency, s^{-1}

p - probability of position

q - probability of time

t - time, s

v - velocity moving, m / s

Greek symbols

ε - quant energy, J

ξ - attribute

λ - wave length, m

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