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# Light and the way we see

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## Abstract

A study into the marvelous phenomena by which man and beast observe the surface of some things while looking through other things.

## Key words

Light, Vision, Waves.

## Essay

We are so used to looking through glass windows as were they transparent, and through air as if there is nothing to block our view. These substances however do not possess the transparency that we ascribe to them. They are in fact just as opaque as any other substance, but for a difference in the way that the waves of light are passed by they appear to us as if they were not there**. It is in that respect that these are transparent.**

Light, as we know, comes to us by what is called waves, and color in the variations of the lengths of the wave. Contrary then to ever expanding waves - as with water - light is very distinct. Each wave is a separate distinct entity or coordinate that proceeds on a straight trajectory to its ultimate end without diverting itself, except when either reflected or refracted.

In reference to Figure 1, As five waves leave a source, each in a direction that will put a one meter distance between them as they arrive upon a surface what may we ask illuminates the areas between these waves? The answer is none, they will appear absolutely dark to us, and so will the surface itself since in fact not one of these waves passed into our eye. The rule thus is that; nothing will appear to us unless the wave strikes our eyes.

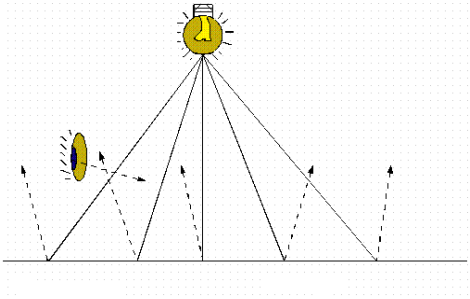

Figure 1

How therefore - with that principles of light being correct are we so well able to behold not only the surface, **but in looking horizontally over it - the whole air to seem illuminated as well?** For here we can pose the question, "how" the air in all its many molecules is not seen, or seen in the brilliance of illumination? ... For we just stated an axiom that unless we receive the wave into our eye nothing will be observed. Consequently, unless we receive wavelengths from the very molecules of the air, that air could neither be unseen nor illuminated, but on the contrary it should be altogether dark, like the deep darkness of the night?

Now at least this thing is becoming interesting, for yes, how then in fact does light proceed in the air to - like David Copperfield - make it disappear before us? ... The answer with David Copperfield, as we know, is "illusion", but with the mode of light we are no less taken in by illusion. The essence of each and every single light-wave is more like a line than a wave.

The wavelength for example, that represents itself to us as "violet" in color, may be compared to a line that stretches from coast to coast (USA) (more than 3000 miles) with a width of no more than two miles. Within such a tube then - the light would pass the entire coast to coast length simultaneously making only one turn of rotation within the circumference of that tube. The forward momentum then of that wave, as well as its rotation is in-and-by the atoms and molecules along its path.

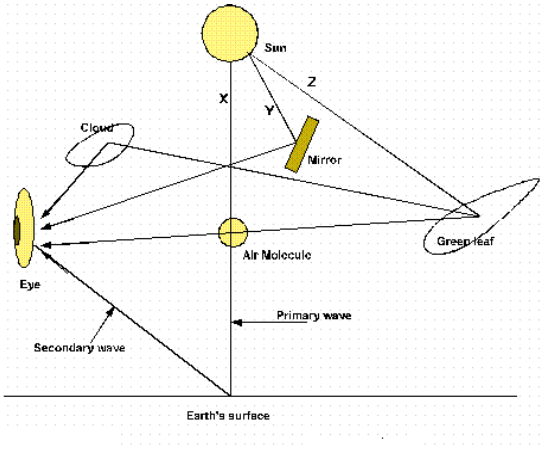


Figure 2.

By illustration Figure 2, as wave X leaves the sun bound for the surface of the earth, does it then implement secondary wave formations at right angles to its trajectory? If so this is not something the wave does on its own, but in conjunction with the atoms and molecules as the two interact with one another. Hence, this primary wave, as it strikes the earth, is arrested or captivated, or as we might say consumed in the molecules that make up the dust of the earth. This so-called consummation of the primary wave is what produces the warmth we so cherish.

Now let us look at some comparisons to learn how things become visible to us. Wave X from the sun does not in itself serve us with illumination; it strikes the surface of the earth and is gone. But along its way it implemented secondary wave formations in its unique contact with the molecules of the air, or so I presume. One wave from the sun struck the green leaf, and rebounded itself into our eye. Is then the green leaf also seen

by way of a secondary wave that came from the molecule in a straight trajectory between the eye and the leaf?

Wave Z from the sun strikes the green leaf and a secondary wave is emitted bound for a cloud in the sky, from where it is rebounded into our eye. What therefore will appear to our eye? The sun, whose wave implemented the secondary wave, or the green leaf, or the cloud? The answer must be the cloud, since waves always reveal their source, or last point of contact. We presume that the instant a wave goes through the mill, that is to say; through the interior of the atom or molecule, it is essentially a new re-iterated wave in a length corresponding to the coordinate of that molecule through which it passed.

As therefore the particular molecules of the leaf regenerates only the green lengths, captivating all others, these molecules (Nitrogen, and oxygen) will regenerate almost any length making it appear white. The cloud thus may remit the green-length of the leaf, but along with it came many other lengths. If on the other hand that particular wave from the leaf were "reflected" by the cloud, we would not be able to notice the green for the multitude of all other wavelengths that are either reflected, refracted, or re-generated by the substance of the cloud making it appear white, or more dark when saturated with more and more water molecules.. Thus we behold the difference in one wave from another in that there are two types of waves, primary and secondary, and that the rule of the source (or last point of contact) applies to all waves.

For here again, to utilize the axiom of the source - reflection and refraction are not counted since these act as bypasses. The mirror in Figure 2 that "reflects" wave Y from the Sun to the eye of the beholder can of course only reveal the Sun. And so in fact it does, while in none of the other waves the sun is beheld by our eye. As each different substance thus is able to reiterate the events brought upon them - each after their own specific frequency, or coordinate as we might say - so they are colored to us through the intermediate of, what is best understood as, "selection" from the varied lengths of the waves. Reiterating the rules, that all waves show their source, and that for anything to appear - a wave of suitable length must strike the eye, we find that this holds equally true **for all things that are not to appear as well.** In other words, for things that appear "transparent."

But we have yet to learn how the air around us is found so transparent. And for this let us go to illustration Figure 3. The primary wave (wave X from the sun) is readily consumed by most molecules in the process of which the molecule sends out a new wave after its own coordinate. But the simple molecules of oxygen, and nitrogen, to name a few, are not so able but readily bypass them. As therefore molecule M implements a copy, this is in two simultaneous and opposite directions, (360 degrees), again because; it is not able to captivate a primary wave, nor re-generate one of a specific length, but of all lengths

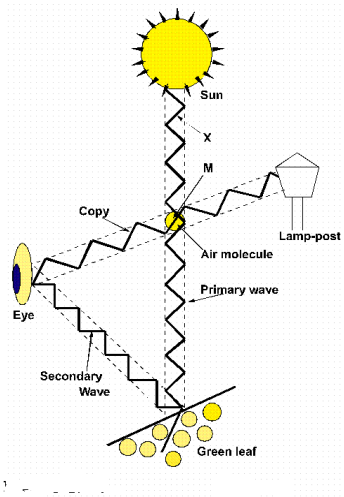


Figure 3.

This newly re-iterated wave then extends in a straight line striking the eye at one end, with the other end contacting upon the housing of a lamppost. What then shall the eye behold? The molecule of the air, which in all respects is as opaque as any other substance, or the lamp-post in the distance? We might say that you actually see "both", you see the lamppost because there is a continues wave-coordinate between you and it, **and you behold the air in seeing right through it, because - the wave has no terminal at molecule M.** The law is that the wave must show it source, which as we saw, was molecule M, and yet it did not show it, or did it?

**The answer is: Yes, it did show its source, it showed it transparent, it showed it as if it were not there - since the wave passed right on by it.** ... In other words, since the wave went two directions simultaneously in an exact opposing trajectory, we in essence looked into a void. Or, the terminal, which the wave attempted to show - was nothing more than a continuation of itself. **That, which for all fundamentals is always opaque, will thus give us the illusion that it is transparent in that the wave-coordinate passes on through, or, is a copy going out both ways leaving no terminal or source to behold.**

Be this now as it may, how then is the axiom of the law to be applied that states; "all waves to reveal their source," when certainly in this case the housing of the lamp-post is not the source, and yet we behold the same? Answer: I mentioned earlier that in certain instances "the source can also mean the last point of contact." This was stated more for our convenience than for a reality, since "last contact", or "source", are essentially the same as far as our beholding thereof is concerned. I of course realize that this needs further definition, the axiom is that eyesight is by waves "reflected" into our eyes." This is not quite true however; better terminology would be to say - by "waves contacting upon our eyes". I thus removed the word "reflected", since it should be by any wave.

Thus we see the housing of the lamppost directly along the line modulating with a coordinate to which our vision is tuned. For again, what should it matter from which direction the modulation is, since it is in the modulation thereof that we see. Take for example another wavelength of the same spectrum, one the likes of electricity, - shall it matter whether you took a hold of either the positive or negative end? No. For you would get jolted on the negative side, wherein the direction of movement is in a fashion

away from you, as also from the positive side, in which the direction of movement is towards you.

The green appearance of the leaf further on down in Figure 3 is seen for two reasons. Number one, the primary wave of the sun did not reflect. And number two, the second opposing side, or direction of the newly implemented secondary wave, was canceled, or not formed in the intricate proceedings of the molecules. Consequently, the molecule at the surface of the green leaf became the terminal, or source of the wave, which then is coded to our receptors in the brain, the resonance of which we interprets into our beholding.

Then by illustration Figure 4, to go by a simple rule whereby to define primary waves from secondary waves, and these from reiterated waves, and to define reflected waves from such as are not reflected. A reflected wave is such that does "not" enter the molecules on which it is spun off, while every other one is put through it. In the illustration all but the 7000-Angstrom lengths are canceled or captured, and even the incidence wave of that length is not merely passed on through, but newly reiterated, or implemented.

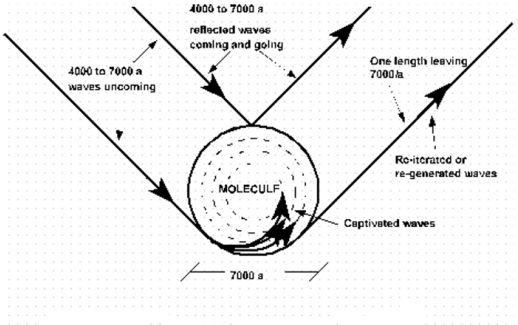


Figure 4

Consequently, when a beam of light is reflected, all wavelengths are reflected, no dispersion is seen. But whenever, and wherever, the wave is as we say - put through the mill - separation is possible. This separation then is understood not only in the dispersion seen by refraction, but in the capturing of selective wavelengths (color) as well. The illustration here conveys but the basic principle. We may as such visualize - that if this molecule had a diameter of 6000 Angstroms - then all but the 6000a wavelengths would be captivated.

There has been much talk about the "dual" nature of light. Personally I do not believe that light comes in two distinct natures, but I do favor that it comes in two formats, that its forthcoming is two-fold. And to enhance this we could use the example of inertia, how there are two factors of inertia, and yet still there is only one inertia. Mass with its many atoms is the first and only real inertia, the angular inertia. The second is that inertia we ascribe to linear velocity. Since then the so called linear inertia of velocity merely compound the angular inertia, so light in its single nature if you will is likewise twofold.

When by figure 5, the light of the sun strikes side A, of the post, it is very well lighted, but because the lines travel only in straight lines, it cast a shadow on the ground. Yet at side B the post is easily seen in its color and even the back-side is easily seen. How therefore is the entire post seen, along with the shadow it casts?

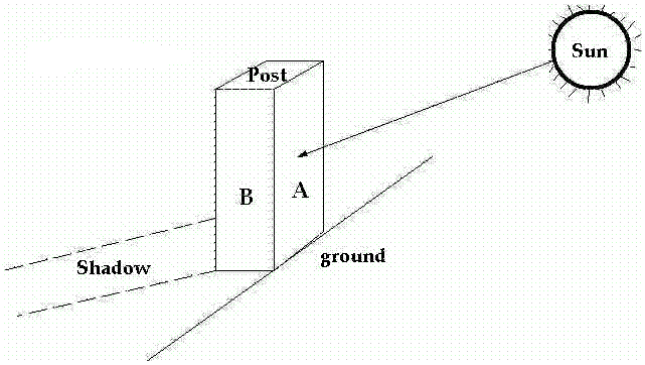


Figure 5

No doubt the ground all around the post receiving full sunlight reiterates newly created wave-lengths corresponding to the typical molecules of the ground into all directions, thereby illuminating all four sides of the post. But as I behold this, there is one distinct difference, and that difference is in the light of the Sun verses those waves, which are secondary as the recreated ones. The secondary waves in the gray color of the concrete floor for example, strike the post and rebound to our eyes in the brown color of the post. Meanwhile none of these waves found any terminal upon the molecules of the air wherefore the air remained transparent.

But is this sentence a correct sentence? As for the so called secondary waves I would say yes, but for those of the Sun there is more to it, for however high we go up into the atmosphere, or in space all the area is brightly illuminated. I then suspect, that, that light which comes from the Sun, which I named primary waves reveal a distinct difference in those many which I named secondary. But to put our finger upon it as we can with inertia this is simpler said than done.

## LIGHT AND THE MEDIA

At one time I had a game to play under the heading of "Light of the eye", to discover if beholding was by wavelengths or by frequencies, and perhaps we could continue that game for a bit more. Let us present an illustration Figure 6, and do some mathematics. Within the broken lines are two wave-lengths, one of 7000A and one of 4000A, and to cut down on numbers let us use meter lengths for angstroms. As for the tubular width around the circumference let us set it at 5 angstroms. The solid line within is one half of the wavelet greater for the 7000A, smaller for the 4000A. The velocity at which these lines pass around the circumference is the "Constant", the full 300.000 km/sec. Then we must find the "relative" velocity of each for the actual distance it proceeded in that one second of time.

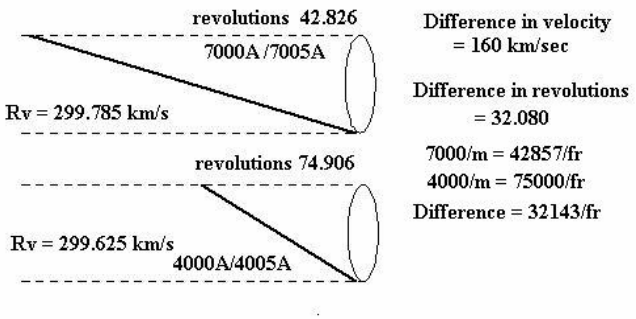


Figure 6

The constant divided by the full length of 7005/m comes to a frequency of 42.826, with 4005/m to 74.906 in frequency. These then multiplied by the nominal length of 7000, and 4000 provides us with the relative velocity of each as noted (Rv). In one second thus the 7000/m length for its angular moment, reduced in velocity - comes 31 rotations short of reaching 300.000/km, while the 4000/m length came 94 rotations short of reaching 300.000/km.

Now let us come to some figures that are more realistic, for we have been scaling our angstrom lengths by meter lengths and since there are ten billion angstroms in each meter, we must multiply the 42.826 turns of the red by ten billion to arrive at angstroms. And divide by their length comes to 61 million revolutions/sec. And for the blue wave at some 74.906 it comes to 187 million revolutions/sec. Can we actually imagine anything turning at that rate of speed?

It is mind boggling to think of these things, even the distances in space how enormous they are, and the size of each galaxy compared to but that tiny speck called our solar system. And how minute we ourselves are upon but a relative minor ball within that tiny speck. What in effect is large or small is by a point of view, and what is fast or slow depends on comparisons. As then it is virtually impossible for us to comprehend the extend of the universe, even so much becomes the apparently simple phenomena of light in its factual nomenclature virtually impossible to comprehend, especially the movement thereof in terms of speed.

## LIGHT PRODUCTION

Shall we now speak of light how it is produced at the sun, or at our incandescent lamp? The latter is more interesting when it is done with electricity. In order to produce light in that way we need a thin metal wire that may be heated to the point of nearly breaking, like red hot. This is in order to not only increase the speed of the rotations of its atoms but additionally to agitate them into vibrations, to perform back and forth movements.

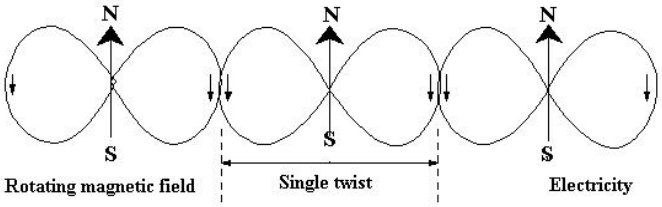


Figure 7

Electricity as nothing other than a rotating magnetic field is the perfect agent, for as seen by Figure 7 its format appears like a wound up rubber band, figures of eight end on end, which came about because by turning the armature through a set of stationary magnetic lines in the generator where we came to twist them over one another collecting them upon copper guides.

Each single twist then is like any and all magnets the format of a figure of eight. As therefore each and every magnet has a north and a south, that is to say an ingoing direction of movement at the south, with an outgoing direction of movement at the north, each single twist is and acts like a regular magnet, with this exception that they rotate at a rate called voltage,

When therefore an electrical conductor is held next to a regular magnet the wire will vibrate back and forth at the rate of its rotation (its voltage). And this is how electricity comes to agitate the atoms in the tungsten wire of our lamps alternately pushing and pulling on them. It then is by this so-called vibration or agitation within the tungsten element that magnetic waves are produced, and that primarily to the octave at which light becomes us.

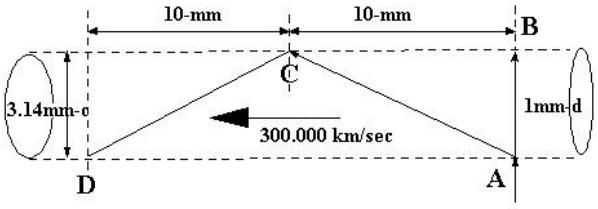


Figure 8

Then to show how these waves are produced within and upon that tungsten element our reference will be to Figure 8. The movement of the magnetic medium has a velocity to the tune of 300.000 km/sec that is at all times present everywhere. But as such it cannot be seen nor will it be as waves nor as lines of - unless and until either lines or waves are instigated. By a magnet the lines are instigates in the linear, while waves are instigated in the angular.

By figure 8 the tube as such is nothing more than the diameter into the circumference of a wave and as such filled with atoms and/or molecules depending on the size of the wave. The all pervading movement along all these atoms then is at the speed of 300.000 km/sec. As thus the atoms in the metal are pushed back and forth while they rotate. Like from point “A” to point “B” in a micro fraction of a second driving a distance of 1-mm, the magnetic medium at that same instant took it down the line a distance of 10-mm. (Like casting something on a conveyer belt) Our wave then will have a half-length of 10-mm with a full crest to crest measure of 20-mm the diameter of which is 1-mm, and its circumference 3.14-mm. The relative velocity (distance in time) of that wave then will be; 20 plus 3.14= 23.14 divided in 300.000 = a frequency of 12964 that then multiplied by the nominal length of 20 comes to 259.291-km/sec.

A wave is never a straight line, they are at all times like unto a single thread around a bolt, or like a coiled spring all because they are at all times produced by an angular impulse upon the ever linear fundamental movement that is mostly seen or known as magnetic. (Not quite so, but too much to go into by this essay)

This 20-mm wave now will not be seen as light, it is far to large, and a 1-mm tubular diameter contains many atoms, while light travels around single atoms, its diameter of travel being on the order of about 1.5 angstroms. And thus to produce light, a very quick and short narrow impulse is needed. Such then is accomplished by the high rotation and agitation that the rotating magnetic field (Electricity) invokes upon our tungsten element. And with the lack of Oxygen, and an inert gas the thin filaments last as long as the manufacturer wants them to last, so as to keep us for a lifetime customer.

In all reality light itself is not in waves, but rather a faculty of our spirit, and God ordained it so that we can only see with our eyes by those kind of waves that are able to pass the smaller atoms, but not by any larger atom wherefore they are stopped in their track or regenerated unto our beholding, therefore it is that we always see the surface of things. To see by the larger radio waves for example is to see through walls and all. As then color is by the varied lengths it too is a faculty of our spirit.

Light therefore in the so-called term of "waves" is but a mechanical innovation, and nothing more than that. Then again waves are never continues, only electrical waves are continues since these are lines of rather than impulses and always connected to a source, while waves travel independent. A single light ray of the sun with a wave-length of 7000 angstroms for example may only strike us with 10.000 wavelets per second, yet that line can contain 428 trillion wavelets within the space of 300.000 km when laid end on end, or continues as it is called. If then by example it be 10 million per second from an atomic explosion it may just blind us or burn the skin of our bodies.

We at all times interpret mechanical innovation into vision, as well as into sound, and even into physical feelings, otherwise everything would be pitch dark, and all is pitch dark, for it is in and by our spiritual interpretation that things appear, the terms for which are light, and sound. Then again as there is light, there is light of light, like our light that is but a derivative of light, even as magnetic movement in all reality is a derivative of the fundamental movement. And no less for all waves and also our electricity that for its angular format is a cousin to the linear format seen upon magnets

When a wave is a straight line it is dark, nothing can be seen since there are no impulses for us to interpret. But then a straight line is never a wave and as such cannot be interpreted. We require variances in order to send and receive our codes for any message, as well as to behold the source or last point of contact into a beholding. Nature in itself for all practical purposes is utterly dark and silent, we in our spiritual nature gather sound as well as vision by no more than a very marvelous mechanical innovation.

Conclusion

Light to say the least is a most marvelous phenomena together with all of nature in how well all these relate to one another, and that no less for sound, or the feelings upon our body. Anesthesia for example serves like a switch to turn off the spirit to our body so that nothing can be felt, proving how we are spirits living in a mechanical home constructed of atoms,