

SIGHT, THE VISUAL PROCESS, AND DOCTRINE

Aubrey T. Allen

II

Introduction

We have studied¹ the globe of the eye and have related its three coats, or tunics, to the Word in its three degrees. Also, we have discussed vision as a process, and have related it to how we acquire understanding of the Word; likewise, we discussed the three degrees of the visual process, and its relationship to the Word. In so doing we traced the visual pathway to the cortical area of the brain. At this point I would like to share with you these beautiful words of Sir Charles Sherrington—where he describes vision.²

But the chief wonder of all we have not touched on yet. Wonder of wonders, though familiar even to boredom. So much with us that we forget it all our time. The eye sends, as we saw, into the cell-and-fibre forest of the brain throughout the waking day continual rhythmic streams of tiny, individually evanescent, electrical potentials. This throbbing streaming crowd of electrified shifting points in the spongework of the brain bears no obvious semblance in space pattern, and even in temporal relation resembles but a little remotely the tiny two-dimensional upside-down picture of the outside world which the eyeball paints on the beginnings of its nerve fibers to the brain. But that little picture sets up an electrical storm. And that electrical storm so set up is one which effects a whole population of brain cells. Electrical charges having in themselves not the faintest elements of the visual—having, for instance, nothing of 'distance,' 'right-side-upness,' nor 'Vertical,' nor 'horizontal,' nor 'colour,' nor 'brightness,' nor 'shadow,' nor 'roundness,' nor 'squareness,' nor 'contour,' nor 'transparency,' nor 'opacity,' nor 'near,' nor 'far,' nor visual anything—yet

¹Aubrey T. Allen, "Sight, the Visual Process, and Vision," *New Philosophy* 84:1 & 2:35-42, 1981.

²Charles Sherrington, *Man on His Nature*, Cambridge Univ. Press, 1942, pp. 128, 129.

conjure up all these. A shower of little electrical leaks conjures up for me, when I look, the landscape; the castle on the height, or, when I look at him approaching, my friend's face, and how distant he is from me they tell me. Taking their word for it, I go forward and my other senses confirm that he is there.

Conjugal Love and Regeneration

In a previous paper³ we discussed the right way to approach the Word. After these prerequisites have been fulfilled, and we "as-of-self" approach the Word, light is brought to a focus on the retina. The effort to understand brings it to focus on the most sensitive layer of the retina, the macula. This area, we suggest, represents the Writings; and, inmostly, the fovea the Doctrine of the Lord. Here, by means of the Writings, natural light is converted into spiritual light, and we view the Word as to its letter from the Lord. Man is then able to confess that the Writings are in essence spiritual, and that they constitute the interior life of the letter of the Word. This is the only way that there can be a progression of the church in conjugal partners, and in mankind as a whole.

In reference to conjugal partners, they now begin to confess that they have understanding from the Lord, and that they live from the Lord. However, this confession is a little bit different in each of them. The male confesses primarily from the understanding that truth is from Him, and secondarily that he lives from the Lord. The female confesses primarily that she lives from the Lord, and secondarily that truth is from Him. This, because the form of their life is different, consequently their approach to the Word. The Lord, therefore, leads them differently, but always toward union or oneness of life. However, the quality of the reception of this life will be dependent upon their reciprocal relationship toward each other.

We need, now, to describe the difference in the quality of the nerve fibers in the retina. It has already been noted that the right eye signifies the feminine nature of man, and the left eye the masculine nature. In each eye though, there will be that which corresponds to both good and truth, or in the opposite sense evil and falsity.

³Aubrey T. Allen, *loc. cit.*

In the female, affections rule, and she is the form of them, so the temporal or outside fibers of the right eye represent the love of good in her. The nasal or inner fibers would seem to represent her inward nature, or the tendency to love falsity. The masculine nature is a form of truth, so the outside retinal fibers would seem to represent the love of truth, while the inward or nasal fibers would seem to represent the love of self. As these fibers from both eyes leave the retina, and progress along the visual pathway, they approach chiasma, or the pathway where two ways meet. It is here the Lord will separate their inward nature from their outward nature, and use good qualities in each to regenerate the dead quality in the other. His direct approach to each will be used by Him to infill and fulfill in the other that quality of life that will be a blessing to them. To do this, at the chiasma, he crosses their inward, perverted loves over to the other side. In the process, in the male the loves of self, represented by the nasal fibers, cross over and are associated on the other side with the temporal fibers of the right eye, represented by the love of good. As a result the love of self is replaced in him by the love of good, and constitutes the love of his wife in him, or his inmost love. In the female, the nasal fibers which represent the love of falsity, cross over and are associated on the other side with temporal fibers of the left eye. These fibers represent the love of truth from the Lord. As a result, her inmost life becomes the love of her husband's understanding, in her. The temporal fibers on each side, because they represent good qualities in each, do not cross over, but proceed with this new association to the lateral geniculate body on each side. This would seem to represent the inner celestial heaven.

As a result of this association—resulting in the reception of the love of good from his wife—the husband begins to confess that not only does he have understanding from the Lord, but also that he lives from the Lord. The female, in the process of receiving inwardly within herself the love of truth from her husband, begins to confess not only that the affection for good is from the Lord, but the truth also which now constitutes her inmost life, or the understanding of her husband in her. As a result of this, the husband rejects any idea of merit in the good that he does, but acknowledges that it is from the Lord. The wife, also, will take no merit in the understanding of truth as it relates to life, but confesses that this wisdom is from the Lord. Consequently, when the fibers from the retina on each side reach the geniculate

bodies, they begin there as new fibers, and are projected toward the striate area of the cortex in the form of optic radiations.⁴ Thus far our heavenly pair has progressed a long way on the regenerative path. The journey has been full of obstacles, but in overcoming they have gained new delights, and are beginning to really believe, not from the lips but from the heart, that they live from the Lord.

Full conjunction, however, has not taken place. On the right side we have the association of the nasal fibers from the left eye, and the temporal fibers from the right eye. The masculine side of life is receiving love of good from the female. On the left side there is the association of nasal fibers from the right eye, and the temporal fibers of the left eye. The feminine nature of man is being illustrated in truths, and instantly relating it to good, which is the wisdom of life. As they, then, from this point on proceed in their journey of life, in each and all things they speak, will, and intend, they give and receive from the other. There is complete unanimity of life, and in this way they proceed—in their journey of life—toward area 17, the calcarine cortex. They know and confess that they are being led by the Lord. Their mental view in all things, inwardly and outwardly, is from the other, and from this perspective they have their sight. They have depth of vision, and fusion in inmost principles, just as, through fusion of the retinal image from each eye, there is depth of vision and one sight; and so this heavenly pair is seen at a distance as one angel. This is the way they enter area 17, and it is here that full conjunction with the Lord takes place; and it is from this inmost celestial heaven that the Holy City, New Jerusalem, descends from God.

Here, and in our previous paper, we have suggested that the visual pathway represents the pathway of life with the regenerating man. If this is so, then there should be a relationship between the visual pathway and the Genesis account of the seven days of creation—which account does, in fact, describe the stages in the regeneration of man. The following is meant to be suggestive of such a possible relationship.

⁴In man, all of the visual fibers end in the striate area of the cortex, but in monkeys and lower mammals much of the striate area 17 is found on the lateral surface of the occipital lobes (See F. H. Adler, *Physiology of the Eye*, Mosby, 4th edition, 1965, p. 680.) Herein lies a difference between man and beast on the physical plane.

Days of Creation

Visual Pathway

- 1st From the cornea to the crystalline lens.
- 2nd From the crystalline lens to the retina
- 3rd From the retina to the optic chiasma.
- 4th From the chiasma to the other side, or to the optic tract.

- 5th From the optic tract to the external geniculate body.
- 6th From the external geniculate body (optic radiations) to striate area #17.
- 7th Rest—Striate area #17.

Perception

Having discussed the visual process, we have thereby laid the groundwork for us to understand more clearly what we mean by perception.⁵ This in turn may be an aid to us in understanding what is meant by "as-of-self." The ability to respond as-of-self to the Lord is what distinguishes man from beast. The accompanying diagram⁶ by Kephart illustrates what takes place in the perceptual process. This diagram can be applied to concepts in engineering, communication, speech pathology, etc., and it can be used to illustrate thinking in a variety of ways.

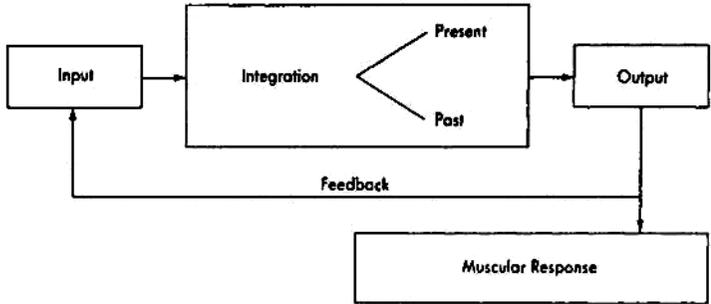


Diagram of feedback mechanisms in perception

⁵For my understanding of "perception," I am indebted to Newell C. Kephart, "The Perceptual Process," *Optometric Extension Program Paper*, Series 1, No. 6, March 1957, pp. 21-23.

⁶Newell C. Kephart, *The Slow Learner in the Classroom*, Merrill, 2nd edition, 1971, Figure 6, p. 108. Reproduced with the kind permission of the publisher.

In the area marked input, he thinks of it as just being the organism's reaction to surface stimulation of the body, and by means of the five senses there is a reaction to it. He makes it clear that each organic part reacts in a different way, but in each case this outside energy does not enter into the organism, but the organism reacts to this energy..Whether from touch, taste, hearing, smell, or sight, sensitive cells within the organism react to the external stimulus in their way. These sensitive cells within the organism are then fired up and a simultaneous pattern of neural impulses are transmitted to the projection area of the cortex. There an analogous pattern of neural impulses is set up by means of the action of internuncial neurones. Kephart considers that it is this pattern of electrical impulses, in the sensory projection area of the cortex, which constitutes the input.

Perceptions result from the activities of the organism itself, not from energy outside the body entering into or through the organism. All things being equal, it should correspond very closely to the energy impinging upon the organism, but he tells us we should remember that it is a translation of outside energy into patterns of neural response.

Kephart considers that once these input patterns have been generated in the sensory projection area of the cortex, then by means of internuncial neurones its effects radiate out into surrounding associated areas. Integration takes place at this point.

The integration process seems to be one of the mysteries of neurology. He indicates that although we do not know exactly how this takes place we must remember that this integrative process is concerned with all the sensory inputs operating in the organism at any given moment, and that there is hardly ever just one input present in the organism at any one time. In the integrative mechanism all these input patterns are organized and integrated so that the organismic response will consider all of them in one act.

Kephart further considers that the integrative process is not only concerned with incoming stimuli at an given moment, but also with past experience and memory, and that a large part of the memory process is a more or less permanent alteration of the organism. He believes the organismic response takes into account the memory of past as well as present activities, therefore, that input patterns have been elaborated and synthesized.

This elaborated pattern is translated into an output pattern, and it may be thought of as a scanning mechanism. He likens it to the television camera which has a scanning beam that translates the

light in the studio into a series of electrical impulses. The picture on the television set being an accurate model of the light distribution; in the studio. The scanning device in the integrative mechanism therefore acts to translate the afferent and association patterns into a motor pattern.

He emphasizes the fact that we should remember the output process is a pattern of neural impulses that occurs within the organism. This time it is a pattern that can be sent down to muscle and will result in movement. He believes that consciousness first occurs at this point in the perceptual process and we are first conscious of the input patterns when an output pattern has been generated. Thus we cannot really "see" until associated areas have been consulted to attach meaning to this input. When it is fed down to muscle, that is, an output pattern is generated, it is only then we really understand or see. This is why seeing is considered to be motor.

He brings out the point that on the way to muscle groups a portion of the output pattern may be drained off and fed back into the system, and that mind is conscious of muscle reaction at this point, and will monitor it. This feedback of the output pattern becomes in itself a part of the input. As it re-enters on the input end of the system it alters the input pattern and a new cycle of the perceptual process begins. This will continue until input exactly matches the output, or until muscle response is adequate to the organismic demand.

The output pattern need not result in muscular response on every cycle of the process. We can generate an output, drain most of it off in feedback for control purposes, and permit none to go to muscle. Many solutions to a problem may be tried mentally before any activity is involved. Much of study and problem solving goes on in this manner.

Before we relate this to the as-of-self, we need to review what has been said previously. It was stated⁷ that in area 17—the visuosensory area—nerve impulses from both retinae are unified, and that these unified, modified impulses are sent higher up into the nervous system; also that in animals, stimulation of this area results in ocular deviations, but not so in man. Why is this so in the case of animals, and not man? It is because at this point in man volitional movement has been separated from the understanding, and transferred higher up into the nervous system. This is not so in the case of animals, and

⁷Aubrey T. Allen, *loc. cit.*

stimulation of this area will result in ocular deviations because motor fibers are connected with organismic parts on a lower level. This is the reason why animals have knowledge, it seems, already in the organic parts. Their maturation is much quicker than man's but the freedom that they enjoy is on a natural organic level, and not on a higher spiritual level.

It was stated that in lower mammals the superior colliculus provides an integrating mechanism of considerable complexity in relation to visual impulses, and that in monkeys much of the striate area is found on the lateral surface of the occipital lobes. In man, however, all visual fibers end in striate area 17.

It was further stated in that same paper that in man parastriate area 18 is considered to be the visuomotor field, and peristriate area 19 is thought of as the visuopsychic field; also that in man area 18 plus 19 is about three times as large as area 17. In the orangutan, however, area 18 plus area 19 is not twice the size of area 17; and in the monkey area 18 plus area 19 is still smaller in relation to area 17.

In man, therefore, these areas have been transferred higher up in the nervous system, and therein is the major organic difference between man and beast. The Lord has separated the will from the understanding. Everything that man knows he has to learn a different way. The understanding has to be consulted and pass judgment on it. A new will has to be built up in the understanding.

Now we are in a position to relate what has been said to the as-of-self. We can see, according to the diagram, that there is a memory of past output patterns. There is also a memory of present activities, and a contemplation of future activities. There is elaboration and contemplation of present truths in anticipation of future action. As we learn new truths, those that agree with and reinforce past concepts of truth would seem to go out and return into the input process and consequently elaborate truths that have been in agreement with our understanding.

This thought, and elaboration of concepts according to truth, is not from oneself but from the Lord. It is He who enables one to understand and see truths in a rational way. We see truths from him, because He is the Truth Itself. The proper approach to the Word, as explained previously, enables us to see these truths not from ourselves but from the Lord. This is why evangelistic activity in the New Church seems to bear such meager fruit. We cannot cause the world to view the Word as we do. This can only be done by the Lord from within, or from the spirit. This does not mean that we

should not try to bring the truth to man, but internal sight, or spiritual sight, comes only from the Lord.

We come to a point in time when truth must be grounded in good if our thought is to rise successively. Perception generally runs horizontally in truths that have been grounded in good. When these truths have been elaborated, through conscious thought and action, they can be raised up vertically or successively only by concepts drawn from previous elaboration. Truths illustrate and elaborate good, but if we do not apply them to life they cannot be retained in the memory.

When, therefore, something comes into our conscious thought that does not agree with good, according to previous concepts of truth, we should not act on it. It is here that the as-of-self cycle starts. If it is something that we are prone to want to do, and we know that it is wrong, we must acknowledge to the Lord that it is a lie and that we want no part of it, we must ask for His strength to act, as-of-self, in resisting and overcoming this tendency toward disorder. This acknowledgment will return on the output cycle of the perceptual process, and be fed-back into the input part of it; and will serve to reinforce previous concepts of good and truth. It is here that we can better understand what is meant by influx is according to efflux.

There is one thing that we must do at this point in the as-of-self cycle of the perceptual process. We must acknowledge, and really believe, that we do this from the Lord. How can we possibly do this? We can, simply because we know without any doubt whatsoever that we live from the Lord. Consequently, any good that we do as a result of His truth, really belongs to Him, it is not ours. By shunning evils as sins, we do good from the Lord, because we live from the Lord.

No one in hell acknowledges that he lives from the Lord, but the whole of heaven does. Can we see what has been done by this as-of-self act, illustrated by the perceptual process? We have, from the Lord, turned ourselves away from hell, and toward heaven. We have confirmed ourselves in good by acting according to truth. It will lead, in time, to the absolute rejection of any hint that the good that we do is our own.

If we can act as-of-self in resisting evil, we can also do so to acknowledge truth. Because the Lord is Truth Itself, any understanding of the truth in us is His; it is not our own. This, because we live from him and not from ourselves. This as-of-self acknowledgment will go out of the output end of the process, and be fed back into the input end, where it will serve to reinforce previous concepts of good and truth. When the opportunity permits we will act on it;

and this acknowledgment will go down into muscle. There it will serve to confirm in us good and truth from the Lord.

In Conclusion

I hope, above all, that if there has been anything accomplished in writing these papers it has been to illustrate in a meaningful way that religion is of life. I have tried to relate doctrine from the Word to organic structure, and in turn show how structure and its functional processes, when properly understood, can be used to illustrate and confirm doctrine.

Each of us, in whatever use we serve, should try to see doctrine in relationship to our use. This, because the Lord is Use itself, and He will let us see Him in use if we really desire to do so. There are knowledges particular to every use. They serve to illustrate this use, but one should not construe this to mean that our worldly occupation is necessarily our spiritual use. We should try, insofar as we can, to acquire worldly knowledges. They are first in time. However, spiritual goals should be primary in end; thus, in time, these worldly knowledges should be used to serve spiritual ends. I am reminded of what Dr. N. J. Berridge said:

Providing our method of seeing spiritual things reflected in natural things is sound, the wider and truer our natural knowledge, the better will be our vision of spiritual things. If we can make proper use of the current tremendous growth in scientific knowledge the church will have a better understanding of spiritual matters than ever before; whereby also its love will be strengthened.⁸

And in Isaiah 19:23-25 we read:

In that day shall there be a highway out of Egypt to Assyria, and the Assyrian shall come into Egypt, and the Egyptian into Assyria, and the Egyptians shall serve with the Assyrians. In that day shall Israel be the third with Egypt and with Assyria, even a blessing in the midst of the land: Whom the Lord of hosts shall bless, saying Blessed be Egypt my people, and Assyria the work of my hands, and Israel mine inheritance.

Acknowledgment

I would like to express my appreciation for the kind encouragement that the late Mr. Lennart Alfelt and Mr. Boyd Asplundh provided in getting me to write "something." Without this, most likely, these papers would never have been written.

⁸N. J. Berridge, "Thinking from Correspondences," *New Philosophy*, 82:1:303, 1979.