REFLECTIONS ON FIRST AND LAST THINGS SAID

Edward F. Allen

ABOUT THE FIRST AND LAST THINGS SAID: THREE SITUATIONS, TWO INVOLVING EMANUEL SWEDENBORG SOMETIME IN 1734-1744, AND ONE INVOLVING THE PHYSICIST MAX BORN AROUND 1948

First, let us imagine Swedenborg having before him a published report by the anatomist Malpighi on his observations of the formation of the chick in the egg during incubation. Having made a selection of successive observations reported by the anatomist ("*at the end of 6 hours…; at the end of 12 hours*, etc…") Swedenborg begins his own observations ("inductions" they are called) with the statement:

> *In the formation of the embryo in the womb, or the chick in the egg, all things are carried on most distinctly* (EAK, vol. I, 248).

In treating this, Swedenborg proposes an analogy between the formation of the embryo in the womb and the formation of the chick in the egg. What is first seen is called a "miniature chaos," and a form called "cicatricula," irregular like the scar or cicatrix left by vaccination. There follows this observation:

> ***And the several members are produced successively, or one after another: so that there is no real effigy of the greatest in the least, and in the germ no type of the future body—no type which is simply expanded*** (EAK, 249).

Second, what is seen and what is induced successively until the chick emerges requires the premising of a "Doctrine of Series and Degrees." The doctrine is premised and applied to a description of what is called the corporeal system (consisting of the brain, nerve fibers connecting the brain with the sense organs) and further to the exploration of the intercourse between the soul and the body. In doing so, Swedenborg reports that,

> **The mere senses, as hearing and sight, considered in themselves, partake in no respect of understanding and reason** (EAK, vol. II, 309).

So it was stated sometime between 1734 and 1744, when Swedenborg was reporting on his philosophical investigations.

Third, two centuries later, around 1948, Max Born, a physicist trying to explain what occurs in physics when the sounds of geiger tubes are heard and the visual tracks in cloud chambers are seen, wrote this:

> **The messages which the brain receives have not the least similarity with the stimuli** (*Natural Philosophy of Philosophy and Chance*, p. 125).

This is not original with nor quoted by Born, but is composed from a report by Professor E.D. Adrian in his book on physiological investigation, *The Physical Background of Perception*.

So there are three different situations, two of them involving Swedenborg and his philosophy two and one half centuries ago, but the third present with us still in our time, in which it is recognized that no obvious connection exists between what a bodily sense receives and what the mind makes of it.

WHY AND HOW SWEDENBORG TURNED FROM THEORIZING ON THE ORIGIN OF THE NATURAL WORLD TO A SEARCH FOR THE SOUL

As an observer of things in nature, Swedenborg began early to wonder about their causes. Later as author of books on *Iron* and *Copper* he must have wondered not only about the origin of metals, but also about the origin of things from which the metals arose. So he proposed a theory about the origin of the natural world. It was successful because it appeared to explain the origin of the sun and its system, and to explain much about magnetism, both natural magnetism in the lodestone and also magnetism about the earth that affected changes in the compass needle. Nevertheless,

the theory was loaded with difficulty. Its first *ens*, called first natural point, had a Janus-like nature. With one face it looked toward the Infinite to which no human mind could penetrate, and with the other toward the finite to which, as he wrote, we may have access.

So he proposed an analogy between the relation of the Infinite to the finite and the relation of the soul to the body. In doing so there was a moderating acknowledgment that,

> Analogical instances illustrate, although they cannot demonstrate. Thus by the comparison of the soul and body it seems possible to gain some little light respecting the connection of the Infinite with the world.

Swedenborg devoted the next ten years to studying the relation of the soul to the body in order to gain a little light on the relation of the Infinite to the finite. Preliminary questions proper to exploring the intercourse between the soul and the body were raised, and a plan for pursuing that exploration was proposed, largely devoted to a search for the soul, all of which concluded with this promise:

> The main end of these our endeavours will be to demonstrate the immortality of the soul to the very senses.

This promise is the principal intention of Swedenborg's philosophy from that point on.

THERE IS IN THE GERM NO TYPE OF THE FUTURE BODY

Swedenborg then began a report on the progress of these endeavours, two parts of which he was to publish under the title of *The Economy of the Animal Kingdom*, the first paragraph of which is,

> The animal kingdom, the economy of which I am about to consider anatomically, physically, and philosophically, regards the blood as its common fountain and general principle. In undertaking,

> therefore, to treat of this economy, the doctrine of the blood must be the first propounded, although it is the last that is capable of being brought to completion.

The first two subjects treated are "Composition and Genuine Essence of the Blood" and "The Arteries and Veins, Their Tunics, and the Circulation of the Blood." At this point a problem arises, namely, how the human body is formed. The situation is somewhat like the one Swedenborg faced in proposing a theory of the formation of the natural world. Then it was the relation of the Infinite to the finite. Now it is the formation of the human body in the womb and thus not visible. As he did then, so now Swedenborg proposes an analogy between the formation of the human body and the formation of the chick in the egg. Eggs are put in incubation, and the process of formation is observed as successive eggs are opened, one at time, for examination: the first one after six hours, the second after the next six hours, and later ones at intervals of days at a time. The resulting observations are published by Malpighi, the anatomist. The resulting observations successively and simultaneously observed in time are then regarded by Swedenborg the philosopher as successive effects. From these causes are induced, and effects occurring successively and simultaneously provide states of organs as they appear, that is, not as to time, but as to successive and simultaneous states.

The exploration of the formation of the chick in the egg leads to three things important to the philosophy of Swedenborg:

1. To knowledge of the formation of the organs themselves;
2. To the demand for the explicit definition of the Doctrine of Series and Degrees;
3. To the development of the language of the Doctrine, not only "successive and simultaneous" as to "state," but specifically in the animal kingdom to "subordinate and coordinate," "posterior and prior," "compound and simple," "inferior and superior," etc., all of which requires many pages in the chapter on "The Formation of the Chick…"

But there are two facts that bracket the entire formation process. The first is the fact that after six hours of incubation an irregular colored area

appears, called a cicatricula, which as said has the same Latin root as cicatrix, the irregular scar left by a vaccination. And the observer at that time must anticipate a chick emerging when the incubation period is complete. Hence almost at the beginning of the chapter, two general observations by the mind are recorded, first,

> *In the formation of the embryo, or the chick in the egg, all things are carried on most distinctly* (Subject heading treated in n. 248).

Second,

> ***And the several members*** [organs] ***are produced successively, or one after another: so that there is no real effigy of the greatest in the least, and in the germ no type of the future body,—no type which is simply expandable*** (Heading of n. 249).

THE PREMISE OF THE "DOCTRINE OF SERIES AND DEGREES"

While the inductions and their treatment on the formation of the chick were in progress, repeated demands were made for a Doctrine of Series and Degrees. Hence the following,

> 579. PSYCHOLOGY is the science which treats of the essence and nature of the soul, and of the mode in which she flows into the actions of her body; consequently it is the first and last of those sciences which lead to the knowledge of the animal economy. But whereas the soul has her residence in a place so sublime and eminent (n. 270), that we cannot ascend to her, and attain to the knowledge of her, except by a particular and general investigation of the lower and accessible things of her kingdom;…it hence becomes necessary that we ascend to her by the same steps or degrees, and the same ladder, by which her nature, in the formation of the things of her kingdom, descends into her body. By way therefore of an Introduction to Rational Psychology, I will premise THE DOCTRINE OF SERIES AND DEGREES (a doctrine, of which, in the

preceding chapters, I have made such frequent mention), the design of which is, to teach the nature of Order and its rules as observed and prescribed in the succession of things: for the rational mind, in its analytical inquiry into causes from effects, nowhere discovers them, except in the Subordination of things, and the Coordination of subordinates; wherefore, if we would advance from the sphere of effects to that of causes, we must proceed by Orders and Degrees; agreeably to what rational analysis* itself both approves and advises. (n. 67, 161.)…But whereas all things in succeeding each other follow one another in order, and whereas in the whole circle of things, from first to last, there is not a single one which is altogether unconnected or detached from the rest; I am therefore compelled, as I said, previous to developing the subject of Rational Psychology, to take into consideration this doctrine concerning order and connection, so remarkably conspicuous in the animal kingdom. In the meanwhile, whether there be truth in what has been said, and what remains to be said, may be easily ascertained from the four following considerations: *First*, In case the truth spontaneously manifests itself, and as it were establishes a belief in its presence, without requiring any support from far-fetched arguments; for we often, by a common notion, and, as it were, by a rational instinct, comprehend a thing to be true, which afterwards, by a multiplicity of reasonings drawn from a confused perception of particulars unarranged and unconnected with others which are more remote from our notice, is brought into obscurity, called in question, and at last denied. *Secondly*, In case all experience, both particular and general, spontaneously favors it. *Thirdly*, In case the rules and maxims of rational philosophy do the same. *Lastly*, In case the proposed views makes the different hypotheses, which have been advanced on the subject, to coincide, supplying us with the proper condition, or common principle, which brings them into order and connection, so that, contemplated in this manner, they are agreeable to the truth. We may remark that a system constructed on the ground of such an agreement, merits the title of ESTABLISHED HARMONY. But to proceed to the Doctrine of Series and Degrees (I EAK, 579).

THE MERE SENSES, AS HEARING AND SIGHT, CONSIDERED IN THEMSELVES, PARTAKE IN NO RESPECT OF UNDERSTANDING AND REASON

In describing abstractly and by applications the Doctrine of Series and Degrees, the principal application is to the corporeal system, consisting of the brain and bodily senses, and nerve fibres connecting them. This induction number provides some idea of the nature of the chapter on the Doctrine of Series and Degrees beyond defining it according to the language developed in making inductions on the formation of the chick:

> By this process the corporeal system is constructed and perfected; in which one thing remains fixed in such a state of subordination to, and coordination with, another, that all individually respect and depend upon each other; in such a manner, that the more simple substances are rendered conscious of every change which takes place in the compound series and substances; and whatever is determined into act, is effected by the more simple, either determining, or concurring, or consenting. Moreover this is accomplished according to natural order, proceeding from an inferior substance to one proximately superior, or from a superior to one proximately inferior; but not from the supreme to the ultimate except by intermediates (I EAK, 607).

The following number offers a specific application of the Doctrine to the "intercourse between the soul and the body," and is a key induction.

> From the foregoing considerations we may infer the nature of the intercourse between the soul and the body: for those things that are superior flow into those that are inferior, according to the order, and suitably to the mode, in which the substances are formed, and in which they communicate, by their connections, with each other. If the operation of the spirituous fluid be the soul; and if the operation of the soul in the organic cortical substance be the mind; and if the affection of the entire brain, or common sensorium, be the animus; and if the faculty of feeling be the

> sensory organs; and the faculty of acting, in the motory organs of the body; then a diligent and rational anatomical inquiry must show the nature of the above intercourse; and must prove that the soul can communicate with the body; but through mediating organs; and indeed according to the natural and acquired state of such organs (II EAK, [301a]).

Note the words "and if the faculty of feeling be the sensory organs." This is described in number 308, from which the following selection is taken,

> In order to investigate the intercourse of the soul with the body, and the reciprocal intercourse of the body with the soul, let us proceed to follow the path laid down by organic substances, that is to say, the clew of anatomy. We find that sight flows along the optic nerve to the thalami or crura of the medulla oblongata, and not only pervades their subtly cineritious and oculate substance, but passes thence through the base of the fornix all over the cortical circumference of the cerebrum; for all the medullary substance of the cerebrum (derived from the cortex) that runs down to the chemical laboratory of the brain, passes through the base of the fornix, and upon the thalami of the optic nerves, and dips into the latter…The case is the same with the other sensations: the ultimate receiving-rooms of all are in the cortex, which is rendered conscious of all mutations that happen in compound series and substances.
>
> But all these sensations, in so far as they are regarded simply as senses, appear to have nothing in common with the understanding. The soul represents them to itself, inasmuch as it is the order of its own nature, and thus knows what is harmonious, or agreeable to order, and what is inharmonious, or repugnant to order…These sensations, therefore, do not constitute the intercourse between the soul and the body: they are a mere translation from an organ obnoxious to the modes of the contiguous aura, to a circumference, and to whatever part of it they are wanted to extend; consequently, they do not ascend to a higher degree, but

remain in their own degree, the same in which they were at their entrance.

If then sensations do not ascend and descend, but are only poured forth from their organs along the nerves into all the little cerebellula of the head, or into the cortical spherules, the question comes, what is there in sensations that is elevated through the degrees of the brain? **The mere senses, as hearing and sight, considered in themselves, partake in no respect of understanding or reason, but are the natural helps and instruments which the intelligent soul makes use of to apply to itself and to represent to others the ideas of its mind and animus** (II EAK, 309).

EXAMPLES FROM PHYSICAL AND PHYSIOLOGICAL INVESTIGATIONS THAT THE MESSAGES WHICH THE BRAIN RECEIVES HAVE NOT THE LEAST SIMILARITY WITH THE STIMULI

Two centuries later, physicists by their hearing and seeing with advanced instrumental techniques, geiger counters, cloud chambers, and photo-electric cells, and by their understanding and reason, arrived at conclusions about electrons, protons, neutrons (parts of the atom) and even about parts of nuclear units. Max Born, one of the important contributors to the theory called "quantum mechanics," gave a firm supporting argument to the probability explanation of that theory. In a series of lectures he had cause to describe what takes place when a physicist observes phenomena and refers what he hears and sees to his mind.

The messages which the brain receives have not the least similarity with the stimuli.

The stimuli he sees are marks on photographs of what happens in cloud chambers for example. On the way to what the brain receives, intermediate results from mathematics may enter the picture. So to this reference,

Here I must refer to the previous Waynflete Lectures given by Professor E.D. Adrian, on *The Physical Background of Perception*,

> because the results of physiological investigations seem to me in perfect agreement with my suggestion about the meaning of reality in physics. **The messages which the brain receives have not the least similarity with the stimuli**. They consist in pulses of given intensities and frequencies, characteristic for the transmitting nerve-fibre, which ends at a definite place of the cortex. All the brain 'learns' (I use here the objectionable language of the 'disquieting figure of a little hobgoblin sitting up aloft in the cerebral hemisphere') is a distribution or 'map' of pulses.

For those readers who may be negatively affected by this turn to what are highly technical scientific experiments in physical and physiological experiments, it should be known that Born was also a lover of music as well as a physicist. So he was able to experience a leap from what could be seen printed on score sheets—not to what happens in the minds of the musicians, but what happened to him.

> For instance: what is a fugue by Bach? Is it the invariant cross-section, or the common content of all printed or written copies, gramophone records, sound waves at performances, etc., of this piece of music? As a lover of music I say No! that is not what I mean by fugue. It is something of another sphere where other notions apply, and the essence of it is not 'notions' at all, but the immediate impact on my soul of its beauty and greatness (pp. 125-6).

TWO OTHER FIRST AND LAST THINGS SAID BY SWEDENBORG SHOULD BE KNOWN

Let us return to Swedenborg. The remark about no effigy in the sperm is made almost at the beginning of his philosophical search for the soul. The statement that hearing and sight do not partake of understanding or reason occurs near the half-way point of that search. Near the end of his philosophy as published by him, he wrote,

> While the body was formed in the womb, [it was] subject to the auspices of the supreme mind. But when the period of these destinies had passed away, and the manikin, bursting the swathings and bars of the womb, rushed forth upon the theatre of the great world, the state of life was instantly changed, and the hinges of determinations…were inverted…Thus we entered, or rather fell, from the highest life into the life of the body…Since, therefore, we are inaugurated into this life, that tends backwards from the last stage of the course to the first the consequence is, that we are born into the densest obscurity, ignorant of all things, and the merest of infants… (AK nos. 456-458)

In sum, the first thing said is that we are born in the densest ignorance. Let us pass to the last thing said, which in part is,

> The LAST END, which also is the first, is, that our minds at length become forms of intelligence and innocence, may constitute a spiritual heaven, a kingdom of God, or a holy society, in which the end of creation may be regarded by God, and by which God may be regarded as the end of ends… (466)

Swedenborg left an unpublished manuscript, containing hundreds of sentences he intended to treat of in continuation of his philosophy. The first thing of its epilogue is, "*That the origin of all sensations is from touch or external impulses…*" (*Five Senses* 444, 450)

In concluding the epilogue, he wrote,

> *From these things it follows that the primary end of the understanding given to us is that we may ascend by degrees from natural into moral life, and from moral into spiritual, and thus finally to heavenly happiness, which is a continuation of spiritual life* (Senses, 639-641)

IN SUMMARY–HOW IN EACH CASE THE GAP IS CLOSED

Case 1. Successive and simultaneous appearance of organs during the formation of the chick leads to inductions of causes of these or-

gans as effects, during which there is a demand for a "Doctrine of Series and Degrees."

Case 2. This is only a part of his progress report on his search for the soul as can be seen that from the senses to the mind is only part of the way from the senses to the soul.

Case 3. In the formation of the body "the body was the body of the soul." But at birth, "the body undertook to manage the reins which the soul relinquished." this is called the inverted way. Because "we are born in the densest obscurity, etc…," and "it is necessary that there be causes of intelligence, and also that impure fires are extinguished: pleasures of the bodily senses, lusts or cupidities of the animal mind and ambitions and desires of the rational mind that terminate in the love of self." In the concluding part the question is asked, for what end are we born into the inverted way? A three part answer is: in order to live in the world; a moral reason, that is, to live with others; and a spiritual reason, how the mind is a uniting medium between things brought to it "by the gates of the senses," and the heavenly things, "through the portal of the soul." Finally to "The LAST END…," as stated above.

Case 4. Wherein from touch or external impulse to the primary end of the understanding, first images from the eyes are called ideas in the mind. Then the progress of the argument is from ideas explored to truths. Truths are forms of goodnesses. Truths and goods in ascending order lead us "to know how to choose the best." But "a superior power" is required not only to know truths, but also to pursue goodness. These are the things referred to in Case 4 by "from these things it follows…" Which is also the last thing said in Swedenborg's philosophical state.

If we were to summarize Swedenborg's progress to explain the gaps, each case would be a subject in itself. For Swedenborg, each case was a step in his search for the soul. When completed it was his intention to write two books: *Rational Psychology* and *An Introduction to Rational Psychology* (See prologue to his *Animal Kingdom*). ❑