

**What We Were Told To Do,
or
Do Neurons Speak?**

Notes from Excursions in Neurobiology, History and Anthropology

excursion (i'kskœ'shen), *n.* a journey or ramble for health or pleasure; a short tour, a trip by and individual or body of persons; a wandering from the subject, a digression.

[SLIDE OF A DRAWN NEURON]

This is a neuron or, rather, a drawing of some ideal neuron of a certain type. Still, just as we can say that a drawing of this or that apple "is" an apple, we can also say "This is a neuron."

[SLIDE OF A PHOTOGRAPHED NEURON]

Now here we have something else about which we can say "This is a neuron." It is also a photographic image of a dehydrated, colored, and otherwise drastically altered piece of a human brain tissue which itself is a greatly altered piece of the brain from a greatly altered human body.

At some point in human history the body began to be represented, then the brain, then parts of the brain, and parts of those parts, and so on. During this long history, done in many ways in many different times and cultures, the body and its many idealized parts began not only to be represented but to also be said to do some representing of their own. In modern Europe these bodies and parts first behaved more like animals, then like the Christian God, and then they started to engage in exchange, manufacturing, storage, and a whole range of forms of communication representing themselves as if they too were leading lives.

[SLIDE OF MANUFACTURING, STORING NEURON]

Do neurons speak? Well, no, or at least I've never heard one. Yet while they don't speak they are, however, said to tell, relay information, excite, inhibit, and otherwise communicate. They are also, like humans and animals, said to have and be bodies. Only figurative expressions, right? One could say that. But such expressions are rarely simple and certainly not simple in this case where the question of figurative language often goes unrecognized in the understanding and imagination of these ideal objects and the billions of material things which they describe.

Returning to the activities of neurons, it is clear that both neurons and their activities are given linguistic ability. This ability need not, however, be construed as voice. The link between giving linguistic ability and ancestral or spirit devotion is found in innumerable texts of classical anthropology as well as in more contemporary elaborations of the phenomena described therein. From Boas' work on Northwest Coast exchange, through Mauss, Sahlins and beyond we find two fundamental and common themes: first, that giving between groups is most often somehow on behalf of and through spirits; that it is "spiritual" in this sense and, second, that these spirits are commonly linked with ancestors. In Boas' description, for example, giving is not to the other group *per se* but rather to the ancestors of the other group. In short, the phenomenon of giving between individuals and groups is commonly described as an ancestral phenomenon or one involving spirits. This is the way in which many amongst humanity understand the distinction of their groups and their own individual worth. From this, I will attempt in what follows to go further, describing the giving of linguistic ability in a similar way.

[SLIDE OF KWAKIUTL RAVEN MASK]

A curious example of giving of linguistic ability in this regard is related by Franz Boas in Kwakiutl Ethnography, ch. IV, "The Potlatch," pp. 85-87. Here, in describing the gift exchange

as one group giving to the ancestors of another, he quotes a native chief as explaining this giving in the following way:

“We try to imitate what our ancestors were told to do by the creator.”

One does not need to look long to possibly see the strange nature of such a thought. How could a group of people be thought of as trying to imitate not what their ancestors did, but rather what they were told to do by the creator? Why imitate what they were told to do instead of follow what they were told to do? In quoting someone as saying: "We try to imitate what our ancestors were told to do by the creator" Boas brings out the ever-ambiguous notion of telling and links it to ancestral experience. **[What kind of language does "telling" involve?]** Besides describing a different way of understanding the relationship between language and behavior than that commonly found in Euro-American thought, Boas makes it clear, in yet a different way, that the giving of linguistic ability, on one hand, and ancestral experience and devotion, on the other, are somehow intrinsically linked.

Pursuing the figuratively expressive nature of the language of neurobiology in the following excursions I will suggest an answer to the question of what exactly the many figurative expressions around the neuron found in neurobiology refer to. My answer, somewhat odd, and to be explained, is that these expressions around the neuron refer to "the neuron" in its ideal form and that this ideal form is a form of ancestral or spirit imitation found in contemporary neurobiology. I take the position that these figurative expressions of neurobiology are a giving of linguistic ability which refer to forms of ancestral or spirit imitation. Put most simply, each figurative expression is ideally associated—or able to be associated through a certain form of

doing history—with an inventor who created it, or made it possible. In a similar manner, for example, we use the terms "Newtonian physics," "Boasian anthropology," "Parsonian sociology," and so on to describe work done "in the spirit of" Newton, Boas or Parsons, according to a certain notion of history of spirit. While being of another ancestral line, Einsteinians, Structural Functionalists or New Leftists still continually give to the ancestors of their rivals. Here the point is that even though the Einsteinians, Structural Functionalists, or New Leftists consider themselves to be bigger and better, they also acknowledge the ancestors of their neighbors through the giving of linguistic ability to these ancestors.

[SLIDE OF HUSSERL]

In the work of Edmund Husserl one finds a subtle, yet striking analysis of the relation between history and science. In Husserl's last and unfinished work entitled *The Crisis of European Sciences and Transcendental Phenomenology* an appendix is included which was later entitled "*The Origin of Geometry*". In this famous piece Husserl addresses the relationship between the history of science in the frames of scientific problems and the problems of universal history in general. There almost everything Husserl says about history can equally be (and I maintain should be) said of historical anthropology.

A bit about the book and its "place in history," its referent, etc.

Husserl - Phenomenology/Existentialism -

(Post-)Structuralism (Ling. Phil. and Sociology)

From the beginning of this exposition Husserl argues that history is based upon a search for origins in that while most historians, in their particular areas of inquiry, do not search for origins, *per se*, the very logic of history itself remains that of development from some beginning

which all consequent historical subjects in their particular areas in some sense positively include being continuous with the past, or negatively include being discontinuous with the past.

[SLIDE OF A CIRCLE]

Using geometry as an example of a scientific area of study, Husserl engages in what he refers to as 'historical investigations in an unusual sense.' Historically speaking, says Husserl, geometry (and indeed no science) is an entity independent from human activity. In addition, this science (and other sciences) is "a tradition" which is handed from person to person over a span of space and time. It is these persons, scientists and learned folk, and not a series of notes or abstract facts, which make up and maintain this tradition. This tradition, says Husserl, is not simply functional or abstract but better understood as "spiritual" [*geistig*]. Of these forms of scientific tradition, i.e. science, he writes:

These forms have arisen as such not merely causally; we also know already that tradition is precisely tradition, having arisen within our human space through human activity, i.e. spiritually, even though we generally know nothing, or as good as nothing, of the particular provenance and of the spiritual source that brought it about.... We understand our geometry to be a total acquisition of spiritual accomplishments which grows through the continued work of new spiritual acts into new acquisitions.¹

Having said this, however, Husserl does not ignore the abstract and ideal nature of the geometric forms as they are said to exist non-corporeally and non-actively in the world. Geometry (and other sciences) is (are) not just the behavior of scientists nor is it (are they) simply the constructed spatio-temporal results of scientific behavior in the world. The "spiritual form" of a science to which he refers is "intrapersonal in origin, where it is a structure within the

¹ Crisis, p.355

conscious space† [**Bewußtseinsraum**] of the first inventor's soul." Yet from there on it gains its ideal objectivity in linguistic living bodies (*Sprachleiber*) of the inventor and those who follow him or her. Beyond this, should he or she, or his or her followers, cease to speak or live, the "spiritual form" or "ideality" becomes what Husserl refers to as "virtual." History, says Husserl, is thereby an a priori science in that its objects are supratemporal, existing outside of the living bodies which are the logical origin of each particular area of historical inquiry. Being an a priori field of inquiry, i.e. a field which relies on something outside of or prior to experience, history nevertheless often tries in some way to base itself upon some sort of (lived-)experience derived through texts. This attempt to go beyond history's extra-experiential nature has been called hermeneutics and, in contemporary anthropology called interpretive anthropology.

Having noted the a priori nature of historical inquiry, however, Husserl also admits of its necessity and the inescapability of this a priori science. Put most directly, summarizing the main current of this exposition, Husserl acknowledges the necessity of the "spiritual form" of historical science which is intrapersonal in origin, having its ideal objectivity in the linguistic living bodies of the inventor and those who followed him or her. This form of history he calls "internal-history."

Relating this original situation to primitivist conceptions, however, Husserl shows himself to be much wiser than many of his contemporaries on this subject. In contrast to Horkheimer and Adorno on science, for example, Husserl denies any attempt to ground spiritual forms, ideal objectivity or linguistic living bodies on simple (positive or negative) historical or historical anthropological understandings of magic and the mythical. He writes:

[H]istoricism [**Historical Anthropologism**], which wishes to clarify the historical [**historical anthropological**] or epistemological essence of mathematics from the standpoint of magical circumstances or other manners of apperception of a time-bound civilization, is mistaken in principle. For romantic spirits the mythical-magical elements of the historical and prehistorical [**or historical anthropological**] aspects of mathematics may be particularly attractive; but to cling to this merely historically factual aspect of mathematics is precisely to lose oneself to a sort of romanticism and to overlook the genuine problem, the internal-historical [**internal-anthropological**] problem, the epistemological problem.²

That problem which such historicism and historical Anthropologism overlooks is, namely, that of ancestral or spirit imitating. Even though scientists working on a particular scientific object do not know "the creator" that "conscious space of the first inventor's soul" as a linguistic living body, they are able to "imitate what their ancestors were told [**in different forms of language**] to do by the creator." Yet this imitation itself is not actually the subject of historical or historical anthropological study (as different theories of magic so often suggest). The shared logic of history and historical anthropology itself, making them both a priori sciences, is actually dedicated to unattainable origins. Yet this is of course by no means to say that they have no value or are necessarily ineffective in the study of science. According to Husserl, the work of the historian and historical anthropologist of science should be the work of a scientist who, imitating his or her scientific ancestors, gains access to that "conscious space of the first inventor's soul" or "creator" in which the structure of the primary personal origin of the ideality of its object lies. Such a science should be, as the Kwakiutl describe their activity, trying to imitate what these ancestors were told do by the creator. It is this process of reasoning through ancestral or spirit imitating—through which the historian is loyal to his or her subject and also in some sense takes on takes on the linguistic living body of the creator—that Husserl calls internal-history. The anthropologist should, like the scientific creator, consciously become, through ancestral imitation, a creator his or herself. [??]

² Crises, p.378

This Husserl's language, not mine.

From this, two remaining and difficult questions are, of course: (a) what is "the creator" here and how does it relate to "that conscious space of the first inventors soul", and (b) in what sense must the historian or historical anthropologist "gain access to" or that conscious space or "the creator"? In different world religions this "accessing the creator" takes on various forms from what is called spirit possession and sacrifice to the study of texts and other forms of personal and public ritual. Knowing the history of religions and something of cultural change and power, both history and historical anthropology have come to regard such "creators" not simply as human beings, as Frazer and others supposed, and in most cases not mystically as many adherents to these religions suppose. Rather, they have come to regard such creators as "inventions" which started with some person who influenced other persons and so on. It is in this way that creators, while supposedly not sought in historical and historical anthropological work, are nevertheless logically construed in this work as conscious spaces of the souls of those who invented these particular traditions we call different particular forms of magic, science and religion.

The clearest way in which historians and historical anthropologists gain access to the conscious space of the souls who created or invented this or that tradition is, of course, not through spirit possession or pious deeds and such, but rather through the study of material records of various sorts. It is in this "a priori" study that they seek to somehow derive the conscious space of the soul of the inventor or creator of this or that historical or historical anthropological object. This conscious space of a soul may be of a powerful western historical figure like that of

Isaac Newton, or it may be a figure unknown to European or other forms of modernity foreign to it who existed and acted as an inventor, creator or at least a very close follower thereof.

Although one often sees historical and anthropological works seemingly addressing a certain invention, like the Native American ghost dance, for example, it is the records of the lives and experiences of particular men and women through which the origin, purpose and role of this invention is explored. If this is not practically possible, it is at least theoretically important.

The problem with history and historical anthropology as they exist, Husserl would say, is that being focused on records of the lives of men and women in such a way they are non-intrapersonal, extra-experiential or a priori, and thus not real but rather virtual. It does not gain access to the conscious space of the creator or first inventor, nor does it actually approach it in the records of the close followers of the inventor or creator, as it believes it does. Rather, it explores a conscious space of the soul of the inventor which is wholly virtual—a virtually conscious space. In contrast to this, Husserl suggests a way of doing history and historical anthropology which is not virtual, or at least much less so. To Husserl, it is possible to go beyond this virtuality and do history and historical anthropology in a way which is wholly intrapersonal and is more sensitive to its a priori or extra-experiential elements. In doing so these forms of study would be better able to gain access to, take on, or become the conscious space of the creator or inventor not through the virtual reality of recorded lives, per se, but rather through actually doing, participating in, a specific scientific, magical, religious or otherwise construed tradition. In becoming a creator within a specific, given tradition, one works through imitating what the ancestors were told to do by the creator and, in doing so, seeks access to that conscious space of the inventor's soul. Put most basically, in learning and doing in this way one gains scientific, magical or religious ancestors, taking on, through learning as we all do, their characteristics. In

doing so one takes on characteristics one might not even be able to recognize just as most of are unable to recognize characteristics of our great-great grandmothers or great-great uncles.

[To sing—thus to imitate singing via ancestral devotion and not so much in song. Tone science. Language. But science and not poetry.]

Creating something new in dialogue and intrapersonal activity.

THE VIRTUAL = HERMENEUTICS

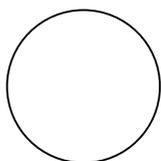
INTERPRETATION

I basically propose a different anthropological history of science not based upon magic but on ancestor devotion and ancestor or spirit imitation.

Magic ----> Religion ----> Science

(Ancestral experience in Christianity too, often forgotten.)

The Internal-History and Internal-Anthropology of Geometry



$$C = 2\pi r$$

"This is a circle."

$A = \pi r^2$ **This is a figurative expression.**

Figure.

Geometric Ideal (intrapersonal) and its 3-D reality.

The Internal-History and Internal-Anthropology of Neurobiology

"This is a neuron."

This is the key figurative expression.

The Geometry of Histology. Pictographs. Graphemes.

Graphic ideal (intrapersonal) and its 3-D reality.

Giving of Linguistic Ability. Fetishism. Animism.

Both animism and fetishism have been argued, but these arguments are lacking the essential (jural, ethical and political) elements of science in these societies.

Show Examples of Givings of Linguistic Ability:

Photos - Slides: Microscopic - Photographic

Different drawings: Graphic

Math/ Geometry: Math Language Written

Electrical Specs: Electrical and Transmission/Reception Language

Chemical Diagrams: Chemical Language - Written, Graphic

QUESTIONS FOLLOWING THIS AND GROUNDING THE ETHNOGRAPHIC

PROJECT:

DO NEUROBIOLOGISTS WORK IN A VIRTUALLY CONSCIOUS SPACE? NO, MOST KNOW VERY LITTLE OF THIS SPACE, EVEN IF THEY DO NAME DIFFERENT THEORIES IN TERMS OF ANCESTORS, ETC.

DOES IT MATTER WHAT THE IMPACT OF THE ABOVE GIVINGS OF LINGUISTIC ABILITY ON ENGLISH AND GERMAN VERBAL AND AURAL/DESCRIPTIONS IS? NEUROBIOLOGISTS DON'T SEE IT THIS WAY AND THEY ARE THE NATIVES.

THIS IS THE ETHNOGRAPHIC CHALLENGE. WE CAN'T LEARN ABOUT NEUROBIOLOGY THROUGH SIMPLY TALKING WITH NEUROBIOLOGISTS. THEY ARE NOT PHILOSOPHERS AND DO NOT REPRESENT WHAT THEY DO IN ANY GREATER CONTEXT OUTSIDE OF THEIR OWN OFTEN VAGUE SENSE OF THE CORRECTNESS OF THEIR ANCESTRAL DEVOTION OR IMITATION.

THE KEY, THEN, IS FIELDWORK IN PURSUIT OF AN INTERNAL-ANTHROPOLOGY OF NEUROBIOLOGY AND NOT AN ANTHROPOLOGY OF THE VIRTUALLY CONSCIOUS SPACES OF NEUROBIOLOGISTS.