

Psychic Fields
and Neural Networks

Robert W. Newcomb

Microsystems Laboratory
University of Maryland
College Park
Maryland 20742

Phone: (301) 454-6869

Why an engineering interest
in psychic fields?

Why an engineering interest
in neural networks?

Why a relation to
sensory handicaps?

Answers in Robotics

(especially robotic
prosthetic devices)

Definition: Robot:

a robot is a machine with animal-like characteristics, these minimally being the ability to interact with objects under programmed control through the presence of end effectors.

Neural-Type Robotics:

The field of robotics where intelligence and control functions are carried out by neural-type signal processors.

Neural-Type Signal Processors:

Electronic microsystems that emulate biological neural systems.

Psychic Fields

Psychic fields are the interaction fields of living organisms. These are taken to occur in an n -dimensional space, $n \geq 4$, the "psychic realm."

[the integer dimension may vary but the space always includes time and three dimensional physical space]

Coordinates: $x_1, x_2, x_3, x_4, \dots, x_n$
 \parallel \parallel \parallel \parallel
 t x y z

(II.1)

metric law: differential arc length

$$ds = \sqrt{(dx_1)^2 + \sum_{i=2}^n (dx_i)^2}$$

(II.2)

Basic Equation

$$\nabla E = C$$

(II.3)

where $E =$ psychic excitation field

$C =$ psychic sources

$\nabla =$ gradient operator

The quantities of (II.3) are in a 2^n -dimensional Clifford algebra formed on the psychic realm.

Let \underline{e}^i , $i=1, \dots, n$
be bases for the n -dimensional
psychic realm.

Then

$$\underline{e}^0 = 1, \underline{e}^i = \underline{e}^i, \underline{e}^{i_1 i_2} = \underline{e}^{i_1} \underline{e}^{i_2}, \dots, \underline{e}^{12 \dots n} = \underline{e}^1 \underline{e}^2 \dots \underline{e}^n$$

are the 2^n bases for the
 2^n -dimensional associated
Clifford algebra.

By letting $E = \nabla P$, for $P =$ psychic potential we can get a wave equation

$$\square P = C, \quad \square = \nabla \nabla \quad (\text{II.4})$$

from which psychic wave transmission can be interested.

Multiplication in the Clifford algebra takes the form

$$ab = a \cdot b + a \wedge b$$

where

$$2 a \cdot b = ab + ba$$

(even = symmetric)

$$2 a \wedge b = ab - ba$$

(odd = skew-sym.)

If $a = \nabla$ then

$\cdot =$ divergence, $\wedge =$ curl

and $\nabla E = C$ becomes

$$\nabla \cdot E = C$$

(II.5a)

$$\nabla \wedge I = 0$$

(II.5b)

where

$I =$ psychic intensity field
(related to E via the metric of the realm)

By separating out the privileged time coordinate E and I can be broken into two parts

$$\begin{array}{l}
 E \quad F_e = \text{psychic excitation field} \\
 \quad S_e = \text{soul excitation field} \\
 \quad \dots \dots [F_e = \frac{1}{2}(E - E^*), E^* = \underline{e}^1 \underline{e}^2 \dots \underline{e}^n; \underline{e}_a S_e = \frac{1}{2}(E + E^*), \underline{e}_a = e^{23 \dots n}] \\
 I \quad F_i = \text{psychic field intensity} \\
 \quad S_i = \text{soul induction field}
 \end{array}$$

similarly for sources

$$\begin{array}{l}
 C_p = \text{psychic charge density} \\
 C_s = \text{soul current density}
 \end{array}$$

This yields

$$\underline{\nabla} \cdot F_e = C_p \quad (\text{II.6a})$$

$$\frac{\partial F_e}{\partial t} + (-1)^n \underline{e}_a \underline{\nabla} \wedge S_e = C_s \quad (\text{II.6b})$$

$$\underline{e}_a \frac{\partial S_i}{\partial t} + \underline{\nabla} \wedge F_i = 0 \quad (\text{II.6c})$$

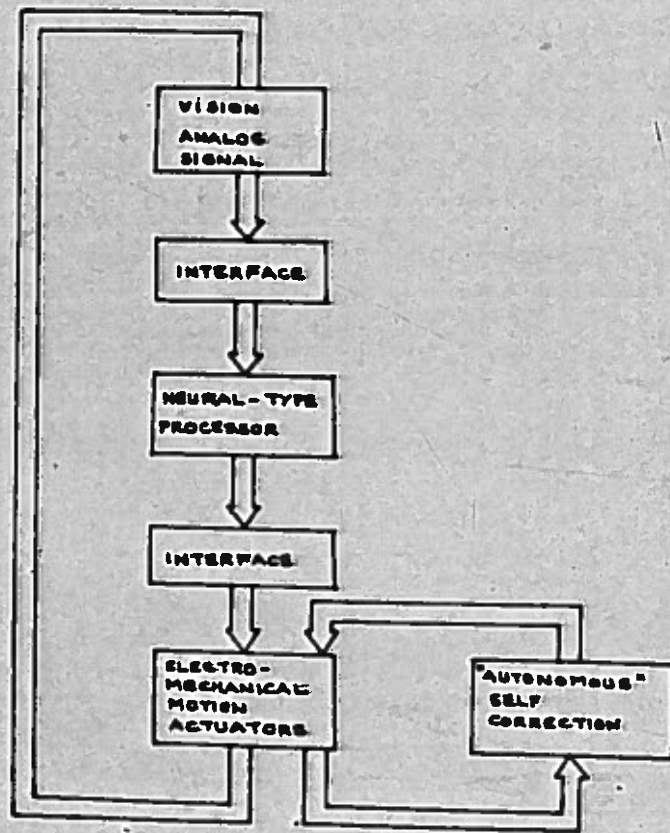
$$\underline{e}_a \underline{\nabla} \cdot S_i = 0 \quad (\text{II.6d})$$

\underline{e}_a is the 2^{n-1} st basis vector in the Clifford algebra & $\underline{\nabla}$ operates in the 2^{n-1} -dimensional (psychic "space") subalgebra

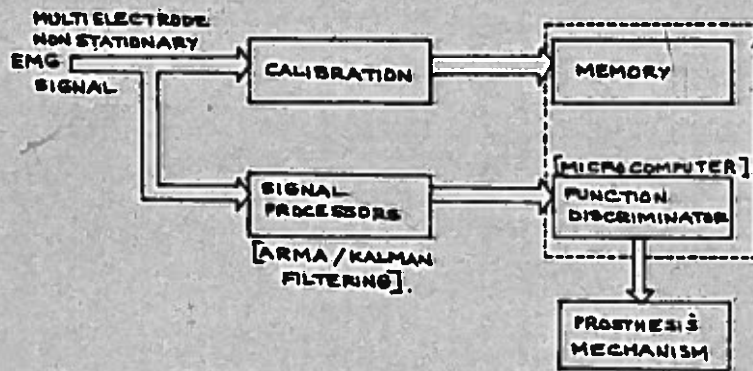
psychic forces

$$f = C_p F_i + (-1)^{\sum_{a=1}^i} C_s \Delta S_i$$

iv
(III.1)



*Neural-Type Robot
Processing Schema*



*Neural-Type Processor
for Prosthetics*