

New and Useful Ideas in Physics and Psychology, from Swedenborg

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Finding Swedenborg ideas that solve problems in science

- **Physics problem:**

- What is the substance of things, given quantum physics?
- Is it particles? Waves? Or something else?

- **Psychology problem:**

- What are the stages of development in children to adults?
- Piaget, Erikson and others have suggested stages. Why are there such stages? Or levels? How do they work?

My story

- I was very puzzled by both mind-body problem & religion.
- I discovered Swedenborg at age 20 from reading Wilson van Dusen's *The Presence of Spirits in Madness*.
- Reading Swedenborg while simultaneously trying to understand quantum physics for day job.
- Looking for a possible common ground
 - 'What is the world like such that we have both Swedenborg and quantum theory?'

Part I

A Physics Problem:

- What is the substance of things, given quantum physics?
- Is it particles? Waves? Or events?
Or something else?
- What is it that persists over time?

Ideas of 'Substance' in philosophy

1. A substance is the ultimate reality that underlies all outward manifestations and change (Webster)
2. A substance is that whose existence is independent from anything else (Descartes)
3. A substance is the 'being' of whatever exists.
4. A substance is what persists over interval of time.

Definitions 1 and 2 maybe refer to God!

What are physical (finite) substances (3 or 4)?

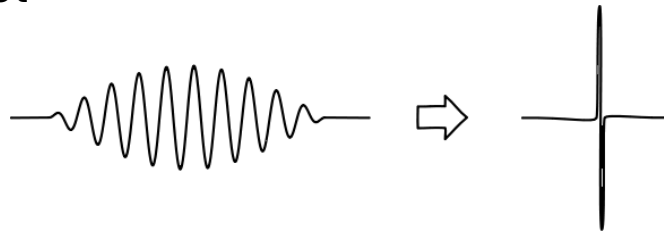
The Quantum Puzzle

- Trying to understand what quantum physics means is difficult, and a problem physics has now had for over 100 years.
- We ask “what is the world made of, such that quantum theory could be true?”
- Many answers have been suggested, but none convincing.
- The world could be a wave, a shape, an event, particles, energy, an experimental result, propensity, potentiality, actuality, mind or material.

Quantum measurement problem

- Contrast between classical and quantum waves:
 - Classical waves (e.g. air or ocean) affect everywhere where that wave is
 - Quantum waves (e.g. electrons or light) affect only one place in where that wave is.

- Quantum problem also known as:
 - “Reduction of the wave packet”



- “Selection of actual outcome”
 - ”Reducing a superposition of alternatives to only one actually occurring”
- ~~Is it a particle being produced or revealed in such measurements?~~
- ~~Which is spread out like a wave? But what is compact like a particle?~~

Any quantum substance?

- What *is* a quantum substance?
- Quantum physics has waves , particles, measurement events, experimental results.
- Measurements are like change :
potential ➔ actual (after Aristotle).
 - But what is potential?
And what is actual?
- Popper: ‘**propensity**’ is what is potential.
It exists before giving actual result.
Then produces an actual outcome by probabilities.

'Love' in Swedenborg

- Love is the life of all creatures (DLW 1)
- Love is the essence and being of all (DLW 53)

Love necessarily persists over an interval of time:

We feel the desire;
we think about how and when to act;
we act at a later time.

'Love' is substance in that sense (at least).
Love has form (the understanding).

Divine Love and Wisdom §53

Things created and finite can have ascribed to them being and expression, substance and form, and even life, indeed love and wisdom, but these attributes are all created and finite.

They can have these attributes ascribed to them not because they possess anything Divine, but because they are in the Divine and have the Divine in them.

For everything that has been created is in itself inanimate and lifeless, but is animated and given life by its having the Divine in it and its being in the Divine.

Now for the burning bush!



‘Love’ in Swedenborg compared with ‘Propensity’ in physics

- Swedenborg’s concept of ‘love’ was very similar to the concept of ‘propensity’ used in the physics of probabilities:
- Both are what exists in some interval of time before an action.
- Both have ‘form’ as well as substance.
- Both produce specific discrete actions (selections)
- **Both** must be the initial ‘being’ that produces the ‘being’ of the actual results.

‘Love’ in Swedenborg corresponds ‘Propensity’ in physics

- Swedenborg’s concept of ‘love’ was very similar to the concept of ‘propensity’ used in the physics of probabilities.
- Spiritual love *corresponds* to physical propensity.
- Furthermore, they both *correspond* to mental propensity or disposition.

- Propensities do what substances needed to do.
- Propensities can be substances and substances propensities.

Generalizing 'propensity'

- The meaning of 'propensity' can be extended to include spiritual propensity (love) !
- 'Propensity' can be taken as a most general concept that included spiritual, mental and physical versions.
- They differ in very definite ways: according to the kinds of interactions and events they produce.
- We get also a concept of 'mental substance' suitable for use in psychology. We can begin to understand how mind and matter exist differently

Part II

A Psychology Problem:



What are the levels of development in children and adults?

Piaget, Erikson & others have suggested stages.

Why are there such stages?

How do they work?



Swedenborg talks about discrete degrees, based on love, wisdom and use. How do they help us understand the details of the processes that go on in our minds? How can they be used to make predictions for the details of psychology?

Jean Piaget

- The early observations of Inhelder and Piaget (1958) led to a theory in which children go through four stages of cognitive growth:
 - the sensorimotor stage (0-2 years),
 - the pre-operational stage (approx. 2-6 years),
 - the concrete-operations stage (approx. 6-12 years),
 - the formal-operations stage (12+ years).

More details on the next slide

Bärbel Inhelder and Jean Piaget. 1958. *The growth of logical thinking from childhood to adolescence; an essay on the construction of formal operational structures*. New York: Basic Books.

Piaget's stages

Sensorimotor Stage (birth to 2 years), where infants learn through sensory and motor actions and develop object permanence;

Preoperational Stage (2 to 7 years), characterized by symbolic thought and egocentrism;

Concrete Operational Stage (7 to 11 years), where children grasp conservation, reversibility, and classification

Formal Operational Stage (12+ years), enabling abstract thinking, logical reasoning, and the ability to understand hypothetical concepts.

Each stage includes functions of previous ones.

Erik Erikson:

Eight stages of psychosocial development, according to Erikson (1956)

Name	Age	Opposing Issues	Activities	Details
1. Oral-Sensory	Birth to 12 to 18 months	Trust vs. Mistrust	Feeding	The infant must form a first loving, trusting relationship with the caregiver, or develop a sense of mistrust.
2. Muscular-Anal	18 months to 3 years	Autonomy vs. Shame / Doubt	Toilet training	The child's energies are directed toward the development of physical skills, including walking, grasping, and sphincter control.
3. Locomotor	3 to 6 years	Initiative vs. Guilt	Independence	The child continues to become more assertive and to take more initiative, but may be too forceful, leading to guilt feelings.
4. Latency	6 to 12 years	Industry vs. Inferiority	School	The child must deal with demands to learn new skills or risk a sense of inferiority, failure and incompetence.
5. Adolescence	12 to 18 years	Identity vs. Role Confusion	Peer relationships	The teenager must achieve a sense of identity in occupation, sex roles, politics, and religion.
6. Young Adulthood	19 to 40 years	Intimacy vs. Isolation	Love relationships	The young adult must develop intimate relationships or suffer feelings of isolation.
7. Middle Adulthood	40 to 65 years	Generativity vs. Stagnation	Parenting	Each adult must find some way to satisfy and support the next generation.
8. Maturity	65 to death	Ego Integrity vs. Despair	Reflection on & acceptance of one's life	The culmination is a sense of oneself as one is, and of feeling fulfilled.

John Gowan

- Combined Piaget and Erikson stages
- Modified Piaget:
 - Split 'intuitive' stage from preoperational substage
- Modified Erikson:
 - Split 'young adulthood' (19-40) into two stages
 - 'Intimacy' 18-25 yrs
 - 'Generativity' 25-40 yrs
 - Moved 'ego-integrity' from maturity to middle adult
- Michael Lamport Commons and others have different extensions of Piaget stages.

Gowan's extensions in his 3x3 grid

		CREATIVITY 2 thou THE OTHER	IDENTITY 1 I, me THE EGO	LATENCY 3 it, they THE WORLD
ADULT	Erikson	9 (AGAPE-LOVE)	8 EGO-INTEGRITY	7 GENERATIVITY
	Erikson		Renunciation-wisdom	Production-care
	Age	old age	40 - 65	26-40
YOUTH	Erikson	6 INTIMACY	5 IDENTITY	4 INDUSTRY
	Piaget	(Creativity)	Formal operations	Concrete operations
	Erikson	Love-affiliation	Devotion-fidelity	Method-competence
	Age	18-25	13-17	7-12
INFANT	Erikson	3 INITIATIVE	2 AUTONOMY	1 TRUST
	Piaget	Intuitive	Pre-operational	Sensorimotor
	Erikson	Direction-purpose	Self-control-willpower	Drive-hope
	Age	4-6	2-3	0-1

Now for the burning bush!




- The 3 columns of 'thou / me / it' corresponded to the 3 degrees of Swedenborg as what and where 'love / wisdom / use' have their focus.
- The 3 rows of 'adult / youth / infant' also corresponded to 3 degrees of Swedenborg as the kind of person who was demonstrating where love, wisdom and use develop.

Gowan labeled with both axes: Love / Understanding / Action

Levels within degrees (sub-degrees)



Discrete
Degrees
within the
Mental
(spiritual
natural)



			LOVE	UNDERSTANDING	ACTION	
Inner Rational	LOVE	Erikson	9 (AGAPE-LOVE) old age	8 EGO-INTEGRITY	7 GENERATIVITY	
		Erikson		Renunciation- wisdom	Production-care	
		Age		40 - 65	26-40	
	Outer Rational	UNDERSTANDING	Erikson	6 INTIMACY (Creativity) Love-affiliation	5 IDENTITY	4 INDUSTRY
			Piaget		Formal operations	Concrete operations
			Erikson		Devotion-fidelity	Method-competence
Sensual	ACTION	Age	18-25	13-17	7-12	
		Erikson	3 INITIATIVE	2 AUTONOMY	1 TRUST	
		Piaget	Intuitive	Pre-operational	Sensorimotor	
		Erikson	Direction-purpose	Self-control- willpower	Drive-hope	
		Age	4-6	2-3	0-1	22

Discrete degrees in the mental

- The table from Gowan, seen in the light of Swedenborg, demonstrates his three-fold discrete degrees **both** columns and rows.
- I was amazed

- We can now use ideas of influx and degrees and correspondences to understand some basic psychology of what happens in psychology.

Three sub-degrees with degrees

	LOVE	THOUGHT	ACTION
Inner Rational - adult	9 (AGAPE-LOVE) old age	8 EGO-INTEGRITY Renunciation-wisdom 40 - 65	7 GENERATIVITY Production-care 26-40
Outer Rational - youth	6 INTIMACY (Creativity) Love-affiliation 18-25	5 IDENTITY Formal operations Devotion-fidelity 13-17	4 INDUSTRY Concrete operations Method-competence 7-12
Sensual - child	3 INITIATIVE Intuitive Direction-purpose 4-6	2 AUTONOMY Pre-operational Self-control-willpower 2-3	1 TRUST Sensorimotor Drive-hope 0-1

Using these ideas

- We can now see how to
 - use ideas of influx and degrees and correspondences
 - understand some basic steps of what happens in psychology.

These degrees connected by influx: downward and to the right

Stage where first appears	Swedenborg's stage	1. Thoughts of Desiring	3. Thoughts of Thinking	3. Thoughts of Effects:
Maturity	Higher rational: thoughts of loves:	thoughts of ends of love	Thoughts of means of loves	Thoughts of effects of loves
Youth	Scientific rational thoughts of thoughts:	thoughts of ends of thoughts	Thoughts of means of thoughts	Thoughts of effects of thoughts
Child	External mind: thoughts of actions:	thoughts of ends of actions	Thoughts of means of actions	Thoughts of effects of actions

Connecting Mental to the Spiritual and Physical Degrees

- We have been talking about ‘Mental Degrees’.
- Swedenborg calls these the ‘Spiritual in the Natural’. Sometimes just ‘natural’.
- These should be connected to the Spiritual Heavens above, and to the Physical Degrees in the body.
- All connected by influx and correspondences:

Part of the Biggest Picture

Rows from
psychological stages

1. Spiritual Degrees Spiritual substances forming loves:	2. Mental Degrees mental substances forming thoughts:	3. Physical Degrees physical substances forming effects:
love of loving: 1.1	thoughts of loves: 2.1	effects from loves: 3.1
love of thoughts: 1.2	thoughts of thoughts: 2.2	effects from thoughts: 3.2
love of actions: 1.3	thoughts of actions: 2.3	effects from effects: 3.3

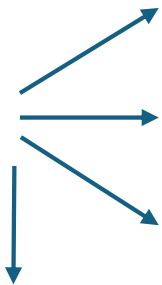
Spiritual levels

Physical levels

← Details of these are further stories! →

Degrees and Sub-degrees (simpler names)

All sustained
and connected
by **influx**
rightward &
downward:



Many
correspondences

interior mind: love	exterior mind: understanding	natural world: effects
Celestial	Internal Rational	Formative level
Spiritual	Scientific (External Rational)	Virtual processes
Spiritual- Natural	Sensual	Actual effects

SPIRIT **Mind** **Physical**

Further details

- Overview of Theistic Science (influx, degrees, etc):
www.theisticscience.org
- Book: “*Starting Science with God*” (Amazon, 2011)
 - More information:
www.beginningtheisticscience.com

Physics: chapters 4 and 24

Psychology: chapters 5 and 22

