Lectures & Course Readings

Temple University Psychology 8012 History & Systems of Psychology

This document contains the Lectures for a course I taught each semester to graduate students in Temple's Psychology Department for 40 years..

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History and Systems of Psychology Temple University Willis F. Overton

INTRODUCTION

This Course explores how **<u>basic conceptual</u>** <u>assumptions</u> have historically shaped, and how they continue to shape, scientific thinking, the development of scientific theories and scientific methods all directed toward solutions to empirical problems.

Any discussion of the place of basic concepts in any empirical science, along with a discussion of the nature and functioning of those <u>fundamental conceptual systems termed metatheories</u>, represent a necessary preamble.

Wittgenstein's (1958) once remarked that "in psychology there are empirical methods and conceptual confusions (p. xiv)."

To avoid validating such a pessimistic judgment it is essential that psychology, or any empirical science, focus some significant portion of its energy on the <u>clarification of concepts</u> that are central to its theories and methods..

As Einstein said:

Concepts that have proven useful in ordering things easily achieve such authority over us that we forget their earthly origins and accept them as unalterable givens. Thus, they come to be stamped as 'necessities of thought', 'a priori givens', etc. The path of scientific progress is often made impossible for a long time by such errors.

Therefore, it is by no means an idle game if we practiced analyzing in long-held become commonplace showing concepts and the circumstances on which, their justification and usefulness depend, and how they have grown up, individually, out of givens of experience. Thus, excessive authority will be broken." their (Einstein, 1916 pp. 101-102) Einstein, A. (1916). 'Ernst Mach.' Physikalische Zeitschrift 17, 101-102)

Place of Philosophy:

Conceptual clarification and the exploration of conceptual foundations have traditionally been the principal provinces of philosophy, and therein lies the rub. Within the psychological community, philosophical thought – and, therefore, any focus on conceptual clarification – has tended to be assigned the <u>role of the anti-science</u>.

Robert Hogan (2001) commented, "Our training and core practices concern research methods; the discipline is deeply skeptical of philosophy. We emphasize methods for the verification of hypotheses and minimize the analysis of the concepts entailed by the hypotheses (p. 27)." However, Hogan also raises a warning flag as he goes on to note that "all the empiricism in the world can't salvage a bad idea (p. 27)."

<u>**Irony</u>**: this marginalization of philosophy and, hence, basic concepts is the product of acceptance of some basic <u>**ontological and epistemological**</u> – hence philosophical – assumptions. These assumptions begin with the idea of splitting reason from observation, and follow with the epistemological notion that knowledge and, indeed, reason itself originates in pristine observation and</u>

only pristine observation (i.e., without interpretation entering). These assumptions then lead to a particular definition of scientific method as entailing observation, causation, and induction-deduction, and only observation, causation, and induction-deduction.

METATHEORIES.

In scientific discussions **basic concepts** are often termed "*metatheoretical*". Metatheories transcend (i.e., "meta") theories in the sense that they define the context in which theoretical concepts are constructed.

1. <u>Metatheory</u>: set of interlocking rules, principles, or a story(narrative), that both describes and prescribes what is acceptable and unacceptable as theory – the means of conceptual exploration – in a scientific discipline (e.g., may have metatheory that prescribes "no mental events.")

2. **Methodology or Metamethod:** set of interlocking rules, principles, or a story, that describes and prescribes the nature of acceptable methods – the means of observational exploration – in a scientific discipline (e.g., may have metamethod that prescribes only continuity).

- a. Primary function of metatheory including metamethod
 provide a rich source of concepts out of which theories and methods emerge.
- Metatheory also provides guidelines that help to avoid conceptual confusions. Consequently, help to avoid what may ultimately be unproductive ideas and unproductive methods.

3. Levels of Discourse in Science:

- a. **Theories and methods** refer directly to the empirical world while metatheories and metamethods refer to the theories and methods themselves. Observational level is level of commonsense obs. Theories and methods function to organize this level (explain).
- b. Metatheoretical levels

There are two levels of metatheories. The first level directly provides concepts for the development of theories and methods. This Level is termed "**Model**" or "**Paradigm**.

Models/Paradigms, themselves, can form a <u>hierarchy in terms of increasing generality of</u> <u>application</u>. Thus, for example, a model that contains the basic concepts from which a theory of **memory** will be constructed is a relatively low-level model because it applies only to memory. Models such as **"developmental systems" (Lerner, 2002) or "equilibrium models**" "embodiment model" (see Valsinger 1998a) apply to a number of domains including social, cognitive and emotional domains and hence functions at a higher level in the hierarchy.

The second, more inclusive, metatheoretical level provides concepts for the development of models/paradigms. This level is termed <u>"Worldview"</u> (Overton, 1984). A worldview is composed of <u>coherent sets of *epistemological* (i.e., issues of</u> **knowing) and** *ontological* (i.e., issues of reality) principles. In this course, much of the discussion will concern ideas that have a very high range of application.

WORLDVIEWS

First describe the nature of **Ontology and Epistemology** :

- <u>Metaphysics</u> -- Inquiry into principles of being and the origin and structure of what there is. Will not be concerned with questions of ultimate realities but will focus on <u>Descriptive Metaphysics</u> see STRAWSON, P. F. (1959):Individuals. An Essay in Descriptive Metaphysics. London: Methuen & Co (i.e, What various systems of thought assert or represent the case to be concerning these realities).
 - i. <u>Cosmology or structural metaphysics</u> –Structure of what there is. The way the universe is put together.
 - ii. <u>Cosmogony</u> origin of things in terms of some principle or original cause or purpose.
 - iii. <u>Ontology</u> Questions of the ultimate nature of the real.What is the real? Course will focus only on ontological issues.

2. Ontological issue. Materialism vs. Idealism

Starts from notion that the world of Appearance is a flux and behind each appearance is an ultimate reality or essence.

Materialism:

The ultimate underlying reality is fixed <u>substance or matter</u>. Sometimes termed <u>"Realism"</u>, but this is the epistemological issue. Sometimes termed "<u>Naturalism"</u>,"<u>Physicalism"</u> (by modern analytic philosophers).

Idealism:

Ultimate underlying reality are "ideas" or "forms."

<u>3</u> Epistemological issue: Realism vs. Rationalism Epistemology is inquiry into how we know. Theory of knowledge.Relation of the knower to the known.

Realism:

World of perception and cognition has an <u>immutable</u> <u>existence of its own independent of the perceiver</u>. The knower plays little role in the known. Somehow, representations of the external world become deposited in the knower. Often called <u>Naïve Realism</u>. Leads to a <u>Copy theoryof knowledge</u>. Sometimes called a "keyhole" theory, or theory of <u>immaculate</u> <u>perception</u>. Sometimes called <u>Objectivism</u> (see Putnam) Sometimes called <u>"Scientific Realism"</u>

Will hear a lot of this name in second half of the course (e.g., copy theories vs. schema theories of memory or of representation).

If reality exists apart from us we come to know by and only by pristine observations (without interpretation) and this leads to <u>empiricism.</u> Note this is a philosophical doctrine that states that knowledge comes through "experience," but experience is defined as pristine interpretation free observations and only by pristine interpretation free observations (or "sensations" in early history). It is not <u>EMPIRICAL.</u> (DEPENDING ON EXPERIENCE' DEFINED AS ACTIVE CONSTRUCTION OF THE KNOWN).

Rationalism: --

Minds possess some form of a priori knowledge and active minds apply this to the world as confronted. (Note, this can range all the way from the Chomsky, Pinker position where there is innate substantive knowledge to Piaget where there is organized action).

Here knower constructs the known or plays active role in the construction of the known. Termed

Constructivism (Interpretationism, Perspectivism). Method here is Reason

(Interpretation) in contrast to the Pristine

observations of empiricism.

Epistemological Note:

We are now at the question of the **relation of the senses (obs) and reason.** This is also the relation between **data (observation) and theory (reason).** What you accept here will largely determine your definition of science: i.e., "Science" comes from Greek "scire" "to know." Thus, is science to be based on a realism, a rationalism, or some melding of the two?

Now turn to the specific nature of the most prominent worldviews, their ontological and epistemological concepts and how these concepts form the basis for the construction of a model of living organisms.

Table 1

Worldviews

Mechanistic	Process-Relational Organismic		
Ontological Concepts			
Accidental Organization	Necessary Organization		
Being	Becoming/Being		

Epistemological Concepts		
Realism-Empiricism	Rationalism-Constructivism	
Models or Metatheories of Living Organisms		
1. Uniformity – Org as appearance	1. Inherent organization	
 Inherently at rest Quantitative change only 	 2. Inherent active 3. Qualitative and quant 	
Metamethods		
1. Elementarism/ Reductionism	1. Holism/Synthesis-Analysis	
2. Antecedent-Consequence Analysis	2. Structure-Function	
Efficient/Material Causes	Pattern explanation	
3. Accidental Change	3. Necessary Change	
Efficient/Material Causes	Pattern explanation	
4. Strict Additivity Continuity	4. Nonlinearity Continuity/Discontinuity	

Activity/Change

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Fixity/stability

<u>NOTE</u>

Some have referred to a third worldview termed CONTEXTUALISM. In Overton (2015) this world view was integrated with ORGANICISM and termed a PROCESS-RELATIONAL world view. Through the rest of the course the latter term will be presented in place of Organicism.

HISTORY

Explore these worldviews and worldview concepts as they emerged in history and formed the ground from which scientific concepts would grow. First explore early metaphysical issues (What is the real) and then Epistemological Issues (Role of knower in the known).

A. PRE-SOCRATIC GREEKS --- Metaphysical Issues.

Science grows from commonsense experience through critical

reflection on this commonsense experience (Wartofsky, Pepper). Early Greek refined commonsense concepts of ethical and political life and art were the **material for analysis.** Sought **EXPLANATIONS FOR ORIGIN AND NATURE OF THE WORLD in natural causes** This supplants explanation provided by **myths and religion**.

APPEARANCE versus REALITY

Solution often **Reductionism.** Approach was to find a single natural element (Air, Fire, Earth, and Water) and reduce appearance to this.

- a. <u>THALES</u> Water.
 - i. Source of life, Birth from water, transformation from

- b. <u>ANAXIMANDER</u> Rejects Thales specific substance and opts for <u>indeterminate stuff which is Activity</u>. Elements then grew out of this activity.
 - i. Here have beginning of <u>substance vs process</u> debate that held in all the sciences.
 - ii. Here also get <u>activity as primary over stability and</u> <u>change over constancy</u>. So one feature of world views emerges
- c. <u>ANIXIMENES</u> Back to <u>substance</u> and makes <u>Air</u> the origin of all things.

i. **ga**s-liquid-solid

- d. <u>HERACLITUS</u> Again back to <u>process</u>. Chooses <u>Fire</u>, but here actually choosing <u>change</u> as basic
 - i. Stability of things or substance we experience are only <u>stages</u> in the change
 - ii. Task is to discover the necessity and or law according to which the change operates
 - iii. Done by <u>Reason (Logos)</u>. Thus, as Process-Relational group will argue <u>constancy will be found in change</u>, <u>being (stability/fixity) will be found in becoming</u>
- e. <u>ANAXAGORAS</u> Rejected Reductionism.of reducing the many to the one (problem of the one and the many)
- i. Postulated an infinite number of real qualities and argued their essence was in their <u>form</u> or arrangement
- ii. This argument in terms of form (although here the elements are static) follows from Hereclitus. It begins the theme of <u>Necessary Organization</u> found in Plato, Leibniz, Gestalt etc.
- f. <u>ATOMISTS</u> Some <u>elements</u> are basic and these in combination form everything in the world. Reductionist and substance explanation. Will find this throughout Psychology from Wundt and Titchener to behaviorism; especially in the Material Tradition.
- i. Material tradition- DEMOCRITUS World made up of <u>Atoms</u> (little bodies of fixed substance) and spaces, the Void.
- Math tradition PYTHAGORAS –
 "number revealed...true nature of things beneath their perceptual appearances."
 The appearance of the world was, in reality, the relation among numbers or ratio

- To this point have dealt with speculative cosmologies and cosmogonies of Pre Socratic Greeks.
- In Athens attention turned more directly to the problem of knowledge (**Epistemology**) and whether **SENSES Or REASON** is the primary determinant of knowledge. Represents beginning of the struggle between **Empiricism and Rationalism** (Idealism). However, real split occurs much later with Descartes.

B. ATHENS. Epistemological issues

SOCRATES (469 – 399)

Little known about him except through Plato. Know his method of doubt.

PLATO 428-347 B.C.

- 1. Rationalist and Idealist.
- 2. Argued against Empiricism and Relativism of Protagoras.

Protagoras argued man is the measure of all things and perception (senses) gives the real.

"Protagoras said that whatever seems to me true is true for me, and whatever seems to you true is true for you (Stace, p.7)." Thus, reality and appearance are the same thing and what the senses present to is what appears.

Plato argued this position leads to unacceptable <u>relativism and solipsism (extreme subjectivism</u>), i.e., if all knowledge reduces to perception, then get extreme relativism both within people (bent stick illusion) and between people.

To argue along with Plato first distinguish between **EXISTENCE AND REALITY**.

Everyone agrees material world exists.

(EXISTS = to locate at some specific space and time, i.e. individual existence.) It might be called a dream, an illusion, or an appearance or whatever, but it is there, i.e., it does exist.

Question is, <u>is the material world the Real</u>? Plato and other idealists answer <u>NO</u>.

Given this Plato attacks Protagoras' doctrine that sensation gives the real as follows:

He analyses sensation and shows that mere sensation far from giving knowledge can barely give consciousness of any sort.

Suppose I know that my body feels warm.

Can only express this in the form of a proposition, i.e., 'My body feels warm' (even if think it, it still takes this form). But how do I know what feels warm is a body? And how do I know what it feels is warmth? Only know body is a body b.c. have seen other bodies and can compare it with them, and find it is like them; and because I see that it is unlike other objects, such as houses, trees, or triangles.

But this implies CLASSIFICATION.

Word 'body' stands for a class of objects and word 'warmth' stands for a class of sensations. IDEA OF CLASSES, (i.e., CONCEPTS), thus INVOLVED EVEN IN THE MOST SENSUOUS KNOWLEDGE.

There are no words in any language that do not stand for concepts.

Thus, NOT MERELY SOME KNOWLEDGE, BUT ALL SEMANTIC KNOWLEDGE, IS CONCEPTUAL.

Hence from bare sensation, as such, no knowledge can arise. CONCEPTS ARE NOT PERCEIVED BY THE SENSES, BUT ARE THE WORK OF MIND WHICH COMPARES, CONTRASTS, AND CLASSIFIES what the senses give it (from Stace, p.8-9)

3, Having argued against Protagoras' view that perception gives the real Plato argues that ultimate **Reality are `IDEAS' or `FORMS' (IDEALISM)** and these nonmaterial entities do not exist `in' the world of sense perception, but underlie it (From Wartofsky, p.86)

e.g.: Consider this object before me.
It is "white", "rectangular", "soft", "material",
"solid", "useful" thing called "paper".
But what is the object, the it, apart from these universal classes to which "it" belongs?
In fact, such is unknowable.
Entire nature of this piece of paper lies in the fact that it belongs to various classes. The classes alone are real.
The paper is simply a congeries of concepts or universals.
Thus, if admit paper exists outside my mind, it follows that concepts or universals are also independent of my or any other mind.

These <u>objective universals</u> Plato called IDEAS or FORMS.

<u>Universals are Real, are Objective</u>. Not merely I who classify objects. The Classes themselves have a being independent of my mind. Universals = the Real in the sense-object. But source through which we receive knowledge of universals is not sensation, but reason. For sensation cannot give us concepts. Concepts formed by abstracting, by reasoning (Stace p. 11)." But note, <u>although the Real (Define Reality as that which has a</u> <u>wholly independent being, a being which does not owe its being to</u> <u>anything else) are universals, they do not exist</u>. The appearance is the individual, that which exists. But reality is the universal, that which does not exist. And it is reality that generates the appearance.

Example: Structure of DNA, Structure of the atom, Structure of Language, Grand Unified Theories (GUT)

Again, although sense perception can touch the outward Appearance of the underlying reality, it is the **<u>Rational</u>** <u>Intellect (RATIONALISM</u>) which comes to know things the way they really are, i.e., their form. Also, because Real object transcends senses and because like knows like, there must be a knowing organ outside time and space. Organ was <u>mind</u> which was timeless and deathless.

World of Appearance is changing, while the Real world of forms is changeless and eternal. (ESSENTIALISM)

Note that this notion of FORM is quite different from Heraclitus. Here it is static being, so more like Anaxagoras. This is like later Gestaltists and some Structuralists.

Note also, problem of what M. Bunge refers to as the **RELATIVISM OF EMPIRICISM vs. THE ABSOLUTISM OF RATIONALISM** (ESSENTIALISM)

Finally, as a **bridge to Aristotle**, Plato = the **Ideas, had a separate existence** of their own in another world beyond space and time. The souls of the righteous might visit these abodes after death, and actually see the Ideas there. Big problem here is that if this is taken literally then implies that "the universals of which this paper is composed are not merely in the paper, composing it, but exist on their own account outside the paper in a world of their own. "But only individual things exist and the universal is that which is not individual. (See Stace, p. 17)

ARISTOTLE (385-322 B.C.)

1. Opposition to Plato.

a). A major difference from Plato is his position that the Ideal Forms do not exist apart from the things themselves.

b).Aristotle argued that "things" are composed of <u>matter</u> (Plato's, the "it", the indefinite substrate of things) and <u>form</u> (Plato's Ideas).

c)Aristotle's argument vis Plato:

What can have a separate existence on it's own. Not forms -Universal is simply a predicate which is common to all the members of a class.

e.g.,. Gold is yellow but yellowness does not exist apart from the gold.

e.g., We say something is shiny. But that shininess cannot occur by itself. There must be a something which is shiny.

<u>Universals, thus, cannot have a separate existence, as</u> <u>Plato thought</u>. But neither does matter exist separately.

<u>e.g.</u> Gold is yellow, heavy, soft, et. The yellowness, heaviness, softness do not exist apart from the gold. But neither can the gold exist apart from its qualities. Strip off in thought the yellowness, the softness, and all other predicates, and what is left? Nothing at all. (Stace, 18)

What alone exists is the gold with all its predicates, that is to say, the combination of <u>matter and form</u>, the formed "thing" this piece of gold, that bed, this tree, that man. Thus again, as before Plato screwed it up, existence means individual existence.

Universal still – as for Plato – is the REAL. But the Universal, the Real does not Exist. (See below discussion of the Potential (matter, the particular) and the Actual (form, universal, Real).

2. Nature and origin of forms of Universals.

ABSTRACT UNIVERSALS = the form of things (patterns of actions) abstracted (Mind given an activity of abstraction, thus still a Rationalism) from sense perception.

Form is what is unique to the thing, i.e., what makes it what it is and what makes it distinction.

e.g. Statue form to marble, marble form to stone, stone form to its composition etc.

This is **Aristotle's Naturalism or Empiricism**. We know Universal Forms by observing particulars and ascending the ladder of abstraction (See Rychlak, p. 263). Note this suggests a nominalism. But isn't because at each level there is always individual and form

3.Nature of Explanation

Argued any phenomenon requires 4 components. Termed 4 causes

Efficient: That which moves the thing (eg, the Stimulus). **Material**: That which thing made of (e.g., the gene, the neuron)

Formal: The form, organization, structure of thing. (e.g., Piaget's "scheme," "mental operation")

<u>Final</u>: That which thing directed towards

(e.g., Werner's "orthogenetic principle" Piaget's "Equilibration principle" Erikson's "Epigenetic Principle"

Teleology: Goal directed.

Formal and Final are objective teleology, not subjective teleology. (see. Hofstadter, A. (1941). Objective Teleology. *Journal of Philosophy*, 37, 29-39.)

4.The "Potential" and the "Actual"

Matter and Form are s<u>ynchronic</u> – applied to particular substance at a particular time.

Potential and Actual are diachronic (across time)

a. Logos (Reason) priority. Actuality (Form) is prior to Potentiality

i.e., Must cite the actuality when give an account of its corresponding potentiality. Thus, 'visible' (form – actual) means 'capable of *being seen*'; 'buildable' means 'capable of *being built*' (1049b14-16).

b. <u>Temporal priority</u>, --Potentiality prior to Actuality:

e.g., the wood precedes the table that is built from it e.g., acorn precedes the oak that it grows into **Development**

Potential-Actuality

Argument for priority in substance of potential over actual involves notion of "Final Cause.:

Things tend to move toward an end (*telos*) — the boy becomes a man, the acorn becomes an oak — and "the actuality is the end, and it is for the sake of this that the potentiality is acquired."

Animals do not see in order that they may have sight, but they have sight that they may see ...

Matter exists in a potential state, just because it may come to its form; and when it exists *actually*, then it is in its form" (1050a9-17).

Form or actuality is the end toward which natural processes are directed. Actuality is therefore a cause in more than one sense of a th'ng's realizing its potential

C. <u>CLASSIC TWILIGHT & PATRISTIC PERIOD (TO 400</u> OR 500 AD); DARK AGES (TO 900) & MIDDLE AGES

PATRISTIC PERIOD ENDED WITH DEATH OF AUGUSTINE IN 430.

Period dedicated to the formation of Christian orthodoxy.

AUGUSTINE:

Stands at the frontier of the two ages: (a). Greek Neo Platonic Period in which he was brought up. (b). Medieval Pioneer of this. For him all philosophy prior to Christ had one fundamental error:

REASON was considered 'an's greatest power.

In truth REASON is obscure and mysterious and solvable only by Christian revelation.

Origin of REASON for Augustine is a double one:

(1). Man created in image of God and hence was equal to this archetype, i.e., reason was pure and led to the truth.

Man fell (Adam) and hence lost his divine attributes including clear and pure 20eason(2). N.

(3) Now reason alone 'an't find its way back. Needs divine grace.

D. <u>DARK AGES (OR EARLY MIDDLE AGES OR</u> <u>MIDEVIAL UP TO 900 AD.</u>

SCHOLASTICISM

(1). The task was to build a system of principles on accepted church orthodoxy. Then use these as <u>first</u>
<u>principles</u> from which to <u>deduce</u> the true. Thus, they used philosophical arguments to deal with sense questions.

(2). With Scholasticism there was also the recovery of Aristo'le's thought. Began when Spain and Sicily was retaken by Christian world in ¹2th and ¹3th Ct. Scholars went there and worked on translations from the Arabic and the Greek.

(3).Between 1200 and 1270 works of Aristotle were imported into universities of Paris and Oxford.

St. THOMAS AQUINAS (1225-1274).

(1) Aquinas enters and from here on Aristotle is set up as authority on matters not related to religious dogma.

(2) Aquinas does not deviate from August'ne's fundamental dogma.

(3) He gives **reason higher status** than Augustine but convinced that reason cannot make use of its powers unless guided by God.

E. RENAISSANCE ---BEGAN MIDDLE OF ¹5th CT.

(1).Copernicus (1473-1543); Francis Bacon- --(Observational methods, hence induction; 1561-1626); Thomas Hobbs (mechanistic contemporary of Descartes; 1588-1679)

(2) Note that the printing press was invented by Guttenburg around 1450 and this had a major impact.

F. <u>17th CENTURY</u>

Kepler – laws of planetary motion, (1629). Galileo – laws of moving bodies (1633); Harvey – circulation of the blood (1633); Newton (theory, 1687).

GALILEO GALILIE (1564-1642).

Major importance is Galileo's <u>subject-object split</u>. Search for pattern or all-pervasive form underlying local motion. Form would appear in mathematical determination and arrangement according to measure and number. However, here he made the split where arrangement or pattern is <u>in nature</u> and not <u>in mind</u>.

This split like Democritus- -- who maintained that some aspects of atoms of" a "real" external world were directly perceptible (i.e., the weight and texture of things) and others (e.g., color, taste) are experiences.

This split also like Locke's primary and secondary qualities.

NOTE: SPLIT MAKES:

- A.) THE "**REAL**" AS NATURAL (HENCE NATURALISM) AND CONSISTS OF PARTICULAR PROPERTIES WHICH ARE MIND INDEPENDENT, AND
- **B.**) "**MIND**" WHICH IS NOT NATURAL AND CONSISTS OF PARTICULAR PROPERTIES WHICH CONSTITUTE **APPEARANCES**.

Table 2

BROAD OUTLINE OF WORLDVIEWS <u>AND</u> <u>HISTORICAL FIGURES</u>



Note: Darwin inaccurately portrayed as Organismic.

DESCARTES (1596-1641-1650

Called last great **RATIONALIST**. Through REASON discover the nature of the world. Begin with INNATE IDEAS and deduce the world from these. DEDUCTION is the method.

How got to innate ideas?
 Through his METHOD OF DOUBT.
 Doubted all things, but in the end could not doubt that he was doubting.
 Thus, to doubt was to think. This led to his famo"s

"Cognito ergo "sum" "I think, therefore I am.

2 . A major implication of arriving at innate ideas was what was to be ever after known at the <u>Cartesian split</u> of subject and object.

- a. The emphasis on the""I" and hence on the Subjective split this off from nature or the Objective. Thus, where we might have two poles of a unified matrix as we will have again in the dialectic, we now have two separate pieces.
- b. This is called DUALISM and the world ever since has been trying to heal this split. It is generally called mind-body dualism but it is broader than this. Broader because also, in choosing the "I" as the Real this introduces his FOUNDATIONALISM. This is the split is between Reality (subject) and Appearance (object). So Descartes does a double split.
- c. Descartes articulated this further by having <u>MIND =</u> <u>thinking or unextended substance</u> <u>BODY = extended</u> <u>substance.</u>

3. This becomes basis for Descartes' major role in the development of the **mechanistic approach**, i.e., the body is **subject to mechanical laws**.

4. Innate ideas and subjective mind also the basis for **Cartesian Theater of the Mind** where ideas like characters run around (See Dennett, Consciousness explained)

5. Innate ideas and their implications also provided the motive force for the ¹8th Century's **Empiricist attack on Descartes form of Rationalism**.

Problem: What is the relation between concepts or ideas and objects or the objective world? All knowledge for Descartes derives from Innate Ideas (e.g., number, duration, extension). However, Descartes also claimed that these Innate Ideas point in two directions. They point forward to empirical reality (i.e., objective reality) because they also point back to the origin of reality, i.e., God. Innate ideas are the trademark which the divine workman imprinted on his product.

Rationalism expressed in notion of innate ideas is the point of **Empiricism attack** in ¹8th Century. **Mechanistic approach to body** is the solution to dualism that Empiricists of the ¹8th Century would employ.

<u>CLASS NOTE</u>: Will now begin to describe the historical development of the two worldviews. Thus, will describe the historical route in the development of the **Mechanist Worldview**, which centrally entails **Realism-Empiricism** and then the **Organismic/Process-Relational Worldview**, which centrally entails **Rationalism-Constructivism**.

G. <u>The ENLIGHTENMENT</u>. ¹8th Century.

(1),Century defined as a reaction <u>Against Cartesian type</u> <u>Rationalism</u>. (Wartofsky, p. 311-314) Reaction against authority of church.

A fight against the repression of dogma.

Attempt to arrive at both Freedom and Certainty (see Toulmin).

(2).These to be achieved through <u>Reason & Rationality</u> <u>rather than dogma</u>. This defines the Modern Era or <u>Modernity</u>...It is distinguished from <u>Post-Modern Era</u> where freedom defined in the context of rejecting reason.

(3) Century a reaction against solving the problem of the relation between thinking (concepts) and things (objects) by appealing to something that was even less known than the problem itself, i.e., God).

Problem had to be based on the ground of **experience (defined as pristine observation)** and solved there. Tried to not solve problems on Metaphysical grounds that rightfully belonged solved on Empirical grounds.

Here will have the historical development of the **Realist-Empiricist == Mechanistic program**

(4) The rise of the natural sciences, especially Isaac Newton, led to two foundational principles

- a. <u>OBSERVATION</u> (not reason) is primary in natural science. Observation produces the data, and leads to the laws which is the aim of science.
- b. <u>INDUCTION (not deduction)</u> becomes the method. This is a new logic that establishes itself at this time. Here the path to knowledge becomes neither the Aristotelian Logic of Classification that the Scholastics used, nor the Deductive Logic (mathematical) of the Rationalists.

(5) As the ¹8th Ct progresses (i.e., as the Empiricist-Realist, Mechanistic program develops)
<u>REASON</u> will become looked upon as an <u>acquisition</u> rather than a heritage.

Both Hobbs and Bacon (see Rychlak, p. 272-273) have already downgraded the intellect and made reason something we must <u>acquire</u>. Note how important this is. Reason must be downgraded for observation to be upgraded.

Note that in the Metaphysical systems of ¹7th century Descartes, Malebranche, and Spinoza, and 18th Century Leibniz, REASON or thinking is the realm of t"e "eternal verit"es" of those truths held in common by the human and the divine mind (6).

Note also as Gadamer says "n "Reason in the Age of Science" In the 18th and 19th century Kant and Hegel continue to develop Metaphysical systems in which self-consciousness, subjectivism, Reason holds a privileged position. REASON is the original intellectual force which guides the discovery and determination of truth. It is a kind of force which 'an't be known by its results but only by its function. Its most important functions are its power to dissolve (analyze) and to bind (to synthesize).

We will later return to Spinoza, Leibniz, Kant, Hegel when we examine the history of a modern interpretation of Rationalism as Interpretationism-Constructivism.

Important point here is that at the beginning of 18th Ct. there is still no major cleavage between thinking (REASON) and experience (OBSERVATION). This comes as we move the Empiricist program from Locke to Berkeley to Hume. First step in the process was to find a point of demarcation between the mathematical (deductive) sciences and the new spirit of inductive sciences. D'dn't want to get rid of Math (The Queen of the Sciences) because it had been too beneficial. Wanted to get away from the authority of math.

ISAAC NEWTON (1642-1726) & HIS LASTING EFFECT

Before proceeding to consider the Empiricist movement from Locke to Berkeley to Hume will look at what Newton did and then the Grand Effect of Newton on coming generations through the Grand Machine Worldview.

- (1) <u>What Newton actually accomplished</u>.
 - a. His Primary contribution was to maintain that bodies are fundamentally <u>inactive</u>. Prior to this it had been held that bodies are fundamentally <u>active</u>. This had the effect of Splitting "Being" or inactive bodies from "Force" or activity. This meant that Being had to be acted upon.

Should note that Newton was himself a dualist. Believed that matter is inactive, and that spirit is active. Also believed that his laws of motion and gravity could hold (Being) organized wholes together in their current form. The laws, however, could never bring (Becoming) the organized wholes into such forms (see Prosch, p. 65).

b. Newton also claimed that he **formulated no hypotheses.** Claimed that his laws stood forth as "observed correlations." Thus, observation and induction were his methods.

c Newton was, of course, a **materialist** as far as natural sciences were concerned.

- (2) <u>The Lasting Implications of Newton's Work</u>.
 - a. The <u>Grand Image of the Machine</u> begins to define reality and knowing. New'on's <u>splitting</u> of matter (inactive) and force led to the Metaphysical understating of the Mechanical Universe. This sometimes called the Billiard Ball sometimes Clockwork notion of the Universe:

" "The notion that basically everything was made up of small solid particles, in themselves inert (inactive) but always in motion and elastically rebounding from each other, bound together by the laws of motion and gravitational forces and operating mechanically (Prosch, 66).

- b. This cosmology of classic mechanics of Newton saw the universe (and everything in it including man, of course) as **perfectly symmetrical and absolutely precise**. A **clockwork universe** as it is sometimes called.
- c. Just as a machine could be **analyzed down** to smallest objective elements and understood in terms of causal relations among elements, all events in the universe must have a <u>natural</u> <u>and knowable efficient cause</u>

d. Just as a machine is **Objective** in the sense that it emits no novel activity, the universe is objective.

e.. All knowable reality then is **reduced to** the dimension of **Objective Mechanism**.

f. Because this cosmology <u>defines Reality</u> in the categories of the machine, anything that does not seem to fit is defined as <u>appearance</u>. And appearance <u>must be</u> reduced to reality according to the dogma of this doctrine

(3)..Impact on <u>SCIENCE</u> of Newton's Machine Universe.

When the belief in this way of understanding is applied to the definition of science and when it becomes a faith rather than a proposal, it becomes **SCIENTISM** rather than SCIENCE.

Scientism = magical conception of natural science as omniscient and omnipotent.

 a). The Scientific effect of Newton's Machine Universe was to make Science in any domain of investigation (e.g., biology, chemistry, ecology, geology, psychology) identical with giving a <u>Mechanical Explanation</u> to the Appearances of the Domain.

Mechanical Explanation (Science) came to mean:

 <u>Reduce the Appearance</u> down to the smallest stable objective element. This is the observe and analyze method or the "analytic ideal", or the atomism, or the reductionism of mechanical explanation. (i.e., Find the "atom" of the subject matter such as the "cell" of biology; the "strata" of geology; the "reflex" or "response" of psychology).

In specific experimental methodology this is called defining the **dependent variable** of your research.

2. Observe (i.e., find) the forces that operate on the atoms. For example, in Psychology find the Stimulus that causes the responses, or find the "risk" factor.

In specific experimental methodology this is called the **Independent Variable**, or the Antecedent Variable.

3. <u>Induce the laws</u> as they relate the antecedent and consequent variables.

These may be mathematical in form but they are inductions from the observations.

b) Materialism and Naturalism. What mattered was matter.
b) All objects and fields of study were equally explainable by reduction to atoms and the physical forces which moved them. Ambition (value, aim) of science of 18th Ct was "to impose a mathematical finality on history and biology and geology and mining and spinning (from F. Matson The Broken Image). It was the narrowest of scientism: The systematic reduction of all subjects and fields of knowledge to the dimensions and categories of natural science."

-(4.) Impact on Science of <u>MIND-</u> -- i.e., Psychology.

a.) From the base of the <u>Subjei-Object split</u> where Descartes made mind the Subjective, Newton's effect was to make mind Objective.

b) If <u>mind</u> were to be a knowable reality it must be moved from the appearance of subjective self to the reality of objective world; from the appearance of knower (active agency) to the reality of the known. In other words, <u>mind</u> <u>must be reduced to objective mechanism</u>.

Only "**primary qualities**" (number, figure, magnitude, position, motion) located in objects "out there" were <u>substantively real</u> (really real"; "**secondary qualities**" (all else which the senses perceive or the mind assembles) located in human mind were the appearances.

c) Thus, man and mind as active agent, as subject, disappeared and reappeared as object. Mind itself became dissolved into particles in motion. These particles or elements themselves came to be held together by laws of association.

d)These changes in mind were partially anticipated by Descartes who had allowed that the body was an automaton subject to the laws of the machine but had exempted mind from mechanical reduction.

e) **Thomas Hobbs** (1588-1679) (contemporary of, and correspondent with, Descartes) also partially anticipated these changes in the nature of mind.

(i.e,Mind and thought, and other human activity all reducible to motions of animal organism ((body and motion were only adequate explanation)". "Mental activities are motions of the nervous system arising as reactions to motions in the external world (Watson & Evans, p. 18")."

1.Hobbs also important in a Newtonian like theory of **Reasoning** or what is today called 'artificial intelligence,' 'production systems,' '<u>computational</u> theory of mind.

Reasoning depends on names, names on imagination and imagination on motion of the material body. Reasoning is computing, reckoning

"When a man reasons, he does nothing else but conceive a sum total from addition of parcels, or conceive a remainder from subtraction of one sum from another; which, if it be done by words, is conceiving of the consequence of the names of all the parts to the name of the whole, or from the names of the whole and one part to the name of the other part. ... For REASON is nothing but reckoning (1651,Leviatian)"

EXAMPLE from Steven Pinker 1 Jan 99 Science p. 40: "Hobbs uses 'reckoning' in the original sense of 'calculating' or 'computing." For example, if the definition of 'man' is 'rational animal,' and we are told that something is 'rational' and an 'animal (names of parts), we can deduce it is a 'man' (name of whole). If these symbols are represented as patterns of activity in the brain [note Hobbs notion of motion of the nervous system described above], and if some patterns trigger other patterns because of the way the brain is organized, then we have a theory of intelligence. That theory became the basis of... much later, information processing models in cognitive psychology. Noam Chomsky's theory of generative grammar, and programs for language and reasoning in artificial intelligence."

<u>NOTE</u>: Later in discussing the Continental philosophical movement of Rationalism, Interpretationism-Constructivism will define reasoning as involving inference, interpretation:

H.<u>18TH CENTURY STEPS IN THE FULFILLMENT OF THE</u> EMPIRICIST-REALIST MECHANISTIC PROGRAM.

New spirit arising.

It is <u>observational</u> and <u>inductive</u>. Follows the advances of Newton. A program that step by step will <u>empty the human</u> <u>mind</u> <u>of any active agency</u> and will increasingly move the understanding of mind toward being one object among others.

Empiricism is itself <u>an epistemology</u> =

ALL knowledge comes from sense or pristine observation **and only** sense or pristine observation.

Empiricism can be defined as all knowledge comes from **experience**, but problem in this movement is that experience came to be defined as "sensations."

JOHN LOCKE (1632-1704) (Essay Concerning Human Understanding 1690)

- (1) Great admirer of Newton. Locke's views rested on assumed **materialism** (Prosch, p. 84). i.e., material world exists objectively outside of mind.
- (2) Locke attacked Descartes' notion of innate ideas. Illustrated the new 18th ct spirit in statement, "there is nothing in the intellect which is not first in the senses".

This is the battle cry of empiricism itself. It is also Locke's **Tabula rasa**. At birth the mind is a blank slate.

Note that **Leibniz** refuted Locke by saying "Nothing except the intellect itself.", i.e., affirming the activity of mind.

Note also that this principle "**there is nothing in the intellect which is not in the senses**" which is the basis of empiricism is, in fact, something which could never be proven by empiricism. It could not, in itself, be found in sense perception or induced from sense perception.

(3) <u>Complex and Simple Ideas</u>

Phenomenologically we have **complex ideas** (beauty, gratitude, human, an army, the universe). Locke argued these came from **simple ideas** via combination and association.

Simple Ideas come from sense impressions. Sensing occurs when impression from sense organs is transmitted to the mind. Mind on analogy of mirror is very passive.

If this is all there were Locke would be left with the problem that beset all empiricist – sensationists. How generate our complex thoughts from simple sensations.

The empiricist solution to this is always some form of **ASSOCIATIONISM**, but that has its own problems.

(4) Primary and Secondary Qualities

Locke argued for two types of sensations. <u>Primary qualities</u> (solidity, substance, figure, and mobility) are inseparable from objects in the natural material world. These constitute the real and our ideas must accord with them to be true. <u>Secondary qualities</u> (color, sounds, and tastes) are dependent on the nature of mind and are only "apparently real".

So, if Locke were totally true to tabula rasa he would have further problem of showing how simple ideas composed of only primary qualities can generate our complex ideas.

(5) Reflection

Actually Locke didn't have to answer this question because as it turns out the mind is not as passive as it first seemed. At this time there is still not a radical split between thinking and experience that there will be later.

Thus, Locke leaves the <u>mind</u> with certain <u>active</u> <u>powers</u> or active functions. These are the functions of comparing, distinguishing, judging, and willing. All of these are captured under the rubric **"Reflection."**

Perception: was one power. This explained the imposition of secondary on primary qualities.

Memory another.

Locke did away with the innate ideas of mind, but still left mind and innate active operations of mind. This is his advance BEYOND DESCARTES and the first step in the development of the program that will end with Hume where there will be no mind.

Remainder of British Empiricists will have this problem because Empiricist movement from Berkeley through Hume, as well as the French philosophical criticism represents a successive purging of these remaining faculties of the mind. Position of Locke and other Empiricists. The physically defined qualities of the stimulus object are the "building blocks" out of which the content (or substance of thought) is generated finds its modern proponents in learning theories and information processing cognitive theories. The information or stimulus is mind independent; the processing or response is mind dependent. How can one effect the other without the postulation of some common ground of which they are both particulars. Answer is you can't and that is their continuing problem. (If you make subject-object poles of a unified activity matrix, you can work it out; but that's the dialectical-relational solution to be discussed later).

BISHOP GEORGE BERKELEY (1685-1703)

(An essay toward a New Theory of Vision, 1709).

Wanted to **maintain empiricism** (knowledge from experience) and Newtonian Physics but wanted to **get rid of Materialism**.

<u>Begins</u> from assumption of empiricists (i.e., all knowledge comes from senses. i.e., there can be nothing in the mind that is not first in the senses).

Almost <u>Ends</u> in a <u>Subjective Idealism</u> and <u>Solipsism</u> (i.e., that mind can know only its experiences and thus only what one experiences is real. This is the extreme subjectivism and relativism of Protagoras. <u>esse is percipi</u>, perception gives the real. See J. Margolis, The truth about relativism)

Berkeley ultimately saved from extreme relativism by importing the idea of God as the Universal Principle of Order (i.e., the Universal mind of which each human mind is a particular). This led to dilemma of inconsistency vs. solipsism will discuss later.
- This journey begins with Berkeley's attack upon Locke's distinction between Primary and Secondary Qualities. Berkeley showed there is no real distinction between them. Both are dependent on sensation or perception. Thus, both are Mind dependent.
- (2) Consequently, we are locked into our own Sense Experience. The Real is what is perceived. Thus, *esse* (being) is reduced to <u>percipi</u> (perception). This is sense perception is one's experience and thus it remains an empiricism-realism.
- (3) This <u>leaves us</u> with no independent <u>objects</u>. Instead we are left with just sense impressions which Berkeley calls ideas. <u>Ideas</u>, note, are not abstract forms such as the idea of pure extension or pure motion independent of any particular. Ideas are <u>particularistic images</u>.
- (4) An abstract idea is a figment of the imagination, an error or disease of language. Abstract ideas cannot come through the senses so they can't be real. Berkeley was a nominalist. Only particular images are ideas.
- (5) Left with <u>particularistic images and with mind</u>. However, mind no longer, as with Locke, has a central power or activity or function of reflection. Mind simply the experience (hence empirical) of abstract, universal ideas. The <u>question is</u> how we go from the reality of particularistic images to Mind.

To define the general problem again:

In <u>commonsense</u> experience (and here I do not mean Sense Experience) we have <u>order and organization</u>.

For example, cs experience suggests objects have a certain <u>size</u> (i.e., size is a relative concept thus there is order among objects that define size); cs objects have a certain <u>distance</u> from other objects (again a relative concept); a certain <u>position.</u>

But the problem is none of these abstract ideas is given in specific sensory experience.

How can we <u>explain</u> the cs experience. Locke would have appealed to the activity of mind through its function of reflection. Berkeley doesn't have this available to him because mind is now a passive receptacle.

Berkeley himself recognized the problem when he said, regarding <u>distance</u> (this was the specific idea that he wanted to explain) "distance is in its own nature imperceptible and yet it is perceived by sight."

(6) Berkeley's <u>attempted solution</u>.

- a) First step, he gives broader meaning to "perception" beyond simply passive sensation. Perception includes the <u>activity of representation</u>. However, this activity is not the central and general activity of mind that Locke used. Instead, this activity is the activity of each particular sense. This is a particularistic and peripheralistic type of activity.
- b) Second step. With this notion of representation he claims that the content of every sense impression becomes represented or <u>re-presented</u> to consciousness (sensations or ideas are themselves passive). Further, every representation <u>causes</u> all other content that it is <u>associated</u> with in experience to also be represented to consciousness.
- c) Step three. It is therefore through the reciprocal interplay of sense impressions; through the empirical regularity with which the particularistic sense impressions recall each other and represent each other to consciousness that one ultimately gets the <u>"idea"</u> (image) of spatial <u>distance</u>.

- d) Because through experience visual and tactual impressions become firmly joined (associated although Berkeley does not actually discuss association) to eventually get the "idea" of <u>space</u> and spatial distance.
- e) It is in the transition from one type of impression to another that we must find the "idea". The <u>transition</u>, however, is <u>strictly empirical</u>. It is based totally on Habit and Practice (these make the reciprocal interplay) and only <u>Habit and Practice</u>. Prior to Berkeley the transition was Rational. It was before Berkeley Logical or Mathematical REASONING that led to the IDEA. That is, before Berkeley, REASONING worked on sense

impressions. Now with Berkeley reasoning does not lead from touch to vision ect. or back again. Only Habit and Practice do this.

 (7) THIS IS BERKELEY'S ADVANCE BEYOND LOCKE IN DEVELOPING THE EMPIRICIST-REALIST PROGRAM.
 Berkeley empties the organ even further of its own operations, its own activity, its own reasoning.

Problem here is that we cannot have any homogeneous space (e.g., space as an envelope) that underlies all the senses and serves as a substratum. Leibnitz had seen a homogeneous space that united the data from various senses as the creation of mind (i.e., the function of the activity of mind) (Piaget does too). For Berkeley, "Homogeneous space" is a wrong headed abstraction.

For Berkeley we have as many spaces as there are senses. Optical, tactile, Kinesthetic. These are not related by common essence or abstract form. They are related only by regular empirical connection.

If this is so any notion of a "true" space loses all meaning. In fact the notions of universal or true notions of space, time, object, causality etc. all lose meaning. So "truth" or "reality" are totally relative to the individual's experience. Thus, we lose the possibility of any <u>Universal Order and Organization.</u>

 (8) No general principle of Order and Organization eventually bothered Berkeley. He therefore imported a principle of Order ---

God. Claimed that the order, consistency, and stability of objects that we find in commonsense (but do not find in his theory) reside in the perceiving mind of God and each individual Mind is a particular of the Mind of God. Thus, each individual mind receives the benefits of the mind of God. ("As our ideas are to our minds, the order of nature is to God's mind" Heidbredder, p. 45).

This ultimately, of course, is not Empiricism.

(9) Berkeley's ultimate dilemma: Inconsistency or Solipsism (Extreme Subjectivism).

If nothing exists apart from consciousness (experience) how can God exist apart from my consciousness.

If only "I" as a spirit exist, I cannot get beyond solipsism. Yet if I assume the existence of other minds and the mind of God, then the objection applies to these that applied to other material things, i.e., that what is unperceived cannot really exist.

DAVID HUME (1711-1776)

(Enquiry Concerning the Human Understanding)

Hume carries the **Sensationistic Doctrine** to its extreme and ends in a complete Skepticism concerning the possibility of valid knowledge.

Bishop **Berkeley** had destroyed the notion that material substance was the **real**. He **had not destroyed the notion of either MIND** (spiritual substance) **or CAUSALITY**. (For Berkeley, the Mind of God was the cause of our experiencing order and organization).

"Berkeley's criticism had removed material substance, but had left a world of orderly events, dependent on a spiritual substance (Heidbredder, p. 48)." Mind and Causality are necessary for Order and Organization."

Hume employs a very simple and powerful method and ends up destroying both the notion of MIND and the notion of CAUSALITY. As a consequence there can be no <u>Necessary</u> Coherence to the world, that is, no universal principle of Order and Organization. This means there can be no valid Knowledge because valid knowledge is knowledge that has a Necessary Logical Coherence to it (i.e., Universal & Necessary). There can be contingent knowledge but that is a different thing.

(1) Hume's Method.

- a) **Turns sensationistic thesis on the problem.** If everything must come from observation and only observation, where then in sensory experience do we find SOUL, SELF, PERSONAL IDENTITY, MIND or any such universal (abstract idea). The answer is we do not find these anyplace in sensory experience.
- b) Hume then says, OK if they are not in sensory experience then **these notions that need to be explained**, they can't do the explaining.

Later Kant will agree that you can't find them in sensory experience but will claim them as synthetic apriori statements, i.e., universals that are necessary to explain the knowledge we have.

For Hume all we have as **real** then are PARTICULAR PERCEPTIONS. Thus, have flux of particular images. No simple substance that underlies all change.

Thus, faithfully applying the Sensationist doctrine HUME DOES AWAY WITH MIND, THIS IS HUME'S ADVANCE OF THE EMPIRICIST----REALIST PROGRAM

- (2) Hume's attempt to account for the appearance of universal knowledge, i.e., the order and organization we seem to experience.
 - a) First divides <u>Perception</u> into two categories.
 <u>Impressions</u>. All sensations, passions & emotions as they make their first appearance. These are what would today be called perceptions or sensations.
 <u>Ideas</u>. These were faint copies of the original impressions.
 - b) Then introduces the principle of ASSOCIATION to try account for the order we appear to have in our ideas. It is to be a strictly an empirical relation between ideas. (Note: Associationism attempts to explain relations between ideas; not between ideas and things).
 - b)
 - c) Hume's principle of association. This will involve the **specific principles of Resemblance, Contiguity in time and place, Causality**. That is the order and organization, the universality and coherence will have to be adequately explained by these principles.

But even here Hume runs into trouble because he then realizes that Causality itself is not found in sensory experience.

d) CAUSALITY reduced to Contiguity.

Concept of "cause" involves the notion of a "**necessary connection**" between the cause and the effect.

Hume's again applies the sensationist doctrine and asks where in sensory experience do you actually see, observe "necessity?" Answer: You don't. All you actually see is Contiguity and Succession. He says that sensory experience only gives temporal order.

Hume's proposed solution for knowledge based only on association of sensations could be attacked by a reductio ad absurdum. Karl Lashley's paper on the problem of Serial Order shows that individual items of a temporal sequence do not in themselves have a temporal value in their association with other elements. That is, temporal order is itself not found in sensory experience. Order is imposed by some other agent.

It can also be shown that the principle of RESEMBLANCE or SIMILARITY is not given in direct sensory experience. Similarity is imposed by the active subject. Give example of "faces" that are "similar" despite no identical elements.

Contemporary outcome of Hume's Associationism: (Pinker, 1999). "Replace Hume's 'ideas' or 'sensible qualities' with 'stimuli' and 'responses,' and you get the behaviorism of Ivan Pavlov, John Watson and B. F. Skinner. Replace the ideas with 'neurons' and the associations with 'connections,' and you get the neural network models of D. O. Hebb and the school of cognitive science called connectionism (p. 40)."

Note this contemporary impact can also be seen in Skinner's Ch 10 of Beyond Freedom and Dignity

- (3) Hume's **Skepticism** (Doubting of all things)
 - a) Thus, under Hume's criticism, the world collapsed into an aggregate of ideas, supported by no substance and connected by no necessity.

The world as Hume saw it was a drift of ideas without connection, without permanence, without unity, without meaning, simply present and passing (Heidbreder, p. 48-49.).

All the complex ideas or abstract ideas or what would be called categories such as Space, Time, Substance, Order, Relations, were nothing but particular images called ideas.

This is a world of doubt, and this is Hume's skepticism.

 b) In the end Hume became bothered by the discrepancy between "the extreme skepticism to which his reasoning had led him and the demands of everyday life (p.49)" and he could find no way to logically (i.e., through reason) reconcile the two.

> Thus he said, "I dine, I play a game of backgammon, I converse, and am merry with my friends" [i.e., everyday life is one thing)]"and when, after three or four hours' amusement, I return to these speculations, they appear so cold and strained, and ridiculous, that I cannot find it in my heart to enter into them any farther (p. 49). "

Here get a sense of what happens to all skepticisms. You must turn from them and go on to other things. This happened in the next century with respect to the empiricist agenda.

Major point is **Skepticism about VALID KNOWLEDGE (UNIVERSAL AND NECESSARY).** Left with just **contingent knowledge** based on empirical associations.

- (4) Hume and the Relation of Ideas and Objects.
 - a) Also notable is that on the one hand, Hume believed that in terms of (**epistemology**) <u>knowledge</u>, we are locked into our perceptions, i.e., can't <u>know</u> objects independently of our senses
 - a) On the other hand, he assumed an <u>ontological</u> position that there is a <u>real</u> sense-independent order of existence, and this may be either correctly represented or distorted by our ideas. Then the question becomes how we can decide whether an idea is correct or a distortion.

Answer: Hume assumed that True Ideas have a greater Vivacity, or force, or firmness or steadiness.

Here again relativism and subjectivity enter. How to determine the Truth of Idea if I hold very firmly to one idea and you to another?

I. <u>19TH CENTURY. CONTINUATION OF THE EMPIRICIST-</u> <u>REALIST, MECHANISTIC PROGRAM BY</u> <u>PHILOSOPHICAL RADICALISM OR UTILITARIAN</u> <u>MOVEMENT</u>.

Hume's skepticism destroyed the notion of a relation between **NATURE & KNOWLEDGE.** Destroyed notion that by

starting in the natural (i.e., in the objective, sensations), valid knowledge could be established.

Hume's argument also left Mind as no more than a heap of perceptions.

Hume's skepticism did not destroy EMPIRICISM as a position that claims that whatever knowledge there is (even contingent knowledge) must come from observation and only observation.

19th Century represents a change in the nature of the problem. Now an attempt is made to find a relation between **NATURE & FEELING**. Called the **Utilitarian Movement** it carries forth both doctrine of Empiricism and the notion of mind as a heap of percepts.

In general, the Utilitarian argument follows from Hume's skepticism concerning valid knowledge in this way:

Because the only thing that man knows is that he can't know about "things" or even about his own intellectual principles, there is no special reason to reject the guidance provided by those aspect of his **instinctual nature** that are most natural and agreeable to him (see Prosch, p. 107). Thus, the notion here is to look to **feelings** and use **Newtonian method to explain Values, Morals, and Politics. That is an attempt to explain Life and Action.**

Hume had said, "If I must be a fool, as all who reason or believe anything *certainly* are, my follies shall at least be natural and agreeable (Prosch, p. 106)"

BRITISH UTILITARIANISM (Jeremy Bentham, 1747-1832 founder)

(1) Used Naturalism (Newtonian Methods) to understand man's actions, values, morals, politics.

- (2) They believed it was a clearly established natural fact that man does (act) and ought to (moral) <u>pursue pleasure and avoid pain,</u> <u>i.e., pursue happiness</u>. (This is the force that causes behavior of a basically passive or inactive organism.)
 - (a) This, which will later be called in Freud the Pleasure-Pain Principle, had already been the basis for a naturalistic attempt by Hobbs to develop an ethics.

(3) Also held that if you generalize this pursuit of pleasure to society and to an ethic, it becomes the pursuit of "<u>the greatest</u> <u>happiness for the greatest number."</u>

(4) However, if you thought of persons as individual "atoms" each would act on the basis of the crassest self-interest, rather than the interest of the greatest happiness of the greatest number.

(5) So need some way of understanding the movement from individual self-interest to individual society interest. Here principles of <u>Association</u> were used.

- (6) Thus both the Naturalism and the Associationism of the Empiricist continue to frame the way of understanding man and his actions through the 19th and 20th Century.
- (7) To actually follow this story, we should go back and trace the course of British Associationism. If we were to do this we would focus on Associationism and go back to Aristotle, Hobbs, Locke, Hume, Hartley (traditionally known as the father of Associationism). Then we would go forward to Brown, James Mill, John Stuart Mill, Baine, Wundt. Then to contemporary Associationism that is contained in contemporary Realist and Mechanistic approaches to Psychology.

Rather than following Associationism at this time we will now go back to the time immediately following Descartes and trace the

second route in our route histories of the development of psychology, The development of the **Rationalist-Constructivist**, **Process/Relational**, **Organismic program**.

J 18TH AND 19TH CENTURY STEPS IN THE RATIONALIST--CONSTRUCTIVIST, PROCESS-RELATIONAL PROGRAM.

In contradistinction to the Empiricist program, the Rationalist program affirms the inherent **activity of Mind**.

As an **Epistemology**

Affirms Mind does not passively perceive an object given to it in its complete form or as sensory elements. MIND, THROUGH ITS ACTIVITY, PROVIDES INTERPRETATION, CONFERS MEANING, IMPOSES STRUCTURE ON THE KNOWN. Thus Mind through its activity, in some measure constitutes or "creates" or "constructs" the object known.

As Theory of MIND,

Mind will be defined as a **system of activity**. (self-organizing and self-maintaining system like today's self-organizing systems)

In Hume and later empiricist, man became a passive empty organism. Mind was a passive receptacle. A heap of percepts. In the present approach Mind is defined by activity.

This **Rationalism** is not a PURE IDEALISM. Idealism denies the existence of objects. This Rationalism-Constructivism accepts that objects exist. It asserts that objects are never known independent of the state, condition, or purpose of the knower.

The **knower is always a participant in what is known**. We could never know a world independent of a knower. This would be a split in the knower-known relationship.

Note that in S-R theory there has always entailed the assertion that the S must be defined completely independently of the R. Can S ever be defined independently of the R? In the split world of Descartes and the Empiricist, the answer is "yes." In the position that we now discuss, the answer is "no."

Important implication of Constructivist (often called **Interpretationist**) perspective: As knowledge depends on the purpose of the knower, there can be different types of knowledge, and each type can be as valid as the others. Thus, there can be religious knowledge, mythical knowledge, scientific knowledge and each has its own validity. This implication is called **Perspectivism** (See Cassirer).

BARUCH SPINOZA (1632-1677)

Dutch-Jewish philosopher. Precursor of the German Enlightenment. Some inconsistencies with Rationalist-Constructivist program.

- (1) Mind-Body = 2 Aspects of same organic whole.
- (2) Whole is Active but operates according to mechanical principles.
- (3) Body causes Passions or Affections Mind causes Ideas.
- (4) Physical-Psychic together yield Emotions
- (5) Theory of self-preservation (adaptation) involving the emotions.
 - (a) I am committed to my life going well
 - (b) I make judgments about how events affect my life for better or worse.
 - (c) These judgments (may be true or false) affect me as experiences of pleasure and pain

e.g., Love = things going well & beloved object in some way partially responsible.

(6) **Rationalism**: "Reason alone can give the world because the world is nothing but logic, an infinite system of logical entailments that is aware of itself and can be conceptualized alternatively as God or nature (Goldstein, p. 185)."This is a Logical Determinism.

- (7) God = ultimate principle bringing unity to mind and matter = Nature. Nature has power of motion (activity) and generation. Nature constitutes the Whole (see Hegel), but here the whole is mechanical, in Hegel it will be Organic.
- (8) Spinoza's principle that "all determination is negation" is important for Hegel later. To determine a thing is to cut it off from some sphere of being and so to limit it. To define is tto set boundaries (Stace, p. 32). Hegel gives it the converse form "All negation is determination.
- (9) Leibniz argues against Spinoza -who was contemporary of Descartes and Leibniz. "Spinoza begins where Descartes ended, in Naturalism" and thus he rejects his views.

GOTTFRIED WILHELM LEIBNIZ (1646-1716)

Leibniz, was a contemporary of Locke. Locke was beginning of British Empiricism and Associationism.

Leibniz beginning of German Enlightment and German Psychology, Psychology following Leibniz, Kant, Hegel, included Act Psych of Brentano – Stumpf – Kulpe – Wurzburg School – Husserl – Gestalt Psychology

<u>Leibniz asserted that mind was more like veined marble</u> rather than the blank marble of Locke. This was a commitment to <u>Necessary Organization</u> of the Process-Relational position.

In reply to Locke's "There is nothing in the intellect which is not in the senses" Leibniz reply "Nothing but the intellect itself" is a commitment to <u>Activity</u> of the Process-Relational Worldview.

Leibniz discussion of monads (active unit) and the relation between this unit (the part) and the general (the whole) is an affirmation of the <u>Holism</u> of the of the Process-Relational Worldview.

In 18th Ct the **Analytic Ideal** (Reductionism-Atomism) imported from Newtonian Science.

- a. Take <u>Substance</u> and **reduce** it to smallest static fixed feature – the **Atom** – the **Real**. The atom is fundamental substance of things in sense of what is left when matter divided into its ultimate parts.
- **b.** Then **Synthesize (induction)** back up to a universal Law.
- c. **Truth** discovered according to **Law of Identity** i.e., discover what **is common** to events and generalize into universal law.

For Leibniz Law was different From Wikipedia, the free encyclopedia

The **identity of indiscernibles** is an <u>ontological</u> principle which states that two or more <u>objects</u> or <u>entities</u> are identical (are one and the same entity), if they have all their <u>properties</u> in common. That is, entities x and y are identical if any <u>predicate</u> possessed by x is also possessed by y and vice versa. A related principle is the indiscernibility of identicals, discussed below. This principle is also known as **Leibniz's law** since a form of it is attributed to It is one of his two great metaphysical principles, the other being the <u>principle of sufficient reason</u>. Both are famously used in his arguments with <u>Newton</u> and <u>Clarke</u> in the <u>Leibniz-Clarke</u> <u>correspondence</u>

- (1) Leibniz **Ontological contribution**: Substituting the **Monad** in place of the atom as the basic unit of nature.
 - a. Characterized by being Dynamic, not static. Monad exists only as Active and Activity defined as a continuous transition from one state to another.
 - b. Monad creates these states out if itself in unceasing fashion. As Leibniz says "The nature of the monad consists in being fruitful and in giving birth to ever new variety.

(See S. Toulmin – Discover of Time p. 267. Permanence belongs to the conceptual world alone. Also, E. Cassirer – Essay on Man – where both permanence and change are conceptual categories)

c. Monad contains its own past and is pregnant with its future.

(See General Relativity Theory where electrons exist in both past and pesent)

- d. Monads Never Identical as Atoms are. Thus, can't be summed. (Monad always to be understood as in transition) This leads to a pluralistic universe, rather than a dualistic or monistic one.
- (2) Leibniz epistemology– Method for Understanding.
 - a. Need to **Discover** (not through observation, but through reason) **Rules of Transition** or Laws according to which transition occurs.
 - b. Focus not on Things. Focus on Relations among things. (i.e, the pattern or Aristotle's formal and final causes)
 - c. Understanding not through Analytic Identity. Understanding through connections among things become evident only in **change among the infinitely different qualities**
 - d. No reduction of many to the one (appearance to reality).
 - d. Discover **unity among the many** (find the pattern among the many) **Unity found in multiplicity** Unity of the many holds at all levels. If there are several qualitatively different methods of gaining knowledge you can't reduce this plurality to the one true knowledge (e.g., if have Art, Religion, Philosophy, Science) can't claim that only Science gives the "true." Truth is found among the totality. Found in the **system that constitutes the whole** of these.

e. Constancy found in Change (S. Toulmin) (see W. Heisenberg – Physics and Philosophy, 1962 – for good treatment of this)

f. Particular (Part) and General (Whole) Relation -- Holism

In analytic ideal, understanding proceeds in an additive fashion. The whole subsumes the parts, but whole is a simple aggregate of elements (discrete parts) that can be summed (added) to constitute the whole. In holistic understanding the whole is not the sum of its parts. <u>Holism</u> = the parts of any whole cannot exist and cannot be understood except in their relation to the whole.

To understand is to establish a reason, rule or principle that unites parts and whole. This is **Leibniz's Law of Sufficient Reason**: States that everything must have a reason or a cause (formal, final included).(see Lovejoy, 146) A rule that brings order and organization to the parts. A system that organizes the parts. Leibniz also employed the **principle of non-contradiction** in conjunction with sufficient reason.

E.g., <u>Seeing</u> is a systemic property of the Visual System, not a characteristic of the retina, cornea, optic nerve, occipital lobe

e.g., <u>Water has systemic properties</u>, not characteristic of any of the parts.

e.g., <u>Football</u> is a set of rules, a system, players running around with or without the ball = parts. e.g. Consider theword meaning in the following sentences: (1) The *party leaders* were *split* on the *platform*; (2) The *disc jockey* discovered a *black rock star*; and (3) The *pitcher* was *driven home* on a *sacrifice fly*. The meaning of the sentence is obviously determined by the meaning of the words; but the meaning of each word is determined by context of the sentence it is in. Parts determine wholes; wholes determine their parts (Gilbert and Sarkar, 2000).

E.g., Searle (1992), in asserting the importance of <u>emergent properties</u> in the nervous system, notes that "just as one cannot reach into a glass of water and pick out a molecule and say 'This one is wet,' so, one cannot point to a single synapse or neuron in the brain and say 'This one is thinking about my grandmother.'" thoughts about grandmothers occur at a much higher level than that of the single neuron or synapse, just as liquidity occurs at a much higher level than that of single molecules

E.g., <u>Meaning</u> of any word – "plane" meaning depends on sentence (whole) in which it is embedded.

E.g., <u>Meaning</u>. "Dearth" and "thread" have same letters, but whole results in different meanings.

E.g., Face. Newspaper picture of face composed of tiny dots. Face not a property of dots, but of the pattern.

E.g., <u>Advertising display</u>. (From D. McKay, *The Clockwork Image*). Consists of hundreds of lights that flash on and off in sequence to spell out a message. Like the Times Square building with news headlines moving across it. "Financial crisis. Congress fails to pass buyout. Candidates say..." Electronic engineer could give complete description of the system in electronic circuit theory. This would not explain the message itself.

Message apparent when operation of display as a whole is considered. Message is a higher level of structure than circuit and lamps. It is a wholistic feature.

E.g., Gestalt

Another feature of holism the whole (system) has emergent (novel) systemic features that are not properties of the parts of the system. **Emergent** properties cannot be reduced to the parts (or antecedents).

Note that the part and whole description do not contradict each other. They are complementary each is valid at it's own level

There is still subsumption, and still Law of Identity among the parts. But parts must be analyzed and related in the context of the whole.

Car engine does not "cause" us to drive to the supermarket, any more than biological system "causes" us to marry somebody from our own social class, ethnic group, and so on. Granted that without engine-powered cars we would not drive to supermarkets, nor perhaps would there be marriage in the absence of a biological system (from Bruner).

(3) **Theory of Mind – Psychology.**

Leibniz & student Christian Wolff believed that understanding mind on the basis of sense impression of the empiricists misunderstands the whole problem.

Misses fundamental nature of mind which is its <u>activity</u>. **Mind does not merely reflect objective reality, mind, through its activity partakes in the <u>construction</u> of the known reality.**

Task of German Enlightenment becomes that of specifying the formative powers of mind and

understanding relation between mind and things. Termed **Faculty Psychology**.

Unfortunately, this task became vulgarized with C. Wolff and led to the notion of **phrenology.**

Kant came to reject Leibniz's principle of the identity of indiscernibles and this was related to his complaint that Leibniz and Wolff maintained a "merely logical" distinction between perception and intellectual cognition. That is, they were distinguished in terms of clarity of the representation rather than in terms of different powers of mind

This then leads **to Kant**.

IMMANUEL KANT (1724-1804) (Critique of Pure Reason 1781)

For a general summary go to: <u>http://www.angelfire.com/md2/timewarp/purereason.html</u>

Two origins: Conceptually followed Leibniz and German Enlightenment Temporally followed Hume

Goal: <u>Reconcile Rationalism and Empiricism:</u>

Concepts (Rationalism) without percepts (Empiricism) are barren; Percepts without concepts are blind.

"Thoughts without contents are empty; Intuitions without concepts are blind"

Kant's Copernician Revolution (all revolutions entail standing assumptions on their head)

Hume: Experience (sensory) does not give Necessity or Universality (Valid Knowledge).

Hume had argued question:

Can we have valid knowledge (necessary and universal)? Concluded no, only contingent knowledge.

Kant agreed with Hume that can't find valid knowledge in sense experience, but Kant argued that that does not mean that valid knowledge is an illusion; necessity and universality are critical components for understanding the world.

Kant argues the correct question is: <u>How</u> can we have the valid knowledge we do have? Points out we do have valid knowledge (e.g., advances in Science). This is the revolution. Asks then <u>what conditions must be presupposed</u> (must be necessary) to <u>understand how it is possible to have the</u> <u>knowledge we do have.</u>

Kant's Method: Transcendental Deduction:

- 1. Have some accepted phenomenon (A) (e.g., cause and effect relations)
- 2. Could not have (A) without (B) (Mind)
- **3.** Therefore, (B) is the case.

Underlying Assumptions of the System:

- 1. Mind is Active (powers of the mind)
- **<u>2.</u>** <u>Constructivist (Interpretationist) Thesis</u>. knower constructs the known or plays active role in the construction of the known.
- 3. <u>Holism.</u> "The first principle required for the notion of an object conceived as a natural purpose is that the parts, with respect to both form and being, are only possible through their relationship to the whole . . . Secondly, it is required that the parts bind themselves mutually into the unity of a whole in such a way that they are mutually cause and effect of one another." Kant's <u>Critique of Judgement</u> (quoted in Lenoir, 1982). This also implies the assumption of a necessary organization

<u>Conditions that must be presupposed</u> (must be necessary) to <u>understand</u> <u>how it is possible to have the valid knowledge that we do have</u>:

- 1. Knowledge comes from <u>Experience</u>, but two aspects to experience:
- a.) <u>Sensory Aspect</u>:(e.g., colors, shapes, ordors, textures, sounds,)
 (1). Objects are as they are in themselves.
 (2). Sensory aspect sets the conditions for knowledge and determines the content.
- b.) Intellectual Aspect: (e.g., beliefs, expectations, rules, concepts)
 - (1). Depend on Operations or Powers or Capacities of Mind.

(2). Powers of Mind determine form & structure of knowledge, the order and form .

Can never know objects or world as an independent reality external to these two aspects of experience.

Always have both aspects in any experience. Like Aristotle's form and matter. So, concepts (powers of mind) without percepts (sensory) are empty; percepts without concepts have are blind (are meaningless).

This reconciles the sensory (empiricists) and the mental (rationalists).

Objects do exist in and of themselves (the famous Thing-In-Itself), but can never know them directly, always know according to categories of mind. Distinction here is between Noumena (thing-in-itself) & Phenomena (thing known). Note here this means there is an independent world whose job is to provide sense data but cannot be known. This causes problems later

- 2. <u>Powers of the Mind</u> 5 Faculties (active powers of mind):
 - a.) Intuition: faculty of receiving & organizing impressions.
 - b.) Imagination: faculty of organizing perceptions (Intuitions)

- c.) Understanding: faculty of producing rules or concepts.
- <u>d.)</u> **Judgment**: faculty of determining whether a rule or concept is subsumed under other rules or concepts.
- e.) **Reason**: Highest faculty of cognition; faculty that produces principles. It is a self-reflexive procedure. Reason requires unity, coherence. It guides Understanding in this direction.

Critique of Pure Reason is a call for new science to determine possibility, principles, and extent of *a priori* knowledge.

3. Integration of Intuition – Understanding --- Imagination

<u>a.)</u> **Intuition**: Stimuli arrive at sensory surface and are transformed into categories of space (for external stimuli) and time (for internal stimuli).

Note, this power of mind is *relatively* passive. It is receptive in nature. That leads to problems later.

<u>b.</u>) <u>Understanding</u>: The faculty that reasons and subsumes particular under the general *A priori* modalities or modes of mind. Not innate ideas, but **innate modes** through which person ultimately comes to comprehend the world.

12 pure (apriori) concepts: Divided into four groups:

- I) Of Quantity (Unity, Plurality, Totality),
- II) Of Quality (Reality, Negation, Limitation),
- *III) Of Relation* (Of Inherence and Subsistence, Of Causality and Dependence, Of Community), and

IV) Of Modality (Possibility or Impossibility, Existence or Non-Existence, Necessity or Contingency).

Note: Hume called "cause and effect" a habit. Essentially an illusion arising from the Association of ideas. For Kant "cause and

effect" are required for explanation, so one of the categories; a presupposition)

Categories of the Understanding define conditions under which the manifold content of intuitions and representations can be unified.

Thus, The **Understanding** is confronted with numerous sensory impressions as these have already been formed by **Intution**.

But intuition and categories not sufficient for knowledge bc sense impressions imply no object, they just are. Thus, needed more.

Need a <u>means</u> by which the <u>individual (sense impression)</u> could join the <u>universal (concepts)</u>

<u>c.)</u> Imaginative Faculty: Activity of mind with power of analysis and synthesis.

Mediates between and links Categories of the Understanding and Form of Intuition to yield knowledge (world of known objects).

Imagination works as the pre-conceptual stage of consciousness when the manifold of Intuition is being apprehended.

This is the pre-conceptual stage where the sense-data are perceived (Intuitions) but not yet conceptualized.

The Understanding (Faculty that subsumes the particular under concepts), relies on Imagination as friend to deliver to it the particular sense- impressions in a very organized fashion so that it can later conceptualize them.

Metaphor for Intuition, Understanding, Imagination (fr Krenseby):

Understanding like a pastry cook or a bread baker who tells his farmer (the **Imagination**) to run out into the field, gather the disparate stalks of wheat (the **Intuition**), grind them into a uniform powder-like flour that it could use to

create all kinds of baked foods: cakes, pies, pastries, breads, danishes.

Thus, concepts (the Universal, the Categories of understanding) without percepts (the particular, sense impressions as organized by Intuition) are barren or empty; percepts without concepts are blind (no meaning).

Kant's Antinomies (contradictions like self-object).

Proposes that distinction between nomena and phenomena resolve these:

e.g., Free-will vs. determinism:

Law of nature that all events are determined, Kant says, but this applies only to phenomena. In the realm of noumena it is entirely possible that there is real freedom, and indeed ethics require that we believe in such freedom of the will.

Problems Kant left.

1.) Becomes a father of <u>Nativism</u> for future generations.

2.) Problem that <u>categories are static</u>, do not develop, yet it appears that even the form of knowledge changes from time to time and place to place (e.g., different forms of geometry; different understanding of form of the universt).

3.) Problem of <u>split between nomena and phenomena</u>. If nomena cannot be known, seem like useless concept.

4.) Kant himself contrasts Intuitive faculty as "passive" and Understanding faculty as "active."

If Understanding is an active intellectual faculty, whose activities are not in space and time,

If sensibility is a passive sensitive receptive faculty, whose operations are in space and time, then

How possible for these faculties to interact with one another?

Note this dualism is basically the same as nomena- phenomena dualism.

This leads to German Romanticism and Hegel.

TIME OUT FOR A P	PRESENTATION OF HISTORICA	<u>L FIGURES</u>
HEGEL:	Phenomenology of Mind ``	1807
MARX	Communist Manifesto	1848
DARWIN	Origin of the Species	1859
BRENTANO	Psych fr Empirical Standpoint	1874
WUNDT	1 st Psych Experimental Lab	1879
WM JAMES	Principles of Psych	1890
	Strongly influenced by Hegel	
J DEWEY	Psych text	1886
	Reflex Arc Paper	1896
	Dissertation on Kant/Hegel	
TITCHENER	Psych text	1896

K GERMAN ROMANTICISM (1772-1805)

Built upon Kant. Also built upon principles of the 1st French Revolution. Claimed that Pure Reason was not enough.

Science and knowledge had to be a synthesis including art, poetry, literature, philosophy. Creativity and imagination became central. Movement centered around the University of Jena (1798-1804) Participants included: The philosophers:

- Johann Gottlieb Fichte
- Johann Wolfgang von Goethe
- Johann Gottfried Herder
- Georg Wilhelm Friedrich Hegel
- Friedrich Wilhelm Joseph Schelling

We will focus on Hegel, but Schelling is particularly important.

G.W.F HEGEL (1770-1831) (Phenomenology of Mind 1807)

Kant had produced germ of interpretationist (epistemological) position. As theory of mind, mind is active and organized. Follows Process-Relational principles as World View.

Kant moved the program away from Leibniz and metaphysics.

Kant **objectified Descartes's** (merely) subjective metaphysical world by showing how subject's experiences related to external objects.

Hegel now criticizes that Kant left us with a world that is "merely objective." Attacks notion of thing-in-itself. Argues that **categories have a history (i.e., they develop).**

Hegel solves Kant's problem by postulating the notion of the Absolute (Absolute Idea or Absolute Spirit) as a direction towards which development proceeds but never reaches. A horizon concept.

The Absolute.

- <u>1.</u>) Understood as a **necessary condition of experience**.
- 2.) It is **not a thing**. It is an organic **whole** (not mechanical as in Spinoza) of which **all things are parts**.
- 3.) It is the *whole* of substance *and* its modes, as the unity of the infinite and finite). Not a kind of thing, but simply the whole of which all things are only parts (Beiser)
- 4.) A self-generating and self-organizing organic active whole (Beiser).

Subject-Object Relation.

- 1.)All of nature is an organism and knowing subject only part of it. Thus, subject and object not heterogeneous substances.
- 2.) Subject and object **are different degrees of organization and development of single living force** (note he makes organic constitutive rather than regulative
 - a.) Self-consciousness = Highest degree of organization and development of power of nature.
 - b.) Inert matter = Lowest degree of organization and develop of power of mind.

How Absolute becomes also an object of experience.

1.) Absolute Idea is limited by space and time circumstances, and works itself out in concrete history.

2.) Absolute **becomes** progressively itself or progressively known through a method or **process**.

3.) Process like development of organism: Increases in differentiation and integration.

4.) Process of **Becoming** is the **Dialectic**

5.) Dialectical movement toward increasing integration constitutes <u>development</u>, the <u>becoming of knowledge</u>

Dialectic Process

<u>The dialectic is a process through which categories</u> <u>differentiate and</u> <u>move towards integration (toward_the Absolute Spirit).</u>

- 1.)Any **initial category** (note category used because it refers to structure of mind in Hegel) -- a **thesis** -- contains implicit within itself an **inherent contradiction** that differentiates into a second category **-the antithesis**.
- 2.) Thus, beginning with an <u>affirmative</u> there is a necessary movement to a <u>negative</u>. Thus, even in the single unity of thesis there is the implicit <u>relation</u> of thesis-antithesis.
- 3.) As thesis and antithesis become differentiated, a potential space between them is generated and this becomes the ground for a new unity or integration -- the **synthesis** (the negation of the negation). Thus, a new relational matrix composed now of three realms; thesis, antithesis, synthesis is formed. The synthesis is not a simple linear compromise.
- 4.)This integration, like all integrations, is incomplete. It acts as a **new thesis** leading to a continuation of the dynamic process of further differentiations and integrations.
- 5.) All integrations represent the <u>part-whole relations of a holistic</u> <u>perspective</u> as well as the dynamic process of inherent activity and inherent change.

- 6.)At each new dialectic level of synthesis (developmental level) <u>novel processes</u> emerge that are <u>systemic properties</u> of the new organization (e.g., organized actions, representations, logical thought).
- 7.) The development constitutes <u>'levels' of consciousness</u>, moving from 'simple consciousness' to 'self-consciousness' to 'reason'. All three levels of consciousness are present at once, even though they seem to 'contradict' each other in form (like the bud, the blossom, the fruit of the plant). One can't have final reflections of reason without the self-consciousness, nor could one be self-conscious of having a

particular emotion unless one indeed had that emotion (fr Hundert p. 55)

Note how <u>Brentano's</u> levels of consciousness (psychic levels) and and <u>Stumpf's</u> follow from this. Same later with Maslow's levels of self-actualization. Werner's and Piaget's cognitive levels, Eric Erickson epigenetic levels of affect.

Paradoxes of the Dialectic Process and their Resolution

At a minimum, paradox involves self contradiction and self reference.

Hegel's <u>Master-Slave</u> dialectic exemplifies paradox. Master and Slave stand in contradiction to each other, and yet each defines the other. A master implicitly implies the constraint of slavery; a slave implicitly implies freedom of a Master. There is no understanding of a master without the understanding of slavery, no concept of slave without the concept of master. Each implies the other and in this sense, they are identical; yet master and slave are distinct and different.

 Systems of thought based on nonorganic mechanical metaphors attempt to resolve and eliminate paradoxes by understanding them as linear disjunctives or linear conjunctives. For example, <u>either</u> the child

constructs the mother, <u>or</u> the mother molds the child; <u>either</u> nature <u>or</u> nurture, <u>or</u> some linear addition (conjunction) of the two.

- 2.) Accepting the paradox means that any account or explanation of the paradox must occur at a more abstract level of analysis. Solutions must <u>transcend</u>, and not resolve, the paradox. Thus, for example, in Figure 1, the paradoxes at the level of the person are accepted, but they are accounted for according to the principle of the dialectic at the level of metatheory.
- 3.)The reconciliation of contradiction into a productive paradox entails bringing the two components into a recursive cycle.

This is illustrated in the famous lithograph by M. C. Escher titled Drawing Hands . Here, a left hand is drawing a right hand, while at the same time, a right hand is drawing the left hand. Which hand is doing the drawing, and which hand is being drawn? Both. Are the hands identical then? Yes. Is there any difference between them then? Yes, the left hand is the left hand, and the right hand is the right hand. A theory of the left hand, like a theory of the child who constructs the mother, is an important component of knowing. A theory of the right hand, like a theory of the mother who constructs the child, is also an important component of knowing. Bringing the two into a recursive cycle permits a recognition that the one cannot be reduced to the other anymore than rationalism and realism can be reduced to one or the other. The paradox stands, and through recursive cycle the contradiction is reconciled.

4.)The transformation of linear contradictory elements into self referential recursive cycles is the primary method of transforming contradictions into productive paradoxes. However, no less important to this process is the acceptance of something like recursive cycles as legitimate to all forms of knowing, including scientific knowing.

Two Modes of Knowing

Hegel (see Stace, 1924) identified two modes of knowing, or stages of mind, that he called the **Understanding (Verstand)**, and **Reason (Vernunft)**.

When knowing operates only in accordance with Verstand, contradictions must be eliminated, and recursive cycles constitute illegitimate and non-scientific forms of knowledge.

When knowing proceeds according to Vernunft, paradox is maintained as the source of both differences and identities, and recursive cycles find an indispensable role articulating the knowing process.

<u>1.</u>) Verstand (Understanding)

- a.)Every question put to Verstand is answered in terms of "**either...or.**" Either the phenomena involved are different and thus they are not identical, or they are identical, in which case they are not different.
- b.)In Understanding categories are static and fixed. Opposites are mutually exclusive and absolutely cut off from each other.
- c.) The Aristotelian law of identity holds absolutely: A = A and it is never the case that A = not A. Both identities and differences are considered, but each is taken separately. As a consequence, concepts are <u>either</u> identical (A = A), <u>or</u> they are different (not(A = B)).
- d.) Verstand implicates <u>linear thinking where contradictions are resolved</u> by showing that the one or the other oppositions is mere appearance.
 Hegel accepts Verstand as a valuable mode of knowing. It is the mode of knowing which searches for precision and clear distinctions. It is the mode of thinking that has characterized methods of justification in science. Subject-object, chance-necessity, object-concept, appearance-reality are all important distinctions that need to be made if thinking is not to become fuzzy and lost in vagueness. However,

analytic philosophy and positivist forms of science have been trapped in the <u>exclusivity of this mode</u> of knowing, and as a direct consequence they have insisted that this, and only this, mode constitutes scientific knowing.

2. Vernunft (Reason)

- a.) The mode of knowing that asserts the principle of the identify of opposites (A = not A). Here categories break up and flow into each other. Both modes consider identity and difference, but Vernunft rejects the exclusive non-relational "either...or," and considers identity and difference simultaneously.
- b.) Thus, Reason requires that opposites be placed into a relational matrix like the recursive cycles described earlier.
- b.) In Vernunft what is identical is also different, and what is different is also identical. Categories in Vernunft are both identical and distinct. In <u>Drawing Hands</u> there is identity; both hands are drawing and both being drawn. But in identity there is the difference that the left hand is the left hand, while the right hand is the right hand. For infant and mother there is identity in that each constructs the other, each provides for the other. But in this identity there is also difference; the infant is not the mother, and the mother is not the infant.
- c.)Hegel pointed out that there is <u>no necessary opposition</u> <u>between the Understanding and Reason. Reason is only</u> <u>opposed to the exclusivity of the Understanding</u>. Because it involves both identities and differences, Reason includes principles of the Understanding. <u>Reason is the mode of</u> <u>knowing that characterizes discovery in scientific discourse</u>, and provides the meaning context for justification. Thus, it is the mode of knowing that establishes the legitimacy of c.)recursive cycles as a necessary component of scientific knowledge.

Summary:

The contradictions found at any level of abstraction among concepts such as subject-object, whole- part, synthesis-analysis, metaphor-observation, organicism- mechanism, interpretationismrealism, cannot be eliminated or resolved at that level.

The contradictions can, however, be reconciled into productive paradoxes by recognizing them as components of recursive systems.

The resolution of the paradox occurs only at the next higher level of abstraction where a synthesis can be established.

This synthesis at the next higher level, however, entails its own contradictions. These can again be reconciled into productive paradoxes through the recognition of broader recursive systems.

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L. EMERGENCE AND DEVELOPMENT OF PSYCHOLOGY

NATURAL SCIENCE HUMAN SCIENCE ACT PSYCHOLOGY

PHENOMOLOGY

GESTALT PSYCHOLOGY

COGNITIVE REVOLUTION

COGNITIVE REV

Preface to describing the emergence and historical development of Psychology, two concepts that constantly appear in this history need clarification – STRUCTURE AND FUNCTION

Structure

STRUCTURALISM

FUNCTIONALISM

BEHAVIORISM

1.) Structure was a basic concept in both Wundt and Titchener structuralist school of psychology. However, -at least in the sphere of experimental psychology-both Wundt and Titchener were committed to working within a Mechanistic Worldview and, as earlier noted, such a commitment entails a further commitment to an elementaristic/reductionist analysis. As a consequence, "structure" was defined within this system as the elements of consciousness and a

was defined within this system as the <u>elements of consciousness</u>, and a research strategy was employed that attempted to reduce the complexity of thought to these elements.

- 2.)Structure is also a basic term for Piaget and Chomsky. But here, "structure" is defined as the <u>abstract organization or form of</u> <u>knowledge and language</u>. This definition reflects a Process-Relational Worldview commitment to the assumption of necessary organization, and research strategies, quite incompatible with those of Wundt and Titchener's, have been developed to explore the nature of such structures.
- 3.)Without the benefit of a deep Worldview analysis one might easily, but improperly, conclude that the research approaches of Wundt, Titchener, Piaget, and Chomsky were for all significant purposes identical because each sought to identify "structures."

Function

The situation is similar, if more complex, with respect to the concept "**function**. "

1.) The Structure-Function meaning of "function."

Function is defined as the natural, proper, or characteristic action of anything, such as an organ of the body (Random House Dictionary of the English Language, 1967). Within the confines of this definition, a reciprocal relation exists between the thing, e.g., the organ, and its function. Given the organ stomach we can ask about its function, or given the function of digestion we can explore the organ. The relation here is one of structure and function, and except for purposes of abstraction one cannot be analyzed without reference to the other.

This meaning of "function" is exactly that which is generated by the **Process-Relational Worldview** with its hard core commitment to an **relational understanding of necessary organization (structure) and activity (function)** and with its consequent research policy of requiring that the exploration of structures proceed within the context of their specified functions, i.e., a structure-function analysis.

This is the meaning held by both **James and Dewey**. This meaning is generated by the Process-Relational worldview is, in turn, exactly that employed by both Piaget and Chomsky as the one considers the function of intelligence and explores the structures that serve it and the other considers the function of language and explores the structures that serve it. The fact that at one time or another the functional, or structural, side of the equation is relatively more elaborated does not lead to a conclusion that Piaget's system is structuralism or a functionalism. To suggest otherwise misses the point of the Worldview generated deep-level meaning of these basic terms. Similarly, to ignore Chomsky's consideration of function is to ignore what Papert called "Chomsky's `organicist' tendency to see mental functions as, organized into organs of the mind" (Papert, 1980, p. 92).

2.) Function without Structure definition of "function" drops the "characteristic feature of the activity" as well as "the object" and focuses simply on the verb form, "to act."(Random House Dictionary of the English Language, 1967). If "function" is taken to mean a commitment to activity in general, then one need have no concern with organization or structure. Clearly here, such a meaning would not be generated by a Process-Relational worldview. Furthermore, because the commitment to activity is left vague, an ambiguity arises: Is the activity involved to be understood *as origin or as outcome*?

This vague definition of function best describes the meaning it held for the Chicago Functionalists, including **James Angell**, **Harvey Carr and Robert S. Woodworth**. However, in the

views of these figures, the meaning of the term acquired additional connotations from the mechanistic research program. For both Carr and Woodworth the <u>activity or function</u> was the <u>product of other forces</u>. That is, deriving from the mechanistic program, the organism was considered inherently stable and activity or function was the product of antecedent stimuli or drives. In fact, in his original statement of the drive concept, Woodworth (1918) was explicit in making this commitment: "The drive is the power applied to making the mechanism go. The mechanism without the power is inactive, dead, lacking in disposable energy" (p. 37).

Rychlak (1977) provided a more elaborate historical analysis of the manner in which this brand of functionalism, as well as later mediational theorists, continued to demonstrate mechanistic hard-core commitments to a Lockean-Humean set of philosophical assumptions. The fact of significance here, however, is that again the meaning of the basic term is generated by the World View metatheory. Ignoring this deeplevel analysis of meaning and grouping according to the surface-level labels has the effect of tearing apart the integrative coherence of any general research program and leads to conceptual and methodological confusion.

3.) Function defined as a factor related to or dependent on other factors.

This meaning has been applied by those favoring an operant or experimental analysis of behavior approach (e.g., Bijou & Baer, 1963;Gewirtz, 1969; Skinner, 1974) as a method of analyzing antecedentconsequent relations without recourse to specific causal statements. Under this definition, behavior (output) is a function of certain contingencies (lawlike patterns) of reinforcement (stimulation – input) Thus, proposals from this group for a functional analysis of behavior reflect a mechanistic research program commitment to an analysis of antecedents and consequences. Here As, the machine metaphor fades sufficiently into the background so that only the (implicit) causal concerns with inputs and outputs are recognizable.
This functionalism of behaviorism was an antecedent – as was Hobbs "computational reckoning" – of contemporary cognitive science functionalism:

M. PSYCHOLOGY AS A HUMAN SCIENCE-

Emphasized Psychology should not be bound to a single method of science and that science itself encompasses more than just the experimental method. Process-Relational- focus on mental activity.

1. FRANZ BRENTANO (1838-1917) (The Psychology of Aristotle 1867. Psychology from an Empirical Standpoint, vol 1 1874)

Act Psychology:

Study mental actions not mental contents.

Psychology as science of psychic phenomena expressed as acts and processes.

Psychological acts are intentional, directional, and purposive. Intentionality:

> All mental states (perception, memory, etc.) are of or about something. Mental states necessarily have "reference to a content" or "direction toward an object" (which is not necessarily a thing in the world).

There is a unity of consciousness and levels of consciousness:

- 1.) Mere awareness
- 2.) Representational

3.) Judgement

- 4.) Personalization of Psychic Phenomena (Assimilation and
- 5.)Accommodation in terms of interests).

Consciousness cannot be reduced.

Brentano was influential in Gestalt thought and was precursor to Phenomenology.

2. CARL STUMPF (1849-1936) (Psychology of Sound 1883 & 1890)

Supervisor of Husserl's thesis – Phenomenology.

Founded Berlin Institute of Psychology, which gave rise to Gestalt Psychology.

Understood phenomena as unitary wholes.

Engaged Wundt dispute over introspection of music, and emphasized the essential unity of musical experience .

3. CHRISTIAN VON EHRENFELS (1859-1932)

Studies with Brentano and Alexius Meinong His legacy is the idea of **Gestalt.**

Ehrenfels' original proposal of "*Gestaltqualitäten*" left many issues open or unclear, which were soon taken up in various ways by his Gestalt successors.

Emphasized holistic view that form is more than the sum of the parts, though he also emphasized the elements of perception distinguished between temporal and nontemporal form qualities.

4. WILHELM DILTHEY (1833-2911)

Some Inspiration from the works of <u>Friedrich Schleiermacher</u> on <u>hermeneutics</u>, which he helped revive. Both figures are linked to <u>German</u> <u>Romanticism</u>. ^(WK) Schleiermacher was strongly influenced by German Romanticism which led him to place more emphasis on human emotion and the imagination.

Distinguished between the **natural and human sciences**. Defined the human sciences to include both the humanities and the social sciences. Argued main task of the natural sciences was to arrive at law-based causal explanations. The core task of the human sciences was to provide an understanding of the organizational structures and dynamic forces of human and historical life (SEP).

5. HENRI BERGSON (French 1859-1941)

First to elaborate what came to be called a <u>process philosophy</u>, which rejected the static values of natural science in favor of values of motion, change and evolution. (EB)

Attempt to establish the notion of duration, or lived time, as opposed to what Bergson viewed as the natural science spatialized conception of time, measured by a clock, that is employed by science.

6. WURZBURG SCHOOL -- OSWALD KULPE (1802-1915)

Thesis: postulation of the existence of special states of consciousness – "thoughts"—which cannot be reduced to sensory content. Associationism reduced thinking to the combining of sensory materials according to the laws of association.

Wurzburg school psychologists philosophy followed principles of phenomenology of Brentano and Husserl..

Argued thoughts do not necessarily have images associated with them (contrast with Titchener's idea) Challenged Structural Psychology Spontaneous and extraneous patterns are present in thought processing.

N. <u>PHENEMONOLOGY</u>

Definition: The study of structures of experience, or consciousness.

Literally, phenomenology = study of "phenomena": appearances of things, or things as they appear in our conscious experience, or the ways we consciously experience things, thus the <u>meanings</u> things have in our <u>experience</u>.

Phenomenology studies conscious experience as experienced from the subjective or first person point of view.

This field of philosophy is to be distinguished from, and related to, the other main fields of philosophy: ontology (the study of being or what is),

epistemology (the study of knowledge, knowing), logic (the study of valid reasoning), ethics (the study of right and wrong action), etc

Precursors of Phenomenology were Brentano's Act Psychology, Stumpf, Wurzburg School

The historical movement of phenomenology is the philosophical tradition launched in the first half of the 20th century by Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, Jean-Paul Sartre, *et al.* In that movement, the discipline of phenomenology was prized as the proper foundation of all philosophy as opposed, say, to ethics or metaphysics or epistemology. The methods and characterization of the discipline were widely debated by Husserl and his successors, and these debates continue to the present day.

1. EDMUND HUSSERL (1859-1938)

Student of Brentano. Major work: 1913. Ideas: <u>General Introduction to a Pure Phenomenology</u>.

Procedure for examining structure of <u>intentionality</u>. This was structure of <u>experience itself</u>, without any reference to factual empirical world.

Procedure called <u>"bracketing</u>".

Put out of action one's ordinary judgments about relation between experience and world.

Ordinary judgment called "natural attitude".

This is attitude generally called "<u>naive realism</u>", i.e., conviction that world is independent of mind and things are the way they appear.

Bracketing allows study of intentional contents of mind purely internally.

This philosophical introspection called "intuition of essences" led to reduction of experience to these essential structures and then demonstration of how our human world was generated from them. <u>General approach</u>: Began with solitary individual consciousness, took the structure he was seeking to be entirely mental, and from there had great difficulty generating the consensual, intersubjective world of human experience.

Later work recognized some of the problems. Last work, The <u>Crisis of</u> <u>European Sciences and</u> <u>Transcendental Phenomenology</u> again took up basis and mtd of phenomenology.

Focused on experience of consciousness in "lived world". This is everyday social world in which theory always directed toward some practical end.

Argued all reflection, all theory, presupposes life- world (commonsense world) as background.

Task of phenomenology: To analyze "essential relation" between consciousness, experience, and this life-world.

Problem: life-world had become obscured by dominence of objectivist conception of science ("Galilean style")

Task: To expand the notion of science to include a new science of the lifeworld -- pure phenomenology -- which would link science and experience **without succumbing to the objectivism** of the Galilean style on the one hand and the **irrationalism of existentialism** on the other.

Failure of Husser's Phenomenology

<u>**Circularity</u>**: If all theoretical activity presupposes life-world what about phenomenology. Phenomenology must presuppose it even as it attempts to explain it.</u>

Recognized this & argued <u>life-world</u> really a set of sedimented, background <u>"preunderstandings</u> or assumptions, which phenom could make explicit and treat as system of beliefs. Pbl this still makes idea of life-world as prior to

science unstable. i.e., what is to prevent scientific knowledge from permeating this background.

Turn to experience was entirely "theoretical", i.e., lacked any pragmatic dimension.

Note Verela et al p. 19 criticize Heidegger's existential phenomenology and Merleau- Ponty's phenomenology of lived experience for same reason. Both stressed pragmatic, embodied context of human experience, but in a purely theoretical way. (This is not an acceptable criticism to me, particularly if you follow Neitzche's "there are no facts, only interpretations" and Hanson's "all data are theory laden")

2. MARTIN HEIDEGGER (1889-1976)

In Heidegger's fundamental text <u>Being and Time(1927)</u>, "<u>Dasein</u>" is introduced as a term for the type of being that humans possess. Dasein has been translated as "being there". Heidegger believes that Dasein already has a "preontological" and concrete understanding that shapes how it lives. This mode of being he terms "<u>being-in-the-world</u>". Dasein and "being-in-the-world" are unitary concepts at odds with a "subject/object" philosophical view dating back to at least <u>René Descartes</u>. Heidegger explicitly disagrees with Descartes, and uses an analysis of Dasein to approach the question of the meaning of being. This meaning is "concerned. with what makes beings intelligible as beings". ^(WKP)

Chief argument against Husserl: Impossibility of separating lived experience from consensual background of cultural beliefs and practices.

3. MERLEAU -PONTY (1908 - 1961) (The Structure of Behavior (1942 SC) and Phenomenology of Perception (1945)

Merleau-Ponty focused on problems of perception and embodiment as a starting point for clarifying the relation between the mind and the body, the objective world and the experienced world... Phenomenology provided the overarching framework for his investigations, but he also drew on empirical

research in experimental psychology (Gestalt) and neurology, ethology, anthropology, psychoanalysis, linguistics. His constant points of historical reference are Descartes, Kant, Hegel, and Marx.

He approved Aron Gurwitsch's claim that Husserl's analyses "lead to the threshold of *Gestaltpsychologie*", an area of his early focus. The Gestalt is "a spontaneous organization of the sensory field" in which there are "only organizations, more or less stable, more or less articulated. (PP 193/79) His summary of Gestalt psychology emphasizes the figure-ground structure of perception, the phenomena of depth and movement, and the syncretic perception of children.

Despite his general approval of Gestalt psychology he concluded that its epistemological framework remained Kantian, requiring that one look "in a very different direction, for a very different solution" to the problem of the relation between the world described naturalistically and the world as perceived. (PP 198/92

The characteristic approach of Merleau-Ponty's theoretical work is his effort to identify an alternative to intellectualism or idealism [Kantian], on the one hand, and empiricism or realism, on the other, by critiquing their common presupposition of a ready-made world and failure to account for the historical [Developmental] and embodied character of experience.

He argues that neither the Kantian nor the empiricist approach is tenable: organic life and human consciousness are emergent from a natural world that is not reducible to its meaning for a mind; yet this natural world is not the causal nexus of pre-existing objective realities, since it is fundamentally composed of nested Gestalts, spontaneously emerging structures of organization at multiple levels and degrees of integration. [e.g., Hegel's philosophy]

On the one hand, the Kantian idealist critique of naturalism [empiricist] should be extended to the naturalistic assumptions framing Gestalt theory. On the other hand, there is a justified truth in naturalism that limits the idealist universalization of consciousness, and this is discovered when Gestalt

structures are recognized to be ontologically basic and the limitations of consciousness are thereby exposed.

Merleau-Ponty concept of "behavior" is parallel to the phenomenological concept of "experience" [i.e., action] (in explicit contrast with the American school of behaviorism [i.e., response], is a privileged starting point for the analysis thanks to its neutrality with respect to classical distinctions between the "mental" and the "physiological".(SB 2/4)

Argues that following the findings of Kurt Goldstein and other contemporary physiologists, the organism is not passive but imposes its own conditions between the given stimulus and the expected response, so that behavior remains inexplicable in purely anatomical or atomistic terms. Merleau-Ponty instead describes the nervous system as a "field of forces" apportioned according to "modes of preferred distribution", a model inspired by Wolfgang Köhler's Gestalt physics (SB 48/46). Both physiology and behavior are "forms", that is,total processes whose properties are not the sum of those which the isolated parts would possess.... [T]here is form wherever the properties of a system are modified by every change brought about in a single one of its parts and, on the contrary, are conserved when they all change while maintaining the same relationship among themselves. (SB: 49-50/47)

Form or structure therefore describes dialectical, non-linear, and dynamic relationships that can function relatively autonomously and are irreducible to linear mechanical causality.

Argues that matter, life, and mind are increasingly integrative levels of Gestalt structure, ontologically continuous but structurally discontinuous, and distinguished by the characteristic properties emergent at each integrative level of complexity. [again Hegel]

Form is characterized by a dialectical relation between the organism and its environment that is a function of the organism's vital norms, its "optimal conditions of activity and its proper manner of realizing equilibrium", which express its style or "general attitude toward the world" (SB: 161/148).

Living things are not oriented toward an objective world but toward an environment that is organized meaningfully in terms of their individual and specific style and vital goals.

Mind, the symbolic level of form that Merleau-Ponty identifies with the human, is organized not toward vital goals but by the characteristic structures of the human world: tools, language, culture, and so on. These are not originally encountered as things or ideas, but rather as "significative intentions" embodied within the world.

Mind or consciousness cannot be defined formally in terms of selfknowledge or representation, but is essentially engaged in the structures and actions of the human world and encompasses all of the diverse intentional orientations of human life. While mind integrates within itself the subordinate structures of matter and life, it goes beyond these in its thematic orientation toward structures as such, which is the condition for such characteristically human symbolic activities as language and expression, the creation of new structures beyond those set by vital needs, and the power of choosing and varying points of view (which make truth and objectivity possible).

In short, mind as a second-order or recursive structure is oriented toward the virtual rather than simply toward the real. Ideally, the subordinate structure of life would be fully absorbed into the higher order of mind in a fully integrated human being; the biological would be transcended by the "spiritual". But integration is never perfect or complete, and **mind can never be detached from its moorings in a concrete and embodied situation**.

Both science and phenomenology explicate our concrete, <u>embodied</u> existence in manner that is always after the fact. Can never recapture richness of experience. Can only be a discourse about the experience.

O. <u>GESTALT PSYCHOLOGY</u>

Gestalt = configuration or form that is unified. Fundamental premise of a system that conceptualized psychological events as **organized**, **unified**, **coherent phenomena**, **anti- reductionistic**;

nativistic proposition of organized mental activity. Emphasized Necessary Organization, Holism, Inherent activity and Constructivism of the Process/Relational Worldview

Derived from **Act Psychology** of Brentano, Stumpf, and Wurzburg school and **Phenomenolog**y

MAX WERTHEIMER (1880-1943)

Began the formal founding of Gestalt psychology in 1910 experiments on the phi phenomenon. He published these experiments in a paper titled "*Experimental Studies on the Perception of Movement*". Phi phenomenon is apparent movement caused by alternating light positions.

Demonstration apparatus utilized two discrete lights on different locations. Although the lights were stationary, flashing the lights at succeeding time intervals resulted in the perception of the light as moving. This result can't be explained in terms of sensory elements and their combinations.

Wertheimer worked with partners KURT KOFFKA and WOLFGANG KOHLER to launch the Gestalt movement.. They used phi and other perceptions (e.g., continually see objects as rectangular – tabletops, picture frames, floors, and windows; seldomly is the image projected on the retina actually rectangular) to demonstrate that the quality of the whole is different from the sum of the parts.

Argued to begin with elements is to begin at wrong end; elements are products of reflection and abstraction. Need to start in naïve perception, and then find that there are not elements but unified wholes; not masses of sensations but trees, clouds, and sky (Heidbredder, p 331). The Gestalt... is a whole that is not merely the sum of its parts.

Activity considered innate. What would be today considered determined completely the result of biology, genes. Hence it was a nativist position.

Impact of Gestalt Psychology: (a) Replaced Wuntdtian Structural Psychology. Objection was to elements. criticized model of psychology based on associationism and elements of sensation. (b) Kurt Lewin field theory: dynamic field of person-environment interactions

P. PSYCHOLOGY AS A NATURAL SCIENCE-

Uses methodology and analytical goals that are common to biology, chemistry, and physics:

Pristine observation, inductive logic and the 19th century version of the experiment.

WILHELM WUNDT (1832-1920)

German. Known as the father of experimental psychology. Established 1879 in Leipzig the first experimental laboratory for psychological research.

Structural Psychology (sometimes called *content psychology*), had the goal of analyzing the human mind through the careful application of the experimental method of *introspection* carried out by trained scientists. This goal included the following aims:

- a.) describe the components of consciousness (immediate experience, unaffected by contents of the mind, called mediate experience) in terms of **basic elements (sensations)** that determine mind,
- b.) describe the combinations of basic elements (associations),
- c.) describe the connections of the elements of consciousness to the nervous system.
- d.) Find a law (induce) that explains the connections.

Wundt came from both mechanistic (experimental method) and a processrelational, organismic perspectives (*ethnic psychology* – study of human nature could reveal higher mental processes through an *anthropological approach*). Wundt did put forth psychology as a formal discipline based on scientific formulations. However, structural psychology tended to overlook psychological processes and activities that did not easily fit into the methodological framework of the natural science model. It's strict adherence to introspection also was problematic, and *structural psychology* died with Titchener in 1930.

EDWARD B. TITCHENER (1867-1927

Worked under Wundt Brought Wundt's ideas to America

Structuralism (a system of Psychology)

- a.) describe components of consciousness (immediate experience) in terms of basic elements, sensattions,
- b.) describe combinations of these elements,
- c.) explain connections of the elements of consciousness to the nervous system

MINOR EARLY FIGURES

Edwald Hering. Work in vision and touch Believed in more nativist interpretation of mind (consistent with Kant)

Hermann Ebbinghaus: studied memory by using nonsense syllables.

Described learning and forgetting curves.

<u>Ernst Mach and Richard Avenarius</u>. Both involved in an early radical empiricism or positivism. Basic elements were sensations, All events are reducible to the psychological and physical components of observation

AMERICAN FUNCTIONALISM

Influenced by Darwin's theory.

Early on emphasized mental processes.

Interested in how the mind works and what uses the mind has,

not just what elements (structures) are involved in mental processes.

Valued importance of adaptation of species and individuals to their environments

WILLIAM JAMES (1842-1910) Principles of Psychology 1890

Taught first Psychology course in U.S. Introduced experimental method to American academia. Wrote "Principles of Psychology."

One of the founders of Functionalism. This imposed a functional interpretation on structural psychology. Also, with

Charles Sanders Peirce established the philosophical school of Pragmatism. Understanding knowing the world as inseparable from active organism's acts (agency).

Argued mind and body are two different interacting systems. Mental and physical experiences are 2 different aspects of the same experience.

Stream of consciousness not a collection of sensory experiences.

Mind is active- changing, continuous, selective.

James-Lange theory of emotions

CHICAGO SCHOOL OF FUNCTIONALISM

JOHN DEWEY (1859-1952)

Wrote "The Reflex Arc Concept in Psychology" (1896). This rejects mechanistic idea of passive organism encountering an external stimulus causing a sensory and motor response; Argued for active organism interacting with its environmental conditions aimed at an active restructuring of these conditions. This work became foundational to functionalism.

For Dewey functionalism is doctrine "that what makes something a mental state [structure]does not depend on its internal constitution, but rather the way it **functions** or the role it plays in the system [**structure**] of which it is a part. " (SEC)

Dewey was also a pragmatist.

To this point functionalism is a very process-relational position. This will change with the next Chicago School functionalist.

JAMES R. ANGELL (1869-1949)

Two propositions basic to his functionalism:

- 1. "Functional psychology is interested in ... mental activity and its relation to the larger biological forces.
- 2. Mental processes aid in the cooperation between the needs of the organism and its environment. Mental functions help the organism survive by aiding in the behavioral habits of the organism and unfamiliar situations." (SEP)

Important to note that any mention of system (structure) is left out here. Have, needs – activity (function) – environment – behavioral habits. Further it is unclear whether the activity is inherent activity or the outcome of something else. Now functionalism is heading towards a mechanistic interpretation and that interpretation is fleshed out in the following two Chicago School functionalists.

HARVEY CARR (1873-1954) ROBERT S. WOODWORTH (1869-1962)

To repeat what was presented earlier on the definitions of function without structure:

For both Carr and Woodworth the <u>activity or function</u> was the <u>product of other forces</u>. That is, deriving from the mechanistic program, the organism was considered inherently stable and activity or function was the product of antecedent stimuli or drives. In fact, in his original statement of the drive concept, Woodworth (1918) was explicit in making this commitment: "The drive is the power applied to making the mechanism go. The mechanism without the power is inactive, dead, lacking in disposable energy" (p. 37).

FUNCTIONALISM TODAY

Today there are several forms of functionalism and all flow from the functionalism of Angell, Carr, and Woodworth. That is, each emerges from a mechanistic context.

Functionalist approaches appear to belong to one of three major strains – "machine state functionalism", "analytic functionalism", and "psychofunctionalism" and these derive respectively, from early AI theories, empirical behaviorism, and logical behaviorism (also termed logical positivism).

Q. BEHAVIORISM

Strictly follows the Mechanistic program.

Study of observable measurable behavior, and only observable measurable behavior. All behavior is acquired through either Classical Conditioning (Ivan Pavlov, J B Watson, Clark L. Hull) or Operant Conditioning (B.F. Skinner).

Respondent behaviors (Classical Conditioning) are **elicited** by stimuli.

Operant behaviors (Operant Conditioning) are emitted

Precursor was **Edward L.** <u>Thorndike (1874-1949)</u> Had worked with Woodworth, hence bridge from Chicago Functionalism to Behaviorism

Connectivism stated responses to specific stimuli are established through a process of trial and error that affects neural connections between the stimuli and the most satisfying responses..

IMPORTANT HISTORICAL FIGURES IN BEHAVIORISM

Ivan Pavlov (1849-1936) Conditioned reflex.

J. B. Watson (1858-1958)

Father of Behaviorism. Coined the term. province of psychology is behavior and should be measured in terms **of** peripheral stimulus-response (importance of principle of frequency),

Clark L Hull (1884-1952).

Drive Reduction Theory later expanded upon by Kenneth Spence. based on same concepts as other behaviorists, notably the stimulusresponse relation and the occurrence of rewards, served as a general theory of learning that inspired other work such as Miller & Dollard's Social Learning and Imitation theory and Albert Bandura's (1977) Social Learning theory.

Hull's Drive Reduction theory asserts that behavior is the result of the need to reduce the tension caused by either primary drives (biological needs) or secondary drives (those learned through conditioning or association with the primary drives.

Hull's theory was enormously influential until the mid to late 1950's. At that time, it was much more influential than Skinner's operant theory. Today, it is lost to history.

B.F. Skinner (1904-1990)

Operant or Instrumental Conditioning: Learning process where behaviors are modified through the association of stimuli with positive or negative reinforcement.

Founder of philosophy of **Radical Behaviorism**: assumes that all behavior is a consequence of environmental histories of reinforcement. Also founded **Behavior Analysis** and **Experimental Analysis of Behavior**.

Unlike Hull, Skinner's principles have remained popular through various Societies, especially the Association for Behavior Analysis International.

R. THE COGNITIVE REVOLUTION

PROCESS-RELATIONAL COGNITIVE REVOLUTION.

Around 1956 a renewed attempt "to bring 'mind' back into the human sciences" (B 1) after a long period of behaviorism or "objectivism." It was an "all-out effort to establish **meaning** as the central concept of psychology" It was a more interpretive approach to cognition concerned with 'meaning-making' intentionality, agency...It focused upon the **symbolic activities**

that human beings employed in **constructing** and in making sense not only of the world, but of themselves. Its aim was to prompt psychology to join forces with its sister interpretive disciplines in the humanities and the social sciences. (B 2). It was also largely developmental in nature. As Bruner says "we were not out to 'reform' behaviorism, but to replace it.(B3.)

At the forefront of this revolution were Jerome Bruner, Heinz Werner, Jean Piaget, William Kessen, Noam Chomsky, and Lev Vygotsky (when he is not interpreted as a behaviorist). An important precursor, besides Kant and Hegel was Gordon Allport.

THE MECHANISTIC COGNITIVE REVOLUTION

Approximate same time frame. **Took computer as its model**. Emphasis shifted from "meaning" to "**information**," from "construction of meaning" to the "**processing of information**."

"In place of the concept of meaning there emerged the **concept of computability**. Cognitive processes were equated with the programs that could be run on a computational device.

This new reductionism even allowed back in old S-R learning theorists and associationist who substituted "**input**" for "stimulus" and "**output**" for "response" and "reinforcement" converted into a **control element** that fed information about the outcome of an operation back into the system.

No place for "mind" in a computational system. Mind suggests intentional states like believing, desiring, intending, grasping a meaning. Similarly, there was an attack on the concept of "agency." Agency implies the conduct of action under the sway of intentional states. So action based on belief, desire, and moral commitment were eliminated by cognitive scientists.

Course Readings

I. <u>Historical Perspectives and Conceptual Issues</u>

READING Week-1

1. Overton, W.F. Lectures 1-2.

READING Week 2

2. Overton, W.F. (1991). Historical and contemporary perspectives on developmental theory and research strategies. In R. Downs, L. Liben and D. Palermo (Eds.). *Visions of aesthetics, the environment, and development: The legacy of Joachim Wohlwill*. Hillsdale, NJ: Erlbaum, pp. 263-311.

Overview of main themes of the course. Being and Becoming, Uniformity and Organization, Fixity and Change. Metaphor, Models, and their role in the creation of the mechanistic and organismic (Process-Relational) worldviews.

READINGS Week-3

3. Brennan, James F. (1998). *History and systems of psychology.* Prentice hall: Upper saddle river, NJ (5th ed.) chs. 7 & 8

Ch. 7: <u>Mental Passivity</u>: The British Tradition (Locke, Berkeley, Hume = Cartesian-Split- Mechanistic model).

Ch. 8: <u>Mental Activity</u>: The German Tradition (Leibniz, Kant, Hegel = Process-Relational model)

READINGS Week-4

4. Brennan, James F. (1998). History and systems of psychology. Ch 11 (164-180) & Ch 12 (185-204).

Ch 11. Psychology as a natural science – structuralism (Locke- Hume = Cartesian-Split-Mechanistic model)

Ch 11. Psychology as a social science --act psychology (Leibniz- Kant-Hegel = Process- Relational model)

Ch 12. American functionalism -- From James & Dewey to Angel, Carr & Woodworth. A Process-Relational approach (James & Dewey)

A Process-Relational approach (James & Dewey) becomes captured by a split approach Angel, Carr & Woodworth)

5. Overton (unpublished) – A short statement on the distinction between Structuralism and Functionalism to help clarify the confusion of going from relational to split

READINGS Weeks 5 & 6

6. Overton, W. F. (Unpublished) The Dialectic

7.. Brennan, James F. (1998). *History and systems of psychology*. Prentice hall: upper saddle river, NJ (5th ed.) Ch 13 (212-223), Ch 15 (247-260), Ch 16 (264-276)

Gestalt - A Leibniz-Kant, but not Hegelian

example. Behaviorism -- A The Lockean-

Humean example.

Note several forms of learning theory. Two prominent forms "classical conditioning (Pavlov, Clark Hull et. al.) and "operant or instrumental conditioning," (Watson, Skinner) along with "Social Learning Theory (Dollard and Miller, early Bandura) become the primary models for the early therapy known as "behavior modification." or "behavior therapy."

READINGS- Weeks 7 & 8

8. Matson, F. (1964). The broken image. Ch 6

A 20th century Kantian-Hegelian humanistic movement. From Gestalt to Freud to Sullivan to Existentialism.

THE 1950's COGNITIVE REVOLUTION: Readings 9-11

9. Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press. Chapter 1. Pp. 1-10

The Cognitive Revolution originated as a reaction against split behaviorism but was soon taken over by another mechanical metaphor -- the computer -- as its model. This led to another split approach, that of information processing.

10. Miller, G. (2003). The Cognitive Revolution: A historical perspective.

TRENDS in Cognitive Science, 7, 141-144.

This is the Cognitive Revolution from the perspective of an originator who took the revolution in a mechanical information processing direction.

11. Vauclair, J & Perret, P. (2003). The cognitive revolution in Europe: taking the developmental perspective seriously. *TRENDS in Cognitive Science*, 7, 284-285.

The argument – in agreement with Bruner -- that Miller has presented only a part of the story of the Cognitive Revolution.

READINGS - Week 9

12. Overton, W. F. & Molenaar, P. C. (2015). Concepts, theory, and method in Developmental Science: A view of the issues. In
W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of the *Handbook of child psychology and developmental science*. (pp. 2-8) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken,

NJ: Wiley.

13. Overton, W. F. (2015). Processes, relations and Relational- Developmental-Systems. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of the *Handbook of child psychology and developmental science*. (pp. 9-62) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.

READINGS-Week 10

- 14. Lickliter, R., & Honeycutt, H. (2015). Biology, development, and human systems. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of The *Handbook of child psychology and developmental science*. (pp. 162-207) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.
- 15. Carpendale, J. I. M., Atwood, S., & Kettner, V. (2013).Meaning and mind from the perspective of dualist versus relational worldviews: Implication for the development of pointing gestures. *Human Development*, 56, 381–400.

READINGS - Week 11

- 16. Marshall, P. (2015). Neuroscience, embodiment and development. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of The *Handbook of child psychology and developmental science*. (pp. 244-283) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.
- 17. Kuczynski, L., & De Mol, J. (2015). Dialectical models of socialization. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of The *Handbook of child psychology and*.NJ: Wiley.

READINGS Week 12

18 .Sokol, B. W.; Hammond, S.; Kuebli, J., & Sweetman, L. (2015).

The development of agency. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of The *Handbook of child psychology and developmental science*.

(pp. 284-322) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.

19. Cummings, E. M. & Valentino, K. (2015). Developmental psychopathology. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of The *Handbook of child psychology and developmental science*. (pp. 566-606) (7th ed.), Editorin-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.

II. <u>Historical Changes in Accounts of the Nature of</u> <u>Science, and Scientific Methodology</u>

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READINGS -Week 13
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- 20. Overton, W. F. (2012). Evolving scientific paradigms: Retrospective and prospective. In L. L'Abate (Ed.), *The role of paradigms in theory construction*. (pp. 31-65). New York: Springer.
 - 21. Smith, P. G. (2003). *Theory and reality: an introduction to the philosophy of science*. The University of Chicago Press: Chicago & London.

Chapter 4: Popper: Conjecture and refutation..

Chapter 5: Kuhn and Normal Science. Chapter 6: Kuhn and Revolutions.

READINGS - Week 14

22. Smith, P. G. (2003). *Theory and reality: an introduction to the philosophy of science*. The University of Chicago Press: Chicago & London.

Chapter 7: Lakatos, Laudan, Feyerabend, and Frameworks. Chapter 8: The Challenge from Sociology of Science -- Latour

- 23. Overton, W. F. (Unpublished). On Contextualism)
- 24. Overton, W. F. (2015). Processes, relations and Relational- Developmental-Systems. In W. F. Overton & P. C. M. Molenaar (Eds.). *Theory and Method*. Volume 1 of the *Handbook of child psychology and developmental science*. (pp. 9-62) (7th ed.), Editor-in-Chief: Richard M. Lerner. Hoboken, NJ: Wiley.

Just skim this over again, noting particularly how organicism and contextualism are integrated into a single Process- Relational Worldview.

III. Presuppositions, Models, Metaphors in Psychological Issues.

OPTIONAL READINGS

Bandura, A. (2006). Toward a Psychology of Human Agency.

Perspectives on Psychological Science 2006 1: 164-180.

Barrett, L. F. & Lindquist, K. A. (2008). The embodiment of emotion. In G. R. Sermin & E. R. Smith (Eds.), *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches.* (pp. 237-262). New York: Cambridge University Press

- Cohen, C.I. (1993). The biomedicalization of psychiatry: A critical overview. *Community Mental Health Journal*, 29(6), 509-521.
- Bowers, K.S. (1973). Situationism in psychology: An analysis and a critique. *Psychological Review*, <u>80</u>, 307-336.
- Edelman, G. M. (1992). *Bright air, brilliant fire: On the matter of the mind.* New York: Basic Books. Final chapter titled: "Mind without biology: a critical postscript." (pp 218-241)

Comparison of Mind as a computer and mind as embodiment.

Fuchs, T. (2005). Corporealized and Disembodied Minds A Phenomenological View of the Body in Melancholia and Schizophrenia. *Philosophy, Psychiatry & Psychology*, 12(2), 95-107.

Glannon, W. (2002). Depression as a Mind-Body Problem. *Philosophy, Psychiatry, & Psychology*. 9(3), 243-254.

Greenberg, J.R. & Mitchell, S.A. (1983). *Object Relations in Psychoanalytic Theory*. Cambridge: Harvard University Press, pp. 1-78.

Gilbert, S. F. & Sarkar S. (2000). Embracing complexity: Organicism for the 21st century. *Developmental Dynamics*, <u>219, Issue 1</u> (p 1-9).

Gilbert is very highly respected developmental biologist. This article describes contemporary developmental biology, especially embryology, and the issue of reductionism – holism there.

Good, J. M. M. (2007). The affordances for social psychology of the ecological approach to social knowing. *Theory & Psychology*. 17(2), 265-295.

Howard, G. S. (1991). Cultural tales: A narrative approach to thinking, cross-cultural psychology, and psychotherapy. *American Psychologist*, 46, 187-197.

Hundert, E. M. (1989). *Philosophy, psychiatry and neuroscience: Three approaches to the mind.* New York: Oxford University Press. Chs 1 & 2 (pp. 13-58).

Hunderth, E. M. (1995). Lessons from an optical illusion: On nature and nurture, knowledge and values. Cambridge, MA: Harvard University Press. Pp 1-72.

Joseph, J. (2010).Genetic Research in Psychiatry and Psychology: A Critical Overview. In K. Hood, C. Tucker Halpern, G. Greenberg, &

R. Lerner (Eds.), *Handbook of Developmental Science, Behavior, and Genetics* (pp. 557-625). Malden, MA: Wiley-Blackwell.

Krasner, L. (1990). History of behavior modification. In A. S. Bellack, M. Hersen and A. E. Kazdin (Eds.), *International handbook of behavor modification and therapy* (pp. 3-26). New York, Plenum Press.

Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago: The University of Chicago Press, Chapters 1,2, 11, 16.

Leder, D. (2005). Moving Beyond "Mind" and "Body." *Philosophy, Psychiatry, & Psychology,* 12(2) 109-113. (Read in connection with the Fuchs article above

Lewontin, R. (1991). *Biology as ideology: The doctrine of DNA*. New York: HarperPerennial.

Marshall, P. J. (2009). Relating psychology and neuroscience. *Perspectives on psychological science*, 4, 113-125.
Relating the two from a non-reductionist position of embodiment, which places mind within the body and brain of an active organism deeply embedded in the world.

Mitchell, S. A. (1988). *Relational concepts in psychoanalysis: An integration*. Cambridge, MA: Harvard University Press, Chapters 1-2.

Mahoney, M.J. (1989). Scientific psychology and radical behaviorism: Important distinctions based in scientism and objectivism. *American Psychologist*, 44, 1372-1377.

Modell, A. H. (1993). *The private self*. Cambridge, MA: Harvard University Press (esp Chapter 4: The dialectic of the self and other).

Molenaar, P.C.M. & Campbell, C. G. (2009). The new person-specific paradigm in psychology. *Current directions in psychological science*. 18(2), 112-117.

O'Donohue, W., Henderson, D., Hayes, S., Fisher, J., & Hayes, L. (2001). *A history of the behavioral therapies: Founders' personal histories*. Reno, NV: Context Press.

Overton, W. F. & Horowitz, H. A. (1991). Developmental psychopathology: differentiations and integrations. In D. Cicchetti and S. Toth (Eds.), *Rochester symposium on developmental psychopathology, Volume 3*. Rochester, NY: The University of Rochester Press. pp. 1-42.

Pribram, K. H. (1986). The cognitive revolution and the Mind/Brain Issues. <u>American Psychologist</u>, 41, 507-520

Prigogine, I. & Stengers, I. (1984). Order out of chaos: Man's new dialogue with nature. Toronto: Bantam Books. Preface, Introduction, & Chapter 1

- Rachman, S. (1997). The evolution of cognitive behaviour therapy. In D.M. Clark and C.G. Fairburn (Eds.), *Science and practice of cognitive behaviour therapy* (1-26). New York: Oxford University Press..
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- Santostefano, S. (1998). *A handbook of integrative psychotherapies for children and adolescents*: North Vale, NJ: Jason Aronson, Inc.

Sonuga_Barke, E. J. S. (1998). Categorical models of childhood disorder: A conceptual and empirical analysis. *Journal Child Psychology and Psychiatry*, 39, 115-133

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- Thakker, J., Ward, T., & Strongman, K. T. (1999). Mental disorder and cross-cultural psychology: A constructivist perspective. *Clinical Psychology Review*, 19(7), 843-874
- Taylor, C. (1992). *The ethics of authenticity*. Cambridge, MA: Havard University Press.

- Van Dijk, J., Kerkhofs, R., van Rooij, I. & Haselager, P. (2008). Can There Be Such a Thing as Embodied Embedded Cognitive Neuroscience? *Theory & Psychology*, 18, 297-316
- Westerman, M. A. & Sten, E. M. (2007). Going Beyond the Internal— External Dichotomy in Clinical Psychology: The Theory of Interpersonal Defense as an Example of a Participatory Model. *Theory & Psychology*, 17(2), 323-351
- Witherington, D. C. (2007). The Dynamic Systems approach as metatheory for developmental psychology. *Human Development*, 50, 127-153.
- Zahavi, D. & Parnas, J. (2003). Conceptual problems in infantile autism research: Why cognitive science needs phenomenology. *Journal of Consciousness Studies*, 10, 53–71

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