

**Factor Analysis of Worldview Inventories  
Suggests Two Fundamental Ways of Knowing**

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**Abstract**

Numerous philosophers and psychologists have proposed two fundamental, antithetical worldviews: Objectivism and Subjectivism. We consider the objectivist-subjectivist antithesis from a psychological perspective. Specifically, we found that when a battery of questionnaires, designed by psychologists to measure agreement with a host various philosophical worldviews, is subjected to a factor analysis, two clear factors emerge, and each factor is associated with a distinctive cognitive and personality style. Mechanists, who endorse an objectivist worldview, appear to be conscientious, but somewhat rigid, restricted, and anti-intellectual. Organicists, who endorse a subjectivistic worldview, are more humanitarian, interpersonally competent, and intellectually open. The possible biasing influence of our own worldview on these results is discussed.

*Keywords:* epistemology, philosophical worldviews, ways of knowing

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A recent exhaustive review by Conway (1989) notes that numerous psychologists have proposed two fundamental styles of viewing the world--an holistic, intuitive style and a linear, analytic style. Table 1 provides a thumbnail summary sketch of this grand epistemic dichotomy; note that several of the entries in this table themselves contain similar summaries. In Coan's (1987) review, he points out that our willingness to accept one grand dichotomy of worldviews is a function of our own preferred worldview. Persons who blur distinctions to see broad patterns might be more willing to equate the dichotomies in Table 1, while individuals who are more analytical will emphasize differences (cf. Block, Buss, Block, & Gjerde, 1981).

The study described in this article examines empirically how meaningfully a range of worldviews can be reduced to one general dichotomy. The study was inspired in part by unsolicited comments to an earlier survey of the worldviews of psychologists (Johnson, Germer, Efran, & Overton, 1988). After responding to the Organicism-Mechanism Paradigm Inventory (OMPI; Germer, Efran, & Overton, 1982), several participants remarked that the OMPI appeared to be measuring constructs similar to those assessed by other worldview measures. Others suggested that the OMPI was too restrictive, both in its forced-choice format, and in its content. By submitting the OMPI and a battery of other worldview measures to factor analysis, we sought to determine the degree to which the two worldviews assessed by the OMPI--organicism and mechanism--could account for variance in all the measures. We thought this type of analysis would be particularly valuable in light of the fact that previous discussion of the dichotomy presented in Table 1 have been almost exclusively conceptual or theoretical.

## **Method**

### **Subjects**

Subjects were 102 students (43 male, 59 female) enrolled in an introductory psychology course at the Penn State DuBois Campus and 101 students (29 male, 72 female) enrolled in an introductory psychology course at DePaul University. The mean age of the DuBois subjects was 20.8 ( $SD = 5.7$ ), with 40% majoring in education or social services and the remaining 60% split about equally among engineering/technology, sciences/social sciences and business. The mean age of the DePaul subjects was 23.3 ( $SD = 6.1$ ), with over half majoring in the sciences or social sciences, a fourth in business, and the remaining split over other areas. The rural DuBois sample was all caucasian. The urban DePaul sample was 68% caucasian, 12% Hispanic, 17% black, and 2% Asian. Ten percent of the DePaul subjects indicated that English was not their native language. Students were given class time to begin responding to the measures below and were given an additional week to complete the measures outside of class. They were given extra credit for their participation.

### **Worldview Measures**

After providing demographic information (gender, age, GPA, major, race, native language, number of courses taken in the natural and social sciences) on a cover page, subjects then completed the worldview measures in the following order.

#### ***Theoretical Orientation Survey (TOS)***

The TOS (Coan, 1979) is a 63-item, Likert-format, self-report inventory assessing one's stance on theoretical and methodological issues in psychology. The inventory is scored for eight scales derived by factor analysis. Second-order factor analysis suggests combining five of the primary scales into an objectivism-subjectivism scale. Objectivism emphasizes an impersonal view of causality, behavior over experience, elementarism, physicalism, and quantitative

analysis. Subjectivism endorses personal will, subjective experience, holism, non-physicalistic models, and qualitative analysis. (The other second-order factor, endogenism-exogenism, marked by two of the primary scales, is much weaker than the objectivism-subjectivism factor.) The TOS has been administered to hundreds of psychologists; thus the validation evidence for the TOS (Coan, 1979, 1987) is more extensive than for any other measure used in the present study.

### ***World View Inventory (WVI)***

The WVI (Holt, Barrengos, Vitalino, & Webb, 1984), is a 60-item, Likert format, self-report inventory assessing agreement with what Holt considers to be four important world views: systems philosophy as articulated by E. Laszlo (1971, 1972), and three world views discussed by philosopher Stephen Pepper (1942): animism, mechanism, and pragmatic contextualism (or, relativism). In the single published study of the WVI, Holt, et al. (1984) provide evidence for the validity of his four scales principally through slight differences on these scales between different faculty groups at New York University (Humanities & Languages, Social Sciences, Natural Sciences).

### **Organicism-Mechanism Paradigm Inventory (OMPI)**

The OMPI (Germer, Efran, & Overton, 1982), is a 26-item, forced-choice inventory designed to measure an individual's preference for one of two worldviews outlined by Overton (1975, 1976) and Reese and Overton (1970). The labels for these two worldviews, organicism and mechanism, were adopted from Bertalanffy's (1968) general systems theory. The worldviews also correspond to Pepper's (1942) world hypotheses of the same name. Initial evidence on the reliability and validity is reported in the original paper by Germer, Efran, and Overton. A more recent publication (Johnson, Germer, Efran, & Overton, 1988) describes how the OMPI successfully discriminated as expected between social scientists with different

theoretical persuasions (sociobiologists, behaviorists, personality psychologists, and human developmentalists). This study also showed meaningful correlations between the OMPI and a battery of personality questionnaires and ratings scales. Finally the OMPI has been found to predict the behavior within various professional groups, including educators, psychotherapists, and hotel management faculty (Johnson, Howey, Reedy, Gribble, & Ortiz, 1989).

Following the suggestion of numerous participants in the Johnson et al. 1988 study, we scored all 56 OMPI items in a Likert format rather than a forced-choice format. The DuBois subjects in the current study were retested with the OMPI in the standard format to assess comparability between the forced-choice and Likert formats.

### **Social Paradigm Belief Inventory (SPBI)**

The SPBI (Kramer, Goldston, & Kahlbaugh, 1987) is a 56-item, Likert format inventory designed to assess agreement with Pepper's four major world hypotheses: formism, mechanism, contextualism, and organicism, although Kramer et al. label the last two worldviews relativism and dialecticism. The SPBI has demonstrated meaningful correlations with other psychological measures, including the OMPI, and meaningful differences across age groups.

### **Psycho-Epistemological Profile (PEP)**

The PEP (Royce, Mos, & Kearsley, 1975) is a 90-item, Likert format inventory designed to assess three major ways of knowing as described by Royce (1964): Metaphorism, Rationalism, and Empiricism. Metaphorism is marked by cognitive processes involving affective symbolizing, Rationalism by analysis and tests of logical consistency, and Empiricism by validation through sensory experience. Royce et al. present in their 1975 manual validation evidence for the PEP in the form of correlations with relevant psychological measures and meaningful differences between different occupational groups.

### **Epistemic Differential (ED)**

The ED (Kimble, 1984) consists of 12 Likert-format rating scales designed to assess a person's tendency to agree with one end or the other of 12 polarities Kimble identified in psychology: scientific vs. human values, determinism vs. indeterminism, objectivism vs. intuitionism, data vs. theory, laboratory vs. field studies, historical vs. ahistorical accounts, heredity vs. environment, nomothetic vs. idiographic thinking, concrete mechanisms vs. abstract concepts, elementarism vs. holism, cognition vs. affect, and reactivity vs. creativity. A summation of all 12 scales results in a single dimension similar to Coan's objectivism vs. subjectivism (Conway, 1989). Kimble reports that his scales meet the standards of traditional psychometric testing, but in his article he used the scales in psychometrically nontraditional ways.

**Young Explanatory Satisfaction Schedule (YESS)**

The YESS (Young, 1975) contains 55 short explanations of physical phenomena with which persons indicate on a Likert scale how satisfied they feel with the explanation, assuming that the explanation is correct. The explanations were precategorized by Young as either precausal (in the sense described by Piaget), dispositional (descriptive), or truly causal. The distinction between the second and third types of explanation were derived by Young from current discussions in the philosophy of science. Subjects therefore receive three scores on the YESS according to their agreement with three different types of explanation.

Because of delays in receiving materials, only the DuBois sample completed the last two worldview measures, the Epistemic Differential (ED) and Young Explanatory Satisfaction Schedule (YESS).

Although the content of many of the worldview inventories used in the present study appears to be similar, the format and types of items vary across the different instruments. The TOS, WVI, and OMPI are perhaps the most similar; each one of these inventories contains

philosophical, theoretical, or methodological statements with which respondents indicate their degree of agreement. The OMPI differs slightly in that it includes with its philosophical items additional items dealing with matters of everyday, practical concern to nonacademics (conjugal, parenting, occupational, legal, and interpersonal relationship items). Although similar in content, the format of the ED is different from the TOS, WVI, and OMPI in that each of the 12 "items" is a full-page description of a polarity in psychology. Each page is divided into two columns and each side of the polarity is described in the left or right column, first in paragraph form and then summarized with a list of key words.

The SPBI is unique in that each item presents a proposition followed by an explanation for the proposed statement. Subjects are asked to indicate their degree of agreement with the item. The YESS is somewhat similar to the SBPI, but rather than following a statement with an explanation, the YESS items present a question followed by an explanation. Furthermore, instructions in the YESS tell the respondent to assume that the explanation is correct, to attempt to get at the structure of explanatory preference rather than preference for "correct" explanations.

Finally, the PEP, although it purports to measure three epistemic styles, contains items that are virtually indistinguishable from items on a standard personality inventory.

### **Personality Measure**

#### ***Inventory for Candid Self-Descriptions (ICSD)***

The ICSD is a set of 50 bipolar, Likert-format rating scales designed by Lewis Goldberg (1989) to efficiently assess the five major factors of personality identified in 50 years of factor-analytic research (John, 1989). From his own extensive research on the five-factor model, Goldberg has concluded that a clear, transparent format for adjective rating scales will provide the most valid measure of the five factors in studies where candid self-description can be expected. To this end, the ICSD is structured with each of the five clusters clearly labeled with

the names of the five factors: Introversion-Extraversion, Agreeableness, Conscientiousness or Dependability, Emotional Stability, and Intellect or Sophistication. In all cases, the more socially desirable adjective is listed on the right side of the rating scale. The ICSD was administered to conceptually replicate the correlation between worldview and personality found by Johnson, et al. (1988).

### **Preliminary Analyses**

Because several of the worldview measures used in the study were relatively new, each measure was subjected to factor analysis at the item level and to internal consistency reliability analyses. Based upon these results, scoring for some of the measures was revised. If an item showed a negative item-total correlation with its scale total, it was deleted from the scale. If a deleted item showed a positive correlation with a second scale on the same inventory and its content seemed to fit the content of that scale, it was re-assigned to the second scale. Also, any item showing a near-zero or negative loading on a factor defined by items from the scale on which it would normally be scored, and a significant loading on a second factor, and if its content seemed to fit the content of items defining the second factor, the item was reassigned to be scored with items defining the second factor. The revisions can be summarized as follows.

Six items were deleted from Coan's higher order factor one (objectivism-subjectivism) and one item was deleted from his higher order factor two (endogenism-exogenism). Many of Coan's primary scales showed unacceptable levels of internal consistency (.4 to .5), even with attempted revisions; therefore only his higher order factor scales were used (reliabilities of the revised scales were .69 and .60).

Holt's scales showed acceptable reliabilities, but factor analysis suggested relocating many Pragmatism items to the Systems Theory or Mechanism scales. With these item relocations, Pragmatism was reduced to five items and its content seemed to indicate complete

skepticism or even anarchism; it was therefore discarded. With a few deletions and additions, Mechanism demonstrated a reliability of .77 and Systems Theory, .84. Deleting five items from Animism boosted its reliability from .85 to .88.

Reliabilities for separate Organicism and Mechanism scales scored from the OMPI were good (.85 and .78), but the factor analysis indicated 16 strong markers of Organism (revised reliability = .83), but only 6 strong markers for mechanism (revised reliability = .52). Despite its low reliability, the six-item Mechanism factor scale was retained. For the subsample of subjects who later completed the OMPI in forced-choice format, the revised Likert-scale Organicism scale correlated .25 with the forced-choice OMPI, and the revised Likert-scale Mechanism scale correlated -.34 with the forced-choice OMPI (the forced choice OMPI is scored in the direction of organicism). Both correlations are significant at the .01 level and could be adjusted for attenuation due to the imperfect homogeneity of the scales and three-week retest interval.

All SPBI scales showed reliabilities in the low .60's, which is barely adequate for further statistical analyses. Furthermore, factor analyses seemed to indicate that subjects were confused about the double-barrelled nature of the items. Some factors were defined by the content of the proposition, and others by the structure of the explanation. Revisions to the scales failed to improve reliabilities, thus they were used according to the standard scoring format.

Factor analysis of the PEP indicated that a fairly radical revision in scoring was necessary. Three factors emerged. The first consisted of items from all three standard scales, and the content of the items dealt with a need for insight and understanding into the self and into others. It was therefore called Insight. The second factor was defined mainly by Metaphorical and Rational items whose content dealt with aesthetic and intellectual interests. It was therefore called Culture, after the fifth factor in Norman's (1963) classic study. The third factor consisted of half Rational and half Empirical items dealing with the scientific method and was therefore

called Science. Reliabilities of these scales were .83, .85, and .73, respectively, and are exactly on the same order as the standard scales.

Analyses of the ED indicated that the most reliable scale was obtained by summing all 12 items; the alpha coefficient of this scale was still only .49, however. The YESS scales were determined to be fine in their standard scoring format; reliabilities were .89, .75, and .81 for the Precausal, Dispositional, and Causal scales. Reliabilities for Goldberg's adjective rating scales were between .82 and .92, but the factor analysis indicated a result that was not as close to simple structure as the solution presented by Goldberg in his manuscript. Therefore, both standard scale scores and factor scores from a five-factor, varimax-rotated solution were used in the final analyses.

### **Major Analyses**

All worldview measures completed by both subject samples were submitted to a principle axis factor analysis with oblimin rotation. We predicted two major factors defined by the scales listed in Table 1. Factor scores from the most interpretable solution were correlated with the ED, YESS, Goldberg rating scales, and demographic variables. The ED and YESS scales were expected to correlate with the factors in a manner suggested by their placement in Table 1. For the ICSD, the worldview factor marked by Organicism should be associated primarily with Intellect, if Johnson et al.'s (1988) results are replicated. If Germer et al.'s (1982) results are replicated, the factor marked by Organicism should be positively related to grade point average. If Kramer, et al.'s (1987) results are replicated, a factor marked by their dialecticism scale should correlate positively, with age, and a factor marked by Mechanism should correlate negatively with age. Subjects' majors were coded according to their primary occupational type as defined by Holland's hexagonal model (Rosen, Holmberg, & Holland, 1987), and the worldview factors were submitted to a MANOVA across the Holland types.

According to Holland's model, Investigative, Artistics, and Social majors should score higher on a factor marked by Organicism, and the Realistic, Conventional, and Enterprising majors should score higher on a factor marked by Mechanism (cf. Johnson, et. al, 1988).

### Results

A scree test indicated two major factors in the worldview measures. Eigenvalues for the factors were 4.0 and 2.7, and they accounted for 28.5 and 19.1 percent of the variance. The correlation between the factors was .06. Solutions with more than two factors were explored, but were not found to be meaningful. Table 2 presents the factor structure matrix for the rotated solution.

Factor 1 is clearly marked by Systems Theory from the WVI, Organicism from the OMPI, Relativism and Dialecticism from the SPBI, and Insight from the PEP. To employ our own terminology, we call this factor Organicism. Factor 2 is clearly defined by Mechanism from the WVI and OMPI, Formism from the SPBI, and Science from the PEP. Again, to use our own terminology, we call this factor Mechanism.

Correlations between Organicism and Mechanism factor scores and the remaining measures are shown in Table 3. High scorers on the Organicism factor also tend to score in the Humanism direction on Kimble's ED, low on YESS Precasual thinking but high on YESS Causal thinking, and generally high across all of Goldberg's scales, but principally on Agreeableness. High scorers on the Mechanism factor tended to score in the Science direction on the ED, high in YESS Precasual or magical thinking, and high on the factor score for Goldberg's Conscientiousness but low on the Goldberg factor score for Intellect. High scorers on the Mechanism factor also tended to be younger and had lower grade point averages. A MANOVA showed significant differences across academic majors for the two factor scores,  $F(10,370) = 3.03, p < .001$  by Wilk's Lambda. Social majors tended to have high scores, and

Enterprising majors, low scores, on Organicism. Realistic majors tended to have high scores, and Investigative and Artistic majors, low scores, on Mechanism.

### **Discussion**

While certainly not all of the variance in available worldview measures can be captured by two factors, a significant amount can, and the meaning of additional factors is not clear. These results should be most reassuring to the persons listed in Table 1 who have suggested a grand dichotomy. However, what we find here is not precisely a grand dichotomy, but rather two relatively orthogonal (independent) dimensions for conceptualizing worldviews. Therefore, in principle one could be high on both Organicism and Mechanism or low on both dimensions. These results should certainly be satisfying to the dialectically-minded psychologists who complained about the forced-choice format of the OMPI in the Johnson, et al. (1988) study.

Most, but not all, scales loaded as we predicted. One exception was the SPBI Mechanism scale, which showed almost equal loadings on both factors. Perhaps this is due to the psychometric problems with this scale noted earlier. Also, although the heavily revised PEP did show an expected pattern for the Science scale (constructed with Rationalism and Empiricism items), Culture (Metaphorism + Rationalism) showed primarily a negative loading on the Mechanism factor rather than a positive loading on the Organicism factor. No predictions were made for Coan's second higher order factor, Endogenism-Exogenism, which loaded equally (and negatively) on both factors. If a case were to be built for additional worldview factors, perhaps Coan's second higher order factor might define one.

Some, but not all, of the correlates of the two worldview factors aligned with our expectations. The correlation with Kimble's measure was exactly as expected. Interestingly, Organicism correlated with Causal, but not Precausal thinking on the YESS, precisely the opposite of what we expected. Mechanism, on the other hand, correlated positively with

Precausal thinking. Thus, "Organicists" appear to reject magical thinking and embrace scientific thinking, while "Mechanists" would appear to be more superstitious and cognitively less developed. On the other hand, Animism from the WVI loaded on both factors, and only slightly more on the Organicism factor, indicating some type of primitive thinking in both Organicism and Mechanism. This issue deserves more attention in future analyses.

Organicism was associated with higher scores on all of Goldberg's scales, although the magnitude of the relations is lessened by using factor scores. Two facts about the format of Goldberg's instrument--(1) that all socially desirable adjectives are at the right margin of the form, and (2) the scales show substantial intercorrelations (on the order of .5 to .7, unexpected for dimensions that are supposed to be orthogonal)--indicate that some kind of response biasing--social desirability or yea-saying--is occurring. These personality correlates do not correspond to those found in the Johnson, et al. (1988) study, which showed organicism associated only with Intellect, Progressiveness, and Ambition, not with Agreeableness, Emotional Stability, Extraversion, and Conscientiousness.

On the other hand, what may be argued is that social desirability has a substantive aspect. It could be the case that Organicism is associated with some positive qualities: humanitarian values, clear thinking, and positive personality traits. Mechanism, at least as defined in the current factor analysis, appears to have a negative cast to it. Mechanists here seem prone to magical thinking and may be less intelligent according to the Goldberg factor score for Intellect and their grade point average. They are also younger, which replicates Kramer et al.'s 1987 finding that older persons are less mechanistic. Mechanism in the Johnson et al. (1988) study also appeared sometimes to be associated with undesirable traits like intellectual dullness and passivity. Perhaps this type of mechanism is "restrictive" in the worst sense of the term used by Coan. However, it is our hunch that many positive aspects of

mechanism--rationality, level-headedness, analytical ability, etc.--are for some reason not manifesting themselves in our research. And perhaps that is because somehow we, with our organicist leanings, have somehow unintentionally introduced bias into our research. We regard this as a real possibility, given the intensely personal nature of science (cf. Houts, 1988). We welcome a conceptual replication of our work by more objectivistic, mechanistic researchers to increase our insight into the relationship between personal factors and intellectual, philosophical thought structures.

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**Table 1***Summary Sketch of the Proposed Epistemic Dichotomy*

<u>Linear, Analytic Style</u>	<u>Holistic, Intuitive Style</u>	<u>Source</u>
Lockean	Leibnitzean	Allport (1955)
Noncreative	Creative	Barron & Harrington (1981)
Analytical	Intuitive	Bruner (1960)
Objective	Subjective	Brunswik (1952)
Restrictive, Objectivist	Fluid, Subjectivist	Coan (1979, 1987) <sup>a</sup>
Mechanism	Systems Philosophy	Holt, et al. (1984) <sup>a</sup>
Modern, Scientific	Primitive, Magical	Horton (1975)
Tough-Minded	Tender-Minded	James (1907)
Mechanistic	Organismic	Johnson, et al. (1988) <sup>a</sup>
Thinking, Sensing	Feeling, Intuiting	Jung (1923)
Science	Humanism	Kimble (1984) <sup>a</sup>
Apollonian, Pythagorean	Dionysian	Knapp (1964)
Formism, Mechanism	Relativism, Dialecticism	Kramer, et al. (1987) <sup>a</sup>
Generic	Particular	Maslow (1957)
Peripheralists	Centralists	Murray (1938)
Left Brain	Right Brain	Ornstein (1972)
Rational, Empirical	Metaphorical	Royce (1964) <sup>a</sup>
Scientists	Humanists	Snow (1964)
Rightist Ideoaffect	Leftist Ideoaffect	Tomkins (1965)
Geometrical-Technical	Physiognomic	Werner (1955)
Field Dependent	Field Independent	Witkin & Goodenough (1977)
Dipositional, Causal	Precausal	Young (1975) <sup>a</sup>

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<sup>a</sup>Psychometric measures are associated with these sources and were used in the present study.

**Table 2**Factor Structure Matrix for Worldview Analysis

<u>Measure</u>	<u>Factor 1</u>	<u>Factor 2</u>
TOS Objectivism	-.22	.48
TOS Endogenism	-.31	-.41
WVI Mechanism	.23	.77
WVI Animism	.39	.27
WVI Systems Theory	.84	.10
OMPI Organicism	.75	-.19
OMPI Mechanism	.18	.43
SPBI Formism	.07	.72
SPBI Mechanism	.58	.54
SPBI Relativism	.65	-.01
SPBI Dialecticism	.74	.06
PEP Insight	.62	-.03
PEP Culture	.16	-.32
PEP Science	-.07	.30

**Table 3**Correlates of the Two Worldview Factors

<u>Measure</u>	<u>Organicism</u>	<u>Mechanism</u>
ED - Humanism	.23*	-.40**
YESS - Precausal	-.28**	.30**
YESS - Dispositional	.19	.07
YESS - Causal	.38**	-.05
Extraversion Scale	.45**	.00
Extraversion Factor	.28**	.02
Agreeableness Scale	.52**	.03
Agreeableness Factor	.39**	.00
Conscientiousness Scale	.35**	.09
Conscientiousness Factor	.19*	.15*
Emotional Stability Scale	.34**	.00
Emotional Stability Factor	.10	-.01
Intellect Scale	.45**	-.08
Intellect Factor	.28**	-.19**
Age	.13	-.31**
Grade Point Average	.08	-.30**
Natural Science Courses	.03	.00
Social Science Courses	.10	-.06

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\* $p < .05$  \*\* $p < .01$  (both one-tailed)

Appendix: Worldview Scales with Sample Items from Worldview Scales

**Theoretical Orientation Survey Richard Coan**

OBJECTIVISM (Restrictive)

SUBJECTIVISM (Fluid)

Impersonal Causality

vs

Personal Will

Human actions are just as strictly determined by whatever causes are operating as all other physical event are.

Human behavior is not completely predictable because people are too individually unique.

Behavioral Content Emphasis

vs

Experiential Content Emphasis

Psychologists should devote more effort to explaining observable behavior than to explaining conscious experience.

Psychologists should be as concerned with explaining private conscious experience as they are with explaining overt behavior.

Elementarism

vs

Holism

Our most important information in psychology is obtained by well-controlled experiments in which we systematically vary one or a few independent variables and record their effects on a specific dependent variable.

Highly controlled experiments often give a misleading picture of the complex interactions that actually occur under natural circumstances.

Physicalism

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All the concepts used in psychological theory should be explicitly definable in terms of observed physical events.

Quantitative Orientation

vs

Qualitative Orientation

Many of the most important relationships in psychology can be best examined by complex kinds of statistical analysis.

Mathematical equations are not a very important device for expressing the most fundamental relationships and principles in psychological theory.

**World View Inventory Robert R. Holt**

Mechanism

The human being and society are merely complex machines which can ultimately be understood in the same way as any other mechanism.

Animism

The material world is but a passing show; what ultimately matters is the real world of the spirit.

Systems Philosophy

Our basic realities are the patterns of relationships that make up systems.

Pragmatism (Relativism, Skepticism,  
Cynicism, Anarchism)

There is no such thing as objectivity,  
even in the physical sciences.

**Organicism-Mechanism Paradigm Inventory**

**Christopher. Germer, Jay S. Efran, & Willis F. Overton**

Organicism

Mechanism

The world is like a large, living organism.

The world is like a large, complex machine.

A child's world is different from mine.

A child's world is like mine, but he/she  
knows less.

A good judge is not objective and knows it.

A good judge is purely objective.

**Social Paradigm Belief Inventory**

**D. A. Kramer, R. B. Goldston, & P. E. Kahlbaugh**

Formism

When someone is not doing a good job it's unlikely that he or she will change. This is because people stay essentially the same and either have the ability to do the job or lack it.

Relativism

A person's behavior is basically inconsistent. This is because each person is a unique, random mix of behaviors, so that he or she can be generous one moment and stingy the next.

Mechanism

Personality is molded in childhood. This is because it's influenced by one's parents, peers, teachers, etc., and once it's formed in this way, it's set.

Dialecticism

Dissent is a healthy sign. This is because if you oppress others unnecessarily you might destroy yourself in the process and become inhuman.

**Psycho-Epistemological Profile**

**J. R. Royce, L. P. Mos, & G. P. Kearsley**

Rationalism

A good teacher is primarily one who helps his/her students develop their powers of reasoning.

Higher education should place a greater emphasis on mathematics and logic.

Metaphorism

A good teacher is primarily one who has a sparkling entertaining style.

In my leisure I would most often like to

enjoy some form of art, music, or literature.

Empiricism

A good teacher is primarily one who is able to discover what works in class and is able to use it.

When reading an historical novel, I am most interested in the factual accuracy of the novel.

**Epistemic Differential Gregory A. Kimble**

1 Scientific Values	Human Values
2 Determinism	Indeterminism
3 Objectivism	Intuitionism
4 Data	Theory
5 Laboratory Investigation	Field Study
6 Historical	Ahistorical
7 Heredity	Environment
8 Nomothetic	Idiographic
9 Concrete Mechanisms	Abstract Concepts
10 Elementism	Holism
11 Cognition	Affect
12 Reactivity	Creativity

## 5 Setting for Discovery

The most important setting for psychological investigations is the laboratory; the most important method is experimentation. Whatever we lose as a result of artificiality is more than made up for by what we gain in the way of control. Precision is more important than ecological validity.

The most important setting for psychological investigations is the real world in which people and animals live. Whatever we lose by way of control is more than made up for by what we gain by working in a natural rather than artificial situation. Ecological validity is

Manipulating variables produces more useful information than anything that can be accomplished by naturalistic observation.	more important than precision.
Hypothesis testing is a more powerful tool than correlation.	Naturalistic observation produces more useful information than anything that can be accomplished by manipulating variables. Correlation is a more powerful tool than hypothesis testing.
Laboratory observation	Field study
Experimentation	Survey/case study
Manipulation of variables	Naturalistic observation
Hypothesis testing	Correlation
Control of variables	Reality
Precision	Ecological Validity

**Young Explanatory Satisfaction Schedule Neil P. Young**

Precausal

Q: Why do rainbows sometimes appear after it rains?

A: Because they are so lovely (sometimes as many as six different colors can be distinguished), and because they provide a means for the sky to indicate that the storm has passed.

Dispositional

Q: Why does sugar dissolve in coffee?

A: Because sugar belongs to the class of substances which are water soluble. In fact, it is one of the most readily liquifiable solids in that class. Of course, the rate at which sugar goes into solution is a function of other factors such as atmospheric pressure and the agitation of the liquid medium.

Causal

Q: Why can a thermos bottle keep things at the same temperature for long periods of time?

A: Heat is transmitted as curvilinear waves.

The lining of thermos bottles is made of a material with a tight linear lattice structure, which heat waves cannot easily penetrate.