

SPECIAL FEATURES/CONTRIBUTIONS SPÉCIALES

A Contrast of Perry and Royce: Implications for the Study of College Students' Epistemological Orientations

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Epistemological orientation is a psychological construct which defines the relatively coherent set of statements students articulate about knowledge, including what knowledge is, how it should be acquired, what can or cannot be known with certainty, what are the limits of knowledge, and what should be the criteria for determining knowledge. Across these types of questions, students usually provide thematic, interconnected responses, and epistemological orientation appears to capture the relatedness of their views (Broughton, 1978; Kitchener & King, 1981; Perry, 1981; Royce & Mos, 1980; Strike & Posner, 1982; Unger, Draper, & Pendergrass, 1986).

Conceptually, the orientation is intended to define a higher order, philosophical framework which explains how students interpret and abstract meaning from information (Royce & Mos, 1980; Strike & Posner, 1982; Wilkinson, 1989). However, the construct itself is not an active, input cognitive process (Kitchener, 1983), such as those postulated to influence reading (Estes, 1978). This distinction, which is elaborated elsewhere (Kitchener, 1983; Royce & Powell, 1983; Wilkinson, 1989), aids in understanding the meaning of the epistemology construct.

It appears that the orientation is of great relevance to educational personnel, especially as a potent source of individual differences. In fact, an awareness of differences in epistemological orientation can aid educators to improve services in student counseling and advisement (Kniefelkamp & Sleptiza, 1976; Widick, Kniefelkamp, Parker, 1975), and in selecting more appropriate curriculum materials and designing optimal course formats (Ault, 1985; Copes, 1974, 1980; Goldsmith, 1977; Heineman & Strange, 1984; Stephenson & Hunt, 1977). Further, the orientation predicts students choice of major (Rancourt, 1983; Schact & Black, 1985), learning and study strategy (Beers, 1985; Diamond & Royce, 1980; Powell & Royce, 1982; Ryan 1984a; 1984b; Schommer, 1988; Schwartz & Wilkinson, 1988; Strike & Posner, 1982), affective and personality characteristics

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(Wardell & Royce, 1975; 1978; Wilkinson & Schwartz, in submission), and level of moral reasoning (Clinchy, Lief, & Young, 1977).

Unfortunately, the literature also makes it clear that little is actually known about the conceptual structure of the epistemology variable, its meaning, or its theoretical position among other factors which influence how college students' learn and perform in higher educational contexts. Further, until the basic nature of the epistemology variable is more adequately analyzed, its meaning and scope will remain inchoate, superficial, and of questionable scientific value.

Thus, the basic aim of this paper is to stimulate a more intense, thorough, and critical evaluation of the orientation. The chosen format for critical review is contrasting two descriptive models which represent the orientations in completely different manners. The models are those of William Perry (1968; 1970; 1981), and Joseph R. Royce and his colleagues (Royce, 1964; Royce, 1973; Royce, Coward, Egan, Kessel, & Mos, 1978; Royce & Mos, 1980; Royce & Powell, 1983).

Besides the difference in how these researchers represent the epistemology construct, the ideas of Perry and Royce span 20 years, and have provided the basis for much empirical work. For the most recent compilations of this literature, the reader is referred to the Perry Network Newsletter (1989) and Royce & Powell (1983). Because of the amount of research generated for both Perry & Royce, their models show far greater evidence of validity and practical utility than more recent representations of the epistemology variable (Kitchener, 1986; Unger, Draper & Pendergrass, 1986).

In addition, synthesizing the ideas of Royce and Perry is essential simply for informing their respective followers that there is more than one way to describe the epistemological frameworks of students. This is an important aim, since anyone familiar with the literature on the orientation soon realizes that Perry and Royce advocates appear unaware of the existence of each others writing. This may seem unlikely, but is easily verified by examining the reference section of any of the above cited studies. What is found is not a single Perry researcher cites Royce or vice versa.

Finally, the models are easily contrasted because they are not theories, but rather, short descriptions which supposedly define a particular orientation. Thus, it is possible to present the models, and later, extract the salient issues. This is the expressed intent of this paper.

What follows is a brief elaboration of Perry's and Royce's model of epistemological orientation respectively. Specifically, a short description of each orientation is presented.

PERRY'S MODEL OF STUDENTS' EPISTEMOLOGICAL ORIENTATIONS

William Perry (1968; 1970; 1981) asserted that college students develop from a dualistic epistemology, to a multiplistic set of epistemological views, and finally, are said to hold a relativistic orientation. Perry proposed that an increase in student exposure to varied educational philosophies creates epistemological conflict, or

dissonance, so that knowledge orientations are modified in the sequence as noted.

Perry asserts that *dualistic* students, typically college freshmen, hold three general epistemological assumptions. These are that (a) knowledge reduces to dichotomous categories, being either right or wrong, true or false, good or bad, (b) knowledge is absolute and that all questions and problems have definitely correct and right answers, and (c) authorities (e.g. college professors) know the absolute truths and are obligated to relay their absolute knowledge to students.

With increased educational exposure, college sophomores and juniors are said to become more *multiplistic*. At this stage, students purportedly question their dualistic orientation which leads them to modify their view of knowledge such that (a) some knowledge questions cannot reduce to one right answer, (b) two competing ideas can exist to explain the same phenomenon, with both ideas equally valid, and (c) knowledge is neither right nor wrong. However, when there is debate, multiplists apparently claim that one perspective will eventually gain status as an absolute truth.

The final epistemological orientation Perry labeled *relativistic*, and typifies students in their later college years. Perry claims that students with this orientation eschew either-or knowledge categorizations, choosing to define knowledge as contextual and contingent. Apparently, relativists feel that all knowledge depends on context so that any claim to knowledge is neither right or wrong, but rather, more or less logical, consistent, and internally coherent. Perry also asserts that relativists look to authorities not for absolute truths, but instead, for interpretation and guidance.

Although Perry also delineates a set of post-relativistic stages, in which students commit to certain knowledge values and beliefs, there is some question in the literature as to whether (a) commitment is really separate from relativism (Sleptiza, 1983), and (b) whether commitment is, in fact, an epistemological orientation (Basseches, 1978; Kurfiss, 1977). Thus, for the present analysis it seems sufficient to refer to three separate knowledge conceptions: dualistic, multiplistic, and relativistic.

ROYCE'S MODEL OF STUDENTS' EPISTEMOLOGICAL ORIENTATION

Royce and his colleagues (Powell & Royce, 1982; Royce, Coward, Egan, Kessel, Mos, 1978; Royce & Mos, 1980; Royce & Powell, 1983) also investigated how students think epistemologically. In fact, Royce & Mos (1980) identified epistemological standards pertaining to three ways of knowing: empirical, rational, and metaphorical. These orientations are described below.

Students with *empirical* orientations purportedly hold that sensory and perceptual experiences provide the foundation for knowledge, so that consistently noted sensory/perceptual observations should be the method for obtaining knowledge. That is, knowledge for these students is best acquired through repeated observation, experimentation, and scientific induction. Thus, for an empirical student, a typical assertion of knowledge might be –" I know that

behavioral therapy is more effective than other forms of psychological therapy because of its accumulated data and scientifically proven benefits.”

Royce & Mos assert that students with *rational* orientations tend to acquire knowledge through logic, reasoning, and deduction. These students purportedly maintain that all information must be analyzed in terms of consistency and coherency. For example, a rational student might claim that –” I know that the best form of psychological therapy depends on the individual case, and must be chosen specifically in terms of its consistency with the patients presenting problems, history, functioning level, and context.”

Finally, *metaphorical* students, according to Royce & Mos assume that knowledge can be obtained only if one can generalize that knowledge to a wide variety of circumstances. For this student, acquired knowledge is somewhat personal and depends partly on insight, analogical reasoning, and ability to symbolize conscious and unconscious experiences. A knowledge statement of a metaphorical student might be, “I know that psychoanalysis is the best form of psychological therapy since it allows for insight, symbolism (e.g. the mind is like the tip of an iceberg), and imagination.”

A close inspection of the orientations described by Perry and Royce indicates that each model differs on three fundamental points. These are (a) the that each model differs on three fundamental points. These are: (a) the epistemological component of central importance, (b) the role of development, and (c) the personal epistemological stance taken by Perry and Royce. These issues, which will form the foundation for all further evaluation, were derived from a careful analysis and thorough reading of both Perry’s and Royce’s writings.

EPISTEMOLOGICAL COMPONENT OF CENTRAL IMPORTANCE

Although Perry does not explicitly state what type of epistemological view students are said to develop, a close look at his description of dualists, multiplists, and relativists suggests that students change in their *definition* of knowledge – what knowledge is, or the end result of learning, cognition, and instruction. Thus, dualists consider knowledge as absolute, multiplists define knowledge as somewhat absolute, and relativists label knowledge as entirely subjective and context bound.

By way of contrast, Royce notes that he is explicitly describing students’ epistemological orientation concerning ways of knowing, and not what students do with this knowledge once obtained (Royce & Mos, 1980, p. 12). Thus, Royce distinguishes his model as one pertaining to *acquisition* – the epistemological standard students articulate to explain how knowledge should be acquired. Contrary to Perry, Royce does not specify the various labels students ascribe to knowledge (e.g. as a set of facts, or a system of concepts which may be entirely contextual and relative, etc.) once acquired.

Overall, it is clear that Perry and Royce were concerned with one epistemological component of knowledge. The question is whether their models are

comprehensive, or sufficient enough in breadth, if each describes one epistemological parameter? Perhaps the complexity of the orientation, which conceivably comprises a number of other epistemological components (e.g. justification of knowing, limits of knowing), is bypassed if it is represented solely by one knowledge component. This issue clearly needs further discussion if the orientation is ever to be completely understood.

Another question is whether the epistemological components of knowledge definition and knowledge acquisition are related? In other words, is there a relationship between a student's definition of knowledge and his/her typical method for acquiring knowledge? For instance, will dualists claim that knowledge is best acquired through empirical methods? Relativists through rational methods?

Recently collected data suggests that students with fundamentally unique orientations concerning the definition of knowledge do indeed adopt different learning and cognitive strategies for acquiring new information (Schommer, 1988; Schwartz & Wilkinson, 1988; Wilkinson, 1989). At this point, results show that students who define knowledge dualistically tend to acquire knowledge in more rote, detail, and reproductive manners, while relativists opt for more elaborative, synthetic, and global methods to learn new information. Thus, present results suggests that epistemological components, such as knowledge definition and acquisition, are interrelated.

THE ROLE OF DEVELOPMENT

Perhaps the most obvious difference between Perry and Royce is whether or not they consider development in students' epistemological orientations. Perry's (1970; 1981) model is clearly *developmental*, in that students are said to progress from dualism to relativism as a function of college exposure, experience, and maturity.

On the other hand, Royce makes no mention of developmental changes in these orientations, opting to conceptualize the epistemology construct as *preferences* – specifically, a preference for one of the three ways of knowing. In fact, Royce notes that epistemological views are stylistic, trait type variables which are relatively stable and consistent over time.

Of course, models which stress either development or preference do not necessarily compete. That is, Perry's dualistic students can be said to prefer this epistemological orientation, while relativists prefer a different type of orientation. Using Royce's terminology, perhaps college freshmen are mostly empirical and then progress to rational or metaphorical orientations?

Yet, the emphasis in terms of either development or preference is extremely important and has substantive ramifications for theory and research. For instance, by emphasizing development, one implication is the importance of indicating exactly when students begin to elaborate their orientation. Interestingly, developmental theorists widely differ in pinpointing when epistemological thinking emerges, with some noting that the orientation begins during college (Kitchener &

King, 1981; Perry, 1970), while others maintain that it starts as early as preschool (Broughton, 1978; Pramling, 1983; Wellman, 1985), or at least as early as junior high school (Wilkinson & Schwartz, 1987). Thus, a major goal for developmental researchers will be to offer a more unified position on the origins of epistemological reflection.

For developmental psychologists, another area which remains in need of study is to specify what causes a person to change epistemological position. For instance, in Perry's framework, what situations, experiences, people, and environments, etc., create epistemological dissonance for, say, a dualist? Although some studies (Stephenson & Hunt, 1977; Widick & Simpson, 1978) exist which isolate curriculum materials that promote epistemological development, no study specifies exactly what it is about instructional materials which change students' epistemological thinking. Thus, a goal for future researchers is to design experiments which clearly define, isolate, and control for variables, instructional or otherwise, which may foster change in epistemological view.

On the other hand, Royce and his colleagues deemphasized development. Rather, the orientation was defined as one component of a person's global style, a style which was characterized as invariant, and resistant to change. However, this conceptualization of the orientation has yet to be put to investigative test, although developmental methodologies (e.g. cross-sectional, longitudinal) could be used to see if change does, or does not occur for the orientations described by Royce.

THE PERSONAL EPISTEMOLOGICAL ORIENTATION OF PERRY AND ROYCE

In reviewing the models of Perry and Royce, an intriguing difference is apparent. Specifically, Perry himself appears to be an empiricist, while Royce seems to be a rationalist. This conclusion is based on the entirely different research approaches and methods used by Perry and Royce.

For instance, one of the central features of an empirical epistemological position is that knowledge comes from scientific experimentation, observation, and experience (Royce & Mos, 1980). That is, knowledge emanates from data. Perry's method of studying his epistemological positions closely adheres to this orientation. For instance, Perry interviewed college students at Harvard University and then developed a nomenclature of epistemological orientations based on the verbal reports of his students. In other words, Perry's model was data driven, perhaps reflecting his personal *empirical* epistemology.

On the other hand, an investigator with a rational epistemology would likely attempt to understand the topic of interest before engaging in experimental study (cf. Howard, 1983, p. 505–506). Regarding epistemology, this would necessitate understanding the long history and tradition of epistemology within the realm of philosophy. Royce and his colleagues have been careful to survey the philosophical literature (see especially Royce et al., 1978), with the three ways of knowing closely approximating the philosophical distinction between empiricists on the one

hand and rationalists on the other (Capaldi, 1969; Goldman, 1986; Hamlyn, 1966; Papanoutos, 1968). Thus, it appears that Royce's method for studying epistemology reflects a *rational* orientation.

By contrast, it seems safe to say that Perry did not study epistemology before engaging in research, since his specific orientations have no counterpart in the philosophical literature. For example, while philosophers, such as Descartes, have used the term dualism, it is difficult to connect dualism in its philosophical context with Perry's use of the term. As for multiplism, and relativism, these epistemological orientations are clearly idiosyncratic to Perry. This again may relate to Perry's orientation of empiricism.

The apparent difference between Perry and Royce regarding personal epistemological orientation highlights the fundamental importance of the orientation in determine how researchers select methodology, define problems, and produce knowledge. Further, the study of the orientation has never been described using a combination of empirical and rational methods, although such a methodology could be devised. For instance, it might be more appropriate to rationally start with all the possible orientations identified elsewhere (Broughton, 1978; Gold & Reimer, 1974; Perry, 1981; Pramling, 1983; Royce & Powell, 1983; Strike & Posner, 1982; Under, Draper, & Pendergrass, 1986) and then empirically test which of these orientations overlap to form coherent sets of epistemological beliefs. This research program remains the greatest need for future explorations of epistemological thinking.

RECOMMENDATIONS FOR FURTHER RESEARCH

Several suggestions can be offered for further research. First, a major caveat in present research is that most researchers have focused solely on one type of epistemological component, either about the definition of knowledge or its acquisition. Since the orientation potentially includes a number of additional knowledge parameters, it is clear that a more comprehensive approach is needed, one which might better encompass the complexity of epistemological thinking. A broader perspective is found in Broughton (1978) and Kitchener & King (1981), as these researchers describe two or more knowledge components. However, there is still much to be known about other epistemological components which remain unexplored (e.g. the certainty of knowledge, the limits of knowledge, etc.). Thus, the status report is that present models provide the necessary foundation for a closer, more thorough inspection of the orientation.

Interpreted as approximations of epistemological thinking, previous research can be recast as necessary, but not sufficient, for examining the orientations potential influence on learning, decision making, and instruction. Although the orientations described by Perry and Royce may be of great relevance to practitioners, the rudimentary nature of their models suggests that prior research results cannot yield a truly sensitive test of the orientations potential educational relevance. Hopefully, as models of the orientation continue to improve, resultant

descriptions will allow for a firmer, and more powerful base for guiding researchers interested in the practical extensions of the epistemology construct.

Thus, the goal for researchers should be (a) to fully examine the entire range of knowledge components which define epistemological thinking, (b) to use this data in the design of a more complete and accurate model of this thinking, and (c) to put the resultant model to empirical test in order to examine its educational applications and relevance.

Second, it is obvious that developmental theorists have yet to offer a cogent and unified position on exactly when epistemological thinking starts. This is a clear priority for future investigation. In addition, those who stress development have yet to adequately isolate, control, and account for the specific variables and environmental situations which precipitate change in epistemological orientation. This line of inquiry will be especially useful for those who are interested in promoting change and growth in this student orientation (Widick & Simpson, 1978).

In addition, if the orientation is conceived of as an enduring disposition, it may be important to use developmental methodology to determine whether orientations heretofore considered stable traits do, in fact, not change. The results of this type of research would have great implications regarding the debate as to whether the orientation develops or remains stable over time.

Finally, the best methodology for studying the orientation may ultimately be a combination of the separate methodological approaches used by Perry and Royce, approaches which are directly related to their personal orientation to knowledge. Specifically, a methodology combining the empiricist tradition of Perry and the rational view of Royce may help to better clarify the exact nature and meaning of epistemological beliefs.

CONCLUSIONS

Epistemological orientation is reported to be a highly influential belief system which greatly impinges the way college students learn and instruction should be delivered. Yet, this conclusion is derived from models of the orientation which appear inherently limited and lacking in the necessary conceptual development needed to build more accurate and complete descriptions of this type of thinking. Indeed, the conceptual concerns identified in this paper render prior research suggestive at best.

There is no doubt that epistemological thinking is an important area of study. However, to capture the complexity and elusiveness of this variable, investigators need to conduct more comprehensive and in-depth analyses in order to determine the epistemological components which need further consideration, the relationships between separate components, the nature and influence of development on the orientation, and to consider a larger, more systematic approach to the study of the orientation, one which combines both rational and empirical traditions. It is hoped that this paper will stimulate further discussion and analysis of the orientation.

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