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A CONTEXTUALIST THEORY OF KNOWLEDGE: ITS IMPLICATIONS FOR INNOVATION AND REFORM IN PSYCHOLOGICAL RESEARCH*

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A "contextualist" epistemology is proposed in this chapter as an appropriate metatheory for psychology, after the meanings of theory and of the more generic term "knowledge" are first clarified. Contextualism's implications for reforming both the process and product of psychology are then discussed. Two phases of needed process reforms are described, that of creatively generating hypotheses and that of developing them by means of empirical confrontation.⁽¹⁾ Finally, the psychological product is discussed by reviewing the various theoretical depictions of the person that have guided and grown out of the research process.⁽²⁾ ✓

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I. The Nature and Tragedy of Knowledge

Because theory is an abstract type of knowledge, its meaning can be better understood if the more generic concept of "knowledge" is first clarified. One knows an object by representing it to oneself, perhaps by constructing in one's cognitive arena an analog that is in one-to-one correspondence to the known aspect of the object; this representation reduces and distorts the object as required to represent it within the knower's cognitive capacities. The average person may have less of a frenzied need to know than is assumed by dwellers in the house of intellect who regard the unexamined life as not worth living; but many people do have at least a modest need to know because the environment's complexity or strangeness often exceeds one's capacity to deal directly with its fullness, so that one can cope with it only by representing it to oneself in a reduced and conventionalized form. Typically, the environment presents the person with more information than the human cognitive system can meaningfully process (McGuire, 1983b), requiring one to cope by reducing the thing-in-itself to a knowledge representation that assimilates a manageable portion of its information to one's available cognitive categories while ignoring its other aspects.

"Knowing" involves the inherent tragedy that these necessary representations of the known are necessarily misrepresentations: One cannot survive without doing it but one cannot do it well. All the operations into which the knowing process can be analyzed, such as those shown in Table I, produce falsifications both in the form of oversimplifications (ignoring most aspects of the known, overlooking unique features of entities grouped together, reducing a complex entity to its aspects on a few dimensions, etc.) and in the form of distortions (capriciously slicing up the seamless web of reality, locating axes of meaning arbitrarily in reality-space, distorting unique experiences so that they fit preexisting categories, assuming that everything else is equal, etc.). Knowledge representations are adaptive insofar as the inevitable oversimplifications are brilliantly apt and the distortions largely irrelevant for the task at hand. One can reasonably hope that phylogenetically acquired genetic endowment and ontogenetically acquired experiential structures will have shaped the human cognitive system so that our concrete knowledge of recurrent, important situations will typically involve such adequate representations.

There is less reason for such optimism when we turn to theory, which is knowledge writ large in the form of generalized abstractions applicable to a wide range of experiences but representing each only vaguely, making it likely that dangerous oversimplifications and distortions will arise when a theory is applied to a specific case. Brilliant theorists may aptly apply a theory to specific situations within their range of expertise, but often theories will be overgeneralized to additional situations where their misrepresentations become more devastating

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TABLE I

THE REPRESENTATIONAL ACT OF KNOWING: MISREPRESENTATIONS AT EACH STEP OF THE PROCESS AS IT EVOLVES TOWARD THEORY

Process	Set operation	Products yielded	Misrepresentations involved
1. Focusing, noticing, awareness	Set assembly	Observations	Elected ignorance of most of the field; arbitrarily slicing the seamless web of reality
2. Analyzing, fractionating	Set partition	Discriminations	Ignoring similarities
3. Categorizing, entitizing, constancies	Partial definition by enumeration	Objects of thought, entities	Ignoring differences; ignoring nonfitting peculiarities
4. Abstracting	Properties	Dimensions of judgment (variables)	Arbitrary placement of axes of meaning
5. Predicating	Partial definition by properties	Propositions, judgments, assignments of objects to dimensions	Ignoring other aspects of the object
6. Relating	Logical set operations	Hypotheses, inferring object's location on one dimension from its location on another	"Everything else equal" fallacy
7. Generalizing	Going from sets to supersets	Principles (hypotheses with broad variables)	Extrapolations distorted by values, wishes, inadequate information
8. Systematizing	Axiom systems	Theory (set of principles relating a domain of variable)	Incompleteness, Gödelian arbitrariness
9. Utilizing	Models	Applications	Oversimplification; distortion

causality

causal

structured propositions

unless the ubiquitous oversimplifications and distortions intrinsic to theories have been kept explicit. An appropriately poignant image of the knower (and especially of the theorist) is that of a rope walker who, on arriving at a precipice of ignorance, ties one end of a chain of inferences to a stake on its brink, and, flinging the free end as far as possible out over the abyss, runs quickly along the thrown chain to get the maximum distance before plunging to disaster. These theoretical chains of inference do not permit great leaps forward but simply allow a little advance beyond the previous Furthest North. Limited knowledge representations being all we have, the only thing worse than generating and using them is not doing so (Edge, 1983).

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Knowing is a human adaptation that evolved as a means rather than as an

end. The consummate intellectual may come to feel that it is an end in itself, but knowing makes survival sense only as an intermediate stage of some larger process. Thomas à Kempis used the words of Ecclesiastes in asserting that the eye is not fulfilled by seeing and analogously the evolution of knowing is explicable only within the context of the further operations that it evokes or channels. In everyday life, the knower's (mis)representation of the environment may serve to guide behavior, generate affective reaction to the situation, terminate concern about it, etc. In the more sophisticated realms of art or science, knowing may lead to more elaborate responses: a writer or sculptor who imagines an inspiring representation may express it in a novel or statue; a scientist who formulates a theoretical representation may develop it by putting it in jeopardy by empirical confrontation. In recent years I have been developing a contextualist philosophy of science (McGuire, 1973, 1983c) that recognizes and exploits the loss and distortion of information necessarily involved in knowledge and especially in abstract theoretical knowledge. In the next section I describe this contextualist position by tracing its evolution through two millennia of epistemological development. Later sections discuss its implications for the reform of social psychological research.

II. Toward Contextualism: Two Millennia of Theory-Testing Criteria

Intellectuals have always recognized the possibility that theories (particularly other people's theories) may be in error and so have proposed evaluating their appropriateness by a variety of internal and external criteria. The internal criterion most often used to judge a theory's adequacy is its internal consistency in not yielding mutually contradictory derivations. On the other hand, a researcher does not have to be a Marxist to judge a theory by the rather opposite criterion of how well it plays a more active dialectical role in knowledge generation by provoking new insights; judged by this standard, an internal contradiction between a thesis and antithesis could be a most useful way of evoking a new synthesis. Other internal criteria sometimes used to judge a theory's attractiveness are that it be parsimonious or broadly relevant or seem certain or be elegantly beautiful. Alternatively, it may be judged by its novelty in being more than just a minor variation on a familiar theme; on the other hand, some judge a theory by its plausibility in fitting within the prevailing metatheory without introducing any eccentric new factor such as extrasensory perception. That these various internal criteria for judging the relative adequacy of competing theories are not only independent of one another but sometimes even mutually contradic-

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tory illustrates a basic descriptive (and prescriptive) tenet of contextualism that will be developed in the following.

The relative adequacy of theories can be judged also by various external criteria. The status of a theory's author or advocate is one such criterion, not only in dogmatic religious and political circles, but even in some sycophantic scientific circles (which is the reason for periodical calls for "blind" reviews of research proposals and journal manuscripts). A more rationalistic external criterion is whether a formulation is derivable from or at least compatible with some accepted set of principles such as the Euclidean axioms or the Hullian behaviorist postulates. Pragmatists judge theories by their usefulness for human survival or some other highly valued end. The external criterion most revered currently by the orthodox scientist is ecological validity such that the theory, on being empirically tested, conforms to some interpersonally observable reality that it is supposed to describe. The Establishment consensus for the preferred external criterion of a theory's truth has evolved during the past two millennia of European thought through at least four stages that are worth singling out here for brief discussion—dogmatism, rationalism, positivism, logical empiricism—before describing our new contextualist position.

A. PRE-CONTEXTUALIST POSITIONS ON THE DEDUCTIVE-INDUCTIVE ANTITHESIS

1. Dogmatism

Within this orientation, the preferred criterion of truth is the hypothesis's conformity to a set of propositions whose legitimacy is recognizable by such signs as the superior credibility of their author, their having stood the test of time, or the compellingness of their content. This was the Establishment meta-theory during the late Roman Empire and early medieval periods when the criterion dogma was the Judeo-Christian Scriptures as interpreted by the teaching office of the Church or the exegeses of the Talmudic rabbis for theorists such as Athanasius, Augustine of Hippo, Gregory, Rashi, etc. While dogmatism ceased to be the dominant epistemology a thousand years ago, it is still the working criterion of current Islamic, Hebrew, and Christian fundamentalists, Freudians and Marxist-Leninists of the strict observance, and other ideologues of one book.

2. Rationalism

The rationalistic criterion of a theory's truth is that it be internally consistent and deducible from a set of reasonable postulates such as self-evident axioms (e.g., the principle of sufficient reason) and inductions based on widespread

also valued
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Talmudic model

less extreme: psychoanalysis as broad paradigm that allows for some development & even data, but severely constrains tests of basic assumptions

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Handwritten notes on the left margin: "dogmatism is evolutionarily through", "pragmatism is evolutionarily through", "Freudians", "Marxist-Leninists", "Talmudic model", "also valued basic theory".

observations (such as that all life comes from life). This rationalistic metatheory began to gain acceptance when the disruptive Viking and Magyar predations subsided in the tenth century. This allowed exploitation, in a pattern of production suitable to northern European conditions, of the previous centuries' technological innovations such as the heavy wheeled plow, the scythe, the shoulder harness' replacement of the yoke (which permitted efficient use of the horse as a draft animal), the three-field crop rotation system, and the integration of animal husbandry with agriculture. The resulting surplus provided a basis for the tenth-century Carolingian revival, which included the professionalization of speculation and a clerical ascendancy, producing epistemological consequences that ended the dogmatic hegemony that had characterized the first millennium of the Common Era. Intimations of a developing rationalistic ascendancy are discernable as early as Anselm's *Monologian* in 1077 of the Common Era in response to his monks' request for a derivation of the Christian corpus of belief on the basis of reason without making use of Scripture. A generation later Abelard in his *Sic et non* went beyond showing that the dogmatic approach is unnecessary by showing that it is inadequate as well, since Scripture and patristic writing include contradictory statements even on basic issues. By the thirteenth century, theorists such as Thomas Aquinas, Averrões, Maimonides, Duns Scotus, along with their precursors such as Peter Lombard and successors such as Nicholas of Cusa and William of Occam, used this rationalistic metatheory to build knowledge edifices as impressive as the contemporaneous cathedrals of stone and stained glass.

Thomistic
philosophy
Occam's
razor

3. Positivism

The hegemony shifted from rationalistic to positivistic epistemologies by the seventeenth century. While the term *positivism* was popularized only by the nineteenth-century writings of Comte, this epistemology was formalized as early as Francis Bacon's *Novum Organum* in 1620 and was adumbrated in the hypothetico-deductive method of Robert Grosseteste and the empiricism of his pupil Roger Bacon. Its elevation by the seventeenth century to the Establishment epistemology is exhibited in the contribution of Locke, Voltaire, Hume, Diderot, etc. Positivism stands the deductivism of the rationalists on its head by using an extreme inductivist criterion of truth, identifying direct sensory experience as the source of all knowledge and as the criterion against which any theory must be tested.

Humeanism

4. Logical Empiricism : "modern" science

Early in our own century, the Vienna Circle took a great roll forward by reconciling the deductive and inductive extremes of the two previous Establishment epistemologies. While its positivistic predecessor was basically an opposite

reaction to the prior rationalist ascendancy, the logical empiricist movement achieved a more creative synthesis of its two predecessors, the deductive thesis and the inductive antithesis. What Schlick, Carnap, Hempel, Feigl, Bergmann, and others within the Wienerkreis did was give the first word to deduction and the last to induction by prescribing that the researcher start out with a hypothesis validly deducible from an a priori theory and then test its and the theory's truth by subjecting it to the jeopardy of disconfirmation via an empirical test. Within this elegant epistemology, a hypothesis has scientific meaning and validity to the extent that it is embedded in both a more abstract theory and a more concrete empirical manifestation.

B. THE CONTEXTUALIST POSITION

The contextualist position here proposed as a new descriptive and prescriptive epistemology for social psychology (and, indeed, for other scientific disciplines) incorporates two of logical empiricism's innovative premises while departing from it radically in two other regards. Contextualism and logical empiricism agree on one basic assumption about hypothesis generating and one about hypothesis testing: namely, that derivations of a hypothesis from broader theories should precede and guide a scientist's empirical observations and that empirical confrontation is essential for developing the hypothesis's scientific meaning and validity. The disagreements between logical empiricism and contextualism likewise involve one hypothesis-generating and one hypothesis-testing assumption. Departing radically from logical empiricism's tenet that some theories are right and others wrong, contextualism maintains that all theories (including even mutually contradictory ones) are right. Departing from the logical empiricist position that the empirical confrontation is a test of whether a given theory is correct (or better, in the method of strong inference, which of several opposed theories is correct and which wrong), contextualism asserts rather that empirical confrontation is a discovery process to make clear the meaning of the hypothesis, disclosing its hidden assumptions and thus clarifying circumstances under which the hypothesis is true and those under which it is false.

As regards the first of these innovative positions, that all hypotheses are true, contextualism maintains that a theory (like knowledge on any other level) is an oversimplified and distorted representation of any situation. It can be a brilliant cost-effective representation in certain contexts and dangerously misleading for others. Because all hypotheses are true, all are false. A hypothesis or its contradictory is each adequately true in a few appropriate contexts and each is dangerously false in many others. Contextualism's second disagreement with logical empiricism is its regarding empirical confrontation, not as a test to determine whether the hypothesis is true or not, but rather as a continuing discovery

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process to disclose the hypothesis's full meaning by revealing its hidden assumptions and so specifying in which contexts its misrepresentations are tolerable and in which seriously misleading. By an adequately designed empirical program, the social psychologist can ascertain the theory's pattern of adequacy over a range of contexts, elaborating its subtleties to provide insight into the conditions that determine when a theory provides powerful guidance and when it misleads.

That the contextualist metatheory includes a coherent bundle of interrelated insights increases the richness of its implications but raises problems of nomenclature. We have successively called the position *interactionism*, *transactionism*, *constructionism*, *constructivism*, and now *contextualism*. Each term has focused on a different emphasis of the approach. For example, the meaning of a theory develops in "interaction" with empirical observation, one [constructs] rather than tests theories through empirical confrontation, and any theory is true in some "contexts" but not in others. The name changes have been carried out, not so much because the earlier terms are inappropriate or because we wished to present a moving target to our enemies, but rather to avoid confusion with partially related positions as when we switch here to *contextualism* from our previous term *constructivism* (McGuire, 1980) to avoid confusion with Vladimir Tatlin's *constructivism* movement (Milner, 1980) in abstract art or, closer to social psychology, to Holzkamp's (1970, 1972) *Konstruktivismus* or Swanson's (1981) *constructivist* formulation. The fullness of the contextualist approach which makes any simple label too narrow also gives the position a rich set of implications for the process and product of social psychological research. In the remainder of this chapter, these implications are described, first for the process of developing psychological theory and then as regards the product, the theories that emerge from the process.

III. Psychology as Process: The Developing of Theoretical Knowledge

Psychology has dual aspects of becoming and being, process and product, the process of developing knowledge and the knowledge product that results. The research psychologist is more preoccupied with the process while such interest as the lay person develops for the field is focused mainly on the product. This divergence of interests results in misunderstandings illustrated by the classroom conflict with the psychologist-teacher on one side spending a great deal of time discussing the methods from which findings emerge and arguing that the meaning of findings cannot be grasped without an appreciation of the investigative processes that yielded them. On the other hand the lay person-student wants to hear more about whatever body of knowledge psychology has produced and

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