

Critical Study

The Generalizability of Critical Thinking: Multiple Perspectives on an Educational Ideal edited by Stephen P. Norris

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This collection of fourteen papers grew out of a conference on the generalizability of critical thinking (CT) held at Memorial University of Newfoundland in 1989. Stephen Norris has here brought together some of the best-known and most influential writers in the area of CT to produce the first book devoted exclusively to an examination of the generalizability question. It is an important and welcome book. Only four of the papers are published elsewhere, all with modifications. All of the papers are of a high standard in my estimation and there is none of the repetitiveness one tends to find in volumes of collected papers. With contributions from philosophers and psychologists, the papers together offer a good representative display of the range of philosophical, psychological, and educational issues which have coalesced over the years around the matter of generalizability. A number of papers broaden the vistas further through their treatment of novel or hitherto underdeveloped aspects of the question. Noteworthy as well is the variety of formulations of "generalizability" which reveals quite comprehensively how the multifaceted character of "the" generalizability

question is tied to differing conceptions and formulations of the nature of CT and its components. The book has an Introduction by the editor and is followed by three Sections: I) Clarifications and Directions for Research, II) Defenses of Generalizability, and III) Challenges to Generalizability.

I cannot here review each of the papers to the extent they deserve and this primarily because of competence. One undertakes a review of fourteen scholarly papers from two different disciplines, and from such a variety of perspectives, at one's own peril. Despite my best efforts, intentions, and the usual constraints, some of the contributors will perhaps feel somewhat short-changed. However, in light of the merit of these papers, and in an effort to set out the multiple dimensions of the generalizability issue as represented in the book, I will attempt here to outline for the potential reader of this book their respective approaches and positions and highlight what I take to be some of their major claims and contributions. My classification and arrangement of these papers differs from the order in which they appear in the book.

The papers by Robert Ennis ("The Degree to Which Critical Thinking is Subject Specific: Clarification and Needed Research") and Ralph Johnson ("The Problem of Defining Critical Thinking") both provide important critical reviews of the state of the art as they see it. Ennis' paper gives a comprehensive account of the

ways in which positions on the generalizability question impact on educational practices and policies of teaching and testing for CT and it provides sufficient recommendations for directions of future philosophical and empirical work in the field to keep philosophers and psychologists busy for quite some time. After outlining the characteristics of the four major approaches to the teaching of CT—General, Infusion, Immersion, Mixed—the paper turns to a consideration of the subject-specificity of CT as one of the central questions underlying the issue of the validity of any particular pedagogical approach. Ennis provides a valuable identification of three versions of the thesis of subject-specificity—domain specificity as an empirical thesis, epistemological subject specificity, conceptual subject specificity—and critically examines the strengths and weaknesses of their respective claims in terms of internal coherence, empirical support and educational implication.

More so than with any of the other contributions—with the possible exceptions of those by Jane Roland Martin and Stephen Norris—Ralph Johnson's treatment of the generalizability question is finely attuned to the logically prior issue of what "CT" is to mean. As Johnson points out, while "generalizable" itself requires careful definition within a framework of terms differentiating "general" from "generalizable", "generalizability" from "transferability", and "generality" from "universality", the difficulty with defining "CT" is compounded by the lack of any real consensus on what precisely it refers to and how it is to be differentiated from a number of related terms and references. This latter claim is well illustrated within a critical review of the stipulative definitions of "CT", and the respective theories in which these definitions are embedded, as developed by Ennis, Paul, McPeck, Siegel, and Lipman. Johnson contends that a common underlying source of the difficulties besetting these accounts rests in their inability to

adequately address and resolve what is termed "the network problem" and "the scope problem" (p.41). The former calls for a clear identification of where it is that "CT" stands with reference to such related abilities or terms as problem solving, decision-making, rationality, metacognition. The latter correlative problem is one of delineating the range of items to be included as a proper subset of CT. Is CT, for example, to extend beyond thinking and belief to encompass the realm of action? (Assuming that thinking can coherently be taken to be somehow distinct from action, Johnson gives the somewhat unusual answer that CT should not be so understood.) Does/should CT include a moral dimension and on what grounds? Johnson's criticisms are in my view fundamental and central ones: none of the theoretically embedded definitions of "CT" provided by the above "Group of Five" are able to capture the force of the term "critical" and none of them is able to adequately identify what precisely it is about some instance or episode of thinking that makes it "critical" thinking and not some other kind of thinking such as "rational" or "higher-order" thinking.

Equally noteworthy about this paper is its attempt to articulate the primacy of the social dimension of CT in a way which challenges some of the Group of Five's residual Cartesian ideals. The reader may want to see in this regard the papers by Blatz and Martin which offer their own corroborating extensions of this primacy. Johnson argues that such criteria of CT as Lipman's "self-correctiveness" over-emphasize the significance and role of the individual thinker and occlude the recognition that such criteria, when held as criteria for "CT", are originally embedded within the methods, procedures and ideals of a community to which the individual submits his/her thought and work for validation and criticism. The individual's self-corrections, like his/her self-ascriptions, do not constitute the final authority on the

matter of "criticalness". One of the important consequences which Johnson draws from his thesis of the primacy of the communitarian character of CT is the seldom-recognized virtue of being able to withstand criticism from one's community of fellow practitioners. The capacity "to take hostile, not just friendly, fire ... is an acid test for a critical thinker" (p.51).

Jane Roland Martin's paper ("Critical Thinking for a Humane World") is the only other paper which falls into the category of critical reviews of the state of the art. Rather than targeting individual writers or theories, however, Martin offers what I read as an over-all diagnosis of the condition of the soul inhabited by that state. I found her paper to be one of the few papers in this collection which raises, in a sustained and dialectical way, the very question itself of the validity and justification of CT as an educational ideal. Martin's approach to the generalizability issue is through the question of whether "CT", as we have it variously formulated at present, should be posited as a general-qua-universal ideal of education—i.e., as an ideal which, if itself justifiable, would underwrite the teaching of some determinate set of skills and dispositions to one and all. Martin argues that CT *can* be such an ideal. But there are conditions. One of these is that our conceptions and practices of CT not allow thinking to be reduced to an abstract and intellectualist mode of thought. Within such a mode, the concretely practical life-problems of men and women become transformed into simply intellectually satisfying academic pursuits or into objects of study for a calculus and technology of strategic action. Martin suggests that while such prevalently-held criteria and ideals of CT as personal distance from the object of study, the suspension of belief, interest, sympathy and intimacy in relation to one's subject matter, may be countenanced by our currently dominant metascientific theories, they are a priori givens neither within science nor within the rational pursuit of

our everyday activities. Martin illustrates other paradigms and styles of inquiry which, while embracing such "subjective" or "feminine" ideals as care, concern, and connection, do not sacrifice the rigour and the seriousness we expect from genuinely "critical" thinking. The challenge Martin poses is one of coming to recognize that the realities of friendship and love, of feeling and relationship, and the uniqueness and complexity of individuals, situations and events, can function as "ingredients of discovery" rather than as indicators of the demise of objectivity (p.168). Martin eloquently develops her case that our attempts to design a conception of CT which is genuinely committed to "liberation and empowerment" must first confront and break down the gender barrier with its attendant constructed oppositions between reason and feeling, subjectivity and objectivity, mind and body, self and other, the private and the public, masculine and feminine, theory and practice. In the latter part of the paper, Martin focuses directly on the last opposition. Her account sensitively reconstructs some of the ways in which spectatorship is built into the curriculum of a liberal education and examines ways in which the educational ideal of an integration of thought and action could serve as a justifiable general ideal for CT.

Two other philosophical papers ask whether a common epistemology could be formally applicable to CT across the various domains of its expression. Siegel's paper ("The Generalizability of Critical Thinking Skills, Dispositions, and Epistemology") argues that there indeed is a unitary and fully generalizable epistemology underlying the variety of different criteria of reason assessment we presently have. Whatever be the variations in what counts as a good reason, Siegel argues, all good reasons share the same epistemic feature of providing warrant to the claims for which they serve as reasons (p.102). Reconstructing this epistemology, Siegel articulates three constitutive features of

such an epistemology: 1) a radically non-epistemic conception of truth, 2) a rejection of relativism and the endorsement of an absolutism with respect to the rationality of reasons and belief, and 3) an acceptance of fallibilism. Siegel develops this account in explicit opposition to the view that different fields possess their own distinctive epistemologies—a view which is often taken to follow from the thesis of interfield variation in criteria of reason assessment. Siegel argues that even if this thesis were true, all it would coherently mean is that different kinds of claims require different kinds of evidence for their support. The reason for Siegel why the thesis is actually false is because there simply is no strict and systematic correspondence between "field" and type of criteria of reason assessment: we find the same criteria operative in different fields and we find a variety of different criteria operative within the same field.

A paper closely related to Siegel's orientation is Sharon Bailin's ("Discovery, Justification, and the Generalizability Question"). She too focuses on an understanding of the epistemology operative within CT, and she too contends that this component, properly understood, is generalizable. Bailin argues that the current preoccupation in the CT literature with skills, abilities, dispositions, and techniques, omits a recognition of the primary importance of an epistemological understanding of the ways in which the creative generation of ideas and solutions, and its constraint by disciplinary principles, rules and procedures, interact to define the structure of inquiry and to reveal the processes by which knowledge is developed and assessed. This epistemological understanding, for Bailin, is generalizable in the sense of being applicable within all disciplines as well as within the actual learning of any discipline (p. 95). The argument is developed within an interesting critique of claims John McPeck makes on the relationship between logic and creativity, and

between imagination and method, while relying on the distinction between the context of discovery and the context of justification. Bailin attempts to show that McPeck ends up misconstruing the nature of this distinction, and with it, the precise character of the interaction between the creative and the evaluative/critical components of CT which that distinction allows for.

Three other philosophers take a more specific approach in focusing on particular abilities or strategies as sub-components of CT. James Ryan ("Finding Generalizable Strategies in Scientific Theory Debates") develops a Kuhnian-inspired framework for the empirical investigation of the generalizability of scientific reasoning strategies. Positing as the units of analysis three "lines of reasoning" and their accompanying sets of strategies within scientific theory debate, Ryan examines their operation in the reasoning about graphics, causes and effects, and simplicity, which was displayed within the debate on the theory of continental drift. Ryan argues that neither the employed lines of reasoning nor their accompanying strategies are unique to geology but can be found to be operative within, and thus generalizable across, a variety of fields and everyday contexts (p.67).

J. Anthony Blair ("The Generalizability of Critical Thinking: The Evaluation of Sources") examines the generalizability of the abilities and dispositions required for the evaluation of the reliability and credibility of information sources. This subset of CT is taken to comprise the "lion's share" of CT (p.127). This view appears significantly less exaggerated within the context of recent work, cited by Blair, on the role within the justification of belief of our "epistemic dependence" on sources of information originating beyond our own individual observations and experience. Blair reviews a number of criteria governing the evaluation of different kinds of information sources and then turns to the question of the generalizability of some of the principles which are operative within

the evaluation of observation reports. The claim here is that while these principles can be said to be general in the sense of not being restricted in their applicability to specific kinds of observation-content, this is not the case with the actual application of these principles to specific observation reports. For such appraisal requires, as does the actual making of an accurate observation report, specific background knowledge of the type of situation in which the observation report is made (p.130). For Blair, both the claim on the generalizability of the principles, and the claim on the non-generalizability of the particulars of a situation are true "by definition" (p.129). Blair goes on to develop what I consider to be a genuinely incisive analysis of the logical and causal relationships between abilities and dispositions and he addresses in light of the analysis a number of important questions concerning the teaching for and the transferability of skills and dispositions of observation report assessment.

David Hitchcock ("Reasoning by Analogy: A General Theory") approaches CT through a focus on the structure of reasoning by analogy as a distinct form of argument, and develops and defends criteria for the evaluation of analogical inference. Hitchcock hypothesizes, however, that such criteria will accord with the criteria governing good inference in general. Analogical reasoning is thus examined as a specific case by which to test the thesis of epistemological subject-specificity. On the identification of analogical argument as "reason[ing] from an assumed likeness between a case of interest (the *target*) and one or more cases (the analog cases or *sources*) to some further resemblance" (p.109), Hitchcock finds that both the strategy involved and the criteria of evaluation remain common across the fields or contexts in which the arguments are made. Epistemological generalism is here considered to be in order so long as it is recognized that the actual employment

of the criteria within evaluation of an analogical inference will require a knowledge of the field within which the subject matter of the argument belongs.

Two of the most prominent supporters of a non-generalizability position, John McPeck and Charles Blatz, provide respectively a re-examination of the issue and an application of the position to the problem of CT testing. McPeck ("Thoughts on Subject Specificity") reviews his position in the light of empirical research on the problem of transfer, and responds to criticisms of his epistemological thesis of subject-specificity as raised by Ennis' paper for this volume and in an earlier version of the paper. In responding to Ennis' charge that his account of the field-specific nature of CT leaves the term "field" unacceptably vague, McPeck urges us to recognize that the lack of precise boundaries characterizing the term "field", and with it, such terms as "general thinking skill" and "critical thinking skill", is not necessarily the consequence of inadequate definition or imprecise theorizing. McPeck draws our attention here to what I believe is an important consideration when examining our concepts and definitions of terms. McPeck points out that what is often taken to be the "vagueness" of a term is actually but a reflection of the structurally open-ended character of most of the terms and expressions within a language. Rather than being seen as a weakness of language, this feature of "the plasticity of language itself", as McPeck terms it, should be recognized as a functioning strength of the language (p.199). Reminding us of Wittgenstein's notion of meaning-as-use, McPeck argues that an awareness of the variety of contexts and paradigms of use through which a term gains its sense is of particular importance in being able to sight the variety of different forms of CT together with the respective criteria of application and assessment characterizing these forms. McPeck's paper goes on to critically identify a common inaccurate construal of the point and direc-

tion of the question concerning cognitive transferability. His review of some of the literature on transfer leads him to conclude that his position on "general reasoning skills", together with his account of the significance of background knowledge, remain well corroborated by the empirical research.

Charles Blatz ("Contextual Limits on Reasoning and Testing for Critical Thinking") stays with his earlier definition of CT as "the deliberate pursuit of well-supported beliefs, decisions, plans and actions" (p.208) and draws out the consequences of his analysis for the question of the validity of standardized testing for CT. Blatz makes what is for this latter purpose a central distinction between first, the generality (i.e., applicability) of principles of logical reasoning and patterns of inquiry across contexts or domains, and second, the generality across contexts of the abilities and dispositions to think and operate in ways which fit or instantiate the former abstract patterns (p.217). Blatz maintains that we can acknowledge the generality of the former but need to recognize that at the latter actually operational level of self-directed and self-moderated thinking and reasoning, the abilities and dispositions involved in CT are highly context bound (p.207). Understood in these terms, Blatz presents his position as a partial form of the epistemological version of subject-specificity. "Communities of discussion" and "informational contexts" are developed as two contextualizing factors functioning to structure variance in the expectations and standards critical thinkers are accountable for meeting. Differences in the former are revealed within background assumptions concerning the categories and behavior of existents together with accepted standard procedures for inquiry and for the translation of determined facts into practice and policy. Blatz maintains that it is such an agreement on questions, problems, assumptions and methodological procedures which, while open to change and refine-

ment, set at any given time specific logical, conceptual, and normative expectations for CT. He proceeds to persuasively show that this contextualizing factor, together with that of "informational context", which specifies what is to count as common knowledge, and what level of knowledge is to comprise "mastery" within the community, are factors which cannot legitimately be omitted in constructing and evaluating CT tests for they are constitutive features of CT itself. On this account, if a CT test is to possess construct validity, then it will be a test which reveals the presence and strength of abilities and dispositions to think in accordance with the expectations held by a given community of discussion and a given informational context (p.217).

Three of the papers in the volume are by psychologists. Two of these investigate the analysis and interpretation of written texts as the locus or site of CT ability. Linda Phillips ("The Generalizability of Self-Regulatory Thinking Strategies") investigates certain thinking and problem-solving strategies which proficient readers actively use in directing and evaluating their reading—i.e., "rebinding", "shifting focus", "analyzing alternatives"—and which can themselves be evaluated for their productivity and strength by means of epistemological criteria proffered within a number of extant models of CT. Reporting on her own research, Phillips finds that highly proficient young readers tend to use more often than low proficiency young readers the same productive reading/thinking strategies used by skilled adult readers. Interestingly, her findings also suggest that background familiarity with the topic or content of a narrative text does not possess the kind of significance for subjects' reading/thinking abilities we would expect on a theory of CT such as McPeck's (p.148). Such empirical evidence for the generalizability of strategy-use from young readers to adult readers, together with Phillips' examination of other research indicating the generalizabil-

ity of strategies across certain subjects (narrative reading and mathematics problem solving), and across certain text genres (narrative reading and expository reading of science), challenges the view that general strategies and principles are in themselves only weak and trite factors in accounting for CT abilities.

David Olson's longstanding interest in the nature and development of literacy is brought to bear on the generalizability issue in a paper co-authored with Nandita Babu ("Critical Thinking as Critical Discourse"). "CT" for the authors is taken to be "essentially synonymous" with literacy: "[t]he interpretation, analysis and criticism of written texts is what critical thinking is and what it is for." (p.184). Rejecting the explanatory value of such generalist terms as "abilities", "traits", "dispositions" for a psychology and pedagogy of CT, the authors recommend that both tasks be pursued in light of an analysis of the development of certain concepts and ideas operative within people's actual ways of representing situations, tasks and problems. On this model, these concepts are displayed within such speech act and mental state terms as "mean", "intend", "infer", "assume", "know". Such terms are taken to be essential in interpreting and characterizing the truth, warrant, and propositional attitude of a speaker to his/her utterance. The metacognitive competence of determining whether a speaker believes a statement, or knows it, or has inferred or assumed it, is basic within CT ability. And it is a competence which requires an understanding of the senses and specific roles of speech act and mental state terminology as embedded within the conventions of literate discourse. The authors contend that it is at this level of the acquisition and use of these particular concepts and terms, rather than at the level of general "all-purpose skills", that the generalizability question is able to be adequately addressed. The authors report on research conducted by themselves and by others which illustrates and supports

this view. A central claim on the generalizability issue here is that while the language of these terms has a general applicability across fields, the correct determination of the role of the propositional content of a statement as being, say, that of an assumption rather than an inference, requires disciplinary-specific knowledge (p.186).

Robert Lockhart ("The Role of Conceptual Access in the Transfer of Thinking Skills") suggests that the complex question of whether CT can be taught as a generalizable skill could profitably be approached via a consideration of a simpler case: memory. He claims that while some research indicates skilled remembering to be highly content bound, we should not infer from this that remembering cannot be taught as a generalizable skill. Certain mnemonic techniques, based on general principles of memory processes are successful. One of these principles is that the content to be remembered be connected with and structured by the elements of the rememberer's already existing knowledge (p.55). Whether a particular form of skilled remembering is readily transferable or remains content bound thus depends upon the degree to which the knowledge required for the structuring of the novel material is itself specialized and content specific (*ibid.*). In the case of any application of a mnemonic technique, however, skilled remembering is a result of a form of training which enables the data of experience to connect with and "trigger" those knowledge structures which are themselves able to effectively organize incoming information (*ibid.*). One of the lessons here is that remembering can be taught as a generalizable skill despite the fact that skilled remembering in one content area may not readily transfer to another content area. Lockhart importantly points out that the analogy to the teaching of CT should not be drawn as a recommendation to adopt the strategy of first teaching general rules and principles, and then adding on content specific skills. For this strategy

omits a recognition of the role of "abductive" memory. The term is borrowed from Pierce and here refers to this particular form of memory as a movement from given data to those theoretical structures (i.e., concepts, inference schema) required for the structuring of data and the resolution of a problem (p.57). What a recognition of the role of abductive memory and abductive access reveals is that the generalizability of CT is not simply a matter of the generality of rules or schema of thought, but involves as well the factors controlling access to those rules. This access relation between content and schema, captured by the term "abductive remembering", is illustrated within an examination of related relevant research. One of the conclusions reached by Lockhart is that actual applications of general rules and schemas of CT may remain content bound due to the fact that abductive access to the rules is itself bound by highly specialized knowledge. Hence, no amount of practice with a general rule can guarantee its access within the context of a particular problem (p.64).

While Stephen Norris' paper ("Introduction: The Generalizability Question") opens this collection, I believe its central message is an appropriate one to identify in closing. Norris develops and defends the view that neither the philosopher's work of conceptual analysis nor the empirical research of the psychologist is by itself sufficient for answering questions concerning the meaning and the generalizability of CT. The need for collaborative inquiry is for Norris especially pronounced within the question of what "CT" means and how we are to go about establishing who or what the term "critical thinker" is to refer to. Norris argues innovatively for this view through an analysis of the semantics of the term "critical thinker". Employing a categorization system which differentiates between nominal kind terms, strict natural kind terms, and nonstrict natural kind terms, Norris concludes that "critical thinker" should be taken as an instance of

the third category (p.13). As such, its meaning, together with the matter of its generalizability, are to be established not only through conceptual analysis, convention or stipulative definition, but as well through empirical research into the possibility that the term denotes an "underlying trait" shared by all referents of the term. While with nominal kind terms the properties which are conventionally set out in the intension of the term enable a determination of the term's extension, such that if the intension of a term were to be altered within a given linguistic community a change in that term's extension would be entailed, this is not the case with a strict natural kind term. For the determination of the extension of such a term is here not a matter of conventional agreement on which properties are to comprise the term's intension, but is rather an empirical matter of determining those natural traits which are shared by all instances of the term and which underly their varying manifestations (p.8). Norris emphasizes that this is a task for science, not philosophy. "Critical thinker", however, should be seen as a non-strict natural kind, the meaning of which is to be determined both through a community's value-based negotiations and agreement on what should comprise the qualities and characteristics of a critical thinker, as well as through empirical investigation into the underlying trait(s) and powers which are realized/realizable within the members of the class. Norris goes on to attempt to locate the definitions of "CT" given by Ennis, Siegel, McPeck, and Norris (previously) within this categorization system and outlines some of the positive and negative consequences he considers to follow from these definitions for the generalizability issue.

For both the scholar in this area, and for the more general student and reader interested in CT and the dimensions of its generalizability/non-generalizability, this is a seminal book which succeeds in gathering and addressing many of the cur-

rently central questions surrounding this issue and one which illustrates some of the productive approaches presently being pursued within their investigation.

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