

**Karl Maton, Knowledge and Knowers: Towards a realist sociology of education**

London, Routledge, 2014

*Educational Philosophy and Theory* 48(5):531–535

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Though it is widely accepted that knowledge is of critical significance in modern society and central to educational research, theories of knowledge practice are still underdeveloped. Knowledge practice is often either reduced to the cognition process from a psychological perspective or to power relations from a social perspective, but is seldom treated as an object of serious study with its own organizing principles and inner properties. Karl Maton's book *Knowledge and Knowers: towards a Realist Sociology of Education* provides a cutting-edge framework of knowledge practices and reveals the underlying principles and structures of both knowledge and knowers from a social realist perspective. The book consists of four parts: Chapter 1 is an introduction, Chapters 2 to 5 focus on legitimation and specialization of the framework, Chapters 6 to 9 focus on semantics and cosmology, and Chapter 10 elaborates on the evolution of the framework.

Chapter 1 provides the rationale and outline of the book. According to Maton, there is a knowledge paradox in contemporary intellectual field, which is characterized by the recognition of the centrality of knowledge in modern society and the lack of an adequate theory of knowledge. This is attributed to methodological essentialism that aims at establishing universal demarcation criteria between knowledge and non-knowledge rather than exploring the inner properties of knowledge itself. Maton

argues that in educational research this paradox is manifested in the form of knowledge blindness. Social realism, which treats knowledge as social and possessing its own properties, powers, and organizing principles, is adopted as the appropriate perspective to overcome this dilemma. Legitimation Code Theory (LCT) is proposed as the conceptual toolkit for the analysis of specific knowledge practices, and the five dimensions (specialization, semantics, autonomy, density, and temporality) of LCT are briefly introduced, though only the first two are discussed in detail in this book.

Chapter 2 explores the languages of legitimation, the core of LCT. Languages of legitimation are defined as claims of legitimacy made by actors for the organizing principles embodied by their practices in their struggles for the status and resources at stake within social fields of practices, which propose a ruler for participation and criteria for the measurement of achievements in a social field. The organizing principles of the actors' practices are conceptualized as legitimation codes, one of which is specialization code. Specialization is said to comprise a dimension of epistemic relation between the practices and the object of study and a dimension of social relation between practices and the subject, the varying classification and framing strengths of which generate specific specialization codes. In terms of specialization, British cultural studies is found to feature a social knower code of legitimation that highlights the voice of working-class membership of the knower as the focus and basis of their knowledge claims, which leads to the proliferation of new individual stances and the fragmentation of the field.

Chapter 3 elaborates the legitimation device in general and the Epistemic-Pedagogic Device (EPD) in particular. Legitimation device is defined as the means whereby the organizing principles of the actors' practices are created, maintained, transformed, and changed, which establishes the relative values of specific legitimation codes and the basis of achievement in and relational structure of social fields. The part of the legitimation device that underlies the specialization codes is called EPD, which comprises fields of knowledge production, recontextualization, and reproduction that are respectively regulated by epistemic, recontextualizing and evaluative logics, whereas distributive logics is said to specialize the forms of knowledge practices of the whole arena created by the EPD. EPD is conceptualized as the focus of symbolic dominance and resistance, struggle and negotiation. According to Maton, the breaks and continuities in intellectual fields are manifestations of the struggles over the control of the EPD and the languages of legitimation of the specific fields, as is illustrated by the struggle for different knower codes in social sciences and the continuity of the knowledge code in mathematics.

Chapter 4 discusses knowledge–knower structures. It is proposed that social fields be conceived as comprising both a knowledge structure and a knower structure (hence knowledge–knower structure), both of which can either be hierarchical or horizontal. A hierarchical structure is defined as principled and layered organization and development through integration of lower level knowledges or knower dispositions, whereas a horizontal structure as strong segmentation of mutually incompatible knowledges or knower dispositions. The specific configurations of knowledge–knower structures are said to be determined by the working of the specialization codes. Science is found to feature a hierarchical knowledge structure and a horizontal knower structure with an

underlying knowledge code, whereas humanities a horizontal knowledge structure and a hierarchical knower structure with an underlying knower code. The debate between scientific and humanist cultures is found to be a clash between knowledge and knower codes, and the unpopularity of school music is explained by the elite code qualification that emphasizes hierarchical organization of both knowledge and knower structures.

Chapter 5 explores the knower structures of social practice. According to Maton, in contrast to the verticality and epistemic relations of knowledge structures, knower structures are characterized by sociality (the degree of integration of knower dispositions) and social relations (classification and framing of subjects of study and their dispositions). A knower structure is defined by the aggregation of legitimate knowers with a privileged gaze (i.e. a privileged type of dispositions), which can either be born, social, cultivated, or trained, whereas the sociality and capacity of growth of the knower structure is said to be shaped by the strength of the social relations of the privileged gaze that sets restrictions on the membership of and ascension through the hierarchy of the structure. It is argued that social fields with a horizontal knowledge structure such as arts and humanities can progress vertically through their knower structures depending on the nature of their gazes, and that the critique of the canonic tradition in arts and humanities is based on a cultivated rather than a social gaze.

Chapter 6 explores semantic gravity, one of the two principles of the semantics dimension of LCT. Semantic gravity is defined as the degree of the context dependence of meaning in social practices. According to Maton, semantic gravity applies to all three fields of the EPD and varies inversely with the verticality of knowledge structures. The mastery of semantic gravity is considered as a necessary condition for cumulative knowledge building, and inadequate treatment of semantic gravity is held responsible for the segmentalism in intellectual or educational fields, as is shown by the failure to integrate existing knowledge in the 'authentic' learning pedagogy prevalent in professional education and in secondary school English pedagogy. It is argued that as mastery of the vast range of semantic gravity is not equally available to everyone, the discovery of ways to maximize the semantic range of everyone may be the key to enabling a more inclusive and farsighted society.

Chapter 7 discusses semantic density and conditions for cumulative knowledge building. Semantic density is defined as the degree of condensation of meaning within sociocultural practices. According to Maton, semantic density and gravity apply to both internal and external relations of social fields of practice, and their relative strengths can be varied independently to generate a range of semantic codes. The semantic profiles of knowledge practices are described in terms of their positions on a scale of relative strengths and the semantic range between their highest and lowest strengths. It is argued that cumulative modality of knowledge building practices is characterized by an internal semantic code with weak gravity and strong density and an external semantic code with strong gravity and weak density embedded in a knowledge code, whereas a segmented modality of knowledge building is characterized by opposite internal and external semantic codes embedded in a knower code.

Chapter 8 shifts focus to cosmologies. Cosmologies are defined as constitutive features of social fields that underlie the ways actors and practices are differentially char-

acterized and valued, and are held responsible for providing the organizing principles of a social field of practices. A cosmology is said to internally shape the hierarchization of actors and practices through clustering actors' stances so that they can be arranged into constellations, and externally imbue constellations with meanings beyond the stances and charges the meanings condensed in the practices with negative or positive valuations. The organizing principles of a cosmology are revealed through the analysis of specialization and semantic codes of the field. It is argued that the valuation of student-centered and teacher-centered instructions in current educational research is largely dominated by axiological cosmologies where stances are measured in terms of their capacity to place knowers in good light rather than by epistemological cosmologies that focus on the explanatory power of the theory, which is held responsible for the prevalent segmentalism in educational research.

Chapter 9 provides a more detailed model of specialization for exploring the minute differences in knowledge practices. Epistemic relations is divided into ontic relations between knowledge and the objects of study and discursive relations between knowledge and other knowledge systems in the field, the varying classification and framing strengths of which result in four insights. Social relations are further divided into subjective relations between knowledge practices and kinds of the knowers, and interactional relations between knowledge and knowing practices, the varying classification and framing strengths of which result in four gazes. The insights of economics, linguistics, and physics at different stages of their development are analyzed, and a gaze shift is found during the development of cultural studies. The specific configuration of each of the four types of relations is called lens, which constitutes the third level of analysis, as is illustrated by the shift from an ontic lens to a discursive lens during the 'linguistic turn' as the basis of the cultivated knower code in many disciplines of social sciences and humanities. A model of specialization with three levels of analysis (code, gaze/insight, and lens) is thus established.

Chapter 10 explores the evolution path of LCT and the stimuli for current and future directions. Among the diverse influences on its evolution, Bourdieu's field theory and Bernstein's code theory are mentioned as the most important. It is maintained that LCT integrates the objects of study provided by field theory such as degrees of autonomy of social fields, organizing principles of practices, cultural capitals, and habitus, and inherits and extends Bernstein's foundational framework by providing intricate analytic tools and more in-depth and fine-grained accounts of the knowledge building practices. Factors recognized as the stimuli for current and future directions of LCT include new questions raised by the theory, fast-growing range of substantive studies that embraces evermore social fields both within and beyond education, and close encounter and complementarity with other approaches and disciplines such as systemic functional linguistics, post-Vygotskian activity theory, psychology, and realist philosophy.

The book is a landmark in the evolution of the social realist approach of sociology of education. Theoretically, it integrates the theories of Bernstein and Bourdieu and extending them by uncovering the principles that underlie the social struggle for cultural capital, developing a fine-grained framework to analyze knowledge practices, and foregrounding the importance of social relations and knower structures that lack in

the frameworks of its forerunners. Practically, its insights into the working of knowledge practices help researchers and practitioners to realize the inner properties of knowledge practices, and its revelation of the struggle for social status and power through the control over languages of legitimation offers critical insights into the unequal distribution of cultural capital and provides ways for better achieving social equality and justice.

There is also room for further improvement. The logics of the EPD need further explanation, and the other three dimensions (autonomy, density, and temporality) of LCT require further development. Translation device could have been provided to translate the language of sociology into that of social semiotics so that his analytical tools would be more operable and his analysis and findings more convincing. Another drawback is its obscurity due to the large number of new terms and multiple theories. It would be helpful if the author provided a glossary of terms and added more annotations to the theories.

The book provides valuable resources for a wide range of readers. It offers education and sociology researchers a useful framework to analyze knowledge building practices, proffers inspirations for practitioners to reflect on education reform, and offers important implications for teachers to provide learners more encouraging environment and greater opportunities for cumulative knowledge-learning. Thus, the book is an essential reading for all serious scholars and practitioners of education and sociology.

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<http://dx.doi.org/10.1080/00131857.2015.1104888>