Epistemology and ontology in SL research

Graham Crookes

University of Hawai'i

<crookes@hawaii.edu>

word count 3799

reference word count 555

The Encyclopedia of Applied Linguistics (ed. L. Ortega). 2012.

1) Introduction

Since the 19th century, central concepts related to knowledge, of interest to philosophers, educators, and scientists, have been analyzed using a small group of primary categories; the core three are metaphysics, epistemology, and axiology. Within these, the large area of epistemology and a subcategory within metaphysics, namely ontology, are sometimes paired as terms of analysis to indicate important positions within the domain of research methodology that might be called the philosophy of research, and also as the basis for understanding positions in politics, pedagogy, and other similar areas. The two terms are often used together in introductory or preliminary discussions of research positions; SL authors often reference the co-authored works of Guba & Lincoln (e.g. 1994) as major sources for this. The terms are also of relevance to second language teachers and other professionals in the broad field of applied linguistics. In this chapter I will first define the terms ontology and epistemology as they occur within their home base of philosophy. then take up some points concerning their use in SL research as a practice intended to result in SL-related knowledge. Many of the issues involved have been in existence as long as humans have philosophized, theorized, and researched. It also seems that some of the same issues play themselves out repeatedly in different but related areas of our field. Thus the social nature of knowledge, the role of interpretation, the degree to which knowledge is well-founded, knowledge of language itself and SL professionals' knowledge, all turn on epistemological and ontological matters.

2) Ontology within Metaphysics

Metaphysics is the study of the most abstract, potentially universal, conceptions; philosophical systematizers conventionally break it into three parts: cosmology, theology, and ontology — the nature of what is. This study has not always been valued. Of the area of metaphysics as a whole, Hume (1748 [2004, p. 107]) wrote, "Commit it then to the flames: for it can contain nothing save sophistry and illusion", a position endorsed later by the logical positivists. In the present context, ontology is seen as relevant to an understanding of research procedures and products in general, because all scientific theories, and by implication, all research methodologies, have a metaphysics (Harré, 1985). That is to say, they all (explicitly or implicitly) take a position on the nature of the things to which they are referring, or the entities they are trying to identify or theorize, and the meanings of the basic concepts they are working with.

The use of the term or concept of ontology in research contexts is often related to whether researchers are trying to arrive at knowledge of an objective, real world, or obtain knowledge of entities that are conceived as not "given", that is, not independent of human action or of embeddedness in human culture. Attempts to deal with these matters have not been helped by the tendency to deal with them simplistically, with dichotomies being particularly pernicious. Thus if we say that there is a "real" world, the one apparently given to us by our senses, then the supposedly singular alternative position, once the first position has taken hold of the label "realist", is presumably "anti-realist". At this point those opposed to the first position are immediately backed into a corner by the "common-sense" question, "surely you are not saying that this world does not exist?". The response is to say, indeed, that is not what we are saying. But what is the position then? It is that the ontological nature of the objects of the research inquiry are much less well-grounded than might otherwise be thought; that they have an existence, yes, but it is one made relative by their ineluctable implicatedness in human existence. Discussions of this topic in SL context, and even in education contexts, have usually not been informed by a full awareness of the historical extent and diversity (beyond binaries) of the philosophical contexts involved.

Ontologies are often associated with one of three main schools of philosophical thought, namely idealism, realism, and pragmatism). Thus one can talk about an idealist ontology,

a realist ontology, or a pragmatist ontology (and of course, many variants or intermediate positions here). Similarly, ontological positions are referenced or specified in terms of other (grand) theories. In the past some spoke of a materialist (or dialectical materialist) ontology (Lenin, 1908, p. 57); equally well at the present time one can refer to a "leftist ontology" (Strathausen, 2009). Thus in ontological explorations in SL research contexts we are concerned with what we mean when we say that a theoretical concept in our area exists and when we are obliged to specify or investigate its nature (e.g., Al-Amoudi, 2010). This applies to rules, to the nature of the second language learner, to language, to the entities "acquired" in SLA processes, to learner identities, to cognitive structures, and so on. Perhaps the most important ontological question or area facing SL researchers is to what degree the objects of their investigation, most obviously language, are socially constituted. This question, for example, is tackled by Zuengler & Miller (2006), whose entire discussion of the difference between cognitive and sociocultural views of language in SLA is specified in terms of ontological perspectives. Furthermore, if one accepts that some concepts (or objects) under investigation are socially constructed, one can then subject the term 'society' itself to inspection. If a conflict theory of society is entertained, that means our basic understandings of language, or of the person, are themselves socially constructed in a contested manner. If a critical theory of society is to be engaged with, a critical ontology follows, in which the ontological status of a language, for example, might be seen as having, say, an inherently patriarchal or class character. Or for example, concerning discourse, it would be found to have a strong tendency to obscure (to the benefit of a ruling class) as opposed to be transparent, or to manifest understandings accompanying those of indigenous people or other oppressed groups in colonial or post-colonial social contexts (cf. Kincheloe, 2006). Finally here, note that though most ontologies refer to "substances", it is also become possible to refer to "process ontologies" (Thorne, 2005).

3) Epistemology

Epistemology is the domain of philosophy which concerns the sources and nature of knowledge. This chapter is concerned with research as a source of knowledge, though other sources are recognized in epistemological discussions. For example, in societies where particular forms of religion (particularly charismatic or fundamentalist) hold political power and strongly influence what passes for knowledge, revelation and authority are two such sources. Intuition is a source of knowledge that has been identified

even by some mainstream philosophers such as Kant. However, in secular societies, two sources are given general lip-service: reason — the exercise of rational judgment — and empirical research.

Scheffler's (1978) review of this area helps identify some subdomains within epistemology. He identifies the question 'what is knowledge?' as the primary focus of epistemology, but provides four other related questions:

> [Second,] the evaluative question: "What knowledge is most reliable or important?… [which] asks for a classification of sorts of knowing… The genetic question: "How does knowledge arise?" To answer this question is to give an account of the processes or mechanisms by which knowledge develops; it is, typically, to provide some model of the mind that may render learning processes intelligible. Fourthly, there is the methodological question: "How ought the search for knowledge be conducted?"… Fifthly… the pedagogical question: "How is knowledge best taught?" (p. 5).

Besides the matter of knowledge itself, SL specialists must concern themselves with sorts of *knowing*, an important area for us, reflecting our ontologies of language. The "genetic" question is equally important. Considering the genesis of knowledge, one epistemological position allows for innate knowledge of language, others dispute this or emphasize that knowledge comes about through learning. And as a consequence, arguments among those concerned with universal grammar based theories of SL acquisition are often framed using the term epistemology. Thus theories of learning in general or SL learning in particular, inherently important for the teacher and potentially important for the researcher (as a person engaged in learning about a phenomenon), come in here. As White (1998, pp. 3-4) says,

> That area of philosophy known as epistemology has been concerned with questions of how knowledge is acquired and the distinction between knowledge and belief. .... Questions about how we learn are closely related to these epistemological preoccupations and rest on them to a large extent. The scientific enterprise of learning theory rests on a variety of related epistemological positions and cannot be understood except in terms of them.

The fourth of Scheffler's questions raises the matter of the search for knowledge. This requires addressing both (a) the philosophy of scientific research methods and (b) the status of professional knowledge vis a vis scientific knowledge. Applied linguistics has certainly concerned itself with the first area in the past, and recently has begun to develop a literature in the second area.

After a period of struggle and confusion, the SL field seems willing now to encompass a plurality of research methods, with their diverse epistemological associations. This is consistent with general positions in educational and social science research (even including psychology) and is signaled by the increased acceptance and promotion of "multiple methods" (e.g., Cresswell & Clark, 2007. Nevertheless, substantial differences concerning epistemologies of inquiry persist. The most obvious one concerns the matter of interpretation. At one end of a spectrum of positions, interpretation is to be minimized through investigative practices which support objectivity (or intersubjective agreement), and to be corrected out of existence through, eventually, peer review and replication or disproof. Alternatively, interpretation can be seen as inherent to human perception, and a process without which there is no understanding in the first place; as crucial to the study of, in particular, social matters, so that informed and possibly guided subjectivity is actually the desired target. Although the position favoring interpretation still seems more radical (and this is because of the persistent dominance of "scientism" in popular culture), it has coexisted with the other extreme position within European philosophies since the earliest times (all the way back, that is, to ancient Greek philosophies; not to mention similar distinctions to be found in Chinese and Indian philosophical systems). Since SL research is an interdisciplinary project, we may see these different positions as reflecting allegiances to other SL-related disciplines, with some SL researchers orienting to cognitive science conceived of as objectivist and others orienting, say, to anthropology, with its longstanding interpretivist stance. (Or equally, in pursuit of historical awareness, we may come to see this as reflecting the *Methodenstreit* ('methods-debate') which engaged the social sciences in Europe shortly after their creation, during the late 19th century.)

Modern analytic philosophy has mostly presented epistemology as individualistic in nature, but in the last few decades a social epistemology has been developed. This is part of the coming together of philosophical and sociohistorical empirical studies of knowledge, following Bachelard (e.g., 1936; Tiles, 2005) and Kuhn. Social epistemology (as its name suggests) emphasizes studying the way knowledge arises from and is supported by social forces and practices. A critical spin on this was visible in sociological analyses of the history of science (e.g., Barnes, 1974) which brought out the role of power, or of socially-located perspective, or the influence of other theories (such as racist, eugenicist, or imperialist theories of humanity) in the development of ideas that were given (for a while) the backing of science. The European tradition in the history of

ideas (e.g., Canguilhem, 1988; directly following Bachelard) flowered in the work of Canguilhem's student Foucault, whose well-known theorizing of the inter-relationship of knowledge and power leads to a position summarized by philosopher of education Noddings: "Many philosophers today suggest we abandon traditional questions of epistemology, and describe truth locally, as a function of power or as an artifact of language and question the extent to which true statements can point to things outside language, while still being able to be truth-telling (or lying) within specific contexts" (Noddings, 1995, p. 105). Recent years have also seen the development of "standpoint epistemologists", of which feminist epistemology is the most well known. This position asserts that the inner view is more authentic, above objectivity; bias (reconceptualized as a standpoint) is unavoidable but the only way to avoid pernicious bias is to include the views of all interested parties in accounts and arguments, rather than attempt to screen them out. Finally here it may be noted that epistemology, historically, has tended to be descriptive, but it is possible to develop a prescriptive, or normative epistemology, by bringing in aspects of axiology (i.e., ethics). A normative social epistemology of research leads to the position that research knowledge must be useful, otherwise its conduct is in some sense unethical.

4) Theories of knowledge in mainstream and SL research; antifoundationalism dominant

Epistemology also encompasses the development of theories of knowledge, important (obviously) because knowledge is the product of research. These theories can be place on a spectrum between foundationalist and antifoundationalist poles; the latter pole has more recently come into a primary position. Foundationalism advances the position that truth claims can be based in some indubitable or self-justified beliefs. Logical positivism was a foundationalist enterprise, aimed at arriving at statements about reality that could be verified; its core position in this area was known as verificationism. Quine and Popper subjected this position to sustained critique, maintaining (successfully) that while normal methods of science can plausibly establish the falsity of general statements, they cannot establish the truth of such statements. In the absence of a verificationalist position (that of the logical positivists), a historical, or temporal, account of how knowledge has been arrived at is to be used to justify it. That is, we are persuaded of the plausibility of a statement, even one arrived at through quantitative procedures, through its support, which comes from the social processes of scientific reporting and judgment exercised through a public process of peer review and follow-up work.

It is valuable to trace this mainstream scientific position, of Popper, back a few steps. It is similar to that of the pragmatists, such as Peirce and Dewey (Hutcheon, 1995). Dewey's epistemology, like most of his work, reflects his interest in unifying dichotomies opened up by the two major philosophical schools of his time, idealism and empiricism. The first assumes that knowledge is of ideal forms; the latter that it is of the real world, to which we are assumed to have more or less direct access. Dewey based his position on our status as human beings in the real world, and indeed as beings subject to evolution. Thus for him, knowledge was only obtained through our action on the world, and in some sense subject to survival constraints (cf. Boyles, 2006).

> Emphasis on the reciprocity of theory and praxis, knowledge and action, facts and values, [and] follows from [a] post-Darwinian understanding of human experience, including cognition, as a developmental, historically contingent process. (Siegfried, 1995, p. 730)

Dewey's position also suggests a way to cut through the common theory-practice division: theoretical knowledge is that which is arrived at through practical inquiry (usually by teachers) when reflected upon and tested in practice.

Then just as language can be seen as having structure, but also as socially created and manifested, as individual but also social in nature, so can knowledge. Knowledge can be seen as knowing, and as itself a social practice rather than something individual. This is equivalent, in epistemology, to moving from an individualist, foundationalist epistemology, toward one which is more social and antifoundationalist. Besides Dewey, the influential work of Thomas Kuhn on the social dimensions of scientific theory test and support lent further support to the social, antifoundationalist position on knowledge, as did the philosophical work of Gadamer (e.g., 1960).

> Gadamer's view was that it is a mistake to think of knowledge (knowing-that, but also knowing-how) as something that occurs outside the traditions in which we are brought up and through which we are taught to see the world. Instead, we should see knowledge as something that occurs in our interaction with the world by means of these traditions.
>
> What Gadamer struggled against—and what Descartes and Hegel were struggling for—was the idea that there could be a pure standpoint, untainted by our traditions and our prejudices, from which any knowings-that could be had. … Gadamer denied that there was any such kind of pure knowledge. He argued forcefully that in order for there to be knowledge there had to be language, and that language always occurs in

> the context of traditions in which viewpoints develop, social relations form, and individual lives….. (May, 2000, p. 79)

This position emphasizes the importance of our own locally-situated, locally-developed knowledge, even in the generation of research-based knowledge. It also suggests the possibility that knowledge tends to be "interested", that is again, reflects the views, traditions, and standpoints of those who create it.

In due course, the understanding of knowledge as a social practice has joined with lines of influence deriving from socio-cultural theory and activity theory and has become more prominent in mainstream social science and in studies of language learning and teaching. Given the organizational locations of SL research and teaching, an interpretation made of this perspective by organizational theorists and knowledge utilization researchers ought to be useful. Orlikovski (2002, p. 249) refers to this position as

> a perspective on knowing in practice which highlights the essential role of human action in knowing how to get things done in complex organizational work. The perspective suggests that knowing is not a static, embedded capability or stable disposition of actors, but rather an ongoing social accomplishment, constituted and reconstituted as actors engage the world in practice.

Thus researchers' knowledge is not necessarily the knowledge of an individual scientist or researcher, but rather the knowing practices manifested by groups of scholars (and teacher-researchers) in social organizations under better or worse (emancipatory or oppressive) conditions.

5) The role of a constructivist epistemology in understanding how a SL researcher arrives at "knowledge"

A constructivist epistemology derives substantially from Kant, who rejected both the innate ideas view of rationalism and the position of the early empiricists (the 'blank slate' view of Locke). Kant's opinion was that we can never know the world in itself, only the world as it is constructed. Piaget developed Kant's position by saying that Kant was wrong in thinking of these structures as static and given. Like rationalists, Piaget assumed mechanisms of mind that make knowledge possible, but like empiricists, he theorized that organisms test their knowledge against the world of sensory experience (thus to some extent his is a non-foundational epistemology). The position that knowledge is constructed by learners and is not the result of passive reception now has produced several varieties of "constructivism".

Thus, we can talk about weak as well as strong constructivism. Then, much learning takes place in social interaction rather than just working with the environment, or "facts" alone, and this takes us to the Vygotskian variant—social constructivism. If we say "all knowledge is mediated by our cognitive structures and theories", we can go on to say (following Hegel: Westphal, 2003) that those structures are social and historical in nature; if we add the possibility that these are almost always accompanied by real-world cultural artifacts which play a crucial role in learning we are then in the realm of "activity theory" (a.k.a. sociocultural historical theory, with its own epistemological positions; see e.g., Thorne, 2005). Finally, radical constructivism emphasizes the way that a person's experienced world is what is arrived at through the process of knowing rather than the discovery of a pre-existing world). Most of these varieties of constructivism have had influence on second and foreign language teachers' understandings of how students learn (Reagan, 2002). They also apply to the researcher's discovery processes, a form or learning, within the social processes of science.

6) Knowledge of second or foreign languages and language teachers' knowledge

SL-researchers are of course quite familiar with the always-continuing debate concerning what knowledge of language really is; that is, answers to the question 'What does it mean to know a language, or an L2?'. In particular, in contradistinction to the early concern of epistemology with propositional knowledge, many SL researchers would accept that knowledge of a language includes "knowing how" (Ryle, 1949, p. 29; p. 38). In addition, this "know-how" pertains not just to the construction of grammatically correct sentences. It also involves knowledge that enables those sentences to function effectively when communicating within another culture. In which case, knowledge of language has to be encased within knowledge of a (second) culture (cf. Gadamer, 1960). This is knowledge also accessed and utilized by SL professionals in general, most obviously SL teachers. I conclude this chapter with a brief reference to the matter of teachers' knowledge, because many (though not all) SL researchers would regard L2 research as of limited worth if not contributing to the knowledge of L2 professionals. For this topic, on one hand we have in the SL domain, work on teachers' knowledge of SL research of (e.g., Bartels, 2005). We can assume that some of the knowledge Bartels identifies (formal knowledge of language, of SLA, and knowledge about applied linguistics) that derives from SL research is of a more or less propositional nature, and thus unproblematic. On the other

hand, we have work in mainstream education. Munby, Russell & Martin (e.g. 2001) have summarized characterizations of teachers' knowledge from 20 years' work in the area. These and other researchers of teachers' knowledge (including SL specialists) have noticed its sometimes tacit, knowledge-in-use character and suggest that it may be embodied in scripts, rules of practice, metaphors, narratives, cases, and have thus pointed out its situated, particularistic, and non-propositional nature (see Crookes, 2009). The transliteration of Ryle's dichotomy to the cognitive terms "declarative knowledge" and "procedural knowledge" is also relevant. It raises (once again) the matter of how formal, theoretical knowledge gets (or does *not* get) transformed into practice. The idea that knowledge of practice begins as declarative knowledge and when automatized becomes procedural knowledge, mentally encoded in a non-propositional form, provides another partially useful metaphor for understanding the difficulties implied by the theory-practice divide (though it suggests a fairly high level of ontological complexity). It has been suggested that the term "praxis" (theoretically-grounded knowledge, reflected on) overcomes this problem (cf Pennycook, 2004). It is thus not possible to bring this discussion of extremely long-standing matters to a simple conclusion. Rather, it seems important to note that the status of the final destination of SL research-based knowledge (the SL professional) is epistemologically and ontologically unclear at the present time, a matter clearly likely to justify further investigation and analysis of SL ontologies and epistemologies.

3,799 not counting title; plus
references (555 words; 30 entries)

References

Al-Amoudi, I. (2010). Immanent non-algorithmic rules: an ontological study of social rules. *Journal for the Theory of Social Behavior, 40*(3), 289-313.

Bachelard, G. (1936/1984). *The new scientific spirit (*trans. A. Goldhammer). Boston, MA: Beacon Press.

Barnes, B. (1974). *Interests and the growth of knowledge*. London: Routledge & Kegan Paul.

Bartels, N. (ed). (2005). *Applied linguistics and language teacher education*. New York: Springer.

Boyles, D. R. (2006). Dewey's epistemology: an argument for warranted assertions, knowing, and meaningful classroom practice. *Educational Theory, 56*(1), 57-68.

Canguilhem, G. (1988). *Ideology and rationality in the history of the life sciences*. Cambridge, MA: MIT Press.

Cresswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Sage

Crookes, G. (2009). *Making a statement: values, philosophies, and professional beliefs*. Cambridge University Press.

Gadamer, H.-G. (1960/[2004]). *Truth and method* (2nd. edn., trans. J. Weinsheimer & D. G. Marshall). New York: Continuum.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.

Harré, R. (1985). *The philosophies of science*. Oxford: Oxford University Press.

Hume, D. (1748/[2004]). *An enquiry concerning human understanding*. Courier Dover Publications.

Hutcheon, P. D. (1995). Popper and Kuhn on the evolution of science. *Brock Review,* 4(1/2), 28–37.

Kincheloe, Joe L. (2006). Critical ontology and indigenous ways of being: forging a postcolonial curriculum. In Y. Kanu (Ed.), *Curriculum as cultural practice: postcolonial imaginations*. Toronto: University of Toronto Press.

Lenin, V. I. (1908/[1972] *Materialism and empirio-criticism.* Moscow: Foreign Languages Press, as cited in *Great Soviet Encyclopedia*, 1979, p. 56.

May, T. (2001). *Our practices, our selves.* University Park, PA: Pennsylvania State University Press.

Munby, H., Russell, T., & Martin, A. K. (2001). Teachers' knowledge and how it develops. In V. Richardson (ed.), *Handbook of research on teaching* (4th. edn., pp. 877-904). Washington, DC: American Educational Research Association.

Noddings, N. (1995). *A philosophy of education.* Boulder, CO: Westview.

Orlikowski, W. J. (2002). Knowing in practice: enacting a collective capability in distributed organizing. *Organizational Science, 13*(3), 249-273.

Pennycook, A. 2004. Critical moments in a TESOL praxicum. In B. Norton and K. Toohey (eds.), *Critical pedagogies and language learning* (pp. 327–45).Cambridge: Cambridge University Press.

Reagan, T. (2002). "Knowing" and "learning" a foreign language: epistemological reflections on classroom practice. In T. A. Osborne (ed.), *The future of foreign language education in the U.S.* (pp. 45-62). Westport, CN: Bergin & Garvey.

Ryle, G. (1949). *The concept of mind*. London: Hutchinson.

Scheffler, I. (1978). *Conditions of knowledge: An introduction to epistemology and education*. Chicago, IL: University of Chicago Press.).

Siegfried, C. H. (1995). Pragmatism. In R. Audi (ed.), *The Cambridge dictionary of philosophy* (2nd edn.; pp. 730-1). Cambridge: Cambridge University Press.

Strathausen, C. (Ed.). (2009). *A leftist ontology: beyond relativism and identity politics.* Minneapolis, MN: University of Minnesota Press.

Thorne, S. (2005). Epistemology, politics and ethics in sociocultural theory. *Modern Language Journal, 89,* 393–409.

Tiles, M. (2005). Technology, science, and inexact knowledge: Bachelard's non-Cartesian epistemology. In G. Gutting (ed.), *Continental philosophy of science* (pp. 157-186).

Westphal, K. R. (2003). *Hegel's epistemology: a philosophical introduction to the 'Phenomenology of Spirit'.* Cambridge, UK: Hackett.

White, C. (1998). *The philosophy of human learning*. London: Routledge.

Zuengler, J., & Miller, E. R. (2006). Cognitive and sociocultural perspectives: Two parallel SLA worlds? *TESOL Quarterly, 40*(1), 35-59.