Elements of an articulated theory of second language teaching

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1. Introduction
1.1 A two-stage, two-source theory

Although there are many definitions of the term 'theory' (see e.g., Kantorovitch, 1988) two understandings of the term are particularly important. One carries the senses of 'organized body of knowledge' or 'system of categories'. The other can be boiled down (under current understandings, e.g., Harre, 1986) to 'explanatory device' or 'statement-picture complex'. At first blush, both sound as though they should take the form of written objects, possibly books in the former case, perhaps propositions and diagrams in the latter, but they can more profitably be conceived of as cognitive objects (Giere, 1988; Harre, 1986).

Being cognitive objects, they can be thought of as having both individual and group aspects. As thinking and inquiring individuals, we may consider a problem and say "I have a theory about that", in beginning to explain a particular situation of concern. Equally, if we have come to some understanding or conceptualization of a domain of knowledge, this could be referred to as our theory of it. It is not unusual for groups to share world views, bodies of knowledge, and explanations, and in that sense theories are shared cognitive objects. Under some socio-historical conditions, such systematic or explanatory cognitive objects are developed in a particularly careful and sustained manner. They may then be dignified with the term 'scientific'.

In this paper, I will attempt to bring this understanding of the term 'theory' to bear on the concept of a theory of second language teaching. I will take the position that, for practical reasons, such a theory needs to be seen as bipartite in nature (explanatory and systematic), and as arising from two sources: the efforts of investigators and the conceptions of teachers. Those two sets of individuals should ideally, of course, overlap.
1.2 Background to SL theories

During the last twenty years, theorizing in applied linguistics has been done more by those concerned primarily with acquisition and learning than by those concerned primarily with teaching. In particular, investigators attempting to construct theories of a formal and/or explanatory orientation have primarily been those oriented to SL acquisition and learning (van Lier, 1991; cf. Hatch, Shirai, & Fantuzzi, 1990; Larsen-Freeman, 1990; Selinker & Tomlin, 1986). Projects of a theoretical nature concerned with SL teaching have not been completely absent, but they have tended to be concerned with "the systematic study of the thought related to a topic or activity" (Stern's first meaning of 'theory', or T1; 1983, p. 25). This kind of formulation is also referred to as a conceptual scheme (Blalock, 1969; Ferman & Levin, 1975). More formal approaches (Stern's third meaning of 'theory', T3) have been rare. Both are important; as Bunge (1967, p. 91) notes, "scientific systematization can consist of either systematics or theory". Ideally, both should be developed and mutually articulated.

The thrust of SL research over the last twenty years has allowed us to think about the learning process as going on potentially independent of teaching and the teacher. It has been the position of many (from, at least, Newmark and Reibel [1968] on) that so long as we know how the learner learns, we can teach accordingly. Consequently, it might seem that research and theory must give priority to the learning process, and once we know how students learn a SL, we will know how to teach it. Alternatively, a related but less extreme position has been that it was best to approach an understanding of SLA (and thereby SLT) through the investigation of informal SLA (Larsen-Freeman, 1990); however, this seems to have resulted in deferment of theoretically-motivated, programmatic investigations of SLT.

In fact, of course, although acquisition may be conceptually prior to teaching, in practice teaching goes on without waiting for a theory of acquisition to be fully developed (cf. Hatch, 1981), though both teachers and researchers of teaching might benefit from the perspective that a theoretical synthesis of the pedagogical aspects of second language learning could provide. And in the absence of a theory of SLT, one of the problems partially caused by the emphasis on acquisition and learning is the difficulty teachers have making connections to what they generally perceive as "theory" — SLA theory (cf. Flynn, 1990). It is, as Lightbown (1985; cf. Gass, 1987) has said, often legitimately distant from the problems that SL teachers would like solutions to.[-1]

Assuming we had a theory of SL teaching (more specifically, a scientific theory of teaching), what would it do? As asserted above, it would systematize and explain, with explanation being generally the more valued function (Crookes, 1992; Gregg, 1991). So a theory of SL teaching would explain — what? The answer to this question seems to depend upon a statement
concerning which of several domains related to second language teaching and learning this theory would be located in. For example, if it were a sociologically oriented theory of teaching, it might attempt to explain why societies have teachers, or the function of teaching in a society. Possibly a social psychological theory of teaching might address the matter of why people become teachers. I think the field of SL studies would have most interest in a theory of teaching insofar as it relates to the objective of teaching, that is, learning. We assume, of course, that teaching results in learning -- not necessarily on specific occasions, but at least overall (Long, 1983).

Consequently, I think an explanatory theory of SL teaching would take as its explanatory objective, learning as caused by teaching, specifically, how learning is caused by teaching, and would most productively be conceived of as a cognitive theory of teaching.[1]

Such a theory would address general "how?" questions, rather than instances of specific behavior (cf. Manicas, 1982). It would have to explain how it is that some SL learning is a product of SL teaching, which entails addressing causal relations of a partial (Ennis, 1973) or "INUS" nature (Ericson & Ellet, 1987; Mackie, 1965). It would follow recent work in SL theory construction (e.g., Beretta, 1991; Crookes, 1992; Gregg, 1991; Long, 1985; pace van Lier, 1991) in focusing on the causal mechanisms which result in such learning. As we do have some ideas as to both what it is that second language learners (cf. Klein, 1986; van Lier, 1991) and teachers (cf. Chaudron, 1988) do, it may be that the elements of an explanatory theory of second language teaching (SLT) exist, but have simply not been assembled in what we would currently recognize as a theoretical form of explanatory adequacy.

At the same time, however, if a theory of SLT is to speak to the needs of SL teachers it must not only explain how it is that SL teaching can cause SL learning, it must also answer the question "What should I (as a teacher) do?". That is, as a teacher, having arrived at an understanding of how it is that some aspect of teaching causes learning, one must then be able to and also deal with the question of how one manifests that aspect of teaching in the classroom, in interaction with a student: 'what should one do?' and then, 'how should one do it?'

Following from the above, the objective of this paper is to develop as far as possible a theory of SL teaching which is both explanatory of SL learning, and to propose how we should see its relationship to systematizations of knowledge of SL teaching. In the next section, I will try to establish in more detail what the explanatory theory should and should not look like. Then in Section 3, I will sketch its conceptual components. There I will draw on existing descriptions of SL learning, recognizing that the necessary material for a theory of SL teaching (at least, as set at the individual level) has long been in existence.[4]
2. The format of an explanatory theory of SLT
2.1 Factor theories or path models

The format of many of the broader theories of SL learning and
teaching in existence is like that of many theories in sociology:
a combination of propositions or generalizations, allied to block
diagrams which connect the key variables, usually with arrows
(e.g., Spolsky, 1989, p. 215; Stern, 1983, p. 44; Strevens, 1976,
cited in Stern, 1983). Theories of this sort, which are
particularly appropriate to contexts of multiple and recursive
causality, are known as path models, or sometimes factor
theories, and are tested empirically using path analysis and
structural equation modelling (Clark & O'Mara, 1991; de Leuw,
However, as van Geert (1987) has argued, they tend to be
insufficiently explanatory as they do not actually deal with the
causal mechanisms which link the variables. A possible response
to this charge is simply to say that the objective of theorizing
in this mode is not to say how variables A to K result in
learning, but simply to establish that it is those variables, and
not some others, which are involved in the determination of the
learning process. Nevertheless, a theory of SL teaching which is
intended to be as explanatory as possible will somehow have to
present the causal mechanisms which result in learning. It will
also have to deal with the other levels that may be relevant to
the phenomenon of interest.

2.2 What levels of theory are we interested in?

A perennial issue in theory construction is whether phenomena
examined at one level of analysis can be adequately explained by
concepts or mechanisms from the same level of analysis. For
example, some time ago Schumann (1978) suggested that SLA in
certain contexts can be attributed to and explained by the
concept of 'acculturation'. This is an aggregation of socioaffective
variables, which could be seen as representing the
social-psychological state of a SL learner. It has been counter
proposed, however, that acculturation is a distal variable which
does not tell us how the learner actually learns the new
language, and that only a concern for the cognitive mechanisms of
learning can do that. Recently, Schumann (1991) has returned to
the topic, and argued that cognitive mechanisms are
insufficiently explanatory -- that we should look at the next
layer down, to neuropsychological processes involved in learning
if we want a satisfactory explanation of SLA. A theory of SL
teaching that is concerned with how learning is caused by
teachers is at least one step away from the accepted level of
causal explanation in existing theories of SL acquisition (i.e.,
the level internal to the learner, primarily cognitive in
nature). It cannot be disputed that it is the learner who
learns, not the teacher. So it must be admitted that in asking
how the teacher causes the learner to learn, we are potentially
one step away from the learning itself. If this results in a
less satisfactory explanation of learning, I think that is
unavoidable.
2.3 The structure of theories which are more explanatory than path models

As I have argued elsewhere (Crookes, 1992), a theory which will give its users a sense that the phenomena of interest have been explained is one which will expose the causal links between the phenomena and their antecedents. It will do this particularly by embodying the mechanisms in a model of the system involved. A theory of this sort has been referred to as "a statement-picture complex" (Harre, 1970, p. 56). Here, the pictorial part concerns the model and its associated hypothetical mechanisms and the statement part refers to generalizations it supports (Giere, 1988; Harre, 1970, 1985a, 1985b, 1986; Suppe, 1974).

Although there are many kinds of explanation, if we are trying to understand how a system (such as a learner's interlanguage) moves from one state to another (i.e., develops) then one of the best ways to arrive at such an understanding is to build our picture of the unknown system on one which is known, making adjustments and creating new concepts where necessary. Then in addition we need to know how the system moves from one state to the next. The means by which this happens is known as a "mechanism". Conceptualizing this idea of a mechanism and the unknown system in which it embodies builds on the data we observe, the generalizations we develop, and, most importantly, on preexisting knowledge of similar structures to be found elsewhere. The last element, then, proceeds by a process of analogy.

Analogical relations hold between the system under investigation, including its differing states at different times, and the model we are working with. The source of the model will be different from the system being modelled because the thing to be modelled is at least in part unknown (Harre, 1970, 1985a, b). The theory supports some generalizations, which are expressed in linguistic terms, but it provides explanatory force from the partial analogy it embodies, which can be thought of as iconic or pictorial in nature ("this looks a bit like that").

2.4 In such theories, how should the interaction of teacher and learner be characterized in causal terms?

We all recognize that in the real world, under open system conditions, antecedent matters, such as favorable societal attitudes to SL learning, the availability of the SL, even the repetition and use of SL phrases, may be insufficient to result in SL learning. Perhaps this is one reason why SLA theorists have focused on the lowest possible levels of theory accessible to them. That way they can say, assuming all other potentially explanatory aspects of the milieu in which the learner is located are favorable, what is it that goes on when learning takes place? That is, what is the core of the matter? But if one wishes not to get exactly at this level, which thus far has been assumed to

...
be the intra-organism level (Halliday, 1978, cf. Ellis, 1981), but at other levels of the system, what must one make of the levels one is not interested in? From one point of view, they become conditions (cf. Mackie, 1965)[2]. This is recognized in at least one major "theory" of SL learning (Spolsky, 1989). In his extensive analysis of SL learning, Spolsky states that he is presenting a set of hypotheses that relate to conditions which must be satisfied if learning is to take place. This may be a useful way to begin to think about situations of multiple causality (or what Guba and Lincoln call "mutual shaping"). (cf. Mackie 19_,; Ericson & Ellet, 1987). On this modification of the traditional (Humean) conception of causality as a connection between events, causes, which in the real world are so often multiple in nature, can be characterized as of an 'INUS' or 'INUP' type. Ericson & Ellet (1987) discuss these concepts as follows:

An INUS cause is (roughly) defined as an Insufficient but Nonredundant condition that is part of a set of conditions that is Unnecessary but Sufficient for its effect. An INUP cause, in contrast, is similar in every way with the exception that when conjoined with the other INUP conditions, it forms a set of conditions that merely confers a certain probability of the occurrence of the effect.... Typically, then, student efforts and teaching activities are INUS (or INUP) causes of student learning. (p. 289)

However, a more preferable and satisfying conception of causality stems from the positions of Bhaskar (1975, etc.) and Harre (e.g., Harre and Madden). On this view, causal explanations require a mechanism inherent in structures (causal powers). Then, second, a differentiation must be made between controlled conditions (such as the laboratory) and the real world. The former are "closed systems", the latter, open -- and though it is only in the former that causal mechanisms can be seen to result in particular effects, this is not to say that they are not in play in the appropriate open case as well. Though one can never be sure what will happen in the real world, our understanding of the causal powers of social structures and mechanisms provides a guide to action in that world.

The model of the system being developed is intended to represent what happens when the system operates under closed conditions (Bhaskar, 1975). It should be made clear that although the term 'mechanism' is used, this is not intended to indicate that the causal connection between teacher and learner is unitary or deterministic, in that in the real world, i.e., under open conditions, many factors besides the instructor influence whether or not learning takes place. Nevertheless, since we are focusing on one strand of this multicausal connection between teacher and learner, we are asserting that there must in general (rather than in any particular instance) be a carry through of the causal impetus provided by the teachers' actions to the learners' actions, or from the teachers' cognitive system to the learners' cognitive system.
3. How does SL teaching cause SL learning?

We need to consider what it is the teacher does to and with the learner that causes learners to learn. It must in general be what the teacher does to and with learners as they engage with the second language. Given the level of the present discussion, the particular aspect of the learners that is important is, to put it loosely, their minds, understood as cognitive-conative-affective systems. By 'engage with language', I refer to what the teacher causes the learner to do in terms of comprehending, producing, and thinking about the language, both alone and with others.

3.1 The teacher-learner system

Theories in physical science tend to use inanimate systems as the models for other inanimate systems -- we may refer to the modeling of the atom upon the solar system, or note how Darwin used Malthusian concepts of how organisms interact with their environmental limits in the short term to develop his theory of evolutionary change in organisms. Theorists in SL studies also seem disposed to take their models from close at hand -- the second language learner as first language learner, for example (cf. Krashen's use of the concept 'LAD'). So it is not unusual to take one somewhat understood cognitive system as the model for a related but less understood system. That will be the strategy proposed here.

The main thing that the teacher does to the mind of the learner is to stand in for part of it, and perform various functions that the learner would otherwise have to initiate and perform on his/her own. The cognitive and conative systems engaged in learning can in an instructional context be seen as a joint construction of teacher and learner, or as an extension of the learner's current capacities. The teacher has many roles, as commonly conceived, ranging from directive or executive (Berliner, 1983), through encouraging, to simply facilitative. In each of these functions, the teacher is supporting or standing in for some aspect of the student cognitive system, and the two (or more) individuals are engaging in this joint cognitive activity in the context of, and mediated by, the social interaction taking place in the social context of the classroom.

In considering an explanatory theory of SL teaching with the joint learner-teacher system in mind, I am drawing on a major component of Vygotskyan psychological theory. Vygotsky's research (e.g., 1932/1962) was centrally concerned with the social dynamics of psychological development, with a strong orientation to the analysis of formal instruction (Moll, 1990). Banned under Stalin and thus unknown in the west until the 1960s, his translated work, though somewhat fragmentary, has in recent years been found extremely stimulating and insightful in education and psychology (cf. Ratner, 1991). Attention has been
given to Vygotsky's ideas concerning the role of social interaction and language in the development of children's thinking, particularly the concept of the "zone of proximal development" (e.g., Cazden, 1981; Wertsch, 1979, 1985), and from a methodological point of view, investigators have explored the potential of Vygotsky's "microgenetic analysis" methodology (Siegler & Crowley, 1991). These ideas have begun to be applied to first language acquisition and to some extent used in analyses of SLA, as well as teacher development (Au, 1990; Au & Kawakami, 1984; Foley, 1991; Lantolf & Ahmed, 1989). Van Lier (1991, p. 30) describes them as potentially "our closest guide" in developing "an L2 learning theory of practice".

With regard to SL learning, we are well aware of the difficulty of achieving success in this area unaided. Regardless of innate endowments in this domain, there is no question that the task of learning a SL is extremely difficult without help. Both the capacities of the aided learner are expanded over those of the unaided learner, and the task is made more simple for the learner who has help. The teacher, then, provides what Bruner (1986, p. 132) discussing Vygotsky's ideas, has called a "loan of consciousness" -- s/he is surrogate problem-identifier, problem-solver, memory, selection process, noticer, and performer of a host of other cognitive and motivational processes which the learner needs to bring to bear on the problem of SL learning. [2]

As discussed in Section 2.3, we can explain taught, or externally-caused learning (i.e., in SLA terms, formal or instructed learning as opposed to informal learning), by modelling the teacher-learner system on the already established human cognitive and conative systems. We know the initially-existing (learner-only) cognitive system has difficulty handling the task of learning a second language, and that the aided (teacher-learner) cognitive system has greater success with it. We know that the difficulty of the task is such that the learner is likely to experience frustration and consequently cease to engage with the task. This suggests the importance of aid at the conative level, too (see below).

The comparative success of the instructed learner can be explained if we see the aided cognitive/conative system as a more powerful, more extensive learning system. Thus, in general, we can see what it is the teacher must do. However, the analogy does not give us an exhaustive list of the processes the teacher must aid or substitute for, because we do not fully understand the unaided SL learning process, nor do we know exactly what the SL learner's cognitive mechanisms and conative needs are. On the other hand, it provides a basis for beginning to construct such a list. This list constitutes our current conceptual schema for the systematic part of an SL learning process, as well as the means by which they are influential in the explanatory part.
3.2 Conceptual domains of a theory of SLT

As I suggested at the outset of the paper, the conceptual domains of a theory of SLT have been in existence for some time, and indeed, work has also been done which provides a heuristic for determining what those areas are.

One approach to generating these domains is via statements of what a teachers' role consists of. To provide a non-SL position (for perspective), here is an example (Marshall, 1988) from mainstream education operating from a declarative knowledge standpoint:

One role of the teacher would be to raise questions that facilitate an increase in awareness of inconsistencies in students' current ways of thinking so that more adequate conceptions can be constructed (Vosniadou & Brewer, 1987). Part of the teacher's role would thus be to diagnose students' misconceptions and current level of thinking, create conceptual conflict, and present content so as to guide students towards greater conceptual consistency.

(Marshall, 1988, p. 13)

Closer to home, a more integrated set of domains is derived by cashing in SLA research -- translating the processes involved in "acquisition" in terms of processes which must be served or supported in teaching. There are in the literature several compatible theoretical analyses of the breakdowns of the stages learners go through in operating on the second language they are exposed to (e.g., Gass, 1987; van Lier, 1991; and cf. Klein, 1986). Van Lier identifies four major stages: exposure (Gass's "appreceived input"), input (Gass's "comprehended input"), intake (the same in both formulations), and uptake (Gass's "integration"), leading to proficiency. Accordingly, the SL teacher must provide the learner with language, ensure that the learner will focus attention on it (or arrange matters so it is easy for the learner to focus on it), then set things up so the learner will "invest effort (cognitive, emotional, physical) so that the input will be processed" (van Lier, 1991, p. 33).

The subsequent stage of "uptake" is necessary to bring the new SL material under control, and requires from the learner "memory work, motor control, schematic networking, pragmatic matching (involving norms of appropriateness and rules of use) and more. These processes occur through practice." (van Lier, 1991, p. 33)

Unpacking this a bit, we have a fairly familiar set of components (listed below). Of these, (1) and (2) have, of course, been part of the academic aspects of discussion of SL learning and teaching for a very long time. Component (2), it may be noted, has only recently re-acquired respectability and (4) has become legitimate only in the last few years. Component (5) has not yet fully arrived on the SLT scene, though it is beginning to be known in educational research.
The components are as follows:

(1) Selection and organization of chunks of language (of whatever size);

(2) The development of "language awareness" (van Lier, 1991) or metalinguistic knowledge through direct instruction as well as consciousness-raising concerning aspects of language (understood broadly as running the entire gamut from voice setting to pragmatics);

(3) As well as language awareness, there must be basic awareness -- that is, the input must be attended to (Schmidt, 19xx);

(4) "Language learning awareness" (van Lier's 1991 term) -- that is, the development in students of first, knowledge of and second, ability to use learning strategies as the apply to SL learning. This is particularly accessible for SL teaching through the work of O'Malley & Chamot (1990), Cohen (1990), and Skehan (1989).

(5) "Motivational control strategies" (the term from McCombs, 1984): Many learners do not have well developed motivational control strategies (cf. Crookes & Schmidt, 1991a). Consequently, they cannot easily sustain engagement with a difficult problem area over a very extended period of time. However, the aided conative system of the instructed learner is better able to dealing with such a learning program, as the instructor can provide external reinforcement of a powerful kind, or arrange for individual learning tasks to be intrinsically rewarding.

(6) "Practice", including

(a) the importance of output in developing command over a second language generally (Bialystok, O'Malley & Chamot)

(b) the role of the interlocutor in providing scaffolding (Hatch, 1978) and feedback (Long, Pica, etc.)

(c) kinds of activities and what (language) gets practiced in them ([any task references]);

(7) Arranging the wider social context for learning (i.e., fellow students, resources) so that it is maximally facilitative. (cf. subjects)

So arguably then, a teacher has the power to cause learning by standing in for parts of the learner's unaided cognitive conative system. For example, instead of the learner acting on the unmodified stream of speech, and attempting to set pieces of it against meaning (cf. Felix, 1986), the teacher can be said to stand in place of that part of the decoding process, leaving the student's cognitive system to concentrate on, for example, entering the element in memory. Or alternatively, rather than the learner having to motivate him/herself to seek out appropriate contexts for the social use of the target language, the teacher arranges this (within the classroom context), again
freeing up processing capacity and preventing motivational interference with the actual movement of elements of the second language from, say, passive comprehension to active use status. And again, although learners may develop for themselves useful ways of acting on material to be learned, the teacher may initially talk the learner through use of such strategies, and then, by providing contexts for their use, facilitate their internalization. And so on. If an image is needed (and indeed, to provide a psychologically-satisfying explanation, something iconic may well be required), then one involving temporary slot-filling (of "gaps" in learners' cognitive-conative systems) followed by removal leaving a replacement image, might be suggested. Vygotsky's term, "internalization", may be advanced as a place-holder, in a statement such as "the teacher stands in for the missing parts of SL proficiency and learning strategies, until the learner has internalized these things". If the question 'But how does the learner internalize them?' is then put forward, theoretical explanation must move down to the next lower level, of a theory of acquisition, not a theory of teaching. And then if a teacher asks, 'How do I cause learners to internalize them?' we have arrived at the domain which states how a teacher gets the real world to embody the mechanisms which will result in internalization (embodied in a systematized body of knowledge, the second part of an articulated theory).

3.3 Teaching learners as opposed to teaching a learner

Because of the kind of source analogy which I have posited (learner-teacher dyad modelled on the single learner), because of the Vygotskyan heritage of this sort of discussion, and because of the general desire to deal with simple instances before complex particulars, I have abstracted right away from the classroom to the teacher interacting with one student. A teacher, reading the foregoing, might respond that a theory of teaching, as sketched thus far, still does not tell him or her what to do in the classroom. I certainly have not directly addressed classroom practice.

I think, however, it is generally not a large step to take from conceptions of dyadic interaction to individual-group interaction. As adult human beings, we have a fair understanding of group behavior, and we base it initially on our understanding of individuals. Modifications must be made, of course, and our understanding is also informed by, for example, metaphors pertaining to loosely-connected physical structures which we may have real world knowledge of, or, for example, to group behavior in other animals we have real world knowledge of (e.g. wolves, and so on). Although teachers are trying to cause (or facilitate) learning in the individual, they must do it in large measure through acting on (and with) the group, or class. This is clear in teachers' phrases: "I got the class to see...", "I couldn't get the class going this morning", etc. Under the very best circumstances in one kind of teaching, the teacher has the full attention of each individual in the class, and is acting as an aid, or add-on, to each individual's cognitive system. But most of the time, this
is not possible, and the teacher must act on and with the learner through the mediation of the group. Consequently, successful teachers must also be efficient orchestrators of social group processes. In some aspects, this need diminishes the potential of teaching: it is much more difficult to deliver instruction finely tuned to support a particular stage of cognitive development to 30 students than to one! In other aspects, it can be facilitative: the development of esprit de corps may be a far more powerful motivator than that which can be engendered by one teacher with one (rather different) student.

Following this discussion, perhaps it can be seen that it is here that the second level of a theory of teaching inhere. The development of an appropriate explanatory metaphor, a model system with a transition mechanism, establishes or creates existing (sometimes incipient) domains of knowledge. The incomplete learners' executive requires a motivational auxiliary, and the model of the learner-teacher dyad provides some explanation for how it is that teaching in general causes learning, and (continuing this example) how it is that motivating a learner causes him/her to learn. The question then arises, "But how do I motivate him?". This too is a question that a theory of (SL) teaching must be prepared to answer, and it does so by drawing on our existing understanding of motivation. Motivation has certain components or types, and is understood to arise under certain conditions, which the instructor can bring about if s/he performs certain actions. Why those actions cause motivation may now be a question of less interest (though it would of course be appropriate to an explanatory theory of motivation instruction). The explanatory model of learning as caused by teaching nominates this body of thought. Because of the nature of the model and the level of explanation it provides, it also does not nominate, that is to say, excludes certain other bodies of thought (physiology, for example). It thus provides an organizing principle, or means of articulating the enormous amount of knowledge that can be brought to bear on SL teaching.

3.4 Individual theories and scientific theories

Recently, there have been some important developments of the concept of a "practical theory", and "practical theories of teaching ... the conceptual structures and visions that provide teachers with reasons for acting as they do" (Sanders & McCutcheon, 1986, p. 54; cf. Brindley, 1990). These may or may not be conscious, are more or less equivalent to "professional knowledge" (ibid.), and "are not scientific theories" in the sense that they may not be "conceptually precise [or] specifically explicated" (p. 57). The idea remains to make such internal cognitive structures explicit. Grotjahn (1991) advocates of RFST work on the basis of the assumption that the advocates of RFST work on the basis of the assumption...
that subjective theories on the one hand and objective (scientific) theories on the other are structurally and functionally parallel or analogous to each other. As numerous empirical studies on the basis of RPST demonstrate, this is a fruitful and justified assumption. (p. 191)

Subjective theories, or practical theories of teaching are obviously valid and important for practice. In particular, like much practical knowledge they can provide the common-sense source for ideas which, reformulated and tested, become part of the "scientific" knowledge base for practice. Although the political realities of teaching in current cultures tend at present to separate teachers from those who generate the forms of knowledge most privileged by society, there is no logical reason why this should be so. And in particular, if we adopt a conception of teacher as research, and better as action researcher (Crookes, in press), then we may think of a cycle of transition and transmission, from teachers' individual subjective theories, to the more shared, perhaps more generalized and more widely tested forms of "scientific" theory, and then back to the individual teacher for test, utilization, modification and internalization (or discard) as subjective theory again.

4. Conclusion

[simply summarize the foregoing, and restate the point that basically, the elements for a theory of teaching are fully in existence -- that what has been lacking, both in our field and elsewhere in social and even physical science, has been a conception of the theory which enables theorizers to see how to organize theory building so as best to deliver a sense of understanding. Remind readers that even theories aiming at facilitating understanding through explanations of underlying mechanisms, cannot, by the same token, explain what to do in specific circumstances. Theories are encapsulations, generative guides. When mixed with specific situations, they can provide suggestions for action, but even these suggestions will not necessarily be useful in the absence of the teachers own knowledge of place (social and historical context) group (the specific history of these students) individual (the particular student) and time (e.g., ten minutes after lunch on a wet Friday afternoon).]
Footnotes

-2 I omit, of course, Stern’s T2: expositions of those packages of pedagogic prescriptions known as Methods, or more generously, schools of thought, of which we have had far too many! But I note we also have the use of the term as synonymous with "conception" -- a common usage (Ferman & Levin, 1975), exemplified in Richards (1992). And for even broader uses of the term, see discussion in Richards (1992).

-1 Since, as noted above, the term is also used to mean organized bodies of thought, applying 'theory' can also be used to mean 'applying the knowledge base for teaching'. This, too, can be difficult for teachers, both because of the language it may be stated in, and because of its generality. For discussion of the problems of converting the generality of the knowledge base to the specificities of day-to-day practice, see Crookes (in press).

1 Alternatively, one can take the relationship between teaching and learning as that to be explained. Then one can explain it causally, or in one important alternative way: logically. Explaining learning as the logical outcome of teaching is addressed by Macmillan & Garrison, 1988, and McEwan, 1990, inter alia.

2 Ennis (1973, p. 5) remarks that a person making a general causal statement (though not a partial one) holds that under normal conditions the sort of thing specified as a cause is sufficient to bring about the sort of thing specified as an effect.... I use [this] phrase to make reference to an unspecifiable list ... of conditions that are expected by the statement-maker... I have avoided ... "ceteris paribus"... because it is not clear what the other things are held to be equal.

3 And compare Foley (1991, p. 66) who refers to the "the tutelage of an adult" as providing a "vicarious form of consciousness". He notes that the caretaker in effect performs the critical function of scaffolding the learning task to make it possible for the child to internalize external knowledge and convert it into a tool of conscious control. (p. 67) Foley's application of Vygotskyan theory to task-based approaches to SL learning, while recognizing the importance of the teacher, emphasizes the learner's role rather than the teacher, and places more emphasis on the development of individual control -- a factor which Vygotsky followed through his interest in 'inner speech' (cf. Diaz & Berk, 1992).

4 I will tend to use the language of post-positivist, realist approaches to science, primarily because that is how most discussions of applied linguistics/SLA/SLT scientific theory has been couched. This is not intended to suggest that research from
other approaches or "paradigms", particularly that leading to the development of grounded theory, cannot contribute to the development of a theory of SLT (cf. Larsen-Freeman, 1990). It should not be forgotten that for many ethnographers, for example, the intention of their work is the development of ethnology (cf. Watson-Gegeo, 198x), and this is fully applicable to qualitative investigations of SL teaching. In addition, the Vygotskian microgenetic analysis and Piagetian process interview techniques, along with the discipline crossing procedures of cognitive anthropology and the protocol analyses of SL learning strategy investigations, are investigative methods which can equally well be used to inquire into SL teaching.
References


Georgetown: Georgetown University Press.


