Pedagogical Grammar: A Cognitive+Communicative Approach

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0. Introduction

Among the various types of knowledge and skills that learners of a foreign language seek to acquire grammar is, in many ways, unique. It should, however, be stressed that this unique status does not derive from the nature of grammar *per se*; after all, it is but one sub-system in a network of other linguistic sub-systems and sub-skills which need to be acquired by learners. Its uniqueness arises from the culture in which grammar is described, taught and researched, all of which, it seems to me, show a tendency to ignore how grammar operates as a communication system and which fail, therefore, to embed it in insights from the *communicative approach* to language teaching and from more recent *cognitive* views of learning. Whilst a considerable amount of teaching and learning time is devoted to the acquisition of grammar in language classrooms all over the world, its pedagogical status remains hotly disputed. Questions arise such as: How important is grammar? How is grammar best acquired? To what extent are first- and second-language similar? Should grammar be taught synthetically (item by item) or in a more holistic way? Does a conscious knowledge of grammar rules help learners? What contribution do grammar exercises actually make to learning? These are only a few of the issues which are frequently discussed by applied linguists and methodologists but which find little consensus. Indeed, the very issue of whether grammar should be taught at all is a not uncommon topic in books, articles and at conferences. It is a sobering reflection on current pedagogical practices that one of the best-known of pedagogical grammarians, Michael Swann (2002), can find 'seven bad reasons for teaching grammar' but only 'two good ones'.

In the following I shall consider how a communicative, use-based view of language on the one hand and a cognitive view both of language storage and of language processing on the other will lead to a reappraisal of pedagogical grammar practices and provide a way forward for designing grammar materials and activities. This dual perspective is denoted by the label Cognitive+Communicative Grammar (C+C grammar).[1]

1. Pedagogical grammar

I shall define pedagogical grammar (PG) as measures taken by teachers, learners, materials designers, grammarians, etc. to facilitate the development of grammatical competence and the skill of using grammar. It follows from this that our concern is primarily, though not exclusively, with conscious learning as opposed to natural acquisition (cf Krashen 1981, 1982, etc.) It is an area of pedagogy which is sometimes

[1] For a more detailed discussion of C+C grammar see Newby (2003).

referred to by applied linguistics as 'form-focused instruction', a term which, however, is quite inadequate since by its very definition it excludes semantic aspects of grammar which, as will emerge in the course of discussions, are at the essence of the Cognitive+Communicative view of pedagogy proposed in this paper.

Considerable attention has been given to supposed differences between 'linguistic' grammars, also termed 'descriptive', 'theoretical' or 'scientific' and pedagogical grammars (see Chalker 1994, Dirven 1990 for summaries). In my view, however, this can be an unhelpful distinction, not least of all since it furnishes pedagogical grammarians with an enticing but dangerous *carte blanche* to provide pedagogical descriptions which are based on intuition and brainstorming rather than on a principled view of what grammar is and, more especially, how it functions as a communication system. Pedagogical tasks such as the setting of grammatical objectives or formulating grammatical rules for pedagogical reference grammars require a solid theoretical basis if they are to have any validity. I would suggest that any difference between 'linguistic' and 'pedagogical' grammars should lie not in the presence or absence of theory that underlies a grammatical description but in the nature of the output of this description. Clearly, the way in which grammar will be presented will vary according to whether the user of a reference grammar is a student of linguistics or a learner of a foreign language.

The main tasks of a pedagogical grammar are the following:

- Find a *theoretical model* (or models) *of language* which will serve as a basis for a description of grammar. This may be an existing linguistic model or one developed or adapted by (applied) linguists – as is the case with the C+C model described in this article.
- *Description*: describe grammar based on this model (→ grammar rules).
- *Selection*: delimit those areas of grammar to be presented to the learner.
- *Packaging*: decide how to present and structure the description; how to specify grammatical objectives; how to formulate rules and exemplify grammar; use of terminology etc.
- *Grading*: establish criteria for the sequencing of grammar – for example, in materials or syllabus design.
- Find a *theoretical model* (or models) *of learning* which will serve as a basis for methodology.
- *Methodology:* devise methodology to facilitate learning (presentation forms, exercises, activities, etc.).

It will be seen from the above list that a prerequisite for both describing grammar and for devising methodology is in each case a theoretical model – of language and of learning respectively. For both purposes this can be provided by a Cognitive+ Communicative approach, which I shall outline in the following and show how it will impact on two important pedagogical tasks: those of defining objectives and of designing grammar tasks and activities.

Before embarking upon this task, however, it would be useful to define what we mean by grammar. In a recent book, David Crystal provides the following definition: "grammar is the study of all the contrasts of meaning that it is possible to make within one sentence" (2006: 161). From a communication-based perspective we may take issue

with the first part of this definition – "grammar is the study of …": grammar is not the 'study' but 'knowledge and use'. Nevertheless, this amendment can be spliced onto the second part to give a speaker-based view of what knowing grammar entails. This will give the following definition: "Grammar is a speaker's knowledge of all the contrasts of meaning that it is possible to make within one sentence and his/her ability to use this knowledge in contexts." It will be noted that grammar is thus being defined both in terms of competence – knowledge – and of performance – use.

2. Setting objectives

The communicative label is, in the eyes of many teachers, associated with methodology; if the term 'communicative grammar' is used at all, then it might relate to exercise or activity types, particularly to oral grammar activities which have a game-like character. While this is an important aspect of a communicative approach, we need to take a much broader view of what underlies this approach if we are to reap the potential rewards that it offers. To do this, we must not only locate it in the area of general skill development but must first consider how a communicative view will influence the setting of grammatical objectives. So let us first remind ourselves what 'communicative' is all about by listing four principles which Richards and Rodgers identify (2001: 161):

1. Language is a system for the expression of meaning.
2. The primary function of language is for interaction and communication.
3. The structure of language reflects its functional and communicative uses.
4. The primary units of language are not merely its grammatical and structural features, but categories of functional and communicative meaning as exemplified in discourse.

It will be noted that point 4 is not an 'anti-grammar' statement: as with Hymes' (1972) categories of 'grammatical' and 'communicative competence', grammatical competence is one integral part of a wider communicative competence, which *includes* grammatical competence as well as lexical competence, pragmatic competence, strategic competence, socio-cultural competence, etc.

Terms such as 'system', 'expression of meaning', 'communication', 'communicative meaning', 'functional uses', 'discourse' require us to take quite a different view of grammar from that which appears to underlie both descriptions found in pedagogical reference grammar and exercises found in FL learning materials, which tend to be based on formal – as opposed to semantic – categories.

The re-orientation of language study in order to explain it as a meaning-based system was one of the revolutionary aspects of the communicative approach to language description. At the heart of this view is the belief that language should be seen as a *process*, rather than a *product*. In order to explain language in general, and grammar in particular, it is therefore necessary to examine the very nature of how meaning is generated. To do this we will need to model some of the processes that human beings go through in order to encode grammatical meanings. Figure 1 below shows a simple *communication model* of the encoding process.

speaker → context → purpose → lexical/grammatical notions → form

Figure 1: The flow of communication

Of particular importance in the model is the directionality of communication indicated by the arrows. These show that meaning is generated by speakers in specific contexts and grammatical meanings or notions give rise to form. This type of model places language meaning, both pragmatic (speaker's purpose) and semantic (lexical/ grammatical notions), in the forefront of analysis and has in fact been used as the basis for categorisation for syllabus and materials design since the advent of the communicative approach. Identifying and categorising the various components of a communication model is at the heart of the influential Council of Europe publication, the *Threshold Level* (1975, 1991) and these 'categories of communication' subsequently found their way into many European school syllabuses. As far as grammar is concerned, a communication-based, semantic orientation provides a range of categories of grammatical objectives, some of which are listed in figure 2.

Category of objective	Specific objective	Examples
grammatical function	describing/modification	- **pretty**, **with a nice face**
general notion	expressing location	- **next to, opposite, over there**
specific notion	arranged activity	- I'**m playing** tennis tonight.
	expressing intention	- I'**m going to use** my new racket.
	making a prediction	- I'**ll** probably **be** back by six.
process	passive	- **We were beaten 3-0.**
	indirect speech	- **He said he was** ill**.**
communicative function	likes - dislikes	- I **like** swimm**ing**
pattern (syntax)	question form	- What **did** he **say**?
form (morphology)	irregular past tense	**was, had, went, saw, gave**
	plural forms	- **boys, men, ladies, kisses**

Figure 2: Categories of grammatical objectives

It will be noted that the final two categories of objectives are of a formal nature (pattern and form) and, following the two categories of syntax and morphology, which are commonly seen as defining the scope of grammar by linguists, it is these which tend to dominate objective specification and syllabus design in traditional pedagogical grammar. However, if we accept the premises of Richards and Rodgers stated above, as well as a 'communication model' view of language, then these will prove woefully inadequate when it comes to seeing grammar in terms of communication.

In recent years various linguistic theories have begun to approach grammatical description from a functional/semantic direction. Prominent among these is the systemic

grammar of Halliday (1985, etc.). An example of this view can be found in the first category of figure 2: grammatical function, exemplified here by the function of modification. A further category, which was given considerable attention in the 1970s, when the 'functional-notional' axis was seen as the main basis of syllabus design in many FL textbooks, is that of general notions, which can be defined as "abstract concepts which reflect general, and possibly universal, categories of human experience, such as time, space, quantity, location etc." (Newby 2000: 449)

Yet this meaning-based orientation throws up a number of theoretical questions concerned with language in general and grammar in particular. For example, what do we mean by 'grammatical meaning'? What is the relationship between ideas and meaning and between grammatical meaning and other types? Is context a part of or apart from language etc. etc.? In order to answer these questions we will find that merely attempting to replicate communication will not suffice. We need further to look into the minds of the users of language and examine what goes on when they engage in the process of generating utterances; that is to say, to take a cognitive view of language. I shall define 'cognitive' as referring to the storage and processing of concepts, knowledge and information within the human mind. It should be noted that 'concepts' includes language concepts such as grammatical meaning. This type of analysis requires us to take on board aspects of cognitive theories.

The Cognitive+Communicative axis will allow us to explore language description from various perspectives. By adopting a communicative view, we can approach it from a pragmatic, discourse-linked, context-based direction; by adopting a cognitive view, we can approach it from a psychological, mind-based direction. These two apparently different parameters are in no way contradictory but will be seen to complement each other since they enable us to see language as both a sociological and psychological phenomenon. The relationship between them is illustrated in figure 3.

↓ **Communicative** = modelling the flow of communication ↓
speaker → context → purpose → lexical/grammatical notions → form
↑ **Cognitive** = processing of each stage by the human mind ↑

Figure 3: The Cognitive+Communicative parameters of language analysis

The central row replicates in simple form various stages of the process of encoding language, already outlined in figure 1. This process can be analysed from different perspectives. A communicative perspective (top row) is concerned with the flow of communication and attempts to identify and categorise the various stages. These stages, represented by arrows, are significant, not only because they aim to reflect the sequential, though recursive, nature of language use but because they will help to provide a systematic categorisation of different elements of communication.

A cognitive perspective (bottom row) attempts to explain how each stage is processed by the human mind. This type of analysis requires the linguist to postulate and model how human beings process information in general and 'linguistic information' in particular and to map linguistically relevant categories onto the communication model. Such a communication model will lay claim to what may be termed *psycholinguistic*

validity; that it to say, it purports to explain how the human mind actually processes information and encodes this into linguistic form.

One of the grammatical categories identified within the cognitive framework is that of *specific notions*, which, in my view, represent the primary meaning-carrier of grammar and is the category that should be of most interest for the grammarian, both linguistic and pedagogical. For this reason, I have elsewhere given this category specific attention within the heading of 'notional grammar' (Newby 1981, 1989a, 1991, etc.).

3. Notional Grammar

Notional grammar can be defined as a theoretical framework for analysing and explaining in a systematic and coherent fashion the conceptualisation system underlying grammatical meaning and the process of grammaticalisation that speakers employ when encoding utterances. Its dual aims are to provide a specification of grammatical meaning which fulfils the theoretical criteria of linguistic analysis and to package its findings in pedagogically accessible form.

It is beyond the scope of this present paper to discuss the theoretical basis of notions in any detail. I shall therefore confine myself to making some of the most important points about the nature of notions and illustrating the outcome of a notional specification for pedagogical grammar. A (specific) notion may be defined as the grammaticalised meaning of a single concept which is encoded within an actual utterance. Three examples of notions can be found in figure 3, all of which describe different ways of referring to future time. These are:

Notion		Form
arranged activity	-	I'**m playing** tennis tonight.
expressing intention	-	I'**m going to use** my new racket.
making a prediction	-	I'**ll** probably **be** back by six.

The view that notions should be given prominence in pedagogical grammar derives from the following four hypotheses (Newby 2003: 275):

1. Notions represent the *primary semantico-grammatical unit* of encoding and decoding. Human beings express and comprehend notions.
2. Notions are *psycholinguistically real*. They represent concepts stored in the 'mental grammaticon' and utilised in the process of grammaticalisation.
3. A notion is an *autonomous semantic concept*. Different notions, even if encoded into the same form, express psychologically separate and distinct grammatical concepts.
4. There is a *systematic relationship* between notion and form. A notion is always encoded into the same form.

The implications of these hypotheses are considerable. On the one hand, 1 and 2 will lead us to give paramount focus to notions both in grammatical description and in pedagogy. This will apply to both the setting of objectives and the formulation of rules. It follows from 2 and 3 that notions are both identifiable and describable. Explaining

grammatical notions will therefore represent the central task of a pedagogical grammarian. With hypothesis 4, I am stating my belief in the absolute systematicity underlying the meaning-form relationship. The implication of this is that grammarians should arrive at exceptionless rules which explain the systematic relationship between notion and form. Whilst these hypotheses might at first sight seem somewhat abstract, they are an essential starting point for a coherent pedagogical model. They have been used as guiding principles in my own pedagogical reference grammars (Newby 1989b and 1992).

It follows from this that when setting teaching/learning objectives in the design of methodology (exercises and activities), these will be expressed predominately in terms of grammatical notions and not in terms of grammatical forms (tenses, articles, etc.) since formal objectives are incompatible with speaker-based, communication-oriented grammar activities. Notional objectives, on the other hand, will provide a springboard to devising communicative methodology.

4. Methodology

Having used the C+C framework to provide a basis for setting meaning-based objectives, we can now turn to the task of how to design activities based on both communicative and cognitive principles.

Criticism is often levelled at traditional grammar methodology for the following reasons:

- It artificially separates grammar from other aspects of communication.
- It does not take sufficient account of natural learning processes.
- It imposes a rather passive learning role on students.
- It places too much emphasis on explicit knowledge of rules and deductive learning.
- It does not provide adequate methodological support to create a bridge between knowing grammar and using grammar.

A much lauded alternative to grammar-based activities can be found under the general rubric of so-called 'task-based' learning (see Willis 1996, Ellis 2003, etc.). As with the communicative approach, there appears to be a strong and weak version and, as with the communicative approach, the strong version throws out the gauntlet to pedagogical grammar activities, since, according to this, both syllabus and methodology should be determined by the setting of meaningful tasks and not by identifying categories of language. Let us explore differences between a task-based and a C+C view by means of a few quotations from Rod Ellis's (2003) comprehensive summary of issues in task-based learning and teaching. In attempting to define what a task is, Ellis states (2003: 3):

> 'Tasks' are activities that call for primarily meaning-focused language use. In contrast, 'exercises' are activities that call for primarily form-focused language use.

Once again we see the form-meaning division rearing its ugly head, for C+C grammar anathema when applied in this way since it implies that grammar is equated with form and is reduced to syntax and morphology. Ellis expands his definition as follows (ibid):

> […] a 'task' requires the participants to function primarily as 'language users' in the sense that they must employ the same kinds of communicative processes as those involved in real-world activities. Thus, any learning that takes place is incidental. In contrast, an 'exercise' requires the participants to function primarily as 'learners'; here learning is intentional.

The polar alignment of language users with communicative processes, real-world activities and incidental learning as opposed to learners who learn intentionally seems to me to misrepresent the nature of most learning contexts. As with stronger versions of the communicative approach, it is claimed that all learning has to be based on simulating the outside world: students must be users of language and not learners of language. Indeed, Ellis himself appears to doubt this line of argument when he adds (ibid.: 5):

> […] the extent to which a learner acts as language user or language learner and attends to message or code when undertaking tasks and exercises is best seen as variable and probabilistic rather than categorical.

A C+C perspective takes as a starting point the view that students are both learners and users of language and therefore recognises the potential usefulness of grammar pedagogy and that 'intentional', conscious learning can play an important role. However, criteria must be applied both from a communicative and from a cognitive perspective in order to assess the efficiency of grammar activities. These criteria may be stated as follows:

> *Communicative criterion* – to what extent does an activity support the development of both grammatical and communicative performance by simulating its conditions?
>
> *Cognitive criterion* – to what extent does an activity support learning by activating learning processes and thus contribute to the overall aims of learning grammar?

4.1 The communicative criterion

The following principles may be applied to assess the extent to which a grammar activity replicates conditions of communication:

1. Clear and realistic context
- grammar arises from an actual situation;
2. Realistic use/processing of language (authenticity of process)
- grammar is communication, not mathematics;
3. Meaning, and meaningfulness of grammar stressed
- grammar helps to convey messages;
4. Personalisation (students link grammar to their own knowledge, ideas, experience, wishes etc.)
- grammar is a way of encoding experience;
5. Open-ended exercises
- grammar is part of a creative process;
6. Task-based
- grammar is a means to an end;
7. Integrated skills (vocabulary, speech acts, speaking, writing)
- grammar works with other linguistic sub-systems and skills to generate meaning.

There is, of course, no simple binary distinction between 'communicative' and 'non-communicative' activities. It could be stated that the more of the above criteria which a grammar activity fulfils, the farther along the continuous cline towards '100% communicative' it might be located. An example of a grammar activity which fulfils several of these criteria is the following, the aim of which is to practise the generation of meaningful 'wh' questions. In this activity students have to write questions which may lead to the answers given.

1. A: *Why are going to bed already?*
   B: Because I feel tired.
2. A: _____?
   B: A hamburger, please.
3. A: _____?
   B: Let's go to France. I've never been there.
4. A: _____?
   B: English and Spanish.
5. A: _____?
   B: For five years. She really loves it there.
6. A: _____?
   B: Fantastic! We had seats in the front row!

With the exception of criterion 6 (task-based) this activity appears to satisfy all the communicative criteria.

Whilst giving an activity a 'communicative' stamp will validate the link between pedagogy and real-life use, this is a necessary but not a sufficient criterion on which to assess its effectiveness within the overall process of learning. The communicative criterion may guide us as to whether to use an activity; it will not, however, provide any

information as to the stage of learning during which an activity might most usefully be applied. To do this, we need to add a cognitive learning dimension.

4.2 The cognitive criterion

A cognitive view of learning is one that has gained in importance in recent years (see O'Malley and Chamot 1990, Skehan 1998). Whilst there is no unified view of what 'cognitive' actually means, one of its central tenets, identified by O'Malley and Chamot (1990: 217), is the following: "Learning a language entails a stagewise progression from initial awareness and active manipulation of information and learning processes to full automaticity in language use." A stage-model is used by cognitive psychologists (for example Anderson 1990) essentially as a processing model; however, it can easily be adapted to enable us to see language learning both as a series of information processing and learning stages. The aim of the model of figure 4 is to identify stages of grammar acquisition.

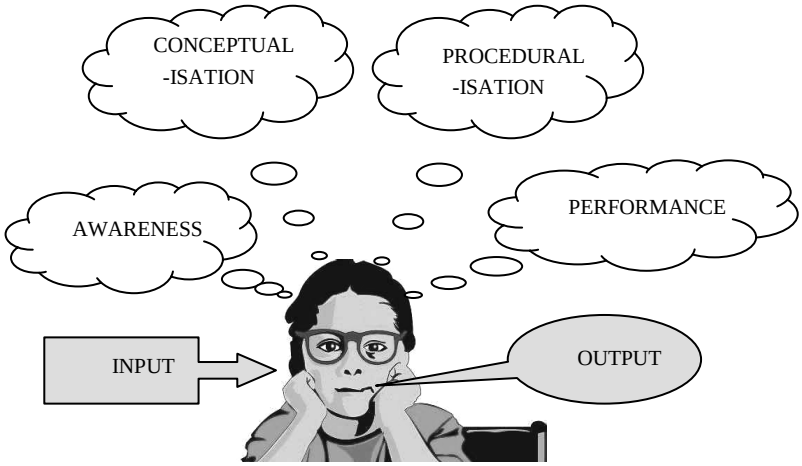

Figure 4: A cognitive model of learning stages

In some ways the concept of learning stages can be compared to the teaching stages found in traditional grammar pedagogy: presentation – practice – production (PPP). A cognitive view, however, will see stages from the *learner's perspective* and will focus on the tasks that need to be accomplished in the human mind at each stage in order for grammar to be internalised. It will be noted that this model sees grammar both in terms of *competence* and of *performance*. Here we can also see a link to the communicative approach, which stresses the importance of seeing language in terms of both knowledge and skills. One important practical use of this model is to analyse certain aspects of grammar activities. In particular, it is possible to match a grammar activity to a particular stage of acquisition. A brief explanation of each stage will be given. It should

be remembered that whilst the model is presented as a series of discrete stages, they are, of course, both overlapping and recursive.

(a) Input

A cognitive view of input is much broader than that normally taken in discussions of second language learning. This different perspective derives from two sources: first, from seeing language in terms of *process* rather than *product*; second, from seeing input not only in terms of *teacher input* but also *learner input*. A narrow view of input will see it in terms of items of new language embedded in a text or dialogue – i.e. the language product. Whilst this represents the core of input, we also need to take into account a range of linguistic and cognitive resources, which are brought to bear on language input by learners. This in turn enables us to take a *constructivist* view of input. The pedagogical implications of this are that, at the following awareness stage, grammar activities will be designed which incorporate the learner's existing knowledge, both linguistic and schematic. This will provide for a more active initial stage of learning than is normally found in traditional grammar pedagogy.

This cognitive view stands in contrast to the learning theories of Stephen Krashen, whose use of the term 'comprehensible input' seems inadequate, blurring the distinction between the data the learner receives and the mental processes used to deal with them. He thus gives one-sided attention to the comprehending of messages but ignores the processing of new language by the learner. As Nick Ellis (2001: 37) says: "Constructivists are unhappy with nativist explanations […] because the innateness hypothesis has no process explanation."

(b) Awareness

Awareness is the stage in which an item of grammar enters the learners' consciousness and in which they release mental energy to process it (see Van Lier 1996: 6). In the context of learning, awareness takes on a specific meaning, which does not correspond to its undifferentiated use in general English. Here it indicates what Eysenck (1984: 49ff.) refers to as *focal attention* and takes on a very active sense, which is well characterised in an early definition given by William James (1890: 403): "Focalisation, concentration, of consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with others." The notion of 'dealing effectively' is particularly appropriate since it points to a more active sense of awareness.

Traditional teaching refers to this stage as the 'presentation' part of the 3 Ps, which reflects its teacher-based orientation to FL methodology. Whilst it does stress the conscious processing aspect required at this stage, it often fails to take into account the actual nature of processing. Consequently, activities of traditional methodology tend not to provide enough scope for the cognitive task of awareness to be given adequate support. Learners are often shown examples of language and told about rules relating to it, but do not actively engage in activities which activate their mental energy. As a result, they may hear or see the language input, but do not process it adequately – what we might call the 'in-one-ear-and-out-of-the-other' phenomenon. A cognitive view stresses the activation of mental processes, and tasks are designed with this in mind.

The term ‘awareness-raising’ or ‘consciousness-raising’ activities used in FL methodology reflects the active nature of this view.

(c) Conceptualisation

Conceptualisation refers to the process of making generalisations on the part of the learner. In other words, we are concerned with the internalisation of rules. This stage requires learners to process language input in two ways: on the one hand, they must comprehend an overall message; on the other, they must build a hypothesis about the nature of a grammatical concept or pattern which has been registered during the awareness stage - a new notion, a new form, a new discourse structure, etc. These dual tasks of comprehension and processing are closely linked: the overall meaning of a message will help learners to form hypotheses about the rules which underlie a new piece of grammar. In addition, learners will make use of contextual information and their own schematic constructs, all of which will lead to their making a generalisation about an underlying rule and incorporating this new rule into their personal ‘grammaticon’. In short, it can be said that pedagogy concerns the management of the evidence-hypothesis-rule process. In traditional grammar terms (PPP), we are still in the area of presentation. The first question that needs to be answered by the teacher is how to structure the ‘evidence’ or data or input, which is equally important for both the awareness and conceptualisation stage. There are four general modes of acquiring new knowledge:

- explication – learning by understanding;
- exemplification – learning by sensing;
- exploration – learning by reflecting;
- utilisation – learning by using.

These different modes are particularly relevant to conceptualisation and impact directly on the evidence-hypothesis-rule process, so let us consider some methodological approaches.

Traditional teaching tends to take the ‘explication’ option; that is to say, the teacher not only provides all the evidence, but the solution to the problem too - the rule is presented on a plate to the learner and it is assumed that this will lead directly to conceptualisation. It will be noted that the ‘hypothesis building’ process is excluded in this approach. As many methodologists have pointed out, this mode of presentation can not only be pedagogically tedious for learners since it does not meet cognitive needs such as curiosity, but is also of dubious efficiency since the *depth of processing* that this involves on the part of the learner is minimal. Nevertheless, it should not be discarded as a methodological option. For certain learning styles, this may be a valuable initial route to knowledge acquisition and, given the limited time often available for school-based language learning, it is usually less time-consuming than other modes; however, in this case it is particularly important that this is supplemented by other modes. A communicative view would advocate the use of utilisation (learning by doing); a cognitive view would stress the importance of exemplification and exploration (discovery activities).

(d) Proceduralisation

Whereas conceptualisation is concerned with the acquisition of new knowledge, proceduralisation relates to the skill aspect of language use in both oral and written production. It is the stage which links competence to performance and, if grammatical knowledge is largely declarative at the beginning of this stage, it is where *procedural knowledge* gradually takes over. As far as pedagogy is concerned, this stage brings us into the second P of the PPP acronym: that of practice – of oral and written activities, exercises tasks and tests, which consolidate concept formation and guide the learner towards the performance stage.

Closely linked to proceduralisation is the diminishing role of attention in information processing. In the initial stages of learning - awareness and conceptualisation - the aim of pedagogical mediation is to 'freeze the action' of language in order to focus the learners' attention on new language and enable them to take on board new concepts; the aim of the proceduralisation stage is to set the action going again and gradually to reduce the amount of attention required to process grammatical items. The proceduralisation of knowledge leads to a more efficient use of the storage capacity of memory. Once a grammatical concept becomes proceduralised, this has the function of reducing the load on memory since declarative knowledge does not need to be retrieved from memory when language is being processed. Proceduralised language knowledge becomes part of long-term memory and this then frees up the working memory to deal with other language-related processing tasks.

An example of a proceduralisation activity is the following oral card activity aimed at giving practice to certain tense notions commonly used in indirect speech.

Grammatical objectives:

Process: How to report utterances and thoughts; Notions: [Past intentions] → {*going to*}, [Past predictions] → {*would*}; [Past willingness] → {*would*} etc.

Description of activity:

Students work in groups of about 4. Cards are placed in a pile in the middle, facing downwards. One student picks up a card and reads out the cue and then completes the utterance by reporting a prediction or intention, etc. Example: The cinema was nearly empty yesterday and I thought *it would be full/would be impossible to get a ticket*, etc. If the other group members agree that the utterance is meaningful, the student can keep the card. If not, it is passed to the next student, who produces an appropriate utterance.

Text of cards:

The cinema was nearly empty and I thought that ...	You haven't done your homework! You promised that ...	The weather is fantastic today! The forecast said that ...	Hey! What are you doing here? You said that ...
We didn't have time to go to the zoo on Sunday, but mum promised that ...	I'm really glad I passed my exam. I was afraid that ...	I was surprised that Katie was at the party. She told me that ...	Why haven't you brought your tennis racquet with you? I told you that ...

(e) Performance

In this final stage, activities will incorporate all the processing demands that performance entails in a real-time context; they will not be scaffolded or pedagogically structured. In other words, learners are given a task and left to themselves to accomplish it.

5. Conclusion

The C+C axis has the potential not only to provide a theoretical base for modelling both the use and the acquisition of grammar but contributes to pedagogical grammar by helping to systematise specific tasks. The most significant outcomes of C+C grammar are the following:

- A theory of grammar based on ways in which grammar is stored in the human brain and used in communication. This gives focus to how grammar is processed when grammatical meanings are created and how these are encoded (and decoded) in communication.
- Pedagogical applications of this theory of grammar:

a) formulation of grammatical objectives
b) syllabus design
c) grammatical 'I can' descriptors – also for level specification (as in the *Common European Framework of Reference*)
d) self-assessment
e) formulation of grammatical rules
f) entry point for methodology

- A theory of learning based on how human beings process and store new information and how human beings recall and utilise information
- Pedagogical applications of this theory of learning:

a) framework for designing and evaluating grammar methodology
b) framework for test and assessment design

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