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What do adult learners make of their own errors? Understanding individual differences in foreign language learning

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ABSTRACT

Errors are not only inevitable, but essential in any form of learning, yet some people are better than others when it comes to learning from their own mistakes. Intake of new knowledge is determined not only by learners' existing knowledge and skills (cognition), but also by their own assumptions about learning (metacognition) as well as the emotions that the learning process brings about (affect). The aim of this paper is to define learner differences in terms of individual patterns of interaction between cognition, metacognition and affect during the process of analysing one's own errors. From a methodological perspective, it also aims to propose a preliminary taxonomy for categorising learning styles through direct observation within the specific context of error self-analysis (ESA) as an alternative to learning style inventories based on self-reported data. Sixty Spanish degree finalists were asked to identify, correct and explain the errors they made in a Spanish speaking assignment. As part of a course component in liaison interpreting, the students were trained to interpret conversations which simulated exchanges between two monolingual speakers of Spanish and English, each using their own language. The students' interpreting performance was recorded and the following data collected: (1) Audio-recording of students' interpreting performance; (2) Word-for-word transcript of the students' recording (written by the students themselves afterwards); (3) Students' detailed analyses of their transcript, indicating what errors they made, what corrections they proposed in each case, and why. Four hypothetical dimensions of learning styles in ESA are proposed: depth of analysis (errors noticed-corrected-explained), voice (personal-impersonal), orientation (reactive-proactive), and affect indicators in discourse (negative-positive). The study discusses the patterns of interaction between these dimensions in relation to cognitive theory, current research on metacognitive knowledge, Bandura's self-efficacy theory, and Weiner's theory of attribution, whereby the explanations ('causal attributions') that we produce in order to account for our success or failure on a previous task determine how we feel about our own performance. The paper concludes with a method for learner training that addresses all four dimensions.

Keywords: self-assessment, error-analysis, affect, language learning, independent learning, autonomy, strategies, learning styles, self-efficacy, attributions

INTRODUCTION: INDIVIDUAL DIFFERENCES AND ERROR SELF-ANALYSIS

Why are certain learners good at learning from their own errors and others not? For the former group, errors are part and parcel of the learning experience: the more errors they make, the more they learn. For the others, errors simply turn learning into an unpleasant experience that leaves them feeling inadequate and frustrated. The ways in which people perceive and deal with their own errors varies considerably from one person to another. The aim of this paper is to examine individual differences in relation to the ways in which adult

learners of a foreign language analyse the mistakes they make while performing a speaking task in the foreign language.

Errors play an essential role in any learning process, and foreign languages are no exception. Through making and correcting errors, learners develop and gradually modify their mental representation of the target language and its rules (Corder, 1967; 1981). This process of knowledge construction results in an organically evolving language system known as a learner's *interlanguage* (Corder, 1981; Selinker, 1972). It lies somewhere between the learner's mother tongue (L1) and the target language (L2). Every new error a learner comes to understand and correct brings that learner's interlanguage one step closer to the target. Unfortunately, such an understanding can take adult learners a very long time to achieve through simple exposure to the L2. Error self-analysis is a technique intended to help them bridge the gap through conscious reflection. In the institution where the present study was conducted, error self-analysis was also introduced as a means of encouraging independent learning in situations where a teacher is not available to provide feedback, for example after graduation.

In error self-analysis (hereafter ESA), learners themselves look back at their own performance (either written or spoken) and try to find and correct the errors they have made. They are also required to explain their corrections. Learners respond to that requirement in many different ways, notably with regard to personal emotions, assumptions about learning, and learning itself. Hence, I define learner differences in this paper in terms of individual patterns of interaction between cognition, metacognition and affect during the process of analysing one's errors.

From a methodological point of view, a secondary aim is to propose a preliminary set of dimensions for categorising learning styles within the specific context of ESA. Given the difficulty in reaching consensus among style researchers (Rayner et al., 2008) as a result of the heterogeneous range of disciplinary backgrounds of contributors to the field (Peterson et al., 2008), it is necessary here to provide a working definition of learning/cognitive styles/strategies. From an applied linguistics perspective, a *learning* strategy is an attempt to develop linguistic and sociolinguistic competence in a given target language, as opposed to those strategies that have language production or communication as their aim (Tarone, 1981). A widely accepted classification of learning strategies in this field comprises three types of strategies: *cognitive* strategies that 'operate directly on incoming information', for example rehearsal, organisation, inferencing and deduction; *metacognitive* strategies which are 'higher order executive skills' such as planning, monitoring, or evaluating the success of a learning activity; and *social/affective* strategies, admittedly described as a 'broad grouping' of strategies involving interaction with another person (for example, cooperation) or the formation of ideas to control affect (for example, self-talk) (O'Malley & Chamot, 1990, p. 44). *Affect* itself could be defined more specifically as the degree to which a particular experience fits with an individual's own needs, and its resulting effect on the individual's emotions (Dulay et al., 1982). Learner strategies can therefore be regarded as a broad category of behaviours that may relate to cognition, metacognition, or affect. It has also been argued that strategies are conscious and intentional (Rabinowitz & Chi, 1987; Sternberg & Grigorenko, 2001), although the role of consciousness in strategic behaviour is a complex and controversial issue (Bialystok, 1990; McDonough, 1999; Schmidt, 1990;

1994). Insofar as a learning style can be defined as ‘an individual’s natural, habitual and preferred way(s) of absorbing, processing and retaining new information and skills’ (Reid, 1995, p. viii), it follows that cognitive styles are themselves a subset of learning styles (Brown, 2000). In comparison to strategy definitions, definitions of style generally incorporate a notion of stability and overall consistency across a class of tasks (Rayner, 2000; Snow et al., 1996), although this too – especially the precise degree of stability of cognitive and learning styles – is a widely debated issue in style research.

In this study, the students’ written corrections and explanations are in turn analysed by the researcher in terms of specific observable features, such as the level of analysis attempted or the use of words denoting strengths or weaknesses. In other words, the instruments used are not based on self-reported accounts of what the learners claim to be doing. Instead, this methodological approach relies on directly observable responses given by individuals as they perform a specific learning task (ESA) in a particular domain (foreign language learning). This specificity implies a primary focus on strategies rather than styles.

The next section will discuss the role of cognition, metacognition and affect in ESA, focusing especially on the reasons why cognition is a necessary, but insufficient condition for learning. The specific study of ESA on which this paper is based will then be described and a number of hypothetical dimensions derived from the findings will be proposed for the description of language learner profiles. Finally, I shall consider ways in which a training approach informed by such profiles could enhance learning and discuss the limitations and potential benefits of this research.

BACKGROUND

The role of cognition

From a cognitive point of view, the main strength of ESA is that it encourages learners to consciously focus their attention on language form. The *Focus on Form* approach proposed by Long (1991) is based on Schmidt’s ‘noticing’ theory, which postulates that “intake is that part of the input that the learner notices” (Schmidt, 1990, p. 139). Schmidt also explains that adult learners may not be able to acquire certain grammar features unless they pay attention to form (*Ibid.*, p. 149). Furthermore, it has been shown that learning tasks that make learners process information at a deeper level (e.g. sorting words according to their meaning) are more likely to induce retention than those in which processing is more superficial (e.g. simply repeating those words) (Anderson, 1985; Ericsson & Simon, 1984). For all these reasons, ESA should be beneficial to adult learners of a foreign language.

But how far can we expect such learners to be able to notice their own errors? In the language learning literature, a distinction is usually made between errors and mistakes (Corder, 1967; 1971; James, 1998). *Errors* conventionally refer to those discrepancies between the L2 norm and the speaker’s output resulting from a lack of awareness of the target language. These are, by definition, difficult to self-correct as the learner still lacks the necessary knowledge to do so. Nevertheless, learners are sometimes aware of an existing gap, for example when they do not know a particular word that they are trying to use in the

target language. In such instances they may be able to bridge the gap themselves by using resources such as dictionaries, grammars, or by questioning competent speakers. In spite of this, error correction is traditionally deemed to be the remit of teachers alone. Conversely, *mistakes* are discrepancies between what a learner is capable of doing (competence) and what s/he actually does under the existing conditions at a specific time (performance) (Corder, 1967, p. 167). Unlike errors, mistakes can easily be noticed and corrected by those who made them, provided that conditions allow them enough time to monitor their own performance. In the case of speaking, this may well not be possible during performance itself, as the entire working memory is busy trying to get the message across in real time. However, the same speaker may be able to notice a significant number of mistakes when playing back a recording of an earlier performance.

Cognition alone is not enough

Let us imagine a little girl learning her multiplication tables. When asked the question ‘5 times 3’ she may resort to a variety of cognitive strategies in order to answer the question: direct retrieval from memory ('I remember: It's 15'), logic ('3x5 is the same as 5x3, so the answer must be 15'), hands-on ('I'll make 5 piles of 3 chickpeas each and count the chickpeas'), auditory memory ('I'll sing the *Times Three* song I learnt yesterday'). The preferred strategy will depend on her cognitive style and some strategies may be more efficient than others (direct retrieval is faster than counting chickpeas), but all strategies are equally effective in providing the correct answer. Unfortunately, many parents or teachers have experienced that not all children are willing to deploy this type of effective strategy. For instance, a child may respond with distraction techniques ('I dropped my pen'), or claim not to know the answer even before the question has been asked, or if all else fails, tear the sheet or have a cry, either because s/he feels genuinely angry/distressed or –more often so—because such displays of anger/distress are yet another powerful distraction technique. The children in question may otherwise be perfectly bright and capable, yet their refusal to even attempt to work out an answer can drive their parents and teachers into utter frustration. So why do such children refuse to deploy any of the cognitive strategies available to them? Intuitively, one could infer that the children are simply in the wrong mood at the time, or that they are making adults lose their temper as a means of taking control over them, or that they are just afraid of not being able to deliver the answer expected. They might even fear that, if they answer this question correctly, the next one could be a lot more difficult.

When it comes to emotions, the feelings experienced by adult learners faced with the challenges of learning a foreign language are not as far removed from those of a child as they might like to think (Arnold, 1999; Dörnyei, 2005; Horwitz et al., 1991). Presented with a new challenge, all individuals have certain ‘beliefs about their capabilities to produce designated levels of performance’ to which Bandura (1977; 1994) refers as *self-efficacy expectations*. People fear and tend to avoid situations that they deem to be beyond their coping skills, whereas they engage in those that they judge themselves able to handle. Within a learning context, self-efficacy expectations are one of the components of ‘person knowledge’, which itself is a subset of metacognitive knowledge or “information learners acquire about their learning” (Wenden, 1998, p. 518). This knowledge is what informs a learner’s choice of strategy when tackling a learning task in terms of planning, monitoring

and evaluating performance. In the case of ESA, a learner with high self-efficacy expectations (in other words, one who believes that s/he is capable of noticing, correcting and explaining his/her own mistakes) will generally approach the task with confidence and therefore be willing to engage in cognitive processing. Consequently s/he will analyse the errors in greater depth and therefore experience some degree of success in understanding the new components of the L2 system. This sense of success should in turn strengthen self-efficacy expectations and give the learner more confidence when faced with the next challenge. Conversely, a learner with low self-efficacy expectations will believe that s/he is not able to notice, correct or explain his/her own mistakes and will therefore be more likely to approach the exercise with apprehension. Engagement will be avoided and consequently little or no analysis will be attempted. Therefore little or no understanding will be gained, resulting in a further weakening of self-efficacy expectations and greater apprehension when faced with the next challenge. When failure is experienced repeatedly over time, individuals may become ‘trained’ to fail even in those instances where their ability and skills would normally make success possible, a response to which Overmier and Seligman (1967) refer to as *learned helplessness*.

As they analyse their own errors, learners are required to consider linguistic criteria such as gender agreement, appropriacy of vocabulary, pronunciation, etc. However they are just as likely to also consider the causes that led them to make such errors, even when the task directions do not ask them to do so. Weiner’s (1985; 1992) attribution theory proposes that the causal explanations (*attributions*) that we produce in order to account for our success or failure on an earlier experience determine how we feel about our own performance at the time. Faced with identical language problems resulting in identical mistakes, two learners of comparable abilities may respond in very different ways depending on the attributions that they create. If errors are put down to external causes (e.g. students not given enough time to prepare) the learners may simply experience anger or irritation against their teacher. Even if both learners perceive the error to be their ‘own fault’ (i.e. internal cause), a controllable cause such as ‘I did not prepare my key vocabulary’ may produce feelings of guilt or shame, whereas an uncontrollable cause such as ‘I can never understand anything’ or ‘I am just hopeless’ is likely to result in a more harmful sense of helplessness.

Learning, as we can see, is much more than a matter of cognition alone, and the previous discussion highlights the reasons why ESA should provide good examples of the complex relationships that are at play between cognitive, metacognitive and affective strategies.

THE STUDY

Method

Sixty English-speaking students taking their final year of a Spanish degree at the University of Newcastle upon Tyne were asked to identify, correct and explain the errors they made in a Spanish speaking assignment. As part of a course component in liaison interpreting, they had been trained to interpret conversations which simulated exchanges between two monolingual speakers of Spanish and English, each using their own language. The students’ interpreting performance was recorded and the following data collected: (1)

audio-recording of students' interpreting performance; (2) word-for-word transcript of the students' recording (written by students afterwards); (3) students' detailed analyses of their transcript, indicating what errors they made, what corrections they proposed in each case, and why. An example of an analysed self-transcript is provided in Table 1. The first column, already completed in the template given to all the students, shows the transcript of the recording that was used as a stimulus for the task. The second column is the self-transcript written by each student. The third column shows any corrections made by the student and the final column shows his/her comments and explanations. The amount of information included in the last two columns (i.e. corrections and comments/explanations) may vary considerably from one student to another.

<i>Turn</i>	<i>Original conversation [Transcript provided on ESA template]</i>	<i>Self-transcript [Written by student]</i>	<i>Corrections</i>	<i>Justification & comments</i>
S4	Preguntale cuándo se reúnen y qué tengo que hacer si me interesa.	Mrs Alonso would like to know when do you meet and what would she have to do in order to come along.	-what does she have to do if she is interested..	More exact
E4	We meet every Thursday. If you want to come along next Thursday with me, you'd be welcome.	Dice que se encuentran cada jueves y si os gustaria ir con el Sr Francis, lo podria hacer.	-Se reunen -Si le gustaria ir el jueves que viene con el Sr Francis..	Wrong person

Table 1: An example of self-transcript with ESA

The comments and corrections provided by a class sample of 26 students were then encoded for each of the following features:

1. Areas in which students identified problems, comprising: vocabulary, grammar, pronunciation and fluency, message content, structure and style, pragmatics (use of contextually-appropriate interaction strategies), and task management.
2. Depth of the analysis performed by the students on each item: indicated, categorised, corrected, or explained.
3. A series of discourse features targeted as possible indicators of students' attitudes to the task: questions, causal relations, use of modal verbs, use of past versus present tense, words denoting emphasis on weaknesses or strengths, use of personal versus impersonal verb forms, and other emphasis markers.

A sample of two scripts (comprising a total of 27 student comments/corrections) was encoded for discourse features by both the researcher and a trained assistant, resulting in an inter-rater reliability index of 0.85. All discrepancies were resolved through discussion and the researcher then proceeded to encode all 26 scripts.

In order to determine whether ESA resulted in improved accuracy, one grammatically challenging section of the stimulus material was also selected (where the English speaker stated: ‘It does not matter if she does not speak English’; which should be translated: ‘No importa que no hable/si no habla inglés’), and the participants’ responses related to this item were analysed qualitatively in terms of language accuracy.

Results

As the methodological aim of the study was to provide a preliminary taxonomy of ESA-related dimensions, the main focus of data analysis was on categories rather than numeric values. Nonetheless, a few global trends are worth reporting here.

1. Categories of errors that students identified

The 26 students whose scripts were included in the sample *noticed* a total of 308 errors or problems. Figure 1 shows the proportion of errors that were identified in each category. The vast majority of these (84 out of 308) were related to unfamiliar vocabulary (lexis). Structure and style were the next largest group (53), followed by content (47, referring to information given in the recording that the student either left out or mistranslated) and pragmatics (42, mostly related to an interpreter’s appropriate way of addressing and referring to the interlocutors).

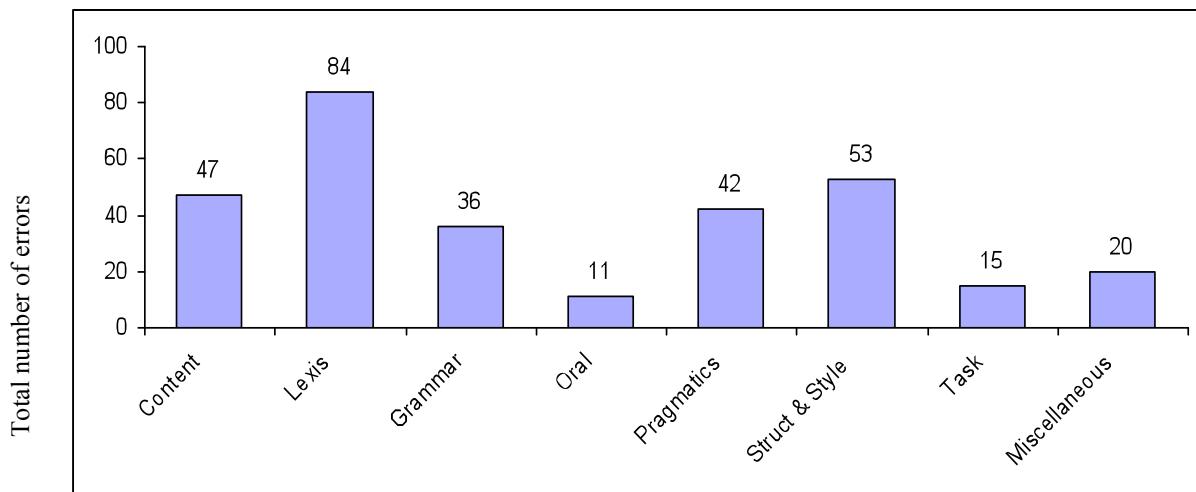


Figure 1: Number of errors noticed in each category

Grammar came only fifth (36 comments, most of them on gender, number, and person agreement). Task management (15) and oral features such as pronunciation and fluency (11) were the least commented upon, while a small number of comments (20, miscellaneous comments such as ‘language problems’) were too vague to be categorised.

2. Accuracy of the corrections made to a specific ‘grammatically challenging’ item

In 10 of the 26 scripts the target structure was either correct the first time round or had been avoided altogether, and therefore could not be analysed. The remaining 16 scripts presented errors of some kind in the original performance, thus enabling the researcher to assess the accuracy of subsequent corrections. Where attempted, the corrections proposed by the students were better than their original performance. Out of 16 revisions, 4 resulted in fully accurate translations and 3 improved with some errors still apparent. A further 7 students did not attempt to correct their inaccurate translations (which appeared to remain unnoticed). Finally, one revision corrected one problem (incorrect person) whilst introducing a different one (incorrect verb mode); and another student who had omitted the item altogether in the original interpreting performance produced a mistake in trying to incorporate the missing content in the revised version. Whilst all revisions attempted resulted in improvements on the original submissions, the most common problem appeared to be that errors were either not noticed at all, or noticed but not corrected.

3. Depth of analysis performed by the students

A simple vocabulary error will be used here to exemplify the different levels of analysis present in the sample. In the stimulus recording the English speaker mentioned a villager ('aldeano' in Spanish), which many students incorrectly translated as 'ciudadano'. The following student comments represent five possible levels of analysis:

- *Level 1:* The student identified an error category ('Unknown vocabulary')
- *Level 2:* The student acknowledged a specific problem ('Ciudadano is wrong')
- *Level 3:* The student proposed a correction in the target language ('Should be aldeano')
- *Level 4:* The student explained the correction in terms of a 'rule' of some kind ('Ciudadano actually means citizen')
- *Level 5:* The student proposed a strategy for improvement ('Look up some key vocabulary before the next assignment')

Only one comment out of 308 displayed all five levels of analysis. Comments analysed at Level 2 (acknowledging) or beyond were the most common (76% of all comments). Level 3 (correction) was also very common (45%). Errors could also be corrected without being categorised (Level 3 without Level 1: 29% of comments). Conversely, Figure 2 shows that Level 3 (correcting) was often omitted, despite it being specifically requested in the task brief. Students failed to attempt a correction for the errors that they noticed in 44.5% of cases, even when a simple dictionary search might have supplied the correct answer. Level 4 (explanation/rule) was less common still (12.7%). Occurrences of Level 5 (proposed strategy) were also rare (9.7%).

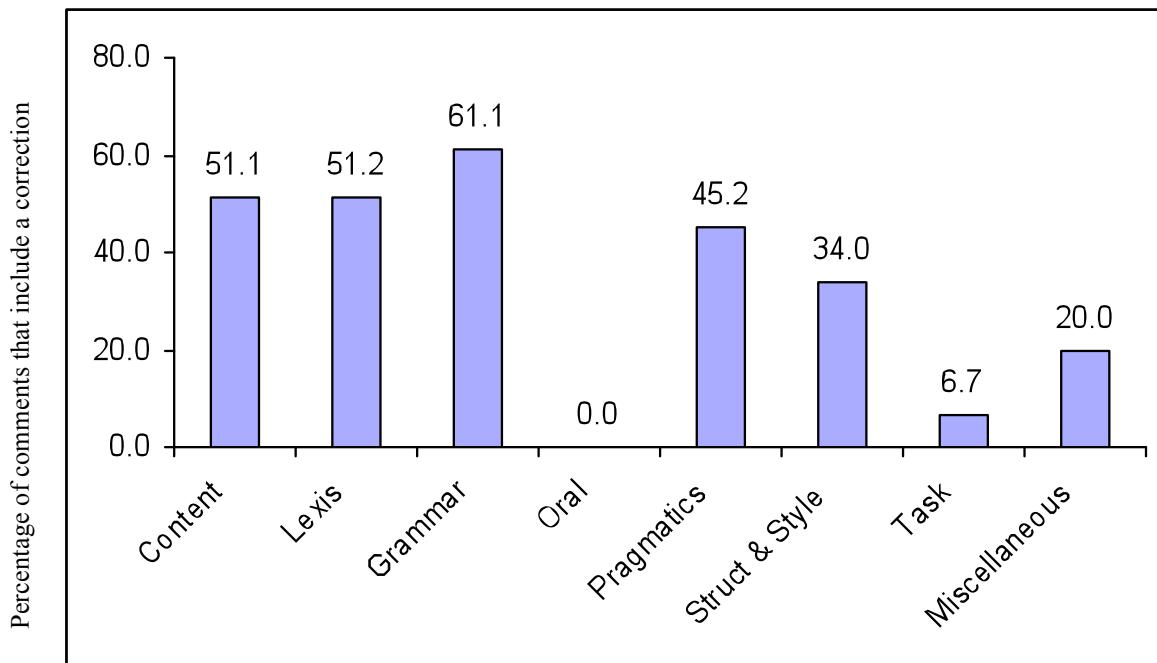


Figure 2: Percentage of comments that include a correction within each error category

4. Discourse features indicating the students' attitudes to the task

A number of discourse features found in the students' comments were examined as potentially relevant indicators of their attitudes to the task:

(a) Questions

These could be formulated overtly ('*Should it be this way round?*') or more covertly ('*Not sure whether ahorita is entirely appropriate.*'). In certain cases they were unequivocally intended for the teacher ('*Will I lose marks if I say monkey instead of gorilla?*'), whereas in others the intended recipient - possibly the student herself/himself - was less clear. The former could indicate either a greater reliance on the teacher or what Tait et al. (1998) have described as a 'strategic' approach, whereas the latter would indicate that the learner was using self-questioning strategies to assist cognitive processing (what the same authors describe as the 'deep' approach).

(b) Justifications

Causal relations were used either in order to account for a problem that the learner experienced (e.g.: '*[I should have mentioned those things], but on the day such vocab wasn't known*'), or in order to account for a suggested correction ('*Representación would be better than cosa in some places, as this is a rather over used word.*').

(c) Reactive versus proactive approaches

The choice of verb forms (e.g. past tenses, ‘should have’, etc. as opposed to present, imperative, ‘must’, ‘need to’, ‘could’ etc.) demonstrates that certain learners focused mostly on what they failed to do (*‘Should have said there was plenty to do if she didn’t have a speaking part’*), whilst others focused more on what could or needed to be done in order to improve their performance (*‘Replace actuar for a sentence that actually states that there’s no speaking involved’*).

(d) Emphasis on weaknesses versus strengths

The use of comparisons, negatives, verbs denoting achievement or under-achievement reveals that some learners focused essentially on the weaknesses in their original performance (*‘Sounded bad because I stumbled’*), whilst others focused on the strengths of their corrections (*‘Pantomime is explained better in the correction. Overall it just sounds more clear.’*).

(e) Personal versus impersonal approach

The use of the first person (*‘I use pues too much’*) denotes a greater involvement of the learner as a person than does the use of impersonal constructions (*‘Española must agree with persona’*).

(f) Emphasis markers in discourse

Many other features suggesting the presence of emotions may be worth considering as well. These comprise the use of exclamations (*‘Ooops this should be in Spanish!’*), question marks (*‘Una parte de voz??????’*), capitals (*‘Used an English word, STUPID STUPID’*) and the use of marked adverbs such as ‘very’, ‘extremely’, ‘often’, ‘hardly’, ‘simply’, superlatives and similar devices such as the words ‘super’ and ‘just’ in the statement: (*‘This was super difficult ‘cos I just didn’t know the vocab’*).

HYPOTHESISING LEARNER PROFILES THROUGH ESA

How do the features just described relate to individual learning styles? Macaro (2006), whose principal research focus lies on language learning, defines styles as “clusters of cognitive and metacognitive strategies that, having gone through a process of proceduralisation, have become stable and fixed, and that a learner has a predisposition to use.” (Macaro, 2006, p. 331). More specifically with regard to ESA, such ‘clusters’ could be characterised in relation to four basic dimensions including depth of analysis, voice, orientation and affect indicators.

Depth of analysis

The results reported above show that the five ‘levels’ identified in this study do not necessarily all occur as a linear sequence. For example, errors were very often

acknowledged without being categorised. In a similar study conducted by Brown and Glover (2006) on written assignments, the authors examined the comments provided by teachers in their written feedback to students. Interestingly, ‘depth’ was also identified as a key dimension of written feedback, but Brown and Glover’s proposed framework had only three levels: Depth 1, where a problem is acknowledged; Depth 2, where the problem in question is corrected; and Depth 3, where the teacher provides an explanation for the correction made. The five-level classification described in the previous section could be mapped into Brown and Glover’s as follows:

- Depth 1 comprising ‘categorisation’ and/or ‘acknowledgement’ of an error;
- Depth 2 comprising ‘correction’ of an error;
- Depth 3 comprising an ‘explanation’ and/or ‘strategies’ for avoiding the error in future.

This provides a simpler, more powerful description of depth, where the central point of reference, Depth 2, is whether or not a correction has been attempted. All analyses that fall short of doing that are classed as Depth 1 and all those that go even further are classed as Depth 3. Instances where a problem has been identified or categorised but not corrected might simply be due to a lack of competence. On the other hand, they could also be interpreted as possible signs of learned helplessness in those cases where the correction would normally be achievable given the information available to the learner.

Voice

This dimension refers to the degree of personal engagement with the task on the part of a learner. The learner’s position can be measured by assessing the proportion of comments formulated in the first person in relation to comments where impersonal structures are used. Use of the first person could mean either that the learner is fully engaged and personally committed to the task, or that anxiety is bringing about a critical focus on the self. Conversely, an impersonal approach may indicate either a refusal to engage personally with the task, or an active engagement in the objective processing of information. Therefore, in order to be correctly interpreted, this feature should be considered alongside the depth of analysis, and the presence of comments relating to strengths or weaknesses.

Orientation

This dimension refers to an overall preference for comments that are formulated either in a proactive or in a reactive manner. It must be noted that a reactive comment is not necessarily less effective than a proactive one. The proactive comment *‘Replace actuar for a sentence that actually states that there’s no speaking involved’* is no more informative than its reactive counterpart *‘Should have said there was plenty to do if she didn’t have a speaking part’*, yet the tone of the comments suggests that the learner’s attitude in the first example is more action-oriented than in the second.

The focus of justifications is also highly relevant in terms of determining orientation. Explaining why one made an error or experienced a problem constitutes reactive attributive

behaviour, whereas giving reasons for a correction is a proactive cognitive strategy that uses analysis for the purpose of learning.

Affect indicators in discourse

The final dimension refers to an overall preference for either positively or negatively formulated comments in the learner's analysis. This will be particularly apparent in the use of terms that either emphasise weaknesses or strengths, as well as the devices described above under '(f) Emphasis markers in discourse'. Here again, a weakness-oriented comment is not necessarily less effective than a strengths-oriented one in terms of its content. Extensive use of the latter might even indicate the kind of over-confident approach adopted by certain individuals as an avoidance strategy: if all is well there is no need to face the challenge of trying to improve a situation.

The discussion so far shows that within each of the proposed dimensions, two learners who display the same type of preference in one direction may in fact do so to different degrees and for different reasons. It is therefore essential to consider all the dimensions together. For example, the comment '*Sounded bad because I stumbled*' can be interpreted as reactive (past tense), weakness-oriented ('bad', 'stumbled'), and personal (first person), which suggests insecurity and personal involvement in the form of anxiety. Conversely, the comment '*Pantomime is explained better in the correction*' can be interpreted as proactive (present tense), strength-oriented ('better'), and impersonal (third person + passive voice), which suggests confidence and a disposition for objective analysis.

TRAINING THE LEARNERS

A teacher's concern is to ensure that, within the natural limits of each individual and the constraints of the learning environment, those habits that promote effective learning are encouraged and those that hinder it are gradually replaced with more effective ones. The training method presented in the next section operates on all the dimensions discussed above.

As seen at the beginning of this paper, the self-efficacy theory (Bandura, 1977, 1994) provides a useful framework for describing the ways in which effective and ineffective learners approach ESA. Learners whose self-efficacy expectations are low (i.e. those who believe themselves to be poor learners) can find themselves trapped in a vicious circle that appropriate training would set out to break (Figure 3). The purpose of such training should be to ensure that those learners experience success in understanding and explaining some of the problems that they encounter in their performance. At the same time they should be discouraged from producing negative attributions to account for the problems in question. In other words, they need to adopt a proactive, positive, and if necessary impersonal approach whilst aiming to achieve the greatest depth of analysis that is possible within their current proficiency level and available resources. This last point, represented on Figure 3 by the grey arrow labelled 'training', is the key for breaking the circle.



Figure 3: Breaking the ‘can’t do’ circle

Modelling Depth 3 analysis techniques

Learners with low self-efficacy expectations need to understand that discovering that one lacks the correct word (or for that matter, any other language tool) does not mark the end, but rather the beginning of the learning process. A small repertoire of very simple techniques can make them realise that they have more power as learners than they had been assuming. An example could be: ‘Look up the word that you need in the dictionary, then look up the correct meaning of the word that you had originally used. In this way you learn two words for the price of one single error.’ Lexical errors are an ideal category for this purpose because they are easily noticed and generally possible to resolve independently with the help of a good dictionary. Simple grammatical mistakes (e.g. gender agreement in Spanish) that are easy to find, correct and explain when deliberately targeted can also be used in this confidence-building approach. Any scaffolding from the teacher should be kept to a minimum as it is essential that the learners realise that they are able to find, correct and explain those simple errors themselves.

Recasting attributions

Training within the ‘depth of analysis’ dimension operates on a cognitive level by modelling the way in which information is processed in order to learn. On the level of

emotions, training needs to recast the learners' affective responses so that the role of such responses becomes facilitating rather than debilitating. In other words, any errors made originally, as well as any failed attempts to correct or explain a mistake should be re-interpreted in terms of constructive attributions. For example, if a learner is creating self-destructive attributions such as 'I am just hopeless', training can help the learner reformulate these into new ones that put the problem down to 'internal-but-controllable', or 'external-but-not-permanent' causes (Martinko & Gardner, 1982; Weiner, 1985). Attributions such as: 'I did not really try'; or for complex items: 'This item is clearly beyond my current level of proficiency' would result in feelings such as guilt or irritation, which are clearly less harmful than helplessness.

Monitoring affective responses

To develop positive affect it may also be useful to raise the learner's awareness of the remaining dimensions (voice, orientation, and affect indicators) and –this is essential– their related discourse features. Thus, a learner whose comments were reactive and full of negative markers could first address the issue at a formal level by removing the most obvious features (negative adverbs, past tenses, *did not-* and *should have*-statements) from his/her analysis and adopting a more objective, impersonal style (e.g. avoiding the first person). This training approach would create a self-reflective attitude and provide the learners with a simple and valuable tool for monitoring and regulating their own emotions during any learning task.

THE LIMITATIONS OF THIS STUDY

Because of its simplicity and practical emphasis on observable behaviour, the approach just described could be an attractive starting point from a teaching practitioner's point of view. However, it has a number of limitations that must also be taken into account.

As yet, the profiles discussed above are still hypothetical. While the dimensions proposed in this study (depth, voice, orientation and disposition) have been identified and successfully operationalised, notably through the use of discourse analysis methods, no set of typical profiles based on these four dimensions has been defined, let alone tested, as yet. The measures proposed would now need to be applied systematically in order to categorise existing individual profiles, and triangulation using standard cognitive style inventories could also be valuable.

Whilst the four dimensions are useful in terms of accounting for relationships between cognition, metacognition and affect in *learning strategies* as defined by Tarone (1981) and O'Malley and Chamot (1990), their relationship to *learning styles* is less clear. The study does not claim to provide any information as to how stable, internalised or consistent the observed approaches might be. Neither is it possible here to establish the extent to which the strategies regarded as beneficial (for example monitoring one's affect by watching discourse markers) may in time become an integral part of a learner's individual style, or to follow Macaro's model (2006), the extent to which such strategies may or may not become proceduralised and clustered together into a stable set of preferred approaches to learning.

The relationship between self-efficacy and performance is also more complex than the training approach outlined suggests. High achievers who think that they are not good at a particular task may be driven to try harder in order to perform better, despite their low self-efficacy in that particular area. Self-efficacy can vary from one context or task to another, and the intensity of its effects is also variable. For example, low self-efficacy may cause an individual to feel more anxious without necessarily causing a drop in the standard of performance. Conversely, the type of induced success proposed in this training approach may not be enough to bring about increased levels of self-confidence where learned helplessness is too deeply ingrained.

Finally, the fact that in ESA, language performance is analysed in terms of declarative knowledge and by means of controlled processing raises a question as to the extent to which ESA can bring about an improvement in the procedural skill of real time language production. Although the *Focus on Form* theory (Long, 1991; Long & Robinson, 1998) supports this hypothesis, the long-term effects of ESA on language proficiency would need to be tested in a longitudinal study.

CONCLUSION

This study does not claim to provide a generic measuring instrument suitable for all forms of learning in any context. Neither does it propose yet another list of typical learning style profiles, each with a list of traits covering every dimension and grouped under a carefully chosen label that encapsulates the ‘learning style’ in question. What it does give is a task-specific framework that practitioners (especially those in the field of foreign language learning) can use in order to understand some of the issues that make certain learners consistently adopt strategies that are effective or ineffective. The main strength of this approach is that it addresses the type of individual differences originating from the complex interactions between the learners’ emotions (affect), the beliefs that emerge from their own interpretations of such emotions (metacognition), and the ways in which learners process information (cognition) as a result of these assumptions. The training approach proposed on the basis of this framework could, with the few caveats discussed above, be particularly beneficial in those instances where, regardless of a learner’s cognitive style, unregulated emotions are preventing him/her from engaging with the task on a cognitive level in the first place.

The question of transferability of this training approach from one domain to another remains open to debate. Developing specific language learning strategies is unlikely to change a person’s entire cognitive style, understood here as stable and internalised ways of thinking and processing information (Rayner, 2000). One might hope, albeit speculatively, that over time, a series of small achievements in one area could improve a learner’s self-efficacy expectations and subsequent strategic approach in other domains. In any case, advocates of style stretching (Cohen, 2002) will now have at their disposal a clear set of tangible tools for addressing the notoriously elusive and complex issue of emotions in learning.

Finally, the research instruments presented in this paper demonstrate an alternative approach to self-reported scales as a method for describing learning styles (as defined by Macaro, 2006). While the dimensions used here are very specifically centred on language learning, the principle of focusing directly on observable features such as the depth of analysis and the presence of specific discourse markers could be easily adapted for other disciplines where learning style researchers need to complement self-reported quantitative instruments with qualitative observational ones.

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