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# Cognitive styles in the service of language learning<sup>1</sup>

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## Abstract

This article presents a new approach to understanding and using cognitive styles to enhance individual language learning. Ehrman and Leaver (2002). Development of a profile approach to learning style diagnosis. Unpublished manuscript; Ehrman, M.E. (2001). Bringing learning strategies to the learner: the FSI language learning consultation service. In: Alatis, J.E., Tan, A. (Eds.), *Language in Our Time: Bilingual Education and Official English, Ebonics and Standard English, Immigration and the Unz Initiative*. Washington DC, Georgetown University, pp. 41–58] have established a learner profile schema usable for diagnosis and advising language learners with ten cognitive style dimensions, most of them well-known (e.g., field independence, leveling-sharpening, random-sequential), The model also includes a superordinate construct, called *synopsis–ectasis* to avoid confusion with earlier names and constructs like ‘global-analytic.’ The article introduces the Ehrman–Leaver Construct and illustrates it with two student cases.

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## 1. Overview of the academic context

### 1.1. Cognitive styles

Work on cognitive styles has been continuous since the 1940s and 1950s, when Witkin and his colleagues (Witkin and Goodenough, 1981) began work on perception

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of the vertical, later to become field independence, and the ego psychologists attempted to understand “cognitive controls” (Jonassen and Grabowski 1993) from which came many of the still-used cognitive style models like leveling-sharpening. Most of the subscales used in the Ehrman–Leaver cognitive styles model described in this paper are adapted from the work of those early researchers. Other work on individual differences has of course looked at sensory channels (e.g., Reid, 1987), language aptitude (e.g., Carroll and Sapon, 1959; Wesche, 1981), personality—the Myers-Briggs Type Indicator (Myers et al., 1998) or the Hartmann Boundary Questionnaire (Hartmann, 1991), physical preferences while learning (e.g., Dunn and Dunn, 1978), and other cognitive measures (e.g., Keefe and Monk, 1986). There is a substantial body of literature now for the affective domain: anxiety (e.g., Horwitz and Young, 1991), motivation (e.g., Oxford and Shearin, 1994; Dörnyei, 2001), and self-efficacy (e.g., Huang and Chang, 1996). Because the literature in individual differences is so rich, the citations above are only samples; there is much more to read in this field.

### *1.2. Application of cognitive styles and learner autonomy*

The literature is full of research on individual differences (much of it is cited in this paper and in this issue). However, there is relatively little about the application of the findings to real life learning. Here, we describe a new model of cognitive styles and its application to enhancing the effectiveness of intensive language training.

Unlike the literature on learning style research, the literature on applications, especially in the context of language advising, is quite sparse. There is considerably more being done in Europe and the Pacific Rim (notably Hong Kong, Australia, and New Zealand) with ‘language advising’ than in the US, but even there, this kind of work is concentrated in relatively few centers, for example, the University of Hull and the CIEL Project in the UK, the Language Centre of Helsinki University in Finland, and Hong Kong Polytechnic University (see [Hong Kong Association for Self Access Language Learning, September 2002](#)). US resources tend to focus much more on generic learning, either in association with a university counseling center or independently (Griggs, 1991). University-affiliated examples include the Oklahoma Institute for Learning Styles (no date) and Pace University (1998). There are other learning help resources available through the Internet that appear to be independent of institutions of higher education, such as [Support4Learning \(no date\)](#), a site that promotes study skills and awareness of learning styles.

Learner autonomy has received a great deal of attention in Europe and Asia, for example through the venerable CRAPEL in France and Hong Kong Polytechnic University (see [Hong Kong Association for Self Access Language Learning, September 2002](#), and the [AILA Learner Autonomy Project Website](#)), but again, it has been the object of less effort in the US. The self-access learning center is the best-known vehicle; it attempts to train learners and provides materials that learners can use at least partially on their own (Benson and Voller, 1997; Cotterall and Crabbe, 1999; Dickinson, 1995; Fitzgerald et al., 1996; Wenden, 1991, 1995).

## 2. The Ehrman–Leaver cognitive styles construct (E&L)<sup>2</sup>

The E&L model consists of a superordinate construct, *synopsis–ectasis*, and ten subscales. It originated from our dissatisfaction with what was commonly referred to as the ‘global-analytic’ distinction, which was leading us to misdiagnoses and confusion about the meanings of terms. We therefore selected ten scales that were informative to us in our work with students, shown in Fig. 1.

Like previous researchers in this field, we saw a systematic, conceptual link among the scales. We initially thought that global, inductive, random, leveling, etc. were ways for learners to group the information or treat it all at once and so used the term ‘synopsis’ to refer to that set of poles. A teacher of Greek provided the opposite of synopsis, ectasis (adj. ectenic),<sup>3</sup> meaning to stretch out, which we adopted for the other pole.

Prior to researching initial student preference responses, we assumed that field independence would cluster with particular, analytic, etc. on the ectenic pole. However, it correlated clearly with the synoptic poles instead and led to a revision in the definition of “synoptic–ectenic” (Ehrman and Leaver, 2002). Because field independence is probably a perceptual and therefore not fully conscious process, we now hypothesize that ectasis controls consciously what synopsis accomplishes through preconscious or unconscious processes. In short, synoptics “trust their guts,” and ectenics tend not to. This phenomenon seems especially clear in the impulsive–reflective subscale, where reflectives need to “think about it” first, whereas impulsives are likely to respond quickly, with little thinking.<sup>4</sup>

We followed in the path of countless researchers and theorists who have attempted to assemble various cognitive styles into clusters. For example, they would argue that a field-dependent person was also likely to be global, socially-adept, etc., (Messick, 1984; Miller, 1987; Riding and Cheema, 1992; Witkin and Goodenough, 1981). Such clusterings, while noticed by many of those studying cognitive styles, unfortunately have never been well researched. Although some of these have been proposed many times under a variety of names (e.g., active–passive by Davis, 1967; holistic–analytic by Kirby, 1988 and Riding and Rayner, 1998); global–analytic and levelers–sharpeners<sup>5</sup> by Schmeck, 1981, 1988; right–left hemisphere, by, e.g., Hermann, 1982, Sinatra and Stahl-Gemake, 1983, Torrance et al., 1977), we decided to use new terminology because our construct is different. For example, an opposition like holistic–specific focuses on the level of detail; one like gestalt–analytic indicates the level of analysis. In contrast, the synoptic–ectenic distinction addresses the degree of conscious control of learning desired or needed, to the best of our knowledge a distinction not found elsewhere in the cognitive style literature.

<sup>2</sup> The E&L model, instrument, and explanatory material are copyrighted by Ehrman and Leaver (2002).

<sup>3</sup> “Ectasis” is stressed on the first syllable; the adjective “ectenic” has stress on the second syllable (source of “ectasis” was Panagiotis Sapountzis, personal communication, 1977).

<sup>4</sup> Other factors, such as pattern matching, intelligence, previous knowledge base, and the like may determine whether the impulsive’s quick response is accurate or not.

<sup>5</sup> Schmeck (1981) referred to these categories as lumpers and splitters.

We developed an instrument, the [Ehrman and Leaver Learning Styles Questionnaire \(2002; Ehrman, 2001\)](#), to make the theory operational. Consisting of three items for each of the ten subscales, the instrument and model have been undergoing validation at the Foreign Service Institute for several years, where they have been in active use as part of the battery of questionnaires offered to participants in the Learning Consultation Service there.<sup>6</sup> The E&L construct includes a profile design providing detailed and individualized information about students but with a construct and a format that make profiles comparable across students and, potentially, over time. Besides the NASSP instrument ([Keefe and Monk, 1986](#)), it may be the only other multidimensional profile available for learning styles.<sup>7</sup>

### 2.1. *E&L subscales*

Each of the subscales included within synopsis–ectasis has its own body of literature, often extensive, in both in general psychology and in second language learning. We provide an overview and sampling of the available literature here.

#### 2.1.1. *Field independent and field sensitive*

Field independence (FI) addresses the degree to which an individual focuses on some aspect of experience and separates it from its background. (The word “field” or “ground” is used for this kind of background; the term “figure” is sometimes used to indicate what receives focus and is thus pulled into the foreground.) Some extend the concept to refer to the ability to conduct abstract cognitive operations on the material that receives focus ([Witkin et al., 1977](#)). [Morgan \(1997\)](#) describes findings that when the field is not clearly organized, individuals who tend to field independence are relatively likely to impose their own structure on the material, whereas field dependents (FD) often accept it as it is. [Ehrman \(1996b, 1997\)](#) indicates that a field independent learner is adept at focusing a spotlight on data, distinguishing and focusing deeply on some specific aspect of the material being learned. Such a learner can look at the forest and pick out exactly the kind of tree in which she or he is interested. A field independent learner is likely to be relatively skilled at chunking information and working further with it.

The first studies in field independence-field dependence were conducted by [Witkin \(1969; Witkin and Goodenough, 1981\)](#). It has been among the most commonly used language learning style dimensions (e.g., [Chapelle, 1992; Ehrman, 1997; Jamieson, 1992](#)). Early studies that applied this concept to foreign language learning, e.g., [Stansfield and Hansen \(1983\)](#) found that field independent learners were better at classroom learning, as tested by discrete item instruments. However, the construct has been little tested with communicative outcomes.

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<sup>6</sup> The current version of the E&L questionnaire has been administered to well over 500 students at FSI, most of whom have received face-to-face interpretation. Some preliminary statistics are available, and further statistical analysis is pending.

<sup>7</sup> Others appear to use a collection of styles that may or may not be held together with a complex instrument.

The term “field dependence” is used in two ways in the literature: absence of the kind of discrimination referred to as field independent and awareness of the entire field. Since field dependence is always measured by tests of field independence; it can safely be defined only as absence of field independence. However, because learners need to be able to be aware of background activity as well as bring information into focus and reorganize it, there is a positive aspect to what is traditionally called “field dependence”, which can enhance functioning in complex social situations. Complex social situations are in turn often involved in real language use, so this kind of ‘field dependence’ is likely to play a constructive role.

Although many, beginning with Witkin and his collaborators (Witkin and Goodenough, 1981) have used the term “field dependence” for such positive responsiveness to the surrounding background, following Ehrman (1996b, 1997), we treat this kind of processing as a separate style, called “field sensitivity”.<sup>8</sup> In contrast to a field independent learner, a field sensitive learner makes skilled use of a floodlight to maintain awareness of the entire forest, registering the presence of all the flora, fauna, and moment-to-moment changes in the environment. Both perspectives are useful, and some learners can apply both, though probably not simultaneously. Absence of field sensitivity is “field insensitivity”, for which, like field dependence, there exists no direct measure, though language teachers report encountering many such learners.

The E&L Questionnaire adopts Ehrman’s (1996b, 1997) model of field independence versus field dependence and field sensitivity versus field insensitivity. A student can be both field independent and field sensitive, one or the other, or neither.<sup>9</sup> Field sensitivity is closely allied to the constructs measured by MLAT part II (Carroll and Sapon, 1959) and the Hartmann Boundary Questionnaire (Hartmann, 1991).

Ehrman’s (1996b, 1997) introduced a model of field independence and field sensitivity (see Table 1) that produces four possible types.

By ‘unpacking’ field dependence, this model makes it possible for a person of Type 1 to have skills associated with both field independence and field sensitivity.

Table 1  
Ehrman model of field independence and field sensitivity

Type 1	Field independent and field sensitive	Can learn from material in and out of context
Type 2	Field independent and field insensitive	Comfortable with out-of-context material
Type 3	Field dependent and field sensitive	Comfortable with in-context material
Type 4	Field dependent and field insensitive	Has difficulties with both kinds of material

<sup>8</sup> The term “field sensitivity” was originally used by Ramírez and Castañeda (1974) as a substitute for field dependence, which they considered derogatory, and in an attempt to suggest a positive opposite to field independence.

<sup>9</sup> The best language learners are often both field independent and field sensitive; that is, they can work with material that is not embedded in context or can see what is most important, and they can also pick up language in a relatively global way by being exposed to it.

### 2.1.2. *Random (non-linear)-sequential (linear)*

“Random” (non-linear) and sequential (linear) learning relate to how a learner structures information, by internal criteria, i.e., random, or external ones, i.e., sequential. Random-sequential differences, frequently addressed in the learning styles literature, have been addressed by [Gregorc \(1982\)](#) as part of a bi-dimensional system, [Pask \(1976\)](#) as part of the holist and serialist distinction, and [Esch \(1977\)](#), who applied the serialist-holist distinction to serialist learners in foreign language programs.

Random learners usually work out their own learning sequences; they can be very systematic learners, but their systems are often idiosyncratic, and their approach may seem “random” to the outsider. Effective random learners tend to tolerate ambiguity relatively well and embrace surprises that might disrupt the learning of others.

Sequential learners want to learn step-by-step, following an order usually provided by a curriculum or textbook. They may become frustrated when faced with very open-ended classroom activities. They often prefer—or even need—to master one thing before going on to the next and want the variables in learning exercises to be controlled. A positive aspect of sequential learning is that such learners seldom miss important points, because they make sure that all the material is covered; they are often systematic and, at their best, good planners.

Ehrman points out that sequential processing provides a kind of control by reducing the likelihood of surprises that may tax the learner’s ability. On the other hand, random learning is also a form of control, as it enables one to count on one’s own resources even in an unfamiliar or ambiguous situation ([Ehrman, 1996b](#)).

### 2.1.3. *Global-particular*

Global processing focuses on the ‘big picture’ and processes “top down,” focusing on overall meaning first. [Leaver \(1998\)](#) suggests that global students try to put meaning to everything, thus sometimes missing details. If they miss enough details, the meaning that they “invent” can stray quite far from reality. In contrast, students who prefer particular processing attend readily to discrete items and details and process “bottom up,” with form before general meaning. They may find details important without regard for larger concepts.

Global learning styles are frequently contrasted with analytic styles ([Messick, 1994](#); [Schmeck, 1988](#)). The Reading Style Inventory ([Carbo, 1997](#)), and the Style Analysis Survey ([Oxford, 1993](#)) use this distinction. However, [Ehrman and Leaver \(2002, Ehrman, 2001\)](#) have pointed out that the characteristics of global learning are not in opposition to those of analytic learning but rather to another set of traits that they label “particular.” Other than literature produced by the authors of this article, the particular (contrasted with global) learning style has only been discussed in learning styles literature to date as “analytic” learning.

### 2.1.4. *Inductive-deductive*

This scale is fairly common in the literature (e.g., [Messick, 1984](#), [Nickel, 1984](#)). Induction begins with the data and extracts generalizations, seeking to find a theory (rule) by looking for patterns in data. Deduction begins with a rule and applies it to

specific cases, perhaps testing a theory (e.g., a rule or generalization) against the facts.<sup>10</sup>

Inductive learners form hypotheses and test them. They often want multiple examples and may even find teacher explanations intrusive. As a result, they often have better control of their classroom output the day following its introduction. Deductive learners prefer to study the rules, and then practice applying them to examples. They may not know what to do with a multitude of examples and thus prefer teacher explanations.

#### 2.1.5. *Synthetic-analytic*

As mentioned earlier, analytic learning (Kagan et al., 1963) is often treated as the opposite of global style. We believe that a synthetic-analytic scale better reflects a true cognitive processing dichotomy than does the better-known global-analytic distinction.

Synthetic students like to use pieces to build new wholes. They easily put together disparate ideas and may even develop new models with them. Synthesis as a learning style has several characteristics: (1) hypothesis formation is intuited; (2) process and product are experienced as simultaneous, and (3) the synthetic learner proceeds from insight to construction. A synthetic learner might combine input from reading with other thoughts and information to form new ideas but be unable to retrieve details because they have been re-formed into new information.

Analytic students like to disassemble wholes into parts; they are at ease working with all the pieces and tend to see the compositional structure of the whole. They work well with rules that they can break down into component parts and use to explain phenomena, and they like word study that permits separating words into etymological pieces: roots, stems, affixes. Analysis as a learning style has several characteristics: (1) hypotheses are built up consciously; (2) process and product are experienced as consecutive, and (3) the analytic learner proceeds from construct to insight.

#### 2.1.6. *Analogue-digital*

This is the one subscale that is not common in the literature. It is adapted from Smith and Berg (1987), who coined the terms digital and analogical from telephone and computer processing systems. In their construct, digital thinking involves logical, sequential processing and uses an on/off mechanism. Analogical thinking is non-linear, “artistic,” and uses a qualitative mechanism of more or less. As far as we know, the Smith and Berg construct that Ehrman and Leaver (2002, Ehrman 2001) adapted for their model has not previously been applied to learning styles theory.<sup>11</sup>

<sup>10</sup> Some sources reverse the meanings of these terms.

<sup>11</sup> Littlemore (2001, 2003) has investigated the effects of metaphorical competence on language learning, treating it as a representative of the holistic style which is otherwise disadvantageous in the academic classrooms where her investigations took place (though not, she suggests, in real communication). A related concept is tight and loose analogical reasoning, based on Holyoak’s (1984) distinction between literal (compared material is closely similar) and deep analogies (information types are quite disparate); loose analogical reasoning would be closer to analogue processing or Littlemore’s metaphoric competence.

The traditional clock face uses a physical metaphor (numbers in a circle) to represent a quantitative concept, time of day; we (Ehrman and Leaver, 2002, Ehrman 2001) use the term “analogue” for such metaphoric representation applied to learning. An example is a student who had difficulty with traditional grammar explanations and conceptualized the complex grammar system of an Asian language as an engine that he could assemble and disassemble (Ehrman, 1996b). This was an extended metaphor. Analogue learners frequently have a strong preference for learning material in context.

In contrast, a digital clock is something of a literal representation of the quantitative idea of time of day. Working with things as they are on the surface can thus also be called “digital”. Digital processing tends to take a fairly literal approach to information, without attempting to seek or impose additional meaning. For example, a student could watch taped discussions on related topics in order to identify the discourse style of the interaction (formal, informal, etc.). The more ‘digital’ students would have more difficulty with this task, because they would tend to focus on the words and not the accompanying implications and connotations.

Analogue learners like stories, parables, analogies, and metaphors, and tend to use “deep” strategies (e.g., association and elaboration), whereas digital learners want to hear it “like it is,” without what may seem like extraneous or fanciful embellishment, and may rely mostly on surface strategies like memorizing or word lists.

#### 2.1.7. *Concrete-abstract*

Concrete learners normally prefer some kind of sensory contact with what is being learned, a relationship with direct experience, and experiential learning. They often want activities using the language to do something, not just talking about the language. Ehrman (1996b) describes a student who likes to play learning games in class, read aloud, take field trips, do role-plays, do pronunciation and grammar drills, talk as much as possible, and write things down. All of these are concrete activities. He rejects classroom discussion of abstractions like cultural values, and finds explanations and grammar rules to be of little help to him. Because hypothetical questions are difficult for him, he brings his response back to his direct experience.

Abstract learners show a preference for grammar rules, systems, discussion of abstract topics, and attention to accuracy. Such a student can become lost in theory and never achieve language use. Another student in Ehrman (1996b) has a strong interest in political science and wants to talk about it, only to be tripped up by her lack of language to match her preference for the abstract. Sometimes she does not understand what her teachers are saying to her because she sometimes starts thinking about a word or grammar rule, rather than just using it. Abstract learners sometimes indicate more interest in the system underlying the language than in actual language use for communication.

#### 2.1.8. *Leveling-sharpening*

The leveling and sharpening scales reflect how students perceive, store, and recall information (Gardner et al., 1959; Lowery, 1982; Messick, 1984). This was one of the first cognitive style dimensions, originally in perceptual processing (Holzman



and Gardner, 1960; Holzman and Klein, 1954). According to Holzman and Klein (1954), levelers rely on past memories and merge current experiences with them, whereas sharpeners rely relatively little on memory. Levelers often blur similar memories and tend to over-generalize. Sharpeners distinguish small differences and separate their memory of prior experiences relatively easily from current ones; if they get in trouble, it is for over-discriminating. As learning styles, leveling-sharpening differences represent what learners pay attention to and how they store it in memory.

When learning new information, levelers meld together information that may be distinctly different and that may come from a number of sources. They overlook distinctions intuitively and frequently see only similarities. They can have trouble with contrastive analysis and analogies, because these are based on differences. Leveling may assist in language learning because it promotes data clumping and thus reduction of cognitive load, and it may encourage fluency if the leveler is not anxious about making errors. However, levelers can also ignore the important distinctions that are critical for linguistic and sociolinguistic accuracy.

Sharpeners may readily retrieve details and fine grammatical or lexical distinctions because they store them separately. Sharpening helps language learning because it contributes to making important distinctions among speech sounds, grammatical forms, and fine differences of meaning. It may be less helpful if it leads to hair-splitting.

Leveling-sharpening differs from global-particular. The former has to do with attention, perception, and storage in memory, and the latter has to do with direction of processing (top-down and bottom-up). Leveling lumps information and reduces distinctions, whereas global learning seeks the underlying meaning and overall pattern of an experience. Sharpening seeks significant distinctions, whereas particular learning focuses on specifics without necessarily making distinctions of category.

FSI experience suggests that leveling and sharpening play important roles in language learning: sharpeners, especially those who are synoptic sharpeners, tend to reach the required professional levels of language proficiency with greater facility than other students. In interviews with very highly proficient language learners, Leaver and Atwell (2002) found that most reported having sharpening preferences or having developed sharpening skills and considered these, among other factors, to be critical to their learning success. One individual, for example, when asked what advice he had for others who would like to reach native-like proficiency levels said they should learn how to observe well, and if they did not know how to do this intuitively, they should be taught to do it (Leaver, 2003).<sup>12</sup>

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<sup>12</sup> Leaver (1986) conducted a study of successful language learners in Russian at the FSI. She followed 102 students through a full-year of learning, including some that were in an advanced course leading to Level 4 (advanced professional proficiency). She identified them as “left-hemisphere-dominant” (a metaphor that has some strong parallels with ectenic learners) or “right-hemisphere-dominant” (which has some strong parallels with synoptic learners). “Right-hemisphere” learners learned easily at beginning levels and quickly reached Level 3 on the compensatorily-scored FSI test [which allows some grammatical

### 2.1.9. *Impulsive-reflective*

This scale refers to speed of processing a response to a stimulus. Impulsive learners respond very rapidly and tend to complete their work quickly but often with less accuracy than do reflective learners. This kind of learner is frequently an active participant in class, contributing remarks on most topics and jumping right in to new projects or tasks. Such students may think aloud and learn by trial and error. One who makes relatively few careless errors is referred to as a “fast-accurate” impulsive learner (Ehrman, 1996b; Salkind and Wright, 1977).

In contrast, reflective learners prefer to think and then respond. They often benefit from relatively complex thinking and tend to work accurately. However, their slowness can result in incomplete work, especially on timed tests or other ‘real-time’ activities like speaking in a foreign language. In some academic programs, a reflective student might be labeled “slow”. A very reflective learner may have difficulty finishing a test on time; however, the completed portions are probably correct. When called on, such a learner often says, “Let me think.”

The impulsive-reflective difference was an early discovery in learning styles (Kagan, 1966; Keogh and Donlan, 1972; Zelniker and Jeffrey, 1976). Impulsivity was associated with immaturity, especially in the 1950s, and more recently with such disorders as attention deficit (Morgan, 1997). However, because there are efficient and inefficient versions of both impulsivity and reflectivity (Salkind and Wright, 1977), neither is necessarily immature or dysfunctional. We (Ehrman and Leaver, 2002; Ehrman, 2001) distinguish between efficient (fast-accurate) and inefficient (error-prone) impulsivity, and between efficient (the usual meaning of reflectivity as a learning style) and inefficient reflectivity (compulsive, lacking learning skills). A summary of the subscales is provided in Table 2.

## 3. The institutional context

The E&L model and questionnaire are used at the Foreign Service Institute (FSI) regularly as part of the Learning Consultation Service in FSI’s School of Language Studies (SLS). FSI provides full-time intensive training in over 60 languages to adult

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error even at Level 3 (professional proficiency) if other components of speech are very strong)]. This, which turned out to be a plateau from which very few rose higher while in training, even though they had reached Level 3 weeks earlier than their “left-hemisphere-dominant” counterparts. “Left-hemisphere-dominant” learners had tended to have immense difficulty in the beginning. Half of them simply never reached Level 3; the other half reached Level 3 significantly later than their right-hemisphere-dominant counterparts, but in the few remaining days and weeks went on to achieve Levels 3+ and 4. The actual situation may be more complex: sharpening may be the critical element for reaching Level 4, as opposed to the whole scale. Consequently, synoptic learner with these sharpening and particular skills preferences may be equally capable of reaching Level 4. The E&L Construct may explain the difference between the “left-hemisphere” learners who dropped out of the race and those who continued, and plans call to test the study population with the E&L (Leaver, 2003).

members of the US foreign affairs community<sup>13</sup> usually with a goal of proficiency at which employees can perform their duties (Interagency Language Roundtable [ILR] Level 3). There is increasing emphasis on achieving levels ‘beyond three’, including near-native ILR Level 4.

Although their educational level is generally high, and a substantial number of students entering language training have previous language learning experience, many FSI students are not sophisticated about language learning. To meet the needs of such students, Ehrman established a language advisory service, called the Learning Consultation Service, basing it on her research during the 1990s (Ehrman, 1993, 1994a,b, 1996a, 1997–1999; Ehrman and Leaver, 2002). Initial experiments with group learning strategies workshops had not worked well, an experience that corresponds to others documented elsewhere (Chamot and Rubin 1994; Rees-Miller 1993, 1994; Wenden 1995), so Ehrman sought a way to make the teachers the source of strategy intervention on a “just-in-time” basis. However, with over 300 language teachers; it would not be feasible to train even most of them to be make sophisticated strategies interventions in a short time. Instead, a small group of carefully trained specialist teachers and a few supervisors, called Learning Consultants, received training to help with learning strategies, using what is known about the individual’s learning style and motivation. The success of the Learning Consultation Service (LCS) depends on the cooperation of the regular classroom teachers; the language-training supervisors who are the language program managers and oversee the work of the teachers; a small corps of “counselors” who administer and interpret the learning style questionnaires; and the Learning Consultants in almost every language section. Student participation is confidential and entirely voluntary. Box 1 shows the learning consultation process.

### 3.1. *Learning strategy advice*

The program basis its strategy on Schmeck’s model (1988) modified by Biggs (1992): the Consultation Service calls student attention to the distinction among surface, achievement, and deep strategies. Surface strategies are those for a specific task problem and nothing more and entail minimum cognitive or emotional investment. Achievement strategies aim at a good grade or relationships with teachers or other students. Deep strategies make elaborations and associate between what is new and what is known and among concepts and experiences. Deep strategies most directly result in long-term retention, although achievement strategies can make the use of deep strategies possible. For example, a discussion with one’s teacher (achievement) might result in suggestions of effective “deep” learning techniques.

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<sup>13</sup> Students at FSI are about 40 years of age on average, and about the middle two-thirds are between 30 and 50. They come from a variety of agencies, though most are from the Department of State. Others come from the Department of Defense, the Department of Commerce, and other agencies. Training generally consists 5–6 h of daily teacher contact time plus homework; courses are 24–88 weeks in duration, depending on the difficulty of the language for English speakers.

Table 2  
Subscale definitions

Synopsis	Ectasis
Synopsis relies on unconscious or preconscious and thus may result in perception of phenomena as wholes.	Ectasis (stress first syllable) seeks conscious control of processing and thus may result in perception of phenomena as composites.
<i>Field sensitivity as learning style</i> : prefers to address material as part of context and often picks up material by “osmosis.” It relates to everything-foreground and background together and can be compared to illumination by a floodlight that shows the whole scene.	<i>Field insensitivity</i> : makes little or no use of the whole context and often excludes “incidental” learning.
<i>Field independence as learning style</i> : prefers to separate what is considered important from context, setting priorities and hierarchies. It can be compared to a spotlight that focuses sharply on one thing, in contrast to field sensitivity.	<i>Field dependence</i> treats foreground and background as the same and does not select out what is important for focus.
<i>Random (non-linear)</i> : follow internally developed order of processing that may appear “random” to others.	<i>Sequential (linear)</i> : follows externally provided order of processing, such as that in a textbook.
<i>Global processing</i> : attends to gestalts and “big picture”, is aware of “forests” (vs. trees), oriented toward processing from the “top down”.	<i>Particular processing</i> : attends to discrete items and details, is aware of “trees” (vs. forests), oriented towards processing from “bottom up”.
<i>Inductive</i> : goes from specific to the general, generalizes from experience, and begins with examples rather than rules or theories.	<i>Deductive</i> : goes from the general to specific, applies generalizations to experience, starts with rules, theories rather than specific examples.
<i>Synthesis</i> : comprehends through assembly of components into a constructed whole; creates.	<i>Analysis</i> : comprehends through understanding componential structure; disassembles.
<i>Analogue</i> : qualitative or metaphoric approach to interpreting experience; an analogue clock represents time metaphorically through a circular image.	<i>Digital</i> : quantitative or literal approach to interpreting experience; a digital clock shows only numbers directly, not representing them as a metaphor.
<i>Concrete</i> : interacts with the world directly, learns through application, often physical, of knowledge. Experiential.	<i>Abstract</i> : interacts with the world through cognitive constructs, learns from formal rendition of knowledge. Theoretical.
<i>Leveling</i> : often does not notice disparities and may seek to reduce them; looks for similarities.	<i>Sharpening</i> notices disparities and differences and seeks to explore and account for them.
<i>Impulsivity</i> : reacts quickly in acting or speaking with little or no conscious “thinking it through”; acts on “gut”; thought often follows action.	<i>Reflectivity</i> : “thinks it through” before action; often does not trust “gut reaction”; action usually follows thought.

The E&L model, instrument, and explanatory material are copyrighted by Ehrman and Leaver (2002).

**Box 1: The Learning Consultation Process:**

*Making the Consultation Service available.* Students are invited on input day to participate in the Consultation Service. They are assured that it is voluntary; and it is for people who are not having trouble as well as to help those who are having difficulties.

*Completing the Diagnostic Questionnaires.* If in languages participating in the accelerated personalized training (APT) initiative, students complete the questionnaires on their first day of training. Others may “walk in” to the Research, Evaluation, and Development Division at any time and are given the questionnaires at that time. Language sections sometimes refer students who are having difficulties.

*Interpretation of Questionnaires.* When possible, this step takes place first in group sessions so the counselors do not have to repeat the same information for each student, and then in individual sessions to apply the generalizations to the student’s situation.

*Follow-up.* This is usually done in the language section by the student’s designated Learning Consultant, who is expected to take responsibility for ensuring that information is used to the student’s benefit by other teachers and by the student (e.g., advice on preparation and classroom strategies). Students may choose to return for follow-up consultations with a counselor on special learning strategies or management of anxiety, for instance.

### 3.2. Consultation service instrumentation

Although the description of cases later in this paper will focus on the E&L model, it is also interpreted in the light of the other instruments administered with it. A simple biographical data questionnaire addressing the student’s educational and language-learning history is used in an interview to reveal a great deal about learning strategies, what is working well (or not), and the student’s motivation, anxiety, and self-efficacy. In addition to the Ehrman and Leaver Learning Style Questionnaire (E&L), other instruments currently used are the Modern Language Aptitude Test (MLAT, Carroll and Sapon, 1959; language aptitude, possibly field independence), Motivation and Strategies Questionnaire (MSQ, Ehrman, 1996b; strategies, motivation, self-efficacy, anxiety), the Myers-Briggs Type Indicator (MBTI, Myers, McCaulley, et al., 1998; general personality and style), and the Hartmann Boundary Questionnaire (HBQ, Hartmann, 1991; tolerance of ambiguity, receptivity).

The Ehrman and Leaver Learning Style Questionnaire (E&L, Ehrman and Leaver 2002), which is the focus of this article, uses self-reported behavior to determine cognitive style preferences. During the individual feedback interview, this questionnaire evokes discussion of both learning styles and learning strategies. For example, an interviewer may suggest creating paragraphs in writing to a student who self-reports a strong preference for analyzing but who needs to develop more

Name:	Mark									
ID Code:	xxxxxx									
<b>Synoptic</b>										<b>2 Ectenic</b>
	1	2	3	4	5	6	7	8	9	
1. Field Sensitive					x					Field Insensitive
2. Field Independent							x			Field Dependent
3. Random			x							Sequential
4. Global					x					Particular
5. Inductive				x						Deductive
6. Synthetic					x					Analytic
7. Analogue							x			Digital
8. Concrete			x							Abstract
9. Leveling					x					Sharpening
10. Impulsive			x							Reflective
	5	4	3	2	1	2	3	4	5	

Fig. 1. E&L scoring and feedback grid for Mark.

“synthetic” skills. (The E&L model, instrument, and explanatory material are copyrighted by Ehrman and Leaver, 2002).

#### 4. The E&L in use

The following two short case descriptions represent use of the E&L construct with actual learners, adults in FSI’s high-stakes training.<sup>14</sup> Each begins with a ‘blind’ discussion of the survey information, using the E&L as a framework. This is followed by information derived from the learner’s interview with a learning counselor and conversation with teachers. The cases are not clear-cut examples of synoptic and ectenic learners. Instead, they were selected as typical of the kind of ambiguous, apparently contradictory information that a ten-scale profile can present and which must be interpreted in a way that is useful for the student.

##### 4.1. Mark: a complex synoptic learner

###### 4.1.1. The questionnaire data

Mark has been studying Japanese for about 8 weeks. His E&L results are presented in Fig. 1. He is field dependent and may also be field insensitive. This is a combination that suggests difficulties right away: he is likely to have difficulty determining what is important, discriminating it from the background, and setting

<sup>14</sup> Preservation of assignment to a desired post, large bonuses, and even retention in the Foreign Service can depend on achievement of designated proficiencies at the end of training. Many of these students are also high achievers and very competitive, so consequences of what they perceive as failure are personally costly as well.

priorities (field dependence). His digital preference, associated with use of surface strategies and preference for a clear field of study, is consistent with the field dependence.

Mark's responses on the field sensitivity dimension fail to reveal a tendency, so the counselor needs to look at other instruments that provide triangulation on the E&L scores. His MLAT subscale scores support the notion that he may be field dependent and suggest that he may have some field sensitivity, but it is probably not strong. The HBQ provides similar information: Mark may have somewhat thin ego boundaries relative to other FSI students and thus be open to input and tolerate ambiguity, but his response scores are not clear-cut.

Mark's results on three other E&L subscales are inconclusive: global-particular, synthetic-analytic, and leveling-sharpening. Information from other questionnaires suggests that the indeterminacy of the first two subscales is probably real—Mark does not have a clear preference for either pole. However, we shall see from the kind of difficulty Mark is having with reading that he is probably leveling out distinctions that he needs to make among written symbols.

Additional evidence for Mark's flexibility as a learner is the fact that he has reported himself a random learner, and less clearly, as an inductive one. The question for the counselor to pursue is whether his field dependence may interfere with the effectiveness of his ability to make use of "random" strategies, non-sequential input, and the kind of pattern seeking that is part of induction.

Information from the MSQ confirms his inductive and non-sequential self-reports on the E&L. On the MBTI, his preferences (INTP) support random processing and induction, but his digital style is unusual for this type. Because he is primarily a synoptic learner, the counselor's initial hypothesis is that his difficulties are likely to come from his field dependence and poorly developed learning strategies (reflected in digital processing). As an impulsive learner, he may not be taking the time he needs for metacognitive strategies: planning, monitoring, evaluating, and re-planning. He has indicated some preference for kinesthetic and auditory learning over visual; kinesthetic preference and his relatively clear concrete processing preference indicate that he would respond well to field trips and role plays. Unfortunately, these are not frequent in FSI programs, especially in the early weeks of instruction.

#### *4.1.2. Information from the interview and the biographic background questionnaire*

It turns out that Mark is a relatively inexperienced language learner. He had Spanish classes in high school, but they taught him very little about language learning strategies, especially for Japanese. He is also in an occupational category that is commonly characterized by thick ego boundaries, some ethnocentricity, avoidance of metaphoric thinking, and frequent difficulty with language learning.

In the interview, his very first words were that he felt as if he was drinking from a fire hose. While they are studying in FSI's intensive language programs, language learning is the students' full time job; the courses cover a great deal of material very rapidly; and they require several hours of homework/self-study as preparation for the next day in class. Mark's biggest difficulty was with the Chinese characters used in Japanese; it seems that they were taking so much of his cognitive capacity that he

was struggling with all the other aspects of learning—even aspects that were normally not particularly difficult for him. He reported having difficulty focusing, which often occurs with kinesthetic-concrete learners who have to sit still too much. He confirmed his concrete learning preference when he indicates that he liked spontaneous, real-life language use and using language to communicate.

Because of the uncertainty about Mark’s field sensitivity, there was a question about whether he should be considered a Type 3 learner (field sensitive and field dependent) or a Type 4 (field insensitive and field dependent) in Ehrman’s field independence typology (1996b). If his digital processing is a result of inexperience; it is possible that with more appropriate learning strategies, he might well develop skills for coping better with random, unpredictable, natural input (note his

Table 3  
Recommendations for Mark

Need or issue	Sample suggestions
Coping with field dependence	Consciously prioritizing topics and activities; selection of important items from texts; use of sequential materials as scaffolding until he is confident enough with the material to approach it more “randomly”
Overuse of digital, surface strategies	Reading for the whole gist rather than parts (step by step procedure as scaffolding)
Difficulty with Chinese character recognition	Mind maps; manipulate characters physically
Kinesthetic/concrete learning	Include movement and manipulation in study at home; participate actively in any role plays or field trips included in the language program; when more advanced, seek opportunities to use Japanese outside the classroom; find something physical to do with his hands when his mind wanders

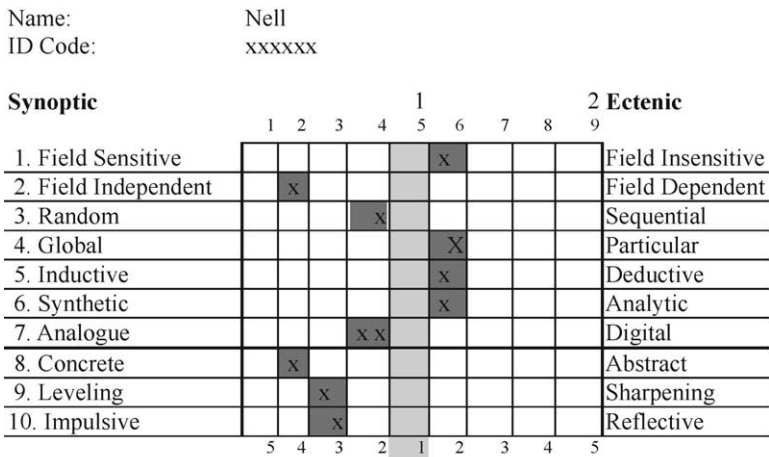


Fig. 2. E&L scoring and feedback grid for Nell.



random, concrete, inductive preferences). In fact, if he were not on cognitive overload with Chinese characters, he might well be coping more like a Type 3—comfortable with natural context but possibly in need of external structure and guidance—than like a Type 4, for whom everything is difficult and requires a great deal of hard, conscious work.

#### 4.1.3. *Suggestions for the student*

The counselor, taking the questionnaires into account, together with the interview and other information, has suggested specific strategies for Mark (see [Table 3](#)) in each of the categories that were indicated as in need of work:

### 4.2. *Nell: a synoptic-ectenic mixture*

#### 4.2.1. *The questionnaire data*

[Fig. 2](#) displays Nell's E&L results. She is field independent and field insensitive, a Type 2 learner in [Ehrman's \(1996b\)](#) typology.<sup>15</sup> We would expect from this combination of the two subscales a learner who prefers to learn material abstractly, who is comfortable with learning out of context, and who has little trouble with prioritizing, but may take in relatively little unconsciously. Such a learner is likely to favor accuracy over fluency.

Nell's preferences for particular and analytic learning are consistent with her being a Type 2, who is interested in specifics (though they may be specifics of a fairly high order, such as structural rules) and who learns by analyzing and understanding the components, rather than the whole. Also consistent with being a Type 2 are her relatively thick ego boundaries (thin ego boundaries correlate with field sensitivity, and Nell is field insensitive). Her responses on the MSQ indicate a student who searches for perfection, which is consistent with the Type 2 classification.

A more extensive look at Nell's profile indicates that her learning style is in fact more complex than the analysis above would indicate, however. First of all, she is a concrete learner, one who likes to apply what she learns through experience, rather than the predicted theoretical classroom learner. She also expresses a preference for analogue learning, which is metaphorical, looking behind the words. Leveling and field independence are another unusual combination, though certainly not impossible, since a field independent may perceive what is high priority to him or her, but at the same time remember by lumping things together. She reports her MBTI type as ENTJ. Her synoptic preferences are consistent with her intuitive type (N), which correlates with synopsis ([Ehrman and Leaver, 2002](#)).

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<sup>15</sup> This type of learner is surprisingly rare in the Consultation Service, despite the large number of learners with years of formal education and experience with the kinds of out-of-context learning that classrooms frequently require. Most students who come to the Service report themselves as Type 3 or Type 4, with the occasional fortunate Type 1 (who accesses both field independence and field sensitivity). It is possible that Type 2 learners are well matched to FSI classrooms, and this certainly would have been the case before communicative approaches came in, but pure Type 2 learners could probably run into trouble when required to use language in context and in real time.

Deductive learning can be consistent with leveling, however, inasmuch as both can serve as ways to reduce cognitive load: a deductive learner avoids the work of figuring out rules from possibly chaotic raw material, and a leveler has fewer things to keep in mind. Impulsivity, too, can be a way of reducing memory load: get it done now, and move on to the next thing.

Nell's self-reported random learning is possibly consistent with her stronger preference for concrete (experiential) learning, in which there are usually no external guidelines to follow. Concrete, real-time learning often requires dealing with the unexpected, and that is part of the random learner's stock in trade. On the MSQ, she indicates that mechanical exercises and rote memorization are not helpful for her.

Fig. 1 shows that Nell is probably somewhat more synoptic than ectenic, but she relies on quite a few ectenic strategies. She needs to take conscious control of her learning of details and structure, possibly in order to build a solid base for less predictable language use.

#### *4.2.2. Information from the interview and the biographic background questionnaire*

Unlike Mark, Nell had some experience informally learning her second language, Polish, when she was in Warsaw previously. As a result, she entered her Polish training with something of a head start. In Warsaw, she spoke some Polish with friends and worked with a tutor, she says, but she regrets not having taken greater advantage of the learning opportunity overseas. She is very clear about her need for accuracy and "getting the pieces right." She considers language learning to be mostly a task of vocabulary building, and says the key is memorizing words, a view that is somewhat consistent with her particular and analytic preferences. She gets into a downward spiral of anxiety when she forgets words, and she reports consistent anxiety about maintaining her vocabulary and is tempted to give up when she finds herself forgetting a lot. She relies on writing words to help her remember. Her teachers say that she is on track in her training, not having any particular difficulty. They report that she speaks easily on topics for which she is confident of her vocabulary control, and listening comprehension is one of her strengths.

#### *4.2.3. Suggestions for the student*

Nell is not having any particular difficulty in class. In this case, the counselor is more concerned with what will happen after Nell arrives at her overseas post, particularly in view of her strong reliance on atomistic, word-based strategies. The recommendations for Nell (see Table 4), then, focus on preparing her for what is to come after her language training and to build on her synoptic preferences.

Both Mark and Nell appreciate a well-designed syllabus but can manage reasonably well when the teacher deviates from it. If they were to be studying the same language and were placed in the same class, the teachers would need to make some adaptations to each: Mark might need help with pinpointing important content; Nell might make this too much of a good thing. If they should get along well, they might well end up helping each other. Of course, both would have to accept that they cannot have everything exactly as they want it, even though the teachers can meet their individual needs much of the time. In addition, the teachers could work

Table 4  
Recommendations for Nell

Need or issue	Sample suggestions
Coping with field insensitivity	Listening for main points; reading for story and letting herself stay open to new peripheral learning; find polish speaking places and “hang out”; listening for meaning; seeing if she can listen “between the lines”
Excessive perfectionism	Take some specific amount of time daily to aim at fluency; ignore errors except when they interfere with communication of meaning
Going beyond vocabulary learning to higher level language units	Working with material that is above her head, so she has to guess and infer; writing or speaking using only a limited set of words (to put the focus on making the most of the words); writing paragraphs and short passages
Managing anxiety about errors and forgotten words	Reframing them as necessary to the learning process (if a learner isn’t making mistakes and forgetting things, she or he is not being challenged)

with them to adapt their self-study activities both to tap into their preferences and to extend their versatility into areas that are less preferred. For example, both learners can benefit from work on coping with the kinds of unstructured situations that they will meet daily after leaving the classroom and arriving at their overseas posts.

## 5. Conclusion

The E&L construct offers a rich variety of information about language learners and language learning. It is useful alone, but even more so in tandem with other information, especially that which comes from discussions and interviews with students that add value, because they permit the interviewer and the learner to discuss unusual or apparently contradictory profiles and make sense of them in the learner’s current context.

This is not a simple model to use because of the many different profiles it can yield, though some profiles are probably very rare (profile distributions comprise an area for future research). However, those who are using it are finding it increasingly rewarding as they come to understand it more deeply. The Canadian Foreign Service Institute has even expressed interest in some teacher training so that its staff can make use of the E&L Construct in their work with students (Claude Altschuler, personal communication, May 24, 2003).

The E&L construct has the advantages both of generality and of specificity. The synopsis-ectasis construct level can be used when a learner has a clear set of preferences tending to the right or the left of the chart and can thus allow more concise descriptions with less detail from the subscales, which is not possible with mixed profiles of the sort provided above short cut much unnecessary detail. At the same time, it provides a more granular approach to individuals than most other models because of the interplay among the ten subscales. All ten of the subscales, though

correlated in greater or lesser degree, can also operate independently of each other, thus creating a multitude of possible combinations and permitting considerable differentiation among individuals. And yet, the multiplicity of profiles still falls within the same relatively standardized system, for comparability.

Through the counselor-student dialogue, the construct has served as the springboard for insight into individuals' learning styles and teaching styles. There is much research to be done on the E&L construct itself, its applications to such areas of interest as very high level language learning, and on its relevance in multiple settings—in classrooms and outside of them. In addition to FSI and the Canadian Foreign Service Institute, the E&L model is also proving useful the National Foreign Language Center, where it is the central learning style approach to assist users in finding appropriate learning strategies in the federally funded LangNet project (Catherine Ingold, personal communication, 2003). It is also in use in at least one US university's ESL program (John Green, personal communication, April 28, 2003). We look forward to the opportunity to continue to explore its potential, its value, and its validity in a variety of settings, including some outside the language field.

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