31 Games and Puzzles in the Second-Language Classroom: A Second Look

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The use us of puzzles and games in the second-language classroom have now become intrinsic components of many approaches, and the choice of many teachers, as formats for students to review and reinforce grammar, vocabulary, and communication skills that it is difficult to imagine a workshop or a seminar without them in a teacher-education program .

Introduction

The posing and solving of puzzles, conundrums, rebuses, riddles, and the like is as old as history itself. The first surviving "think-of-a-number" puzzle dates back to an Egyptian papyrus written around 1650 BC (Wells 1992: 1). The oldest book of games in existence, known as the *Libro de juegos*, was commissioned more than 700 years ago by King Alfonso X of Castile and Leon (Mohr 1993: 11). It contains clear descriptions of how to play chess, checkers, and various card and board games. The antiquity of the puzzling instinct in human beings shows that it is a fundamental feature of the human mind. And the widespread popularity of puzzle magazines, puzzle sections in newspapers, puzzle books, TV quiz shows, game tournaments in chess, checkers, cards, etc., reveals that puzzles and games are alive and well in the contemporary human mind.

Puzzleology, to coin a term for the field that deals with the study of puzzles and games in human cultures, has enjoyed a long-standing role in the educational domain, where games, problem-solving tasks, and puzzle techniques have been the standard fare in the curricula of many school subjects for a long time. As puzzleologist James Fixx (1978: 18) once wrote, the reason for this is, no doubt, because "puzzles not only bring us pleasure but also help us to work and learn more effectively." In the area of second-language teaching, puzzleological techniques such as crosswords, word searches, scrambled words, simulations, interactive games, board games, etc. have now become intrinsic components of many approaches, and the choice of many teachers, as formats for students to review and reinforce grammar, vocabulary, and communication skills. Puzzleological activities have become such common features of commercially-available textual materials, and the topic of discussion of virtually every teacher-training seminar, that it would be impossible today to think of second-language teaching without them. They are now seen to be highly versatile techniques that serve both specific discrete-

point learning tasks (*reinforcing structural and lexical knowledge)* and more interactive ones *(communication and functionality)*. But it was not that long ago that the injection of this fun element in second-language teaching would have been considered a frivolous waste of time by the teaching profession. And even in today's more accepting climate, puzzleological techniques are viewed as tangential, or at best supplementary, to more mainstream techniques.

The most memory-enhancing way in which humans develop concepts, from infancy to adolescence, is through some form of recreational mental play. While the specific characteristics of such mental gymnastics might vary somewhat from culture to culture, the need to solve problems   constitutes a cognitive, cross-cultural universal.

Our purpose in this essay is to revisit puzzleology in second-language teaching, in order to give the teacher an overview of what the most relevant facts on file are *vis-à-vis* their incorporation into classroom instruction and to provide an elementary typology of puzzleological techniques for the teacher interested in incorporating them in his/her language classes.

Puzzleological Techniques and Second-Language Learning

The experimental literature dealing with the learning-efficacy of puzzleological techniques is not extensive. Outside of a few scattered attempts to assess their validity and to develop a psychologically-appropriate typology for their instructional utilization, very little has been done in the way of giving this topic a thorough empirical treatment (e.g., Omaggio 1978, 1982, Mollica 1979, 1981, Wright, Betteridge and Buckby 1979, Danesi 1979, Webster and Castonon 1980, 1985a, 1987, 1981, Rixon 1981, Rodgers 1981, Jones 1982, 1986, Palmer and Rodgers 1983, Crookall 1985, Crookall, Greenblat, Cooke, Klabbers, and Watsin 1987, Crookall and Oxford 1988, Crookall and Saunders 1989, Cicogna, Danesi, and Mollica 1992). Two clear facts have emerged from the literature.

The sketchy experimental evidence that does exist has generally shown such techniques to be supportive of language learning processes.

For such techniques to be effective, they must be designed with specific instructional/learning objectives in mind.

The empirical work of Rodgers (1981), Palmer and Rodgers (1983), and a few others (see the studies in Crookall 1985, Crookall, Greenblat, Coote, Klabbers, and Watson 1987, Crookall and Oxford 1988, and Crookall and Saunders 1989) has shown, by and large, that games are effective learning-enhancers, but that they raise several critical questions which, to the best of our know-ledge, have not as yet been addressed. So, from a purely research and learning theory perspective, the general indication would seem to be that the basis for using puzzleological techniques to complement, supplement, or even completely shape the second-language teaching process is psychologically

sound. Recently, Sandra Savignon (1992) has observed that such techniques have become favourites of communicative methodologists precisely because they serve the elusive goal of meaning negotiation.

But perhaps the greatest support for puzzleological techniques in second-language teaching is anecdotal evidence and common sense. The general research in educational psychology, the corpus of case studies of learners, the everyday observations of school teachers, and the common perceptions of anyone in daily contact with children and adolescents point collectively to what appears to be a fundamental requirement of learning: namely that the most memory-enhancing way in which humans develop concepts,   from infancy to adolescence, is through some form of recreational mental play. While the specific characteristics of such mental gymnastics might vary somewhat from culture to culture, the need to solve problems constitutes a cognitive, cross-cultural universal. It would seem, therefore, that the logical question for second-language teaching is not whether or not to include puzzleological techniques into its repertory of instructional options, but rather how best to tap the natural tendency to solve problems in an instructionally-meaningful way. Rodgers (1981) has shown how this can be done by highlighting five properties of puzzleological techniques that are reflective of current-day practices in second-language teaching. In our view, these properties explain why they are easily insertable into the frameworks of most contemporary proficiency-oriented approaches to second-language teaching:

1. *They are competitive*.
2. *They are rule-governed* (i.e. they have a limited numbers of specific and clearly-defined rules).
3. *They are goal-defined*.
4. *They have closure* (i.e. there is a specific point at which a puzzle is solved or a game is finished).
5. *They are engaging*, in that they constantly seem to challenge the participants.

So, it would seem that puzzleological techniques are ancillary activities that can be easily used in combination with other kinds of instructional activities in. the framework of some broader methodological blueprint for second-language teaching. Rarely has anyone ventured to design a syllabus, or teaching system, aimed at making the whole second-language teaching process puzzleological in orientation. One of the few to have done so, as reported in his Ph.D. dissertation of 1992, is Mark Miller of the University of Delaware. Miller designed an entire syllabus and instructional system based on interactive game-playing. Adopting the usual experimental-statistical approach of a controlled study, he found his game-playing design to be an effective means of imparting both linguistic and communicative competence to university language students, while at the same time allowing for the maintenance of a high level of interest and motivation in the course. While this

was designed only as a pilot study, it nonetheless endorses what the previous literature has been documenting in bits and pieces.

From a purely research and learning theory perspective, the general indication would seem to be that the basis for using puzzleological techniques to complement, supplement, or even completely shape the second-language teaching process is psychologically sound.

Play vs. Game

Given the paucity of so-called hard evidence in favour of the learning-efficacy of puzzleological techniques in second-language teaching, it is perhaps useful to cast a quick glance at what psychologists have to say about the use of play, problem-solving, and games in education generally. While the meaning of the word play is certainly intuitively obvious, it turns out to be a rather difficult one to define formally. It is perhaps most useful to think of play as a kind of innate and unreflective form of psycho-motor behaviour that allows children to interact in a meaningful way both with their environment and with others. It manifests itself across cultures primarily as a form of physical involvement with people and things, invariably stimulating affective and experiential responses that lead progressively to the build-up and coding of knowledge. As Munzert (1991: 37) point out:

> Infants learn through exploration of the physical world by random movement, crawling, touching, and coming into direct contact with people and objects in the environment.

Culturally-structured or routinized forms of play are the games that children learn from their peers, older children, or adults in a participatory way. Spontaneous playing behaviours can occur within or outside of games. But a game always enlists some form of the play instinct. The essential requirement of a game is that it have a structure or a clearly-predictable format within which the play instinct can operate. For educational purposes one can refer to game-playing in classroom settings as a pedagogically-designed system for imparting knowledge or skill based on playing. (For a comprehensive treatment of the positive effect of games on cognitive development see, for example, Loftus and Loftus 1983).

Cognitively, game-playing invariably involves the deployment of problem-solving strategies. The goal, or end-state, of any game constitutes a problem that the child/adolescent must attempt to solve within the format of the game. This forces the learner to go from a random, experiential form of thinking to a more organized and representational one shaped by the structural elements of the game format. As Lesgold (1988: 190) observes, in order to solve a problem, the person must know what steps are possible and "how to represent the problem."

The solution path that the student discovers can be said to result from a creative strategy because the learner must use the given elements of the game to locate the path. Creativity can thus be constrained

for the present purposes to mean the ability to arrange the given elements of a game or a puzzle in ways that bring about a solution to the problem posed by a game or puzzle. The arrangements will vary from individual to individual; but they will do so within the limits defined by the structural elements of the game or puzzle. Thus, unlike most popular notions of the term, creativity in game-playing or puzzle-solving involves the utilization of structures within a pre-established format. It is in coming up with the solution path that the learner is forced to explore alternative and innovative ways to use the structures to access the end-state. In this sense, therefore, it can be argued that puzzle-solving and game-playing are effective means for channelling the student's innate tendency to be creative towards some specific learning goal. As Munzert (1991: 63) has aptly remarked, creativity is an educationally-meaningful notion only if it "involves a sense of purpose coupled with action." This means that the creative act "requires that emerging ideas and thoughts be organized into new or different patterns from their previous organization" (see also Perkins 1988 for empirical studies on problem-solving creativity as purposeful behaviour; and Gowan, Khatena and Torrance 1981 for a comprehensive treatment of the associated educational implications).

Puzzle-solving and game-playing are effective means for channelling the student's innate tendency to be creative towards some specific learning goal.

Arguing from this general research base, it can be hypothesized that puzzleological techniques are effective insofar as they allow the students to come up creatively with solutions to a specific problem posed. It is in formalizing each solution through the medium of language that the students come to acquire the conceptual domains underlying the puzzle or game in terms of the language structures that express them.

It is clearly beyond the scope of the present review essay to go any further into the details of the psychology of problem-solving and game-playing and of its supporting empirical base. Suffice it to say here that it can be used to understand why puzzleological techniques constantly manifest themselves as learning-enhancing activities in second-language teaching. Extrapolating from all the discussions, anecdotal experiences, and the studies that do exist on puzzleological and game-playing techniques, the following general findings, terminological clarifications, and caveats can now be brought to the reader's attention:

It has been found necessary to distinguish between language teaching puzzles and language teaching games, since the former are problem-solving texts that require the individual learner to come up with a solution within the framework of the text, while the latter involve problem-solving activities involving group interaction, and therefore are more focused on contextual parameters.

The effectiveness of language-teaching puzzles has, to the best of

our knowledge, rarely, if ever, been studied experimentally. The anecdotal evidence, however, portrays them as useful primarily as control, reinforcement, and review techniques (e.g. Mollica 1981, 1992b, Danesi 1985a, Nuessel 1994).

The research on language-teaching games (e.g. Palmer and Rodgers 1983, Crookall 1985, Crookall, Greenblat, Coote, Klabbers, and Watson 1987, Crookall and Oxford 1988, and Crookall and Saunders 1989, Miller 1992, Musumeci 1992) raises several questions that still require an answer.

1. Are they usable with all groups of students, especially since different groups and individuals respond differently to kinds and degrees of competition?

2. Do the same kinds of benefits that have been documented in other areas of education and development over the last two decades with the use of problem-solving and game-playing techniques (e.g. Edwards, Devries, and Snyder 1972, Livingston and Kidder 1973, Devries and Slavin 1978, Loftus and Loftus 1983, Sawyers and Rogers 1994, Berk 1994) accrue in similar ways with the use of language-teaching games in second-language teaching?

3. Do language-teaching games encourage interaction or can they inhibit classroom participatory behaviours?

Despite such *caveats* and questions, there seems to be a general feeling among users of language-teaching puzzles and language-teaching games that they foster learning, if in no other way than through the inducement of recreational states of mind.

Language-teaching puzzles and language-teaching games should be used judiciously. They should be used to motivate students and to challenge them. They should never be used as time-fillers.

A Typology of Puzzleological Techniques

Before selecting or preparing the specific language-teaching puzzles or language-teaching games for his/her course, the teacher should always keep in mind that the age, learning styles, and previous training of the students must be taken into consideration. Children can handle language-teaching puzzles that are cast in reduced and simplified form (e.g. elementary crosswords, word searches, etc.). But very young children have great difficulty in handling such language-teaching puzzles as logic puzzles, rebuses, etc. Therefore, bearing in mind that language-teaching puzzles and language-teaching games must be synchronized to the learner's age and level of competence, teachers can generally rest assured that the use of these techniques will produce favourable results:

Language-teaching puzzles are usable primarily for form-based and meaning-based language tasks, and language-teaching games for more communication-based and group interaction tasks.

Both language-teaching puzzles and language-teaching games can be easily constructed and keyed to specific and general instructional objectives. Once the learning task has been determined, the teacher can select or construct the appropriate language-teaching puzzle or language-teaching game to accomplish it.

Language-teaching puzzles and language-teaching games are useful primarily as review, recall, reinforcement, control, and occasionally as expansion techniques.

Language-teaching puzzles and language-teaching games should be used judiciously. They should be used to motivate students and to challenge them. They should never be used as time-fillers. So, the learners should be made to understand that they are just as much a part of the course as are other kinds of exercises, drills, activities, etc. The teacher should also keep in mind that the over-use of language-teaching puzzles and language-teaching games is not desirable. To maintain interest, the teacher should always diversify the types of language-teaching puzzles and language-teaching games used together with other kinds of techniques.

Pedagogical writing in the area of language-teaching puzzles and language-teaching games within the last three decades has been rather extensive (e.g. Lee 1965, Bressan 1970, Crawshaw 1972, Wolfe 1972, Hupb 1974, Latorre and Baeza 1975, Schmidt 1977, Schloss 1977, Caré and Debyser 1978, Omaggio 1978, 1982, Wright, Betteridge and Buckby 1979, Mollica 1979, 1981, 1992, Danesi 1979, 1985a, 1985b, 1987, Hendrickson 1980, 1983, Maley and Grellet 1981, Ervin 1982, Irwing 1982, McKay 1985, Schultz and Fisher 1988, Steinberg 1991, Cicogna, Danesi, and Mollica 1992, Dickson 1992, Nuessel 1994). In general, methodologists suggest that at least three categories of these techniques can be employed in second-language teaching. These can be called as follows:

1. *form-based* language-teaching puzzles,
2. *meaning-based* language-teaching puzzles, and
3. *communication-based* language-teaching games.

This terminology attempts to synthesize into a few manageable categories the many and diverse kinds of instructional objectives suggested in the literature vis-a-vis the utilization of language-teaching puzzles and language-teaching games.

Form-Based Language-Teaching Puzzles

A form-based language-teaching puzzle focuses the individual learner's attention on language form. It is one of the most popular types of puzzeological techniques that has been in use as a regular feature in most textbooks and ancillary materials for at least three decades. Scrambled letters, crosswords, word searches, tic-tac-toe, word mazes, cryptograms, and the like make up a truly rich and broad repertory of

language-teaching puzzles that can be tailored to fit specific form-based learning tasks. They are popular with both teachers and learners because they cast the reinforcement and control of spelling, grammar, and vocabulary into a challenging and recreational problem-solving format.

The following examples are suggestions that we have extracted from the literature, which we reproduce here simply to demonstrate how versatile form-based language-teaching puzzles can be. Some recent collections and discussions of such language-teaching puzzles can be found in Steinberg 1991, Mollica 1992b, and Nuessel 1994.

Word search

Danesi (1985a) created a word-search language-teaching puzzle in which he hid the French colour adjectives *rouge, noir, blanc, vert*, and *jaune*. The words can be read from left-to-right, right-to-left, up-down, and down-up. He suggests that this puzzle can be used for different objectives by simply changing the instructions for solving it. It is up to the teacher to decide which level of reading difficulty to employ. The teacher can use this puzzle for a variety of review, control and reinforcement tasks. The following are some suggested activities:

- The students can be asked simply to locate the colour adjectives in the puzzle, after having given them the words (= *simple recognition task/orthographic task*).
- The students can be asked to locate five colour adjectives in the puzzle, without telling them which ones (= *vocabulary task*).
- The students can be given definitions or incomplete sentences for each word and then asked to find the words in the puzzle (= *vocabulary review/cloze task*).
- The students can be given the feminine forms of the adjectives and then asked to locate their corresponding masculine forms in the puzzle (= *morphological task*).

The number and diversity of the instructions is limited only by the imagination and specific requirements of the teacher. All form-based language-teaching puzzles have this feature.
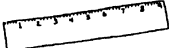
Mollica (in preparation) is in the process of developing for various languages a series of word-searches in which the stimulus for the hidden word is either *print* (i.e., a word), or *non-print* (i.e., an illustration) or both *print* and *non-print* (i.e., word associated with the illustration.) He arbitrarily chooses 20 words on a given topic or theme and creates the first three puzzles using both print and non-print as stimuli, followed by two puzzles in which only the visual stimulus is given (Figure 1). In this way, he is encouraging the student to learn new vocabulary or review it by going from print (word), to non-print (*illustration associated with word*) to print (*word to be found in the puzzle*.) This repetition is designed to help the student to learn or recall vocabulary. (Figure 2).
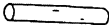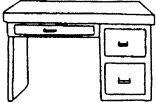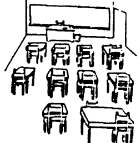
En la escuela

Busca en el recuadro las palabras asociadas a la escuela. Las palabras se pueden leer de arriba abajo [↓], de abajo arriba [↑], de derecha a izquierda [→] de izquierda a derecha [←], y en diagonal hacia arriba [↗] o hacia abajo [↘]. Las letras que quedan darán el nombre de dos escritores españoles.
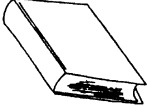
☐ la goma ☐ la regla ☐ la tiza ☐ el escritorio ☐ la sala de clase

☐ el libro

```
R E G L A A M O G E S P
O N R E D A U C S A A U
D O A L O C C C C P L P
A R P A A L U A E L A I
R R A D M E P L L A D T
R A D E L U E R U P E R
O Z O A N R L O C I C E
B I R T A N L P E Z L O
P P A L I B R O S E A D
E S C R I T O R I O S E
S A R U T N I P V E E G
A Z I T A S A R E J I T
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☐ las pinturas

☐ el cuaderno ☐ el borrador

☐ las tijeras ☐ la pluma

☐ la papelera ☐ el pizarrón
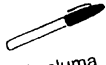
☐ la escuela ☐ las luces ☐ la cola ☐ el sacapuntas ☐ el lápiz ☐ el pupitre
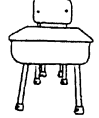
☐ la grapadora

Figure 1

Mollica (1981b, 1982) has also created word-search puzzles in which the form reflects the theme or topic. Moreover, he suggests on "hiding" a message closely related to the theme or topic. The student solving the puzzle, therefore, cannot help but feel a sense of accomplishment in solving the puzzle but also in feeling satisfied in "finding" the related hidden message. Once all the words (*ange, berger, boules, cadeaux, cheminée, crèche, décorations, étable, étoile, gui, nuit, Père Noël, renne, sapin, vœux*) have been circled on the "Christmas tree", the hidden message

En route!

Trouve dans la grille les mots associés à l'auto. Les mots peuvent se lire horizontalement, verticalment, en diagonale, de droite à gauche, de gauche à droite, de haut en bas, ou de bas en haut. Transpose ensuite les lettres qui te restent pour finir la phrase ci-dessous.

```
        S C O F F R E T
        A A I L E P H A R E
      T P R E T R O V I S E U R
    E N J O L I V E U R E C A L G E I U S S E
    I O T C L I G N O T A N T N S M O T E U R
    E P A R E B R I S E T O I T T N A L O V
      R V I                        R C E
```

toit

pare-brise

coffre

essuie-glace

moteur

capot

rétroviseur

enjoliveur

volant

aile

phare

roue

clignotant
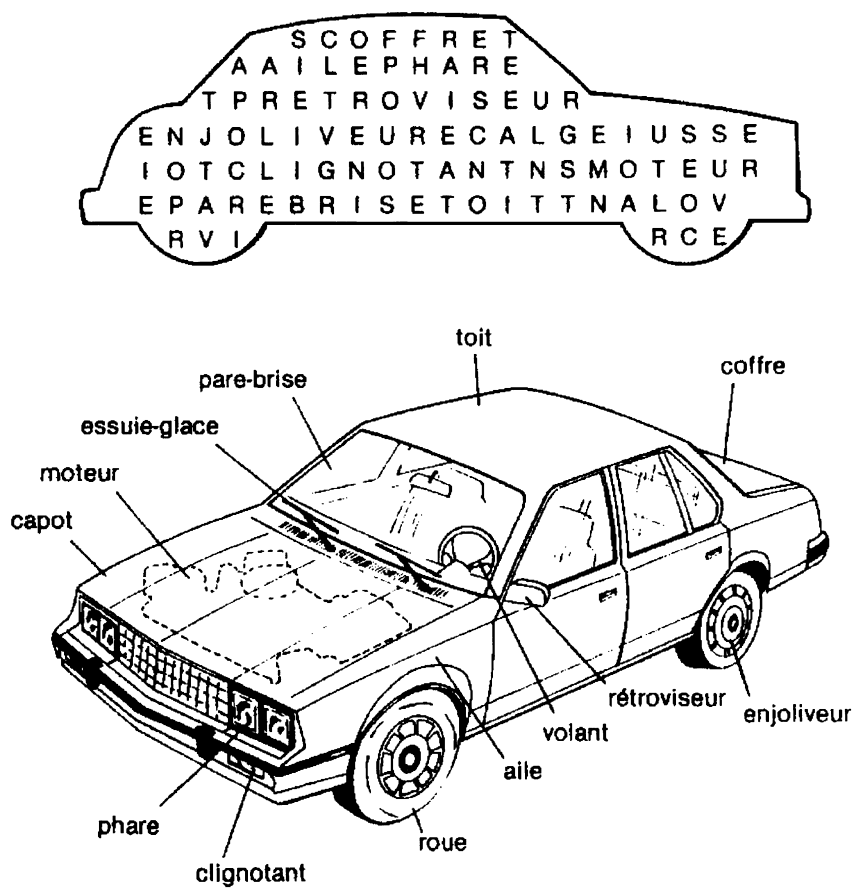
On achète de l'essence à la _____

Figure 2

A similar word-search puzzle can be created in the shape of a heart for St. Valentine's Day (Figure 4). Again, once all the words directly related with the theme are found (*aimer, amis, amitié, amour, baisers, cadeau, cartes, chocolats, coeur, embrasser, fête, fêter, filles, fleurs, garçons, gentil, joli, lettre, rose, sourire, Valentin*), a hidden proverb related to "love" will appear: "Deux choses ne peuvent pas se cacher : l'ivresse et l'amour." ("There are two things that cannot be hidden: drunkenness and love.") Mollica 1981-1982).

- ☐ ange
- ☐ berger
- ☐ boules
- ☐ cadeaux
- ☐ cheminée
- ☐ crèche
- ☐ décorations
- ☐ étable
- ☐ étoile
- ☐ gui
- ☐ nuit
- ☐ Père Noël
- ☐ rennes
- ☐ sapin
- ☐ vœux

```
                    B
                    O
                B U P
                O L È
              N N E R S
              E C S E A
            E I H N N P T
            U V E O O I H
          G Œ L M I Ë N R E
          U I U I T L E R E
        X O E G N A G U S E A
        T N N É É R E N N E S
      É T A B L E O C R È C H E
      T I U N B E C A D E A U X
                    É
                    D
```

Figure 3

- ☐ aimer
- ☐ amis
- ☐ amitié
- ☐ amour
- ☐ baisers
- ☐ cadeau
- ☐ cartes
- ☐ chocolats
- ☐ cœurs
- ☐ embrasser
- ☐ fête
- ☐ fêter
- ☐ filles
- ☐ garçons
- ☐ gentil
- ☐ joli
- ☐ lettre
- ☐ rose
- ☐ sourire
- ☐ Valentin

```
      D C E                 U R X
    N C A O H             O C E O S
  E S I R N E E       I S H R E S S
  B P E T S R U E L F O T U V E
  E A E E N N T R O P C T R A L
  A M I S S E C A J C O E E H L
  E M B S O R L L I V L L M R I
  G L I R E U C A D E A U I E F
    A I T A R R S V S T E A E
    R T I S S I T L S A A
      Ç N É S R R M O M
      O E U E R E O
        N G T R U
        S Ê R
        F
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Figure 4
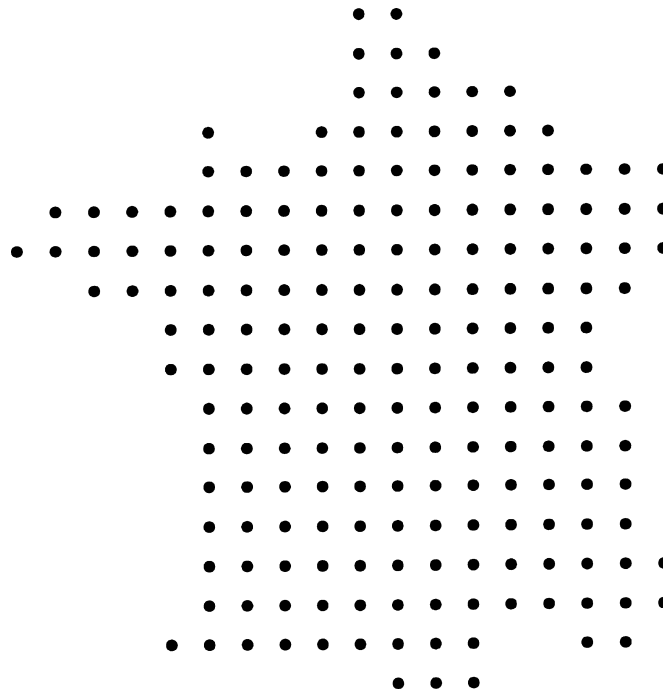
Figure 5

revealed will spell out "Bonne et heureuse année." (Figure 3).

Hidden messages may also be used to provide cultural, linguistic, historical or geographical information (Mollica 1992c). Teachers may decide to "hide" some of the *chefs-lieux* of France (*Ajaccio, Amie, Châolon-sur-Marne, Clermont-Ferrand, Dijon, Lille, Limoges, Lyon, Marseilles, Metz, Montpellier, Nantes, Orléans, Paris, Poitiers, Rennes, Rouen, Strasbourg, Toulouse*) in the shape of the country itself (Figure 5).

But the hidden words may not necessarily always be thematic in nature. Teachers might wish to select words which are merely associated with the topic or theme. In the following word-search puzzle, (Figure 6), Mollica (1992c) includes names of rivers, mountains, cities, composers, writers, wines, as well as lexical items relating to capital "C" culture and lower case "c" culture. (*Adige, Alitalia, Alpi, Arno, arte, Bari, Barolo, Capri, Dante, Elba, esploratori, espresso, Etna, Fiat, Ionio, musicista, Papa, pecorino, Pisa. Po, poeta, repubblica, Roma, scrittori, stivale, tenori, Tevere, Torino, Verdi*). Once all the words have been found, students will realize that the hidden message will inform them that "Dante è il padre della lingua italiana."

Crossword Puzzles

When Arthur Wynne published the first crossword puzzle in the puz-

```
                          T  A  I  F
              E        A  T  S  I  C  I  S  U  M
        A  T  E  O  P  T  O  R  I  N  O  D  A
  N  T  R  T  E  P  I  R  O  T  T  I  R  C  S
        A  N  E  E  V  I  M  B  N  I  L
        A  P  A  A  V  A  C  A  P  R  I
           E  L  B  A  E  D  R  I  O  A
           E              R  I  S  N  L
                          R  E  A  E  I  E
                          E  D  S  T  T  B
                             G  A  P  A  A  E
                             L  I  C  L  R  L
                                D  I  O  N  I  O
                                V  A  L  R  A  L
                                   E  O  B  A  O  I
                                      R  N  B  T  S  N  G
                                      D  I  U  O  S
                                         I  R  P  R  E  A
                                            O  E  I  R  L  U
                                            A  C  R  I  P  P  T
                                            A  E        S  I
                                            T  P        E
                                            N  P
                                            L  A  I
                                            A  P  D
                                            A  N  A
```
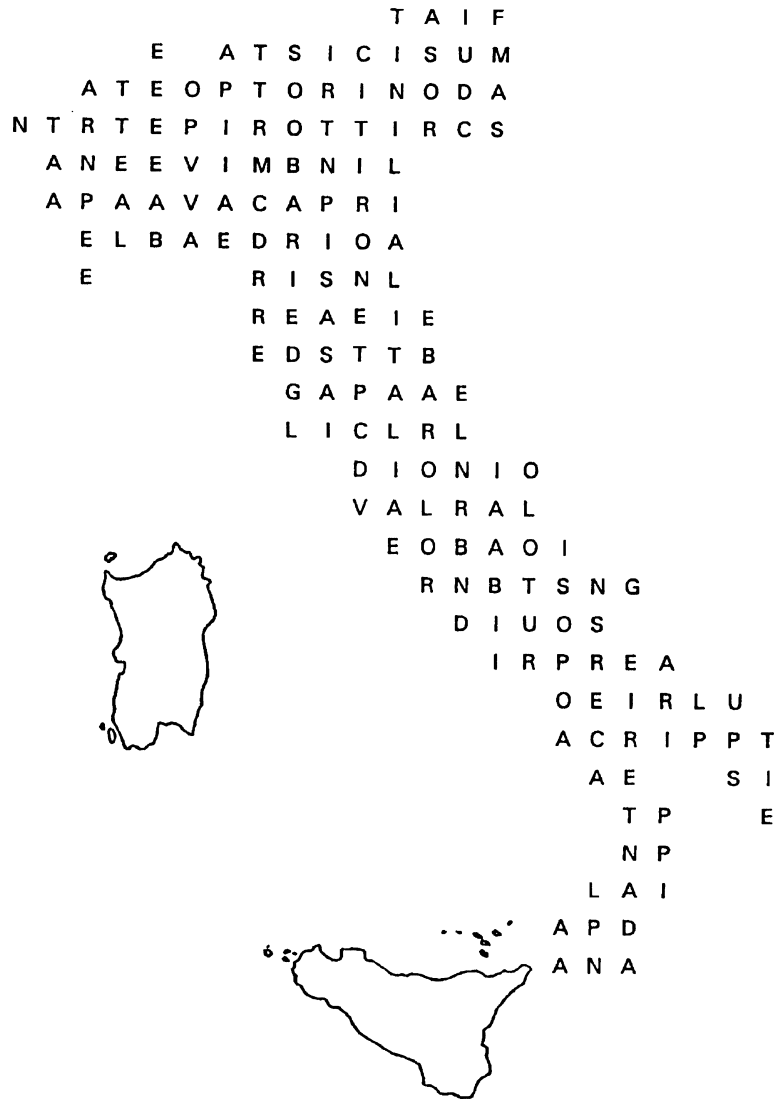
Figure 6

zle pages of Sunday's New York *World* on December 21, 1913, he probably did not realize the instant success the puzzle was to enjoy. The biggest puzzle craze that America had ever set in motion. Roger Millington 1977: 24,25) describes the situation anecdotally. The following are some examples:

> Engaged couples announced their good news by composing appropriate crosswords and sticking them in the local paper. The Rev. George McElveen, a Baptist pastor of Pittsburgh, was the first of many preachers to use the crossword puzzle to attract bigger congregations. He announced that a large blackboard would be placed in front of his pulpit. On it was an original puzzle and the audience was required to solve it before he would

begin his sermon. The solved puzzle, needless to say, proved to be the text for his sermon. In Atlantic City, crosswords were distributed in church to stir interest in a current missionary campaign in China and Persia. Church-goers were requested, however, not to solve the puzzles during the service […]

In December 1924, unaware the craze was shortly to achieve similar magnitudes in Britain, *The Times* took pity on America. In an articles headed AN ENSLAVED AMERICA, it noted that "All America has succumbed to the crossword puzzle." Guessing inaccurately, it continued: "The cross-word puzzle is by no means a new thing; in all likelihood it was known as long as the Civil War." *The Times* felt that the crossword was "a menace because it is making devastating inroads on working hours of every rank of society." How devastating? Well, according to their New York correspondent, five million hours daily of American people's time – most of them nominally working hours – were used in unprofitable trifling.

A great deal has been written on the crossword puzzle in the language class using the printed word as a stimulus (Mollica, 2007). In his classic study of this puzzeological technique, Dino Bressan (1970), for example, likes the crossword puzzle for the obvious contribution it can make from a linguistic point of view. "A carefully graded selection of crosswords in order of complexity," maintains Bressan, "will contribute to the acquisition of new words and phrases as well as the consolidation of previous knowledge through repetition." Bressan classifies direct-definition clues into nine different headings:

1. *Generic*. Clue: Prénom. Answer: Ils
2. *Synonymic*. Clue: Tout naturel. Answer: Inné
3. *Antonymic*. Clue: Pas fictif. Answer: Réel
4. *Allusive*. Clue: Échappe au rêveur. Answer: Réalité.
5. *Allusive-negatory*. Clue: Bien de gens ne connaissent que sa marge. Answer: Loi.
6. *Definitory*. Clue: Dont rien ne vient troubler la quiétude. Answer: Sereine.
7. *Descriptive*. Clue: Recueillent des malheureux. Answer: Asiles.
8. *Punny*. Clue: Il avait vraiment la bosse du théâtre! Answer: Polichinelle.
9. *"In" clue*. Clue: Lettres d'amour. Answer: Am.

David E. Wolfe (1972) acknowledges Bressan's worthwhile contribution and offers a number of examples "as perhaps more realizable in the language class, assuming that the crossword puzzle is teacher-prepared and is based on material previously studied by the student." One of the examples Wolfe suggests is the picture clue. "Any concrete noun which the teacher can draw," declares Wolfe, "is appropriate as a clue, assuming the noun has been taught."

Mollica (1987, 1988a,1988b, 1991a, 1991b, 1992a), for example, has

published in various languages a series of line master puzzles based on everyday vocabulary themes. These puzzles are designed to test students have mastered the vocabulary and, at the same time, provide hours of fun in or outside the classroom scene. He presents four sets of puzzles, A,B,C,D, for each theme and arbitrarily chooses twenty words for each one. Each set builds upon the previous one, reviewing the words studied and then by adding new related vocabulary words to each puzzle. The final set, D, contains all 20 illustrated words without the printed words. The following is an example for the reinforcement and control of clothing vocabulary in English (Figure 7).

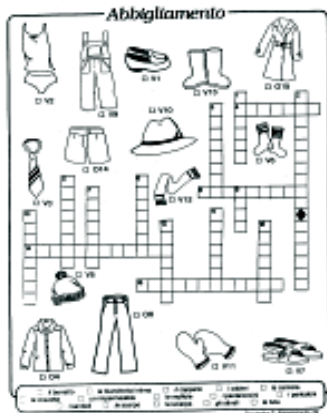As it stands this language-teaching puzzle constitutes an elementary type of exercise, whereby the beginning student will simply associate each word with its visualizable referent and then write it into the crossword arrangement. More difficult uses of this puzzle can be envisioned as follows:

Crossword Puzzle A   Crossword Puzzle B

Crossword Puzzle C   Crossword Puzzle D

Figure 7

1. the words can be removed from the puzzle;
2. the visual referents can be replaced by definitions, synonyms, antonyms, etc.;
3. a story containing the vocabulary can be written and the student asked to select the items that fit into the crossword arrangement; and so on.

Anagrams

The followings anagram that can be used for word recognition and spelling in Italian (Danesi 1988: 152). In this case the words to be unscrambled give common first-conjugation verbs in Italian:

> *Anagrammando le lettere seguenti, trovare dieci verbi.*

> 1. *g e r l e g e* (*leggere*)

> 2. *a l p r a r e* (*parlare*)

> 3. *a r m i p r a r* (*imparare*)

> 4. *g a r a n i m e* (*mangiare*)

> 5. *etc.*

Cryptograms

A cryptogram, such as the following, can be used for obvious word-recognition, syntactic, morphological, and discourse expectancy reinforcement and control in French (Danesi 1985a: 27). The hidden message, "L'amour est une grande illusion" translates, *Love is a great illusion*.

_ ' _ M _ U _	_ _ _	_ _ _	_ _ _ _ _ _	_ _ _ _ _ _ _
1 2 3 4 5 6	7 8 9	5 10 7	11 6 2 10 12 7	13 1 1 5 8 13 4 10

Tic-tac-toe

A tic-tac-toe puzzle in German that has an obvious lexico-semantic focus, by which the student is expected to find three words in a line that have something in common, is the following one (Danesi 1985a: 23). The answer is three types of fruits: *Apfel*, *Brine* and *Pfirsich*.

Apfel	Brine	Pfirsich
Blume	Land	Baum
Hand	Kopf	Buch

cuadernos

cuaderno   pluma

?
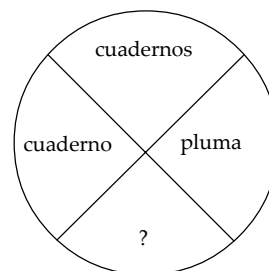
Word Circle

A word-circle puzzle in Spanish, can be used to test the plural formation of nouns (Danesi 1985a: 25).

Mazes

Mazes are also useful for both oral or writing (i.e., copying) activities. The task is to visit all the French relatives only once, using the arrows as point of departure and point of return. As the st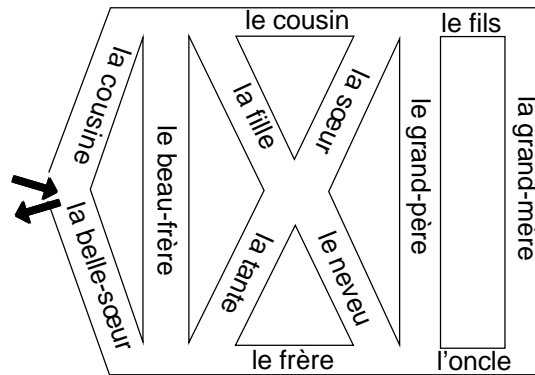udent "visits" the relatives, each name can be either spoken or written out depending on the skill the teacher wishes to emphasize. Several answers are possible, thus providing variety to the activity.

Meaning-Based Language-Teaching Puzzles

Language-teaching puzzles which focus the learner's attention on meaning are especially useful at intermediate and advanced levels. Riddles, sequences, logical deductions, and the like all allow the learner to employ the abstract language schemas of the target language fruitfully within the specific meaning domains outlined by the solution path of the puzzle.

Logical Puzzles

This type of puzzle provides factual infromation from which students draw a solution by logical thinking. These puzzles demand no technical mathematical knowledge, but "call for clear thinking and an ability to establish the logical relationships which the data presented imply." (Phillips, 1961: 2). Wylie best describes the method of obtaining a solution for such puzzles:

> By drawing clonclusions from it, and examining their consistency within the total framework of the problem, the answer is ultimately wrested from the seemingly incoherent information initially provided.

Consider as one example the following puzzle. Teachers may want to adapt this according to their teaching topics. The "professions" may be changed into "nationalities", into "food preferences," and so on.

> *MM. Martin, Blanchet et LeBlanc travaillent dans le même édifice. Ils sont banquier, avocat et bijoutier mais pas nécessairement dans cet ordre. Le bijoutier*

qui est l'ami de M. Blanchet est le plus jeune des trois. M. LeBlanc est plus âgé que l'avocat. Essayez ed deviner leur métier ou profession. (Mollica, 1976: 26).

In solving this problem, Danesi (1985) suggests a table in order to keep track of the possibilities. He suggests that an X be placed in the box of the item to be eliminated; if we conclude the opposite, he suggests an O. The table for the above puzzle will be as follows:

	banquier	avocat	bijoutier
M. Martin			
M. Blanchet			
M. LeBlanc			

The third sentence leads us to conclude that M. Blanchet is not the jeweller. We can, therefore, put an X in the appropriate cell in the array to eliminate M. Blanchet:

	banquier	avocat	bijoutier
M. Martin			
M. Blanchet			
M. LeBlanc			X

The fourth sentence allows us to conclude that M. LeBlanc is not the lawyer:

	banquier	avocat	bijoutier
M. Martin			
M. Blanchet			X
M. LeBlanc		X	

Sentences three and four also allow us to deduce that M. LeBlanc is not the ajeweller. This is because the jeweller is the youngest of the three, while M. LeBlanc is at least older than the lawyer:

	banquier	avocat	bijoutier
M. Martin			
M. Blanchet			X
M. LeBlanc		X	X

A look at the table makes it clear that M. LeBlanc is the banker. We note this by putting an O in the appropriate cell and eliminating the banker possibility for the other two:

	banquier	avocat	bijoutier
M. Martin	X	X	O
M. Blanchet	X	O	X
M. LeBlanc	O	X	O

We now see that M. Blanchet is the lawyer and M. Martin is the jeweller. As a result of our careful reading the final table will look like this:

	banquier	avocat	bijoutier
M. Martin	X		
M. Blanchet	X		X
M. LeBlanc	O	X	X

Tables may become more complex with some more difficult problems involving more than three items or people.

Consider, as an example, the following logical deduction puzzle in Italian (Mollica 1992: 110).

> *Il giovane Marco Ferrara ha invitato a cena Carlo Rossi, Mario Bruni, Paolo Moretti e Gianni Martino. Purtroppo non ricorda quale professione esercitano (avvocato, architetto, chirurgo, ingegnere). Sa che…*
> 1. *Mario Bruni è più anziano dell'avvocato e dell'ingegnere.*
> 2. *Il chirurgo cena sempre da solo.*
> 3. *Mario Moretti cena spesso con Gianni Martino.*
> 4. *Il più anziano è anche il più ricco.*
> 5. *Carlo Rossi cena spesso in compagnia dell'avvocato e dell'ingegnere.*
> 6. *Gianni Martino è più anziano dell'avvocato e dell'ingegnere.*
> 7. *A Mario Bruni non piacciono le attività sportive.*
> *Sapresti dirgli quale professione esercitano questi quattro signori?*

The following table will be very useful in solving the problem.

	avvocato	ingegnere	chirurgo	architetto
Mario				
Paolo				
Gianni				
Carlo				

A table (similar to the one for the previous puzzle) can be set up to help the student keep track of the possibilities, alternatives, etc. An X in a cell indicates an elimination, and an O a finding.

It is not necessary to go into the details of the simple solution to this puzzle here. The reader will be able to figure out the answer with little difficulty. The important features to note here about the solution can be summarized in point form as follows:

These language-teaching puzzles allow the learner to become cognitively involved in the problem space created by the puzzle.

The learner must decipher the meaning of the language-teaching puzzle, making limited changes but creative ones to the components of its problem space.

By reflecting on the whole problem-solving event in conceptual and verbal ways, the learner assimilates the meaning-to-form relations that are inherent in the puzzle.

A few more examples will suffice to show the features that such puzzles embody.

Legal Cases

In a legal case such as the following French one (Mollica 1992b: 124-125), the student has to verbalize a plausible solution:

Si vous étiez le juge…

En écoutant le testament de feu M. Henri Marchand, Georges est très content d'apprendre qu'il va hériter du portefueill de son oncle. En recevant et en examinant le porte-feuille, il y trouve dix billets de cent dollars. Son cousin, jaloux, exige qu'il partage la somme avec lui. Georges soutient que son oncle lui a laissé à lui le portefeuille et, par conséquent, tout ce qu'il contient. Ce cas finit au tribunal.

Si vous étiez le juge, diviseriez-vous l'argent parmi le deux cousins ou donneriez-vous la somme entière à Georges?
(Choisissez parmi vous deux avocats: un qui plaidera la cause de Georges, l'autre qui représentera son cousin.)

Sequencing

In the following sequencing problem in French (Mollica 1992b: 126), students are told that two anecdotes are out of sequence:

Un mauvais écrivain et un agent de police.

1. *Arrivé à "Conclusion du test d'haleine", il inscrit consciencieusement:*
2. *Un mauvais écrivain confie à un ami:*
3. *Puis l'agent rédige son rapport.*
4. *– Tiens! Il sait déjà lire!*
5. *Un agent de police arrête un automobiliste en état d'ébriété et le conduit au poste de police.*

6. *– Quelle catastrophe! Mon fils de quatre ans a jeté au feu mon manuscrit.*
7. *"Saint Émilion 1953."*
8. *On lui fait passer tous les tests, y inclus un examen à l'alcotest.*

(Answers: *Anecdote* 1: 5,8,3,1,7; *Anecdote* 2: 2,6,4.)

More examples and discussions of meaning-based language-teaching puzzles can be found in Wright, Betteridge, and Buckby 1979, Maley and Grellet 1981, McKay 1985, Danesi 1985a and Mollica 1992b.

Communication-Based Language-Teaching Games

The literature on this type of language-teaching game is quite extensive, but the reader can consult Schultz and Fisher (1988) for a good comprehensive typology. The general definition of a language- teaching game is a problem-solving game that involves more than one learner. So, it unfolds in terms of a group-based, interactive format that focuses on language use and meaning negotiation. Games like *Charades, What's My Line*? and others (including board and card games), that create contexts in which the language is used in discourse-appropriate ways, constitute communication-based language-teaching games. Here are some examples that are self-explanatory.

Charades

Danesi (1985a: 45) proposes the following activity for charades:

***Rules/Procedures*:**

The class can be divided into two teams once again, and the object is to guess a word or expression that a member of each team must act out in pantomime. Team members are allowed to ask questions and make statements in the target language. The words or expressions are prepared in advance by the teacher and put into a box from which each team draws. The team taking the least time overall to guess the answer wins.

***Instructional Objectives/Types of Communication Skills*:**

By tying the words and expressions to some theme or unit, the primary objective of this game is to review vocabulary. However, since it requires the students to participate verbally in finding a solution, it also encourages the use of the language in an autonomous and meaningful way.

Family Feud

Danesi (1985a: 48) suggests that even the ever popular TV show "Family Feud" can be a source for communication-based language-teaching games.

***Rules/Procedures*:**

The teacher should survey a group of students on a series of gen-

eral questions (your favourite colour, make of car, type of food, and so on). The frequency of each response is then tabulated. The class is divided into two teams. Ten questions are asked by the teacher in the target language and a student delegated by each team must attempt to respond to all questions within a specified time frame (for example, one minute). The answers of the two students must be different. The more popular the answer according to the survey, the higher the score. Each team then chooses a different player for the next ten questions, and the game continues as before. At the end, the scores are added up, and the team with the highest score is declared the winner.

Instructional Objectives/Types of Communicative Skills:

This game is clearly useful in building up the ability to understand and respond to target language messages. This type of activity consequently develops fluency. Vocabulary is also practised.

Biographical Bingo

Dickson 1992: 231-232) suggests Biographical Bingo for the achievement of similar objectives.

Played in the same way as "Find Someone who…," but uses a Bingo grid for the actions. As in Bingo, the winner is the student who finds people for 5 spaces in a row.

Questions and Answers

For a questions-and-answer activity, designed to stimulate oral participation in the classroom, Dickson (1992: 237) proposes the following:

Form two teams. Using a large picture or map on the wall, the teacher calls out a word indicating an object or a place. One team must form a question about that object or place and the other team must answer the question. Each team wins points for correct questions or answers.

Purpose: Students get practice in both asking and answering questions. If a picture is used, the game can review certain vocabulary. If a map is used, it could review geography.

Predicaments
For this interactive activity, Dickson (1992: 236) suggest that:

One student leaves the room while the other students think of a predicament such as running out of gas, the school burning down, losing their money, getting home long after their curfew, etc. The student who went out returns and asks the others in turn: "Qu'est-ce tu ferais si ceci t'arivais?" Each person must give a reasonable answer based on the predicament agreed on. The student whose answer finally reveals the predicament is "It" next.

Concluding Remarks
It is perhaps useful to conclude this essays by reviewing some of the

main aspects of puzzleological techniques in second-language teaching in point form:

- These techniques have an important role to play in second-language teaching as versatile exercises, drills, etc. alongside other kinds of practice and reinforcement techniques.
- Although there is no experimental literature on the learning-efficacy of language-teaching puzzles, and only a handful of studies on the psychological effectiveness of language-teaching games, there are no indications or evidence to the contrary, namely data showing that puzzleological techniques are ineffectual or detrimental. More research is obviously required in this domain.
- Language-teaching puzzles are useful as form-based and meaning-based reinforcement and control activities.
- Language-teaching games are useful as communication-based activities.
- Although there exists some evidence that entire courses or curricula can be based on a language-teaching game approach (e.g. Palmer and Rodgers 1983, Miller 1991), by and large puzzleological techniques are useful primarily as supplementary or complementary activities that can be used in tandem with other techniques within broader methodological and curricular frameworks.
- These techniques should be given the same treatment and weight as other exercises, drills, and activities; otherwise the student will tend not to take them seriously.
- Both teacher and students must find puzzleological technique enjoyable; otherwise they will become counterproductive.
- Given all these provisions, we are convinced, as have been many teachers over the last three decades, that puzzleological techniques have as much a role to play in second-language teaching as they have been shown to have in many other areas of education.

Our purpose in this revisitation was not to be exhaustive, nor to be innovative in showing how language-teaching puzzles and language-teaching games can be incorporated into second-language teaching. Our goal was simply to highlight the diversity and versatility of these recreational forms of language and communication exercise and practice. We conclude by emphasizing one more time to the reader that puzzleological techniques do not constitute a method or an educational paradigm. They are enjoyable activities that can be used together with other kinds of practice devices for reinforcement, review, thinking, control, and communication in the classroom. All these techniques really aim to do is to achieve the same kinds of exercise and practice goals that more traditional drills and activities do. But, they inject so much fun into the process that they end up invariably fostering a positive attitude in teacher and students alike to the learning tasks at hand. And this is the primary condition for learning to occur.

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