

From Crosswords to High-Level Language Competency

Jeffrey Knisbacher

The Historical Context

On December 21, 1913, the modern crossword puzzle was invented in New York City by an immigrant from Liverpool, a journalist named Arthur Wynne.

That first puzzle was introduced in the "Fun" section of the *New York World*, a paper founded in 1860, which lasted over 100 years until its demise as the *New York World Journal Tribune* in 1967. Joseph Pulitzer (memorialized by the Pulitzer Prize) had purchased the paper in 1883 and ran it until his death in 1911.

The crossword puzzle came into being in the heyday of sensationalism and wild publicity, when, for lack of competition from other media almost every large city had multiple newspapers vying for readership. America in 1913 was a very different place than it is today. In a sense, the crossword puzzle was the last gasp of a contradictory era of poverty and opulence, corruption and reform that was coming to a sudden and unforeseen close with the imminent outbreak of World War I. But it was also, perhaps, the most successful product of that era, having spread around the world to become a staple of daily life almost everywhere. (See the reproduction of that puzzle in the next section of this paper.)

Crossword Development

Whatever the reasons, that first crossword (or Word Cross as it was initially termed) was wildly successful, with immediate calls from readers for more of the same. For the next ten years, the *New York World* was the sole publisher, but, for reasons unknown, the crossword puzzle was never copyrighted or trademarked. It was only in 1924

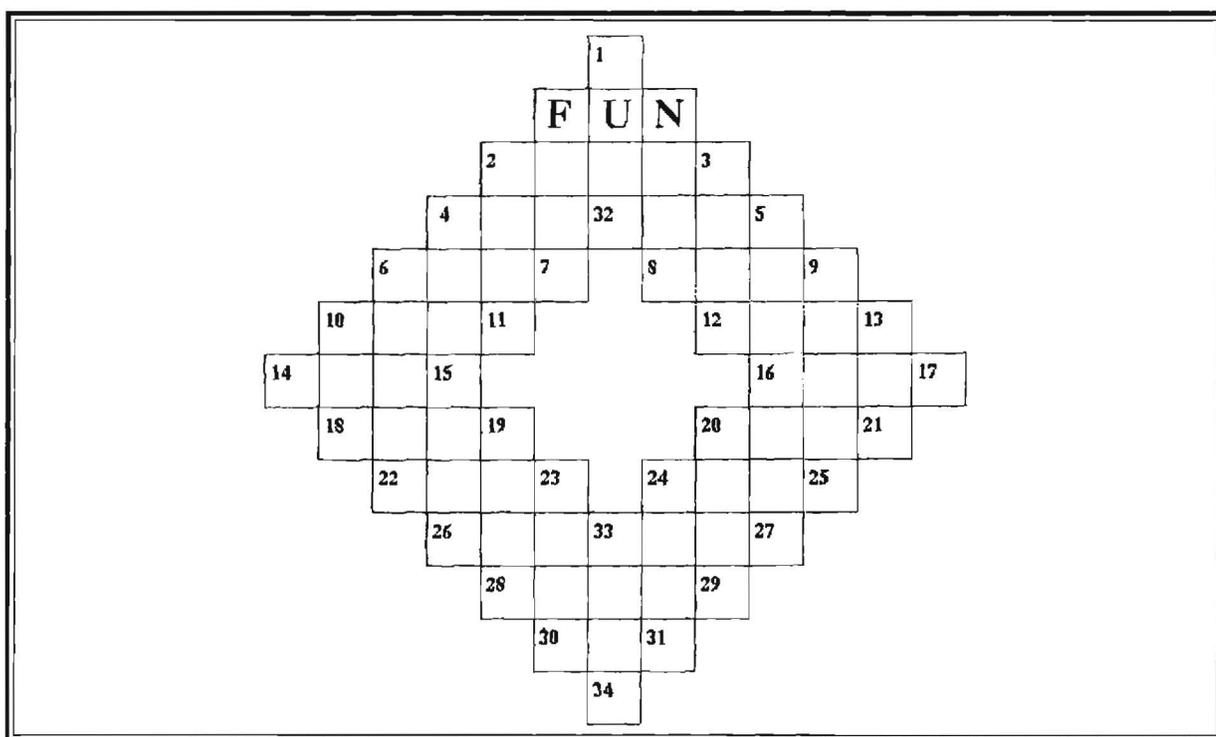
that the first daily crossword appeared, not in the *World* but in the *New York Herald Tribune*. It was also in 1924 that the first book of crossword puzzles appeared, from the fledgling firm of Simon and Schuster, which grew to become one of the world's publishing giants on the heels of that initial success. The first *New York Times* puzzle appeared only in 1930, and a regular Sunday puzzle was instituted in 1942. By 1950 the *Times* Sunday puzzle had become so popular that a daily version was instituted, which, in the 1960s, was syndicated to other papers across the country. To this day it remains the epitome of challenge for serious puzzle fans.

It was only in 1922, after the end of the "Great War," that the first such puzzle appeared in Britain, and in 1924 the *Sunday Express* was persuaded to run some crosswords, the first of which was co-authored by its inventor Arthur Wynne. The puzzle's popularity soared there, too, but with a twist. The Brits found the original form too "American." They began modifying the entries to fit British usage, sometimes dispensed with what by then, in the U.S., had become the standard square grid with symmetrical black fills (using heavy bars instead to indicate word boundaries—the so-called "barred crosswords"), and, most significantly, changed the nature of the clues. To make them more difficult, they created the "cryptic crossword" (the style that appears today in the *London Times*). The clues in this type of puzzle have two parts, a normal one, and a second that makes use of anagrams, puns, cryptograms, and other kinds of wordplay to severely challenge the solver. By 1926 this form, the rules for which had been laid down by A. F. Ritchie and D. S. Macnutt, had become a staple in Britain, and the *Observer* had hired a full-time "setter" (puzzle constructor), who gleefully adopted the pseudonym

⁵ “Torquemada” (real name Edward Powys Mathers).

That real brainpower was needed to solve these puzzles led to a unique contest. Early in 1942 the *Daily Telegraph* ran a misleading ad, offering to donate one hundred British pounds to the Minesweeping Fund if, under controlled conditions, anyone could solve their crossword puzzle in less than twelve minutes. In fact, the ad was a ploy to recruit intelligence agents to work on enemy ciphers at Bletchley Park. The half dozen or so successful entrants went on to become part of the team that ultimately broke the German Enigma, a very significant contribution to the war effort.

That first crossword puzzle invented by Arthur Wynne back in 1913 differed from most of today’s American offerings in several ways. Instead of being square, it was diamond-shaped; the definitions were not given under separate horizontal and vertical headings, but rather via beginning and end numbers, both of which were included within the grid; and, hence, there was no need for blacked-out squares to indicate word divisions. (It should be noted that some of these features are still used in specialty puzzles and in many foreign puzzles.) One feature of this early puzzle later became standard: No two-letter words were allowed. On the other hand, Wynne did use the same word twice (“dove,” 10-11 across, where it is defined as a bird, and 19-28 down, where it is defined as a pigeon. Finally, there was another feature in this early puzzle that is still



The world’s first crossword puzzle
By Arthur Wynne, December 21, 1913 from *The New York World*
(Solution here <<http://crosswordtournament.com/more/wynne2.html>>)

- | | |
|----------------------------------|------------------------------|
| 2-3. What bargain hunters enjoy. | 6-22. What we all should be. |
| 4-5. A written acknowledgment. | 4-26. A daydream. |
| 6-7. Such and nothing more. | 2-11. A talon. |

3

10-11. A bird.
 14-15. Opposed to less.
 18-19. What this puzzle is.
 22-23. An animal of prey.
 26-27. The close of a day.
 28-29. To elude.
 30-31. The plural of is.
 8-9. To cultivate.
 12-13. A bar of wood or iron.
 16-17. What artists learn to do.
 20-21. Fastened.
 24-25. Found on the seashore.
 10-18. The fibre of the gomuti palm.

19-28. A pigeon.
 F-7. Part of your head.
 23-30. A river in Russia.
 1-32. To govern.
 33-34. An aromatic plant.
 N-8. A fist.
 24-31. To agree with.
 3-12. Part of a ship.
 20-29. One.
 5-27. Exchanging.
 9-25. To sink in mud.
 13-21. A boy.

seen but is usually decried by serious puzzle makers and puzzle solvers: the use of “crosswordese,” that is, words that are so obscure that even the most literate members of society are unlikely to have ever seen them.

In the 1920s, 1930s, and 1940s, certain other trends became established practice for many daily newspapers in the U.S. Even before that, Margaret Petherbridge (later Farrar) had done away with Wynne’s dual numbering system, marking word boundaries by blacked out squares, which had to be symmetrically arranged. (The puzzle must have the same grid structure if turned upside down, which prevents even-number sized grids.) Later she set a related formatting standard that is still generally followed: No more than 16 percent of the total squares in the grid could be blacked out. (Note that the British style of cryptic crossword, with “barred grids”—thick lines within the grid to indicate word boundaries, with no black squares to waste space—does not require symmetry and, hence, may be of any size, even or odd.)

Margaret had been hired on as Wynne’s assistant at the *World* when the demand for puzzles became unmanageable, and later became the first crossword editor at the *Times*, where she reigned for nearly thirty years before being forced into mandatory retirement at the age of 72 in 1969.

During her tenure at the *Times*, she also set other conventions that have become standard, e.g., puzzles would become more difficult as the week progressed, reaching a peak with the Sunday offering. The idea was that people going back to work on a Monday (and in those early days everybody, it seemed, did the puzzles on the bus or train to work) needed to get back up to speed after a relaxing weekend. Moreover, there wasn’t as much time to devote in the middle of the week. From early on it was realized that single word solutions were not challenging enough, so Margaret Farrar was the first to allow multiple word phrases that later progressed to made-up phrases within specific parameters, and even whole quotations stretching over several grid lines. (The best puzzle designers try to avoid, as much as possible, very common, short “fill” words, for which there are published lists available.) Gradually slang and jargon made their way into the puzzles, along with trade names, personal names, abbreviations and acronyms, onomatopoeia, common foreign words and phrases, roman numerals, historical figures, and just about everything from popular culture and current events. Quite typically, also, daily puzzles are 15x15 grids while the Sunday offering expands to a 21x21 format (or, occasionally, a 23x23 format).

During the war years, *New York Times* publisher Arthur Hays Sulzberger became addicted to

3
the *Herald Tribune's* crossword and came to the conclusion that his paper should have one too. Who better to oversee the paper's puzzle, he concluded, than the top name in the field: "Mrs. Crossword" (Margaret Petherbridge Farrar)? As befitted the "Gray Lady's" stature, Sulzberger decided the *Times's* crossword should focus on current events and the news (for the next thirty years, Margaret would be ordered to keep it "dignified"), and the daily puzzle should be solvable in around twenty minutes—the average amount of time commuters spent on the subway each morning on the way to work.

Certain other conventions have long since become staples in U.S. crosswords: When an entry (the technical term for a word or solution) calls for an abbreviation, the definition will generally have an abbreviation as one of its parts. If a phrasal entry is a pun or some other form of wordplay, the "clue" (as opposed to a true dictionary definition) will usually end in a question mark. Words or phrases with an apostrophe are permitted, with the apostrophe simply ignored, e.g., "wont" in the sense of "will not." Sometimes metalanguage is indicated obliquely in a definition by words such as "preceder" or "follower." E.g., this definition: three letters, "plop" preceder; hence "ker" as in "kerplop" (and not something in the real world that precedes a plop). Serious puzzles are now almost always a two-person production: one person creates the puzzle, the other edits it, i.e., checks the definitions and desired answers for correctness.

Finally, the daily puzzles now usually have a "theme," perhaps Margaret Farrar's most important innovation. Sometimes the theme is stated explicitly in a title line at the top; more frequently, it is not. Usually the theme appears only in the longer answers.

Other features that are not uncommon in contemporary American crosswords are these:

1. Clues can refer to other clues, sometimes explicitly by number, sometimes not.

2. Especially in untitled puzzles, a holistic approach may be necessary; i.e., you may need to look at the entire puzzle before being able to solve it.

3. To figure out the first theme answer or answers, especially where there is no explicit indication by title, it is usually necessary to complete the interlocking words that surround them. After that, if the pattern is understood, some of the other long responses may become apparent, thus helping to solve other parts.

Thus far only English-language puzzles have been considered, mostly those in the U.S. Information on the history of crossword puzzles in other languages is relatively hard to come by, though it is clear from Internet searches that crosswords are now prevalent and highly developed in most European languages and have spread well beyond Europe to include countries and languages that use other than the Roman alphabet and even write in the opposite direction from English, i.e., right to left, e.g., Egypt (Arabic), Israel (Hebrew), and Iran (Persian). There have been crossword puzzles in the Korean syllabary (Hangul), in Chinese (both pinyin Roman alphabet transcription and native logographic characters), and Japanese (kana syllabaries). The makers of *Crossword Tools* can produce crosswords in HTML or Postscript format in any language supported by Unicode, with samples available in a large number of languages including Thai and Vietnamese, which have notoriously difficult font issues.

(Partial examples of a Chinese crossword, edited to fit the printed page, a Russian "picture" puzzle, and a Greek puzzle can be found in Appendices A, B, and C. A Russian word puzzle is shown in Appendix D.)

Linguistic Aspects

The main thesis of this article is that the ability to solve an appropriately difficult crossword puzzle requires a high degree of competency in the language and culture of the puzzle. The tasks required to solve American English crossword puzzles require skill sets on the part of the puzzle solver that relate to every level of language structure; this article will then link those skill sets to the Interagency Language Roundtable scales that define high-level reading competency. This general conclusion is apparently not a new one, as witnessed by this quotation from the *Britannica 2000 CD*: "To be able to solve a crossword puzzle in a second language shows a high degree of skill and knowledge therein."

The initial focus of this discussion is on English crossword puzzles, mainly to simplify the task of illustrating how and why crossword puzzle solving is a serious enterprise, with real potential for high-level second-language teaching. That does imply, of course, that English crossword puzzles could be used in a "Teaching English as a Second Language" (TESOL) environment. However, the main purpose here is to set out a framework for using foreign language crosswords to help English-speaking students achieve a high level of competence in some other language. Unfortunately, limits of time and space prevent a detailed examination of this potential in a large number of languages. What will be done is a close analysis of a single high-level crossword puzzle in Russian that is of comparable difficulty to the English ones. The assumption will be, on the basis of the long history of crossword puzzles in the world, that at least in the major European languages, crossword puzzles of similar interest and value will be easy to find and can be similarly used.

As noted before, the daily crossword puzzles that appear in major American newspapers (and which are often syndicated around the country) have for decades followed a pattern of

increasing difficulty as the week progresses. This raises some interesting issues with regard to rating crosswords by difficulty, but for the moment it will be assumed that any crossword puzzle that appears in a major daily American newspaper will pose significant challenges for a non-native speaker of English. Note that the British "cryptic" crosswords will be specifically excluded from consideration. They may be of value in training cryptologists, but are likely to be so overwhelming for the average second-language learner (and possibly even for the average American) as to be counterproductive as a teaching aid.

The value of crossword puzzles in language teaching lies much more in the subtleties posed by the clues than in the actual words that are to be figured out. In other words, the ability to solve crossword puzzles goes way beyond mastery of vocabulary. In fact, as will be shown, it involves all of the structural levels of language—phonology, morphology, syntax, and semantics—and a lot more.

In the realm of language knowledge, crossword puzzles may ask for any or all of the following:

1. Synonyms — (with less than obvious clues) tighten, as text (four letters, looking for "edit")
2. Antonyms
3. Foreign words that are common in the given language—e.g., café cup (five letters, looking for "tasse"), or less common—e.g., clarified butter (four letters, looking for "ghee"), or in the clue "suffering from mal de mer" (seven letters, looking for "seasick")
4. Alphabet letter names—average grade (three letters, looking for "cee"), pi follower (three letters, looking for "rho")
5. Archaic usage—color (five letters, looking for "tinct")

5

6. Obsolescent/poetic language—e.g., close by, old style (four letters, looking for “nigh”)

7. Onomatopoeia—cry in cartoons (three letters, looking for “eek”)

8. Abbreviations — gov’t officials (four letters, looking for “feds”), car starter, abbr. (three letters, looking for “ign”)

9. Acronyms — military flier’s acronym (four letters, looking for “JATO, jet- assisted takeoff”), “no seats” on B’way (three letters, looking for “SRO, standing room only”)

10. Contractions — pronoun-verb contraction (6 letters, looking for “they’ve”)

11. Prefixes — prefix with thermal (three letters, looking for “geo”), prefix meaning sun (five letters, looking for ‘helio), med lead-in (three letters looking for “pre”)

12. Suffixes — word with when, what or who (four letters, looking for “ever”), alternative to -esque (three letters, looking for “ish”), slug ending (four letters, looking for “fest”)

13. Part of speech ambiguity — constitutional (6 letters, looking for “stroll”), final (four letters, looking for “exam”)

14. Slang — problem for a “deejay” (four letters, looking for “skip”), slangy denial (three letters, looking for “nah”)

15. Pig Latin — amscray (four letters, looking for “shoo”)

16. Jargon—e.g., fa follower, (three letters, looking for “so”), clues to a detective (five letters, looking for “leads”)

17. Argot (or subculture) — e.g., track maven, (four letters, looking for “tout”), three card monte (four letters, looking for “scam”)

18. Fill in the blank as a simple sentence completion: What can I ___ convince you? (four letters, looking for “do to”) — Note that this example also illustrates the use of multiword phrases.

19. Fill in the blank as a search for an idiom: I’ll take that as ___ (three letters, looking for “a no”)

In the realm of general knowledge, the puzzles may reference:

20. The arts

a. Authors

b. Names of poems — “nevermore” croaker” (five letters, looking for “raven”), football team named for a poem (six letters, looking for “ravens”)

c. Oscar-winning films

d. Painters and sculptors

21. History

22. Geography

23. Sports

24. Science and technology

25. Religion

26. Current events

27. Food

28. Clothing

At the risk of stating the obvious, usage, spelling and vocabulary in all these realms, in addition to the specific facts, may vary by language or country. Thus the response to a geography question about the location of Berlin (looking

for "Germany"), for example, in a German puzzle would be "Deutschland," in a French puzzle, "Allemagne," etc. In other words, even the general knowledge portion of the puzzles will usually require language mastery above and beyond any subject matter expertise.

To solve puzzles that ask for these kinds of information, both linguistic and general, requires an active mastery of all levels of language structure. It is obvious, of course, that the request for synonyms or antonyms or the ability to recognize that a given word may act as more than one part of speech, tasks semantic competence, knowledge of how language is used to convey meaning. The need to find multiple-word, phrasal answers, especially in response to a fill-in-the-blank scenario, tasks syntactic knowledge, as do requests for contractions. Requests for prefixes or suffixes, often through veiled or ambiguous clues, force a focus on morphology. So does the intersection of words at common suffixes such as the plural "s" or a clue deliberately phrased in the past tense, forcing an expectation of a "d" or "ed" somewhere in the answer (not necessarily at the end, if the response is a phrase).

Less obvious, perhaps, is the reliance on our implicit understanding of phonology as mediated through conventional spelling (the graphemic system). As parts of the grid are filled in (usually the most certain responses first), other answers will be partially filled in, as well, due to the word intersections. In many cases a partial fill will be enough to jog memories as to what the entire response should be. But in other cases (especially where the required answer is a proper name or simply an unfamiliar lexical item), the puzzle solver will rely on an understanding of what the possible consonant clusters, or CV or VC sequences can be (as represented in the spelling) to guide him or her to the final fills. For example, every native speaker of English knows, intuitively, that the following three-consonant sequences are possible: spr, str, scr and spl, scl (but not *stl)—but only at the beginning or middle of

words, never at the end. Similarly it is known that "ts" is possible at the end of English words but not at the beginning (which may be why the foreign words "tsar" and "tsetse" seem to be very popular among crossword constructors!). Of course these clustering rules are very language-specific, as the two examples above show, and many seemingly strange sequences are possible in other languages e.g., initial clusters in Russian that might be represented in English as zb, psh, bd, etc. Finally, a knowledge of the graphemic system is directly tasked by requests for letter names (sometimes in foreign alphabets, most typically Greek), and indirectly so via the need to spell correctly all of the answers.

Beyond the traditional structural linguist's approach to language are questions of language usage (often referred to as "pragmatics"). These are typically issues of "register," different kinds or flavors of language for different situations. In this area "argot" refers to language differences of style or vocabulary based on social class (e.g., the language of the underworld), "jargon" refers to the technical vocabulary specific to a particular trade or profession, "slang" refers to the language of the street or other informal situations, and "formal language," used in serious publications or oratorical settings, will often use unusual or archaic terms, or allusions to the literary masterpieces of the surrounding culture. All such items are grist for the puzzle constructor's mill because they make the puzzle more challenging and entertaining. (Another precept of the puzzle-making art is that the final product must never refer to things that are unpleasant; the puzzles are, after all, a form of entertainment, a point that will be revisited later under instructional aspects.)

How is all of this germane to high-level language competency? The best way to approach that issue is by reviewing the relevant aspects of the Interagency Language Roundtable (ILR) definitions of and distinctions between the reading levels that are designated 3 (General Professional Proficiency), 3+ (General Professional

5

Proficiency, Plus), 4 (Advanced Professional Proficiency), 4+ (Advanced Professional Proficiency, Plus) and 5 (Functionally Native Proficiency). Before proceeding, it should be noted that there are similar definitions for the other three primary language skills: speaking, listening, writing. In fact, some of the register issues discussed earlier may apply more appropriately to the speaking skill since they appear much more frequently in speech than in writing. Nevertheless, for the sake of simplicity, and because crossword puzzles are a written phenomenon, this discussion will be limited to the reading dimension.

The most critical aspects of level 3 reading ability are "able to read within a normal range of speed and with almost complete comprehension a variety of authentic prose material on unfamiliar subjects...Text types include news stories similar to wire service reports or international news items in major periodicals, routine correspondence, general reports, and technical material in his/her professional field; all of these may include hypothesis, argumentation, and supported opinions." All of this, of course, represents minimal requirements for, say, a professional translator. Equally important, however, is what is NOT expected at level 3: "...it is not expected that the individual can comprehend thoroughly subject matter which is highly dependent on cultural knowledge or which is outside his/her general experience and not accompanied by explanation...Can get the gist of more sophisticated texts, but may be unable to detect or understand subtlety and nuance...may experience some difficulty with unusually complex structure and low frequency idioms."

Individuals at the 3+ level progress to the point of understanding "many sociolinguistic and cultural references" but still may miss "some nuances and subtleties." They can comprehend more complex structures; "however, accuracy is not complete." They are still shaky when it comes to texts that "rely heavily on slang and unusual

idioms." At the 4 level (Advanced Professional Proficiency), they can now "read beyond the lines" and "understand the intent of writers' use of nuance and subtlety." They can follow "unpredictable turns of thought readily in, for example, editorials, conjectural and literary texts in any subject matter area DIRECTED TO THE GENERAL READER [emphasis mine]." But they still "may have some difficulty with slang." At the 4+ level they are close in ability to the educated native in reading and understanding "extremely difficult or abstract prose, a very wide variety of vocabulary, idioms, colloquialisms, and slang...Accuracy is close to that of a well-educated native reader, but not equivalent."

Finally, it is worth reproducing in its entirety the description of level 5 reading ability (Functionally Native Proficiency). "Reading proficiency is functionally equivalent to that of the well-educated native reader. Can read extremely difficult and abstract prose; for example, general legal and technical as well as highly colloquial writings. Able to read literary texts, typically including contemporary avant-garde prose, poetry, and theatrical writing. Can read classical/archaic forms of literature with the same degree of facility as the well-educated, but non-specialist native. Reads and understands a wide variety of vocabulary and idioms, colloquialisms, slang, and pertinent cultural references. With varying degrees of difficulty, can read all kinds of handwritten documents. Accuracy of comprehension is equivalent to that of a well-educated native reader."

It should be clear from these definitions that the keys to high-level, near-native reading ability lie in the area of cultural fluency, and the ability to grasp unconventional texts, i.e., texts that can be difficult for the native (legal or technical material outside one's own field of expertise, poetry, colloquialisms, slang, and even classical literature).

It should be equally clear from the previous discussion that these are precisely the areas on

3

which high-level crosswords focus, but which seem to have been overlooked by previous writers on the subject who, apart from the *Britannica* writer cited above, apparently assume that crosswords are useful only for vocabulary building. For example, consider this quote from a 1984 book on teaching Russian: "Other possibilities for classroom activities reviewing vocabulary are endless...Students often enjoy making up crossword puzzles, particularly if it is announced in advance that the best one will be put on a ditto for everyone to solve. One way to use crossword puzzles is to hand them out to students when they finish a test. This provides a constructive, yet enjoyable activity to fill up time which would otherwise be wasted." There are several possible reasons why the greater potential of crossword puzzles for high-level language training (and testing) has been overlooked: lack of familiarity with the fine points of a serious crossword puzzle, a dismissive attitude toward crosswords as merely a frivolous pastime, or, as suggested above, a focus on the answers rather than the clues.

Pedagogic Potential

Since it is the higher levels of language aptitude that are aimed at, and since, by definition, those are levels achieved by educated adults, this discussion will dispense immediately with the idea that crossword puzzles can be used to teach basic vocabulary (usually at much lower levels and often with children in mind). Of course simple or made-up crosswords can be used that way, but serious crossword puzzles are inappropriate for that purpose; they are too difficult. They can, however, be used as a valuable adjunct in teaching precisely the skills that lead to near-native competency: differences in tone and register, technical and specialized language, culture-bound associations, archaic usages, literary references, dialect variants, and the nuances and subtleties of idioms and slang expressions.

It should be emphasized at the outset that working crosswords (or playing any other kind of lan-

guage game) alone will not lead to such competency. Some ways will be discussed in which the puzzles can be used to enhance high-level language knowledge, but in-country training (immersion) with simultaneous and follow-up formal instruction is by far the best way to achieve such competency. Indeed, if suitably intense, and if the student is appropriately motivated and talented, that kind of instruction alone can achieve the objective without any reference to crossword puzzles. After all, there are many educated people who do not (and perhaps cannot) do crossword puzzles in their own native language. That leads to another corollary: for testing purposes the ability to solve an appropriately difficult puzzle under closely defined conditions could be a sufficient test of high-level language ability but could never be considered a necessary one.

The previous section discussed the kinds of linguistic knowledge that are brought to bear to do a serious crossword puzzle, the way they involve every level of language structure, and the connections between those kinds of knowledge and the measures of high-level language competence. But what has not been considered yet is how precisely these puzzles can be used in a training regimen and where they fit in the broad range of theories and practices for teaching and learning language.

Much of U.S. linguistic research over the past four decades has focused on generative-transformational grammar, first introduced by Noam Chomsky in the late 1950s. Indeed, that theory, which has gone through many permutations over the years, has been so influential as to leave a seemingly indelible mark on the English language itself. Whereas once religion and then science were looked to as the answer to big problems, now, at least in business and government, "transformation" is all the rage. Nonetheless, there have been strong competing views about the nature of language, especially from those who teach language for a living.

The core tenet of the generative-transformational approach is that all human beings are born with an innate capacity for language that manifests itself in a finite set of rules for producing or “generating” an infinite number of sentences. Many generativists believe that the core set of rules is universal, and that the manifest differences between the 6,000-plus human languages derive from different sets of transformations (another kind of rule) that are applied to the base rules and different lexical “plug-ins” when the abstract rules (which are expressed by mathematical formulae) are filled in at the bottom of the process with actual words. Chomsky’s most famous claim may, perhaps, be that no sentence (which he considers the basic unit of language) ever repeats itself.

This last idea is probably key to understanding the objections of pedagogues, as well as “discourse analysts,” cognitive linguists, and other more traditionally disposed theorists to Chomsky’s ideas. While sentences may not normally recur in formal written language (and even in that case there is room for disagreement), certainly in normal conversation or “discourse,” they do. Much of the work of the language teacher trying to help students speak a foreign language is in drilling not just the patterns or rules that may be at work some of the time, but also the daily life expressions that are used all of the time. (Chomsky would probably demur that these utterances are not true “sentences”—i.e., many of them express social pleasantries rather than new information—but that is certainly not always the case, and it is beside the point. To speak a language effectively, the user must master these things first. There are other, equally serious, difficulties with the generative-transformational approach as a linguistic theory upon which to base second-language instruction. First, there is the unsettling fact that while almost everyone learns his or her first language to perfection, the learning of a second language is appallingly unsuccessful in all too many cases. If the basic rules of language are innate, why should this be?

A second and related problem is how to turn generative-transformational rules into a believable training regimen. Long before generative grammar appeared on the scene, for much of human history over the last 5,000 years since writing was invented, the teaching of foreign languages has been based on “grammar.” Rarely, if ever, did that approach alone produce fluent speakers of the second language, but it did produce a lifelong dislike of grammar (and language) in many. There is no indication that the mathematics-like rules of generative grammar would be any more successful. On the contrary, their formalism is so rigid and academic as to be even more off-putting.

Since the nature of the learning process is part of the issue here, it follows that learning theory, or a cognitive approach to language instruction based on psycholinguistic research, may lead to more promising results. Here it would be useful to follow the lead of three prominent practitioners, Stephen Krashen and Peter Skehan, both cited previously, and Michael Lewis. Because this is not the place for a full-scale treatment of cognitive or psycholinguistics, some of the key ideas will be listed, along with a look at how they relate to the claim that foreign language crossword puzzles can be used as one tool for achieving high-level language competence.

A key notion of Krashen’s “Natural Approach” (as quoted by Lewis) is the following:

Greater emphasis on vocabulary in the early stages of learning...Vocabulary is basic to communication. If acquirers do not recognize the meaning of the key words used by those who address them, they will be unable to participate in the conversation...For this reason, the author is not impressed with approaches that deliberately restrict vocabulary acquisition and learning until the morphology and syntax are mastered.

5

This emphasis on the lexical aspect of language is, of course, not meant to be restricted to just the early stages of language learning. In actuality it applies throughout a lifetime since people are constantly learning new lexical items and collocations even in their native language.

Lewis provides a set of key principles as an underlying theoretical framework for this approach. The ones most relevant to this paper are the following:

Language consists of grammaticalised lexis, not lexicalised grammar.

The grammar/vocabulary dichotomy is invalid; much language consists of multi-word 'chunks'.

A central element of language teaching is raising students' awareness of, and developing their ability to 'chunk' language successfully.

Although structural patterns are acknowledged as useful, lexical and metaphorical patterning are accorded appropriate status.

Collocation is integrated as an organizing principle within syllabuses.

...

Language is recognized as a personal resource, not an abstract idealization.

Successful language is a wider concept than accurate language.

...

Socio-linguistic competence—communicative power—precedes and is the basis, not the product, of grammatical competence.

Grammar as structure is subordinate to lexis.

...

Sub-sentential and supra-sentential grammatical ideas are given greater emphasis, at the expense of earlier concentration on sentence grammar and the verb phrase.

Task and process, rather than exercise and product, are emphasised.

Over a quarter century ago, Bolinger argued that the human memory system is extremely large and probably characterized by redundancy. Anything that a person can say in any language can be said in multiple ways. Part of the problem for the foreign language student is not just in learning how to say things the right way but also in learning to say them in any or all of the ways that the native might. Pawley and Syder argue that the capacity for such variation is largely the result of an immense store of "lexicalized sentence stems" (LSS). "The average native speaker...knows hundreds of thousands of such lexicalized sentence stems, and these are then available as a repertoire of elements which may be used in ongoing conversation to achieve the degree of real-time fluency which we take for granted and which would not be attainable otherwise."

Skehan amplifies on this idea: "Learners need to make the choice from a range of grammatically acceptable utterances that would be used by native speakers. As we have seen, native speakers make choices which are lexically based. Learners who restrict themselves to item-and-rule approaches to language will be forever marked as non-members of the speech community they aspire to. To achieve that acceptability...they will have to become more lexical in their mode of communication, and correspondingly in the repertoire of language knowledge that they possess. One way of doing this is to extend the range

3

of lexical sentence stems (and lexical phrases) that they use.”

Putting all of these ideas together, the following can be said about crossword puzzles as a means to achieve that range of expression:

1. Crossword puzzles are certainly lexically based. Not only the responses, but also the clues themselves are rarely complete sentences.

2. The lexical items used, in both the clues and the responses, are often the most recent or most common collocations to appear in the language.

3. Those collocations are typically slang or jargon or argot, the informal language of the street that is not otherwise readily encountered outside an immersion setting.

4. The language of crossword puzzles is, by its very format, “chunked.”

5. The language of crossword puzzles is not abstract but concrete and “personal.”

6. In another dimension, the puzzle format, by its very nature of requiring thinking and rethinking, has built-in redundancy that reinforces learning.

As noted before, the best way for the language student to begin to absorb the vast vocabulary of a new language is through guided immersion. But absent that, and in addition to conversation in class or other exposure to native speech patterns, crossword puzzles can provide access to the spoken language in small bite-size pieces that are easy to digest.

How, precisely, is this done? Since the focus on high-level language training is relatively new, and crosswords have never been used before for this purpose (as far as is known), new territory is being charted here. The guidelines proposed are not based on experience and will undoubtedly

have to be refined by those who actually take the plunge in using them. But certain features seem obvious. Clearly the instruction based upon them has to be designed by native or near-native speakers. And unless that native speaker has unusual puzzle-solving talent (or an endless supply of time), the puzzles that are used should be pre-solved. (Not a problem, since the solutions to journal puzzles regularly appear in the next issue.)

One approach would be to design an entire class around the use and solution of puzzles. Each day, or perhaps more than once a day, a puzzle is handed out and the class is asked to solve it, either individually or as a kind of brainstorming exercise working together. In the latter mode, the class discussion, led by the instructor, should be entirely in the target language, with appropriate hints as needed. If the puzzles are to be solved individually, the instructor needs to provide a way to avoid frustration. One way to do this would be to hand out hints to some or all of the clues. Again, the hints should be in the target language. If the instructor is computer savvy, he/she might set up the puzzle in one of the computer programs discussed below that allow for electronic hints. Whether done as a class project or individually, the puzzles should be followed by discussion and written exercises that focus on other ways to say the same thing or discussions of related topics with an emphasis on the colloquial and cultural aspects of the theme. It is assumed that students who enroll in such a course would be attracted by its novelty and would not feel threatened by the need to solve puzzles.

Another approach would be to use the crossword puzzles as enhancement to regular classroom instruction. In this case, students' learning styles become more of an issue. In an ideal world students would not have to rely on their own intuition to assess their learning observed mode of thinking. They would already have taken one of the commercial products marketed for that purpose, e.g., Herrmann's brain dominance invento-

ry (HBDI) or Kolb's learning style inventory (LSI).

Again, this is not the place to delve into all the facets of learning styles and their specific import for language instruction. The discussion here will be limited to a brief look at Herrmann's Four Quadrant theory. From Hippocrates in the 4th century B.C. to aphasia theorists Wernicke and Broca in the 19th century and on to our own day, observers of brain disorders have noted a correlation between the site of brain trauma and the specific form of speech disorder that results. Recent studies have shown that just as most people are right-handed or left-handed (and not ambidextrous), most people also have a preferred brain dominance, a preferred mode of thinking, with increased neural activity on that side of the brain. This, then, points to brain dominance as the source of preferred learning styles.

The now familiar left brain/right brain dichotomy (left brain-analytic, sequential, verbal and temporal; right brain-holistic, pictorial, spatial and simultaneous) has been further refined by Herrmann into a four-quadrant system, based on his claim that the limbic system (the seat of our emotions) needs to be considered in addition to the neocortex (the 80 percent of our brain that is involved in thinking). In this "whole brain" theory, the four quadrants are separated right and left, as above, but also cerebral on top and limbic on the bottom.

A person who is upper (cerebral) left dominant, termed a "stringer" by Gross, tends to be logical, analytical and fact-based. Presumably such a learner would be strongly attracted to puzzle-solving. A person who is lower (limbic) left dominant tends to be sequential, fact-based, organizing and implementing. Such people might tend to get frustrated while doing puzzles since their desire for sequence might keep them focused on items they do not know instead of moving on to what they do know.

People who are upper (cerebral) right dominant are said to be intuitive, imaginative and non-sequential. Such people might lack the detail perspective to be successful puzzle solvers on their own, but might be very valuable in a brainstorming setting in coming up with new ideas and approaches. Finally, the lower (limbic) right dominant people are characterized as kinesthetic, sensitive, communicative and persuasive, big-picture, top-down people. Gross termed them "groupers." They might be the least likely of all to be interested in puzzle solving. But Herrmann's major thesis is that once we recognize our own observed mode of thinking, we can use that knowledge to train the other quadrants, in other words, to match our personality characteristics to our work habits and thereby become more productive.

In a real-world educational setting, where it is unlikely that these learning style evaluative tools are available, it will be incumbent upon the instructor to be particularly sensitive to individual student differences. Puzzles are not for everyone, and alternative activities may be required for those who do not take to them. Finally, puzzles may be a particularly good adjunct in classes that focus on humor, since humor and crossword puzzles share a common ground in their emphasis on colloquial speech and up-to-the-minute issues of the day.

Crossword Puzzle Software and a Crossword Rating System

Up until now this article has focused exclusively on the actual crossword puzzles themselves and ignored the issue of how they are constructed or how they might be constructed. In fact, the article has deliberately left the impression that only puzzles created by and for natives are worthy of consideration for high-level language instruction. But that is not entirely true. Imagine a full-time course based around authentic puzzles, perhaps given out at a frequency of one a day. There is no reason why an enterprising and suitably tal-

5

ented instructor or team of instructors could not create artificial puzzles as drill and practice for the terms discovered in the native puzzles and further amplification of the topics involved. Similarly the native puzzles could be re-created in computer software that allows for hints, selective uncovering of responses, or even full on-line solution so as to make the course virtually self-paced.

What may not be realized by the casual puzzle aficionado is that if a good puzzle is hard to solve, it is even harder to create. The issues of crossword puzzle creation are discussed at length by several of this country's distinguished composers and editors in the previously referenced *The Crossword Obsession*. Not everything covered there is necessarily relevant to the purposes laid out in this article since it is not clear that foreign crossword puzzles adhere to the same rules and requirements. In particular it is not known whether foreign crossword puzzles emphasize themes of the type discussed earlier. But whether they do or not (and constructing a themed puzzle is a much more time-consuming enterprise), it is unlikely that an instructor would need to do multiword or punned themed puzzles for instructional purposes. Of course, puzzles designed around jargon from a particular field of research could be of interest. The general recommendations that may be relevant are the following:

- Fewer fill-in-the-blank clues ("one _money")
- Fewer inflectional suffix entries
- Few or no partials
- Fewer three-letter entries (of which there are only a limited number)
- More wordplay
- Elegant grid design
- Fewer vowel-consonant-vowel-consonant fill words

- Long words stacked on top of each other
- Hard words OK but not obscure terms ("crosswordese")
- Two obscure terms should never cross

What these boil down to are puzzles that are less conventional, more original and more entertaining. Presumably these general guidelines would apply as well as to puzzles that are made up for sophisticated foreign language learners. (Note, however, that fill-in-the-blank type clues might be a plus in foreign language instruction for teaching important collocations!)

Timing considerations are also important here. Accomplished puzzle constructors may be able to create a 15x15 puzzle (in English) in as little as an hour, but the novice will clearly require several hours, even with software producing the grids. (The hardest part of the construction, apart from themes, is designing clever clues, for which the software is of relatively little help.) Larger puzzles may take even experienced designers fifteen hours or more of work. A very few of the "professional" constructors report doing up to sixty or seventy puzzles for publication a year. For many others, thirty is typical, which should serve to indicate the complexity of the work involved.

Note that there are also specific word-count maxima and black-square count maxima (based on the 16 percent rule mentioned earlier) that are fairly rigidly enforced for the various size puzzles:

15x15	78 words (72 unthemed)	38 black squares
21x21	140 words	74 black squares
23x23	168 words	88 or 90 black squares

Of course language instructors are under no compulsion to follow those guidelines or even to produce grid-type puzzles. However, if they do, they should be aware that these are the conventions that American puzzle solvers are used to and comfortable with.

5

Most professional constructors are avid readers and note takers, keeping lists of every new word or phrase they encounter. Some of them report files (usually computerized) of up to 20,000 such entries, often arranged by word length. Clearly this kind of effort is beyond the capacity of even the most under-taxed language instructor (if there is such a beast)! Fortunately there is software available to alleviate some of that toil.

Two software programs discussed in some detail in *The Crossword Obsession* as "industry standard" are *Crossword Compiler* (also known as *Crossword Compiler for Windows*, or CCW) and *Crossdown*. CCW was written by a Ph.D. in astrophysics from the U.K. named Anthony Lewis and has been under continuous development and improvement since its early days as a DOS application in 1993. Its opening screen asks you to choose between cryptic, American, freeform, or shaped crosswords. If you choose American, you are given eight choices of prepackaged grid sizes ranging from 11x11 to 25x25, or you can choose custom sizes that are not necessarily square.

If you choose one of the eight prepackaged grid sizes, you are then given a very large choice of different grid patterns for each, with a sample of the pattern in a window at the right and the number of words and black squares shown on the left. You then have three choices for filling the grid: put the word in yourself (required for themed crosswords), allow for "autofill" from a word list using default settings, or autofill from a word list of your own choosing (possibly the best for foreign language work). For an additional fee, CCW provides a "Word Web" word list or you can create your own or find one on the Internet (e.g., at the <http://www.cruciverb.com> site). Note that you can rework the presupplied grids if you so desire (moving or deleting black squares, etc.), and you will generally find that the autofill entries are often either boring or "crosswordese" abstruse. In other words, even the autofill option will not produce all your entries in a satisfying

way, and you will have to go in and make manual adjustments. Next, CCW has a cluing function that allows you to see the number of your entry on the left, the actual entry on the right, with space in between to add the clue. If you double click on a clue, you bring up a clue database that can provide pre-made clues for many of your entries. Finally, you can export your puzzle in a variety of formats for MS Word or desktop publishing programs for high-quality printing.

Crossdown, by Sam Bellotto, Jr., has similar setup and output capabilities, but lacks some of CCW's features while adding others. It provides all the standard grid sizes, but not the nonstandard ones. Nor does it have an autofill function. All of the fills have to be done manually (at least in the version described in *The Crossword Obsession* as of 2001). However, it will keep track of all your previous entries and clues through an optional "Cluebank" add-on and provides some free construction and marketing tuition.

Beyond these two programs there are literally dozens of others available, a partial list of which is provided at the end of this article in bookmark form (in the softcopy version), along with an even more extensive list of English and foreign language crossword sites. (A much larger list of crossword-related sites can be found in *The Crossword Obsession*, pp. 325-336, covering, in addition, many other types of word games, on-line reference material, and organizations devoted to puzzles.) Particularly noteworthy for our purpose are the *Across Lite* program, available for free download from Literate Software Systems, which allows for on-line crossword publishing and solving, and is used by many publications worldwide including the *New York Times*, the *Los Angeles Times*, the *Washington Post*, the *Neue Zürcher Zeitung*, and many others. Also worthy of special mention are the Crossword Tools mentioned before that can support virtually any font through Unicode, another program to design crosswords using an MS Excel spreadsheet, and various foreign-language-specific soft-

3

ware for at least German, Danish, Swedish, Italian, and Spanish.

One final note is in order here. This article has talked throughout about “serious” crossword puzzles that are appropriate for high-level foreign language instruction without attempting a specific definition. Such a definition might be made in terms of the ILR language levels discussed above. For instance, a Level One crossword puzzle would likely be limited to single word entries of some of the most common words that a beginner in the language would first encounter. A Level Two puzzle might up the ante to use words typical of factual news reporting. A Level Three puzzle might make use of words of evaluation and judgment of the type found on an editorial page. Clues, of course, would be similarly rated, perhaps just simple synonyms at the lower levels and more complex definitions at the higher ones.

For levels 3+ and above, the rating system would probably have to be more subjective, perhaps along the lines of the percentage of answers that deal with cultural issues and language of the type characteristic of native speakers – slang, jargon, wordplay, etc. Perhaps as an initial cut, 50 percent of the entries would have to be constructed that way for a Level 3+ puzzle, 75 percent for a Level 4 puzzle, 90 percent for a Level 4+ or 5 puzzle. (But because of the physical constraints of the puzzle design process and the need for words to “cross” appropriately, it may not be possible to meet such goals.) These, of course, are simply guesses in the absence of any previous experience with this kind of enterprise. It is left for those who follow to work out the exact details.

Useful Web Sites:

- Crossword, English
Brief Crossword History
<http://www.crosswordtournament.com/more/wynne.html>
- Crossword Puzzle History
http://www.crossword-puzzles.us/Crossword_Puzzle_History.htm
- First Crossword Puzzle
<http://www.crossword-puzzles.us/1stCrossword.htm>
- Your Dictionary Crossword
<http://www.yourdictionary.com/crossword>
Crossword History
<http://www.infoplease.com/spot/crossword1.html>
- American Crossword Tournament Brief History (1st Crossword)
<http://crosswordtournament.com/more/wynne.html>
- AARP Magazine Crosswords
<http://www.aarpmagazine.org/games/>
Crossword Master Site List
<http://www.macnamarasband.com/links/links.html>
- Amo’s Crossword Dictionary
<http://www.amo.qc.ca/>
- Houston Chronicle Crossword
<http://www.chron.com/xword>
- NY Times Crossword
<http://www.nytimes.com/pages/crosswords>
- USA Today Crossword
<http://www.usatoday.com/life/puzzles/puzzle.htm>
- More USA Today Crosswords
<http://puzzles.usatoday.com/>
Best Crosswords
<http://www.bestcrosswords.com>
- Interactive Crossword Puzzle
<http://www.quizland.com/cotd.htm>
- Sydney Morning Herald Crossword
<http://www.primate.wisc.edu/people/hamel/cp.html>
- British Crosswords
<http://www.crossword-puzzles.co.uk>

3

- Hexagonal Crossword
<http://www.tresman.co.uk/ian/hexaword.htm>
- Surfeteria Fractured Crosswords
<http://www.surfeteria.com/crossword/how-break.shtml>
- Surfeteria Coded Crosswords
<http://www.surfeteria.com/crossword/howcoded.shtml>
- American French Genealogical Society Puzzles
<http://www.afgs.org/puzzle/puzec2.html>
- All About Puzzles
<http://www.puzzles.info/>
- Word Wizard
<http://www.bigfishgames.com/downloads/wizard/index.html>
- Word Wizard III (Coda Software, UK)
<http://www.laplace.demon.co.uk/codasoft/>
- Korea Theme Crossword (English)
http://www.koreasociety.org/KS_curriculum/SF/2001/Lessons/klp_viii.pdf
- HP Free Puzzles
http://h10050.www1.hp.com/activitycenter/us/en/toys_stkrs_pzzls.html?jumpid=ex_R602_UAG_go/search-hho-google-ac-puzzles
- Cryptic Crosswords
<http://www.cullen.demon.co.uk/>
- Barred Grid 18x18
<http://www.cullen.demon.co.uk/0205p.htm>
- Crossword Puzzle Games
http://www.crosswordpuzzlegames.com/puzzles/gt_2439.html
- Acrostic Poem
http://poetrypotpourri.homestead.com/files/Poetry_Potpourri_Acrostic.htm
- Poe's Acrostic
<http://home.vicnet.net.au/%7Epoems/ps/html/acrostic.html>
- Largest Puzzle Site
<http://www.primate.wisc.edu/people/hamel/cp.html>
- <http://www.softows.com/Free/Games/Puzzles/Crossword-Challenge-11091.html>
- Crossword, Foreign Language
Neue Zurcher Zeitung
<http://www.nzz.ch/kreuzwortraetsel/uebersicht.html;jsessionid=D8C945541079F4288E546B1EA881F5E3>
- Manfred Jahreis
<http://www.manfredjahreis.de/Lehrerseite/Unterrichtsmaterial/Kreuzwortratsel/kreuzwortratsel.html>
- German Crosswords
http://www.hoflohmann.de/Service/fur_unsere_Kleinen/Kreuzwortratsel/kreuzwortratsel.html
- Mathematical Crosswords (Romanian)
http://www.dacia.edu.md/ro_dacia/educatie/stiinte/elevi/matematica/joc_mat5/Index.htm
- Histoire des mots croises
http://www.hannequart.com/article.php3?id_article=25
- Histoire de mots croises (Arepo...)
<http://homepage.urbanet.ch/cruci.com/textes/histoire1.htm>
- French Cross Word Sites
<http://homepage.urbanet.ch/cruci.com/textes/liens.htm>
- Language Learning Crosswords
<http://www.struccbooks.com/>
- Arabic Crosswords (Al Ahram)
<http://www.arab2.com/games/arabic-crosswords.htm>
- Arabic Arrow Crossword
<http://members.tripod.com/%7EArabCrossWord>
- Persian Crosswords
- Palestinian Crossword Propaganda
<http://www.jewishvirtuallibrary.org/jsources/Peace/crossword.html>
- Hebrew Crosswords
<http://www.active.co.il/word/>
- Crucigrama (Spanish)
<http://www.terra.es/personal5/925460218/Juegos/Letras/crucigrama.htm>
- Crucigramas de Espana
http://www.tuttogratis.es/juegos_gratis/crucigramas_gratis.html
- Crucigrama de Egiptologia
<http://www.egiptologia.com/egiptomaniacos/crucigramas/crucigrama2.htm>

5

Spanish Crucinet
[http://webs.satlink.com/usuarios/1/ldeneira/Istoria del Crucigrama](http://webs.satlink.com/usuarios/1/ldeneira/Istoria%20del%20Crucigrama)
<http://webs.sinectis.com.ar/mcagliani/herucigrama.htm>
 Joker-Crucigrama (Argentina)
http://www.jokercrucigrama.uolsinectis.com.ar/esta_edicion/historia.htm
 JuegosMania.com.ar
[http://www.juegosmania.com.ar/Softonic \(Mexico\)](http://www.juegosmania.com.ar/Softonic%20(Mexico))
http://www.softonic.com/file.phtml?id_file=24978&action=view&view=infext
 Terro List of Crossword Sites (Mexico)
http://www.softonic.com/file.phtml?id_file=24978&action=view&view=infext
 Crucigrama Blanca
<http://www.partal.com/vademecum/cast/creu/1.html>
 Crucigrama
<http://www.partal.com/vademecum/cast/creu/2.html>
 Latin Crossword
<http://www.geocities.com/Athens/4092/cross2.html>
 Catalan Mots Encreuats
<http://www.partal.com/vademecum/cat/creu/1.html>
 Palindroms Musicals (Catalan)
<http://www.partal.com/vademecum/cat/llibres/5.html>
 Foreign Language Crosswords
[http://www.puzzles.about.com\od\ otherlanguages](http://www.puzzles.about.com/od/otherlanguages)
 Multilingual Puzzles and Crosswords
<http://www.clueword.com/cwhome.htm>
 Crosswords Around the World
<http://www.yourdictionary.com/crossword/puzzles.html>
 World Crossware Sites (Russian)
<http://federcross.xelon.ru/philos.shtml>
 Classic Russian Crossword Solved
<http://federcross.xelon.ru/classhif.shtml>
 CrosswordList Magazine (Russian)
http://www.worldpressweb.com/product_info.php?products_id=138

Pole Chudes (with Solutions)
<http://privatelife.ru/krossvord/2001/Krossn6.htm>
 Russian Crossword Puzzles
<http://www.avalon.net/%7Eemelya/PuzzleFun.html>
 100 Russian Scanwords
<http://www.crossword.ee/index.php?i=scanwords>
 Sebesednik (On-line Crosswords and Scanwords)
<http://www.sobesednik.ru/>
 Czech Crosswords (Krizovsky) w. Solutions
<http://www.krizovsky.webz.cz/>
 Ukrainian Scanwords
<http://sinvisti.iatp.org.ua/dozvil/scanwords.htm#>
 Chinese Now Software (Crosswords)
<http://www.knowplay.com/language/transparent-chinese.html>
 Chinese Now Crossword (Pinyin)
<http://www.knowplay.com/language/transparent-chinese.html>
 Comeletras (Hebrew Pacman, Uruguay)
<http://serjudio.com/interaccion/comeletras.htm>
 Elite Japanese Crossword (Russia)
<http://eliteware.narod.ru/>
 Japanese Crossword Description (English)
<http://www.catchysoft.com/jc wd.html>
 Hiragana Crossword Puzzles
<http://japanese.about.com/bltoy5a.htm>
 Japanese Crossword Rules (Russia)
<http://eliteware.narod.ru/rule.html>
 Japanese Crossword Instructor (Russia)
<http://eliteware.narod.ru/teach.html>
 History of Japanese Crosswords (Russia)
<http://enotes.diallink.net/jchist.htm>
 Jewish Crossword Puzzles
<http://members.aol.com/jewxword/index.html>
 Times of India Crossword
<http://www.timesofindia.com/today/xwjava.html>
 Culturopedia India Crossword
<http://www.culturopedia.com/Crosswords/cwkit1.htm>
 India Vocabulary Crossword Puzzles
<http://www.edhelper.com/geography/India.htm>

UNCLASSIFIED

Cryptologic Quarterly
Spring/Summer 2005

3

Crossword Express (Applet)
<http://www.crauswords.com/ilinks.html>
 Archisoft Mots Croises (Swiss)
http://www.archisoft.ch/index_Flash.html
 Dutch Crosswords
<http://www.puzzels.bambamscorner.nl/>
 Norwegian Crosswords
http://frank_esl2000.tripod.com/norxword/nor_xword.htm
 Indonesian Crosswords
<http://www.clueword.com/anacw/ind/indacw.html>
 Turkish Crosswords
<http://www.clueword.com/cword/turkish.html>
 Bilingual Crosswords
<http://www.clueword.com/game/crossword.htm>
 English-Maltese Crossword
<http://www.lapasserelle.com/lm/pagespeciales/anglicistes/malta/intmalta%20/engmalt2.html>
 JCross English-Maltese Crossword
<http://www.lapasserelle.com/lm/pagespeciales/anglicistes/malta/mlangquiz2/7/7mqtwo.htm>
 Interactive Children's Crossword (Korean)
<http://211.185.231.66/study/4data/1hak/Dod/3-3-3.swf>
 YP Books (Korean)
<http://www.ypbooks.co.kr/ypbooks/WebHome/main.jsp>
 Korean to English Crossword Puzzles
<http://www.tgedu.net/student/jung-eng/fun/cross/cross.html>
 K Atoms Free Game
<http://www.114pda.com/index.html>
 Multilingual Word Games (Italian)
<http://www.mavicanet.com/directory/ita/13001.html>
 Gujarat Crosswords
<http://www.gujaratsamachar.com/crossword.html>
 Crossword Software
 Eclipse Crossword Creator
<http://www.eclipsecrossword.com>
 Crosswords on Web
<http://db.tidbits.com/getbits.acgi?tbart=07201>

Wissens-Quiz.de
<http://www.jenskleemann.de/>
 Crossword Builder
<http://www.edhelper.com/crossword.htm>
 Professional Crossword Compiler
<http://www.crossword-compiler.com>
 Crossworld Maker Software
<http://www.tea.ch>
 Crossword Compiler
<http://www.crossword-compiler.com/>
 Across Lite (Literate Software Systems)
<http://www.litsoft.com/>
 Word Finder
<http://www.kryds.dk/english/frame.htm>
 Crossword Express (Applet)
<http://www.crauswords.com/ilinks.html>
 Crossword Express Download
<http://www.crauswords.com/>
 Crossword Express Features (Slide Show)
<http://www.crauswords.com/features.html>
 Clueword Language Games
<http://www.clueword.com/freeloadaddr.htm>
 Clueword Scrabble
<http://www.clueword.com/cgi-bin/cwscrabble.pl>
 Able Stable Games
<http://www.ablestable.com/play/play-hub.htm>
 Crossword WeaverSoftware
 <<http://www.crosswordweaver.com/?google>>
 Puzzle Software Review
<http://www.puzzlesoftwarereviews.com/>
 Centron Crossword Maker
<http://www.centronsoftware.com/internet.html>
 Danish Crossword Constructor
<http://drn.digitalriver.com/product.php%5Bid%5D64500%5Bcid%5D151%5BsiteID%5Dcomputerworld?PHPSESSID=390e40e5cf2cb5c952e704a8dc54aafc>
 Crossword Constructor 5.0
<http://drn.digitalriver.com/product.php%5Bid%5D64520%5Bcid%5D151%5BsiteID%5Dcomputerworld>
 Swedish Crossword Constructor
<http://drn.digitalriver.com/product.php%5Bid%5D64516%5Bcid%5D151%5BsiteID%5Dcomputer-world>

UNCLASSIFIED

Page 37

3

Spanish Crossword Constructor

[http://drn.digitalriver.com/product.php%5Bid%5D64502%5Bcid%5D151%5BsiteID%5Dcomputer-](http://drn.digitalriver.com/product.php%5Bid%5D64502%5Bcid%5D151%5BsiteID%5Dcomputer-world)[world](http://drn.digitalriver.com/product.php%5Bid%5D64502%5Bcid%5D151%5BsiteID%5Dcomputer-world)

German Crossword Builder

[http://drn.digitalriver.com/product.php%5Bid%5D64498%5Bcid%5D151%5BsiteID%5Dcomputer-](http://drn.digitalriver.com/product.php%5Bid%5D64498%5Bcid%5D151%5BsiteID%5Dcomputer-world)[world](http://drn.digitalriver.com/product.php%5Bid%5D64498%5Bcid%5D151%5BsiteID%5Dcomputer-world)

Crossword Power Tools (Thai, Vietnamese, etc.)

[http://www.geocities.com/SiliconValley/Port/](http://www.geocities.com/SiliconValley/Port/5886/cpt_xw10/cpt_p.html)[5886/cpt_xw10/cpt_p.html](http://www.geocities.com/SiliconValley/Port/5886/cpt_xw10/cpt_p.html)

Multiple Crossword Creation Programs from

Gamecraft

<http://www.gamecraft.net/>[foreign/2546/2563/2568/](http://www.gamecraft.net/foreign/2546/2563/2568/)

Wissens-Quiz.de

<http://www.wissens-quiz.de/>

Cruciverba Italiana

[http://www.nienteperniente.it/en_03_gennaio/c](http://www.nienteperniente.it/en_03_gennaio/cruciverba06.html)[ruciverba06.html](http://www.nienteperniente.it/en_03_gennaio/cruciverba06.html)

More Italian Cruciverbi

<http://www.cantodellasfinge.net/cruci/>

Design a Crossword Puzzle in MS Excel

[http://www.microsoft.com/Education/](http://www.microsoft.com/Education/Crossword.aspx)[Crossword.aspx](http://www.microsoft.com/Education/Crossword.aspx)

(U//FOUO) Jeff Knisbacher was born in the antediluvian era BC (Before Computers) and therefore pleads innocent of any claims of computational malpractice! He first began to speak at age three, went on to teach linguistics for several years at the University of Maryland, Baltimore County, and then spent his first years at NSA teaching a foreign language and managing the program. In subsequent incarnations here, he served as a language testing guru, a SNOBOL instructor, a computer program supervisor, an instructional evaluator, a network installer and administrator, a part-time R&E and IOTC researcher, and a computer-based training facilitator. Prior to retirement in 2005, he worked for three years on an operational research project. He is currently a project manager for Lingualistek in Columbia, Maryland. Jeff holds a B.A. in German from Johns Hopkins University, a B.H.L. in Hebrew literature from Baltimore Hebrew College, an M.A. in Russian from Brown University, and a Ph.D. in linguistics from Brown.

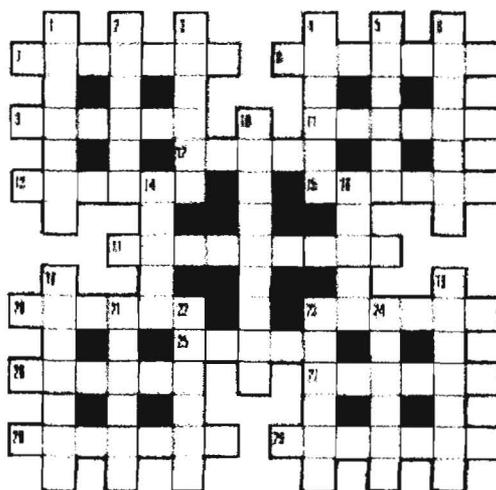
Appendix A
Chinese Crossword Puzzle

蓄	森	林	動	地	質
園	產	哲	植	理	心
藝	農	學	劇	中	電
	機	工	植	文	日
歷	史	管	物	數	造
財	圖	館	理	學	大
金	人	類	獸	藥	氣
推	農	經	牙	學	畢
國	工	濟	商	法	律
企	會	計	學	治	護

H2G2	PSYCH.	H9H10	ATTORNEY	F2G2	PHYSICS	E3D3
E3D3	GEOLOGY	F9G9	LAW	G10H10	NURSING	E2F2
G1G2	GEOG.	E8F8	MED	A6A7	FINANCE	A5B5
I3I4	MECH. ENG.	H4G4	JAP.	G3G4	CHINESE	F4G4
G8	Graduate	H3I3	E.E.	C8C9	ECON.	I5I6

Appendix B
Russian Picture Puzzle

КРОССВОРД С ФРАГМЕНТАМИ

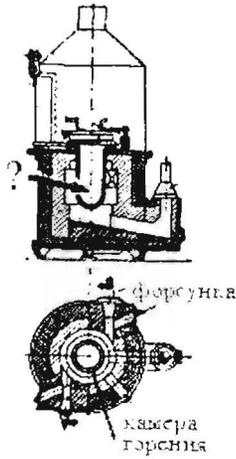


8. Александров, Блинов, Внкуллов, Зайцев,
Зимин, Зингер, Ионов, Коноваленко Кузькин, ...

9. der Tod

3

11.



12. Франция – франк, Германия – марка, Дания, Швеция, Норвегия, Финляндия, Эстония - ...

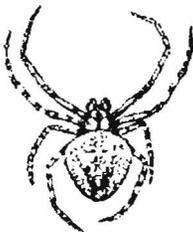
13.



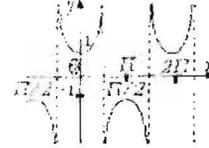
15.



17.



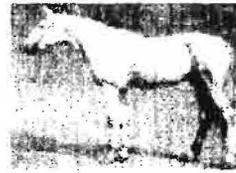
20. (функция).



23. (тип искусственного водопада).



25. (владелец завода, на котором была выведена порода).



26. Подхожу ближе к пещере и вижу, что Билл стоит, прижавшись к стенке, и еле дышит.

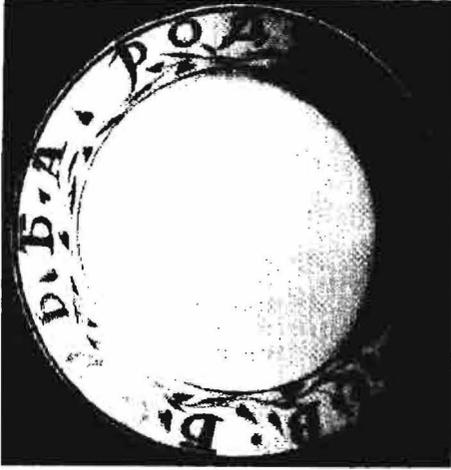
- Он сунул мне за шиворот с пылу горячую картошку, - объяснил Билл - и раздавил ее ногой, а я ему надрал уши. Ружье с тобой, Сме? - Я тебе покажу! - говорит мальчишка Биллу - Еще ни один человек не ударил Вождя Краснокожих, не заплатившись за это. Так что ты берегись! (перевод Н. Дарузес) (подлатинная фамилия автора.)

27.

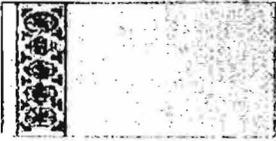


3

28. (художник).



29. (столица государства).



ПО ВЕРТИКАЛИ

1. Туберкулез – чахотка, малярия – лихорадка, диарея – понос ииит...

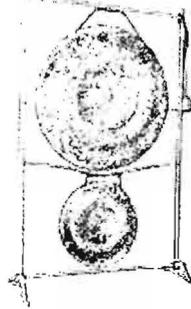
2. (прославленный исполнитель роли Гамлега).



3. Б. Бабочкин – Чапаев, Б. Блинов – Л. Кмит - ...



4.



5. (национальность).



6.



5

10. (нижний чин).



14. (босвая машина).



16. "О великий, / Всещедрый повелитель, / Лицегрозный царь Максимилиан! / Всю землю пройду, / Своей кровью оболую, / А Черного арапа зарублю и засеку! / Всю моя могучая рука - / Покатись с Черного арапа голова!" (персонаж).

18. (конструктор).



19. (титул монарха).



21. "Привезли с железной дороги стрелочника, положили я его на стол, чтобы емг операцию делать, а он возьми и умри у меня под хлороформом. И когда вот не нужно, чувства проснулись во мне, и защемило мою совесть, точно это я умышленно убиол его... Сел я, закрал глаза, вот зтак, и думаю: те которые будут жмть через сто-двести лет после нас и для которых мы теперь пробиваем дорогу, номянут ли нас добрым словом?" (персонаж).

22. (заменитель сахара).



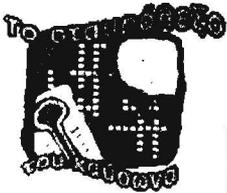
23.



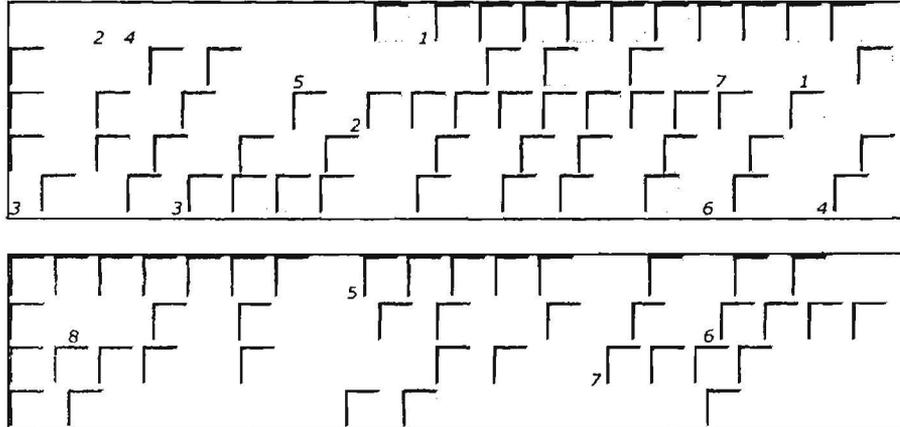
24. (святой, в честь которого построен собор).



Appendix C Greek Crossword Puzzle



Συμπλήρωσε τα κουτάκια με κεφαλαία Ελληνικά γράμματα



Πάτησε για να δεις τη

ΟΡΙΖΟΝΤΙΑ

1. Για τον ανθρώπινο οργανισμό η σωστή είναι 36,6° Κελσίου
2. Είναι ένα από τα έντονα συμπτώματα της θερμοπληξίας
3. Πρέπει να πίνουμε πολλά στην περίοδο καύσωνα
4. Είναι το διάστημα της ημέρας, που ιδιαίτερα σε περίοδο καύσωνα, δεν πρέπει να μένουμε στον ήλιο
5. Είναι πολύ "δυνατός" όταν έχουμε καύσωνα
6. Έτσι ονομάζεται η ζεστή περίοδος του καλοκαιριού κατά την οποία η θερμοκρασία παραμένει πάνω από τους 38° Κελσίου για περισσότερο από τρεις ημέρες
7. Τα δέντρα μας την προσφέρουν

ΚΑΘΕΤΑ

1. Αποτελεί σύμπτωμα της θερμικής εξάντλησης και της θερμοπληξίας
2. Τέτοιου τύπου εξάντληση παθαίνουμε όταν ο οργανισμός έχει κουραστεί από την προσπάθεια να διατηρήσει σταθερή την θερμοκρασία του
3. Είναι πολύ έντονη το καλοκαίρι και ιδιαίτερα τις μεσημεριανές ώρες
4. Την παθαίνουμε όταν αρχίζει να ανεβαίνει η θερμοκρασία του οργανισμού μας λόγω της μεγάλης ζέστης
5. Πως ονομάζεται ο μηχανισμός διατήρησης σταθερής της θερμοκρασίας του ανθρώπινου οργανισμού;
6. Ρέει άφθονος αν έχουμε πάθει θερμοπληξία
7. Είναι ο αρμόδιος στον οποίο πρέπει να καταφύγουμε σε περίπτωση εμφάνισης συμπτωμάτων θερμικής εξάντλησης ή θερμοπληξίας
8. Το φοράμε πάντα το καλοκαίρι όταν βγαίνουμε για παιχνίδι κατά την διάρκεια της ημέρα

Appendix D

A Sample Russian Crossword Puzzle

The Russian crossword that will be examined was chosen, basically at random, from a group of old *Krokodil* humor magazines (a monthly publication) that were available to the author. The fact that there were two successive issues, May of 2000 (No. 10) and June of 2000 (No. 11), meant that the solutions to the puzzle in No. 10 were to be found in No. 11. While having the solution available might not be necessary for native speakers, it definitely was for the author, who relied on the assistance of native

speakers (who, out of modesty, choose to remain anonymous) for the detailed explanation that follows. In this analysis, each clue is reproduced in Russian along with an English translation, the Russian answer, the translation of the answer in English, and comments on the pedagogical value, using the same parameters that the author did for analyzing English crossword clues. Note also that *Krokodil* chose to modify the Russian word 'krosvord' to 'kroksvord' i.e., 'croc [cross] word'.

HORIZONTAL

5. Кстаги, о птичках: приравненное к штыку--by the way, of birds, equated to a bayonet

Перо (feather/pen).

In Russian there is one word that means both 'pen' and 'feather'. The allusion is the same as in English: The pen is mightier than the sword, but the wording is very different.

6. Место царской отсидки-the place where the czar sits out his term

Трон (throne)

The word 'tron' in Russian is cognate with the English 'throne' but spelled differently. The use of отсидки is humorous, since that is not the usual term for simply sitting, but, rather, the term used for doing time in prison

7. Огромный такой для маленькой такой (песенн.)-So huge for so small (in song)

Секрет (secret)

Here the clue has an abbreviation which must be recognized. In order to know the answer you have to know the Russian children's song, or figure out the answer from the other clues.

8. Галина как яркий представитель бульонного кубизма-Galina as a shining example of bouillon cubism.

Бланка (Blank)

Here the clue is again humorous and intended to mislead. The reference to 'cubism' suggests an artist, though the 'bouillon' part makes no sense in art history. In fact, 'cubism' refers to bouillon cubes and Galina Blanka is simply a trade name for several different kinds of bouillon soups marketed in Russia. Again, familiarity with local brands is as important for a Russian puzzle as it is for an American one.

12. Герой анекдотов, которые ныне квалифицируются как политические-hero of anecdotes that now qualify as political

Вовочка (Bobby)

Another culture-bound clue. Vovochka (Bobby) was a common character in traditional Russian humor. However, Vovochka is also the nickname for Vladimir, which happens to be Putin's first name.

14. Вторичный половой признак классиков марксизма-secondary sexual characteristic of the classics of Marxism

Борода (Beard)

A deliberately racy clue referring to the pictures that used to be everywhere in the USSR of the "heroes of Marxism," all of whom sported beards.

15. Чистильщик тянущий резину (канц.)-a cleaning device that drags a piece of rubber (office supply)

Ластик (eraser)

The Russian 'lastik' derives from the pan-European 'elastic' (from Greek) and is also used for 'rubber band'.

17. Обычный для сторожа, тройной для фигуриста-customary for a security guard, tertiary for a figure skater.

Тулуп (a sheepskin coat)

Again, you have to know that because of Russia's harsh climate, a long sheepskin coat is de rigeur for security guards, who don't move around all that much. You also have to know that the same term 'tulup' is skater jargon for a 'triple axel' jump.

3

19. Милая дамочка - дойная корова ТВ рекламы-dear lady, milk cow of TV ads

Мила (Mila)

Familiarity with TV ads in Russia is a must for this clue.

20. Полный финиш в тельняшке-complete finish in a sailor's T-shirt

Амба (sailor's slang for 'caput/all over')

Here one has to know that the Russian 'tel'nyashka' is maritime jargon for a sailor's T-shirt and that is the clue that sailor's slang is needed for the response. Note also that this is an example of meta-language in a Russian clue. The clue does not refer to the T-shirt at all, but to the language used by a person who would wear that garment.

21. Сухопарая финка (банн.)-a dry-steam Finn (bath house)

Сауна (sauna)

The abbreviation for bathing/bath house gives this away. In this case the spelling is exactly parallel to the English.

22. Возмужавший цыпленок-a chick turned into a man

Петух (a rooster)

Here the answer is obvious if you know the Russian word for 'rooster'.

23. Детский врач, чья книга для родителей - то что доктор прописал (амер.)-pediatrician, whose book for parents is "What the Doctor Prescribed" (Amer.)

Спок (Spock)

A reference to the American Dr. Spock books on child rearing, apparently just as popular in Russia. Note the Russified spelling

27. Борец и клоун в одном лице китайской национальности (голивудский)-a fighter and clown in the same person, ethnic Chinese (Hollywood)

Чан (Chan)

A reference to Jackie Chan, the martial arts actor.

29. Весенняя зелень, индо взоревшая на полях-the first greenery of spring that sprouts in the fields

Озимь (the winter crop)

30. Мамаша щенков которыми давали на лапу (гоголевск.)-the mommy of the puppies by which they gave on the paw (Gogol)

Борзая (a borzoi dog)

Another reference to Russian literature and the famous 19th century writer Gogol. Note also the colloquial 'mamasha' for 'mommy'

31. Континент, вдоль по которому гуляют Таня-Ваня (чуковск.)-the continent along which stroll the Tanya-Vanya (Chukovskiy)

Африка (Africa)

Yet another reference to Russian literature, this time to Chukovskiy, who wrote a famous children's poem warning of the dangers awaiting a child in Africa (crocodiles, etc.)

32. Уфимская баскетболистка, сделавшая рок-рывок в спорткомплексе «Олимпийский»--the female basketball player from Ufa who made a slam-dunk in the "Olympic" sports complex

Земфира (Zemfira)

Several cultural references here. The town of Ufa, capital of the Ural-area Bashkir Republic. The sports jargon for slam-dunk 'rok-ryvok' and the "Madison Square Garden" of Moscow, the Olympic sports complex.

34. Масло, от которого телевизор кажется замазанным-the butter (or oil) by which the TV seems to be greased]

«Олейна» (Oleina)

Another reference to TV ads.

36. Брюки, короче-pants, but shorter

Бриджи (shorts)

The colloquial term for short pants.

37. Вершина любовникого треугольника с равнобедренными Хиллари и Монники-the vertex of the isosceles triangle that has Hillary and Monica on the two equal sides

Билл (Bill)

Note that "Bill" is written with two 'l's in Russian to indicate that it is the hard 'l'

38. Музыкальный инструмент, на который В.С.Черномырдин хотел как лучше-the musical instrument V.S. Chernomyrdin would have preferred to play

Баян (a large accordion)

Musical jargon: 'bayan' being a large accordion. Also a reference to the political scene of the 90s, when, in the aftermath of the breakup of the USSR, Chernomyrdin was in charge of the economy and was widely blamed for the catastrophic loss of value of most people's savings. He supposedly said that he only wanted to make things better.

This is a play on the word 'luchshe' which means 'better' but in this context is translated 'preferred'. Here is a similar musical metaphor of people trying to gain sympathy by plucking at heartstrings.

VERTICAL

1. 1/2 художника замочившего красного коня-1/2 of an "artist" (meaning an artistic team) that soaked a red horse

Петров (Petrov)

The authors are well-known comic writers Ilf and Petrov. The clue is another allusion to the works of this team.

2. Ездок в неизвестное на Пегасе-A rider into the unknown on Pegasus

Поэт (Poet)

An allusion to classical literature, possibly more familiar to the Russian audience than to the American.

3. Прикол на приколе (стиль)-an idle stake (style)

Стеб (a stalk)

A humorous reference to hair being straight up, meaning making fun of.

4. Орудие убийства конопатого дедушки (поэт.)-an instrument for murdering a freckled grandfather (poetic)

Лопата (a shovel)

Another literary allusion.

3

7. Самое место для лыка-the very place for a label

Строка (a written line)

Another meta-language kind of clue. Not a physical location but a linguistic device.

Self-explanatory, but a good excuse for pointing out the history of the Alaskan purchase from Russia in 1867 (as "Seward's Folly") and the lingering connection with Russian language and culture even today.

10. Тот что стоит в кустах - всегда кстати (горинск.)-that which stands in the bushes, always by the way (Gorinsky)

Рояль (a piano)

Another literary allusion.

11. Тело накачка которого называется «билдингом»--a body the pumping of which is "building"

Боди (body)

An allusion to the English phrase "body building" that is now part of the Russian vocabulary and reminiscent of the English "pump iron"

13. Святой заголовок (иконописн.)-a holy "heading" (iconography)

Нимб (a halo, or nimbus)

A reference to the iconography of the Russian Orthodox church.

15. Город, из-за которого нужен нам берег турецкий-a city from which we need a Turkish shore

Анталья (Anatolia)

A reference to Russian geography

16. Болотная тварь, пристающая к царевичам с поцелуями-a swamp creature pestering sons of czars with kisses

Лягушка (a frog)

Another literary allusion, to a kind of Russian version of Beauty and the Beast.

17. Танец, утомленный солнцем (аргентинским)-a dance fatigued [burned] by the sun (Argentinian)

Танго-a tango

18. Ударная штукавина для садо-мазо-кайфа-a hitting instrument for sado-masochist "kicks"

Плеть (a whip)

Subculture reference. Note the substitution of the correct Russian morpheme -хизм (мазохизм=masochism, just as in English) with кайфа, another slang term

24. «Кон-Тики» чисто конкретно-Кон Тики, concretely

Плют (a raft)

A reference to the international sea classic by the late Norwegian author Thor Heyerdahl, who set out on a raft to reach remote Easter Island

25. Заведение, где легко доиграться-an establishment where it is easy to get into trouble

Казино (a casino)

Note the different spelling convention in Russian (z vs. s)

26. Похоронное бюро, туды его в качель (илфонетровск.)-a funeral bureau which is on swings

«Нимфа» (Nymph)

Another allusion to the literary team of Ilf and Petrov. Note also the use of the archaic form туды instead of the standard туда

27. Индеец 4x4 по фамилии Джип-а 4x4 Indian of the Jeep family

«Чероки» (the Jeep Cherokee)

The most popular SUV in today's Russia. (The Mercedes 600 being the most popular car)

28. Московская племянница голливудского дядюшки Оскара-the Moscow cousin of Hollywood's "uncle" Oscar

Ника (Nika)

Nika being the Russian equivalent of the Oscar, the film industry's highest accolade

32. Косой «плейбойчик» (зоолог.)-a cross-eyed playboy (zoology)

Зайчик (a bunny rabbit)

In Russian colloquial usage, Косой, the “cross-eyed one,” automatically is understood to be a bunny rabbit, and the bunny rabbit is also the *Playboy* magazine symbol.

33. Клоун, при виде которого низзя смеяться-а clown at whose appearance you cannot laugh

Асисяй (Assisi)

A popular figure in Russian culture whose “clowning” deals with politics and, hence, is to be taken seriously. Note the use of the clown’s slurred word низзя instead of standard нельзя

35. Парад - полный отпад (цирк.)-a show, a full fall (circus)

Алле (Jump!)

Circus jargon. Apparently from the French *allez* ‘go’, a command to a circus animal such as a big cat, to jump.

36. Касторский, он же Кикабидзе-Kastorsky, aka Kikabidze

Буба (Buba)

A role played by the Georgian Soviet actor Kastorsky. Note that Russian uses он же for ‘also known as’, aka. Also note that Kikabidze is his real name, Kastorsky being a stage name.

In summary, in this one Russian crossword puzzle are many of the kinds of usage that are found in a whole range of English crosswords and which are characteristic of high-level native speech. To wit: slang, jargon, archaisms, subculture, abbrevia-

tions, morphological wordplay, foreign borrowings, metalinguistic clues, all kinds of cultural references including sports, art, religion, literature, food, clothing, popular entertainment, politics, economics, history, and geography.