World Applied Sciences Journal 22 (9): 1310-1317, 2013
ISSN 1818-4952

DOI: 10.5829/idosi.wasj.2013.22.09.212

Contribution of Cognitive Linguistics to Tefl: Presentingconceptual Meaning in Phrasal Verbs

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Abstract: This study investigates the advantages of applying Cognitive Linguistics (CL) to the instruction of conceptual meaning of phrasal verbs in an Iranian EFL context. Sixty intermediate learners were randomly assigned to two equal control and experimental groups. Thirty two phrasal verbs (PVs) with the particles *up*, *down*, *in* and *out* were instructed to experimental groups using the insights gleaned from CL. The control group received the same PVs in terms of dictionary definitions and single verb equivalents. Statistical analysis of a pre/posttest assessment confirmed the superiority of the CL-based approach and revealed a strategy transfer to unrehearsed PVs as well.

Key words: Phrasal Verbs · Cognitive Linguistics · Particles · Embodiment · Motivation · Conceptualization · Spatial scene · Vantage point · Strategy transfer

INTRODUCTION

A quick glance at television programs, movies, interviews, pop music, internet exchanges and many other conversational settings reveals that phrasal verbs (hereafter PVs) are abundant in today's colloquial English. Although there is usually a single verb equivalent, native speakers opt for the PV alternative. This dominance of PVs in everyday language of English speakers has madethem a crucially important part of English lexicon for EFL learners. Even mastery of PVsis assumed to be a true evidence of language proficiency [1]. However, PVs have a reputation of being tough and troublesome for EFL learners; witness the publication of numerous self-study textbooks, for example: [2-5] and PV-specific dictionaries, such as: [6, 7].

One reason that makes learning PVs a daunting task is that there are innumerable PVs in English and EFL learners are intimidated and confounded by this diversity [8, 9]. Yet, that is a secondary source of problem compared to the issue of idiomacity (i.e., unpredictability of meaning of the construction from its components) For example, in *'I'm just worn out!'wear* does not refer to wearing clothes in literal sense of the verb and nobody is going *out*; rather, *wear out* is an idiomatic PV which means 'to exhaust or tire'. The problems are reinforced by the way through which PVs have beentraditionally presented in course books or taught by teachers [9, 10]. In the traditional approach PVs are given in long lists of learn-by-heart vocabulary and memorization is suggested as the only strategy; thereby,it has been implied that PVs are unsystematic, arbitrary and random.

The thriving field of Cognitive Linguistics (hereafter CL) challenges the assumed arbitrariness of PVs in traditional view and argues that lexicon, at least in the case of particles, is systematically motivated, or simply put; principled and rule-governed [11, 12]. A CL-based approach, thus, gives the leading semantic role of the PV to the particle component and provides a promising approach to the pedagogy of PVs based on cognitive meaningful learning. According to the *embodiment principle* of CL, cognition is the conceptual representation of bodily experience in spatio-physical environment [13, 14]. From early infancy sensory perceptions are recorded in human mind in the form of reactivations of brain [15]. These reactivations are technically referred to as *image-schemas* [16], *simulations* [17] and *redescriptions* [18]. CL argues that such conceptual representations of motion, space and physical relations shape and motivate the foundation of cognition and thought. In the English language, such representations are linguistically encoded in particles;

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hence, CL-based analysis of underlying mechanisms that stimulate such conceptualizations provides a significant way of understanding the complex behavior of particles in general and PVs in particular.

For example, regarding the particles *up* and *down*, the fact that humans have their head at the top and legs at the bottom of their bodies gives rise to top-down interpretations of entities with no real physical body. Thisenables English speakers to talk about'Manchester United*climbing up* the Premier league table'. Furthermore, given that the upright posture of the body entails health and good psychological conditions and a crouched and stooped body posture implies the opposite, *up* and *down*connote positive-negative values. Thus, without even knowing the meaning of the PVs '*run down*' or '*cut down*', one can predict they convey a negative sense.

Another conceptual representation of physical experience is the notion of *containment* which is linguistically encoded by the particle *in*.Human body is bounded with its skin and all of the concrete objects the infant observes and manipulates have limited bounded shapes. Such observation gives rise to a mental representation of bounded entities in terms of containment [13, 14]. Containment at first is a simple spatial relation for a child and reflects in expressions such as: *The toy in thebox*. Gradually however, the notion of containment evolves into numerous complex abstract concepts. For example, drawing on the containment schema, a child develops the ability to make sense of sentences such as: *He is in trouble/ love/ debt*. Hence, the particle *in* entails being inside or entering a container-like entity ranging from observable things such as cars, buildings, gardens, countries to invisible abstract entities such as activities, movements, situations, relations and so forth. In the same vein, the particle *out* is conceptualized as the notion of non-containment or exteriority; analogously, many of the senses associated with *out* involve opposing inferences from those arising with *in*.

In 1980, Lakoff and Johnson proposed *the conceptual metaphor theory* suggesting that human cognition is metaphoric in nature. Later on, Johnson [16] introduced *image-schemas* as the building block of metaphors. Many CL researchers found these insights relevant to the study of PVs and set out to investigate whether presenting the underlying image-schemas and metaphors of particles to English learners has positive effects on pedagogy of PVs, for example: [19, 24] to name but a few.

On the whole, these studies confirmed the usefulness of making the students aware of underlying image-schematic motivation of particles in PVs; however, they also revealed some areas of weakness and doubt. For example,Boers [19] observed that "Knowledge of the conventional metaphoric themes of a given language does not guarantee mastery of its conventional linguistic instantiations" (p. 569). The most remarkable shortcoming of previous accounts of systemacity of PVs was brought to light byCondon [20]. She admitted that in her study and other existing studies by that time "a vitalpiece of information is missing, namely, the location of the *'viewer'*" (p. 152; emphasis in original). She noted that many confounding behaviors of particles; especially the fact that contrasting pairs such as *up/down* or *in/out* appear to be synonyms in some PVs, could only be explained by taking the viewer's vantage point into account. The above-mentioned issue is addressed by the recent developments of CL and mostly by the work of Leonard Talmy [25] and Vyvyan Evans and Andrea Tyler [1-12, 26].

According to the findings of Gestalt psychology, human's species-specific perceptual mechanisms change, structure and add further complexity and details to the raw input received from sensory experience. One of the ways in which perceptual apparatus constrains and structures human's experience of space is *figure-ground segregation* [27]. Human perception tends to automatically segregate any given scene into figure-ground organization (*figure* is highlighted or focused element of the scene and *ground* is the background or reference object). Talmy [25] tailored the figure-ground segregation to language suggesting that the representation of space in language encodes *spatial scenes*.Any given language provides a means ofviewing the same state, situation, or event fromthe range of perspectives that are conventionallyavailable to the language user. In other words, a language provides the language user with resources for viewing the same scene in multiple and hence alternative ways or in CL-specific terms, *construals*.Shifts in construal give rise to new interpretations of the scene.

Native speakers of a language are subconsciously aware of the conceptual and construalbases of spatial scenes; however, non-native language learners who are accustomed to see the relations and events in physical world through the lens of their mother tongue are clueless about that fundamental knowledge. This leads to a *cross-linguistic mismatch*: the particles do not match up well between languages; therefore, language learners have to cope with anomalies [28]. Examples of how different ways of conceptualization may lead to confusion in choosing the correct PV for Iranian learners are as follows:

(1) She put the ring on her finger. اوانگشتررابه‌دست کرد.

Because of cross-linguistic mismatch Iranian learners are likely to use *to* or *in* instead of *on* for describing the same activity.

(2) a. He filled in the form. اوفرمراپرکرد. b. He filled out the form.

Sentences in (2) exemplify a scene which could be described using two particles *in* and *out* is not encoded by any particles in Persian.

The critical issue of cross-linguistic mismatch is addressed by Evans and Tyler [12] who submit: " rather than viewing particles from different languages as presenting different *meanings*, it is more insightful to take the view that different languages emphasize different aspects of the same (or similar) scene" (p.14, emphasis in original).

In sum, the above-described grounds lead to the logical assumption that giving instructions to and making EFL learners aware of the underlying principles of particles would help them learn Pvs more efficiently. The present study takes this hypothesis as its point of departure and building on Evans and Tyler's insights,examines whether presenting the conceptual bases of the particles*up*, *down*,*in* and *out*enhances a host of Iranian students' learning of PVs. It also aims to find out if such an approach would help them develop an ability to transfer and apply their acquired knowledge to unfamiliar novel Pvs. To put the above-mentioned hypothesis into practice, the following research questions were formulated:

- To what extent does a CL-based approach to teaching phrasal verbs by presenting underlying motivations of particles yield different results from a traditional approach such as the use of dictionary definitions/ examples/ simple statements of meanings?
- To what extent do CL-instructed students and the students who received their treatment by dictionary definition and single verb equivalents differ in developing a transfer strategy to unrehearsed novel phrasal verbs?

Method

Participants: The participants who took part in this study were 60 young female students (aged 17-23) of a private language school in Isfahan, Iran. They all shared Persian as their mother tongue. The study was conducted during the summer English courses of the institute and before starting the course participants were informed that they were going to receive instruction concerning a number of PVs incorporated into their regular program. The participants were at the intermediated level of language proficiency (based on a placement procedure using a version of the Oxford Placement Test [29].

Materials: The data collection procedure of the study was performed through a pretest-posttest assessment. At the beginning of the course, the participants were asked to take a written pretest. Before administering the pretest, participants were briefed about PVs; highlighting that PVs consist of a verb plus a smaller word (such as up, down, in and out) and giving examples they had already been practically familiar with, such as get up, stand up, sit down, come in and go out. The participants were assured that their scores on the experimental tests would have no negative effect on their end-of-term results and then the test was distributed. The pretest was later used as the posttest at the end of the experiment. The test was designed to address the two posed research questions of the study; thus it was split up into two parts. The first part examined the taught 32 target PVs with particles *up*, *down*, *in* and *out*. The second part took focus on 12 novel unrehearsed PVs with the same four particles.

The first part of the test had a force-choice, fill-in-the-blank format. It consisted of cloze passages in the form of short dialogs or paragraphs, each of which was missing several PVs. For each cloze passage, the participants were asked to select the most appropriate PV from a given word bank. The second part of the test consisted of 12 paraphrase items; which required replacing the italicized parts of the sentence with one of the given PVs in a word bank. The participants were told not to worry about tenses and that they could, if they had difficulties with tense changes, insert the PVs in the infinitive form for both parts of the test.

The criteria for choosing the target PVs of the study were two-fold: firstly, they were chosen from classifications of most frequent and useful PVs for pedagogical purposes provided by Gardner and Davies [30]. Secondly, only Pvs with idiomatic meanings were

Table 1: Motivations for *up* and *down* based on Tyler and Evans' model

Particle	Basic Meaning	Additional Senses	Example
UP	Moving upwards toward the top	More	These exercises are good for *building up* leg strength.
		Better	They decided to get *dressed up* and go to a nice pub.
		Complete	The mayor has a plan for *cleaning up* waste sites.
Down	Moving downwards toward the bottom	Less	Don't offer me cigarettes; I'm trying to *cut down*.
		inferior	He is so modest; he always *talks* his success *down*.
		Complete	Pleas *wipe down* the stove after cooking!

Table 2: Motivations for *In* and *Out* based on Tyler and Evans'model

Particle	Basic Meaning	Vantage Point	Additional Meanings	Example
IN	Inside a container (containment)	inside	Enter	He *put* a lot of time *in* his research.
			Kept inside (blockage)	Never *hold in* your bed feelings.
		outside	Disappear	He finally *gave in* and admitted that his wife was right.
OUT	Outside a container (exteriority)	inside	Leave	After a three-day rest, the travellers *set out* again.
			No More	Their money *ran out* quickly.
			Complete	The research was *carried out* by students.
			Prevent (exclusion)	Yuga will help you *block out* pain and stress.
		Outside	visible	His unique personality makes him *stand out* from the crowd.
			Known	The birthday party *turned out* to be a disaster.

selected and literal ones were excluded. The reason was that literal PVs are rather catchy and simple for EFL students but idiomatic PVs are proven to be extremely problematic for EFL learners [28, 5].

Regarding the scoring procedure, a correct answer on each test item would count as *one score* and an incorrect/no response would otherwise count as *zero*. Therefore, a total of 32 and 12 would be a complete score a participant could gain on part one and part two of the test respectively.

Research Design: Using tables of random numbers, the 60 intermediate participants of the study were divided into two equal control and experimental groups. The experimental groups received their instruction of 32 target PVs through the model proposed by Tyler and Evans [26] within the CL framework. The control group received the same PVs following a traditional approach, with no cognitive motivation and only relying on dictionary definitions and synonyms of PVs and using them in some example sentences.

The instruction of PVs was integrated into an extended general EFL program lasting over 1.5 summer months in 3 one-and-a-half-hour sessions per week (a total of 24 sessions). Owing to the bulk of content students had to cover in their program, a limited amount of time (ten minutes per session for both groups) was devoted to the instructional treatment. The course lasted for 8 weeks; each particle was allotted two weeks of instruction. Due to an odd/even schedule, both groups attended the same class at the same hour of the day and were instructed by the same teacher.

Instructional Procedure: The teacher-fronted instruction for experimental group began by giving a brief explanation of particles having a related network of meanings and the notion that the central meaning for each particle designates a spatial relation between a *figure* and a *ground* element. However, to avoid the risk of overwhelming the students with technical terminologies, the dominant employed terms were (F) element or the focus of attention and (G) or the background. The students were instructed that our understanding of space and the phenomena in our surrounding environment is organized by our brain. The brain does not perceive the world in a flat array; rather, it organizes our perception in terms of (F) and (G) elements. In an imaginary scene, (F) tends to be the smaller, more moveable element which is the focus of attention; the (G) is the larger, less moveable, locat ing element. The instruction was accompanied with schematic drawings (e.g., stick figures, cubes, arrows, dots, etc.) that the teacher draw on the board to illuminate the spatial scene related to each particle.

Gradually and over the 8 weeks of the experiment, the primary meaning of each particle as well as the additional senses it holds were presented to students emphasizing the roots of these meanings in everyday activities and bodily characteristics. These guidelines were adapted from Tyler and Evans' book. A noteworthy point is that Tyler and Evans model concentrates on prepositions and not PVs; therefore, some of the senses of *in/out* that only relate to their prepositional function were excluded. Table 1 and Table 2 summarize the basic and additional meanings of each particle accompanied with some instances of Pvs.

For *in* and *out*, the students were familiarized with the notion of *vantage point* and how a shift of interior/exterior vantage point gives rise to different interpretations. The students were highly recommended not to memorize the instructions but to conjure up the spatial scene relevant to each particle and try to infer the meaning from contextual clues. Another instructed point was the cases where contrasting pairs of *up/down* and *in/out* appear to be synonyms.

As for the control group, the 32 target PVs of the study were taught under the same time schedule but through a traditional approach. The teacher wrote a target PV on the board and asked students to look it up in the dictionary. Single verb equivalent of the PV was also introduces, if any existed. Finally, the students were asked to memorize the PV and learn it by heart.

RESULTS

The collected data from the pretest/posttest assessment were fed to SPSS (version 20.0) and were statistically analyzed by comparison of mean scores and their corresponding *p*-values through T-Test analysis.

Investigating the First Research Question: In order to investigate whether the two instructional procedures yielded different results independent samples T-Test was performed. As Table3 depicts, the groups' performances on pretest (part1) show a Sig. (2-tailed) value of 0.394. Put statistically, there is no meaningful difference between the groups at the beginning of the experiment. ($p > .05$) However, at the end of the experiment, the groups' performances on the posttest (part1) display a statistically significant difference ($p < .05$). This indicates the better learning gain of experimental studentsin comparison with their control peers. Figure1 portrays the outperformance of experimental groups on posttest in terms of mean scores.

Investigating the Second Research Question: In order to investigate whether the participants could transfer their acquired knowledge to novel PVs the scores of pretest/posttest (part 2) were compared in terms of equality of means through independent samples T-Test. As illustrated in Table4, the control and experimental participants performed relatively equal on pretest ($p > .05$) but after the treatment participant group significantly outperformed the control group on the posttest. ($p < .005$) This superiority in strategy transfer is also evident in Figure 2.

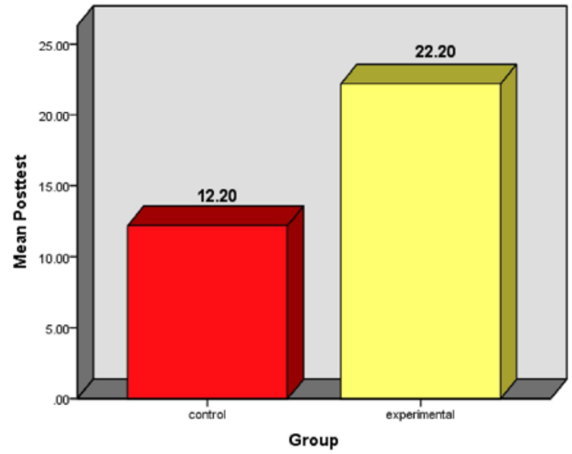

Fig. 1: Graphic representation of the means (posttest-part1)

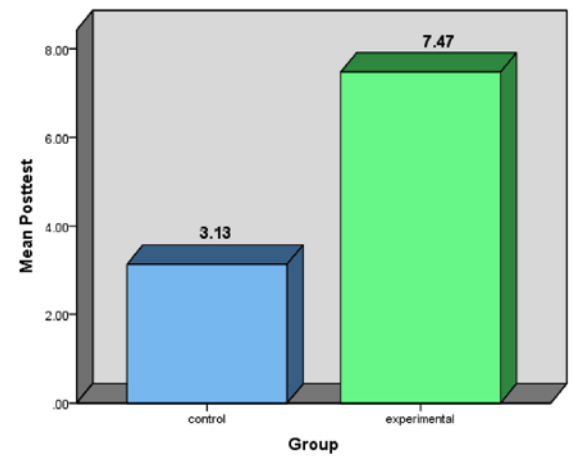

Fig. 2: Graphic representation of the means (posttest-part2)

Table 3: Independent samples T-Test for equality of means (pre/posttest-part1)

	t	df	Sig. (2-tailed)
Pretest	.859	58	.394
Posttest	-13.699	58	.000

Table 4: Independent samples T-Test for equality of means (pre/posttest-part2)

	t	df	Sig. (2-tailed)
Pretest	1.138	58	.260
Posttest	-11.086	58	.000

DISCUSSION

Regarding the first research question, analysis and comparison of the results demonstrate that experimental learners significantly outperformed their control peers on the first part of the pretest/posttest and this lends strong support to the postulation that applying CL to teaching and learning PVs is beneficial and yields better results than a traditional approach that promotes memorization. In general,these findings confirm the outcomes of previous research approving a CL-based approach to the pedagogy of PVs, for example [20-24]. But meanwhile, these results contribute novel evidence that the shortcomings of previous studies could indeed be overcome by taking a more sophisticated and detailed account of CL motivations. The previous studies showed poor results for efficiency of CL-instruction for idiomatic PVs compared to literal ones. Condon [20] suggested that this issue roots in the fact that the metaphor awareness-raising approach underscores the embodied experiential basis of particles and is too simplified because it does not account for many details of spatial scenes such as viewer's vantage point. To address the shortcomings of previous research, the current study deliberately concentrated on idiomatic PVs and took advantage ofTyler and Evans' model where particles are presented with respect to full-fledge and sophisticated details of construal such as figure-ground profiles and vantage points. The advantage and usefulness of this CL-based approach to learning idiomatic PVs is clearly supported by the current findings.

The reason of such superiority lies in the fundamental idea behind CL motivation that was applied to this study. CL puts up that language and linguistic behavior is an integral part of cognition as a whole and not a separate and unique faculty [31]. It follows that relatively general theories of cognitive processing will pertain to learning a foreign language, in particular, theories which concern memory. Two are particularly relevant: dual coding theory and levels of processing theory. In *dual coding theory* [32] it is held that there are two ways a person could expand on learned material: verbal associations and visual imagery. Visual and verbal information are processed differently and along distinct channels in the human mind, creating separate representations for information processed in each channel. Thus, both visual and verbal codes can be used when recalling information. Since the treatment of experimental group was a combination of teacher-fronted verbal explanations and representative drawings of spatial scenes encoded by particles from different vantage points, it can be concluded that these two distinct codes might have provided the experimental learners with a dually enhanced processing. Control participants who received neither explicit explanations nor schematic drawings did not benefit from such enhancement and not strangely showed a lower learning gain.

Another relevant theory is *levels-of-processing theory*. The key claim of this theoryis that the deeper the level at which information is mentally processed, the more likely the information is to be committed to long-term memory [33]. In other words, the duration and strength of the memory trace can be promoted by (mentally) connecting a new item with ones already known, embedding the item in a meaningful scenario and/or associating the item with a mental image. There are two levels of processing: deep processing which entails durable semantic associations in memory and meaningful learning and shallow processing based on no traceable scenario or associative clues leading to fragile memory record which is susceptible to rapid forgetting. This theory sheds light on the results of this study and provides a plausible explanation for the lower performance of the control group: in the absence of prompts to link PVs with mental images or previous knowledge and with relying merely on memorization the instruction on PVs could only be processed at a shallow level resulting in less effective learning and recall. In contrast, CL motivations about the conceptual bases of spatial scenes and meaning extensions of particles enabled the experimental students to process the received instruction on PVs at a deeper level and in a more active manner.

These explanations carry the answer to the second posed question of the study as well. Returning to this question that addressed the knowledge transfer to unfamiliar PVs, the findings indicate a successful transfer of knowledgefor the experimental group. As noted by Nation [34] inferring the meaning of a new item on the basis of existing knowledge is an important strategy in learning a second language and this strategy directly relates to the existence of some background reference. Dealing with new unfamiliar PVs involves drawing on contextual clues to infer the meaning. In general, inference is generated from a retrieval cue which would first have to access information from the relevant knowledge in memory.The strength of an inference is a function of the strength with which the cues are encoded. Accordingly, recorded information at deeper levels of processing and coded dually by verbal explanations and imagery representation would stimulate stronger inference abilities in comparison with the information without such support at memory. That is why the CL-instructed students exhibited better inference ability and could relate their acquired knowledge to unrehearsed PVs. Previous research reported no evidence of developing such ability in their experimental participants [19, 20]. Thus, satisfactorily results of the current study bear further witness to the value and advantage of the applied approach.

CONCLUSION

The present study was an attempt to examine whether arecent CL-based approach, namely *Principled Polysemy Theory*[26]could have any advantageous contribution to teaching and learning PVsin comparison with an approach in which PVs are instructed through dictionary definitions and single verb equivalents. The findings of the study lend strong support to the superiority of the CL-based approach in yielding better learning gain of PVs as well as knowledge transfer to unfamiliar PVs. This ascendancy may originate from the basic thesis of CL that particles are not arbitrary but motivated by language users' experience of their physical, social and cultural surroundings. The findings imply that such motivated systemacity offers pathways for EFL learners to attainthe following benefits:

- A more profound understanding of conceptual bases of spatial scenes of particles and becoming familiar with the ways particles are conceptualized in native speakers' mindset; a kind of knowledge that does not automatically emerge in a foreign context.
- Learning and remembering PVs meaningfully and efficiently (owing to greater depth of processing in general and to dual coding in particular)
- Becoming more confident and less intimidated by PVs; once the studentsrealize that PVs are not entirely arbitrary, they opt for alternatives to blind memorization, such as relying on conjuring up the spatial scenes of particles and inferencing the meaning from available cues. This changes their previous negative attitude toward PVs and encourages them to use them more frequently.

Another implication of the study relates to pedagogues and material designers; they could benefit from these findings in designing and performing actual practices to present PVs using their underlying CL-inspired motivations that may merit explicit teaching and save considerable class time.

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