

processes and the related domains, the less we can propose ready-made solutions for the issue of errors. Using Thomas Kuhn's (1970) metaphor, we can consider language learning generally and error treatment specifically as a process of puzzle solving in which some pieces have been located and set in place up to now, and the rest are under study. In the domain of second language acquisition, definitely social constructivism is the latest piece of this puzzle. Reflective teachers can take advantage of this paradigm and the preceding ones to increase their knowledge about the promising area of error analysis and probably contribute to this area of knowledge.

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regard, Vygotsky (1978) distinguishes between two developmental levels: the level of actual development that the learner can reach independently and the level of potential development which s/he is capable of reaching under the guidance of teachers or in collaboration with peers. By making a distinction between these two levels, Vygotsky shows his interest in the social dimension of learning (Duffy & Jonassen, 1991).

Language in this paradigm is treated in a specific way because it is both a mediating tool for achieving higher mental functioning and a subject of study (Vygotsky, 1978). According to Reinfried (2000), language learning in social constructivism should be action-oriented, where language is learned collaboratively, free creation is praised, and learning is achieved by actively doing projects and self-teaching. Language learning should be learner-centered which supports individualization of learning and autonomy. Learners should develop awareness not only for learning but for the language itself and for the intercultural aspects as well. The last but not the least, constructivist language learning is supposed to be holistic, authentic, and content-based.

Social constructivism in domain of education is not prescriptive in nature; it is descriptive. It seems to be a philosophy whose pedagogical applications are interpreted variously. That is why it gives teachers, learners, educators, or policy makers some macro-strategies to see the issues, define them, and try to solve them in unique ways. Indeed, in education, everything or everyone has their own version of reality which is unique. Therefore, application of this paradigm to

areas such as error treatment should be done cautiously. Here, some suggestions are provided as error correction guidelines:

1. If learners are unique, the mistakes or errors they make will be unique. Error correction shouldn't be exported from one situation to another situation or from one person to another one.
2. Language has an interactive nature and is best acquired collaboratively. Error correction should also use this potentiality.
3. Social context is an important contributor to both learning and mislearning. To analyze the learners' errors, this reservoir should be considered as a good indicator.
4. If social interaction is taken as the purpose of language, those errors that impede communication should override those errors which hurt accuracy but keep intelligibility safe.
5. Those error correction techniques which entail negotiation or dialogue will lead to better results.

Conclusion

The present article elaborated on error correction techniques based on the four schools of educational psychology. The principles of these schools were elaborated and the issue of error correction was interpreted in the framework of these paradigms. A close look at these paradigms shows that they constitute a trend in which a transition is seen from the physiological aspect to cognitive aspect, then to affective aspect, and finally to social aspect. Moreover, this trend gets more complicated as it develops to later stages and similarly the proposed guidelines become less directive and specific. In other words, the more we know about language learning

this method, he proposes that teachers should treat learners' errors in a non-threatening way without calling further attention to the errors (Larsen-Freeman, 2003). Considering the strong position of humanism about affection, the following suggestions can be made based on the principles of this school of psychology as some guidelines for treating errors:

1. Errors should not be called for because treating them in a direct way destroys the positive self-image of the learners.
2. Committing errors is an inseparable part of learning.
3. Committing errors is the main reason which discourages, frustrates, and even frightens learners to make an effort to learn language. What learners need is a climate in which rapport can be built up to give them the feeling of security.
4. Different learners show different reactions towards error correction according to their personality and emotional characteristics.
5. It seems that self-correction and peer-correction cause little negative emotional effect in comparison to teacher-correction.

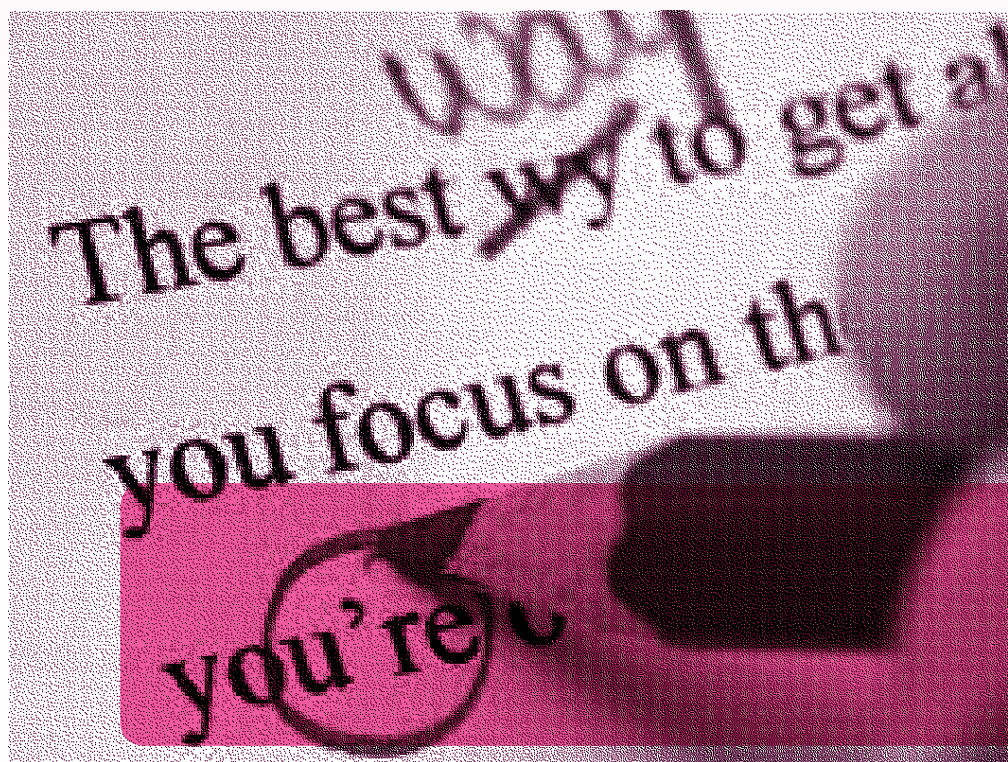
Social Constructivism and Error Treatment

Constructivism is the latest school of psychology whose popularity has grown recently. According to Driscoll (2000), Constructivism has multiple roots in psychology and philosophy, among which are cognitive and developmental perspectives of Piaget, the interactional and

cultural emphases of Vygotsky and Bruner, the contextual nature of learning, the active learning of Dewey, and the paradigm and scientific revolutions of Thomas Kuhn (p. 375).

Constructivist assumptions about learning could be summarized as knowledge is actively constructed by learners as they are trying to make sense of their experiences (Perkins, 1991). According to Williams and Burden (2000), this school of thought has two branches: cognitive and social. The former has been pioneered by Jean Piaget under the name of cognitivism. The latter - social constructivism- developed by Vygotsky notes that all cognitive functions originate in, and must be explained as products of social interactions. In other words, this paradigm emphasizes the importance of culture and context in understanding what occurs in society and constructing knowledge based on this understanding (McMahon, 1997).

The phenomenon of learning in social constructivism emphasizes the critical importance of culture and the social context for cognitive development. In this



treating errors in cognitive educational psychology:

1. Generally errors should be tolerated rather than being immediately corrected.
2. They should be corrected internally. External forces like teacher correction cannot have a long-lasting effect.
3. A teacher should distinguish errors from mistakes. Mistakes which are the results of performance deficiencies should be overlooked and errors should be corrected sooner or later in subtle ways.
4. A teacher should provide the learners with authentic and comprehensive input to give them some opportunities to pass through their interlanguage system.
5. Acquisition of some structures takes time until the cognitive prerequisite reaches its optimal level of development.

Humanism and Error Treatment

Humanistic psychology which emerged during the late 1950's in the United States was a reaction against scientific reductionism in which people were treated as objects. The movement was led by Rogers who was a psychotherapist. Rogers (1969) believed that all humans are born with a drive to achieve their full capacity and to behave in ways that are consistent with their true selves. His notion which has been described by O'Hara (2003) as a *transformative pedagogy* (p. 64) has important implications for education. The most important one is a shift from *teaching to learning*. Another implication is that it is important for learners to feel good about themselves (high self-esteem), and to feel that they can set and achieve appropriate goals

(high self-efficacy). For Rogers (1983), a proper education was a matter of personal involvement which covered the whole person cognitively and emotionally. In such an atmosphere, the teacher is a facilitator, not a disseminator of knowledge (Williams & Burden, 2000).

The phenomenon of learning in social constructivism emphasizes the critical importance of culture and the social context for cognitive development. In this regard, Vygotsky (1978) distinguishes between two developmental levels: the level of actual development that the learner can reach independently and the level of potential development which s/he is capable of reaching under the guidance of teachers or in collaboration with peers

Based on what was presented as tenants of humanistic education, its pedagogical implications can be limited to this strong claim: nothing direct can be done for learning processes except for providing optimal emotional conditions for learning. Pioneers of this school have not proposed detailed specifications of the areas of pedagogy such as error analysis or error treatment. Probably the only trace of such specifications about error treatment can be found in Currans' works (1976) about *counseling learning* where he suggested *Community Language Learning* as a method of language learning. In

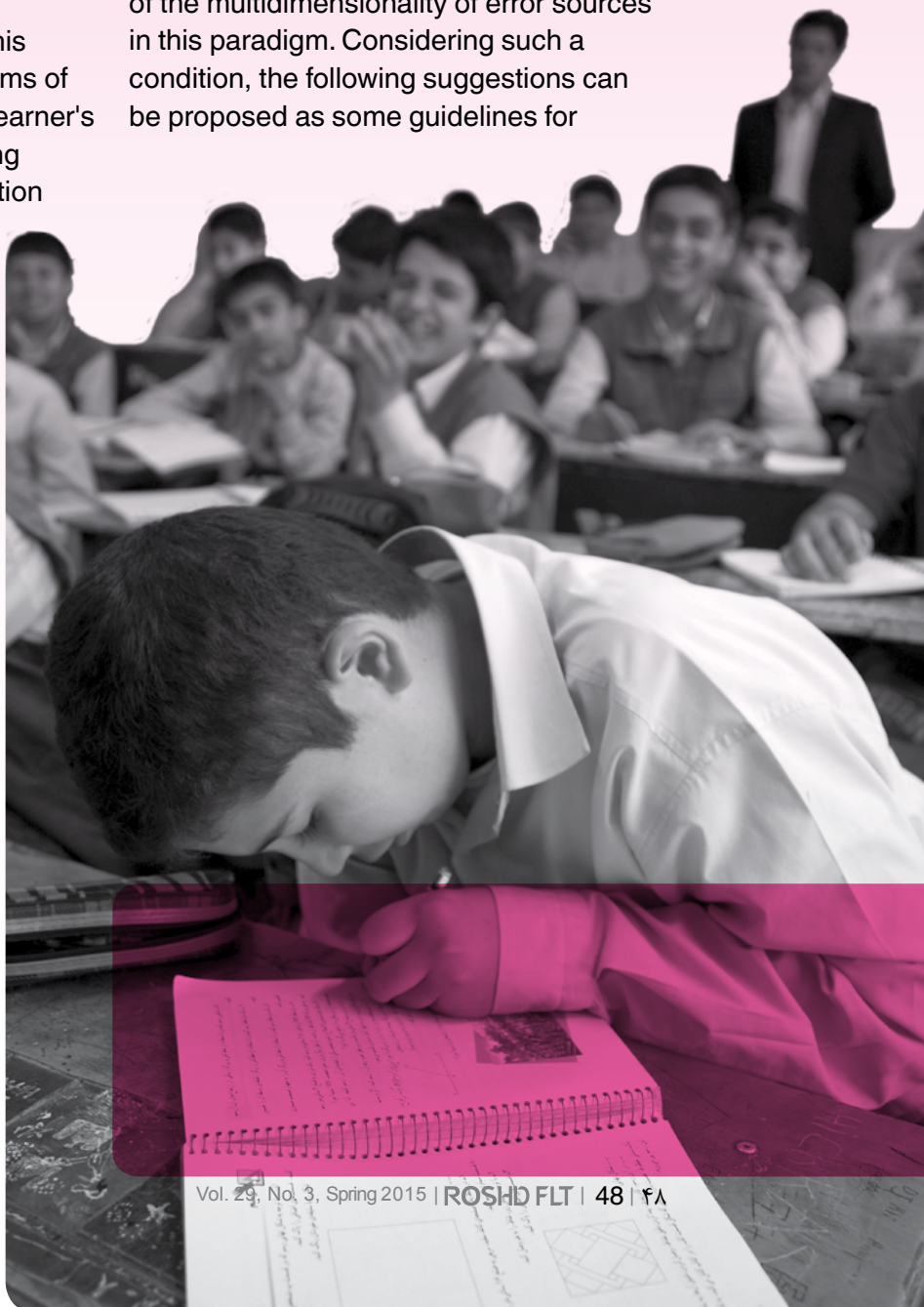
result of interaction between the cognitive structure and language data. Using language acquisition device, a learner gets data from the environment, analyzes them, makes hypotheses, tests the hypotheses, forms the language rules, and step by step makes the whole body of language. Therefore, language is a rule-governed linguistic system which is systematic in every stage. Such a system, according to Ellis (1997), is permeable, transitional, variable, and the product of multiple interacting forces such as transfer, general learning mechanisms, personality factors, cognitive development and input.

As it is expected, the product of this system may be some erroneous forms of language of all types because the learner's interlanguage system is approaching the final state. An important implication of such a view is extending the boundary of errors – previously limited to interlingual errors – to "intra-lingual errors". This new type of errors results from faulty or partial learning of the target language, rather than from language transfer.

Such conceptualization of errors changed error analysis as was seen based on behavioristic psychology. Under the rubric of cognitivism, errors are viewed as the manifestation of language progress indicating the stage of learners' knowledge (Schachter, 1974). In line with this notion, Nunan (2001) believes that errors are not evidence of pathology on the part of learners, but as a normal and healthy part of the learning process. Similarly, Littlewood (1998) states that many researchers have begun

to realize that learners' errors need not be seen as signs of failure. On the contrary, they are the clearest evidence for the learner's developing systems.

If we accept such ideas, the issue of error analysis will encounter some difficulties. Here, so many criteria should be considered some of which are a distinction between errors and mistakes, types of errors, the underlying nature of errors, and learners' cognitive level of development. The variables involved are so enormous that no comprehensive list can be proposed. This is mainly because of the multidimensionality of error sources in this paradigm. Considering such a condition, the following suggestions can be proposed as some guidelines for



essentially a system of habits; learning proceeds by producing a response to a stimulus and receiving either positive or negative reinforcement. If an organism receives enough positive reinforcement for a certain response, the response will turn into a habit. Therefore, language teaching should involve a lot of pattern repetitions to instill proper habits in learners akin to learning skills, such as driving a car. For second language learning, there is the case of habits of the first language interfering in the process of second language learning.. Therefore, if second language acquisition is disturbed by the habits of the native language, it is reasonable to focus on the differences between the native and target language. This is where CA comes in to play its role.

Rogers (1969) believed that all humans are born with a drive to achieve their full capacity and to behave in ways that are consistent with their true selves. His notion which has been described by O'Hara (2003) as a transformative pedagogy (p. 64) has important implications for education. The most important one is a shift from teaching to learning

Based on what was motioned, it can be concluded that errors in behaviorism are limited to interlanguage errors resulted from negative transfer or interference. Therefore, those areas of the two languages that are different will be difficult because when they are transferred, they

will not function satisfactorily in the foreign language and will result in errors.

Error treatment in such a paradigm is straightforward. Errors are viewed as the result of bad habits so they must be corrected immediately in order not to become a part of the newly developed system of habits. Consequently, it would be wise for teachers to facilitate rote learning as much as possible. Here, all errors are treated the same; no criteria are provided which can make a distinction between them. In sum, all of them must be avoided at any cost.

Cognitivism and Error Treatment

After the 1960s, challenges to behaviorism increased and some psychologists began to move away from strict behaviorism. The prominent figure was Chomsky who refuted Skinner's behaviorist explanation of language development. Chomsky (1957) asserted that children possess an innate ability to extract meaning from speech sounds. Such an idea stimulated further interest in *cognition*, a term used to describe all the mental processes involved in acquiring, storing, and using knowledge.

Probably the most salient area of study for cognitive psychology is *learning*. Cognitive psychologists are particularly interested in complex forms of learning, such as learning languages, because it is closely related to perception, memory, thinking, problem solving, and other mental processes. Of particular interest to cognitive psychologists are how children acquire language and why they have an easier time in the process of language acquisition compared with adults who try to learn a second language.

From the standpoint of cognitive psychology, learning a language is the

Corder (1967). Considering the paradigm shift in linguistics from behaviorism to rationalism, he proposed the shift of emphasis from *teaching* to *learning*. He noted that in L1 acquisition we interpret children's incorrect utterances as evidence that they are in the process of acquiring the language. In second language acquisition, Corder proposed that some of the strategies adopted by second language learners are substantially the same as those adopted by kids in the process of acquiring the first language.

According to Selinker (1992), Corder contributes to our understanding of errors in two ways: errors are not random, but are in fact systematic, and they are not negative or interfering in any way with learning a target language but are, on the contrary, a necessary positive factor, indicating hypotheses testing. This drew the researchers' attention to a systematic framework for the study of language errors which was later termed as *error analysis*.

Error analysis viewed errors from a different angle. In fact, error analysis superseded contrastive analysis by examination of errors attributable to

all possible sources of errors, not just those resulting from negative transfer from the native language (Brown, 2007). Thus, learners' errors were viewed as different types of evidence to tell the teacher how far an individual learner has progressed towards the goals. Such conceptualizations of error paved the way for various interpretations which were heavily influenced by schools of psychology and linguistics of the time. In what follows, four schools of psychology along with their effects on error treatment are discussed.

Behaviorism and Error Treatment

In the 1950s and 1960s, psychology was dominated by *behaviorism* advocating the use of strict experimental procedures to study the observable behavior in relation to the environment. This school was first developed by Watson and Pavlov who proposed stimulus-response theory and later developed by Skinner who accentuated the role of consequences or reinforces in increasing the probability of occurrence of a behavior (Brown, 2007).

Language, according to this view, is



performance" (1982, p 130). They also distinguish errors based on the causes whereby they occur; they use the terms *performance* errors and *competence* errors. By the former they refer to errors caused due to fatigue and inattention, and by the latter they mean those caused due to lack of knowledge of the language rules. Corder (1981) characterized *mistakes* as being induced by slips of the tongue, or lapses in memory, arising from physical states and psychological conditions such as fatigue, stress, or inattention. In contrast, errors, as Richards and Schmidt (1992) have argued, are the use of linguistic items in a way that a native speaker regards as showing faulty or incomplete learning. Likewise, Brown (2007) makes a distinction between error and mistake; he defines mistake as "a failure to utilize a known system correctly", while error "reflects the competence of the learner" (p. 257). Ellis (1997) suggests two ways to distinguish errors from mistakes: the first one is the consistency of the learner's performance and the second one is asking the learner to try to correct his/her own deviant utterance. Where the learner is persistent in committing the deviant form and is unable to correct it when it is addressed, the deviation is an error. Otherwise, it should be categorized as a mistake.

Error Analysis in Course of Development

For some SLA researchers *error analysis* was established on the pillars of *Contrastive Analysis* (CA) (Larsen-Freeman & Long, 1991). During the 1940s and 1960s, SLA researchers were interested in systematic comparison between two languages to identify their

similarities and differences. There was a strong belief that a more effective pedagogy would result when these similarities and differences are taken into consideration. For example, Fries (1945) as one of the leading applied linguists of the day noted that "the most efficient materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner" (p. 9).

According to Selinker (1992), Corder contributes to our understanding of errors in two ways: errors are not random, but are in fact systematic, and they are not negative or interfering in any way with learning a target language but are, on the contrary, a necessary positive factor, indicating hypotheses testing

Lado (1957) also believed that individuals tend to transfer the forms and meanings of their native language and culture to the foreign language and culture. He went on to propose a more controversial position when he claimed that "those elements that are similar to native language will be simple for the learner, and those elements that are different will be difficult" (p. 2). The notion that linguistic differences could be used to predict learning difficulty made the basis for the contrastive analysis hypothesis (Larsen-Freeman & Long, 1991).

The importance of errors in the language learning process was first observed by

Introduction

Let's start with something obvious: learning a foreign language, similar to any kinds of learning, involves committing some errors, though they are unfavorable. If somebody has a choice between saying a sentence correctly or erroneously, they definitely choose the former. Accordingly, no teacher gives a high score to a student who makes many mistakes. This is just one side of the coin. The other side is an attitude which views the act of making mistakes as something natural and inevitable. That is, learning a language is a gradual process and errors are expected in any stage of learning. Overall, it is important for both teachers and students to accept that errors are an inevitable part of the language learning process (Davis & Pearse, 2000).

In the realm of language teaching, such positions place teachers in a serious dilemma: should they correct or ignore the students' errors? After solving such a dilemma, two important questions every EFL teacher faces are *how to correct errors* and *how much to do it* (Shaffer, 2008). The attitudes of the proponents of rival theories differ towards such issues from no correction to extensive correction, from immediate correction to delayed one, and finally, from implicit correction to explicit one.

According to many language educators and researchers, making errors is an indispensable and natural process in language learning (Edge, 1989; Hendrickson, 1987 as cited in Katayama, 2007). Apparently, each extreme of this continuum solely provides us with half-truths. Therefore, teachers should neither correct errors immediately nor ignore them completely; they should find a third

alternative between these two. Needless to say, the type of errors is one of the most influential factors in this regard which is investigated in Error Analysis (EA). EA, like any other modes of inquiry in the language learning process, is a pedagogical practice in the domain of applied linguistics. Applied linguistics, in turn, is an interdisciplinary approach whose roots are in linguistics and psychology. In other words, do's and don'ts in treating mistakes or errors come from these two branches of humanities. In line with the trend, an effort will be made to show how errors are treated in the schools of behaviorism, cognitivism, humanism, and social constructivism.

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Errors vs. Mistakes

Different definitions have been proposed for the concept of error. For example, Dulay, Burt, and Krashen (1982, p. 130) define error as "the flawed side of learner speech or writing" which "deviates from some selected norms of mature language

Error Treatment in Four Schools of Psychology

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چکیده

هدف این مقاله بررسی شیوه‌های برخورد با خطاهای زبانی در چهار مکتب فکری روان‌شناسی شامل رفتارگرایی، شناخت‌گرایی، انسان‌گرایی، و ساخت‌گرایی اجتماعی است. ابتدا برخی اصطلاحات تخصصی مربوط برای تعیین محدوده این نظام‌ها تعریف می‌شود. سپس، خاستگاه، تاریخچه و تکامل این رویکرد تحقیقی مورد بررسی قرار می‌گیرد. در نهایت نیز تلاش می‌شود تا تصویر واضح از مکتب روان‌شناسی مذکور با هدف کاربست پیشنهادهای آن‌ها در برخورد با خطاهای زبانی ارائه گردد. چنین تلاشی برخاسته از این منطق که آشنایی با رویکرد این مکاتب به معلمان کمک می‌کند تا به درک صحیحی از فرایندهای ذهنی زبان‌آموزان هنگام ارتکاب خطاها برسند.

کلیدواژه‌ها: خطاهای زبانی، رفتارگرایی، شناخت‌گرایی، انسان‌گرایی، ساخت‌گرایی اجتماعی، دانش‌آموزان

Abstract

This article aims at investigating the patterns of error treatment in four schools of psychology: behaviorism, cognitivism, humanism, and social constructivism. First, some related terms are defined to identify the boundaries in these disciplines. Second, the roots, history, and development of this mode of inquiry will be elaborated on. Finally, an effort will be made to depict clear pictures of the major schools of psychology to find their pedagogical implications for patterns of error treatment. The rationale behind such an endeavor is that familiarity with the way each school of psychology perceives errors will help teachers conceive what happens in learners' mind while committing errors.

Key Words: error treatment, behaviorism, cognitivism, humanism, social constructivism, student