

ERROR ANALYSIS IN ENGLISH TEACHING: A REVIEW OF STUDIES

Joanna Huang (黃秋燕) 中山女高英語教師

Abstracts

Language learning is actually a process of trial and error, in which a learner form a hypothesis and later on prove it, abort it or adjust it. The EA study, therefore, is to examine a learner's errors in a longitudinal way in order to state the individual learner's hypothesis and locate the progress s/he is making. In the light of CA (contrastive analysis), we can predict possible sources of errors made by Chinese EFL learners; by analyzing these errors, we teachers can gain some insights into future course design or types of remedial instruction. Also, through proper treatment to the errors, we can make the errors work for learners, rather than frustrating them.

Key words: Language learning & teaching, error analysis, error & treatment

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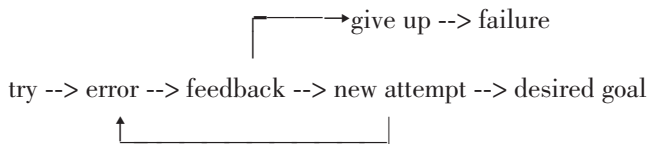
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1. Introduction

Errors or mistakes committed by students in the second/foreign-language classroom had had a hard time until current views on them became widely accepted. Even in modern times, errors in the second-language classroom were once harshly banned. The structuralist (descriptive) linguist took the philosophy that language was a set of mechanistic habits from the behaviorist psychologist and put it into practice in his audio-lingual classroom, where errors were carefully avoided right from the very beginning and banned from every learning stage. With the emergence of the generative-transformational theory in linguistics and the cognitive movement in psychology, the attitude towards errors has changed almost overnight. Students' errors are thus treated as a surface phenomenon and are sometimes the learner's own system to approximate the real system of the target language (Chiang 1981: 10). As a matter of fact, "correct" production yields little information about the actual linguistic system of learners. Thus the purpose of this report is just to analyze students' errors so that we teachers can give some comprehensive and considerate feedback to them and eventually help them achieve successful learning.

2. Error in first and second language acquisition

Language learning is a process in which, like learning to swim, learners profit from mistakes by obtaining feedback to make new attempts that successively approximate the desired goals. Learners' errors can also "provide to the researcher evidence of how language is learned or acquired, what strategies or procedures the learner is employing in the discovery of the language"(Corder 1967:167). However, sometimes the feedback from an error can be so strongly negative that the learner would give up making new attempts and the learning would end up in failure. This process is shown in the following diagram:



Therefore, Holley and King (1974) discuss the role of correction in the second-language classroom. Their claim is that students will be greatly discouraged if correction of errors in the

classroom is unduly done, as when the instructor insists upon strict grammatical accuracy and when he often overcorrects. They also propose a classroom approach to and some guidelines for the correction of student errors in class.

During the trial-and-error process, the rules that a learner formulates are proved correct if the form he produces is acceptable in the target language, but need to be revised if the form is unacceptable. The latter appears as an error in his speech. If we apply this interpretation of the learning process to second language learning, we find that there is one substantial difference from the first language learning situation. The child learning his first language is exposed to one language only and can make his hypotheses about the rule structure on the basis of that language and whatever innate notions of language he may have. When a learner is faced with the task of acquiring a second language, he also has to attempt to establish the rules of the language. Like the native learner he can use the evidence provided by the target language itself, and this will lead to errors of performance which may be very like those made by the mother-tongue learner. But, unlike the first language learner, he also has an alternative source of hypotheses. His grammar-forming mechanism has already mastered the rules of one language, and what it knows about the structure of that language is readily available to assist in the formulation of hypotheses about the structure of the second language. The individual's knowledge of his mother-tongue becomes part of the evidence to be considered in trying to determine what the rules of the new language are. In using this knowledge he may make errors which are the result of L1 interference.

In this way, errors of both L1 and L2 acquisition are seen to be the product of the same overall learning process. While providing a framework within which all the evidence of error can be discussed, it does not contribute to our understanding of why the learner bases his hypotheses on the mother-tongue at times and on the target language at other times. Nothing like enough research has been done into second language learning for us to be able to understand the interaction between these two ways of applying a learning strategy (Wilkins 1972: 203-204).

3. Why study errors?

Corder (1967) states the usefulness of error analysis in three respects: to the researcher or linguist, to the language teacher, and to the learner himself. While analyses of learners' errors provide insights into the nature of language, especially into the innate nature of the learner's system, they provide even more insights into the process of language teaching and learning. As such, concrete conclusions may usually be drawn from the results of the analyses regarding how a second or foreign language can be more effectively taught and learned, or how existing methods

of teaching and learning can be improved.

In deciding what should be the linguistic input to language teaching materials, we should certainly examine and seek an explanation for the errors that are typically made by different groups of learners. From what we have seen it is clear that the explanations will prove to be partly contrastive and partly non-contrastive between L1 and L2. The fact that error may be caused both by contrastive differences and by the structure of the target language itself means that it is impossible to base the content of language teaching entirely on the results of contrast. Even if it were possible to make wholly accurate predictions of contrastive difficulties, we should not have predicted all the difficulties that a learner faces. The structure of the second language itself has to provide much of the content of language teaching. It cannot be assumed that non-contrastive aspects of the language will look after themselves. This probably accounts for the fact that anyone who has taught English to pupils from differing language backgrounds has found that there are many aspects of the structure of English which are almost universally difficult for learners of English as a second language (Wilkins 1972: 204). Therefore, errors are also useful in assessing teaching materials. For example, in Chiang's (1981) view of the English Composition course of the NTNU English Department, the high frequencies of errors found in the compositions may indicate the insufficiency for the students to master the written component of the language. The career-oriented motivation of the population of subjects being investigated is different from that of any other population of English majors on the other campuses. As such, better command of written English appears more important to them than to other English majors on the other college campuses who may or may not enter into the TEFL profession (1981: 205).

Chiang's study also states other pedagogical implications:

- A. Making use of the hierarchy of difficulty: Hierarchies of difficulty are basically established in terms of frequencies of errors of different classes and subclasses. In the ESL/EFL classroom, much more benefit can be derived from the results achieved in error analysis, because the teacher can have a clear idea regarding where the main problems of his students lie, and what should be placed more emphasis in teaching.
- B. Making use of the contrastive observations: Usually this (contrastive analysis) is done to illustrate the possible interference from Chinese to English, and often the kind of interference pertains to word order and lexical selection. However, with due effort, the English teacher might easily find from the vast corpus of students' production those correlated features between the two languages which facilitate rather than hinder learning-i.e., the positive transfers. This not only helps the students but also make easier the task of learning.

- C. The usefulness and need of remedial programs: When the result of error analyses shows high frequencies of errors, remedial programs of some kind are necessary.
- D. The development of error-based teaching materials and syllabuses for use in the composition class: Patterns of errors can be built up into a classified inventory of errors together with the most revealing examples in the corpus.
- E. Implications for individualized instruction: As one of the general trends in TESL and in education in general is toward individualization of instruction, the error-analysis practice is perhaps one of the most effective means of understanding the individualities of the learner.
- F. Understanding the strategies of the learner: Understanding students' learning strategies, the teacher will be in a better position to teach.
- G. Implications for teaching methodology: As observed, many of the composition classes are based on the sole philosophy that "the more the students write, the better they write." After the error analysis, this needs to be slightly modified-"The more a student is guided to write, the better he writes."

4. Ways of analysis: CA and EA

CA (Contrastive Analysis) is also termed as CAH (Contrastive Analysis Hypothesis, Brown 1980) or CLA (Contrastive Linguistic Analysis, Fries 1945). It arose from a critical view of the audio-lingual method, pointing out that only with a scientific and detailed description of L2 can language teaching be successful. Fries' slot-filler grammar (1952) enabled a linguist to accurately describe the two languages, and to help the learner overcome the differences between the two. Later CA was criticized as being too strong, thus arising the 'weak version' of CA (Wardhaugh, 1970), providing an observational use-a description after the fact. The weak version remains today as 'cross-linguistic influence' (CLI), which consists a great part of the later theory EA (Error Analysis). EA arose from the need of objective statistics to prove the previous hypothesis (Sawyer, 1965), by analyzing the test scores of the students in a given area. Some linguists believed that no matter how scientific the description and comparison of the two structural systems may be, a prediction of learning difficulties based on theoretical-linguistic considerations may not suffice as a valid approach for the characterization of the exact learning tasks. It was expected that by running an analysis of the error scores of the students, a quantitative basis would be provided upon which one could build a more reliable method of predicting learning difficulties, or at least it would supplement the contrastive linguist's work.

In the light of EA theory, some terms have been coined to describe the legitimacy of learners' second language systems. Selinker (1972) used "interlanguage" to describe the learner's second language system that has a structurally intermediate status between the native and target languages. Nemser's "approximative system" (1971) and Corder's "idiosyncratic dialect" (1971) are terms used in describing the same general phenomenon.

The most obvious approach to analyzing interlanguage is to study the speech and writing of learners, or what has come to be called "learner language" (Lightbown & Spada 1993; C. James 1990). Production of data is presumably reflective of a learner's underlying competence.

5. Sources of errors

Selinker (1972) observes a learner's "interlanguage" and assumes that there is a "latent psychological structure" in the brain of the learner, which is activated when he attempts to learn a second language. Selinker also discusses the problem of fossilization in terms of the learner's native language, interlanguage, and target language.

In 1971, Richards cites four major types or causes of intralingual (developmental) errors: (1) overgeneralization, (2) ignorance of rule restrictions, (3) incomplete application of rules, and (4) false concepts hypothesized. Later in his 1974 paper, he identifies six sources of errors, namely, (1) interference, (2) overgeneralization, (3) performance errors, (4) markers of transitional competence, (5) strategies of communication and assimilation and (6) teacher-induced errors.

Richards and Sampson (1974) advocate the study of learners' approximate systems and identify seven factors characterizing second-language learner systems, namely: (1) language transfer, (2) intralingual interference (3) sociolinguistic situation, (4) modality, (5) age, (6) successions of approximative systems, (7) universal hierarchy of difficulty.

Schumann and Stenson (1974) in an introduction to their compilation state three major reasons for errors: (1) incomplete acquisition of the target grammar, (2) exigencies of the learning/teaching situation, and (3) errors due to normal problems of language performance, such as the difficulties, both inter- and intra-lingual ones, which are normally expected.

Politzer and Ramirez (1973) conducted a study of errors made by Mexican-Americans, and found that errors might result from a number of sources such as L1 interference, improper application of rules of L2, regional differences, etc.

5.1 Brown (1980) states four sources of errors:

A. Interlingual Transfer

In early stages, the native language is the only previous linguistic system that the

learner can draw upon; thus the interference is inevitable.

B. Intralingual Transfer

Once a learner has acquired parts of the new system, more and more intralingual transfer-generalization within L2---would occur.

- C. Context of Learning---Richards (1971) called "false concepts" and Stenson (1974) called "induced errors," including: a) misleading explanation from the teacher, b) faulty presentation of a structure in a textbook, c) improperly contextualized pattern, d) confused vocabulary items because of contiguous presentation, e) inappropriately formal forms of language---bookish language.

D. Communication Strategies

In order to get the messages across, a learner may use some techniques like word coinage, circumlocution, false cognates, and prefabricated patterns, which can all be sources of error.

5.2 Laurell (1987) draws a taxonomy of interlanguage errors:

Grammatical subsystem	Sample error	Description	Category
Morphology	He was call. Why didn't you came to work?	Omission Addition	Developmental: past participle form not acquired Developmental: double marking of past tense
Syntax	What this is?	Misordering	Developmental: misordering of the verb
Phonology	Man is eborubing. (evolving)	Substitution and addition (/b/ is substituted for /v/, /r/ is for /l/; /u/ is added)	Interlingual: phonological interference from Japanese
Semantics	She is a sensible person.	Substitution (sensible for sensitive)	Interlingual: French lexical interference (French sensible =English sensitive)

5.3 As to studies of errors committed by Chinese students learning English as a second/foreign language, Huang (1974) identifies three major causes for the syntactic errors committed by Chinese EFL learners: (1) interference from the structure of Chinese, (2) interference from the structure of English, and (3) other causes.

In Teng's (1987) study, he discusses three major sources of errors in tense committed by the third graders in senior high school. They are: (1) performance errors-occasional lapse in performance caused by memory limitations, (2) interference errors---the learner's failures to tell the difference between the native language and the target language, (3) intralingual errors--the negative transfer generalization of rules within the target language.

5.4 Shih (1987) discusses the reasons behind the different types of pragmatic failure from four aspects: (pp.233-254)

- A. Teaching material: ...the teaching materials do not provide the needed information, drills and application activities in this aspect. The old junior high English textbooks are audiolingual by design and almost completely structurally oriented, and the old senior high English textbooks in general belong to the traditional type of readers, which all aim at the reinforcement of the structures, vocabulary and idioms. There is little attention paid to oral communication.
- B. Teaching method: Many college English majors and high school English teachers feel timid in real life conversation. We can predict that the high school students using the new textbooks probably will have a better command of oral English in the long run, yet it is still doubtful that they will be communicatively competent in real life interactions, because ... many teachers do not adopt the communicative approach in teaching.
- C. Language environment: Classrooms are probably the only available places for the practice of oral communication skills. However, even in the classroom they are deprived of opportunities to speak English because spoken English is not tested in the joint entrance examination, and many teachers devote almost all of the class period to the instruction of grammar, vocabulary, reading, and writing skills.
- D. Teachers' competence: The results of the pragmatic failure analysis reveal that many secondary school English teachers have not had sufficient training in oral communication, and are not communicatively competent enough to help students to acquire communicative skills. Therefore, after six years of junior and senior high English ... many Chinese students still have difficulty communicating, not to mention communicating appropriately.

6. Studies of error types in Chinese EFL learners

Studies which focus on the analysis of EFL/ESL errors in the speech or in the written materials of Chinese learners have recently been found like: T-S Huang 1974, W-H Huang 1977, Chen 1979, Tseng 1979, Ahring 1979-80, Chiang 1981, Teng 1987 and Shih 1987, etc. Huang (1974) identifies major causes for the syntactic errors. Huang (1977) deals with errors in six areas: (1) use of words, (2) use of phrases, (3) grammar, (4) rhetoric, (5) use of punctuation, and (6) spelling. Chen's (1979) makes use of Burt and Kiparsky's major distinction between local and global mistakes: local ones such as verbs, nouns, determiners, prepositions, adjectives, adverbs, pronouns; global ones such as conjunctions, errors with the use of subjects, objects, and complements, run-on sentences, misplacement, relative clauses, sentences fragments, inversion, and errors with other constructions. His study shows the hierarchy of difficulty as follows: (1) verbs, (2) nouns, (3) global errors, (4) determiners, (5) prepositions, (6) adjectives, (7) adverbs, (8) spelling errors, and (9) pronouns. Chiang's (1981) is a full-fledged study, including lexical errors, grammatical errors (including those with verbs, nouns, pronouns, adjectives and adverbs, conjunctions, prepositions and particles, interjections, determiners, confusion of the form-classes, punctuation, capitalization, syllabification, abbreviation, contraction and short forms, subject, object, and complement, questions, negation, inversion, and direct/indirect speech, misplacement, violation of sentence or verb patterns), semantic, rhetorical and stylistic errors, and miscellaneous errors (idiosyncratic ones). Teng's (1987) focus is on errors in tense, while Shih's (1987) on pragmatic failure: socio-pragmatic failure and pragmalinguistic failure.

7. Identifying errors

One of the common difficulties in understanding the linguistic system of both first and second language learners is the fact that such systems cannot be directly observed. They must be inferred by means of analyzing production and comprehension data. What makes the task even thornier is the instability of learners' systems. Systems are in a constant state of flux as new information flows in and causes existing structures to be revised. Repeated observations of a learner will often reveal apparently unpredictable or even contradictory data. In undertaking the task of performance analysis, the teacher and researcher are called upon to infer order and logic in this unstable and variable system.

Corder (1971) provided a model for identifying erroneous or idiosyncratic utterances in a second language. According to the model, any sentence uttered by the learner and subsequently

transcribed can be analyzed for idiosyncrasies. A major distinction is made between overt and covert errors. If a plausible interpretation can be made of the sentence, then one should form a reconstruction of the sentence in the target language, compare the reconstruction with the original idiosyncratic sentence, and then describe the differences. If the native language of the learner is known, the model indicates using translation as a possible indicator of native language interference as the source of error. In some cases, no plausible interpretation is possible at all, and the researcher is left with no analysis of the error (Brown 1980: 220).

If the teacher and researcher is not the native speaker of the target language, double-checking of the identified errors by a native speaker is needed (Chiang 1981, Teng 1987, Shih 1987).

Chiang also points out that a successful identification of errors is a prerequisite to any successful analysis of errors. It depends on two factors: (1) a clear understanding of what errors are (a working definition of error is therefore necessary, and, if possible, a theoretical one), (2) the analyst's sensitivity or sensibility to the language.

8. Treatment of errors

Errors in students' oral production are usually ignored in a communicative classroom activity. Students' success is determined as much by their fluency as it is by their accuracy. Therefore, errors are tolerated and seen as a natural outcome of the development of communication skills. What the analyst works on is their written forms.

8.1 Correction and improvement:

"Correction" refers to the process, or the results thereof, of bringing a piece of student writing to a grammatically unambiguous level. Here "grammar" refers to the collection of basic morphological and syntactic rules which govern the basic well-formedness ("well-formedness" here in a pretheoretical sense) of the target language.

"Improvement" refers to the process, or results thereof, of bringing the composition to a higher level, such that violations of rhetorical principles, ill-formedness in meaning, violations of logic, poor use of words, defects in style, etc., will also be tendered to.

8.2 Criteria of correction:

8.2.1 Whenever correction or improvement is done, great consideration must be given to the context in which the corrected or improved expression occurs.

8.2.2 Except in cases where the meaning of an expression is particularly ambiguous,

dubious, or distorted, the content or meaning of the expression should be kept intact.

- 8.2.3 Consideration will also be given to the set of presuppositions (the set of extralinguistic facts) that help specify the "relative well- formedness" of the sentence or expression.
- 8.2.4 Level of usage and varieties of the L2 must also be considered. Normally, any other social or regional variety of English such as the spoken or written language of an underprivileged class is not acceptable and should be improved.
- 8.2.5 Care will be taken not to take "grammar" from a puristic point of view. Ex, shall and will is not to be considered different unless particular contexts favor one or the other.

8.3 Classification of errors:

In any study of error analysis of this kind, the errors identified have to be duly classified if statements concerning where the subjects' difficulties lie are to be made, i.e., what kinds of errors occur more often than what others. The task, however, is by no means an easy one. This is because very often classes of errors overlap, and occasionally some errors simply do not lend themselves to a clear-cut categorization. There seems to be no ideal model of classification of the tremendous varieties of errors found in student compositions. All models leak, in one way or another. And, it seems no models can be as exhaustive and inclusive as they are ideally supposed to be; in each of them there usually is the need of a "garbage can" to take care of those which do not fall appropriately into any of the classes and subclasses established (which is usually given the heading "miscellaneous"). Thus, the analyst has to establish his own model of classification, in which he can classify all errors into some major categories, and then sub- or sub-sub-categories in hierarchical structure are subsumed under each of these major headings appropriately.

8.4 Enumeration and registration of errors:

The way in which errors are counted or enumerated affects directly the scores frequencies, and statistics of errors, and therefore the results, conclusions, and evaluative power of the results. Questions may arise as to whether the same type of errors committed by the same subject in the same piece of writing should be considered as constituting only one or more errors. To answer these and similar questions, we can make use of the distinction drawn between "type" and "token" of linguistic expressions (Peirce 1931-58

and Lyons 1977)(note 1) and will count all the individual "instantiations" or tokens of the same type of error and establish error frequencies and statistics thereby. And while there is difficulty in classifying errors and very often the same error may fall into more than one category, the error is, however, enumerated only once-either as an error in one area or as one in another, and not as both.

All the ill-formed expressions or errors identified from the corpus are registered or recorded onto the Hand-Sort Punched Card System (note 2) and, in consideration of the important role of context in justifying the status of an linguistic express, they will be entered in full sentence form rather than in isolation.

8.5 Scores, frequencies, and statistics of errors:

As has been discussed in the preceding section, error counts are usually strictly on tokens (occurrences) rather than types of errors. So are error scores, frequencies, and statistics.

Scoring or counting of errors was done at the same time when the identification task was being done-whatever error was found was immediately entered onto a corpus card.

Frequencies of errors so far discussed belong to two types: absolute and relative ones. Absolute frequencies are those which indicate actual occurrences of errors, usually expressed by natural numbers such as "Verb errors: 838", which indicates that, in a certain corpus, there are so many occurrences of errors. Relative frequencies, however, are theoretically those which are worked out with respect to possible occurrences of errors. Such frequencies are supposedly the results of the following formula:

$$\text{Relative frequency} = \frac{\text{Number of actual occurrences of errors}}{\text{Number of possible occurrences or errors}}$$

These relative frequencies of errors, though suggested for use by such error analysts as Duskova (1969) and Schachter and Celce-Murcia (1977), remain presently inaccessible since there are yet no ways to know how many times an error could have occurred in a certain context of language use. There is not yet a "norm" of errors.

Although the error frequencies are absolute in the sense of Duskova and others, they are relative in another sense-relative to the total of words a certain group of subjects have written. For example, we can count all the verbs, nouns, etc., in a given corpus and see how many occurrences of each category have been mistaken.

Finally, while some figures of error frequencies are made relative to numbers of words, care must be taken that they should always be obtained from dividing the absolute numbers of errors by their corresponding numbers of words, and not by any other means such as by

dividing equally between two averages at a lower level.

9. Possible problems

In addition to the difficulty Brown (1980) has pointed out--...systems are in a constant state of flux as new information flows in and causes existing structures to be revised (220), there are some limits of the effort done in error analysis (we would ignore the "peripheral reasons" (Olsson, 1973) such as lack of interest, wandering of attention, and laziness, etc.):

- A. It places too much attention on errors and loses sight of the value of positive reinforcement of clear communication.
- B. It overemphasizes production data but language is actually speaking & listening, writing & reading.
- C. It fails to account for the strategy of avoidance; thus the absence of error doesn't mean nativelike competence.
- D. It keeps us too closely focused on specific languages rather than viewing universal aspects of language.
- E. Oral production is hard to analyze because of some possible technical problems and also the communicative design in the classroom activities. According to the functional syllabus, students' oral production is their vehicle for classroom communication; what counts is the message being conveyed. Errors in this sense are usually tolerated.

10. Conclusion

Errors serve as an important means for teachers and researchers to observe the learner's learning process and learning strategies. We learn by observing errors in children's L1 acquisition that they actively generalize their own linguistic system and thus help L2 learners to generalize theirs. The contrastive view (CA) enabled a linguist to accurately describe the two languages, and to help the learner overcome the differences between the two. The analytic way (EA) supplements CA with objective statistics. The former provides a prediction of possible error sources so that teachers can avoid their occurrence; the latter takes careful identification of students' errors and deliberate classification of the identified ones. By tracing the records of errors, we see students' progress (note3), and meanwhile, necessary changes in teaching objectives are required and remedial instruction should be provided if necessary. Also, we should keep in mind that overemphasis on errors can frustrate learners' motivation; the record of errors should be kept among teachers and researchers. Furthermore, "correct" writing does not

mean "good" writing. As far as language proficiency is concerned, appropriateness should be notified as well; therefore, cross-cultural pragmatic information should first be acquired by language teachers and then be conveyed through teaching process.

NOTES

1. "The distinction is now widely employed," Lyons (1977:13) remarks. "...the relationship between tokens and types will be referred to as one of instantiation; tokens, we will say, instantiate their type." He gives the following pair of sentences as example:

- (1) There are nine letters in the word reference.
- (2) There are five letters in the word reference.

Both sentences are correct under a certain circumstance. In (1) letter-tokens are considered, since there actually are nine letters there; in (2), letter-types, since the letter e is instantiated four times. Likewise, we may speak of word-tokens and word-types, error-tokens and error-types, etc.

2. This was invented in 1924 by a British named Alfred Parkins. The method uses edge-punched data-sorting cards of various sizes. The 4'x 6' cards that the present study makes use of are claimed to theoretically have an almost infinite classificatory capacity of 364.

3. Strictly speaking, progress should be stated in terms of the same group of subjects. This implies that in order to understand such progress, follow-up studies of the identical group should be carried on over a period of all four years. While it is assumed that there is a high degree of generalizability of the results of the study, the frequencies of errors are supposed to apply not only to that specific population of subjects, but to populations of subjects of similar backgrounds as well. In this consideration, talking about student progress here is not totally unreasonable and impossible.

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