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Contrastive Analysis

The Problem of a Model

1. Introduction

Contrastive Linguistics, a branch of linguistics, employs contrastive analysis, comprising three key steps: description of two languages (L1 and L2), comparison to identify similarities and contrasts, and prediction of potential errors and difficulties for L2 learners. These processes rely on theoretical frameworks, categorized into description models, comparison models, and prediction models. However, the latter two often receive limited attention in contrastivist literature.

The discipline, with its roots in the 19th century, gained prominence in the mid-20th century through pioneers like Fries (1945), Weinreich (1953), Haugen (1956), and Lado (1957). Earlier comparative linguistics, focusing on historical similarities to trace common origins, lacked the synchronic perspective central to modern contrastive linguistics. Two types emerged: theoretical contrastive linguistics, seeking linguistic universals by emphasizing similarities, and applied contrastive linguistics, addressing L2 learner difficulties by highlighting differences. This distinction influences the choice of models for description, comparison, and prediction.

The discipline experienced a peak in the 1950s, with optimism exemplified by Fries's assertion that scientifically described and compared language materials are most effective for learners. However, enthusiasm waned in the 1970s due to criticisms, particularly of prediction models. These models were often deemed inaccurate in anticipating learner errors and overlooked significant L2 challenges. Such criticism largely targeted applied contrastive linguistics and stemmed from shifts in linguistic theories, which destabilized the models used. Despite these setbacks, contrastive studies persisted, albeit with varying vigor.

The method followed by traditional contrastivists IS summarized by Sajavaara (1981 :37) as follows:

> *Traditional contrastive analysis is characterized by the methodological principle that the structure of the languages to be contrasted will have to be described first by means of one and the same theoretical model, and these descriptions are then contrasted*

for the specification of similarities and dissimilarities. In most cases, the procedure is one of the following five (...):

(1) The same categories ofthe two languages are contrasted;

(2) The equivalents for a certain category of the target language are sought in the source language;

(3) Rules or hierarchies ofrules in the two languages are compared;

(4) The analysis starts from - a semantic category whose surface realizations are sought in the languages to be contrasted; and

(5) The analysis starts from various uses of language.

The quotation highlights three main points in contrastive analysis:

1. Directionality of Contrastive Analysis: Traditional contrastive analysis is often unidirectional, moving from the target language to the native language, reflecting a bias towards the target language. Theoretical contrastive linguistics, however, is adirectional and static. It is suggested that contrastive analysis could equally be conducted in the reverse direction, from the native language to the target language, without compromising its validity.

2. Use of a Single Model for Both Languages: While using the same model for both languages can highlight structural contrasts, it may not always be suitable, especially when comparing languages from different families, such as English and Arabic. In these cases, it may be better to apply separate models that best describe each language, distinguishing contrasts arising from the models versus those due to inherent language differences.

3. Independence of the Model: For neutral and objective results, contrastive models should be formulated independently of the languages being analyzed. However, most models have been derived from European languages, particularly English, which may lead to inaccurate or unfounded comparisons when applied to non-European languages, such as Arabic.

The paper discusses these points in relation to description models, comparison models, and prediction models, and offers suggestions for contrastivists when selecting an appropriate model.

2. Description Models

In contrastive analysis, description models are essential for thoroughly and scientifically describing the two languages (L1 and L2) under study. The choice of model depends on the nature of the languages, the aim of the analysis (theoretical or practical), and the level of comparison (phonology, grammar, vocabulary, etc.). Models are typically derived from linguistic theories like structuralism, transformational generative grammar, or functional systemic theory, though an eclectic model—

drawing on elements from multiple theories—can be useful, especially in comparing languages like English and Arabic.

Description in contrastive analysis usually focuses on specific linguistic levels: (a) phonology, (b) grammar, (c) lexicon, and (d) text and discourse. The first three belong to microlinguistics, which traditionally analyzes language at the sentence level, while the fourth concerns larger units like texts and discourse, a focus that emerged in the late 1950s and 1960s. The model used for description should have four essential characteristics:

1. Comprehensiveness: The model should cover various levels, structures, and subsystems of both languages.

2. Neutrality: The model should be as independent of the languages as possible, avoiding bias from one language, especially when models are derived from European languages like English.

3. Simplicity: The model should be simple, particularly for pedagogical purposes, to avoid unnecessary complexity.

4. Durability: The model should be stable and enduring, although many linguistic models are subject to change.

Given these factors, the contrastivist might choose between traditional, eclectic, or modern theoretical models. The eclectic model, combining aspects of multiple theories, is often the most useful approach.

Finally, it is important that the model be simple especially if it is to be useful for pedagogical purposes. Twaddell mentions one factor which promotes complication in a model (1968:199):

> *The more a set of phonological or grammatical factors is limited to a particular style of formulation, the harder it may be for the working writer or teacher to make pedagogical use of it.*

The use of a single linguistic theory can make the model harder to understand and apply. Modern linguistic models are often complicated by the frequent use of symbols and abstract notations, which aim to make linguistics more like mathematics. However, linguistics is a social science, not a pure science, and it is better for linguists to use clear, plain language (metalanguage) rather than cluttering their descriptions with symbols. This approach simplifies understanding and makes the model more accessible, as illustrated by an example from James (1981):

English	Portugese

1)Indef. Article	a/ -(adj)N.sing	um/ - (adj)N.sing. m
	o/ -(adj)N.pl	ums/ -(adj)N.pl. m
		O/ - N

James seems to be aware of this complication; for he explains the two rules in plain English immediately after formulating them.

2.1. Phonological Models

The focus here is on phonology, which involves the functional use of sounds in a language, rather than on articulatory, auditory, or acoustic phonetics. Comparing phonological systems is less problematic than comparing other linguistic levels because the boundary between phonology and other levels is clearer, and phonological sounds are more easily verified through laboratory instruments. Two main models for comparing phonological systems are:

1. The taxonomic model from structural linguistics, which includes two subtypes:

Item-and-process (IP) model

Item-and-arrangement (IA) model, both based on Hockett's work (1954).

2. The generative model, which is based on Chomsky and Halle's The Sound Pattern of English (1968).

These models offer different approaches for analyzing the sounds of two languages.These two models are exemplified by James (1981: 35-6) using the past form took:

(i) (IP) / t u k / = / teik / + (/ ei/ ⟶ / u /), where the medial diphthong ei / is replaced by the monophthong / u/ of took.

(ii) (IA) / tuk / = / t – k /+ / - u - /, where the root /t –k / has / ei / in the present form and /u / in the past form.

In the generative model two levels of sound structure, deep and surface, are proposed: e.g. sing has at deep level the sound / ŋg /, then / g/ is deleted and the surface structure has /si ŋ/. Thus sing is represented as /ŋ/ /si ŋ g/ ⟶ / si ŋ /.

In contrastive analysis, two main phonological models are discussed: the generative model and the taxonomic model. The generative model, while more detailed and useful in theoretical linguistics, has faced criticism in pedagogical studies for lacking psychological reality and not aligning with practical language teaching needs. On the other hand, the taxonomic model is more suited to applied linguistics, where tools like the IPA charts help compare the sounds of two languages.

The distinctive features concept, introduced by the Prague School phonologists, is also valuable in contrastive analysis, as these features are universal and serve as a basis for comparison. In language teaching, it is emphasized that teachers should avoid rigidly applying theoretical models and instead focus on the broader pattern of comprehensibility. The goal is for students to learn the phonological system of the target language holistically, without overly stressing exact pronunciation like native speakers, as this can lead to pedantic or pretentious speech. The emic approach promotes learning sounds as they function within the language's system, helping students signal meaning distinctions naturally.

2.2. Grammatical Models

The main challenge in describing grammatical systems in contrastive analysis lies in finding a suitable model, as modern syntactic theories tend to be short-lived and incomplete. Additionally, shifts in linguistics, such as the expansion of study from microlinguistics (focused on sentences) to macrolinguistics (which includes text and discourse), influence grammatical models. Early structuralist theories, promoted by figures like Fries (1945) and Bloomfield, emphasized independent systems within each language but faced criticism for neglecting meaning and focusing only on form. These models were mechanical and unable to explain distinctions like between "He is eager to please" and "He is easy to please."

With the introduction of Transformational Generative Theory by Chomsky in 1957, a distinction between deep structure and surface structure was proposed, suggesting that languages shared similarities at the deep structure level. This theory influenced much of the contrastive analysis in the 1960s. However, competing theories like Generative Semantics and Case Grammar soon emerged, creating confusion.

One notable work using the generative model, Language Structures in Contrast by Di Pietro (1971), faced criticism for suggesting that teaching should focus on deep structures. Critics like Sanders (1981) argued that teaching should instead focus on surface structures—the form that learners

actually produce. She cited Chomsky's view that learners do not need to be aware of deep structures to successfully produce sentences in a foreign language.

In the field of theoretical contrastive linguistics the conclusion arrived at through comparing languages has sometimes been short lived and .misguided. James (1980:7) cites an example from Ross (1969), who suggests that adjectives are derived from NPs in deep structure. Ross based his claim on English, German and French as in:

- Jack is clever, but he doesn't look it.
  Hans ist klug, aber seine Sohne sind es nicht.
  (Lit. Jack is clever, but his sons aren't it).
  Jean est intelligent, mais ses enfants ne le sont pas.

Data from Polish disproved this claim, where the substitute for the adjective is an adjective and not a pronoun. Ross's claim may also be disproved with data from Arabic:

- جاك ذكي ولكن أولاده ليسوا كذلك.
(Jack dakiyun wa laakinna awlaaduhu laysu kadaalika).

Where كذلك is a prepositional expression. (= 'like that'). In fact evidence from Arabic would point to the possibility that adjectives are related to verbs. Consider the following:

- أخذ السارق ما خف وزنه وغلي ثمنه.
(The thief carried away whatever was light and valuable).

- خافت الفتاة حين رأت منظر المشنقة.
(The young woman was afraid when she saw the sight of the gallows).

- أحمرّ التفاح.
(The apples are (have become) red).

Two important European theories in contrastive analysis are:

1. Prague School Linguistics, which emphasizes a functional view of language. It introduced concepts such as Communicative Dynamism (CD), Theme and Rheme, and Given and New Information. These ideas have been widely used in contrastive analysis.

2. Systemic Linguistics, pioneered by Firth and developed further by Halliday and other British linguists, also adopts a functional perspective on language. Its main strength is its focus on context and viewing language as a social system and a means of communication. Key categories from this theory, such as Unit, Structure, Class, and System, are often borrowed in contrastive analysis due to their status as linguistic universals.

2.3. Lexical Model

The study of lexicon in linguistics was long neglected, affecting contrastive studies which relied on models derived from linguistic theories. However, comparative lexicology has been maintained by ethnologists, lexicographers, and translators. Ethnologists, particularly proponents of the Sapir-Whorf hypothesis, argued that languages shape the way we perceive reality, leading to the concept of linguistic relativity. There are two versions of this: the strong version, which claims language determines perception, and the weaker version, which suggests language is influenced by culture and in turn affects perception.

Most linguists accept the weaker version, which complicates contrastive lexicology, as it implies that words may not have absolute equivalents across languages due to cultural differences. Conversely, those who believe in the universality of human experience argue that core human concepts, like marriage, are consistent across cultures, though realized differently. This universalist view supports contrastive lexicology and provides a foundation for theories such as the semantic field theory, which categorizes words based on their paradigmatic relations (e.g., kinship, culinary, colour terms). The semantic field theory posits that languages share basic categories, like colour terms, though each language selects them differently based on a natural hierarchy.

An example of this is the Berlin and Kay (1965) study, which identifies universal colour terms across languages. Despite criticisms, this theory can aid in contrasting vocabularies, such as how English uses four terms to express heat (cold, cool, warm, hot) while Arabic uses three:

English	cold	cool	Warm	hot
Arabic	بارد	دافئ		حار

Componential analysis, which has been inspired by distinctive feature analysis in phonology, is based on syntagmatic relations. It claims, as in phonology, that meaning may be analyzed into primary (indivisible) semantic features or components which combine to form the meaning of a word. Thus the meaning of 'cow' may be analyzed into the following components: BOVINE + MATURE + FEMALE; the meaning of 'woman' may be stated as: HUMAN + MATURE + FEMALE. It will be clear that the contrast between these two words lies in BOVINE vs. HUMAN. In spite of the criticism levelled against componential analysis, it can be usefully used in comparing certain areas of the vocabularies of various languages; for example, 'murder' may be contrasted with قتل as follows: murder: CAUSE + DIE + DELIBERATELY: qatala (قَتَلَ): CAUSE + DIE. To translate the English word into Arabic, one has to narrow the meaning of the Arabic term by using a modifier, e.g. قتل ; عمداً عمدا (= killed deliberately).

2.3. Discourse Models

Since the early 1970s, linguistics and contrastive analysis have expanded to include units larger than the sentence, marking a shift from competence to performance and from language as a system (code) to language as a means of communication. The study of language in context has become crucial for understanding meaning, with the emergence of two key units: text and discourse. Textual studies focus on formal relationships like cohesion, thematic organization, and information distribution, while discourse studies (or discourse analysis) examine the functional use of language in communication, exploring how utterances perform speech acts such as informing, asking, or requesting.

Discourse analysis can be divided into two models: the British model, which treats discourse as a finished product and analyzes it structurally (e.g., in terms of transactions, exchanges, moves, and acts), and the American ethnomethodologist model, which views discourse as a dynamic, unfolding process between participants, focusing on turn-taking, pauses, overlapping, and adjacent pairs. A contrastivist can use either model to study how these aspects are realized in different languages, such as by comparing turn-taking in English and Arabic. Differences may include varying pauses, overlaps, and discourse initiation or closure, such as the use of repetition in Arabic greetings, which contrasts with English discourse practices.

- كيف حالك؟ (How are you?)
- بخير والحمد لله. (Fine, God be praised.)
- كيف حال الأولاد؟ (How are the children?)
- عال العال والحمد لله. (Excellent, God be praised.)
- كيف حال العائلة؟ (How is the family?)
- الجميع بخير. (All are well.)
- كيف حالك؟ (Again how are you?)
- عال، الحمد لله. (Excellent, God be praised.)

In English there are fewer turns:

- How are you?
- Fine. Thank you.

Moreover, in Arabic there is more inquiry about family and relatives than there is in English. Other genres than conversation may be contrasts, e.g. narrative discourse, jokes and interviewing. In the British model, an exchange often consists of three moves in English: initiation, response and follow-up:

- A- What time is it? (initiation)
- B- Ten-thirty. (response)
- A- Thanks. (follow-up)

A corresponding Arabic discourse would probably have four moves:

- A- الساعة كم من فضلك؟ (initiation)
- B- العاشرة والنصف. (response)
- A- شكراً. (follow-up)
- B- الشكر لله. (follow-up)

Various theories of pragmatics in addition to semantics are used in investigating the meaning of discourse, which includes deixis, presupposition, implicature and speech act. These aspects of pragmatic meaning are universal, but how they are realized in various languages is culture specific. For example, deictic elements of a discourse may be compared in English and Arabic; these elements indicate how participants, time, place, etc are related to the context. The way languages use these elements differ. For example, English often uses that to refer anaphorically to objects involving negative feelings for the speaker:

- What is that in your hand? (pointing to a speaker)

In a similar situation, the Arabic speaker may use هذا (lit. this):

- ما هذا الذي في يدك؟

Personal pronouns when occuring together are ordered differently in English and Arabic. The normal order in English is: 2nd person + 3rd person + 1st person: e.g. you, he and I. An Arabic speaker starts with the 1st person, then the 2nd, then the 3rd person: أنا وأنت وهو (I, you and he).

On the formal level of discourse (text), cohesion, thematic organization and information distribution are three major areas which may be explored in contrastive analysis. Cohesion in English has been studied in detail by Halliday and Hasan (1976) using Systemic linguistics. This area has not been investigated thoroughly for Arabic texts. The Prague School theory combines thematic organization with information distribution; it assigns thematic status to elements carrying given information and rhematic status to those expressing new information. Halliday's systemic linguistics considers theme-rheme and given-new two distinct systems, which are correlated in that the unmarked theme expresses given information and the unmarked rheme new information ; but this is not necessary. A contrastivist comparing thematic and information structures in English and Arabic faces the problem of choosing between the systemic model and the Prague School model. The first model, which has been developed from data derived from English is probably more suitable for the English language; whereas the Prague theory model, which is

based on data taken from a Slavonic language, is perhaps more suitable for Arabic, which like Slovanic languages has a flexible word order. Probably the solution here is to opt for an eclectic model which combines certain aspects of both models. Personally, I have always found it useful to use the systemic model with a number of modifications from the Prague School model to suit Arabic as well as English (cf. Aziz 1988).

At the level of discourse grammar and vocabulary acquire an additional functional dimention. Two examples, one for each of these areas will illustrate the point. For example, traditionally relative clauses in English are introduced by wh-relative pronouns, who and which sets, that or the zero relative pronoun. The use of these pronouns is restricted by the gender of the antecedent (person/ non-person), the case of the antecedent (subject/ object) and the type of the relative clause (restrictive/ non-restrictive). Arabic, on the other hand, has two sets of relative pronouns: الذي and its feminine form التي which have dual and plural forms. These forms are restricted by case (subject/ object and genitive); and the zero relative pronoun. The first set is used with a definite antecedent and the zero pronoun with an indefinite antecedent. For example:

- the man who came الرجل الذي جاء
- a man who came رجل جاء
- the book (which) you bought الكتاب الذي اشتريته
- a book (which) you bought كتاب اشتريته
- the two women (whom/ that) you saw المرأتان اللتان رأيتهما
- my sister, who came here أختي التي جاءت إلى هنا
- my aunt, whom you met last week عمتي التي قابلتها بالأمس

At discourse level, their function is to indicate two types of information one less important expressed by the relative clause included inside the main clause in English, as this example from Tessa Moore cited by McCarthy and Carter (1994: 125) illustrates:

(1) Guy Faukes, who tried to blow up Parliament, was a Roman Catholic.
(2) Guy Faukes, who was a Roman Catholic, tried to blow up Parliament.
(3) The plot failed.

(2) and (3) form discourse; (1) and (3) do not. If however (3) is replaced by (4):

(4) He was just one of many who were prepared to die for their faith.

Then only (1) and (4) form discourse, (2) and (4) do not. The Arabic sentence corresponding to (1) – (4) are:

(1.a) كان جاي فوكس كاثوليكياً، وقد حاول أن يفجّر البرلمان
(2.a) حاول جاي فوكس أن يفجّر البرلمان، وكان كاثوليكياً
(3.a) وقد فشلت المؤامرة
(4.a) وهو واحد من الكثيرين الذين كانوا مستعدين للموت من أجل عقيدتهم

Here too, only (2.a), and (3.a), and (1.a) and (4.a) are discourse; the other arrangements are not. It is to be noticed that Arabic normally expresses minor information in such sentences by a coordinate clause placed after the main clause, which conveys the main information.

With regard to vocabulary, some words acquire a dynamic function in discourse; they are termed procedural (Widdowson 1983: 92-4); and others termed schematic have a relatively constant function. Procedural words have a relatively general sense which may be interpreted differently in different contexts: e.g. object, process, thing. Schematic words, as stated above, have a fairly constant sense: e.g. pencil, red, telescope. For example:

(5) In the dark he saw a shining object; it was a big diamond.
(6) In the forest he saw an ugly object; it was a dead snake.

The word object in (5) refers to a diamond, in (6) to a dead snake. Diamond and snake, on the other hand, belong to the schematic part of English vocabulary. Arabic vocabulary may also be investigated with regard to its procedural and schematic elements. For example, the word شيء is used to express the sense of object in (5) and (6):

(5.a) رأى شيئاً يلمع، وكان هذا الشيء جوهرة كبيرة
(6.a) رأى في الغابة شيئاً قبيحاً، وكان هذا الشيء حيّة ميّتة

These areas of vocabulary require further contrastive research work.

3. Comparison Models

The comparison of languages in contrastive analysis requires a shared common basis or property, as comparing entirely different or identical languages is unproductive. This analysis involves distinguishing difference from contrast, the latter presupposing a basis of similarity. According to Rivers (1968), differences introduce new knowledge, while contrasts address native-language interference. The foundation of contrast lies in equivalence, which is central to comparison models.
Equivalence can follow two primary models:

1. Formal models, focusing on structures and rules (e.g., adjective positions in English versus Arabic).
2. Functional models, emphasizing semantic and pragmatic meanings (e.g., restrictive and non-restrictive uses of adjectives or speech acts like greetings).

In contemporary contrastive studies, these models are often combined but not necessarily. Functional equivalence has broadened to include pragmatic meaning, allowing comparisons of discourse-level phenomena like speech acts or pragmatic functions. For example, comparing how greetings in English and Arabic serve a similar pragmatic role of maintaining social relations highlights this integration.
Application models can be either non-directional, treating both languages neutrally, or directional, favoring the foreign language (L2) as the target of analysis. Applied contrastive analysis often adopts the latter approach due to its pedagogical focus and the contrastivist's expertise in L2.

4. Prediction Models

In discussing prediction models, we move from the linguistic to the psychological component of contrastive analysis which is concerned with using the results of the analysis for pedagogical purposes. Prediction models are therefore part of applied rather than theoretical contrastive analysis. Theoretical contrastive studies do not concern themselves with pedagogical prediction; they aim at discovering linguistic universals. As has been stated above, applied contrastive analysis received a strong impetus in the statement of C.C. Fries (1945: 9) (see section 1). The assumption underlying the process of comparison is that, in the words of Lado (1957: 2): 'individuals tend to transfer the forms and meanings and distributions of forms and meanings of their native language and culture to the foreign language and culture'. Two types of transfer have been recognized: positive and negative. The former is based on similarities between the native language of the learner and the foreign language; the latter, negative transfer termed also interference, results from contrasts between the native language and the foreign language. Thus similarities between L1 and L2 will help to facilitate the process of learning, whereas differences between the two languages will create problems for the learner. Contrastive analysis, it has been claimed, can predict four things: the cause of a problem, the areas of difficulty, the errors which the learner may face, and finally the tenacity or endurance of some errors. The last point implies suggesting a scale of difficulty (cf. Rivers 1968: 154).

The prediction model of contrastive analysis, rooted in behaviorism, dominated in the 1950s and 1960s. Behaviorism, established by Watson (1924) and integrated into linguistics by Bloomfield (1933), explained learning as a process of stimulus-response (S-R). However, it faced major criticism from Chomsky in his critique of Skinner's Verbal Behavior (1957), which led to its replacement by cognitive psychology.

By the late 1960s and 1970s, applied contrastive analysis faced significant criticism, especially from the United States, regarding its predictive power. Critics argued that it often failed to accurately predict learning difficulties or identified errors that did not occur. Consequently, some linguists proposed that contrastive analysis focus on explanation, leaving error identification to error analysis, which emerged as an alternative in the 1960s.

Error analysis, later used to verify contrastive analysis predictions, became central to studying learners' transitional competence (Corder 1967), interlanguage (Selinker 1972), or approximative systems (Nemser 1971). This widened and revised the scope of both contrastive linguistics and error analysis, though paradoxically, contrastive studies persisted and even thrived despite the criticism.

With the decline of behaviorism, some linguists proposed replacing the transfer model of prediction with alternatives like the Ignorance Hypothesis (James 1980). This shift reflected the growing influence of cognitive psychology in linguistics. Ignorance hypothesis is defined by Varadi (1980):

> *If interest in the acquisitional process is not restricted to the inhibitive effect of the clash of the two systems, and ifthe learning process is also considered, one cannot escape the fact - almost too obvious to mention - that the T (target language) does not present itself to the learner at a single stroke, as it were. Consequently, along with an analysis of inhibition and the facilitation ofAS (approximate systems), there must be a third domain in ASA (approximate system analysis): the study of hiatus. Errors ofthis type result from the fact that neither the learner's B (base or source language), nor his previously acquired knowledge of T - the main sources and components of his AS - is of any help, and the learner is in (perhaps temporary) ignorance of particular areas of the target language.*

Interference was therefore considered by many linguists are vacuous concept. Newmark (1970:225) expresses this view briefly and clearly: ' the Cure for interference a simply the cure for ignorance.' and recent years, the early strong version of transfer model found in Lado's writing (1957) has given way to a weaker version which claims that some of the learner's errors due to interference from the mother tongue. However, there are other sources of errors found in the speech and writing of the learner of a foreign language, namely over generalization, ignorance of rule restrictions, incomplete application or rules and the building of false systems for concepts (Richards 1971). Thus two types of errors are recognized: Interlingual errors resulting from interference of the native language, and intralingual errors due to other sources. That transfer model is combined with ignorance model derived from error analysis in an eclectic model which is better equipped to predict, diagnose and explain the learner's errors.