تطبيق للتحليل الدلالي النحوي في الترجمة الإنجليزية والعربية

An Application of a Syntactic Semantic Analysis in English and Arabic Translation

Hamed Shoay Saleh Al-Mogarry
Researcher - Department of English
Faculty of Arts & Humanities - Sana’a University - Yemen

حامد شوعي صالح المقري
باحث – قسم اللغة الإنجليزية
كلية الآداب والعلوم الإنسانية – جامعة صنعاء – اليمن
Abstract:
This paper aims at studying certain syntactic and semantic aspects in English and Arabic. It specifically applies the syntactic method of Transformational Generative Grammar (TGG) and the semantic model thematic roles in certain English sentences and their Arabic translation from a linguistic point of view. It provides a theoretical background of TGG and thematic roles as the basic framework of the analysis applied in this study. The data includes selected English sentences from three different short stories along with their Arabic equivalents. The co-analysis of the English sentences and their Arabic translations is based syntactically on Chomsky’s TGG (1965) and semantically on Fillmore’s thematic roles (1977). The results of the study show that syntax and semantics within these two languages make some kind of interface. This emphasizes the idea of linguistic universals advocated by Chomsky. The application of co-analysis indicates that the syntactic and semantic aspects can be relatively similar in English and Arabic particularly in terms of the type of the noun phrases in the deep and surface structures and semantic roles. The study concludes that translation is a practical field where the feasibility and utility of the linguistic theories and ideas can be tested, and that integration and application of more than one approach in translation such as TGG analysis and semantic roles can help in producing more appropriate translations. However, it should be stated that syntax semantics interface and its overlapping can’t be solely used in translation studies.

Keywords: Syntax, Semantics, Interface, Translation, Co-analysis, Application.

Introduction:
Linguistic studies have made great and huge contributions in the modern times. Recent theories of language and linguistics have the larger share in these contributions. Linguists usually apply certain linguistic approaches and models to study language units and find out their meanings. They either use a single model to tackle a linguistic issue from a certain angle or they vary their techniques and use more than one of these techniques to investigate the concerned aspect from different perspectives and dimensions. In this regard, the current paper is intended to apply a syntactic-semantic co-analysis in certain English sentences and their Arabic translations. The syntactic analysis is based on TGG, particularly the deep structures and surface structures. The same
sentences are studied semantically, that is, the semantic roles in the English sentences and their translations are pointed out. By doing so, the study deals with a syntactic semantic concern or what is called syntax semantic interface.

**Theoretical Background**

Theoretically speaking, it is important to have some background of the theories, schools and studies related to the topic of the current paper. Chomsky’s TGG and Fillmore’s semantic roles are the main basis upon which the syntactic/semantic analysis of the data in this study is carried out. Transformational Generative Grammar, as conceptualized by Chomsky, had a different perspective of language. Grammar is structured and is composed of numerous levels and components. Component is introduced in terms of TGG as “a level of description of a grammatical model which consists of a syntactic, semantic, and phonological component”, (Bussmann: 1988). As a whole term, the base component is referred to as “the part dealing with syntax, that is divided into two components: the base component and the transformational component”, (Richards: 32). He goes on to define the base component in such a way that “the base component generates the basic sentence patterns of a language; the transformational component transforms these into sentences” (32).

(Crystal: 40) defines a base as the “part of the standard model of generative grammar”. He says it “is used in the phrase base component… which is one of the two main divisions of the grammar’s syntactic component” (40). For (Greinas: 1979: 22), the base (component), which generates deep structures, contains: “(a) a categorical sub-component which includes both syntagmatic and morphological classes established by syntagmatic grammar… (b) the lexicon, which supplies indications on the syntactic, semantic and phonological traits of the morpheme signs”.

According to (Thakur:1998: 174) “the output structures… generated by the base known as D-structures” and these D-structures “serve as input to the transformational component of grammar” which basically consists of “a number of movement rules” which in turn “transform D-structures into S-structures”. The following sentences can show the difference between D-structures into S-structures. "The dean gave the doctor a gift. The doctor was given a gift by the dean". The S-structure of the 1st sentence is (NP+VP+NP+NP) as categorical components and as lexicon (The dean+ Past tense+ give+ the +doctor+ a+ gift). The S-structure of the 2nd sentence is (NP+VP+NP+Prep) as categorical components and as lexicon (The + doctor + Past tense +aux+ give + a+ gift + Prep+ the +doctor). Although the two sentences have different S-structures, both sentences have the same D-structure. The D-structure of both sentence is the same that is the agent is the dean and the benefactor is the teacher. (NP+VP+NP+NP) as categorical components and as lexicon (The + dean+ Past tense + give + the +doctor+ a+ gift). Nevertheless, it is worthy to note that Chomsky has modified his interpretation for the base component of language many times. In this regard, (Crystal:2001: 395 & Bussmann: 1998: 491) say that TGG consists of three components: syntactic, semantic and phonological, “a syntactic component, comprising a basic set of phrase-structure rules (sometimes called the base component), which together with lexical information provides the deep structure information about sentences, and a set of transformational rules for generating surface structures."

To sum up, one can say that the base component serves as input to two basic elements of language which are semantic rules and deep structure. Semantic rules give semantic representation. The Deep structure leads to transformational rules or transformations which again lead to surface structure. Generative grammar intends to describe the competence of a speaker in producing language and the competence of a hearer to understand the language; known as the speaker-hearer knowledge of their language (Chomsky: 1965: 4). The Deep structure is the abstract level in which all meaning is stated. It describes the order of words in a simple, active, positive, and declarative sentence. It also shows the lexical
and phrasal categories to which the words belong and the hierarchical relationships in which the words enter. The surface structure can be defined as the realization of deep structure. The surface structure is processed material ready to be used in language activity. The deep structure becomes a surface structure via transformation.

Chomsky proposes some basic rules to generate a sentence which he called Phrase Structure Rules as the basic of constructing the deep structure. They are used to break a natural language sentence down into its constituent parts, namely phrasal categories and lexical categories (parts of speech). Phrasal categories include the noun phrase, verb phrase, and prepositional phrase; lexical categories include noun, verb, adjective, adverb, and many others. Huddleston (2006: 119) represents the Phrase Structure Rules of English sentence when he uses some symbols. In the following system of rules, S stands for Sentence, NP for Noun Phrase, VP for Verb Phrase, Det. for Determiner, Aux for Auxiliary, Vgp for Verb group, N for Noun, and V for Verb stem.

On the other hand, Malmkjær (2004: 95) states that "a transformational rule is a rule which maps one syntactic-analysis tree into another. The transformational rules depend upon the prior application of the phrase-structure rules and have the effect of converting or transforming one phrase marker into another. The transformation rules can rearrange the string; these can be rearrangement, addition, deletion, and replacement. Huddleston (121) mentions some common transformational rules of the English sentence. The following are some of these rules:

1. Passivation: The deep structure of the sentence is in the active form. To get the passive form, passive transformation rule must be applied.
2. Affix Hopping is the movement of inflectional affix to their surface position.
3. Inversion: the act of changing the position of
4. Complementizer insertion is the marker of subordinate clause under NP node.

As has been mentioned above, the semantic analysis done in the current study is based on the Fillmore's case theory (1977). Fillmore's case (3) is determined at the deepest syntactic level. A sentence consists of a verb and an unordered series of case relationships. In fact, Fillmore's cases are conceptualized differently by different scholars. "These relationships are variously called functional roles, case roles, deep cases, participant roles, thematic roles, case frames, and semantic roles" (Cruse: 281, & Fillmore:3).

The semantic role can be a term used to refer to the relationship that a participant has with the main verb in the clause. It is also known as the most common or thematic relations and one of the most common and simplest forms of lexical semantic representation.

Chomsky (35) says that "these notions in fact enter into many different theories of semantic description. They are the semantic relations of Jerrold Katz, the thematic relations of Jeffrey Gruber and Ray Jackendoff (1979), the case relations of Charles Fillmore".

It is believed that the types of roles which are already referred to in the semantic structure of arguments create a universal well-recognized group of essential notions. This leads to show that all languages have the same set or maxims in clause construction and the cases configurations should be universal (Cook: 121).

Fillmore (1968: 3) defines them as "semantically relevant syntactic relationships involving nouns and the structures that contain them". He suggests that his case notions are "a set of universal, presumably innate concepts"(3).

The basic structure of a sentence consists of a propositioned nucleus (P), i.e., a set of tenseless relationships (involving a V, one or more NPs, possibly embedded sentences) and modality (M), carrying notions like tense, mood and negation: S -> P + M (ibid). The proposition ("sentence" in this sense) consists of a verb and one or more noun phrases, each associated with the verb in a particular case relationship" (ibid:21). These case categories build up a "case frame" displaying the semantico-syntactic roles of the participants in the described situation. The cases proposed by Fillmore (42) in a hierarchical order are as follows:
- A: Agent - (no definition).
- E: Experiencer - "where there is a genuine psychological event or mental state verb".
- I: Instrument - the immediate cause of event.
- S: stimulus: Object - entity that moves or undergoes change; also, a wastebasket for cases that cannot be classified otherwise.
- S: Source - (no proper definition).
- G: Goal - receiver, destination of a transfer or movement, result.
- L: Location - place of event.
- T: Time - time of event.

It is worth mentioning that linguistics and linguistic theories have been of great importance to translation filed. Since translation is a linguistic activity, it is relevant to comparative and contrastive linguistics. Some linguists (Ulrych, and Bosinelli: 1999: 229) claim that linguistics "provides translation with a scientific foundation". As Fawcett suggests the link between linguistics and translation can be twofold, that is the application of findings of linguistics to the practice of translation, and establishing a linguistic theory of translation (2). Catford (1965) claims that "any theory of translation must draw upon a theory of language – a general linguistic theory" (1). "Comparative linguistics is considered a branch of translation studies," (Hatim:2001: 9) For Bell, "translation can be invaluable to linguistics for testing theory and for investigating language use," (xvi).

Thus, linguistics and translation can be considered related to each other. In this regard, (Snell–Hornby: 15 & Baker (1999) 4) emphasize the interrelation between the two disciplines, and contrastive linguistics could provide a translator with a valuable reference and valuable insights into the nature and function of language. (Nida: 16 & James: 9) claim contrastive and comparative studies have been useful for translation studies in providing explanations for and solutions to translation practice problems and receiving a range of theoretical and practical insights of translation. Chomsky's theory was appropriated by translation theorists because it conceptualized a universal pattern behind different grammatical structures. Nida (1965) uses Chomsky's linguistic terms such as deep and surface structures and develops his own theory. He says that a generative grammar is based upon certain fundamental kernel sentences, out of which the language builds up its elaborate structure by various techniques of permutation, replacement, addition, and deletion (60). For the translator especially, the view of language as a generative device is important, since it provides him first with a technique for analyzing the process of decoding the source text, and secondly with the procedure for describing the generation of the appropriate corresponding expressions in the receptor language.

Nida (1965:75) emphasizes the semantic analysis in translation along with the syntactic analysis. In his view, the role of semantic components is almost universally regarded as being fundamental to any analysis of semantic structure. Semantic components are structurally essential if a linguist deals with semantic problems.

In the same context, linguists and scholars in translation studies refer to the connection between words and concepts and between grammar and the choice of words. In this connection, Newmark (1998:125) states that “the general and main facts of a text are provided by grammar,” which “indicates who does what to whom, why, where, when, how. Lexis is narrower and sharper; it describes objects, actions and qualities; or, roughly, nouns, verbs, adjectives and adverbs”.

The analysis of the sentences using one approach as TGG or more than one has been exhausted by linguists and researchers even until today. Many studies and researches have been conducted both in syntax and semantic basis in translation. Yet, there are many puzzles to be solved by linguists, translators and researchers in order to provide comprehensive explanation about the application of transformational generative grammar and thematic roles as syntax semantics interface in translation studies.

In this regard, Ying (2) discusses the importance of deep structure and surface structure in analyzing the syntactic structure of
sentences in source and target language. She confesses that the theory of D- / S-structure is of great importance in analyzing the syntactic structure of sentences in the source language and target language and its influence to Nida’s translation model is a good example of this combination, but, the function of D- / S-structure cannot be exaggerated in translation study as translation is not just a syntactic process but a combination of many aspects. In other words, she admits that TGG alone cannot account for all the translation problems.

Mohammed (2019) concludes that there is a wide disagreement among linguists about specifying the terminology of semantic roles. Arabic tends to use syntactic functions to refer to the agent or subject less than English. Psychological factor may work as a good motivator for certain semantic roles. In this study, the researcher uses only semantic roles but this single approach proves that it is insufficient to explain all the linguistic issues related to Arabic and English. Al Jumaily (2018) believes that the enigma of syntax-semantics can be moderated if we treat language as a system encoded by a speaker and decoded by a listener. It seems natural that a speaker starts to think first to generate a set of underlying structures which constitute the semantic structure of the sentence he is thinking about. Then, he is obliged to project them via the grammatical rules of the syntactic component in order to have correct phonological interpretation. A listener receives, first, the surface structure of the sentence, that is, the phonological and semantic representations, then, passes to syntax in order to arrange and systematize these representations to facilitate the comprehension of their meanings. Al Jumaily (2018) here gives general theoretical conclusions that may not be applied in real situations and he doesn’t provide even some examples.

Lechner (2013) discusses the central aspects of the syntax-semantics interface in derivational theories of the grammar. He describes the main theoretical tools for translating surface representations into abstract, transparent logical forms which can be directly interpreted in the semantic component. His study is devoted to addressing the issue theoretically.

The above studies and researches show that there is a need for combining the two methods of analysis based on more than one theory and tackling the relationship between more than one level of linguistics. Those studies indicate that they were based on a single approach that is either TGG or semantic roles. Their researchers also had a syntactic analysis or a semantic one of the data. The current study is intended to be comprehensive in the sense that it is going to be based on TGG and Case Theory. It would include both syntactic analysis and semantic one. It would highlight the syntax semantic interface and its relation to and application on translation in general particularly Arabic translation.

Analysis

This part presents the analysis of the data collected from different literary works along with their Arabic translations. The first example is "The American wife stood at the window" (Hemingway's the Cat in the Rain:109). The analysis of such a sentence is as follows:

| S = NP + VP |
| NP= Det. + Adj. +N |
| VP = V + PP |
| PP= P + Det. +N |

The Arabic translation of the above sentence has the following deep structure. (VP + NP+...
Adv. P). The difference between the deep structures of the ST and TT is the order of the categorial components as in NP and VP. Another difference is that in the ST, the last categorial component is a PreP where as in TT (Arabic) it is Adv. P. This last difference disappears in semantic roles since the structures of ST and TT have the same semantic roles that are agents for the first NP: The American wife, and location for the last P.

Another example is (She would not be happy) (Hemingway's the Cat in the Rain: 109). This sentence can be syntactically analyzed according to the Phrase Structure roles as follows:

S= NP+ VP
NP= Pro
VP= Modal + Neg.+ V + adjective.

The deep structure of this sentence would be "She+ not + past+ modal + be+ happy". The surface structure would seem like (Pro + Neg.+ past tense + Modal+ MV + Adj.). The transformational rules applied here to get the final output of the sentence its surface structure are affix hopping of modal and the tense as well as Neg. not, (She would not be happy). The semantic roles of this sentence include (Experiencer for the first NP and Associate for the Adj.

This sentence was translated by Al-Halulu (2001: 55) as (لم تسر بذلك). The analysis of the Arabic version would be like the following:

S=NP+VP
NP=Pro(embedded)
VP=V+PreP
V=V + Tense + Neg.
PreP= Pre +N

The deep structure of this sentence consists of (NP + Neg.+ MV +Pre P). The surface structure would seem like (Neg.+ past tense + MV+ Pro +PreP). The transformational rules applied here to get the final output of the sentence its surface structure are affix hopping of the tense and Neg. not to a particle. The semantic roles of this sentence include (Experiencer for the first NP and Stimulus for the PreP. The ST and TT are similar in the number of NPs since they have two NPs each. They also have the same semantic role for the first phrase but different in the second.

Another example from Mansfield's Miss Brill (2019) is (She had taken it out of its box that afternoon). This sentence can be syntactically analyzed according to the Phrase Structure roles as follows:

S= Np+ Vp
NP= Pro
VP=VG+NP
VG = M+ Tense +V
NP=Pro+AdvP
AdvP=Adv+PreP
PreP=Pre+NP

The deep structure of this sentence would be "She+ past+ aux+ V+ Pro +Adv. P". The surface structure would seem like (She +had + taken+ it+ out +of+ its+ box+ that+ afternoon). The transformational rules applied here to get the final output of the sentence its surface structure are affix hopping of perfective "en" and the tense. The semantic roles of this sentence include (Agent for the first NP and theme for the second NP, location for the third and time for the last NP.

The above sentence is translated by (Al-Kurashi: 2006: 83) as (لقد اخرجته من الخزانة ظهر ذلك اليوم). The syntactic analysis of this sentence is as follows:

S= NP+ Vp
NP= Pro (embedded)
VP=VG+NP
VG = Particle+ Tense +V
NP=Pro+PreP
PreP=Pre+NP
NP=N+Adv

The deep structure of the Arabic sentence consists of (NP+MV+Pre P). The surface structure would seem like (Particle+ past tense + V+ Pro +PreP+NP). The transformational rules applied here are affix hopping of the tense and insertion of a particle. The semantic roles of this sentence include (agent for the first NP and theme for the second NP, location for the third NP and time for the last one. The ST and TT are similar in the number of NPs since they have four NPs each. They also have the same semantic roles for the NPs.

Another example from Miss Brill is (Was not the conductor wearing a new coat?) (Mansfield's Miss Brill: 201). It can be syntactically analyzed as this:

S= NP+ VP
The deep structure of this sentence would be "NP+ past + aux+ V+ NP + Adj. + Adv. P+S". The transformational rules applied are affix hopping of the tense past in the first part of the sentence. In the second part of the sentence, T rules applied are affix hopping of the tense past, passivation, and insertion of "be". The semantic roles of this sentence include (Agent for the first NP and theme for the second NP. In the second part of the sentence, the semantic roles are (Agent for the first NP and associate for the second NP.

The Arabic translation of this sentence by (Al-Halwani: 26) is as follows:

The syntactic analysis of this sentence is as follows:

S= NP+ VP
NP= det+N
VP= VG+NP+Adv
VG = Tense +V
NP= Pro
VP= VG + NP+ PreP
PreP= Pre+N+NP
PreP= Pre+N

The deep structure of this Arabic sentence consists of (NP+VP+NP+VP). The surface structure would seem like (Question Particle+ Nominal V(Gerund)+ NP). The transformational rules applied here are affix hopping of "ing" to make N+Nominal V(Gerund)+ and insertion of a question particle. The semantic roles of this sentence include (agent for the first NP and associate for the second NP, and theme for the third NP. The ST and TT are different in the number of NPs since the ST has only two but the TT has three NPs. They also have the same semantic roles for the NPs functioning as subject and object but the Arabic sentence has more additional semantic role for the third NP.

The following example is taken from Edgar Poe's the Cask of Amontolload. "He prided himself on his connoisseurship in wine" (6). It can be syntactically analyzed as this:

S= NP+ VP
NP= Pro
VP= VG + NP+ PreP
VG = Tense +V
NP= Pro + PreP
PreP= Pre+N+NP
PreP= Pre+N

The deep structure of this Arabic sentence would be "NP+ past+ V+ NP+PreP+PreP". The transformational rules applied are affix hopping
of the tense past. The semantic roles of this sentence include (Agent for the first NP and associate for the second NP.

The Arabic translation of this sentence by (Ghada Al-Halwani:26) is "لقد كان يفخر بخبرته في النبيذ". The syntactic analysis of this sentence is as follows:

S= NP+ VP
NP= Pro
VP=VG+NP+PreP
VG = Aux+Tense+V
NP=Pro+PreP
PreP=Pre+N+PreP
PreP=Pre+N

The deep structure of this sentence would be "NP+ past+V+ NP+PreP+PreP". The transformational rules applied are affix hopping of the tense past and insertion of the auxiliary. The semantic roles of this sentence include (Agent for the first NP and associate for the second NP. The ST and TT are similar in the number of NPs since the ST and TT has two NPs each. They also have the same semantic roles for the NPs functioning as agents and associate.

Discussion

From the analysis carried out above, it is obvious that there is a syntactic semantic connection in English and Arabic. This interface is clearly observed when applying the TGG syntactic analysis and semantic roles analysis on the English sentences and their Arabic translations above. The co-analysis that is syntax semantics could help the translators to great extent in rendering the ST into the TT properly and appropriately. In other words, the syntactic /semantic analysis of the source text was nearly similar to that of the target text in terms of the type of the NPs in the deep and surface structures and semantic roles. This indicates that translators can make use of this filed that is syntax semantics interface and studies conducted in it.

As is known that the focus of translators can be either on the form or on the content. Following either way alone may not be effective in translation process. Using the binary approach that is semantic roles and syntactic analysis can be a practical and good way for achieving a reasonable amount of adequacy of translation since the form is maintained through syntactic analysis and the content through the semantic roles.

Another point raised here is that translation is a practical field where linguistic theories and ideas can be applied for the sake of testing their feasibility and utility.

It should be noted here that integrating and applying more than one approach in translation can be useful and can help in producing more appropriate translations. In this regard, TGG analysis and semantic roles of ST and TT is a real and practical example of combination and integration of different approaches in translation.

In spite of the promising points mentioned above, it should be stated that syntax semantics interface and its overlapping cannot be solely used in translation studies and applications because of the fact that there are no two languages identical. Deep and surface structures and semantic roles are no exception. However, this type of analysis is of great use and benefit for translators as is seen in the above section.

There is some kind of harmony within a language in terms of its syntax and semantics. That is found in English sentences when analyzed above. This harmony is also observed in Arabic sentences when analyzed. The agreement noticed between syntax and semantics within one language alone and with other languages as in English and Arabic emphasizes the idea of linguistic universals by Chomsky. The application of co analysis of syntax and semantics in certain sentences in one language and their translations in another shows that those syntactic and semantic aspects can be relatively similar in those language. This observation enhances the idea of linguistic universals of languages.

Conclusion

There are some that can be concluded from the study as follows:/ (Based on the discussion attempted above, the following points can bring this study to end as follows:

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- The analysis of the sentences above shows that there is a strong relation between linguistics and translation.
- There is some kind of interface within a language in terms of its syntax and semantics.
- The agreement noticed between syntax and semantics in these two languages emphasizes the idea of linguistic universals by Chomsky.
- The application of co-analysis of syntax and semantics in these two languages shows that those syntactic and semantic aspects can be relatively similar in those languages particularly in terms of the type of the NPs in the deep and surface structures and semantic roles.
- Using the binary approach that is semantic roles and syntactic analysis can be practical for achieving adequacy of translation since the form is maintained through syntactic analysis and the content through the semantic roles.
- Translation is a practical field for testing linguistic theories and ideas.
- Integrating and applying more than one approach in translation, for example, TGG analysis and semantic roles can help in producing more appropriate translations.
- Syntax semantics interface and its overlapping can't be solely used in translation studies.
- It is recommended that future researchers should apply these syntactic and semantic theoretical concepts on a larger quantity of data and on different forms (genres) of literary and non-literary languages.

References