Syntax Semantics Interface and Translation

Hamed Shoay Saleh Al-Mogarry
Dept. of English, Faculty of Arts, Sana’a University
almogarry@yahoo.com

Abstract

This study attempts to investigate the interface between syntax and semantics in English and Arabic. It is to study the potential implications of Transformational Generative Grammar (TGG) and thematic roles in translation from a linguistic point of view. It presents a theoretical background of TGG and thematic roles as the basis of the analysis applied on certain English sentences from three different texts along with their Arabic translations. Those sentences and their Arabic translations are analyzed syntactically according to Chomsky's TGG (1965) and semantically to Fillmore's thematic roles (1977). The results of the study show that there is some kind of interface within these languages in terms of syntax and semantics. This emphasizes the idea of linguistic universals by Chomsky. The application of co-analysis showed that those syntactic and semantic aspects can be relatively similar in English and Arabic particularly in terms of the type of the NPs in the deep and surface structures and semantic roles.

The study concludes that translation is a practical field where the feasibility and utility of linguistic theories and ideas can be tested, and integration and application of more than one approach in translation e.g. 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.

Key Words: Syntax- Semantics- Interface- Translation- analysis- implications.
Introduction:

Linguistic studies have great and huge contributions in the modern times. Recent theories of language and linguistics have the larger part of such achievements. Linguists usually apply certain linguistic approaches and models to study language units and present their meanings. They sometimes use a single model and try to tackle that linguistic issue from a certain specific angle but they often vary their techniques and use more than one method and they investigate the concerned matter from different perspectives and dimensions. In this regard, the current study studies the implications of the syntactic and semantic analysis of certain English sentences and their Arabic translations. The syntactic analysis is based on TGG particularly deep structure and surface structure. The other approach used in this study is a semantic one, that is, the semantic roles in the English sentences and their translations are pointed out. By doing so, the study is dealing with a syntactic semantic concern or what is called syntax semantics interface.

Theoretical Background

Theoretically speaking, it is important to have some background of the theories, schools and studies related to the current study. Chomsky's TGG and Fillmore's semantic roles are the main base upon which the syntactic and semantic analysis of the data in this study is done.

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, 1996, p. 88). As a whole term, base component is referred to as “the part dealing with syntax, is divided into two components: the base component and the transformational component”, (Richards, 1992, p. 32). He goes on defining base component as “the base component generates the basic sentence patterns of a language; the transformational component transforms these into sentences” (p. 32).

(Crystal, 2001, p. 40) defines a base as “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” (p. 40). For (Greinas, 1979, p. 22), “the base (component), which generates deep structures, contains: (a) a categorial 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, p.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”.

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, p. 395 & Bussmann, 1996, p. 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 base component serves as input to two basic elements of language which are semantic rules and deep structure. Semantic rules give semantic representation. Deep structure leads to transformational rules or transformations which again lead to surface structure.

Generative grammar intends to describe the competence of speaker in producing language and the competence of hearer to understand the language (speaker-hearer knowledge of their language (Chomsky, 1965, p. 4). Deep structure is the abstract level in which all meaning 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 realization of deep structure. Surface structure is processed material ready to be used in language activity. The deep structure becomes a surface structure via transformation.

Chomsky proposed 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 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.


On the other hand, Malmkjær (2004) states that “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; it can be rearrangement, addition, deletion, and replacement (p. 95). Huddleston (1976) mentions some common transformational rules of English sentence, they are as follows:

1. Passivation: The deep structure of the sentence is in form of active. To get passive form, passive transformation rule must be applied.
2. Affix Hopping is the movement of inflectional affix to their surface position.
3. Inversion.
9. Complementizer insertion is the marker of subordinate clause under NP node (p.121).

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 (1977) is determined at the deepest syntactic level. A sentence consists of a verb and an unordered series of case relationships (p.3).

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, 1986, p. 281, Fillmore, 1968, p. 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, 1965, p. 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, 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, 1971, p. 121).

Fillmore (1968) defines them as "semantically relevant syntactic relationships involving nouns and the structures that contain them" (p.5). He suggests that his case notions are " a set of universal , presumably innate concepts"( p. 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 sementico-syntactic roles of the participants in the described situation. The cases proposed by Fillmore (1977) (p.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
O 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 field. Since translation is a linguistic activity it is relevant to comparative and contrastive linguistics. Some linguists (Ulrych, and Bosinelli, 1999, p. 229) claim that linguistics "provides translation with a scientific foundation". As Fawcett (1997) 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(p. 2). Catford (1965) claims that "any theory of translation must draw upon a theory of language – a general linguistic theory"(p. 1). "Comparative linguistics is considered a branch of translation studies," (Hatim, 2011, p. 9) For Bell (1994), "translation can be invaluable to linguistics for testing theory and for investigating language use," (p. xvi).

Thus linguistics and translation can be considered related to each other. In this regard, (Snell–Hornby, 1995, p. 15 & Baker, 1999, p. 4) emphasize the
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, 1965, p. 16 & James1980, p. 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 uses Chomsky's linguistic terms such as deep and surface structures and develops his own theory. He (1965) 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 (p. 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) 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(p.75).

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) 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,” (p. 125).

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 (2011) 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 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 (p. 2)

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 (p. 20).

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 here gives general theoretical conclusions that may not be applied in real situations and he doesn’t provide even some examples (p. 18).

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 (p. 13).

The above studies and researches show that there is a need for combining 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 semantics interface and its relation to and application on translation in general particularly Arabic translation.

**Analysis**

This chapter 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*, 1987, p. 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 transformational rule applied in this sentence is the tense marker insertion only. The semantic roles of this sentence are agent for the first NP The American wife, and location for the last NP which is a part of the Pre P. syntactically, this sentence contains two NPs and semantically it has two semantic roles.

This sentence was translated into Arabic as (وقف زوجة اخمريكاي عناد شاباكهاا) (Al-Halulu, 2014. p. 55). The analysis of the sentence can be as follows:

\[ S = VP + NP \]
\[ NP = Adj + N \]
VP=V+AdvP
AdvP=Adv+N

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

Another example is (109) (She would not be happy). This sentence can be syntactically analyzed according to the Phrase Structure roles as follows:
S= NP+ VP
NP= Pro
VP= M Odl + 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, 2014, p. 55) as (لم تسأل بذلك). the analysis of the Arabic version would be like the following:
S=VP+NP
NP=Pro (embedded)
VP=V +PreP
V=V+Tense+Neg
PreP= Pre+N

The deep structure of this sentence consists of (NP+ Neg+ MV+ PreP). 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, 2014, p. 201) 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+AdvP". 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, 2013, p. 83) as (لقد اخرجته من الخزائنة 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, 2014, p. 201). It can be syntactically analyzed as this:

S= NP+ VP  
NP= det+N  
VP=VG+NP  
VG = Aux+ Tense+Neg+V  
NP=Det+Adj+N

The deep structure of this sentence would be " NP+ past+aux+Neg + V+ NP". The surface structure would seem like (was not the conductor wearing a new coat). The transformational rules applied are affix hopping of progressive "ing", aux insertion "be", the tense past, and aux fronting (movement) to form a question and make negative. The semantic roles of this sentence include (Agent for the first NP and theme for the second NP).

This sentence is translated by (Al-Kurashi, 2013, p. 83) as (اليس قائد الفرقة (مرتبة معطى جديدًا). The syntactic analysis of this sentence is as follows:

S= NP+ VP  
NP= det+N  
NP=N+NP  
NP= Adj+N

The deep structure of this Arabic sentence consists of (NP +NP+NP). The surface structure would seem like (Question Particle+ N+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.(2000) "He had a weak point – this fortunate- although in other regards he was a man to be respected and even feared"(p.6). This sentence can be syntactically analyzed as this:

S= NP+ VP  
NP= Pro  
VP=VG+NP+Adv (S)  
VG = Tense+V  
NP=Det+Adj+N  
AdvP=Adv+S  
S= NP+ VP  
NP= Adv+Pro  
VP=VG+NP+Adv

The deep structure of this sentence would be " NP+ past+aux+ V+ NP+AdvP+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, passivization, 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.

www.baydaauniv.net/buj
The Arabic translation of this sentence by (Ghada Al-Halwani, 2006, p. 26) is as follows:

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+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 agent and theme.

Discussion

From the analysis 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 can't 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 a 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 points that can be concluded from the study as follows:
- The analysis of the sentences above shows that there is a strong relation between Linguistics and translation.
- There is a 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 those 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


