

## A Dual Analysis of Arguments: Semantic and Syntactic

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Kang, Seung-Man. "A Dual Analysis of Arguments: Semantic and Syntactic." *Studies in English Language & Literature* 45.1 (2019): 241-259. This paper delves into some aspects of arguments along with adjuncts, widely illustrated in terms of tests and criteria in the literature. I argue that they are largely syntactic in nature and posited to exhibit the syntactic well-formedness of sentences. It follows that this straightforward clarification of arguments often excludes some thematic adverbial phrases as an adjunct on the one hand and includes non-thematic phrases as an argument on the other. Accordingly, I suggest that we need to posit two types of arguments in this paper: semantic and syntactic. Semantic arguments, which are closely associated with the meaning of the predicate, are base-generated by Merge within VP (or AP) under the VP-Internal Subject Hypothesis (Fukui & Speas, 1986; Koopman & Sportiche, 1991) and receive a thematic role. On the contrary, syntactic arguments are those that are base-generated by Merge outside VP (or AP) or derived by movement to the so-called A-position for syntactic well-formedness, receiving a theta role. This dual analysis of arguments is argued to provide a more principled account of a variety of constructions such as expletive, passive, unaccusative, raising constructions, and so on.

**Key Words:** argument, adjunct, thematic role, predicate, VP-Internal Subject Hypothesis

### I. Introduction

Arguments are often described in comparison with adjuncts, and they constitute one of the most controversial dichotomies in generative syntax. The notion of arguments is semantic in nature, so that they are considered to be closely related with the meaning of the predicate, while adjuncts are not (Kroeger, 2004; Radford,

2004; Carnie, 2006). Another key criterion distinguishing the two is the 'obligatoriness' of arguments and the 'optionality' of adjuncts.

- (1) a. The boy kicked a ball on the playground.
- b. Johnny behaved *badly*.
- c. *It* often clears up here right after snowing heavily.
- d. *There* is a fly in your soup.

The phrases, *the boy*, *a ball*, and *Johnny*, are considered as an argument according to their close association to the predicate as described above. This criterion immediately excludes the italicized phrases as an adjunct. The criterion of 'obligatoriness', however, includes them as an argument-type phrase due to their mandatory presence for syntactic well-formedness: *badly* as a subcategorized adjunct (Dowty, 2003), weather-*it* as a quasi-argument (Chomsky, 1981; Burzio, 1986; Svenonius, 2002) and existential *there* as a true expletive. Here arises a discrepancy between the two key criteria characterizing arguments and adjuncts. This is partly due to the fact that semantic core participants do not always pattern with the arguments that are expressed in the syntax (Jackendoff, 2002; Ágel & Fischer, 2009).

In this paper, I review some properties of arguments and adjuncts, widely illustrated in terms of tests and criteria in the literature. I argue that they are largely syntactic in nature, put forward to show the syntactic well-formedness of sentences. This characterization can lead to treating *on the playground* as an adjunct but *it* and *there* as an argument, which is contradictory to the straightforward definition of them solely from a semantic perspective. Accordingly, I suggest that arguments should be classified into two types, semantic and syntactic. This dual analysis enables us to treat syntactically non-obligatory phrases as a semantic argument and phrases without a semantic role as a syntactic argument, subsequently providing a more principled account of expletive, passive, unaccusative, raising constructions, and so on.

## II. Arguments vs. Adjuncts

### 2.1 Definition

There have been a host of research works on the description of arguments along with adjuncts since the pioneering work of Tesnière (1959). Here are some definitions of them in their chronological order. Haegeman (1994: 44) defines arguments as "the participants minimally involved in the activity or state expressed by the predicate." In Culicover (1997: 16), arguments are defined as the phrases that denote the things or relationships between things expressed by verbs, adjectives, and some nouns. Kroeger (2004: 10) states that "arguments are closely associated with the meaning of the predicate itself, while adjuncts are not." Arguments are defined in Carnie (2006: 51) as "the entities participating in the predicate relation."

Despite such diverse definitions above, arguments could be canonically defined as 'core participants of the activity, event, or state denoted by the verb', as illustrated in (2) (Jackendoff, 1972; Kroeger, 2003; Tallerman, 2005).

- (2) a. The boy kicked a ball on the playground.
- b. \*kicked a ball on the playground.
- c. \*The boy kicked on the playground.
- d. The boy kicked a ball.

According to the canonical definition of arguments above, *the boy* and *a ball* in (2a) are arguments because they are seen to participate in the activity of kicking (*the boy*) and being kicked (*a ball*). Obviously, a semantic relation appears to be reflected between the verb and its two arguments. A syntactic relation also appears to hold between the two due to the ill-formedness in (2b,c). The well-formedness of (2d) reflects the semantic and syntactic status of adjuncts; the PP adjunct, *on the playground*, does not contribute to the formation of meaning denoted by the verb

*kick* and does not affect the syntactic well-formedness of the sentence. The alleged PP adjunct is considered to simply provide a peripheral meaning and extra information to the activity of the verb.

It is unfortunate that the canonical definition of arguments, alluded above, does not provide us with an exhaustive description of argumenthood and adjuncthood. Arguments and adjuncts are often contrasted in terms of tests or criteria in the literature. In this subsection, 7 tests are presented to elicit the properties of arguments and adjuncts in a comparative way.

## 2.2 Core vs. Optional Participants

A most salient contrast between arguments and adjuncts can be made in terms of their existential status: core versus optional. As arguments and adjuncts are defined with respect to the predicate, the former are said to be present alongside with it, while the latter are not.

- (3) a. Sammy destroyed \*(my reputation) (last year).  
b. Mandy ate (a pizza).
- (4) a. Selma elbowed her way into the crowd.  
b. \*Selma elbowed her way. (Needham & Toivonen, 2011: 405-6)

We note that the elimination of *my reputation* causes ill-formedness, but that of *last year* does not affect the well-formedness of the sentence. The so-called optionality test is at work here, consequently enabling us to treat the former as an argument and the latter as an adjunct. A contradiction to the optionality criterion mentioned above occurs in (3b), in which the alleged argument *a pizza* is allowed to be omitted, and in (4b), in which the alleged adjunct *into the crowd* is obligatory for well-formedness. It turns out that the optionality test is not a complete and representative criterion for argumenthood.

### 2.3 Verb Specific Arguments

Arguments are described to be tied to specific verbs or verb classes, while adjuncts are not (Koenig et al., 2003; Needham & Toivonen, 2011). The agent arguments of verbs, for example, are assumed to carry additional properties other than those carried by all other agents.

- (5) a. Tom sang a song in the room.  
 b. Jane wrote a letter in the room.

According to Koenig et al. (2003: 73), the agent of the singing event in (5a) "must adduct its vocal folds in any event that *sing* felicitously describes." Analogously, the agent of the writing event in (5b) is taken to move its hand to produce exemplars of words or sentences. It follows that the agents, *Tom* and *Jane*, carry an idiosyncratic property with respect to the predicate, each closely tied to the verbs *sing* and *write*, respectively.<sup>1</sup>

A typological contrast arises above between the agent and the location. That is, the location, represented as *in the room* in (5), lacks "verb specific properties of the (event) location at which events of singing or writing occur (Koenig et al., 2003: 73)." That is, the location adjunct above can freely occur with the two different verbs *sing* and *write* without their verb specific properties imposed on it, which is further attested in (6).

- (6) a. ??The magician vanished the rabbit in the garden.  
 b. ??She explained him the story in the garden. (Goldberg, 2013)<sup>2</sup>

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<sup>1</sup> This criterion is widely referred to as 'verb specificity' in the literature (Koenig et al., 2003; Needham & Toivonen, 2011; Goldberg, 2013; Przepiórkowski, 2016).

<sup>2</sup> Note that I have added the location *in the garden* to the original sentences.

Goldberg (2013: 440) presents the above examples to demonstrate verb specificity, in which all the arguments, except the locative adjunct *in the garden*, are required to carry verb specific properties due to their semantic ties to the verbs, *vanish* and *explain*. According to her, the lack of verb specificity in (6a,b) gives rise to the weirdness of the examples above. It should be noted that, if the location *in the garden* is a canonical adjunct, its presence and absence do not cause such weirdness because it is assumed not to carry verb specific properties.

## 2.4 Prepositional Content

Argument phrases are observed to be less likely to utilize the core or basic meaning of the preposition (Pollard & Sag, 1987; Wechsler, 1991; Needham & Toivonen, 2011).

- (7) a. Kim turned *on* the radio.  
 b. Kim jumped *on* the sofa. (Christie, 2013: 218)

According to this criterion, the phrase, *on the radio*, is an argument, and the phrase, *on the sofa*, is an adjunct. It is seen that the preposition *on* in (7b) denotes a physical location of something on top of the sofa, while that in (7a) does not. This test is, however, problematic in the following two respects. First, as pointed out by Christie (2013), it is difficult to discern the core or basic meaning of a preposition. According to the Cambridge Dictionary, the word *on* as a preposition, for example, appears in approximately 19 different environments according to their connotation such as 'resting at the top of another thing', 'forming a part of another thing', 'covering another thing', 'being broadcast', etc., as shown below.

- (8) a. There is snow *on* the ground.  
 b. Read the instructions *on* the bag.

- c. The child had no shoes *on* her feet.
- d. What's *on* TV tonight?

Even a cursory look at those numerous examples will make it impossible to determine its genuine connotation in and out of context. Another problem, I argue, is that we cannot treat the particle *on* in (7a) as a preposition. As will be discussed in the next chapter in detail, the particle in question seems to have lost the characteristics in terms of meaning and function.

## 2.5 VP Preposing

The so-called VP-preposing test distinguishes an argument from an adjunct by compelling the argument to follow a preposed verb but allowing the adjunct to remain behind (Emonds, 1970; Baltin, 2006; Needham & Toivonen, 2011).

- (9) a. Kylie wanted to draw a picture, and draw *a picture* she did.
- b. \*Kylie wanted to draw a picture, and draw she did a picture.
- (10) a. Kylie wanted to leave on Monday, and leave *on Monday* she did.
- b. Kylie wanted to leave on Monday, and leave she did on Monday.

We note that the argument *a picture* has been preposed obligatorily along with the verb *draw* in (9a), while the adjunct *on Monday* can freely be preposed (10a) or left behind (10b), departing from the verb *leave*. This characterization is highly syntactic in nature because the argument is in a close bond with the predicate, both of which are represented as a complement and a head of VP in generative syntax, respectively.<sup>3</sup> The close bond between the two has been formulated as a theory-internal requirement, called Adjacency Condition (Chomsky, 1981).

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<sup>3</sup> The close bond between the head and the complement illustrated here has been formulated as a theory-internal requirement, called Adjacency Condition, in Stowell (1981) and Chomsky (1981, 1986).

## 2.6 Fixed Preposition

Christie (2013: 217) describes this criterion by stating that argument phrases are more likely to have a fixed preposition, and adjunct phrases can be followed by any number of prepositions to head the phrase (Pollard & Sag, 1987; Wechsler, 1991; Camie, 2002; Tutunjian & Boland, 2008; Needham & Toivonen, 2011).

- (11) a. Kim relies *on*/\*near/\*over/\*along Kelly.  
 b. Kim jogs *on/near/over/along* the hill.  
 c. Kelly put the book *in/on/beside* the box.

This test correctly identifies only the phrase headed by *on* as an argument in (11a). By contrast, the adjunct phrases can be headed by several different prepositions, as shown in (11b). However, example (11c) flies in the face of the criterion in question as the head of the argument phrase is not fixed to any single idiosyncratic preposition.

## 2.7 VP Anaphora

The VP-anaphora test states that argument phrases cannot be preceded by 'do-so' clauses, while adjuncts can (Baker, 1978; Radford, 1988; Needham & Toivonen, 2011).

- (12) a. \*Cathy kicked the ball and Kelly *did so* the wall.  
 b. Kelly swam *on* Tuesday and Rory *did so* *on* Wednesday.

The ill-formedness of (12a) indicates that the argument *the wall* should be included in *did so*, whereas the alleged adjunct *on Wednesday* can stay outside. Under the analysis of *do so* as replacing VP or V' (Culicover & Jackendoff, 2005; Sobin,

2008), an argument and an adjunct can be included in the *do so* phrase, as shown in (13).

- (13) a. Max lit a cigar with a match, and Mary *did so* too.  
 b. Max lit a cigar with a match, and Mary *did so* with a Zippo.  
 (Sobin, 2008: 148)

In (13a), the argument *a cigar* and the adjunct *with a match* have been included in the reference of *did so*, whereas in (13b) only the argument is inside *did so*. It turns out that the inclusion of the adjunct is optional, as illustrated in (13b).

The optionality of the adjunct above immediately enables us to distinguish it from the argument, which is obligatorily included in the reference of *do so*.

- (14) a. \*Barry hired a big Jaguar, and Milly *did so* a Volkswagen.  
 b. \*Lenny sent Will a postcard, and Gemma *did so* a present.  
 (Aarts, 2008: 210)

We note above that the arguments, *a big Jaguar* and *Will*, have been excluded from the reference of *did so* in (14a) and (14b), respectively, subsequently giving rise to illegitimate *do so* constructions. This is reminiscent of the condition that *do so* cannot replace less than a V' (Aarts, 2008: 210). Turning back to the examples in (12), example (12a) is ruled out by the fact that *did so* replaces the verb only with the argument *the ball* excluded. Example (12b) is well-formed as *did so* replaces a V', in which the intransitive verb forms a V' constituent without an internal argument.

## 2.8 Uniqueness/Iterativity

This criterion posits that arguments are not iterative, whereas adjuncts can occur

multiple times (Fillmore, 1968; Bresnan, 1982; Needham & Toivonen, 2011).

- (15) a. Kelly kissed the boy.  
 b. \*Kelly kissed the boy the girl.  
 c. Kelly kissed the boy in the park on the red bench.

(Christie, 2013: 219)

Example (15b) is ruled out by the presence of two arguments, *the boy* and *the girl*, in the position where only one (internal) argument is licensed.<sup>4</sup> In contrast, two adjuncts, *in the park* and *on the red bench*, are allowed to occur with respect to the verb (predicate). A close look at (15b) will reveal that its ill-formedness is purely of syntactic nature. That is, the two arguments can be two participants being kissed, which is evidenced by a legitimate coordinate construction as in *Kelly kissed the boy and the girl*. This constitutes another instance where arguments are largely determined by syntactic, not semantic, constraints.

### III. Proposal

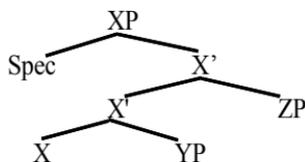
#### 3.1 X-bar Structure: Head, Complement, and Specifier

So far I have described 7 major characteristics of arguments in comparison with adjuncts largely from a syntactic perspective. All these characteristics could be described in the generative X-bar framework (Chomsky, 1970; Jackendoff, 1977), in which a specifier (Spec), a complement (YP), and an adjunct (ZP) are clustered around a head (X). Any phrases, lexical and functional, are formed by means of Merge and Projection, as illustrated below.

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<sup>4</sup> It should be noted that the verb *kiss* is a two-place predicate which can take one external and one internal argument.

## (16) X-bar Structure

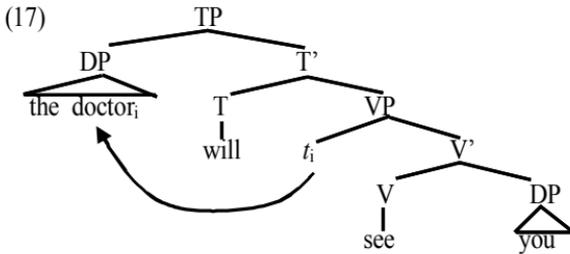


The head  $X$  merges with its complement  $YP$  and projects an intermediate category  $X'$ , which in turn merges with an adjunct  $ZP$  and projects an upper  $X'$ , which finally projects a maximal phrase  $XP$  by merging with a specifier.

In (16), the head  $X$  is any lexical or functional category and determines the number and the type of its complement, specifier, and adjunct. What concerns us here is the status of the adjunct. An adjunct, adjoined to  $X'$  or  $XP$ , constitutes a dichotomy along with a complement as well as with an argument. In this regard, it is of a dual characteristic with the same term. A clear distinction is made between the complement and the adjunct as the former has a closer bond with the head than the adjunct. As illustrated throughout the paper, this strong bond is often expressed in terms of the obligatoriness of the argument as opposed to the optionality of the adjunct for syntactic well-formedness, which serves as a most typical criterion for distinguishing between the two. This in turn gives rise to a further distinction in terms of subcategorization by a syntactic head; a subcategorization restriction holds between a head and its complement, not between a head and its adjunct(s).

### 3.2 Semantic Arguments and VP-Internal Subject Hypothesis

If the head  $X$  in (16) is  $V$ , it will project  $VP$  as a maximal projection, which in turn is merged with a functional head  $T$ , subsequently forming  $T'$  and finally  $TP$  as a clause, as schematized in (17).



The subject of a clause was traditionally defined as an NP immediately dominated by S (Chomsky, 1965) and later as an NP which occupies the specifier position of T (or I) (Chomsky, 1982).

The subject *the doctor* in (17) was suggested to be base-generated in TP-SPEC in order to satisfy the condition that clauses must contain an NP or a DP in the specifier position of a tense phrase (TP) or an inflectional phrase (IP), which is widely known as EPP (Chomsky, 1982). Departing from this non-movement description of the subject, a ground-breaking hypothesis has been put forward in order to provide a more principled account across the world's languages, which is widely known as the VP-Internal Subject Hypothesis (Fukui & Speas, 1986; Koopman & Sportiche, 1991; Radford, 1997). They hypothesize that subjects originate as a specifier of VP and are raised into the specifier position of TP (or IP) in order to satisfy EPP, as depicted in (17).<sup>5</sup> Building on the X-bar structure in (16) and the VP-Internal Subject Hypothesis in (17), I propose that the complement DP and the specifier DP in (17) are 'semantic' arguments closely associated with the predicate V within VP.

The VP-Internal Subject Hypothesis draws our special attention here because it is in a better position to explicate the thematic role assignment to arguments. As a first approximation, we can raise a theory-internal question of how thematic roles are

<sup>5</sup> The maximal projection category which houses the subject varies across researchers and languages: VP (Fukui & Speas, 1986), Vmax (Koopman & Sportiche, 1991), vP (Chomsky, 1995), and so on. They all could be converged uniformly as the maximal projection of V.

assigned to arguments. For our discussion here, I adopt the Theta-Role Assignment Principle (TRAP), illustrated below (Hornstein et al., 2004: 50).

(18) Theta-Role Assignment Principle

$\theta$ -roles can only be assigned under a Merge operation.

The principle above, along with the VP-Internal Subject Hypothesis, holds that the object DP *you* is assigned a theta role by Merge with V and the subject DP *the doctor* by Merge with V' within VP. We note here that theta role assignment by Merge does not capture a direct relationship between V and the subject DP due to the intervention of the intermediate category V'. Under a government configuration, however, the subject and the object DP are assigned a theta role straightforwardly under government by V.<sup>6</sup> In terms of Merge, the object and the subject DP merge with different categories, V and V', respectively. This will lead to a distinctive classification of the former as an 'internal argument' and the latter as an 'external argument'.

### 3.3 Semantic Arguments and Thematic Roles

Arguments are roughly defined as participants in "the little drama that a proposition expresses (Aarts, 2008: 92)." A proposition is typically represented in terms of a clause, in which a semantic predicate plays a vital role in expressing the propositional content of the clause. The predicate is most often expressed by the verb, and it takes (an) argument(s) to convey the meaning of the proposition. In this regard, arguments stand in a unique relation with the predicate, and this relation is often established via thematic role assignment.

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<sup>6</sup> Merge is identified as Government in terms of theta role assignment in Hornstein et al. (2004), in which the government relation is established via m-command, not c-command. In this paper, however, I will stick to the notion of Merge for theta role assignment.

'Thematic roles' assigned to arguments have been dubbed interchangeably as 'semantic roles', 'theta roles', or 'θ-roles' in the literature without any detailed clarification (White, 2003; Hornstein et al., 2004; Aarts, 2008). If we adopt 'thematic roles' as described most typically in Jackendoff (1972), in which they are defined by the primitive semantic properties of predicates, they are semantic in nature. This clarification immediately excludes theta roles (or θ-roles) as syntactic in nature.

An attempt to distinguish between the two different types of roles, thematic/semantic roles versus theta/θ-roles, has been made in the literature (Cowper, 1992; Haegeman, 1994; Carnie, 2006). According to their distinction, the former are the roles to the arguments that participate in the event or in the state denoted by the verb, whereas the latter denote thematic relations assigned by the verb to particular positions in the syntax. The positions in question are occupied by arguments which are obligatory for syntactic well-formedness, which are treated as a 'syntactic' argument within my dual analysis of arguments in this paper.

### 3.4 Semantic and Syntactic Arguments

We have seen that any entities in thematic relations with the predicate are treated as arguments. We have also seen that thematic roles should be distinguished from theta roles. If some entities in a proposition carry thematic or theta roles, should they be treated as arguments in a uniform way? Arguments per se go hand in hand with the predicate, which is semantic in nature, in order to convey the propositional content of a clause/sentence. Accordingly, I argue that 'semantic' arguments should be defined and described from a different perspective from 'syntactic' arguments.

(19) The child kicked a ball in the park. (Barbu & Toivonen, 2016: 13)

If we stick to the definitions of arguments and adjuncts, which are largely of

syntactic nature, we are obliged to treat *the child* and *a ball* as an argument and *in the park* as an adjunct in (19) due to the 'obligatoriness' criterion. Obviously, we note that the alleged adjunct PP *in the park* contributes the meaning of location to the action denoted by the predicate *kick*. It follows that *in the park* should be assigned a thematic role irrespective of the criteria described in Chapter 2.

To recap, arguments should be distinguished between semantic and syntactic ones. I propose that 'semantic' arguments are those, core or peripheral, which are base-generated by Merge within VP (or AP) and supplement the meaning of the predicate. On the contrary, 'syntactic' arguments are those which are base-generated by Merge outside VP (or AP) or derived by movement to A-position to satisfy syntactic well-formedness. It follows that 'semantic' arguments in (19) are *the child*, *a ball*, and *in the park*, whereas 'syntactic' arguments are *the child* and *a ball* only, which are obligatory for the sentence to be well-formed.<sup>7</sup> Now the semantic arguments in (19) are assigned an Agent, Patient, and Location thematic role, respectively. The alleged syntactic arguments, *the child* and *a ball*, are assigned a theta( $\theta$ ) role.

My argument for this classification could be further justified in the following constructions.

- (20) a. *There* is a fly in your soup.  
 b. *The window* was broken by Tom.  
 c. *The tree* fell.  
 d. *The boy* seems to have gone home.

Within my dual analysis of arguments, the phrases in italic are all treated as a syntactic argument as well as a semantic argument (*the window* and *the tree*). First

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<sup>7</sup> An overlap arises here between a semantic and syntactic argument; *the child* and *a ball* are both a semantic and a syntactic argument, and *in the park* is treated only as a semantic argument in this paper.

of all, the existential expletive *there* in (20a) is base-generated in TP-SPEC by Merge to satisfy EPP without any semantic role with respect to the predicate. The passive subject *the window* in (20b) has moved to subject position for a Case reason after receiving a thematic role from the predicate within VP. The unaccusative subject *the tree* in (20c) is assumed to be base-generated by Merge as an internal (semantic) argument of the predicate *fell* and has moved to subject position for EPP. Finally, the raising subject *the boy* is treated to be base-generated within the embedded VP, receiving a thematic role, and moved to subject position, receiving a theta role, as desired. It turns out that the italicized phrases are all required in the position for syntactic well-formedness. The four phrases in italic share in common that they are occupying an A-position, in which A stands for 'argument', which in turn is a 'syntactic' argument in this paper. It should be noted that *there* in (20a), base-generated outside VP, does not receive a thematic role from the predicate, and *the window* (20b) and *the tree* (20c) are not assigned a thematic role in subject position according to Burzio's (1986) Generalization.

#### IV. Conclusion

This paper has delved into some aspects of arguments along with adjuncts, illustrated in terms of tests and criteria in the literature. I observe that they are largely syntactic in nature, mainly focusing on the syntactic well-formedness of sentences. This straightforward description often excludes some thematic adverbial phrases as an adjunct on the one hand and includes non-thematic phrases as an argument on the other. I argue that this is due to the lack of a clear clarification between canonical semantic arguments with a thematic role and obligatory arguments for syntactic well-formedness.

Accordingly, I distinguish 'semantic' from 'syntactic' arguments in this paper. Semantic arguments are described as those, core or peripheral, which are

base-generated by Merge within VP, headed by the predicate V, and receive a 'thematic role' from the verbal predicate. On the contrary, syntactic arguments are described as those which are base-generated by Merge or derived by movement to the position outside VP for syntactic well-formedness. They share in common that they occupy the so-called A-position where no thematic role is assigned by the predicate; they are argued to be assigned a 'theta-role' in this paper. This dual analysis of arguments is seen to further provide a more principled account of expletive, passive, unaccusative, raising constructions, and so on.

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