Argument Structure of English verbs

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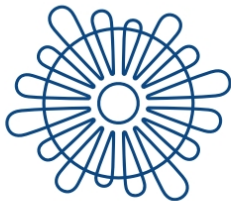
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Sveučilište u Zadru

Odjel za anglistiku
Sveučilišni prijediplomski studij Anglistike

Arijana Gudelj

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Završni rad

Student/ica: Mentor/ica:

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Zadar, 2023.

Izjava o akademskoj čestitosti

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Zadar, 20. rujna 2023.

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Abstract

1. Introduction

The objective of this paper is to examine the verb's argument structure in the English Language. Firstly, the general definition of the argument structure will be represenetd. After analyzing the general definition, the focus will be on the arguments of the structure, the way how they can be selected and the types of the arguments. Then, I will examine two approaches of the argument structure such as the projectionist and the constructional approach and provide the necessary examples. Furthermore, I will use 100 concordance lines of the corpus for the analysis of the verbs such as *make, dream, achieve, think, hit, kiss, dig* and *bake* from the projectionist and constructional approach. Moreover, research of the previous studies, academic works and linguistic literature will be mentioned. In the research various types of verb's valency patterns will be empasized with the representation of their frequencies and proportions.

2. Argument Structure of the verb

In this chapter I will define the argument structure, describe the selection and the division of the participants of the structure. Then in the following chapters two approaches of the argument structure will be examined and explored in the research study as well.

2.1. Defining argument structure

Argument structure is defined as the occurence of verb with a number of participants or valency pattern[1] (Perek, 2015, p. 10). Participants are considered the obligatory parts of the verb with the aim of describing an action, a situation or an event (Hilpert, 2014, p. 27). The relationship between the verb and its participants can be described by using the analogy of atoms and electrons in configurational valency. As a chemical element contains atomic numbers depending on the position in the periodic table, the verb requires its participants (Hilpert, 2014, p. 26).

There are some verbs which can function in the sentence without making reference to the argument (Perek, 2015, p. 15). The verb *rain* in (1) can stand alone without referring to the arguments around it due to the fact that it describes the weather by conceptualizing itself.

(1) ”*All weekend I promised everyone to show them my Phanton 2 Quadcopter but for the best part it <u>was raining</u>*” <enTenTen15>.

The argument structure can be defined in another way. ”The argument structure of the lexical item can be defined as an unordered list of its arguments which are labelled by the terms such as Actor, Theme, Goal, Source, etc.” (Williams, 1980, p. 83). For instance, the verb's argument structure can be represented as:

(2) *hit*: (Actor, Theme) (Williams, 1980, p. 83)

From the example (2), the actor functions as the subject while the theme has the function of the object. When the verb *hit* appears in the sentence, actor of verb has the place external of the verb phrase of which the verb *hit* is the head. The theme is placed in the internal position, within the VP where the verb *hit* is the head (Williams, 1980, p. 83).

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[1] It is important to add that argument structure does not need to be the occurrence of verbs with participants. ″The argument structure can be the occurrence of any other part of the word class such as nouns or adjectives as long as that element governs the elements of a sentence.″ These words taken as arguments which do not only refer to verbs are called the prototypical predicators (Levin & Rappaport Hovav, 2005, p. 33).

Table 1. Types of the participants (Hilpert, 2014, p. 27)

Semantic role	Function	Example
Agent/actor	the initiator of the action	*"Jacob ate his fill"* <enTenTen15>.
Patient	The participant which undergoes the action.	*"Jacob ate his fill"* <enTenTen15>.
Theme	the participant which is moving.	*"We threw the ball over the house"* <enTenTen15>.
Experiencer	the participant aware of a stimulus	*"We heard the noise"* <enTenTen15>.
Stimulus	an experienced participant	*"We heard the noise"* <enTenTen15>.
Beneficiary	the participant who benefits from the action.	*"After a meal of spaghetti he sang for her"* <enTenTen15>.
Recipient	the participant who receives an item	*"I gave her a flower to hold and of course all she wanted to do was suck on the flower"* <enTenTen15>.
Instrument	the participant who serves as a means to the action	*"The building is old and the doors to the cells are opened with a key instead of electronically"* <enTenTen15>.
Location	the place of an event	*"Joseph Kohn Heyman (1908-2001) was born in Atlanta"* <enTenTen15>.
Goal	the end point of a movement	*"You threw it in the box"* <enTenTen15>.
Source	the starting point of the movement	*"They're fortunate each time they come home from the job in one piece"* <enTenTen15>.

A lexical item's argument structure is nothing more than listing of those arguments, distinguished one from the other by the notation of the external argument as an underlined argument. The noun phrase on which a lexical item's primary projection is based is that lexical

item's external argument. The only thing that distinguishes each of the argument labels from the others is that they each have a different intrinsic content or structure (Williams, 1980, p. 86).

2.2. Types of arguments

If we examine Edin Williams' definition of the argument structure from the previous section, the semantic terms such as the Actor, Source, Goal, Theme used for labelling the arguments, should not play the crucial role in describing the argument structure. The thematic relations are more important than the terms themselves. Also, the thematic relations are represented as the parameters for the function of internalising and externalising arguments in the notation of argument structure, which is presented in the example 2 of the verb *hit*. The problem that has appeared in writing this paper is the number of thematic relations or types of the arguments.

Some linguists claim that the division of arguments as external and internal represents the argument structure's additional feature to the definition of the argument structure as the unordered list of the arguments. The concept of the a-structure is used to represent the argument structure because it observes an internal organization and the nature of the representation of the a-structure itself by focusing on the grammatical information of a predicate as an expression that takes the argument (Grimshaw, 1991, p. 2). The verb, which can be decomposed into conceptual unit of the action, is represented as an instance of the action, which is considered as the category. In addition, the doer of the action is always projected as an external argument, which functions as the logical subject (Roca, 1992, p. 50).

In order to deploy arguments correctly, there are various systems of notation such as the capitalization of the external argument, the argument written in italics, underlining arguments to represent the external argument, the usage of the angled brackets for the identification of the external argument (Grimshaw, 1991, p. 2).

(3) *Announce* (Agent(Goal(Theme))) (Grimshaw, 1991, p.4)

From the example (3) we can observe that the a-structure explains a structured representation of the relation of the prominence among arguments, which is determined by the predicate's properties such as thematic hierarchy where the agent as the external argument is more prominent than others and the goal is more prominent than the theme (Grimshaw, 1991, p. 4). What determines the property of the argument as external or internal is the intrinsic relation of the argument with other arguments (Grimshaw, 1991, p. 5).

The argument structure contains one external argument because X-bar theory, which states that predicative phrases except those functioning as the subject represent lexical item's

maximal projection (Williams, E., 1980, p. 84). Also, the external argument is positioned outside of the lexical item's maximal projection while other arguments must be positioned within the phrase with the internal position of the maximal projection. "The division of the arguments as external and internal is used to distinguish between the unergative and the unaccusative clauses based on the lexical features of the verb where the external argument functions as the subject in the unergative clause while the internal argument functions as the subject in the unaccusative clause" (Williams, A., 2015, p. 67). The unergative clause is represented as the intransitive clause whose subject has the same function as in the transitive clause. The unaccusative clause is also the intransitive clause whose subject patterns represent object patterns in the transitive clause. However, some linguists think that the distinction of the arguments as internal and external is not necessary due to the fact that the arguments are listed in the order. When the arguments are projected from different heads of the phrase in the sentence, the distinction of the arguments as external and internal is useless. Particularly, the subject of the unergative clause in the relation with the action verb, which does not represent the external argument linked to the verb, instead it is linked to another head of the verb phrase (Williams, A., 2015, p. 67).

2.3. Selection of arguments in the argument structure

The purpose of selecting arguments is to link them to the syntactic function such as the subject, object, subject and object predicative, so that then they can be combined to the verb to form the phrase.

The arguments for which the predicate requires the properties of agent are selected lexically as the predicate's subject. On the other hand, the argument which requires the most patient features is lexicalized as the direct object (Williams, 2015, p. 132).

As the same predicates select the arguments of the same syntactic structure, different sets of predicates can select arguments in a different semantic domain. The choice of arguments is examined at the semantic representational level. Argument selection is predictable based on the semantic features of the predicates (Grimshaw, 1979, p. 280).

In comparison to the previous linguists who claim that the argument selection determinants are syntactic (Williams) and semantic (Grimshaw), Fillmore states that determinants contain both the semantic and pragmatic characteristics. Argument selection is based on the hierarchy of participant roles, which were filled with the syntactic functions to achieve the saliency (Fillmore, 1977, p. 73). The selection of arguments is the result of the

inclusion of the arguments in the clause and linking them to the syntactic function. The inclusion of participants in the clause is compared to the commercial scene of buying and selling, which consists of the buyer, the seller and the goods. The verb *buy* is focused on the buyer's actions respecting the goods, the money and the seller. The verb *sell* is focused on the actions of the seller respecting the goods, the money and the buyer. The verb *pay* is focused on the buyer's action respecting the seller, the money and the goods. In these cases of the commercial event where verbs such as *buy, pay* and *sell* are used, in order to link the agent as the participant and the subject, which represents the syntactic function, two individuals need to be involved so that the commercial event can properly function. However, only one participant role of the agent is necessary to be linked to the function of the subject in the clause (Fillmore, 1982, p. 116).

3. Approaches to the argument structure

In this chapter, two approaches to the argument structure such as the projectionist and the constructional approaches will be presented. Firstly, the projectionist approach will be defined by Perek. Then, Tesnière's work will be represented and followed by the examples of the argument structure patterns. Secondly, the types of constructions will be shown by referring mostly to Goldberg's work, which represents the constructional approach to the argument structure.

3.1. Projectionist approaches

Projectionist approaches focus on the verb as the center of the argument realization by assuming that meaning and form's aspects need lexical knowledge structured in the form of semantic frames where a word represents a lexical unit by evoking frame and pairing with it (Perek, 2015, p. 16). Projectionist model originates from linking rules as the foundation for the predictability theory, which states that the valency is based on the grammar rules (Levin, 1993, p. 29). The examples of the projectionist approaches are: Biber (2002), Carnie (2006), Faulhaber (2011), Grimshaw (1990), Chomsky (1965).

3.1.1. Tesnière's viewpoint

The theory of valency pattern or argument structure states that the verb determines the organization of the clause. Tesnière based syntax semantically on the words' structural order as a way of defining the hierarchy of words. Every sentence's word structure is described by the idea of stemma, which depicts the relationship between the sentence's governors or heads and its dependents. As a result, the relationship between the governor and the dependent is the primary semantic element. All of a governor's dependents are connected to it as a node and the primary verb serves as the center of the node. The work of Tesnière defines arguments as two types of verb's dependents: actants with the noun form, to present the participants and circonstants in the form of adverbs, which represent verb's state and the setting (Tesnière, 2015, p. 97).

Table 2. The characteristics of types of actants (Tesnière, 2015, p. 105).

From the structural point of view		From the semantic point of view		Representation	
Name	Appeared in sentence with:	Name	Character	Symbol	Enunciation
First actant	1, 2, 3 actants	Subject	Does the action	O'	O prime
Second actant (active)	2, 3 actants	Direct complement/object complement/ object	Does the action of the passive verb	O"	O second
Second active (passive)	2, 3 actants	Passive complement/Agent complement/ Counter-subject	Does the action of the passive verb	"O	O counter second
Third actant	3 actants	Indirect complement/complement of attribution	Action occurs to its benefit or detriment	O'''	O third

In this table, the actants, in the form of nouns, are represented with the symbol O and because of the types of actants which are enumerated (the first actant, second, third) the index is used such as O', O", O'''. Also, the index can be presented before the symbol O in the case of the passive actant or counter subject ("O) (Tesnière, 2015, p. 105). These actants are observed from two points of view, structural (number of actants) and the semantic point of view (the function) (Tesnière, 2015, p. 105).

3.1.2. The patterns of the argument structure

Tesnière describes numerous argument structure patterns: avalent verb, monovalent verb, divalent verb, trivalent verb, tetravalent verb.

Avalent verbs are types of the intransitive verbs without actants. They do not have the valency and they are represented as impersonal verbs or unipersonal verbs. These types of verbs are used to express state and meteorological phenomena (Tesnière, 2015, p. 241).

(4) "*It's raining*" <enTenTen15>.

Monovalent verbs contain one actant and they are called neutral or intransitive such as *sleep, flow, doze, travel* (Tesnière, 2015, p. 241). They can represent the action and the state.

(5) "*In a city that never sleeps*" <enTenTen15>.

"Pattern of monovalent verbs is represented by this formula: [NP] + verb + [0] where the NP represents a complement of a noun phrase and 0 indicates that the verb does not use a complement in the predicate" (Faulhaber, 2011, p. 7).

Verbs which possess more than one actant are called transitive verbs (Tesnière, 2015, p. 243). These verbs can be called divalent (require two actants), trivalent (take three) and tetravalent verbs (need four actants).

(6) "*Esmilada is 13 and has finished the sixth grade but decided to leave school and help her mother with house activities*" <enTenTen15>.

The pattern of the divalent verbs consists of the monotransitive clause, copular clause represented by the formula [NP] + verb + [NP] and the pattern which includes particle *in* to the complement (Faulhaber, 2011, p. 7).

Monotransitive verbs

(7) "*It carried 800 colonists...*" <enTenTen15>.

Copular verbs

(8) "*...growth is good...*" <enTenTen15>.

Divalent pattern with *in* complement particle

This pattern is also divalent pattern which contains the complement [in_NP] where the particle represents the head and uses the noun phrase for its complementation (Faulhaber, 2011, p. 8). The pattern of this type of divalent verb can be presented as [NP] + verb + [in_NP] (Faulhaber, 2011, p. 8)

(9) "*Creativity and imagination are stimulated through stories about the wonders of life in the garden*" <enTenTen15>.

(10) "*So give a ball to someone English and let him kick it to add English to it*" <enTenTen15>.

(11) "*I <u>bet</u> him a dollar it would, and I'd even let Denny start it*" <enTenTen15>.

Projectionist viewpoint of the argument structure emphasizes the necessity of memorising the patterns as an idiosyncratic aspect of language in accordance with projectionist theory. Transitive verbs can be subcategorized in types or diathesis: active, passive, reflexive, and reciprocal (Tesnière, 2015, p. 244). Chomsky (1965) subcategorized verbs as intransitive, transitive, ditransitive with various patterns and with various complements (p. 90). There are five valency patterns of the verb: 1. intransitive, 2. monotransitive, 3. ditransitive, 4. complex transitive, 5. copular (Biber, 2002, p. 120).

3.1.2.1. Intransitive verbs

These vebs have the pattern contains the subject, the verb without obligatory elements (Biber et al., 2002, p. 119). Intransitive verbs need one NP (noun phrase), the argument which functions as the subject (Carnie, 2006, p. 59). This can be marked as [NP ___] (Carnie, 2006, p. 50).

(12) *At first, it was physical machines that were sold, but once NDA's <u>came</u>, it shifted software to become secretive*" <enTenTen15>.

3.1.2.2. Monotransitive verbs

"The pattern of these verbs contains two complements, which function as subject and direct object and that these verbs are followed by one direct object " (Biber et al., 2002, p. 120). This type of the pattern can be marked as [NP ___ NP] (Carnie, 2006, p. 50)

(13) "*You <u>are carrying</u> the values of the American people*" <enTenTen15>.

3.1.2.3. Ditransitive verbs

The pattern of these verbs consists of the subject, the verb, indirect and direct object. Unlike to the monotransitive ones, these verbs are followed by two objects (Biber et al., 2002, p. 120). "There are several types of ditransitive verbs in various forms: [NP __ NP PP], [NP __ NP NP], [NP __ NP {NP/PP/CP}], [NP ___ NP {NP/PP}]" (Carnie, 2006, p. 51).

(14) "*They were very kind to let themselves be interviewed even briefly and <u>give</u> me permission to include them in this story*" <enTenTen15>.

3.1.2.4 Complex transitive verbs

This pattern possesses elements such as the subject, the verb, the direct object, object predicative or obligatory element, adverbial (Biber et al., 2002, p. 120).

(15) "*I'll <u>call</u> him David* " <enTenTen15>.

3.1.2.5. Copular verbs

There are two patterns in which these verbs appear. The first one is composed of the subject, the verb (copular) and the subject predicative while the second one consists of the subject, the

verb (copular) and an obligatory adverbial (Biber et al., 2002, p. 120). The most common copular verbs are: *be, look, appear, seem, sound, feel, become, stay* (Biber et al, 2002, p. 141).

(16) "*This <u>sounds</u> familiar*" <enTenTen15>.

3.2. Constructional approach to the argument structure

Constructional approach states that the verb does not project argument structures, instead the argument structures are stored as independent constructions or form-meaning pairs (Perek, 2015, p. 24). There are several types of constructions: intransitive, ditransitive, caused-motion, resultative, the way construction, the conative construction (Goldberg, 1995, 50).

Intransitive construction supports only one argument in the form of the noun phrase. Also, this type of the construction represents the action as the event where the agent and the theme are not profiled and only the agent is given the prominence (Langacker, 2008, p, 385).

(17) "*The man smile*" <enTenTen21>.

Transitive construction contains a verb, the subjcet argument and the object argument. In order to acquire the transitive construction, the types of the event should be encoded where the subject encompasses various semantic roles: the experiencer, the agent, the goal, the instrument while the role of the object includes the theme and the patient. The transitivity can be represented as the correlation with agent potency, object affectedness, the degree to the fact that the event may be represented as the action (Theakston, et al., 2004, p. 92).

(18) "*The owner pushes the bike*" <enTenTen21>.

The example 18 shows the semantic forms of the transitive construction of the verb *push*, which in this case consists of the agent represented as *the owner* and the patient represented as *the car*. "Ditransitive construction is defined as X causes Y to receive Z and it represents the transfer scene which contains of three arguments" (Goldberg, 1995, p. 50).

(19) "*And one time I baked her a cake and she ate the about 3/4 in the matter os 24 hrs*" <enTenTen15>.

The example (19) shows the compatibility of the verb *bake* and the ditransitive construction because of the incorporated meaning "X causes Y to receive Z" where there is the fusion of verb's participant role the construction's argument role such as the agent (X) and then the fusion is mapped to the position of the subject (I). Also, the recipient (Y) is mapped to the position of the first object (her) and the patient (Z) is mapped to the position of the second object (a cake) (Goldberg, 1995, p. 50). The example 21 shows that the X is represented by the pronoun *I*, which functions as the subject, Y is represented by the pronoun *her*, which functions as the indirect object and Z is represented by the noun phrase *a cake*, which functions as the direct

object. X, Y and Z in this example are three arguments. "Semantically, X has the role of the agent, Y has the role of the theme and Z has the role of the recipient. The example 21 presents *a cake* as the theme (Z) which is transfered from the agent *I* (X) to the recipient *her* (Y)" (Goldberg, 1995, p. 50).

Sem	CAUSE-RECEIVE	<	Agt	Rec	Pat	>
R: instance, means	PRED					>
Syn	V		SUBJ	OBJ	OBJ$_2$	

Figure 1. The ditransitive construction (Goldberg, 1995, p. 50)

"The caused-motion construction is defined as X causes Y to move Z" (Goldberg, 1995, p. 152).

    (20) "*Ander Herrera's excellent pass found Mata in space, and he hit the ball across Simon Mignolet, the Liverpool goalkeeper, and into the far corner*" <enTenTen15>.

The example (20) shows that the verb is compatible with the caused-motion construction because the verb incorporates the meaning "X causes Y to move Z" where the argument represented as the causer takes the responsibility for the argument, which contains the semantic role of the theme to move ahead a predetermined path (Goldberg, 1995, p. 152). The causer, which is represented by X, is the pronoun *he*. The theme is represented by the Y, which is *the ball* and Z is a designated path *across Simon Mignolet into the far corner.*

Sem	CAUSE-MOVE	<	Cause	Goal	Theme	>
	PRED	<				>
Syn	V		SUBJ	OBL	OBJ	

Figure 2. Caused-Motion constration (Goldberg, 1995, p. 160)

"Resultative construction is defined as X causes Y to become Z" (Goldberg, 1995, p. 190).

    (21) "*Thy father kissed him burlesque*" <enTenTen15>.

The example (21) shows the agent as *the kisser* and the patient as *the kissed*. It is said that this type of the construction supplies the argument (result-goal) if there is the fusion between the participant role and the construction's argument role such as the patient (Goldberg, 1995, p. 190). The example 21 shows X as *thy father*, which functions as the subject. Y is the pronoun

him with the function of the indirect object. Z is represented by the adjective *burlesque* as final state of the process.

Sem	CAUSE-	<		Cause	Goal	Theme	>
	MOVE						
	PRED	<					>
Syn	V			SUBJ	OBL	OBJ	

Figure 3. Resultative construction (Goldberg, 1995, p. 160)

Boas (2003) states that verbs are very specific about the types of resultative phrases they allow. Verbs might be restrictive in terms of the kind of semantic result phrase they choose. For instance, the verb *paint* only accepts result phrases that denote a colour. Some verbs, like *hammer* enable the state that indicates the result to be taken in the form of an adjective phrase. Another type of verbs, like *strangle* permit the result phrase to occur as a prepositional phrase. Others, like *speak* and *talk* exhibit different behaviours depending on the resultative use (Perek, 2015, p. 34).

"The way construction is defined as X creates the way out of Z" (Goldberg, 1995, p. 199).

(22) "*He dug his way out of the house and once again crept around Rusl*" <enTenTen15>. "The subject of this type of the construction moves along the path which is indicated by the prepositional phrase (PP)" (Goldberg, 2995, p. 199). The example (22) can be paraphrased such as *He managed to escape from the house.* Semantically, he escaped from the house by digging his way out, which represents means or he escaped from the house while digging his way out, which represents the manner (Goldberg, 1995, p. 199). The example 22 represents X as the pronoun *he* and Z is represented by the prepositional phrase *the house.*

Sem	CREATE-	<		Creator-theme	Createe-way	Path	>
	MOVE						
	PRED	<					>
Syn	V			Subj	Obj$_{way}$	Obl	

Figure 4. Way Construction (Goldberg, 1995, p. 207)

"Conative construction denotes the intended result of the act designated by the verb" (Goldberg, 1995, p. 64). Also, conative construction represents an attempted action without the specification about the action conducted" (Levin, 1993, p. 42).

(23) "*The girl kicked at the dog*" <enTenTen21>.

From the example 23, *the girl* as the agent directs the action *at the dog*, which is represented as the oblique object. The oblique object such as *the dog* in this case may be affected by the subject with ou without success of the attempted action (Pinker, 1989, p. 104).

Verb's semantic frame dictates the argument structure construction by providing several available positions that can be further explained in the clause. Argument structure construction represents two ways of combining the verb's construction: semantic enrichment and inherent compatibility. In the constructional approach, constructions have the roles of the crucial argument realization determinants since their meaning defines which verbs can be utilized with the participant roles that can be realized based on the positions of the syntactic forms of the construction (Perek, 2015, p. 40).

The aim of valency theory described by Herbst and Schuller is the syntactic implementation of valency slots which enumerate the patterns of the valency carriers. Herbst states that constructions of the argument structure are valency constructions generalizations. The valency realization principle governs how arguments are realized and it states that a verb's participant pattern can only be accomplished as an example of an argument structure instance in the case where the verb possesses an appropriate valency construction (Perek, 2015, p. 36).

According to Langacker the presence of a lexical item in a structural frame determines its categorization rather than its association with a specific semantic value independent of its use. It might be argued that a verb develops a sense consistent with the overall meaning of the construction when it appears frequently in that form (Langacker, 2009, p. 255).

3.2.1. Constructional approach to the system of transitivity

It is said that the transitivity system consists of the interaction of the agency and the types of the process (Halliday, 2014, p. 354). Also, it can be seen as the configuration of elements which are centered on the process. Process is divided into the process types representing the experience in the model of the figure (Halliday, 2014, p. 213). Types of process which can be represented by the system of transitivity are: verbal, material, relational, mental, existential, behavioural (Halliday, 2014, p. 214).

The transitivity model is established on the configuration of actor and process. The actor represents the process which unfolds through the time, restricted to the actor or expanded to the participant, which is influenced by the performance of the actor in the process (Halliday, 2014, p. 334). The transitivity does not only attribute to the types of verbs or events, but it depends on numerous factors with the reference to properties of the clause and verb: high transitivity and low transitivity (Langacker, 1987, p. 35).

4. Overview of previous research

In recent times, some academics from China (Zhen and Yang, 2015, Liu and Du, 2017, Zhang, 2018) have utilized valency theory to examine valency patterns of English verbs. Zhen and Yang (2015) created a corpus system, which contains valency patterns with both the function of valency grammar based on the syntax as well as the particular words and speech parts of pattern grammar. Zhen (2016) analysed the meaning and structures based on the valency pattern. Moreover, Zhen and Yang (2015) created a collection of descriptions that were corpus-driven. It is a valency system pattern that includes both the syntactic and grammatical functions of valency grammar in addition to particular words and speech parts from the pattern. Semantic preference, semantic sequencing and collocation were the corpus linguistics study analytical techniques used. They examined verb valency features in an English corpus using the descriptive approach. Also, structure of the lexis, the co-selection of lexis and meaning were highlighted in the core linguistic concepts examination of valency pattern and collovalency and their practical value in teching English. After that, they presented the techniques for using collovalency and valency patterns in teaching. In order to identify the best translation unit, Zhen (2016) examined the valency pattern of the verb *contemplate* and translation equivalents in the corpus of both English and Chinese. The syntactic structure limited the valency pattern. Zhen (2016) examined the grammatical structures of verbs and the valency pattern lexical meaning. Zhang (2018) examined both the syntactic and semantic aspects of node words based on the Corpus Contemporary American English and contrasted the words valency patterns.

Liu, G., Du,Y. (2017) expanded the descriptive framework to include the category of voice and examined the verb *appoint* in terms of its valency patterns, which appears in both the active sentence and the passive sentence. Allerton (1982) analyzed valency sentence patterns of 33 verbs. He used both constructional and projectionist approach to examine verb's valency patterns. The valency is represented as the syntactic relationship between the governors and the dependents, which function as the subject and the object. Also, he divides the function of the subject and the function of the object, which are syntactic functions, from the semantic ones such as the agent, the patient, the source, etc. Allerton described verbs, valency pattern frames, valency representation of the structure as a deep and surface.

Reichardt (2013) by using the verb *consider* investigated the relationship between regional grammar, meaning, translation equivalency. He contrasted the verb *consider* with verbs such as *believe, think* and *feel.* Valency patterns of verbs are analyzed based on the subcategorisational depth of complements and the surface structure of the ambiguous sentences.

Reichardt examined the valency patterns of the verb *consider* such as monovalent (S + V), divalent (S + V + Obj, S + V + Obj-that, S + V + Obj-wh, S + V + Obj-ing), trivalent (S + V + Obj N, S + V + Obj Adj, S + V + Obj nom-as, S + V + Obj adj-as, S + V + Obj v-to-be-nom, S + V + Obj v-to-be-adj, S + V + Obj v-to-inf, S + V + Obj prep-for).

 Gilquin and Viberg's (2009) corpus-based analysis of the verb *make* based on 100,000 words of the corpus CLMETEV resulted in the discovery of the main functions of the verb *make* such as causative functions (causative-VP and causative-ADJ), transformation, production, pro-verb and the function of the support-verb. Firstly, the pro-verb is discussed in the situations in which the predicate makes the reference to the predicate which is previously mentioned or to the predicate entirely undetermined. The example of the sentence where the pro-verb is presented: "*What did you make of that*" <enTenTen 21>. The support verb functions as the support to the noun, in which the action is specified such as "*I will not make the decision*" <enTenTen 21>. The following function of the verb *make* is the transformation, which is linked to the abstract idea of production as it is referrred to a change in an entity's nature instead to the creation of a new entity. The example of the sentence where the transformation is presented is "*It was the hit movie version of it*" <enTenTen 21>. The verb *make* has the function of the causative to attribute a quality to the verb's syntactic frame's object. The example of the causatives with the verb phrase "*The smell made her feel slightly queasy*" <enTenTen 21> and the second example of the causative with the adjective "*That made the dogs even more furious*" <enTenTen 21> (Gilquin, G., Viberg, A., 2009, pp. 67-82).

 Biber's studies have represented the synctactic patterns that vary in registers and their analysis depends on the variation's dimensions. The syntactic alteration of the verb *think* that occurs with the complement in the form of that-clause is more frequent in the register of conversation than in academic prose (Biber, D., 1996, p. 184). Moreover, there is another research by Adnan, A. & Oktavianti, I. based on gathered data that used the articles which express the opinion. The verbs are then classified according to Halliday's classification and the result of the specific type of the verbs where the verb *think* is placed is the category of cognitive verb which forms 7,1% in the sentence. The result show that the category of material type, which consists of the verbs such as *go, teach, do, work*, is used in the texts more than the verbs expressing the cognition (think). What is also different is that the cognitive verbs do not vary in the number and usage as the verbs of the material type (Adnan, A., Oktavianti, I. N., 2020, pp. 108-117).

 Also, the valency system of the verb *think* is described by Reichardt in the corpus of 200 concordance lines of the BNC corpus. Some valency patterns that are linked to other verbs

repulse some valency patterns such as S + V + Obj adj frequently linked with the verb *think*. The research proclaims that the verb *think* most frequently occurs with the complement in the form of the prepositional phrase. "The research shows that there is one monovalent pattern of the verb *think* (S + V), eight divalent patterns (S + V + Obj, S + V + that clasue, S + V + Wh clasue, S + V + PP, S + V + prep-about, S + V + mod-so), eight trivalent patterns (S + V + Obj nom, S + V + Obj vb-to-be-nom, S + V + Obj vb-to-be-adj, S + V + obj mod prp-of, S + V + obj + prp-of nom-like, S+ V + prep-of adj-as, S + V + obj mod)" (Reichardt, 2013, p. 203).

5. Research question and methodology

As already mentioned, the argument structure can be defined in terms of the number of arguments a verb accepts. By following this definition, projectionist approach representatives categorise the verbs as monovalent, divalent, trivalent, tetravalent, transitive, intransitive, ditransitive, complex-transitive. However, the new classification is required for the argument structure evaluation if the central focus on the verb is substituted by linking the consistent form of the verb with the meaning of the form in which it appears. This new classification involves types of the constructions such as intransitive, transitive, ditransitive, caused-motion, resultative. Previous researchers such as Zhen & Yang (2015) examined the valency patterns features of the verb *contemplate* by using the descriptive approach and techniques for teaching purposes in an English corpus, which resulted in the discovery that the projectionist approach limited the valency pattern.. On the other hand, Gilquin and Viberg's (2009) research incorporated both the projectionist and the constructional approach in order to analyse the verb *make* based on the corpus CLMETEV, which discovered the main functions of the verb *make.*

This paper aims to investigate practically the claims made by the projectionist and constructional approahes about the argument structure by answering the research questions:

1. What are valency patterns of verbs *dream, think, achieve, make, hit, kiss, dig, bake* used in the corpus enTenTen21 by using the projectionist and the constructional approach to argument structure?

2. Which approaches are better for capturing the argument structure of these verbs?

In order to examine valency patterns of verbs such as *make, dream, achieve*, *think, hit, kiss, dig and bake* based on the syntactic valency, the corpus enTenTen21, already collected from October to November 2021, is used. The way I collected the data from the corpus is by typing each verb in the search of the corpus enTenTen21 from which 100 sentences for each verb were selected and analysed. Sentences are extracted randomly and verb's concordance lines were drawn. The corpus consists of 61,585,997,113 tokens, 52,268,286,493 words and 2,852,972,274 sentences. Text types of the corpus are: wikipedia categories, wikipedia translations website, doc-Website (wikipedia.org, mit.edu, senate.gov, standford.edu). I will display tables with the patterns of verbs that were identified, their distribution among the pertinent tokens, the percentages of the patterns, and frequencies so that the characteristics of the sentences containing these verbs can be observed.

6. Results and discussion

In this chapter, the valency patterns of verbs such as *make, dream, achieve, think, bake, dig, kiss* and *hit* will be presented in the tables. After describing the data gathered in the tables the verbs will be examined by using both the projectionist and the constructional approach.

To begin with, the valency patterns of the verb *make* together with the frequency and the proportion in one hundred concordance lines is presented in the Table 1. As the table shows, the verb *make* has valency patterns such as divalent, trivalent and tetravalent patterns which are established on the projectionist classification of the valency. The divalent pattern forms 54% in the sentence. The trivalent pattern forms 35% in the sentence. The tetravalent pattern forms 11% in the sentence. It can be concluded from the table that the verb *make* occurs frequently with two complements. The divalent structure of the verb *make* links the subject complement and the object complement with the valency represented by the pattern of S + V + Obj. The majority of the object complements are the noun phrases. Then, the verb *make* in the trivalent pattern contains three complements. Valency pattern of the trivalent verb are represented as S + V + Obj PP, S + V + Obj to-inf, S + V + Obj NP. These complements are presented in the form of the prepositional phrase, complement with the infinitive and the noun phrase. The valency of the tetravalent verb are represented as S + V + Obj PP PP, S + V + Obj PP AdvP, S + V + Obj PP as-clause.

The verb *make* can occur both in the resultative and ditransitive constructions. The construction differs from the divalent, trivalent and tetravalent patterns in the fact that the construction's object plays the semantic role. The construction's object in which the verb *make* can appear such as the resultative construction is the result of the process that the verb *make* denotes. The example of the object as a result of the process is ”*On time, daytime flights with no screaming children near me make me a happy camper*” <enTenTen21>. In the resultative construction, the verb *make* denotes the process from which resulted the object's state in the form of the adjective phrase (*a happy camper*). However, the object can exist as the patient without being the result of the action that the verb denotes in the ditransitive construction such as ”*My friend made me an offer* ” <enTenTen21>.

Table 3. The valency pattern of the verb *make*

	Valency	Patterns	Frequency	Proportion
The projectionist approach	Divalent	S + V + Obj	54	54%
	Trivalent	S + V + Obj PP S + V + Obj to-inf S + V + Obj NP	35	35%
	Tetravalent	S + V + Obj PP PP S + V + Obj PP AdvP S + V + Obj PP as-clause PP	11	11%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Resultative	X causes Y to become Z	58	58%
	Ditransitive	X causes Y to receive Z	42	42%

Table 4 shows the divalent, trivalent and tetravalent patterns of the verb *dream*. Divalent pattern forms 83% in the sentence. Trivalent pattern forms 14% in the sentence. Tetravalent pattern forms 3% in the sentence. The conclusion to be drawn is that the verb *dream* occurs most frequently with two complements. The divalent structure of the verb *dream* links the subject and the object complement with the valency pattern such as S + V + Obj. The verb *dream* in the trivalent pattern contains three complements. The trivalent verb occurs most frequently in patterns such as S + V + Obj PP, S + V + Obj that-clause, S + V + Obj NP. The complements of the trivalent verbs are the prepositional phrase, the noun phrase, that-clause. The lowest frequency of the pattern of the verb *dream* is the tetravalent pattern such as S + V + Obj PP PP.

The verb *dream* is found in the transitive construction. The object of the verb *dream* does not receive the action which the verb denotes, but it is the result of the process, in this case the cognitive process which the verb *dream* denotes. As the result of the process of dreaming,

the object represents the final state of the dream, which can be accomplished or not in the reality such as "*Many people dream of becoming a western cowboy, but this is not a simple job*" <enTenTen21>.

Table 4. The valency pattern of the verb *dream*

	Valency	Patterns	Frequency	Proportion
The projectionist approach	Divalent	S + V + Obj	83	83%
	Trivalent	S + V + Obj PP S + V + Obj that-clause PP S + V + Obj NP	14	14%
	Tetravalent	S + V + Obj + PP PP	3	3%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Transitive	X acts on Y	31	31%

We can observe from the Table 5 that the verb *achieve* has patterns such as divalent, trivalent and tetravalent. The divalent pattern occurs 61% in the sentence. The trivalent pattern occurs 25% in the sentence. The tetravalent pattern occurs 14% in the sentence. The most frequently used pattern of the verb *achieve* according to the data is the divalent pattern such as S + V + Obj. The most frequent occurence of the trivalent pattern is S + V + Obj PP where it can be seen that the verb possesses three complements; subject complement, object complement and that occurs in the form of the prepositional phrase. The tetravalent verb occurs with three patterns such as S + V + Obj PP PP, S + V + Obj PP as-nom, S + V + Obj PP Part clause and it represents the least frequently used verb. The complements of the tetravalent verb are in the form of the prepositional phrase and as-clause.

The verb *achieve* is positioned within the transitive construction, but in this case the construction is not the prototypical construction where the object is not represented as the patient because it does not receive the action which the verb denotes. If you achieve something, that object is the result of the process of hard work and consistency.

Table 5. The valency pattern of the verb *achieve*

	Valency	Patterns	Frequency	Proportion

	Divalent	S + V + Obj	61	61%
The projectionist approach	Trivalent	S + V + Obj PP	25	25%
	Tetravalent	S + V + Obj PP PP S + V + Obj PP as-clause	14	14%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Transitive	X acts on Y	31	31%

Table 6 shows the valency patterns of the verb *think* such as divalent, trivalent and tetravalent patterns. The divalent pattern forms 69% in the sentence. The trivalent pattern forms 20% in the sentence. The tetravalent pattern forms 11% in the sentence. It can be concluded that the verb *think* occurs most frequently in the divalent pattern such as S + V + Obj with the subject complement and the object complement. The object complement occurs as the noun phrase and that-clause. The most frequent pattern of the trivalent verb is S + V + Obj PP. Complements that are incorporated in the trivalent structure are: S + V + Obj to inf, S + V + Obj as-nom, S + V + Obj that-clause, S + V + that-clause PP. The verb *think* in the trivalent pattern contains three complements. The pattern of the tetravalent pattern is S + V + Obj PP that-clause and it contains four complements in the form of the prepositional phrase, the noun phrase, that-clause and another noun phrase.

The verb *think* is placed within the transitive construction and the construction is not the prototypical construction where the object does the receive the action because of the verb *think* which denotes the cognitive process and the object is represented as the result of the process of thinking.

Table 6. Valency pattern of the verb *think*

	Valency	Patterns	Frequency	Proportion
	Divalent	S + V + Obj S + V + Obj that-clause	69	69%
	Trivalent	S + V + Obj PP	20	20%

The projectionist approach		S + V + Obj to-inf S + V + that-clause PP S + V + Obj as-nom S + V + Obj that clause		
	Tetravalent	S + V + Obj PP that-clause S + V + Obj as-clause that-clause S + V + Obj PP PP	11	11%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Transitive	X acts on Y	85	85%

From the Table 7, we can observe that the verb *bake* has the divalent pattern which forms 49% in the sentence, trivalent pattern forms 45% and the tetravalent pattern forms 6% in the sentence. The most frequent pattern is the trivalent pattern while the least frequent one is the tetravalent. Verb which contains the pattern such as S + V + Obj is the divalent verb. The divalent pattern shows that the verb possesses two complements that occurs as two noun phrases. The trivalent verb has several patterns such as S + V + Obj PP, S + V + Obj AdvP, S + V + Obj NP, S + V + Obj as-nom. The tetravalent verb contains patterns such as S + V + Obj PP PP, S + V + Obj to inf PP, S + V + Obj NP PP, S + V + Obj PP to inf, S + V + Obj PP part-clause.

From the constructional approach, the verb *bake* shows the compatibility with the ditransitive construction because of the fusion verb roles and the construction. The ditransitive construction differs from the prototypical transitive construction due to the fact that object does not receive the action from the verb, the object receives the theme or another object. The object of the ditransitive construction is not called patient, it is the recipient. If someone baked the

cake to someone, the action of the verb *bake* is made on purpose with the intention so that the person can receive the entity, *cake*, which semantically functions as the recipient.

Table 7. Valency pattern of the verb *bake*

	Valency	Patterns	Frequency	Proportion
The projectionist approach	Divalent	S + V + Obj	49	49%
	Trivalent	S + V + Obj PP S + V + Obj AdvP S + V + Obj NP S + V + Obj as-nom	45	45%
	Tetravalent	S + V + Obj PP PP S + V + Obj to inf PP S + V + Obj NP PP S + V + Obj PP to inf clause S + V + Obj PP Part clause	6	6%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Ditransitive	X causes Y to receive Z	88	88%

Table 8 shows that the verb *hit* contains the divalent structure which forms 51% in the sentence, the trivalent pattern which forms 40% in the sentence and the tetravalent pattern forms 9% in the sentence. The verb *hit* in the divalent structure links the subject and object complement in the form of S + V + Obj. The verb hit as the trivalent verb possesses the patterns such as S + V + Obj PP, S + V + Obj Adv PP, S + V + Obj as-clause, S + V + Obj to-inf clause. The complements of the trivalent verb are represented as to-inf clause, as-clause, adverb phrase,

prepositional phrase. Tetravalent verb, which possesses the patterns such as S + V + Obj PP PP, S + V + Obj PP as-nom, S + V + Obj as-clause PP is the least frequent verb pattern in the sentence. The forms of the complements of the tetravalent verb are prepositional phrases, as nominals, as-clauses.

From the constructional approach, the verb *hit* is compatible with caused-motion construction where the object proceeds down the path which is predetermined by the causer of the action. For example, if someone hit something such as the ball across or over something like the field, the entity such as the ball is preceded down the path of the field by the causer.

Table 8. Valency pattern of the verb *hit*

	Valency	Patterns	Frequency	Proportion
The projectionist approach	Divalent	S + V + Obj	51	51%
	Trivalent	S + V + Obj PP S + V + Obj AdvP S + V + Obj ss-clause S + V + Obj to-inf clause	40	40%
	Tetravalent	S + V + Obj PP PP S + V + Obj PP AdvP S + V + Obj PP to-inf	9	9%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Caused-motion	X causes Y to move Z	16	16%

From the Table 9, we can observe that the divalent pattern forms 76% in the sentence, the trivalent pattern forms 21% and the tetravalent pattern forms 3%. The divalent pattern of the

verb *kiss* consists of S + V + Obj with two complements. The trivalent verb has the pattern of S + V + Obj AdvP, S + V + Obj PP, S + V + Obj as-nom. The complements of the trivalent verb *kiss* occur in the form of the prepositional phrase, as-nominal, adverb phrase, prepositional phrase. The tetravalent verb contains the pattern such as S + V + Obj AdvP PP.

The verb *kiss* shows the compatibility with resultative constructions if there is the fusion between the verb roles and construction roles. In accordance with the resultative construction, the verb kiss provides the argument and the object based on the kind of semantic phrase that signifies the result that it selects.

Table 9. Valency pattern of the verb *kiss*

	Valency	Patterns	Frequency	Proportion
	Divalent	S + V + Obj	76	76%
The projectionist approach	Trivalent	S + V + Obj PP	21	21%
	Tetravalent	S + V + Obj PP to-inf S + V + Obj PP NP	3	3%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Resultative	X causes Y to become Z	4	4%

From the table 10, it can be observed that the verb *dig* has the divalent pattern which forms 49% in the sentence. The trivalent verb forms 47% in the sentence and the tetravalent verb forms 4% in the sentence. The divalent verb has the pattern of S + V + Obj. The trivalent verb contains the patterns such as S + V + Obj PP, S + V + Obj AdvP. The tetravalent verb contains the patterns such as S + V + Obj PP PP, S + V + Obj PP AdvP, S + V + Obj to-inf PP. The complements of the tetravalent verb occur in the form of prepositional phrase, adverb phrase, infinitive clause.

The verb *dig* is compatible with the way construction based on the semantic role of the construction because it is the construction's meaning that determines the combination of the verb with the participant role based on the position of syntactic forms of the construction. For example if someone dig his way out of somewhere, there are several interpretations of how the

person did it or what is the actual meaning behind the action. However, once we discover the meaning of the construction such as escape, the phrase can be completed such as someone dig his way out of the prison. Once, the meaning of the construction is understood, the verb does not need to be examined.

Table 10. Valency pattern of the verb *dig*

	Valency	Patterns	Frequency	Proportion
The projectionist approach	Divalent	S + V + Obj	49	49%
	Trivalent	S + V + Obj PP S + V + Obj AdvP	47	47%
	Tetravalent	S + V + Obj PP PP S + V + Obj PP AdvP S + V + Obj to-inf PP	4	4%
The constructional approach	Type of the construction	Meaning	Frequency	Proportion
	Way construction	X creates the way out of Z	28	28%

7. Conclusion

This paper investigated the valency patterns of the english verbs such as *make, dream, achieve, think, hit, kiss, dig* and *bake* from the perspective of the syntactic valency, which is focused on the verb as the center of the argument realization and the constructional grammar, which represents the argument structures as stored, independent constructions or form-meaning pairs. From the projectionist approach, verbs are classified as monovalent, divalent, trivalent, tetravalent according to Tesnière's classification and the verbs can be classified as intransitive, monotransitive, ditransitive, complex-transitive, copular. It has been discovered that the verb *make* has 54 divalent patterns, 35 trivalent patterns and 11 tetravalent patterns. The verb *dream* has 83 divalent patterns, 14 trivalent patterns and 3 tetravalent patterns. The verb *achieve* possesses 61 divalent patterns, 25 trivalent patterns and 14 tetravalent patterns. The verb *think* contains 69 divalent patterns, 20 trivalent patterns and 11 tetravalent patterns. The verb *hit* has 51 divalent patterns, 40 trivalent patterns and 9 tetravalent patterns. The verb *dig* contains 49 divalent patterns, 47 trivalent patterns and 4 tetravalent patterns. The verb *kiss* contains 76 divalent patterns, 21 trivalent patterns and 3 tetravalent patterns. The verb *bake* has 49 divalent patterns, 45 trivalent patterns and 6 tetravalent patterns. The projectionist approach would be more practical approach for the analysis of the argument structure because it does not require the understanding of the construction's meaning, the roles of the verbs and constructions. The sentence of the valncy patterns in the research is the smallest unit and the verb is represented as the fundamental sentence element. The study's findings offer a new perspective on teaching English grammar.

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Argument Structure of English verbs

ABSTRACT

This paper will present the argument structure of English verbs. The focus is on the relation between the lexical verb and its arguments in the verb phrase. The arguments can be positioned before and after the verb in the clause and therefore they create the pattern according to the constructional approach to the argument structure. However, if the focus is shifted from verb's patterns to the event represented by the action denoted by the verb to express the meaning, the concept of the construction has the important role in the argument realization. Furthemore, the aim of this paper is not only to present theoretical explanation of the argument structure, but also to use it by examining both the valency patterns of verbs such as *make, think, dream, achieve, bake, dig, hit, kiss* and the types of the constructions that these verbs are compatible with. The second objective of the examination of these verbs is to discover a better approach to the argument structure such as the projectionist or the constructional approach. For the examination of these verbs, the corpus enTenTen21, which was collected from October to November in 2021, is used. 100 sentences were randomly extracted and analysed from the corpus for each verb and the results are shown in the tables.

Keywords: argument structure, patterns, projectionist approach, constructional approach, corpus enTenTen21

Argumetna struktura glagola u engleskom jeziku

SAŽETAK

Ovaj rad istražuje argumentnu strukturu glagola u engleskom jeziku. Važnost se predaje odnosu argumenata između leksičkog glagola i njegovih argumenata u glagolskom izrazu. Budući da se argumenti mogu nalaziti ispred i iza glagola u rečenici, oni stvaraju obrazac prema projekcionističkom pristupu argumentnoj strukturi. Međutim, ako se pozornost skrene s glagolskih obrazaca na događaj predstavljen radnjom označenom glagolom za izražavanje značenja, konstrukcija postaje važna za realizaciju argumenata. Nadalje, ovaj rad ne predstavlja samo teoriju argumentne strukture, već uz pomoć teorije istražuje obrasce glagola kao što su *praviti, misliti, sanjati, postići, peći, kopati, pogoditi, poljubiti* i također vrste konstrukcija s kojima su ti glagoli kompatibilni. Drugi cilj istraživanja ovih glagola je izabrati koji od ovih pristupa je bolji za pristup argumentnoj strukturi. Za ispitivanje ovih glagola koristi se korkus enTenTen21 koji je prikupljen od 2021. godine. 100 rečenica je nasumično izdvojeno i analizirano za glagole, a rezultati su prikazani u tablicama.

Ključne riječi: argumentna struktura, obrasci, projekcionistički pristup, konstrukcionistički pristup