

# Verb Valency

## Grammatical Functions and Semantic Roles

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## Verb Valency, Grammatical functions and Semantic roles

**Valency** deals with the question of how many participants a certain verb logically presupposes in order for the event denoted by the verb to be realizable.

For instance, it takes only one individual to carry out a **sleeping event**. Each and every one of us can do that without any assistance from others. Therefore, we say that a verb (or verbs) denoting a sleeping event presupposes one argument, namely the individual doing the sleeping.

A full sentence describing a sleeping event, then, typically consists of an appropriate form of the verb plus a phrase, typically an NP denoting the individual who sleeps, as in (1):

(1) John sleeps

Accordingly, the verb *sleeps* is described as belonging to the class of **Mono-valent** verbs, which comprises all **intransitive** verbs, *die, wither, walk, run, liquidate*, etc..

In this sentence the argument is realized as an NP with the sentential grammatical function of **subject**, and the subject has the semantic role of AGENT. Note that sleeping is an intentional act since (more often than not ☺) you can decide whether you want to sleep or not<sup>1</sup>.

### Valency classes

We usually distinguish between four<sup>2</sup> valency classes for verbs:

Mono-valent

*die, wither, walk, run, drown, liquidate, ...*

Di-valent

*hit, love, kiss, build, meet, bake, cover, watch, see, change, ...*

Tri-valent

*give, hand, offer, send, put, cover, deny...*

Avalent

(meteorological verbs) *rain, snow, ...*

### Di-valent verbs

Di-valent verbs involve two entities: In order for a hitting-event to be possible, two entities have to be involved, one doing the hitting and one being hit.

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<sup>1</sup> There are certain difficulties with definitions of the semantic roles, which I shall not address in detail here. I am assuming that in order for an individual to perform the role of AGENT, that individual must have intentions and be able to make conscious choices to perform actions or not. But we have to acknowledge that non-intentional or non-volitional forces exist, which may perform the same kind of actions as intentional agents. For instance, I may decide to destroy my house, which makes me the AGENT in a sentence like *Per destroyed his own house*. Of course, a storm may do exactly the same thing, but we would not normally ascribe intentions to storms, and so in the terminology I'm using here, a storm is not a possible AGENT. Instead, for non-intentional agents we shall use the role CAUSE. This means that in a sentence like *The financial crisis destroyed the country's economy*, the subject *the financial crisis* fills the semantic role of CAUSE rather than AGENT.

<sup>2</sup> Maybe we should allow for a fifth class of quadri-valent verbs: a candidate would be the verb *bet* as in *I bet you £5 that Liverpool wins the match*, with the arguments indicated by the square brackets: *[I] bet[you] [£5] [that Liverpool wins the match]*.

Typically, the arguments of di-valent verbs have the grammatical functions of subject and direct object, respectively, as in:

- (2)     John kissed his bride  
           S                   DO
- (3)     John    saw    his father  
           S                   DO

But, the fact that the grammatical function is the same for the two sentences does not entail that the semantic roles that the verbs assign to their respective arguments are also the same. That is because the semantic roles are determined by the nature of the event that the verb denotes, and not by the syntactic properties of the verbs. Thus, for the examples in (2) and (3) we get the roles indicated in (4) and (5), respectively:

- (4)     John kissed his bride  
           S                   DO  
           AGENT    PATIENT
- (5)     John                   saw    his father  
           S                                   DO  
           EXPERIENCER            PATIENT

The reason why *John* is assigned the role of AGENT in (4) is that he performs an intentional act of kissing the bride. In (5), however, *John* is not doing anything actively. The verb *see* is a verb of so-called inert perception, i.e., in order to see something, you only need to open your eyes, you do not have to make a conscious decision to see something.

This implies that semantically closely related verbs may ascribe different roles to their arguments. For example, when you watch something or look at something, you carry out the acts of watching or looking as a result of your having decided to do so, they are both acts of will, whereas seeing is not, and therefore agency is involved with both of the verbs *watch* and *look*, cf. (6):

- (6)
- |             |           |                   |
|-------------|-----------|-------------------|
| <u>John</u> | looked at | <u>his father</u> |
|             | watched   |                   |
| S           |           | DO                |
| AGT         |           | PATIENT           |

**Tri-valent verbs**

Tri-valent verbs involve three entities: In order for a giving-event to be possible, three entities have to be involved, one doing the giving, something given, and someone or something receiving what is given.

But note that, as in the other valency classes, with the tri-valent verbs several different event types may be involved. For instance, a putting-event involves three entities: one carrying out the putting, the entity that is put somewhere, at finally the place where the thing is put. On a very abstract level, there is a certain affinity between giving and putting. In many cases when

you give something to someone, the thing given moves from giver to receiver. When you put something somewhere, the thing moves from the putter to some final destination.

Typically, the arguments of tri-valent verbs have the grammatical functions of subject, indirect object and direct object, respectively, cf. (7):

(7)     John gave his bride a ring  
          S                    IO            DO

However, some tri-valent verbs differ from this pattern of grammatical functions, e.g., a verb like *put*:

(8)     John put his money in the envelope  
          S                    DO            ADV<sub>place</sub>

where we get a valency-bound place-adverbial instead of a IO<sup>3</sup>.

As far as roles are concerned, with tri-valent verb arguments we also get a variety of role assignments. With (7) and (8), the role assignments are as shown in (9) and (10), respectively:

(9)     John           gave his bride            a ring  
          S                    IO                    DO  
          AGENT            RECIPIENT/  
                                  BENEFICIARY    PATIENT

(10)    John put his money in the envelope  
          S                    DO            ADV<sub>place</sub>  
          AGT                PNT            LOC

We should think of role patterns not as a property of the individual verb, but rather a property of a certain KIND of event, e.g. an event of giving or an event of putting, which may be expressed by any one of a number of synonymous verbs or phrases.

So, at the conceptual level we may assume that we have prototypical representations of events of giving and putting, each involving a certain role pattern as indicated in (11) and (12):

(11)    #GIVE(AGT, REC(/BEN), PNT)  
          “AN event of giving involves three roles, AGENT, RECIPIENT (or BEBENEFICIARY) and PATIENT”

(12)    #PUT(AGT, PNT, LOC)  
          “An event of putting involves three roles, AGENT, PATIENT and LOCATION”

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<sup>3</sup> The reason why I call the place-adverbial ‘valency-bound’ is that in contradistinction to most adverbials, this one is a necessary argument of the putting-event: One cannot just put a book, one has to put it somewhere.

As text producers, then, we have a number of possibilities as to how we want to express linguistically the state of affairs represented conceptually in our minds.

For instance, all the sentences in (13) would be possible ways of linguistically describing the same real-world giving-situation conceptualized as the representation in (11):

- (13) a. Anne gave John a book  
b. Anne offered John a book  
c. Anne handed John a book  
  
d. Anne gave a book to John  
e. Anne offered a book to John  
f. Anne handed a book to John

These sentences would all exhibit the role pattern shown in (11) even though we have chosen to express the GIVING-relation by a different verb in each case. For instance, the role assignment in (13a-c) could be illustrated as in (14):

- (14) a. Anne **gave** John a book  
b. Anne **offered** John a book  
c. Anne **handed** John a book
- 
- #GIVE(AGT, REC, PNT)

In (13d-e) we see that it is also possible to use a different syntactic construction involving an NP and a PP instead of two consecutive NPs to express the arguments of the verbs. But still we have the same roles to be assigned, so in this case the picture is as shown in (15):

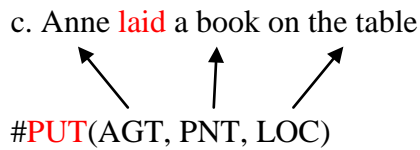
- (15) d. Anne **gave** a book to John  
e. Anne **offered** a book to John  
f. Anne **handed** a book to John
- 
- #GIVE(AGT, REC, PNT)

Similarly putting-situations conceptualized as shown in (12) may be expressed, e.g. as shown in (16):

- (16) a. Anne put a book on the table  
b. Anne placed a book on the table  
c. Anne laid a book on the table

and we get a role assignment as shown in:

- (17) a. Anne **put** a book on the table  
b. Anne **placed** a book on the table



### Avalent Verbs

Avalent verbs form a special class in that the kinds of events they denote are characterized by not presupposing the existence of any entity performing the event<sup>4</sup>. In other words, an event of raining does not presuppose that somebody is doing the raining. At the linguistic level this means that in a sentence like (18):

(18) It's raining

the subject *it* is not a referring NP. There is simply nothing for it to refer to. But the syntactic rules in languages like English and Danish say that all clauses (except imperative clauses) have to have a subject. So, the subject *it* in (18) is not a linguistic way of expressing an argument, it's a purely formal device, an empty place holder which, by the syntactic rules of English, has to occupy the subject position in the clause.

Since there is no argument, it also follows that there are no roles to be assigned when we deal with this class of verbs, that is, the formal subject *it* does not carry a semantic role; only referring expressions can carry a semantic role.

### Linking verbs

There are certain problems to note in relation to linking verbs. Linking verbs<sup>5</sup> seem to belong to the class of Di-valent verbs since they seemingly connect two arguments. Take an example like (19):

(19) The Bank of England **is** the central bank of the United Kingdom

We have two NPs here with the syntactic functions of subject and subject complement, respectively. But what about role assignment?

The important thing to note here is that, even though both NPs contain a definite article, only the first of the NPs is actually used to refer to an entity, namely the subject *The Bank of England*. But what is the other NP, the subject complement used for? The answer is that it is used – not to refer to anything – but to assign a property to the unique individual denoted by *The Bank of England*. Therefore, in this case we will say that only one role is assigned, namely the role PATIENT, which is assigned to the subject.

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<sup>4</sup> Actually, this point shows a problem for the kind of approach I'm proposing here, since it is not clear what is the basis for my claim that the events in question do not involve arguments. What I am doing is inferring from the possible linguistic constructions of avalent verbs in English (and Danish) to the nature of the event. But, of course, that is not a reliable way of making claims about the nature of the event. I would like to assume that the conceptual representations in our minds are in principle language independent. But this point of view is very difficult to maintain in practice, and since I want to make a methodological distinction between a real-world state-of-affairs, a mental conceptual representation and a linguistic expression, in order to make things play together for each claim I make for one level, I have to look at what happens at the two other levels.

<sup>5</sup> In the terminology of Huddleston & Pullum (2005: 78), linking verbs are called "complex-intransitive verbs".

### **Valency and clause structure**

Valency plays an important role in understanding the conceptual content of a clause, since it is a precondition for a clause to be complete that the valency requirements of the main verb of the clause are met. So, this is an important reason why strings of words like *Peter said* or *the government wants* cannot be clauses: The valency requirements of the verbs *said* and *wants* have not been met since they are both missing one of their arguments.

### **Terminology: The valency classes and the canonical clause structures of H&P**

The four valency classes for verbs treated above give rise to the classes of canonical clause structures introduced by Huddleston & Pullum (2005: 78) in the following way:

Avalent main verb (meteorological verbs) <i>rain, snow, ...</i>	→ INTRANSITIVE
Mono-valent main verb <i>die, wither, walk, run, drown, liquidate, ...</i>	→ INTRANSITIVE
Di-valent main verb <i>hit, love, kiss, build, meet, bake, cover, watch, see, ...</i>	→ MONOTRANSITIVE
Tri-valent main verb <i>give, hand, offer, send, put, cover, deny...</i>	→ DITRANSITIVE

### **References**

- Huddleston, R. & Geoffrey K. Pullum (2005): *A Student's Introduction to English Grammar*. Cambridge: Cambridge university Press.
- Jensen, Per Anker (1985): *Principper for grammatisk analyse*. Arnold Busck. København. Especially chapters 2 and 4.