

NEUTRAL VERBS IN ENGLISH:  
A PRELIMINARY CLASSIFICATION

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Introduction

The French researchers Boons, Guillet, Leclère (1976), while examining the transitivity and intransitivity of French verbs note the existence of an inbetween case, that of neutrality, in which a verb can be both a one-NP verb and a two-NP verb, but with a special relationship. Neutrality is present when the following equation holds, where the arrow means relative synonymy:

$$(1) \quad N_0 V N_1 \Leftrightarrow N_1 V$$

NP's are numbered from left to right starting with the subscript 0.  $N_0$  is the subject, while  $N_1$  is the first complement,  $N_2$  would be the second complement, etc. The following verbs are considered neutral:

- (2)    a. *Max chimed the bells*  
         b. *The bells chimed*
- (3)    a. *The enemy sank the battleship*  
         b. *The battleship sank*

In all these sentences, the direct object of the (a) sentence is the subject of the (b) sentence, and the meanings are similar. The subject of the (a) sentence causes the object of the sentence to undergo the action expressed by the verb. The only extra information thus is the idea of "cause to happen."

Boons, Guillet, Leclère (1976) established a list of over 400 neutral verbs in French. In French, for example, we have:

- (4)    a. *Max plie la branche*      (5) a. *Le soleil a fondu le beurre*  
         b. *La branche plie*                      b. *Le beurre a fondu*

which correspond to the English:

- (6) a. *Max bends the branch* (7) a. *The sun melted the butter*  
 b. *The branch bends* b. *The butter melted*

Jespersen (1914–29) referred to these verbs as the “move and change” class. Carlota Smith (1970), using the term “change class,” remarks the importance of having an independent activity which can occur without an external agent (the (b) sentences), while at the same time, having a presumed external control (expressed by an agent, the subject of the (a) sentences). Smith uses the following example to illustrate how acceptability of the neutral construction depends on how willing the  $N_1$ , the “patient”, is to relinquish control of the action:

- (8) a. *The nurse burped the baby*  
 b. *The baby burped*  
 c. ?*The nurse burped the patient*  
 d. *The patient burped*  
 e. \**The nurse burped the doctor*  
 f. *The doctor burped*

Fillmore (1970) claims that verbs that imply surface-contact, such as *hit*, *slap*, *strike*, *bump*, etc. generally do not accept the intransitive construction:

- (9) a. *Max hit the tree*  
 b. \**The tree hit*

while change of state verbs that do not imply surface-contact, like *bend*, *break*, *fold*, *crack*, etc. favor this construction:

- (10) a. *Anne folded the paper*  
 b. *The paper folded*

Fillmore pointed out, however, the idiosyncratic behavior of the distributional properties of the object, claiming that replacing *paper* by *string* would render the example above unacceptable.

More recently, syntacticians in the school of GB (Keyser & Roeper (1984), Radfrew (1988), and Fellbaum & Zribi-Hertz (1989)) tend to use the term “ergative” when referring to these verbs. Keyser & Roeper (1984) distinguish ergatives from the “middle construction,” where an adverbial such as *easily*, *well*, *badly*, *quickly*, etc. is necessary for the acceptability of the intransitive use:

- (11) a. *Max waxes the kitchen floor*  
 b. *The kitchen floor waxes easily*  
 c. \**The kitchen floor waxes*

The middle construction is very frequent in bureaucratic and scientific language:

- (12) a. *The Environmental Protection Agency indexed their databases*  
 b. *Their databases indexed quickly*  
 c. \**Their databases indexed*

But it is not always easy to distinguish the two types of constructions. Keyser & Roeper (1984) claim that many verbs fall into both categories and that some sentences are in fact ambiguous between middle and ergative readings such as:

- (13) *The door opens easily*

which may or may not imply an agent that opens the door.

### Lexicon-grammar

In a lexicon grammar framework (Gross 1981 & 1996), syntactic analysis is based on a formal classification of a large portion of the lexicon. For example, researchers at the Université de Paris VII have examined more than 10,000 French verbs noting distributional properties such as possible subjects and complements, as well as transformational properties. This work is performed by a team of linguists who determine these reproducible acceptability judgements. Generally tables are constructed for about 200–300 verbs at a time using 20–25 properties indicated by plus or minus signs. In constructing these tables, they have shown that this information is highly lexical, that is, a particular series of pluses and minuses applies to individual verbs or small group of verbs, rather than to broad semantic classes. Limited submatrices have been constructed for English (e.g., Freckleton 1985, Machonis 1988, Salkoff 1983), but most American researchers do not systematically analyze the lexicon. Theoretically, the French lexicon has 10,000 entries and 500 properties and can be visualized as a 10,000 by 500 matrix.

Following Boons, Guillet, Leclère (1976), we constructed a list of neutral verbs of English. We did not look at purely transitive or purely



intransitive uses. A verb had to exhibit neutrality, as defined above, in order for it to be classified.<sup>1</sup> Middle verbs, that is verbs that had to have an obligatory adverbial in the  $N_1$  V construction, were not classified. Lists such as these are constructed by systematically going through a dictionary and determining which verbs accept the neutral construction. We used the second college edition of *The American Heritage Dictionary* and completed our table from lists taken from Levin (1993), a book which, while not systematic, semantically classifies large portions of the English lexicon. Referring to the neutral construction as the "causative alternation", Levin (1993) points out its frequency with certain semantic classes, such as the following:

**break** verbs: *break, chip, crack, crash, crush, fracture, rip, shatter, smash, snap, splinter, split, tear*

**cook** verbs: *bake, barbecue, blanch, boil, braise, broil, brown, charbroil*

She also notes the existence of 4 morphological classes that favor the causative alternation:

**-en** verbs: *awaken, brighten, broaden, dampen, darken*

**-ify** verbs: *acidify, calcify, intensify, petrify*

**-ize** verbs: *americanize, caramelize, crystallize, decentralize*

**-ate** verbs: *accelerate, coagulate, de-escalate, deteriorate*

We succeeded in compiling a table of 537 neutral verbs of English, which can be seen at the beginning of the Appendix (cf. Table 1: Neutral Verbs of English). Each row is said to be an entry of the lexicon grammar. Distributional properties of the  $N_0$  and  $N_1$ , which for the moment, only entail the properties human and non-human, are indicated by a plus or a minus. We have also included an  $N_1$  that works with each verb. In hopes of finding broad semantic classes that could guarantee neutrality, we have included to the far right two columns that express the semantic properties of the verb — but this last bit of information is generally not part of a lexicon grammar. In the next to last column, we give a general semantic class, such as **sound**, **cook**, **motion**, **decrease**, etc., while more specific semantic information, such as type of **motion** (**forward**, **circular**, **down**, etc.) or type of **decrease** (e.g., **temperature**, **size**, **speed**, etc.) is noted in the last column.

The most common morphological pattern associated with the nouns in this construction is that the  $N_0$  can be human or non-human, while the  $N_1$  is

often only non-human. That is, the noun that appears in both the transitive and intransitive sentence is generally marked as non-human, while the external control (the subject of the transitive sentence) can be human or non-human. More information will have to be entered into the lexicon grammar to further distinguish these possible complements. Further work on these verbs will also involve adding additional morphological and transformational information to the table. Whereas the passive transformation seems to work with just about all of our data, other transformations, such as those that involve the insertion of a support verb, appear much more limited.

For example, a preliminary look at the two constructions:

- (14)  $N_0$  make a V-n Prep  $N_1$   
 $N_1$  make a V-n

suggest that this information is highly idiosyncratic. Many neutral verbs do not accept these transformations at all:

- (15) a. \*Mike made (a close + an open) with the door  
 b. \*The door made (a close + an open)

A few, especially **sound** verbs, accept both:

- (16) a. Art made a bang with his fist  
 b. His fist made a bang  
 (17) a. The pilot made a landing with the plane  
 b. The plane made a landing

Other verbs, however, will accept one or the other *make* constructions, but not both:

- (18) a. \*Anne made a bounce with the ball  
 b. The ball made a bounce  
 (19) a. Max made a tear in the paper  
 b. \*The paper made a tear

Sometimes, however, an additional modifier can render certain expressions acceptable, as in the following examples:

- (20) a. Max made a fold in the paper  
 b. \*The paper made a fold  
 c. The paper made a nice fold



- (21) a. *The photographer made an enlargement of the photo*  
 b. \**The photo made an enlargement*  
 c. *The photo made a beautiful enlargement*

These examples suggest that the acceptability of nominalizations will have to be entered into the grammar for every verb.

### Further tables

In constructing this table of neutral verbs, we also classified 35 neutral verbs with particles in a separate table, which can be seen at the end of the Appendix (cf. Table 2: Neutral Verbs with Particles). Generally the particle is movable, and thus there are two possible word orders for the transitive sentence:

- (22) a. *The electrician screwed in the new fuse*  
 b. *The electrician screwed the new fuse in*  
 c. *The new fuse screwed in*
- (23) a. *The clown livened up the party*  
 b. *The clown livened the party up*  
 c. *The party livened up*

However, with the two examples involving the particle *forward*, the particle must be obligatorily moved to the end of the sentence in the transitive use:

- (24) a. \**Max inched forward the car*  
 b. *Max inched the car forward*  
 c. *The car inched forward*
- (25) a. \**He leaned forward his head*  
 b. *He leaned his head forward*  
 c. *His head leaned forward*

Furthermore, we noted the existence of another verbal pattern, which can be expressed by the following equation:

$$(26) \quad N_0 V N_1 (E + \text{PREP } N_2) \Leftrightarrow N_1 V \text{PREP } N_2$$

where an extra prepositional phrase is obligatory in the intransitive use:

- (27) a. *They lodged the executives (E + in that hotel)*  
 b. *The executives lodged in that hotel*  
 c. \**The executives lodged*
- (28) a. *The Ancient Greeks originated the Olympic Games (E + in 776 B.C.)*  
 b. *The Olympic Games originated in 776 B.C.*  
 c. \**The Olympic Games originated*

The extra prepositional phrase should also be included for verbs like *evacuate*, which has the following structures associated with it:

- (29) a. *The firemen evacuated everyone from the building*  
 b. *Everyone evacuated from the building*  
 c. *Everyone evacuated*  
 d. *Everyone evacuated the building*  
 e. \**The building evacuated*  
 f. *The building evacuated easily*

In this example, *evacuate* appears to exhibit neutrality with a human  $N_1$  (*everyone*), but not with a non-human  $N_1$  (*building*). Further work on neutral verbs will thus involve adding additional morphological and transformational information to Table 1 (Neutral Verbs), more verbs and particles to Table 2 (Neutral Verbs with Particles), as well as the construction of a table of neutral verbs followed by Prep  $N_2$ .

### Semantic nature of neutral verbs

Let us now examine the semantic nature of these verbs in order to see if it is possible to predict which type of verbs admit neutrality. Our largest semantic classes involved verbs of **change** (75 entries) and **motion** (134 entries). But all verbs involving either change or movement are not necessarily neutral. On the other hand, **cook** verbs (32 entries) seem to work almost all the time:

- (30) a. *Max (boiled + heated up + defrosted + reheated + steamed + stewed) the vegetables*  
 b. *The vegetables (boiled + heated up + defrosted + reheated + steamed + stewed)*



- (31) a. *Max (barbecued + fried + grilled + roasted) the chicken*  
 b. *The chicken (barbecued + fried + grilled + roasted)*

Nevertheless, a few cases involving only partial cooking seem to reject neutrality:

- (32) a. *Kathy parboiled the rice*  
 b. ?*The rice parboiled*
- (33) a. *Fred precooked the chicken*  
 b. \**The chicken precooked*  
 c. ?*Fred prepared the vegetables, while the chicken precooked*

Furthermore, we remarked that **cut** verbs, some of which are involved in cooking, like *chop*, *cut*, *hack*, etc. involve surface-contact and thus are not neutral, although the middle use is grammatical:

- (34) a. *Max (chopped + cut) the vegetables*  
 b. \**The vegetables (chopped + cut)*  
 c. *The vegetables (chopped + cut) easily*

Likewise, verbs of **sound emission** (42 entries) frequently accept the neutral construction:

- (35) a. *The monk (chimed + clanged + rang + tolled + sounded) the bell*  
 b. *The bell (chimed + clanged + rang + tolled + sounded)*

Other **sound emission** verbs reject the neutral construction. In some cases, the intransitive use is ungrammatical.

- (36) a. *Max (screamed + murmured) the message*  
 b. \**The message (screamed + murmured)*

In other cases, it's the transitive construction which does not exist, unless the causative is overtly expressed by the verb *make*:

- (37) a. \**The tourists roared the lion*  
 b. *The lion roared*  
 c. *The tourists made the lion roar*
- (38) a. \**Max ticked the clock*  
 b. *The clock ticked*  
 c. *Max made the clock tick*

We find similar problems with other semantic classes. No class can systematically predict which verbs will be neutral, and thus each must be marked in the grammar. For **destroy** verbs (25 entries), we have:

- (39) a. *The men (exploded + disintegrated + burned) the building*  
 b. *The building (exploded + disintegrated + burned)*

But neutrality does not exist for the semantically similar *annihilate* and *demolish*:

- (40) a. *The men (annihilated + demolished) the building*  
 b. \**The building (annihilated + demolished)*

Finally, we have a small list of **gather** verbs (10 entries) accepting the neutral construction:

- (41) a. *The scientist (accumulated + accrued + amassed) his data*  
 b. *His data (accumulated + accrued + amassed)*
- (42) a. *The accident gathered + assembled + mobilized) a crowd*  
 b. *A crowd (gathered + assembled + mobilized)*  
 c. *A crowd gathered after the accident*

But semantically similar verbs do not accept the neutral construction. In the case of *harvest*, the intransitive is ungrammatical, unless accompanied by an adverbial:

- (43) a. *The farmer harvested the crops*  
 b. \**The crops harvested*  
 c. *The crops harvested easily*

Some reject the intransitive construction, even with an adverbial:

- (44) a. *The scientist (acquired + hoarded) his data*  
 b. \**His data (acquired + hoarded)*  
 c. \**His data (acquired + hoarded) over the years*

Others reject the transitive construction:

- (45) a. \**The accident (congregated + flocked) a crowd*  
 b. *A crowd (congregated + flocked)*  
 c. *A crowd (congregated + flocked) after the accident*



## Conclusion

Let us conclude that although certain semantic classes tend to favor neutrality, they do not automatically assure it. In fact, Levin (1993) says that she is not fully satisfied with her semantic classes:

The verb classes that are identified in this book should be "handled with care," since there is a sense in which the notion of "verb class" is an artificial construct. Verb classes arise because a set of verbs with one or more shared meaning components show similar behavior.

For example, should *snap* be classified as a **break** verb or a verb of movement (**motion**)? Is *sizzle* a **sound** or **cook** verb? Should *slam* be classified under **sound** or **motion**? In their conclusion, Keyser & Roeper (1984) claim that ergatives are lexical, while the middle construction is syntactic:

We have argued, in effect, that similarities between the lexicon and the syntax call for mechanical concepts that are applicable to both domains. (Keyser & Roeper 1984: 415)

Likewise, our descriptive work on English neutral verbs gives further evidence for building a formal lexicon, or lexicon-grammar, where pertinent lexical and syntactic information, both distributional and transformational, is listed for each individual verb.

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## ACKNOWLEDGMENTS

Drafts of this article were originally presented at the LVIII *Southeastern Conference of Linguistics* meeting and at the 17th *Colloque sur les Lexiques et Grammaires Comparés*. I would like to thank the participants of both meetings for their comments and suggestions.

## NOTES

1. That is, similar transitive and intransitive sentences using the same  $N_1$  had to be acceptable for native speakers. In case of doubt, a verb had to be marked as transitive and intransitive in the second college edition of *The American Heritage Dictionary* in order for it to figure in our tables. Many judgements were verified by students in General Linguistics at Florida International University. In particular, I would like to thank the students of Spring 1995 and 1997 for their help and observations in this project.

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### SUMMARY

This article presents a first attempt at systematically classifying neutral verbs in English. Neutrality, also known as the ergative construction or the causative alternation, is present when the following equation holds:

$$(1) \quad N_0 V N_1 \Leftrightarrow N_1 V$$

In the following sentences, for example:

- (2) a. *Max chimed the bells.*  
b. *The bells chimed.*
- (3) a. *The enemy sank the battleship.*  
b. *The battleship sank.*

the direct object of the (a) sentence is the subject of the (b) sentence, and the meanings are similar. Following Boons, Guillet, Leclère (1976), who presented a classification of over 400 neutral verbs of French, we systematically examined the English lexicon and compiled a list of over 500 neutral verbs of English, indicating an appropriate  $N_1$ , along with the morphological properties of human and non-human for each  $N_0$  and  $N_1$ . A preliminary glance at these verbs suggests that the morphological and transformational properties associated with each verb are highly idiosyncratic. Furthermore, this study shows that although certain semantic classes tend to favor neutrality, they do not automatically assure it, and presents further evidence for building a formal lexicon, or lexicon-grammar, where pertinent lexical and syntactic information is listed for each individual verb.

Received October 10th, 1998

### APPENDIX

Table 1: Neutral Verbs of English

$N_0$	$N_1$	Verb	$N_1$	$N_0$	Semantic Properties	Semantic Properties	
+	+	accelerate	the car	-	+	motion	forward
+	+	accrue	the data	-	+	gather	
+	+	accumulate	the data	-	+	gather	
+	+	acidify	the solution	-	+	chemical process	
+	+	advance	the film	-	+	motion	forward
-	+	age	the fruit	+	+	mature	decay
+	+	air	the program	-	+	continuous state	
+	+	align	the tires	-	+	fix	
+	+	alkalify	the solution	-	+	chemical process	
+	+	alkalize	the solution	-	+	chemical process	
+	+	americanize	the population	+	+	change of state	
+	+	amass	the data	-	+	gather	
+	-	approach	the moment	-	+	motion	toward
+	-	arch	his back	-	+	motion	curve
+	+	assemble	the crowd	+	+	gather	
+	+	asphyxiate	the child	+	-	suffocate	
+	-	audition	the actor	+	-	examine	check out
+	+	awake	the baby	+	-	change of state	
+	+	awaken	the baby	+	-	change of state	
+	+	bake	the cake	-	+	cook	
+	+	balance	the scales	-	+	process	
+	-	bang	the gong	-	+	sound	
+	+	barbecue	the steaks	-	+	cook	
+	-	beam	the lights	-	+	light emission	
+	-	beep	the horn	-	+	sound	
+	-	begin	the job	-	+	start	
+	+	bend	the branches	-	+	bend	
+	+	blacken	the fish	-	+	change color	
+	+	blanch	her complexion	-	+	change color	
+	-	blare	the radio	-	+	sound	
+	-	blast	the radio	-	+	sound	
+	-	blink	her eyes	-	+	motion	sudden
+	-	blow	the whistle	-	+	sound	
+	+	boil	the eggs	+	+	cook	

N <sub>0</sub> = Nhum N <sub>1</sub> = N-hum Verb	N <sub>1</sub>	N <sub>1</sub> = Nhum N <sub>1</sub> = N-hum Semantic Properties	Semantic Properties
+ + boost	their spirits	- + increase	up/down
+ - bounce	the ball	- + motion	
+ - bow	his head	- + bend	
+ + braise	the vegetables	- + cook	
+ + break	the glass	- + break	
+ + brew	the coffee	- + cook	
+ + brighten	the room	- + change color	
+ + broaden	his outlook	- + increase	
+ + broil	the fish	- + cook	
+ + brown	the meat	- + change color	
+ + burn	the leaves	+ + destroy	outward
+ + burst	the bubble	- + motion	
+ + buzz	the tower	- + sound	
- + calcify	the leg joint	- + chemical process	forward
+ - canter	the horse	- + motion	
+ + capsize	the boat	+ + motion	upside down
+ + carbonize	the substances	- + chemical process	temperature
+ + caramelize	the mixture	- + cook	
+ + catapult	the arrows	- + motion	
+ - cease	her breathing	- + stop	
+ + centralize	the government	- + change	
+ + change	his mind	- + process	
+ + char	the meat	- + cook	
+ + charbroil	the steaks	- + cook	
+ + chill	the wine	- + decrease	
+ - chime	the bell	- + sound	
+ + chip	the paint	- + break	circular
+ + choke	the victim	+ - suffocate	
+ - circulate	the flyer	- + motion	
+ - clang	the bell	- + sound	
+ - clank	the chains	- + sound	
+ - clash	the cymbals	- + sound	
+ - clatter	the dishes	- + sound	
+ + clear	the room	- + decrease	
+ - click	her heels	- + sound	
+ - clog	the drain	- + stop	close
+ - close	the door	- + motion	

N <sub>0</sub> = Nhum N <sub>1</sub> = N-hum Verb	N <sub>1</sub>	N <sub>1</sub> = Nhum N <sub>1</sub> = N-hum Semantic Properties	Semantic Properties
+ + clot	the blood	- + change of state	down circular
+ + coagulate	the blood	- + change of state	
+ - coast	the boat	- + motion	
+ - coil	the rope	- + motion	
- + collapse	the building	- + destroy	
- + collect	dust	- + gather	
+ + combine	the elements	- + combine	
+ + commence	the show	- + start	
+ + compact	the can	- + decrease	
+ + compress	the paper	- + decrease	
+ + conclude	his speech	- + finish	size size
+ - convene	the troops	+ + gather	
+ - convert	the infidels	+ + change	
+ + cook	the steaks	- + cook	
+ + cool	the water	- + decrease	
+ + corrode	the metal	- + destroy	
+ + count	the point	- + increase	
+ - crack	his knuckles	- + sound	
+ + crack	the glass	- + break	
+ + cramp	her leg	- + change	temperature
+ - crash	the car	- + break	
+ + crease	the shirt	- + bend	
+ + crinkle	the shirt	- + bend	
+ - cross	his eyes	- + motion	
+ + crumble	the papers	- + sound	
+ + crumple	the tie	- + bend	
+ + crunch	the chocolate	- + sound	
+ + crush	his skull	- + break	
+ + crystallize	the salt	- + chemical process	curve
+ - curl	his arm	- + motion	
+ + curve	the beam	- + bend	
- + dampen	the room	- + change	
+ + darken	the stage	- + change color	
+ + decalcify	his bones	- + chemical process	
- + decay	the body	- + chemical process	
+ + decelerate	the car	- + decrease	
+ + decentralize	the system	- + motion	
			away



N <sub>0</sub> N <sub>1</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	Semantic Properties	Semantic Properties
- + decompose	the body	- + chemical process	decay		
+ + decrease	their pay	- + decrease			
+ + deepen	the fault	- + increase	size		
+ - de-escalate	the war	- + decrease			
+ + deflate	the tires	- + decrease			
+ + deflect	the light	- + light emission			
+ + defog	the windows	- + change of state			
+ + defrost	the meat	- + cook			
- + degenerate	the hormone	- + decrease			
+ + democratize	the island	- + change of state			
+ + depressurize	the cabin	- + change	pressure		
- + deteriorate	his condition	+ + decrease			
+ + detonate	the bomb	- + destroy			
+ + dilate	the pupils	- + increase	size		
+ + dim	the lights	- + change color			
+ + diminish	their pay	- + decrease			
+ - dip	the wing	- + motion	down		
+ + discolor	her complexion	- + change color			
+ + disentangle	the plot	- + change	undo		
+ + disintegrate	the building	- + destroy			
+ + disperse	the crowd	+ + motion	outward		
+ - disrobe	the king	+ - change			
+ + dissipate	the mist	- + chemical process			
+ + dissolve	the chemical	- + chemical process			
+ + distill	the liquid	- + chemical process			
+ + divide	the sea	- + motion	separate		
+ - dock	the boat	- + motion	toward		
+ + double	her income	- + increase			
+ + drain	the sink	- + decrease			
+ - dress	the child	+ - change of state			
+ + drip	blood	- + motion	down		
+ - drive	the car	- + continuous state			
+ - drop	the supplies	+ + motion	down		
+ + drown	the baby	+ + suffocate			
+ + dry	the flowers	- + destroy			
+ + duplicate	the pages	- + process			
- + echo	the sound	- + sound			

N <sub>0</sub> N <sub>1</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	N <sub>1</sub> N <sub>2</sub> Verb	Semantic Properties	Semantic Properties
+ + empty	the hallway	- + decrease			
+ + end	the war	- + finish			
+ + enlarge	the photo	- + increase	size		
+ + equilibrate	the scale	- + fix			
- + erode	the sand	- + destroy			
+ + escalate	the feud	- + increase			
- + evaporate	the water	- + chemical process			
+ + expand	the business	- + increase			
+ + explode	the weapon	- + destroy			
+ + fade	the shirt	- + change color			
+ - fail	the student	+ + change	evaluation		
+ + fatten	the cow	+ - increase	size		
+ - feather	the oar	- + motion			
+ + ferment	the liquid	- + change of state			
+ - finish	the lesson	- + finish			
+ - fire	the gun	- + motion	sound		
- + flap	the flag	- + motion	back & forth		
+ + flash	the light	- + light emission			
+ + flatten	the pillows	- + decrease	size		
+ - flex	her muscles	- + increase	size		
+ + flicker	the light	- + light emission			
+ - float	the toy boat	+ + immerse in liquid			
+ + flood	the land	- + immerse in liquid			
+ - flush	the toilet	- + sound			
+ + fluster	the student	+ - psychological state			
+ - flutter	its wings	- + motion	back & forth		
+ + fly	the plane	+ + motion			
+ + focus	the camera	- + motion			
+ + fog	the windows	- + change of state			
+ - fold	the paper	- + bend			
+ + fold	the business	- + finish			
+ + foreclose	the mortgage	- + finish			
+ + form	the club	- + start			
+ + fracture	his arm	- + break			
+ + fray	his jeans	- + destroy			
+ + freeze	the meat	+ + decrease	temperature		
+ + frighten	the baby	+ - psychological state			



N <sub>0</sub> N <sub>1</sub> Verb	Z <sub>1</sub>	N <sub>1</sub> N <sub>1</sub> Verb	Semantic Properties	Semantic Properties
+ + frizz	the hair	- + change of state		
+ + frizzle	the bacon	- + cook	sound	
- + frost	the window	- + increase	temperature	
+ + fry	the chicken	- + cook		
+ + gag	the man	- + suffocate		
+ - gallop	the horse	+ - motion	forward	
+ + gather	a crowd	+ + gather		
+ + germinate	the seed	- + start		
+ - gleam	the light	- + light emission		
+ - glide	his feet	- + motion	forward	
+ - gong	the bell	- + sound		
+ + graduate	the student	+ - finish		
+ + granulate	the salt water	- + change		
+ - grate	the gears	- + sound		
+ - graze	the cattle	- + process	eat	
+ + grill	the chicken	- + cook		
+ - grind	the gears	- + sound		
- + grizzle	the hair	- + change color		
+ + grow	the tomatoes	- + grow		
+ + halt	the car	+ + stop		
+ - hang	a basket	- + process	place	
+ + harden	the substance	- + change of state		
+ + hasten	his steps	+ + increase	speed	
- + hatch	the eggs	- + start		
+ + heal	the wound	+ + fix		
+ + heat	the soup	- + cook		
+ + heighten	their fears	- + psychological state		
+ - honk	the horn	- + cook		
+ - hook	the golf ball	- + motion		
+ - hurry	the children	+ - motion	sudden	
+ - hurt	a ligament	- + change	break	
+ + hush	the baby	+ + decrease	sound	
+ + hydrate	the powder	- + chemical process		
+ - idle	the car	- + continuous state		
+ + ignite	the match	+ + light emission		
+ + illuminate	the sky	- + light emission		
+ + immerse	the submarine	+ + immerse in liquid		

N <sub>0</sub> N <sub>1</sub> Verb	Z <sub>1</sub>	N <sub>1</sub> N <sub>1</sub> Verb	Semantic Properties	Semantic Properties
+ + improve	the situation	+ + change		
+ + incinerate	the building	- + destroy		
+ + increase	her donation	- + increase		
+ + incubate	the bacteria	- + start		
+ + inflate	the economy	- + increase		
+ + intensify	their efforts	- + increase		
+ - interlock	his fingers	- + join		
- + itch	my arm	- + irritate		
+ + jangle	the keys	- + motion	back & forth	
+ + jerk	the car	- + motion	sudden	
+ + jiggle	the handle	- + motion	up & down	
+ + jingle	the bell	- + sound		
+ + jolt	the aircraft	- + motion	sudden	
+ - jump	the horse	- + motion	up	
+ + keel	the boat	- + motion	upside down	
+ + kindle	the fire	- + light emission		
+ - knell	the bell	- + sound		
+ - land	the plane	+ + motion	down	
+ - latch	her door	- + motion	close	
+ - lather	the cream	- + change	increase	
+ + launch	the rocket	- + motion	up	
+ + leak	oil	- + motion	down	
+ - lengthen	the book	- + increase		
+ + lessen	the pain	- + decrease		
+ - levitate	the woman	+ + motion	up	
+ + lift	their spirits	- + increase		
+ + light	the fire	- + light emission		
+ + lighten	her hair	- + change color		
+ - lilt	the tune	- + sound		
+ + liquefy	the mixture	- + cook		
+ + liquidate	the business	- + destroy		
+ - lob	the ball	- + motion		
+ + lock	the gate	- + motion	close	
+ - loop	the jets	- + motion	curve	
+ + loosen	the rope	- + change		
+ + lower	the flag	+ + motion	down	
+ - macerate	the sponge	- + immerse in liquid		



$N_0$ =: $N_1$ =: Verb	$Z_1$	$N_1$ =: $N_1$ =: Semantic Properties	Semantic Properties
+ + mackle	the pamphlet	- + destroy	
+ + madden	the prof	+ - psychological state	
+ + magnify	the tension	- + increase	
+ - maneuver	the platoon	+ + motion	command
+ - march	the soldiers	+ + motion	exhibition
+ + marinate	the steak	- + cook	
+ - marry	the couple	+ - join	
+ - mate	the dogs	+ + join	
+ + materialize	his dreams	- + process	creation
- + mature	the bonds	+ + increase	mature
+ + maximize	the screen	- + increase	size
+ + mellow	the wine	+ + change	quality
+ + melt	the ice	- + change of state	
+ - mend	the fracture	- + change	fix
+ + merge	the companies	+ + motion	together
+ + metabolize	the cell	- + change of state	
+ + metathesize	the liquid	- + change of state	
+ + minimize	the screen	- + decrease	size
+ + mire	the atv	- + motion	down
+ - miscarry	the baby	+ - loss	death
+ + mix	the substance	+ + combine	
+ + mobilize	the troops	+ + motion	together
+ + modernize	his ideas	+ + change	
+ + modulate	the wave	- + change	
+ + moisten	her skin	- + change of state	
- + molt	its skin	- + change	
+ + move	the company	+ + motion	away
+ + muddy	the river	- + change	
+ + multiply	his earnings	- + increase	
+ + mummify	the body	- + chemical process	
+ + muster	the assembly	+ + gather	
+ + nationalize	the companies	+ + change	
+ + neutralize	the chemicals	- + chemical process	
+ - nod	his head	- + motion	up & down
+ - nurse	the foal	+ + process	
+ + open	the door	+ + motion	outward
+ + operate	the system	- + continuous state	

$N_0$ =: $N_1$ =: Verb	$Z_1$	$N_1$ =: $N_1$ =: Semantic Properties	Semantic Properties
- + overflow	the river	- + immerse in liquid	
+ + overturn	the boat	+ + motion	upside down
+ + oxidize	the copper	- + chemical process	
+ - pace	the horse	- + motion	striding
+ + paddle	his feet	- + motion	stroking
+ + pale	her complexion	+ + change color	
+ + panic	the boy	+ - psychological state	
+ + parachute	the supplies	+ + motion	down
+ - parade	the troops	+ + motion	exhibition
+ - parboil	the rice	- + cook	
- + parch	the earth	- + change	heat/dry
+ - park	the vehicles	- + motion	
+ + part	the waters	- + motion	separate
+ - pass	the motion	- + motion	forward
+ + patter	its paws	- + sound	tapping
+ + pause	the music	+ + stop	
+ - peel	the bell	- + sound	
+ + peel	his skin	- + change	stripping
+ + percolate	the coffee	- + cook	
+ + perk	her spirits	- + change	elation
- + petrify	the wood	- + change	stiffening
+ - pivot	the telescope	- + motion	circular
+ + play	the music	- + sound	
+ - plump	the pillows	- + increase	size
+ - poach	the eggs	- + cook	
+ + point	its tail	- + motion	up
+ + polarize	the light	- + change	separation
+ + pop	the cork	- + sound	motion up
+ - pour	the water	- + motion	down
+ - pout	her lips	- + change	shape
+ - prance	the horse	- + motion	striding
+ + presoak	the laundry	- + immerse in liquid	
+ + prick	its ears	- + motion	up
+ + print	the letter	- + process	appear
+ + project	her voice	+ + sound	amplification
+ - promenade	the horses	+ + motion	exhibition
+ - protrude	his jaw	- + motion	outward



$N_0$ Nhum = N-hum Verb	$Z_1$	$N_1$ Nhum = N-hum Semantic Properties	Semantic Properties
+ - pucker	her lips	- + change	shape
+ + puff	steam	- + motion	outward
+ - pull	the muscle	- + destroy	
+ + pull	the rope	- + motion	toward
+ + pulverize	the rock	- + destroy	
+ + pump	the water	- + motion	up & down
+ + puncture	the balloon	- + break	
+ + puree	the avocado	- + cook	softening
+ - purse	her lips	- + change	shape
- + putrefy	the body	- + decay	
+ + quadruple	her savings	- + increase	
- + quake	the earth	- + motion	back & forth
+ - quicken	his step	- + motion	acceleration
+ + quiet	the audience	+ + decrease	sound
+ + quintuple	his income	- + increase	size
+ - race	the car	- + motion	forward, fast
- + radiate	its heat	- + increase	temperature
+ + raise	their spirits	- + increase	
+ + rally	the troops	+ - gather	
+ + rattle	the toy	- + sound	
+ + rebroadcast	the program	- + process	again
+ + recline	the chair	- + motion	back
+ + redden	her hair	- + change color	
+ + redouble	her income	- + increase	
+ + reduce	their pay	- + decrease	
- + re-echo	the sound	- + sound	
+ + reflect	the light	- + light emission	
+ + reform	the addict	+ + fix	
- + refract	the rays	- + change	
+ + reheat	the food	- + cook	
+ + reinflate	the economy	- + increase	
+ + rekindle	the fire	- + light emission	
+ + relax	the patient	+ - process	
+ + reopen	the store	- + motion	again
+ + replay	the song	+ + sound	again
+ + reproduce	the bacteria	- + start	
+ - resell	the house	- + exchange	

$N_0$ Nhum = N-hum Verb	$Z_1$	$N_1$ Nhum = N-hum Semantic Properties	Semantic Properties
+ + resolve	the situation	- + fix	
+ + restart	the engine	- + start	again
+ - resume	his work	- + start	again
+ + reunify	germany	+ + gather	again
+ + reunite	the class	+ + gather	again
+ + reverse	the tape	- + motion	
+ + revive	the child	+ + psychological state	
+ + revolve	the top	- + motion	circular
+ - rhyme	the words	- + sound	
+ - ring	the bell	- + sound	
+ + rip	the clothes	- + break	
+ + ripen	the fruit	- + mature	
+ + roast	the corn	- + cook	
+ + rock	the boat	- + motion	back & forth
+ + roll	the wheel	- + motion	circular
- + rot	the garbage	- + decay	
+ + rotate	the telescope	- + motion	circular
+ + run	the machine	- + continuous state	
+ + rupture	the spleen	- + break	
+ + rust	the bicycle	- + decay	
+ + rustle	the leaves	- + sound	
- + sag	the pier	- + motion	down
+ + sail	the boat	- + motion	
+ + scar	the tissue	- + destroy	
+ + scatter	the leaves	+ + motion	outward
+ + scorch	the blouse	- + destroy	
+ + sear	the earth	- + destroy	
+ - sell	the house	- + exchange	
+ + separate	the children	+ + change	separation
+ + sever	the ropes	+ + change	separation
+ + sextuple	their assets	- + increase	
+ + shake	the house	- + motion	sound
+ + shatter	the glass	- + break	
+ + shed	its skin	- + change	stripping
+ + shift	his position	- + motion	change
+ + shine	the light	- + light emission	
+ + shorten	the stick	- + decrease	size



$N_0$ Nhum Nhum Verb	$Z_1$	$N_1$ Nhum Nhum Semantic Properties	Semantic Properties
+ + shred	the paper	- + destroy	
+ + shrink	the shirt	+ + decrease	size
+ + shrivel	their spirits	- + decrease	
+ + shut	the windows	- + motion	close
+ + sicken	the child	+ + destroy	
+ - simmer	the rice	- + cook	
+ + singe	his hair	- + destroy	
+ + sink	the ship	+ + immerse in liquid	
+ - sizzle	the butter	- + cook	sound
+ + slacken	the pace	- + decrease	
+ + slam	the door	- + sound	motion
+ - slide	the panel	- + motion	back & forth
+ + slow	the car	- + decrease	speed
+ + smash	the glass	- + break	
+ + smear	the paint	- + motion	circular
+ + smother	the victims	+ - suffocate	
+ + snag	the sweater	- + motion	
+ + snap	his jaws	- + break	
+ - snap	the stick	- + break	
+ + soak	the clothes	- + immerse in liquid	
+ + soften	the cheese	+ + change of state	
+ + sound	the alarm	- + sound	
+ + sour	the drink	+ + decay	
+ + spatter	the oil	- + motion	outward
+ - speed	the car	- + motion	forward, fast
+ + spill	the wine	- + motion	down
+ - spin	the top	- + motion	circular
+ + splash	the water	- + motion	outward
+ + splatter	the bleach	- + motion	outward
+ + splinter	the wood	- + break	
+ + split	the egg	- + break	
+ + spoil	the food	- + decay	
+ + spread	the disease	- + motion	outward
- + sprout	the plants	- + grow	
+ - squeak	the door	- + sound	
+ - squirt	the ketchup	- + motion	outward
+ + stabilize	the patient	+ + change	

$N_0$ Nhum Nhum Verb	$Z_1$	$N_1$ Nhum Nhum Semantic Properties	Semantic Properties
+ + stain	the dress	- + change	destroy
+ + stall	the car	- + stop	
+ + start	the play	- + start	
+ + starve	the children	+ + destroy	
+ + steam	the vegetables	- + cook	
+ - steep	the tea	- + immerse in liquid	
+ - stew	the vegetables	- + cook	
+ + stiffen	his joints	- + change of state	
+ + sting	my hand	- + irritate	
+ + stir	his emotions	- + change	
+ + stop	the vehicle	+ + stop	
+ + strain	the tea	- + cook	
+ + strengthen	his muscles	- + change of state	
+ + stretch	the sleeve	- + increase	size
+ + strike	the bell	- + sound	
+ + submerge	the ship	+ + immerse in liquid	
+ + suffocate	the man	+ - suffocate	
+ + supercool	the liquid	- + decrease	temperature
- + sway	the branches	- + motion	back & forth
+ + sweeten	the tea	- + change	
+ + swerve	the car	- + motion	side to side
+ - swing	the bat	- + motion	back & forth
+ + swing	the telescope	- + motion	circular
+ + swirl	the ice-cream	- + motion	circular
+ - swish	her skirt	- + motion	sound
+ - swivel	the chair	- + motion	circular
+ + tan	his skin	+ + change color	
+ + tangle	the string	- + change of state	
+ + taper	the candles	- + decrease	size
+ + tarnish	the silver	- + decay	
+ + tear	the paper	- + break	
+ - tense	his muscles	- + increase	tension
+ + thaw	the popsicle	- + cook	
+ + thicken	the gravy	- + cook	
+ + thin	his hair	- + decrease	change
+ - tighten	his grip	- + motion	inward
+ + tilt	the sails	- + motion	side to side



$N_0$ Nhum Nhum Verb	$Z_1$	$N_1$ Nhum Nhum Semantic Properties	Semantic Properties
+ - tinkle	the bell	- + sound	
+ - tip	the glass	- + motion	side to side
+ + tire	the athlete	+ - decrease	energy
+ + toast	the bread	- + cook	
+ - toll	the bell	- + sound	
+ - toot	the horn	- + sound	
+ + topple	the regime	+ + destroy	
+ + toughen	his character	+ + change of state	
+ - train	the skaters	+ - exercise	
+ + transfer	the data	+ + motion	away
+ + translate	the phrase	- + change	
+ - trill	the notes	- + sound	
+ + trip	the boy	+ + motion	down
+ + triple	his savings	- + increase	
+ - trot	the horse	- + motion	forward
+ + turn	the handle	- + motion	circular
+ - twang	the string	- + sound	
+ - swirl	the baton	- + motion	circular
+ + twist	the branches	- + motion	circular
+ - twitch	her nose	- + motion	sudden
+ - undress	the child	+ - change of state	
+ - unfold	the flag	- + motion	undone
+ - unfurl	the flag	- + motion	undone
+ + unhinge	the door	- + motion	undone
+ + unify	the country	+ + gather	
+ + unite	the states	+ + gather	
+ - unlock	the door	- + motion	open
+ + unravel	the ribbon	- + change	undone
+ - unscrew	the wing nut	- + motion	circular
+ + untie	his laces	- + change	undo
+ + untwist	the bottlecap	- + motion	circular
+ + unwind	the toy	- + motion	circular
+ + vaporize	the chemicals	+ + chemical process	
+ - vary	his speed	- + change	
+ + veer	the ship	- + motion	side to side
+ + vibrate	their hearts	- + motion	back & forth
+ - victual	his ship	- + process	

$N_0$ Nhum Nhum Verb	$Z_1$	$N_1$ Nhum Nhum Semantic Properties	Semantic Properties
+ - volunteer	the kids	+ - join	
- + wag	his tail	- + motion	side to side
+ + waken	the baby	+ + change of state	
+ - walk	the horse	+ + motion	forward
- + wane	his enthusiasm	- + decrease	
+ + warp	the cardboard	- + destroy	
+ - wave	the flag	- + motion	
+ + weaken	the bridge	+ + decrease	
+ + westernize	the people	+ + change of state	
+ - whirl	the baton	- + motion	circular
+ + whiten	her complexion	- + change color	
+ + widen	the road	- + increase	
- + wiggle	his tail	- + motion	sides
- + wilt	the roses	- + destroy	
+ + wind	the handle	- + motion	circular
+ - wink	her eyes	- + motion	sudden
- + wither	the flowers	- + destroy	
+ + wobble	the boat	- + motion	back & forth
+ + worry	the mother	+ - psychological state	
+ + worsen	the situation	+ + decrease	
+ + wrinkle	the blouse	- + bend	
+ + yellow	the paper	- + change color	

Table 2: Neutral Verbs with Particles

$N_0$	$N_1$	Verb	Particle	$Z_1$	$N_1$	$N_2$	Semantic Properties	Semantic Properties
+	-	check	in	the guest	+	-	motion	arrive
+	-	check	out	the story	-	+	process	verification
+	-	check	out	the guest	+	-	motion	leave
+	-	clog	up	the drain	-	+	stop	
+	+	cool	down	the engine	-	+	decrease	temperature
+	+	crank	up	the motor	-	+	start	
+	+	dry	up	the flowers	-	+	destroy	
+	+	fatten	up	the baby	+	-	increase	size
+	+	fill	up	the room	-	+	increase	
+	+	flame	up	the fire	-	+	light emission	
+	+	freak	out	max	+	-	psychological state	
-	+	gush	out	water	-	+	motion	outward
+	+	heat	up	the soup	-	+	cook	
+	-	inch	forward	the car	-	+	motion	forward
+	+	leak	out	information	-	+	process	become known
+	-	lean	forward	his head	-	+	motion	forward
+	-	line	up	the class	+	+	motion	
+	+	liven	up	the party	+	+	increase	fun
+	-	pile	up	his homework	-	+	gather	
+	+	plug	up	the drain	-	+	stop	
+	+	plump	up	the turkey	-	+	increase	size
+	-	screw	in	the fuse	-	+	motion	circular
+	+	slow	down	the car	+	+	decrease	speed
+	-	snip	off	the branch	-	+	break	
+	+	sober	up	the man	+	-	change of state	
+	-	stick	out	his neck	-	+	motion	
+	+	stress	out	the students	+	-	psychological state	
+	+	switch	off	the current	-	+	decrease	
+	+	tip	over	the canoe	+	+	motion	upside down
+	-	try	out	the actor	+	-	examine	check out
-	+	tumble	over	the tree	+	+	motion	down
+	+	wake	up	the baby	+	+	change of state	
+	+	warm	up	the room	+	+	increase	temperature
+	+	wash	out	the spot	-	+	fix	
+	+	wear	out	the tape	-	+	destroy	

## NOMS COMPOSÉS ET TRADUCTION FRANÇAIS-ESPAGNOL

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### Introduction

Les recherches entreprises au sein du LADL et du LLI ont montré que le problème de la délimitation entre noms composés et groupes nominaux libres est crucial pour le traitement automatique de la langue. À cet effet, il est nécessaire de disposer de dictionnaires où figurent explicitement les noms composés, autrement dit, les groupes nominaux dont l'ensemble des propriétés sémantiques et syntaxiques ne peut être calculé à partir des propriétés de leurs constituants.<sup>1</sup> Ces dictionnaires devraient permettre d'envisager des applications informatiques diverses comme la vérification orthographique, la documentation automatique ou la génération de textes.

Dans le cadre de l'élaboration d'un dictionnaire électronique de noms composés pour l'espagnol, nous nous sommes penché sur le problème de la traduction français-espagnol de ces suites nominales. L'expérience dans l'enseignement de la traduction montre que, pour des langues voisines, l'apprenant a une trop forte tendance à rendre de façon littérale les composés nominaux, soit qu'il ne les identifie pas comme tels, soit qu'il fasse trop confiance à une transparence translinguistique qui a, cependant, des limites.

Or, il semble évident que, s'agissant toujours d'unités lexicales à part entière et non de séquences libres, la traduction des noms composés ne peut pas se faire à partir de celle de leurs constituants. Elle va donc poser des problèmes réels car le grand nombre de noms composés existant dans le lexique, ainsi que leur fréquence dans les textes (que ce soit en langue générale ou en langue de spécialité), font que le traducteur s'y trouve confronté en permanence. Par ailleurs, les dictionnaires bilingues disponibles sont loin de couvrir les nécessités du praticien de la traduction français-espagnol.