Appendix 3 The Lexical Subclasses of the LSP English Grammar

The Lexical Subclasses of the LSP English Grammar

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This appendix defines adjective, noun and verb subclasses. These subclasses, as well as others not presented here, are defined in such a way that they can be used as a guide for classifying new entries to the LSP lexicon and as a linguistic reference tool. Each definition includes a statement of the intent of the subclass, a diagnostic frame, sentence examples, and a word list drawn from the present dictionary. The subclasses are defined to reflect precisely the grammatical properties tested for by the restrictions of the grammar. Where necessary for clarifying the intent of the subclass, three additional criteria are employed: excision, implicit and co-reference, and paraphrase. The subclasses have been defined so as to be consistent with a subsequent stage of transformational analysis.

The notational conventions used in the subclass definitions and frames are as follows:

- $\text{\&}$ - an ungrammatical sequence
- $x$ - $x$ (the underlined term) is the class being subclassed in the frame or a particular lexical item used in the frame.
- $\underline{x}$ - $x$ (the double underlined term) is the class being subclassed in the frame where the frame also contains a particular lexical item
- $(X)$ - in a frame, an optional element
- $(X)$ - in a definition, a further subdivision of a subclass
Appendix 3  Adjective Subclasses

X/Y - either X or Y

\[
\begin{align*}
\text{X} \\
\text{Y} \\
\end{align*}
\]
- either X or Y or Z

T - article

D - adverb

OBJ - a cover term for all the object strings (see object string reference guide)

SN - an embedded sentence of the following types:

THATS - That John was here
FORTOVO - for Mary to go
TOVO - to live
SVINGO - them working overtime
CISHOULD - that John be here
SNWH - whether/why/how...he went

It should also be noted that the specified frame which delimits a word is not the only frame in which that word can occur; it serves merely as the test frame when classifying words.

Object String (OBJLIST) Reference Guide

ADJN = Adjective + N (noun phrase)
ASOBJBE = as + Object of be
ASSERTION = Subject + Tense + Verb + Object
ASTG = Adjective String
CISHOULD = Subjunctive form of ASSERTION
CPSP = Particle + SN
DP = Particle (e.g. carry on)
DP1.PN = DP1 + PN
DP2.PN = DP2 + PN
DP3 = N + DP
DP3.PN = DP3 + PN
DP4 = of-permutation of DP3
DP4.PN = DP4 + PN
DPSTG = Adverb string
FORTOVO = For + Subject + to + Object
NA = N + Adjective
NASOBJBE = N + as + Object of be
ND = N + Adverb
NN = (Indirect object) + N
NP = N + PN
NPXNN = N + P + wh-complement
NPSVINGO = N + P + SVINGO
NPVINGO = N + P + VINGO
NPVINGSTG = N + P + VINGSTG *
NSNWH = N + SNWH
NSVINGO = N + VINGO
NTHATS = N + that + ASSERTION

*VINGSTG = VINGOFN/NSVINGO

NOTOE = N + to + be + Object of be
NOTOVO = N + to + V(infinitive) + Object
NULLOBJ = Null object for intransitive verbs
NULLRECIP = Null object for reciprocal verbs
OBJBE = predicate N or adjective or PN or adverb
OBJECTBE = OBJBE + verbal objects of be
PN = prepositional phrase
PNSVINGO = P + SVINGO
PVINGO = P + VINGO
PVINGSTG = P + VINGSTG *
SASOBJBE = Subject + as + OBJBE
SNWH = wh-complement
SOBJBE = Subject + OBJBE
STOVO-N = Subject + TOVO less one object N
SVEN = Subject + passive verb phrase
SVINGO = Subject + Ving + Object
SVO = Subject + tenseless V + Object
THATS = that + ASSERTION
TOVO = to + tenseless V + Object
VINGO = past participle + Object
VINGOFN = (N's) Ving of Object
VINGSTGPN = VINGSTG + PN
1. Adjective Subclasses.

AASP:
an adjective is in AASP if it occurs only with the non-sentential (non-SN) right adjunct to \( V \ OBJ \) \( \& N \) = an embedded, or contained, sentence) (DSNG, 7):

\[
\text{John is able to walk.  
\text{He is able that Bill walks.  
\text{He is able for Bill to walk.  
\text{He is able whether Bill walks.  
\}
\]

Adjectives which occur with both non-sentential and sentential right adjuncts are not in AASP (see ASENT1, ASENT3), e.g.:

\[
\text{John is certain to go.  
\text{John is certain that he will go.  
\text{John is not certain whether to go.  
\text{John is eager to go.  
\text{John is eager for Mary to go.  
\}
\]

Frame:
\( N \ be \ Adi \ to \ V \ OBJ \)

Examples:
\( \text{John is free to leave.  
\text{She is fit to work.  
\text{The book is apt to fall.  
\text{You are apt to be asked for money.  
\text{It is apt to be assumed that John left.  
\text{She is due to arrive at five.  
\text{She was right to object.  
\}
\]

NOT AASP:
\( \text{John is certain to go. (ASENT1)} \)
\( \text{He is anxious to leave. (ASENT3)} \)

WOBD LIST: able, fit, free, quick, ready, set, slow.

AINPA:
an adjective is in subclass AINPA if it occurs in the adjective position in the sentence adjunct string \( PA (P = \text{in or at}) \); e.g.: \text{in general, at present, in particular} (WPOS11).

The particular \( P \) must be specified for each adjective.

Frame:
\( \text{in} \ Adi \ at \)

Examples:
\( \text{In general, we can maintain the following.  
\text{We do not, at present, know the answer.  
\text{We cannot say, in advance, what tomorrow will bring.  
\text{We didn't know what to think about her statement at first.  
\}
\]

Dictionary Entry:

\text{GENERAL.  
\text{ADJ: (.10), ...  
\text{.10 = AINPA: (I IN)} \}

WORD LIST: advance (\text{in}), best (\text{at}), first (\text{at}), full (\text{in}), general (\text{in}), last (\text{at}), least (\text{at}), particular (\text{in}), present (\text{at}), short (\text{in}).
Appendix 3  Adjective Subclasses

AINRN:
an adjective is in the small subclass AINRN if it can occur as a single-word right adjunct of a noun (WN50):

the people present
the conclusions possible

Non-AINRN adjectives in RN require an adjunct or conjunct (WN50):

an item worthy of your attention
an item worthy
a sum greater than they expected
a man courageous and true
a man courageous

WORD LIST: above, absent, alone, apparent, available, available, due, necessary, observable, obtainable, possible, present, relevant, responsible, visible.

APREQ:
an adjective (or Ving or Ven form of the verb) is in APREQ if it occurs before a quantifier which is a left adjunct of N (WN5), e.g.:

an additional five people
the following three items

The occurrence of superlative adjectives before Q N (the tallest three boys) is accounted for by a separate statement in WN5; therefore, superlative forms should not be listed as APREQ.

WORD LIST: above, additional, another, bottom, first, good, last, necessary, next, other, own, particular, previous, representative, same, top, usual, very, wrong.

ASCALe:
an adjective is in ASCALe if it can occur to the right of the measure sequence QN in which N is in subclass NUNIT (inches, feet, pounds, years, etc.) (WQ2), e.g., long in

The line is 10 inches long.
a ten inch long line.

ASCALe includes long, wide, deep, broad, tall, thick, high, old.

Since both ASCALe and non-ASCALe adjectives can occur in Q N ADJ in their comparative form (three shades darker), the Q N + Comparative Adj. is accounted for by a separate statement in WQ2. Therefore, comparative forms need not be listed as ASCALe.

Frame:

Frame:

Frame:
WORD LIST: broad, deep, high, long, old, premature, square, tall, wide.

ASENT1: an adjective is in the subclass ASENT1 (similar to noun subclass NSENT1) if it can occur as the object of the verb be when the subject of be is a string from the set SN (i.e., THATS, (FOR)TOWO, CISHOULD, SNWH) (WSNI):

That he sold books is probable.
Whether he will come is uncertain.

As the object of the verb be, an adjective in ASENT1 may have a string from SN as its right adjunct, provided the subject of be is it (DSNI):

It is probable that he sold books.
John is probable that he sold books.

Several adjectives which occur as ASENT1 also occur as ASENT3, e.g.:

John is certain that he sold books (ASENT3)
It is certain that he sold books (ASENT1)

Therefore, such adjectives should be listed as both ASENT1 and ASENT3.

ASENT1 is subdivided according to the type of SN string with which the particular ASENT1s occur; i.e.,

1) ASENT1: (AFORTO)
For us to leave now would be easy.
It would be easy for us to leave now.

2) ASENT1: (ASHOULD)
That he return is imperative.
It is imperative that he return.

3) ASENT1: (ATHAT)
That they lied is obvious.
It is obvious that they lied.

4) ASENT1: (AWH)
Whether he will come is uncertain.
It is uncertain whether he will come.

ASENT1: (AFORTO) is further subdivided into three classes according to the type of extraction from the embedded sentence which occurs with a particular adjective; viz.:

1) ASENT1: (AFORTO: OBJEXT)
occurs in $N_1$ be -- (for $N_1$) to $V-N_2$:
The problem will be easy for John to solve.
related to

For John to solve the problem will be easy.

2) ASENT1: (AFORTO: SUBJEXT) occurs in N be V OBJ:

John was kind to invite me.

related to

For John to invite me was kind.

3) ASENT1: (AFORTO: NOEXT) occurs with neither type of extraction:

For John to write a letter now would be curious.

A letter would be curious for John to write now.

John would be curious to write a letter now.

All three subclasses of ASENT1: (AFORTO) can occur with a PN adjunct:

For us to leave now would be bad for John.

For John to invite me was kind of him.

For us to leave now would seem curious to John.

WORD LIST: AFORTO: OBJEXT: bad, base, convenient, difficult, easy, simple; AFORTO: SUBJEXT: gross, just, kind, original, rash, wrong; AFORTO: NOEXT: curious, justifiable, permissible, possible, practical, usual; ASHOULD: crucial, desirable, essential, important, right; ATHAT: apparent, bad, certain, crucial, curious, good, important, just, likely, natural, peculiar, possible, significant, understandable, wrong; AWH: clear, insignificant, doubtful, uncertain, unclear.

ASENT3:

an adjective is an ASENT3 if, as the object of be, it can have a sentential right adjunct SN while the subject of be is not necessarily it (see ASENT1); i.e., ASENT3 can occur in the environment N be SN:

He is certain that they passed his doorway.

2 He is tall that they passed his doorway.

ASENT3 is subdivided according to the type of SN string within which the particular ASENT3s occur; i.e.,

1) ASENT3: (AFORTO)

I would be happy for you to come.

2) ASENT3: (ASHOULD)

I am insistent that you go alone.

3) ASENT3: (ATHAT)

I am certain that John will come.

4) ASENT3: (AWH)

We are uncertain why he left.

Frame:

N be Adj SN (N ≠ expletive it)

Examples:

I would be happy for you to come.

They were eager for the speaker to address the crowd.

I am insistent that you go alone.

I am certain that John will come.

I'm grateful that the stuff arrived on time.

We're happy that you can come.

He is doubtful whether the plans will come off.

I'm not sure whether they will come.

We are uncertain why he left.
Dictionary Entry:

HAPPY
ADJ: .10
.10 = ASSENT3: (AFORTO, ATHAT).

WORD LIST: AFORTO: anxious, eager, happy, impatient, ready; ASHQUID: emphatic, insistent; ATHAT: certain, doubtful, grateful, happy, hopeful, impressed, lucky, proud, sad, sorry; AWH: doubtful, uncertain.

ATIMETAG:
adjectives (and articles) classified as TIMETAG may occur in the sentence adjunct position as left adjuncts of NTIME1 (NTIME1 includes week, year, day, etc.) (WPOS10).

WORD LIST: last, next, this.

COMPARATIVE:
an adjective is in the subclass COMPARATIVE if it can occur in the environment N1: t be -- than N2:

John is happier than Bill.
John is tender than Bill.

Adjectives listed as COMPARATIVE also occur to the right of the measure sequence QN in which N is in subclass NUNIT (cf. ASCALE) (WQ2), (e.g.: three shades darker, one pound lighter).

COMPARATIVE adjectives are listed separately from their positive forms.

WORD LIST: abler, deeper, earlier, greater, higher, larger, narrower, number, rougher, simpler, smaller, straighter, stranger, stronger, sweeter, weaker.

SUPERLATIVE:
an adjective is in the subclass SUPERLATIVE if it occurs with the suffix -(e)st before a quantifier which is a left adjunct of N (WN5), e.g.:

the worst ten days
the tallest three boys

Cf. APREQ.

WORD LIST: ablest, deepest, greatest, highest, lightest, longest, lowest, narrowest, roughest, simplest, straightest, strangest, sweetest, tallest.
II. Noun Subclasses.

AGGREGATE:

a singular noun is in AGGREGATE if it can occur as the subject of both definitely singular verbs and definitely plural verbs, (WAGREE1): e.g.:

The group has changed its mind.
The group have changed their minds.

An AGGREGATE noun cannot occur as a predicate of be when the subject of the sentence is singular (WAGREE2):

\[ \text{He is a group.} \]

In the construction \( Q \) of \( N \), if \( N \) is singular, it is AGGREGATE (WN53):

five of the group

\( \text{He gathered.} \)

Also AGGREGATE nouns can occur as the subject of collective and reciprocal verbs (WAGREE3):

The group met.

Tests for NHUMAN allow for AGGREGATE nouns in the NHUMAN position:

The group who call themselves the rangers are waiting. (WWH3)
He brought the group a present. (WPOS22).

WORD LIST: aggregate, assembly, block, board, couple, ensemble, family, group, government, majority, minority, pair, public, remainder, segment.

INITIAL (atomic class):

used for abbreviation of proper names (Harry S. Truman), names of organizations (A. F. of L.), etc.

The 26 letters of the English alphabet must appear in the dictionary each followed by a period.

NAME:

A noun is in NAME if it can occur in the environment

\[ \{ \text{NTITLE} \} \]

\[ \{ \text{NCOUNTS} \} \]

or in the environment

\[ \{ \text{INITIAL} \} \]

\[ \{ \text{NAME} \} \]

Frames:

\[ N \text{ (V sing/pl)} \]

Examples:

The group has changed its mind.
The group have changed their minds.
The couple is of one mind.
The couple are of one mind.
The public disapproves of it.
The public disapprove of it.
A minority is in favor of the action.
A minority are in favor of the action.
for example:

Prof. Jones
President Nixon
John P. Jones
Mary Smith

The subclass NAME also shares restrictions with the other non-NCOUNTI nouns, i.e.:
1) it cannot occur as the host of a relative clause \( S-N \) (DN53):

\[
\text{If Charles you slapped was a mere child}
\]

2) it is a more likely subject of the relative clause \( S-N \) than are most other nouns (DN61):

The report John presented . . .

?The report writers presented . . .

3) it can occur in commaless apposition to a host noun (WCOM10):

My friend John

WORD LIST: Abe, Acheson, Friedman, John, Jones, Mary, Maury, Ringer, Solomon.

NCLASSIFIER:
A noun is in NCLASSIFIER if it occurs as the host of another noun, \( N_2 \), where \( N_2 \) occurs in commaless apposition to NCLASSIFIER, e.g.:

- the term revolution
- the element hydrogen

All NCLASSIFIERS are NONHUMAN; for \( N \) NHUMAN apposition (my friend John) see NAME and NCOUNT3).

An NCLASSIFIER is in either:
1) NCLASSIFIER1, which includes metalinguistic words that introduce terminology, e.g. term, symbol, or
2) NCLASSIFIER2, which includes classifier words specific to the subject matter area (supplied by the user), e.g.:

- element, drug, acid, enzyme, extract, hormone, ion, mineral, coefficient, factor, etc.

Note: An NCLASSIFIER noun should not be confused with the host of a relative clause \( S-N \) construction. If a noun can occur as \( N_2 \) in the string

\[
\text{The } N_1 N_2 \text{ be . . .}
\]

then \( N_1 \) is a NCLASSIFIER. For example:

The element hydrogen is the lightest substance.

Mr. Smith
Associate Director Robert Brown
Secretary of State Kissinger

Frame:

\[
\text{The } N_1 N_2 \text{ be . . . (} N_2 \neq \text{NHUMAN)}
\]

Examples:

NCLASSIFIER1:
The symbol \( \Sigma \) is interpreted as the subject of a sentence.

Linguists often confuse the terms string and sequence.

The expression Rarified grammar will be used to refer to the grammar in Appendix II.

NCLASSIFIER2:
The element hydrogen is the lightest substance.

The drug digitalis promotes undesirable side effects.

The feature + singular is necessary here.
Therefore element is an NCLASSIFIER.

However,

The reaction digitalis produces is dangerous.
β The reaction digitalis is dangerous.

Therefore, reaction is not an NCLASSIFIER.

WORD LIST: NCLASSIFIER1: expression, symbol, term.
NCLASSIFIER2: acid, amphibian, chemical, carrier, compound, drug, enzyme, extract, fibre, hormone, ion, isolate, mineral, molecule.

COLLECTIVE:
a noun is in NCOLLECTIVE if it occurs as the non-plural subject of a collective verb when that verb has a null object, e.g.:

Dust gathered in the corners.
β A book gathered in the corners.
or as the non-plural object of a collective verb, (WAGREE3), e.g.:
The shelf will gather dust.
β The shelf will gather a book.
Cf. AGGREGATE.

Frame:

NCOUNT1:
occurs in the environment Aθ(n) — tv OBJ, and not in the environment — tv OBJ.

Nouns not classified as NCOUNT1 (i.e. mass nouns and many abstract nouns) can begin a headless relative clause S-N (DN51):

The reaction digitalis produces...

Frame:

NCOUNT2:
an NCOUNT1 which, as the object of a specified preposition P, occurs without a preceding article (WN9). The particular P which occurs with a given NCOUNT2 is specified in the dictionary entry of that NCOUNT2.

Frame:
Note: It is not necessary to apply the NCOUNT2 test to a word not classified as NCOUNT1.

The solution is at hand.

In conclusion, ... 

His illness was of pancreatic origin.

He stayed at home.

What is at issue here?

Dictionary Entry:
(NSD) CONCLUSION.
.11 = NCOUNT1, NCOUNT2: (IN1), ...

WORD LIST: amount (in), answer (in), approach (in), assumption (in, by), bed (in), case (in), charge (in), conclusion (in), contract (against, by, from, in, into, on), course (in, of, on), degree (in, of), end (without), estimate (according to, beyond, by), example (by, for), foot (on), focus (in, into, out of), gross (in), hand (at, by, in, on, out of), kind (in), length (at, in), limit (beyond, within, without), line (in, on, off), mark (of), measure (beyond, to), number (according to, beyond, by, in, of, without), parallel (in, without), phase (in, out of), place (according to, in, into, of, out of), point (in), position (in), process (in), question (beyond, in, into, under, without), ratio (in), reach (beyond, in, into, out of, within), show (for, in, on), significance (of), turn (in), view (from, in, into, on), way (by).

Frame:
N t be N

Examples:

He is president.
We elected him president.
He remained president.

WORD LIST: collector, director, head, investigator, judge, president, secretary.

NHUMAN:
 Can occur as the first noun in the string NN -- i.e., as indirect object -- (WPOS22):

She bought the boy a book.

(cf. AGGREGATE) or as the host of a right adjunct WH string (relative clause) headed by who/whom (WWH2):

The man who ate the cheese left.

NHUMAN does not occur as the host N of a right adjunct PN string with P = into (WN51):

The children into the house are noisy.

or as the subject of the sentential predicate be + SN (DSN1):

The man is that we need money.
WORD LIST: agent, boy, chemist, doctor, German, host, independent, judge, man, neighbor, native, neighbor, observer, parent, person, president, relation, representative, sister, student, subject, woman, worker.

NLETTER: a noun subclass which contains all the letters of the English alphabet. It is used in the NQ string as a variant of Q (WN12):

Table 1
Table A
size 5
size B

NONHUMAN: a noun is in NONHUMAN if it cannot occur as the subject of a verb in VSENT3 (e.g.: believe, deny, discover, know, read) and other verbs which require a human subject (e.g.: hand, laugh, long, skin) (WSEL2). Cf. NOTNSUBJ.

WORD LIST: ability, act, assumption, balance, can, day, dose, enzyme, feature, frog, gland, hypothesis, interaction, junction, London, mean, need, organ, pathway, peak, position, property, range, saturation, tension, use, wonder.

N:PLURAL: a noun is in the subclass N:PLURAL if it occurs in the environment These — tV OBJ and not in This — tV OBJ (WAGREE4); e.g.:

These groups answered quickly.
This groups answered quickly.

Frame: T N Q N
Examples: a size ten dress
a pH 7 solution
a model six radio
a table 6 calculation

WORD LIST: area, base, figure, model, pattern, pH, phase, section, site, stage, table, type.
NSCALE:
Subclass NSCALE can almost be defined extensionally. It contains the words length, width, depth, height, breadth, thickness, age, weight, volume, area, and perhaps a few others. These words occur as \text{T}_2 in the sequence \text{Q N P N}, where \text{N}_2 = \text{UNIT} (inches, years, etc.) and \text{Q} = \text{quantifier}, including numbers (WQ3).

In the case of length sequence (two inches) a class of nouns, also classified as NSCALE, can occupy the place of length in \text{P NSCALE}: two inches in diameter, in circumference, along the diagonal, etc.

(The adverbs across and around can also occupy the \text{P NSCALE} position.)

WORD LIST: age, altitude, area, breadth, height, intensity, length, luminosity, strength, volume, wavelength, width, circumference, diameter, thickness.

Frame:
\text{Q N P N}

Examples:
The line is two inches in length.
He is five years of age.
The area measures twenty feet in width.
The rectangle is two inches along the diameter.

NSENTP:
occurs in the environment \text{it be P SN}, where \text{P} is \text{of or to} (DSN5). The choice of \text{of} or \text{to} must be indicated in the dictionary entry of each NSENTP.

\text{P + NSENTP} functions like sentential adjectives: \text{it is of interest that he came}, similar to \text{it is interesting that he came}; \text{it is to his advantage (for him) to be here}, similar to \text{it is advantageous for him to be here}.

Frame:
\begin{align*}
\text{it be P N SN}.
\end{align*}

Examples:
\text{It is of interest whether he came.}
\text{It is of significance that he was here.}
\text{It is to your advantage (for you) to be here.}

Dictionary Entry:
\text{INTEREST.}
\begin{align*}
\text{N: J1, . . .}
\text{NSENTP: (iOF), . . .}
\end{align*}

WORD LIST: account, advantage, concern, consequence, essence, importance, interest, moment, necessity, note, value, weight.

NSEXT1:
occur with a right adjunct SN (SN = an embedded, or contained, sentence) or a predicate be + SN, but not with both in the same string (DSN5):

The fact that he left surprised me.
\text{The fact that no one wants to come.}
\text{The fact that he left is that no one wants to come.}

Note: To avoid confusion between NSEXT1 + SN and the relative clause N + THATS-N (e.g., \text{The book that he wrote} use an intransitive verb in the contained, or embedded, clause of the test sentence, viz.:

The fact that the atom exists is clear.
\text{The book that the atom exists is clear.}

Frames:
\begin{align*}
\text{(T) N SN tV OBJ.}
\text{(T) N be SN. (OBJ \neq SN)}
\end{align*}

Examples:
The demand that salaries be raised was rebuffed.
The plan for him to go to college was foremost in their minds.
His attempts to leave were noticed.
The fact that they enrolled is known.
The question whether or not to vote was posed.
Appendix 3  Noun Subclasses

NSENT1 is subdivided according to the type of SN string with which the particular NSENT1s occur; i.e.,

1) NSENT1: (A FOR TO)
   The plan for him to go
   His attempts to leave
2) NSENT1: (A SHOULD)
   The demand that salaries be raised
3) NSENT1: (A THAT)
   The fact that they enrolled
4) NSENT1: (A WH)
   The question whether to vote

WORD LIST: demand, move, notice, order, suggestion, direction, analysis, assumption, charge, claim, conclusion, criticism, doubt, estimate, fact, finding, hypothesis, idea, interpretation, knowledge, observation, position, postulate, report, representation, response, theory, thought, view, alternative, question.

NSENT2:
A noun is in NSENT2 if it can occur in the environment T — SN ie SN (DSN5).
Note: NSENT2s are automatically allowed by the grammar in the environment specified for NSENT1s (i.e. T — SN T V OBJ: The evidence that he murdered her surprised me); therefore, NSENT2s need not also be classified as NSENT1s.

WORD LIST: evidence, indication, reason.

NSENT3:
occurs as the subject of be + SN (DSN1), but not with a right adjunct SN (DSN5).
Note: NSENT1s and NSENT2s are automatically allowed by the grammar in the environment specified for NSENT3s, thus

The fact is that he came.
The reason was that he loved her.
Therefore, NSENT1s and NSENT2s need not also be classified as NSENT3s.

WORD LIST: approach, basis, change, conflict, connection, consideration, deal, detail, development, difficulty, ending, error, point, problem, procedure, reason, result, reverse, rule, significance, situation, solution, thing, trouble, wonder.

NsINGULAR:
a noun is in the subclass NsINGULAR if it occurs in the environment This — tV OBJ and not in These — tV OBJ (WAGREE4), e.g.:

This book fell.
# These book fell.

Frame:
This N tV OBJ.

Examples:
This boy is happy.
# These boy is happy.
Note: words like fish, series, etc. are in neither NiPLURAL nor NiSINGULAR.

WORD LIST: ability, age, combination, data, digitalis, excitability, group, Gunther, lactone, liberation, measure, mucosa, observation, plasma, rise, sodium, try, uncertainty, use, valency, want, year.

NTIME1: a noun is in NTIME1 if it cannot occur alone as a sentence adjunct. It occurs as a sentence adjunct with appropriate left or right adjuncts. Its left adjuncts include last, next, each, every, etc. (i.e., adjectival TIMETAGs). Its right adjuncts include hence, and, later, etc. (i.e., adverbial TIMETAGs) (WPOS10).

If in the PN right adjunct of N, P = since, the host noun is an NTIME1 (WN51):

The week since his arrival has been hectic.

A noun in NTIME1 can also occur as the host of when + S (WCOM8):

I remember the day when he arrived.

WORD LIST: century, day, evening, Fall, generation, hour, minute, moment, month, morning, night, second, term, time, week, year.

NTIME2: a noun is in NTIME2 if it can occur alone as a sentence adjunct (WPOS10). NTIME2 is a closed class including yesterday, today, tomorrow, Sunday, Monday, etc. NTIME2s (but not NTIME1s) may also occur alone as possessive nouns in noun phrases:

Yesterday's meeting was cancelled.

A report later they show how it works.

WORD LIST: yesterday, tomorrow, Sunday, Tuesday.

NTITLE: a noun is in NTITLE if it is a title which can precede names of persons, e.g.: Dr., Mrs., Mr., Ms., Prof., Professor (WPOS24).

Nouns in NCOUNT3 (e.g. President) need not be classified as NTITLE.

Frame:

N NAME (INITIAL) (NAME)

Examples:

Dr. John Smith
Prof. Mary Jones
WORD LIST: Dr., Doctor, Mr., Ms.

**NUNIT:**

A noun is in NUNIT if it can occur as the N of the measure sequence \( Q N \) followed by a P N or A of dimension \( \text{in length, of age, long, old} \) (see AScale) \( (DQ3) \). In the predicate position, NUNIT agrees in number with \( Q \) \( (WQ1) \):

- He is five years old.
- He is one year old.
- He is five years of age.
- He is one year of age.

In the LN position, NUNIT is singular \( (WQ1) \) and \( Q N \) is not followed by a PN \( (DQ2) \):

- A five year old child
- A five years old child
- A five years in age child

Nouns which are not NUNIT by the above criteria, but which occur in \( Q N \) of an LN sequence \( (e.g., \text{a three act play}) \) will be accepted in the N of \( Q N \) if the rare switch is on.

**Examples:**

- a five year old child
- a five years old child
- a five years in age child

**Frames and Examples:**

\[
Q N P N
\]

- It is two \text{inches} in width.
- He is five \text{years} of age.
- The play is two \text{hours} in length.

\[
Q N A \quad (A = \text{AScale})
\]

- It is two \text{inches} long.
- He is five \text{years} old.
- The play is two \text{hours} long.

\[
\text{a two inch (long) line}
\]

- \text{a five year old child}
- \text{a two hour play}

**III. Selection Attributes of the Verb**

**NOTNOBJ:**

Applies to verbs restricted in terms of the noun objects with which they can occur in scientific writing. The noun subclasses with which the verb cannot occur are listed as NOTNOBJ attributes of the verb \( (WSEL1) \); e.g., since NSENT1 nouns do not occur as the object of \text{eat} \( \& He \text{eats the fact} \), \text{eat} is classified as NOTNOBJ: \( (NSENT1) \).

The noun subclasses considered in NOTNOBJ are NHUMAN, NONHUMAN, NSENT1, NSENT2, NSENT3, NTIME1, NTIME2.

NOTNOBJ classes also apply to the compound noun \( N \text{Ving} \) (hat wearing), the compound adjective \( N \text{Ving} \) (a hat wearing man) and the passive \( Vn \) as an RN (the verse quoted); if for any given verb \( N, L, N, N \), does not occur then \( N, \text{Ving} \) and \( N, Vn \) do not occur: \( (WSEL3, 4 \text{ and } 5 \text{ respectively}) \):

- That man wears a hat.
- Hat wearing
- A hat wearing man
- He quoted the verse.

**Examples:**

NOTNOBJ: \( \text{NHUMAN} \)

- The government abolished the boy.

NOTNOBJ: \( \text{NONHUMAN} \)

- John surprised the enzyme.

NOTNOBJ: \( \text{NSENT1} \)

- John ate the fact.

NOTNOBJ: \( \text{NSENT2} \)

- John fished the reason.

NOTNOBJ: \( \text{NSENT3} \)

- John dried the trouble.

NOTNOBJ: \( \text{NTIME1} \)

- John convinced the week.

NOTNOBJ: \( \text{NTIME2} \)

- John convinced yesterday.

**Dictionary Entry:**

\[
\text{EAT.}
\]

\[
\text{TV: (NOTNOBJ: .2 \ldots )}
\]

\[
.2 = \text{NSENT1, NSENT2, NSENT3, NTIME1, NTIME2.}
\]
The verse quoted

vs. He eats the fact.
Fact eating
A fact eating man
The fact eaten

WORD LIST: NOTNOBJ: (NHUMAN): abolish, assume, compress, edit, fish, fraction, interpret, learn, paper, peak, smooth, summarize; NOTNOBJ: (NONHUMAN): convince, surprise; NOTNOBJ: (NSENT1): act, content, decrease, inactivate, lower, prevent, tend, work; NOTNOBJ: (NSENT2): act, content, decrease, inactivate, further, lower, maintain, tend, work; NOTNOBJ: (NSENT3): act, content, extract, inactivate, learn, lower, tend, work; NOTNOBJ: (NTIME1): achieve, diminish, oppose, restore; NOTNOBJ: (NTIME2): achieve, analyze, diminish, oppose.

APPLICATIONS TO VERBS

applies to verbs restricted in terms of the noun subjects with which they can occur. Similar to NOTNOBJ in form, the value of the NOTNSUBJ attribute is a list of noun subclasses which cannot, in scientific writing, at least) occur as the subject of the verb in question (WSEL2).

Also, for occurrences of adjectival Vine N (the dining gentleman), if for any given verb N tV OBJ does not occur then Vine N does not occur (DSEL1):
The gentleman dined.
The dining gentleman
The gentleman occurred
The occurring gentleman

Examples:

NOTNSUBJ: (NHUMAN)
The gentleman occurred.

NOTNSUBJ: (NONHUMAN)
The clock believed it.

NOTNSUBJ: (NSENT1)
The fact cares.

NOTNSUBJ: (NSENT2)
The reason knows.

NOTNSUBJ: (NSENT3)
The trouble studied.

NOTNSUBJ: (NTIME1)
The week designed the plan.

NOTNSUBJ: (NTIME2)
Yesterday designed the plan.

Dictionary Entry:

BELIEVE
TV: (NOTNSUBJ: .1 )
.1 = NONHUMAN, NSENT1, NSENT2, NSENT3, NTIME1, NTIME2.

WORD LIST: NOTNSUBJ: (NHUMAN): bound, occur, peak, result; NOTNSUBJ: (NONHUMAN): assess, believe, care, hand, long, skin, stage, wonder; NOTNSUBJ: (NSENT1): believe, care, consider, design, discover, dose, drug, eat, last, learn, occur, publish, sight, sleep, think, understand, wonder; NOTNSUBJ: (NSENT2): accelerate, consider, doubt, interpret, occur, sense, sight, summarize, think, understand, wonder; NOTNSUBJ: (NSENT3): associate, care, consider, initiate, learn, publish, question, rate, think, understand, wonder; NOTNSUBJ: (NTIME1): compound, diminish, initiate, occur, refer; NOTNSUBJ: (NTIME2): compound, diminish, initiate, occur, refer.

IV. Object Attributes of the Verb.

OBJLIST: ADJN:
The object string ADJN is a permutation of NA (e.g., Paint the house red; see OBJLIST: (NA)). Therefore the OBJLIST of a verb which includes one must also include
Appendix 3  Object Attributes of the Verb

ADJN is marginal if N is not followed by a right adjunct of N:

I painted red the house.
I painted red the house which you saw last Tuesday.

Examples:
He painted red the house on the corner.
He bound tight the ropes which were slipping off the deck.
She made secure the rattling windows.
He marked "fragile" the package we sent.
You've already pumped dry the source you were planning to count on.
We split open the package marked "fragile".

WORD LIST: bind, color, draw, grind, keep, make, mark, plate, pound, pump, split, stretch, tie

OBJLIST: (ASOBJBE):
The object string ASOBJBE must be distinguished from the adjunct sequence as + NSTGO. The two may be distinguished by the fact that the as of the ASOBJBE string is paraphrasable as 'in the capacity or character of', e.g.,

They served as messengers.

whereas the as of the adjunct sequence is paraphrasable as 'when' or 'while' e.g.,

They served as young men.

The two may also be distinguished by the fact that in sentences containing the ASOBJBE string, the primary stress of the sentence falls on the head noun of the noun phrase functioning as the OBJBE, e.g.,

Enzymes function as catalysts.

whereas, in sentences containing the adjunct sequence, the primary sentence stress falls on the verb, e.g.,

John changed as a lieutenant.

Note 1: a large number of verbs occur with both the object string and the adjunct, e.g., serve (above).

Note 2: An occurrence of ASOBJBE can frequently be related to an occurrence of NASOBJBE:

They served (the king) as messengers.

Cf. NASOBJBE.
WORD LIST: appear, apply, arise, begin, continue, enter, exist, fail, function, go, occur, originate, participate, remain, train.

OBJLIST: (ASSERTION):
The verbs classified as OBJLIST: (ASSERTION) are a subset of the verbs classified as OBJLIST: (THATS), i.e.:

She knows John is an "A" student.
She knows that John is an "A" student.
She reported that John is an "A" student.

It should be noted that the computational treatment of forms like It seems that he was here is to define a small subclass, VSENT4 (= appear, happen, remain, seem, turnout), which can take OBJLIST: (ASSERTION), (THATS) where applicable, provided the subject of the VSENT4 is the expletive It.

WORD LIST: appear, assume, believe, discover, feel, figure, find, imply, know, learn, maintain, mean, note, say, seem, sense, show, state, suggest, suppose, think, understand.

OBJLIST: (ASTG):
Verbs which occur with the object string ASTG each occur with a limited set of adjectives in the adjective position:

This rings true.
This rings red.

This limitation on the set of adjectives which occur with verbs specified as OBJLIST: (ASTG) distinguishes these verbs from those specified as OBJLIST: (OBJBE) for which no such limitation exists:

She remains true.
She remains red.
She remains sick.
She remains intelligent.

NOT OBJLIST: (ASSERTION):
She remains true.
John looks happy.
WORD LIST: assay, break, come, glow, go, hold, lay, rest, ring, stand, test, turn, work.

**OBJLIST: (C1SHOULD):**

The verb of the SN is not tensed. Verbs which satisfy the frame occur with should V as well as with V.

**Examples:**

I demand that he come.
The plan provides that he be on time.
It necessitates that he be on time.

**OBJLIST: (DPSN):**

It is necessary to define this as an object string (in place of treating it as an adverbial adjunct plus SN) since some sequences have no analysis in terms of an SN string plus optional adjunct, e.g.:

He pointed out that this was the best approach.

\(\beta\) He pointed that this was the best approach.

The particular DP must be specified for each verb.

**Examples:**

He pointed out that this was the best approach.
He pointed that this was the best approach.

**Dictionary Entry:**

FIND

TV: (OBJLIST: .3, \ldots).

\(\beta\) = DPSN: .17, \ldots.

\(\beta\) = DPVAL: (1 OUt?1).

**OBJLIST: (DP1):**

Applies to strings in which the adverb-preposition (or particle), DP, cannot be analyzed as an adverbial adjunct, e.g.:

They lined up.

\(\beta\) They lined.

Or, if the verb also occurs without a DP or other object, then it occurs in a different sense than with the DP, as is often indicated by a difference in subject selection:

John carried on.

\(\beta\) John carried.

The point carried.

Some of the constructions classified as OBJLIST: (DP1) are the result of 'mid-

**Examples:**

They carried on.
He showed off.
We give up.
The plane took off.

**NOT OBJLIST: (DP1):**

She drove in.
He went out.
They walked down.
The Lexical Subclasses of the LSP English Grammar

ENTRY: ACT.
TV: (OBJLIST: .3 . . . )
.3 = DPI: .16, . . .
.16 = DPVAL: (IUP1).

These entries are related to a class of V N DP constructions:

They blew the house up.
The house blew up.

The particular DP must be specified for each verb.

WORD LIST: act (up), add (up), back (down, off, out), come (about, around, to, up), carry (on),
clear (out, up), cool (down, off), couple (up), cover (up), draw (back, up), dry (out, up), fall (away, in, off, out), follow (through), give (in, out, up), level (off, out), look (up),
lose (out), measure (up), phase (out), run (down, on, out, over, up), show (off, up), sleep (in,
over), slow (down, up), split (away, off, up), start (in, out, up), stop (by, in, off, over, up), take
(off), test (out), try (out), turn (out, up), warm (out), work (out).

OBJLIST: (DP1PN):

It is necessary to define this as an object string (in place of treating it as an
adverbial adjunct plus PN) since some sequences have no analysis in terms of a
PN string plus optional adjunct, e.g.:

She moved in on him.
She moved on him.

In place of N, a Ving string is sometimes possible and is allowed by the grammar:

It boils down to their having taken
a bribe.

The particular DP and P must be
specified for each verb.

In the WORD LIST, the arrow (+) follows the set of DPs specified for each
verb and precedes the set of Ps specified
for that verb.

WORD LIST: add (up -> to), build (up-> to), come (up, around, back-> to, with), double (up with),
face (up -> to), feel (up -> to), fit (in with), go (along, down, in, off, out for, in, of, with),
keep (away, up -> from, to), lead (up -> to), link (up -> to, with), live (up -> to), look (down, in,
out, up -> for, on, to), measure (up -> to), own (up -> to), pair (up, off -> with), play (up -> to),
put (up -> with), reach (out -> for), speak (out, up -> for), stand (up -> to, for), try (out -> for).

OBJLIST: (DP2PN), (DP3PN), (DP4PN):

applies to strings in which the adverb-
preposition, (or particle), DP, cannot be
analyzed as an adverbial adjunct; i.e., mix
up the last name with the first + mix the
last name with the first + up.

As the object of Ving in certain
strings where Ving usually is followed
by of N there is an object form of the

Frame:

N TV DP N P N (DP2PN)
N TV N DP N P N (DP3PN)

Examples:

I mixed up the last name with the first.
I mixed the last name with the first.
Appendix 3  Object Attributes of the Verb

DPN PN string where the of occurs between DP and NPN (the splitting up of the project into three parts). This form is DP4PN.

Any verb which takes DP2PN takes all the variants: OBJLIST: (DP2PN, DP3PN, DP4PN). The particular DP and P must be specified for each verb.

In the WORD LIST, the arrow (→) follows the set of DPs specified for each verb and precedes the set of Ps specified for that verb.

WORD LIST: add (in→ with), bind (up→ with), call (away→ to), chain (down, up→ to), divide (up→ with), end (up→ in, with), follow (up→ with), link (up→ to, with), pair (up, off→ with, into), play (off→ against), separate (out, off→ from), sign (over→ to), single (out→ for), take (up→ with), trace (back→ to), yield (up→ to).

OBJLIST: (DP2, DP3, DP4):

DP2 may be distinguished from a prepositional phrase PN by the fact that the DP and N permute:

He looked the number up.
He looked up the number.

whereas the P and N of the prepositional phrase do not permute:

He looked up the shaft.
He looked the shaft up.

For some verbs which take DP N objects, the N position may be filled by a Ving string (They kept up their writing to the President). In the machine grammar, a Ving string is allowed freely in place of N in DP N, and is considered rare as a replacement of N in N DP.

As the object of Ving in certain strings where Ving usually is followed by of N, there is an object form of the DP string where the of occurs between DP and N (the sending in of the entry). This form is DP4.

Any verb which takes DP2 takes all the variants: OBJLIST: (DP2, DP3, DP4).

The particular DP(s) must be specified for each verb.

WORD LIST: act (out), add (in→ with), ask (in, out, over, up), back (up), beat (up), bind (down, off, over, up), block (in, off, out, up), bring (about, off, out, up), carry (out, through), clear (away, off, out, up), cool (down, off, cover (up), deal (out), divide (up), draw (back, down, in, off, out, up), dry (off, out), drive (in, off, out), eat (away, up), factor (out), figure (out), find (out), fish (out, up), fit (in), follow (up), give (away, back, in, out, over, up),

The mixing up of the last name with the first.
He split up the project into three parts.
They bound up the old wheat with the new.
He is linking up the defendants with this new crime.

Dictionary Entry:

BIND.

TV: (OBJLIST: .3, . . .)

.3 = DP2PN: .19, DP3PN: .19, DP4PN: .19, . . .

.19 = DPVAL: (↓ UP|), PVAL: (↓ WITH↓).

Frame:

N ↓ TV DP N ↓ (DP2)
(N ↓ ≠ PRO)

N ↓ TV N DP (DP3)

Examples:

He looked up the number.
He looked the number up.
He sent back the gift.
He sent the gift back.
He sent in his entry.
He sent his entry in.
He took off his coat.
He took his coat off.
He put on his coat.
He put his coat on.
He looked over his notes.
He looked his notes over.

Dictionary Entry:

LOOK.

TV: (OBJLIST: .3, . . .)

.3 = DP2: .17, DP3: .17, DP4: .17, . . .

.17 = DPVAL: (↓ OVER↓), (↓ UP↓).

Frame:

N ↓ TV DP N ↓ (DP2)
(N ↓ ≠ PRO)

N ↓ TV N DP (DP3)

Examples:

He looked up the number.
He looked the number up.
He sent back the gift.
He sent the gift back.
He sent in his entry.
He sent his entry in.
He took off his coat.
He took his coat off.
He put on his coat.
He put his coat on.
He looked over his notes.
He looked his notes over.
hand (around, back, down, in, on, out, over), lead (in), leave (in, out), level (down, off, out), line (up), live (down), look (over, up), make (out, over, up), mark (down, off, up), move (in, out), paper (over), point (off, out, up), pump (in, off, out, up), read (over), reason (out), regain (back), rule (out), save (up), show (in, off, out, up), sleep (off), slice (off, slow (down, up), smooth (away, back, down, off, out), space (out), split (away, off, up), store (up), strip (off), switch (off, on), take (off, out, up), think (out, over), try (on, out), turn (down, off, on, over), use (up), warm (up), wash (away, down, off), weigh (down), work (off, out, over), write (down, in, off, out, up).

OBJLIST: (DSTG): applies to small subclasses of verbs which occur with particular adverb subclasses. E.g., act, do, mean, behave, require an 'evaluative' adverb (He behaves badly but he means well). He behaves but he means); other verbs require an adverb of motion (He glanced up, He glanced about, He glanced); still others require a locative adverb (He resides here).

The verbs which require a locative adverb also occur with other locative strings - He resides on Prince St.
He resides where he pleases.
- although a set of locative object strings is not in the present grammar.

WORD LIST: compare, do, handle, head, lie, place, range, rate, tunnel.

OBJLIST: (FORTOVO): The computational treatment of forms like It remains for us to make the final decision is to define a small subclass, VSSENT4 (appear, happen, remain, seem, turn out) which can take OBJLIST: (FORTOVO) where applicable, provided the subject of the VSSENT4 is the expletive it.

Note: To distinguish between FORTOVO and the object for N + to V (OBJ) where to V (OBJ) is an adjunct (He is looking for an assistant to aid him in his work), use there as the subject of the FORTOVO:

He plans for there to be five people on the committee.
I asked for there to be a proctor at the exam.

WORD LIST: appeal, arrange, ask, cry, demand, fight, hope, intend, like, long, mean, motion, pay, plan, prefer, press, provide, remain, wait, wish.
Verbs which occur with the object string NA each occur with a limited set of adjectives in the adjective position in NA:

He painted the house red.
≠ He painted the house strange.

This selectional dependency between the verb and the adjective distinguishes the verbs which occur with NA, such as paint, from sentence-container verbs, such as think, consider, judge, etc. (classified as OBJLIST: SOBJBE), which exhibit no selectional dependencies between the verb and the adjective:

I consider the house red.
I consider the house strange.

Verbs which occur with the object string NA also differ from verbs which occur with the sequence NSTGO + adjectival adjunct (e.g., She ate the apple green). These two sequences differ in that the noun and adjective of NA permute while the noun and adjective of NSTGO + adjunct do not:

He painted red the house on the corner.
≠ He ate green the apple on the table.

Some verbs which occur with NA require an NA object, i.e., they do not also occur with a N object:

The blow knocked him senseless.
≠ The blow knocked him.

Some border on the idiomatic:

Strike him dumb.
Pump it dry.

WORD LIST: bind, color, draw, grind, keep, make, mark, plate, pound, pump, split, stretch, tie.

OBJLIST: (NASOBJBE):
A verb is classified as occurring with OBJLIST: (NASOBJBE) if it occurs in the frame

\[ N_1 \rightarrow V \rightarrow N_2 \rightarrow \alpha \rightarrow N_3 \]

where \( N_i \) is a predicate of \( - \) or refers to \( - N_i \). For example, in They served the king as messengers, messengers is predicated of they.

This distinguishes sentences occurring with the object string NASOBJBE from

Frame:

\[ N_1 \rightarrow V \rightarrow N_2 \rightarrow \alpha \rightarrow N_3 \]

\[ N_3 \text{ is a predicate of } N_i \]

Examples:

They served the king as messengers.
He entered the army as a private.
She interpreted it as a linguist.
He ran the race as a sprinter.
those occurring with the object string
SASOBJBE, in which N₁ is a predicate of
N₂ (They treated him as a lackey).

The object string NASOBJBE must
also be distinguished from the sequence
N + as + N, where as + N is a sentence
adjunct. These two may be distinguished
by the fact that the as of NASOBJBE is
paraphrasable as 'in the capacity or char-
acter of', e.g.,

They served the king as messengers.
= in the capacity of messengers

whereas the as of the sequence N + as +
N is paraphrasable as 'when' or 'while',
e.g.,

They served the king as young men.
= when they were young men.

Cf. OBJLIST: (ASOBJBE).

Note: a number of verbs occur with
both the object string and the adjunct se-
quence, e.g., serve (above).

WORD LIST: begin, continue, enter, interpret, run, serve.

OBJLIST: (ND):
 applies to strings in which the adverb
(D) cannot be analyzed as an adjunct, e.g.:

He put it there.
# He put it.

Or, if the verb also occurs with a
noun object alone, it occurs in a different
sense than with the N + D:

They treated them.
They treated them well.

There is a selectional dependency
between the verb and the adverb such that
verbs specified as OBJLIST: (ND) can oc-
cur only with either locative adverbs and
adverbs of motion (here, there, nearby, up,
down) or with 'evaluative' adverbs (well,
badly, poorly) (WPOS1M):

He put it there.
# He put it about.
He bore the news well.
# He bore the news there.

The particular adverb subclass
(whether DLOC1 or DLOC3 or DEVAL) with
which each verb occurs is not at present
checked by the grammar.

NOTOBJLIST: (NASOBJBE):
They treated him as a lackey. (SASOBJBE)
We will consider John as our preferred candidate.

He established it as a fact. ( = )
They served the king as young men. (adjunct)
He discovered the enzyme as a student. ( )

Frame:
N 1V N D

Examples:
They treat them well/badly.
He put it there.
He bore the news well.

She wears her age well.
Appendix 3  Object Attributes of the Verb

WORD LIST: bear, put, treat, wear.

OBJLIST: (NN):
In sentences occurring with OBJLIST: (NN) either the verb is give in its modal use (He gave the door a kick) or N2 (the indirect object) is NHUMAN or AGGREGATE:

I gave him a book.
He bought his family presents.

A majority of the verbs classified as OBJLIST: (NN) enter into the transformation

\[ N \text{ tV N}_1 \text{ P N}_2 \leftrightarrow N \text{ tV N}_3 \text{ N}_2 \]

where \( N_2 = \) NHUMAN or AGGREGATE.

Others occur with idiomatic extensions of the transformation:

I showed him a good time.
or with quantity expressions of the NQN type:

It cost him five dollars.

WORD LIST: allow, ask, bring, cause, charge, choose, deal, deny, design, do, draw, find, gain, give, hand, leave, make, net, order, prepare, read, save, show, take, tell, will, write.

OBJLIST: (NPN):

There are at least several types of verbs which occur with the object string NPN:

1) Those which require the complete NPN object:

They attributed the painting to Massaccio.
\( \# \) They attributed the painting.
\( \# \) I referred him to the librarian.
\( \# \) I referred him.

2) Those for which the PN is droppable—They liberated the city from the enemy. They liberated the city.

— but which exhibit a strong selectional dependency between the verb and the preposition:

\( \# \) They liberated the city to the enemy.
I filled it with water.
\( \# \) I filled it around the edge.
I bought a gift for Mary.
\( \# \) I bought a gift to Mary.

FRAME:

N tV N P N

Examples:

They attributed the painting to Massaccio.
I fed his lunch to him.
I entered him into school.
I continued him in school.
I directed my attention to the blackboard.
I brought a gift to John.

One can transform X into Y.

I emptied the water into the sink.
He concerned himself with the issue.
I incorporated your suggestion into the paper.
I applied my solution to our problem.
I connected the plug to the outlet.
This dependency helps to distinguish the object string NPN from the sequence noun object plus P N adjunct (e.g., They liberated the city on Sunday). Many verbs can occur with either the NPN object string and the noun object plus P N adjunct, where the preposition is the same in both cases:

They liberated the city from the enemy. (NPN)
They liberated the city from motives of political advantage. (N + PN adjunct)

The particular P must be specified for each verb.

WORD LIST: accelerate (to), attract (to), add (to), apply (to), ask (into, to), associate (with), attribute (to), balance (against, on), beat (into, to), bring (into, to), catalyse (into), charge (to), clear (of), combine (with), correlate (with), demonstrate (to), deprive (of), direct (against, at, to, toward), enter (in), expel (from), give (to), identify (with), limit (to), make (of), obtain (from), pattern after, present (to, with), slice (from, off), subject (to), take (from, to), turn (against, from, into, on, to), view (with).

OBJLIST: (NPSNWH):

The particular Prep must be specified for each verb.

The P is restricted in terms of the container verb, not in terms of the contained SNWH. This is evidenced by the fact that the P of NPSNWH does not permute to the end of the SNWH string, e.g.:

John asked me about what he should do.
# John asked me what he should do about.

Cf. OBJLIST: SNWH.

Note: Avoid use of what S as the SNWH in the test frame since what S may be the replacement of a given N2 in N1PN2, e.g.:

I covered it with what you gave me.

Frame:

SUBJ tV N P SNWH

Examples:

I asked him about whether my passport would be stamped.
He interested her in what he was planning to do.
I will base my opinion on whether she shows up.
I saw the organizer about whose car we should take to the picnic.
They made a big deal of whether you came on time.

Dictionary Entry:

INTEREST
TV: (OBJLIST: .3 . . . ).
.3 = NPSNWH: .17 . . .
.17 = PVAL: (IN1).

WORD LIST: ask (about), base (on, upon), brief (on, about), contact (about), interest (in), make (of), question (about), see (about), trace (to).

OBJLIST: (NPSVINGO):

As distinct from the object string NPVINGSTG, the N3 of NPSVINGO is not possessive:

I asked him about John's having been there (NPVINGSTG)

Frame:

N1 tV N2 P N3 Ving (OBJ)

Examples:

I asked him about no one having been there.
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I asked him about no one having been there. (NPSVINGO)

If N₃ is a pronoun, it is accusative (WPOS5).

Note: to avoid confusion of the object string NPSVINGO with the sequence N P N plus a right adjunct Ving (He kissed Mary near the door opening on to the balcony), use the expletive there as N₃:

I asked him about there having been no witnesses.

The particular preposition(s) must be specified for each verb (WPOS15).

**Dictionary Entry:**

I asked him about there having been no witnesses.

TV: (OBJLIST: .3).

The particular preposition(s) must be specified for each verb (WPOS15).

**WORD LIST:** ask (about), attribute (to), base (on, upon), brief (about, on), caution (about), center (on, about, around, upon), charge (to), compare (to, with), contact (about), contrast (to, with), correlate (with), deduce (from), identify (with), limit (to), make (of), question (about), relate (to), tell (about), trace (to).

**OBJLIST: (NPVINGO):**

The noun object (N₃) of TV is understood to be the subject of Ving.

The particular preposition(s) must be specified for each verb (WPOS15).

**Frame:**

N₁ TV N₂ P Ving (OBJ).

**Examples:**

I prevented him from ruining his health.

I cautioned him against ruining his health.

I talked him into going to Chicago.

I cured him of stuttering.

I converted him to smoking cigars.

**Dictionary Entry:**

CONVERT.

TV: (OBJLIST: .3).

Examples:

I asked him about their offering him more money.

I told him about Mary's leaving.

She asked him about writing programs.

I attributed my success to changing my plans.

Don't subject me to John's singing.
However, a verb classified as occurring with the object string NPVINGSTG must be capable of occurring with a sequence NP P Vingstg in which the Ving has an overt subject and in which this overt subject is not coreferential with either the subject \(N_j\) or the noun object \(N_j\) of the TV.

Note that VINGSTG here refers to either the object string NSVINGO or the object string VINGOFN.

The particular preposition(s) must be specified for each verb (WPOS15).

WORD LIST: ask (about), attach (to), attribute (to), base (on, upon), compare (to, with), connect (with), deduce (from), identify (with), link (with), make (of), pattern (after), prepare (for), question (about), relate (to), separate (from), set (on), subject (to), tell (about), trace (to).

Frame:
\[N \_TV \_N \_SNWH.\]

Examples:
- He told me whether they were coming.
- They wrote him who was coming.
- I asked him why he did it.
- I taught him how to do it.

WORD LIST: ask, teach, tell, write.

Frame:
\[N \_TV \_N.\]

Examples:
- He analyzed the compound.
- John met Mary.
- He amassed a fortune.
- He equated A and B.
- This key opens the door.
- They perjured themselves.
- It costs five dollars.
- He fastened the chain.
occur only with special noun objects (usually nominal transforms of the verb of the sentence: He slept a good sleep) are classified as OBJLIST: (NULLOBJ) only.

WORD LIST: ask, believe, combine, divide, eat, face, fish, group, like, mean, number, order, part, place, prefer, provide, question, run, relax, require, say, skin, substitute, suppose, take, tell, try, underestimate, vary, want, work, write.

OBJLIST: (NSVINGO):

The Ving in the object string NSVINGO may occur with either an overt or a zeroed subject:

She favors doing it.
She favors their doing it.

The subject of Ving need not be the same as the subject of the container sentence; e.g., in

John described his studying.

his = John or, alternatively, his = some other person. Cf. VINGO.

Since NSVINGO is more sentence-like in its form than the VINGOFN string it is helpful to include in the test frame for NSVINGO features which are characteristic of sentences, e.g.,

1) an object after Ving: We discussed writing novels.
2) an adverb after the object: She prefers doing it quickly.
3) a negative element before the Ving: She favors not doing it.

Note: to avoid possible confusion, do not use in the test frame for OBJLIST: (NSVINGO) a Ving which can function as a noun modifier (see WERYVING). I.e., you don't want He needs designing women classified as a case of NSVINGO.

WORD LIST: abolish, accelerate, allow, choose, complicate, describe, determine, discuss, evidence, facilitate, include, infer, limit, mean, mention, notice, oppose, prefer, prevent, propose, question, restrict, suggest.

OBJLIST: (NTTHATS):

The noun object of TV is NHUMAN (WSN8).

Note: a verb which takes a sentence string as its subject (That no one wants to come troubles her) may appear to take the sentence string in its object when the subject is the expletive it (it troubles her that no one wants to come); but these are not considered to be object strings or parts of object strings. The one exception is the closed class VSENT4.

Frame:

<table>
<thead>
<tr>
<th>NTV (N's) Ving (OBJ)</th>
</tr>
</thead>
</table>

Examples:

He described (his) studying at night.
He decided to accelerate their advertising.
The group discussed writing novels.
In their program of exercise, they include climbing a mountain.
The nurse has limited (her) seeing visitors so frequently.
He mentioned (his) seeing Mary.
They opposed (their) adjourning early.
She prefers doing it her way.
They proposed sending another letter.
He questioned having to arrive at 8 P.M.
The doctor has restricted his seeing visitors.
He suggested swimming more slowly.
I understand his wanting to leave so early.

Frame:

<table>
<thead>
<tr>
<th>NTV (N's) Ving (OBJ)</th>
</tr>
</thead>
</table>

Examples:

I told you that he came.
I taught him that honesty is the best policy.
WORD LIST: advise, caution, content, convince, interest, promise, satisfy, show, teach, tell, write.

**OBJLIST: (NTOBE):**

verbs classified as OBJLIST: (NTOBE) can occur with the following object strings:

- N to be OBJBE
- N to have N
- N to have Ven

*Examples:*

They discovered him to be in error.
We consider Dr. Smith to have the best solution.
John was found to have left early.

Verbs classified as occurring with the object string NTOBE cannot occur with an NTOVO object string:

- They discovered him to cross the street.
- However, when IV occurs in the passive, any verb is allowed in the infinitive:
- John was found to frequent houses of ill repute.

*Examples:*

They found him to frequent houses of ill repute.

The to of OBJLIST: (NTOBE) does not equal in order to; i.e., sequences such as They introduced this plan to be controversial should not be considered as cases of OBJLIST: (NTOBE).

If N₂ is a pronoun, it is accusative (WPOS5).

WORD LIST: assume, believe, claim, confirm, consider, demonstrate, determine, discover, establish, feel, find, know, observe, note, notice, report, show, suppose, think.

**OBJLIST: (NTOVO):**

The V of the object string NTOVO includes be and have, but also other V:

They expected him to go home.
They expected him to be on time.
They expected him to have the best solution.

*Example:*

They conditioned them to beg for food.

I like him to come home early.
I told him to do it over.

The to of OBJLIST: (NTOVO) does not equal in order to; i.e., sequences such as He drinks milk to keep thin (= He drinks milk in order to keep thin) should not be considered as cases of OBJLIST: (NTOVO).
Appendix 3  Object Attributes of the Verb

Note: do not classify verbs which occur with the expletive it as subject (it contents him to know that she is here) as NTVO (see OBJLIST: (NTHATS)).

If N2 is a pronoun, it is accusative (WPOSS).

Word List: advise, allow, ask, cause, caution, challenge, choose, condition, convince, designate, detail, employ, engage, expect, forbid, force, induce, influence, intend, like, mean, motion, motivate, order, pay, permit, prefer, prepare, press, pressure, require, stimulate, suffer, teach, tell, trouble, trust, want, write.

OBJLIST: (NULLOBJ): verbs classified as occurring with the object string NULLOBJ include
1) verbs which do not also occur with N or PN or other object strings (disappear, vegetate, ache).
2) verbs which can occur with special N objects (He slept) (see OBJLIST: (NSTGO) note).
3) normally transitive verbs which may occur without their N objects (He reads: He reads books).
4) a VCOLLECTIVE if it occurs with a non-singular or collective subject (Dust gathers).
5) verbs with droppable PN or adverb objects:
   He worked on the problem.
   He worked.
   He walked by.
   He walked.

Word List: accelerate, act, age, appear, care, change, come, compete, compound, continue, decrease, demonstrate, diminish, draw, eat, enter, exist, fail, fish, follow, go, happen, homogenize, know, last, lengthen, live, look, matter, move, occur, point, provide, publish, ran, read, relax, remain, rest, result, return, ring, see, sleep, start, study, sweat, take, think, try, wonder, work, write.

OBJLIST: (NULLRECIP): a verb is classified as occurring with the object string NULLRECIP if, when it occurs with no overt object and with a noun subject which is not singular (i.e., is AGGREGATE, PLURAL, or conjoined) it would be natural to reconstruct the object each other or P each other (on at least one reading); e.g.:

The couple fought (with each other), (with me).
The parties conferred (with each other).

Frame:
N1 and N2 TV (P) each other.

Examples:
John and Mary met each other at school.
X and Y differ (from each other) as to structure.
Your claim and my claim conflict (with each other).
Bill and Bob fought (with each other).

They are requiring you to show your I.D.
John and Mary agree (with each other),

to your plan).

\(\not\) John met.

\(\not\) John fought with each other.

The groups separated (from each other).

The lines parallel each other.

**WORD LIST:** agree, argue, associate, combine, confer, conflict, correlate, differ, link, meet, part, parallel, separate.

**OBJLIST:** (OBJBE):

In the object strong OBJBE, the OBJBE is the predicate of \(N_J\). The machine grammar allows four possible values for OBJBE:

1) NSTG (noun string):

John appeared an idiot.

He seemed a happy man.

The restriction on number agreement between subject and object (WAGREE2) applies here.

Note: if the sequences \(N_{SINGULAR}\) tV \(N_{PLURAL}\) and/or \(N_{PLURAL}\) tV \(N_{SINGULAR}\) occur, the tV is not classified as

2) ASTG (adjective string), including adjectival Vens and Vings (see VENDADJ and VVERYVING):

They look happy to be here.

We felt satisfied.

The results might seem surprising.

Note: verbs which occur with only a limited set of adjectives (ring true, blush red, etc.) are classified as OBJLIST: (ASTG), not OBJLIST: (OBJBE).

3) DSTG (adverb string):

I feel down.

He seems down and out.

They looked well.

A restriction limiting adverbs to those which occur after be (WPOS1H) applies here.

Note: verbs which occur with a wider range of adverbs, i.e. which occur with adverbs of motion, manner, etc., are not classified as occurring with the object string OBJBE: (DSTG), e.g. He came here, up, down, quickly, etc.

4) P N:

This appears of great significance.

The matter seems in dispute.

Note: Verbs classified as occurring with OBJBE: PN, as opposed to those classified as occurring with PN, can occur with a

**Frame:**

\(N_i\) tV OBJBE

OBJBE = noun, adjective, adverb, P N

**Examples:**

John acted strange.

They appear happy to be here.

He became ecstatic when I told him.

They feel able to assume the responsibility.

She looks capable.

Whether they will come remains unclear.

She seems right for the job.

The eggs smell bad.

John appeared an idiot.

He became president a year ago.

She remains a strong woman.

He seemed a happy man.

John appeared down and out.

Bill felt apart from the rest of us.

They looked well.

They seem well.

The matter appears in dispute.

It will remain to his advantage to see them.

The cake smells of anisette.
Appendix 3  Object Attributes of the Verb

range of P + NSENTP (to his advantage, of value, of interest, of significance) constructions. Therefore, verbs which can occur with this range of constructions should be classified as OBJBE: (PN), although other PN constructions are also possible here.

WORD LIST: ASTG; act, appear, become, feel, look, remain, seem; DSTG; appear, feel, look, seem; NSTM: appear, become, remain, seem; PN: appear, remain, seem.

OBJLIST: (OBJECTBE):
applications only to the verb be in all its forms (am, are, be, been, being, is, was, were).
The sequences which are treated as objects of be include:
1) Ving (OBJ) (He is looking into the matter). This is the same string as the object string VINGO. As object of be, the string represents a treatment of the progressive tense; it is therefore restricted so as to exclude non-well-formed verbal sequences:
   A He is having gone.
   B She was being going, etc.
2) passive V + (OBJ) (War was never declared). Because of the frequent occurrence of the passive construction in scientific writing, it is more economical to list the passive objects for each verb in the word dictionary than to compute them by a rule of passive omission. The correspondences between active and passive objects used in the preparation of dictionary entries is given in OBJLIST below.
3) OBJBE, i.e., a noun, adjective, adverb or PN string (cf. OBJLIST: (OBJBE):
   He is a carpenter.
   He is happy.
   He is here.
   The matter is in dispute.
4) SN (an embedded sentence):
   The trouble is that no one knew.
   To ask the question is to answer it.
   It is not that there was nothing to do.
5) Ving strings (see OBJLIST: (NSVINGO) and OBJLIST: (VINGOFN)):
   An added burden is filling out innumerable forms.
6) TOVO (John is to start Monday).
7) ASSERTION (The trouble is John wants to go).
8) BEINGO (John is being a fool).
9) EMBEDDEDQ (The question is: why did John go?)
OBJLIST: (PN):
verbs which occur with OBJLIST:
(PN) exhibit a strong selectional dependency
with the preposition:

He depends on Mary.
He depends with Mary.
It matters to me.
It matters with me.

and, for the most part, do not also occur
(with the same meaning) with a zeroed object:

You can rely on John.
You can rely.
He stands for justice.
He stands.

Verbs which occur with the object string
NPN from which the leftmost N can be dropped
(He gives money to charity) are also included
here.

In the case of some verbs, a middle form
of the verb takes both NPN and PN objects:

One can transform X into Y.
X transforms into Y.

The particular preposition(s) must be
specified for each verb (WPOS15).

WORD LIST: account (for), act (on), add (to), agree (on, to), amount (to), answer (for), ask (about, for), associate (with), balance (on), believe (in), care (about, for), change (into, to), compare (to, with), consist (in, of), deal (with), depend (on, upon), differ (from, in, with), divide (into), draw (from, on, to, upon), drive (at), enter (in upon), focus (on), give (of, to), happen (across, on, upon), identify (with), long (for), look (at, after, for, into, upon), meet (with), reduce (to), run (for), substitute (for), tell (of), transfer (to), wonder (about).

OBJLIST: (PNHOWS):
includes those verbs which occur with
how S but not with SNWH, e.g.:

He liked how it was done.
He liked whether it was done.

Many of these verbs also occur with
PN how S which is included in this string.

For these verbs the particular preposition(s) must be specified (WPOS15).
Appendix 3  Object Attributes of the Verb

**WORD LIST:** complicate, correct, define (for), demonstrate (for, to), describe (for, to), expose (to), film, infer, like, mention (to), restrict, review (for), summarize (for), understand.

**OBJLIST:** (PNN):

Since PNN is a permutation of NPN,
any verb specified for one must be specified
for the other.
PNN, however, usually occurs only
when N3 = N + RN:

?Mary gave to John the book.
Mary gave to John the book which he
needed for his exams.

The particular preposition(s) must be
specified for each verb (WPOS15)

**Frame:**

N1 tV P N2 N3
N1 tV N2 P N3

**Examples:**

He gave to her the book which he himself
needed.

They attribute to Massaccio the Introduction
of perspective into medieval art.

They correlated with speech variation several
factors which are usually considered sociological.

They have depleted of its riches the soil which
we cared for so lovingly.

**Dictionary Entry:**

ATTRIBUTE.

TV: (OBJLIST: .3, . . . ).

.3 = NPN: .17, PNN: .17, . . .

.17 = PVAL: (I TOO)

**OBJLIST:** (PNSNWH):

The noun of PN is NHUMAN (WSN8).
The P is from, to or of.
Verbs which can occur only with PN
how S and not with the full range of SNWH
strings--

He described to me how to go.

He described to me whether to go.

--are classified as OBJLIST: (PNSHOWS)
and not as OBJLIST: (PNNWH).

Note: avoid use of what S as the SNWH
in the test frame since what S may be the
replacement of a given N2 in P N1 N3 (e.g.
I will give to him what he needs).

Note: do not classify verbs which oc-
cur with the expletive it as subject (it
matters to me whether he comes) as PNSNWH
(see OBJLIST: (NTHATS)).

The particular preposition(s) must be
specified for each verb (WPOS15).

**WORD LIST:** admit (to), communicate (to), conceal (from), explain (to), hint (to), indicate (to),
learn (from), mention (to), prove (to), relate (to), say (to), write (to).
The noun of PN is NHUMAN (WSN8).
The P is from, to or of.
The computational treatment of forms like It appeared to John that Mary was here is to define a small subclass, VSENT4 (= appear, happen, remain, seem, turn out) which can take the object string PNTHATS, where appropriate, provided the subject is it.
Note: do not classify verbs which occur with the expletive it as subject and which also occur with a sentence string as subject (It occurred to John that he was needed. That he was needed occurred to John) as PNTHATS. (see OBJLIST: (NTHATS)).
PN can be accompanied by an adjunct, in which case the subject of SN is usually a pronoun:
They reported to him (about his leaving) that it had not been voluntary.
The particular preposition(s) must be specified for each verb (WPOS15).

WORD LIST: admit (to), announce (to), assert (to), cry (to), communicate (to), demonstrate (to), disclose (to), explain (to), hint (to), illustrate (to), indicate (to), intimate (to), learn (from), mention (to), motion (to), prove (to), remark (to), require (of), reveal (to), say (to), suggest (to), write (to).

OBJLIST: (PNTHATS):

Frame:
N tV P N SN

Examples:
I learned from John that the matter was under discussion.
I demonstrated to them that the hypothesis accounted for several disparate facts.
It appeared to him that Mary was here.

Dictionary Entry:
DEMONSTRATE.
TV: (OBJLIST: .3, . . .).
.3 = PNTHATS: .5, . . .
.5 = PVAL: (t TO4).

Frame:
N tV P N that N V (OBJ).

Examples:
They suggested to him that he curtail his remarks.
They demanded of her that she remain.
They required of John that he attend.

Dictionary Entry:
REQUIRE.
TV: (OBJLIST: .3, . . .). 
.3 = PNTHATSVO: .6, . . .
.6 = PVAL: (t OF1).

WORD LIST: ask (of), demand (of), expect (of), propose (of), require (of), reveal (to), say (to), suggest (to).

OBJLIST: (PNVINGSTG):

Since PNVINGSTG is a permutation of VINGSTGPN, any verb specified for one must be specified for the other.

Frame:
N tV P N2 VINGSTG
N tV VINGSTG P N2
Usually, however, the acceptability of the PNVINGSTG permutation depends on the presence of one or more adjuncts within the VINGSTG:

?He prefers to going out with Mary staying home.
He prefers to going out with Mary staying home with someone else.

The particular preposition(s) must be specified for each verb (WPOS15).

**Examples:**
They limited to certain hours his seeing visitors.
They reported to the nurse his seeing visitors.
They attributed to his wife's business acumen his succeeding where everyone else had failed.
He charged to a heavy workload his going home late.

**Dictionary Entry:**
ATTRIBUTE.
TV: OBJLIST: 3, ...
.3 = VINGSTGPN: 15, PNVINGSTG: 15, ...
.15 = PVAL: (TO).

**WORD LIST:** see OBJLIST: (VINGSTGPN).

**OBJLIST:** (PSNWH):
The P of the object string PSNWH is restricted in terms of the container verb, not in terms of the contained SNWH. This is evidenced by the fact that the P of PSNWH does not permute around the SNWH (cf.

**Examples:**
John asked about whether he should go.
John asked whether he should go about.

Note: avoid use of what S as the SNWH in the test frame since what S may be the replacement of a given N in PN (e.g., John landed on what he had been looking for).

The particular preposition(s) must be specified for each verb (WPOS15).

**Examples:**
They limited to certain hours his seeing visitors.
They reported to the nurse his seeing visitors.
They attributed to his wife's business acumen his succeeding where everyone else had failed.
He charged to a heavy workload his going home late.

**Dictionary Entry:**
ATTRIBUTE.
TV: OBJLIST: 3, ...
.3 = VINGSTGPN: 15, PNVINGSTG: 15, ...
.15 = PVAL: (TO).

**WORD LIST:** ask (about), care (about), check (on, into), depend (on), figure (out), hear (about), hint (at), knew (about), look (into), pertain (to), read (about), refer (to), reflect (on, upon), remark (on, about), report (on), speak (about), talk (about), tell (about), think (of, about), touch (on, upon), wonder (about), write (about).

**OBJLIST:** (PSVINGO):
As distinct from the object string PNVINGSTG, the N2 of PSVINGO is not possessive; however, the two object strings overlap extensively:

They worried over his drinking so much.

If N2 is a pronoun, it is accusative (WPOS5).

Note: to avoid confusion of the object string PSVINGO with the sequence PN plus a right adjunct Ving (He looked at the door opening on to the balcony), use the expletive there as the N2.

**Examples:**
They worried over him drinking so much.
He focused on the president flying to Florida in a private plane.
We asked about there being no food.
He writes about John's absence disturbing Mary.
We asked about there being no food.
The particular preposition(s) must be specified for each verb (WPOS15).

Dictionary Entry:
FOCUS.
TV: (OBJLIST: .3, . . . ).
.3 = Pvingo: .18, . . .
.18 = PVAL: (V ON).

WORD LIST: account (for), amount (to), answer (for), approve (of), approve (of), ask (about),
begin (with), center (on, about, around, upon), come (to, of, from), care (about, for), compare (of,
with), depend (on, upon), and (in, with), explain (about), focus (on), hear (of, about), lie (about),
plan (on), point (to), read (about), remark (on, about), remember (about), speak (of, about), talk
(of, about), think (about), wonder (about), write (about).

OBJLIST: (Pvingo):
There is no overt subject of Ving
(He refrained from his pressing the point).
The subject of TV (N1) is understood to be the subject of Ving.
The particular preposition(s) must be specified for each verb (WPOS15).

Frame:
N1 TV P Ving (OBJ)

Examples:
I can't keep from smoking.
He refrained from pressing the point.
She succeeded in passing.
She is engaged in writing a novel.
He left off seeing her.

NOT OBJLIST: (Pvingo):
He relies on (our) making an impression.
(Pvingstg).
He couldn't account for (their) making a mistake. (Pvingstg).

Dictionary Entry:
KEEP.
TV: (OBJLIST: .3, . . . ).
.3 = Pvingo: .19, . . .
.19 = PVAL: (I FROM).

WORD LIST: admit (to), convert (to), delay (in), engage (in), fail (in), go (without), keep (from),
specialize (in).

OBJLIST: (Pvingstg):
In the object string Pvingstg the left
adjunct of Ving (specified in the frame as
N2's) is either an overt subject—
He asked about their writing programs.
--an article--
He asked about the writing of programs.
--or null--
He asked about writing programs.

Frame:
N1 TV P N1's Ving (OBJ)

Examples:
Mary couldn't account for (John's) losing the key.
This amounts to (his) writing a new program.
They asked about (his) leaving early.
However, a verb classified as occurring with the object string PVINGSTG must be capable of occurring with a sequence P Vingstg in which the Ving has an overt subject and in which this overt subject is not coreferential with the subject of the TV.

Note that VINGSTG here refers to either the object string NSVINGO or the object string VINGOFN.

The particular preposition(s) must be specified for each verb (WPOS15).

They asked about John's reading of the passage.

Dictionary Entry:

ASK.

TV: (OBJLIST: .3, . . .).

.3 = PVINGSTG: .15, . . . .

.15 = PVAL: (I ABOUT).

They treated him as a lackey.

He established it as a fact.

They entered it as a business expense.

He designed the building as a refuge.

She described them as sharing her opinion.

They established it as following from the premise.

NOT OBJLIST: (NASOBJBE):

They served the king as messengers.

He discovered the enzyme as a student (adjunct)

WORD LIST: account (for), agree (on), amount (to), answer (for), argue (about, against, for), ask (about), come (from, of), compare (with), focus (on), long (for), look (into), point (to), provide (against, for), read (about), test (for), think (about), wonder (about), write (about).

OBJLIST: (NASOBJBE):

A verb is classified as occurring with OBJLIST: (NASOBJBE) if it occurs in the frame

\[ N_1 \rightarrow N_2 \rightarrow N_3 \]

where \( N_1 \) is a predicate of \( N_2 \). For example, in They treated him as a lackey, lackey is predicated of him, not they (cf. OBJLIST: (NASOBJBE)).

Unlike the sentence adjunct as + N (They treated him as a reward), the as + N of NASOBJBE cannot be preposed to the beginning of the sentence:

\[ \text{As a lackey, they treated him.} \]

\[ \text{As a reward, they treated him.} \]

\[ \text{As a fact, he established it.} \]

An object string VINGO (cf. OBJLIST: (VINGO)) may also occur as the predicate of \( N_1 \):

They established it as following from the premises.

She described them as sharing her opinion.

Note: a number of verbs occur with both the object string and the adjunct sequence, e.g., treat (above).

WORD LIST: accept, acknowledge, administer, advance, characterize, choose, consider, depict, describe, designate, discontinue, employ, engage, enter, establish, expose, identify, include, intend, interpret, isolate, know, label, mean, mention, plan, present, propose, provide, put, receive, recognize, regard, represent, see, separate, suggest, train, try, undertake, use, utilize, view, visualize.
The Lexical Subclasses of the LSP English Grammar

OBJLIST: (SNWH):

Note: a P may occur at the beginning or end of the SNWH string:

I wonder to whom he is referring.
I wonder whom he is referring to.
I don't know from whom he obtained the information.
I don't know whom he obtained the information from.

This P in SNWH is not to be confused with the P which is dependent on the container verb (cf. OBJLIST: (PN), (PSNWH)). This latter P does not occur at the end of the SNWH string:

I wondered about whether to go.
I wondered whether to go about.

Note: avoid use of what S as the SNWH in the test frame since what S may be the replacement of a given N in NSTGO (e.g., I ate what he gave me).

Note: do not classify verbs which occur with the expletive it as subject (It doesn't matter whether he comes) as SNWH (see OBJLIST: (NTHATS)).

WORD LIST: affect, ascertain, ask, calculate, check, contemplate, choose, concern, consider, control, decide, deduce, denote, discern, discuss, doubt, establish, examine, hear, indicate, influence, investigate, judge, know, learn, prove, question, remember, report, reveal, say, see, show, state, tell, verify, wonder, write.

OBJLIST: (SOBJBE):

In the object string SOBJBE the OBJBE is the predicate of N2. The machine grammar allows four possible values for OBJBE:

1) NSTG (noun string):
   They considered him their savior.
   They elected him president.
   They call him a genius.

   The restrictions on number agreement between subject and object (WAGREE2) apply here.

2) ASTG (adjective string), including adjectival Yens and Vines (see VENDADJ and VVERYVING; also OBJLIST: (SVEN)):
   He considers them foolish.
   I found it well-designed.
   We thought him interesting.

3) DSTG (adverb string):
   They mistakenly thought him here.
   They assumed him on the premises.

   He believes it possible.
   I prefer him here.
   I supposed it nearby.

   They assumed him on the premises.
   They find it of slight interest.
Appendix 3  Object Attributes of the Verb

A restriction limiting adverbs to those which occur after be (WP0S1H) applies here.

4) P N:
For legal purposes, they assumed him on the premises.
The particular values of OBJBE must be specified for each verb.

They ruled him out of order.

I consider the matter in dispute.

We thought it to his advantage to see you.

Dictionary Entry:

CONSIDER.

TV: (OBJLIST: .3, . . . .)

.3 = SOBJBE: .19, . . .

.19 = BVAL: (ASTG, NSTG, PN).

WORD LIST: believe (ASTG, DSTG, NSTG, PN), consider (ASTG, NSTG, PN), find (ASTG, DSTG, NSTG, PN), judge (ASTG, NSTG), label (ASTG, NSTG), prefer (ASTG, DSTG, PN), pronounce (ASTG, PN), prove (ASTG, DSTG), report (ASTG, DSTG, PN), show (ASTG), suppose (ASTG, DSTG, PN), think (ASTG, DSTG, NSTG, PN).

OBJLIST: (STOVO-N):
The verbs classified as OBJLIST:
(STOVO-N) are be and have.

If the to V is deleted from an occurrence of STOVO-N either the remaining sentence is unacceptable:

He has paying his workers to consider.

There is not a moment to lose.

or the sense of the remaining sentence is changed:

I have a guy to see.

I have a guy.

It is nothing to sneeze at.

It is nothing.

The N1 or Vingstg functions as the logical object of the verb of the embedded sentence.

OBJLIST: (SVEN):
The object string SVEN as in I got the papers duplicated must be distinguished from (1) the sequence noun plus adjunct (I delivered the papers duplicated) and (2) the object string SOBJBE (I considered the house well-designed).

SVEN may be distinguished from the noun plus adjunct sequence by the fact that if the Ven is deleted from an occurrence of SVEN either the remaining sentence is unacceptable:

He wishes the tapes destroyed.

Frame:

N1 TV N2 N3 Ven

Examples:

He has paying his workers to consider.

I have some stuff to deliver.

He has money to burn.

There is not a moment to lose.

That is the right principle to maintain.

OBJLIST: (STOVO-N): The verbs classified as OBJLIST: (STOVO-N) are be and have.

If the to V is deleted from an occurrence of STOVO-N either the remaining sentence is unacceptable:

He has paying his workers to consider.

There is not a moment to lose.

or the sense of the remaining sentence is changed:

I have a guy to see.

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It is nothing.

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He wishes the tapes destroyed.

Frame:

N1 TV N2 N3 Ven

Examples:

He has paying his workers to consider.

I have some stuff to deliver.

He has money to burn.

There is not a moment to lose.

That is the right principle to maintain.
He wishes the tapes.
or the sense of the main verb is changed:
I got the papers duplicated.
I got the papers.
whereas if the Ven is deleted from the noun plus adjunct sequence the remaining sentence is acceptable and the sense of the verb remains the same:
I delivered the papers duplicated.
I delivered the papers.
SVEN may be distinguished from SOBJ- BE by the fact that the Ven of SVEN is a true passive, whereas the Ven of SOBJBE is adjectival:
I got the papers duplicated.
I got the papers beautiful.
I consider the house well-designed.
I consider the house beautiful.
Note: In distinguishing verbs which occur with SVEN from those which occur with SOBJ- BE: (1) add an adverbial left adjunct (well, badly, very, etc.) to the Ven. If this addition is acceptable, the verb being tested should be classified as SOBJBE:
I thought the house well-designed.
I consider him very reserved.
if the addition is marginal, the verb should be classified as SVEN:
I ordered the house well-designed.
I got the papers very duplicated.
(2) replace the Ven with a pure adjective (happy, small, intelligent, etc.). If the sentence is still acceptable, the verb being tested should be classified as SOBJBE, not SVEN.
I ordered the house beautiful.
I considered the house beautiful.
If N2 is a pronoun, it is accusative (WPOSS).

WORD LIST: assume, had, like, order, require, see, want, wish.

OBJLIST: (SVINGO):
The object string SVINGO must be distinguished from (1) the sequence noun plus adjunct and (2) the object string SOBJBE.
SVINGO may be distinguished from the noun plus adjunct sequence by the fact that

Frame:
\[ N_1 \text{ TV} N_2 \text{ Ving (OBJ)} \]

Examples:
They kept John waiting.
If the Ving is deleted from an occurrence of SVINGO either the remaining sentence is unacceptable:

I left the book lying on the table.

or the sense of the main verb is changed:

John kept Mary waiting.

We observed their intellect and their moral sense expanding.

I've started the machine going.

PBS covered the investigations involving Watergate. (N + adjunct).

I consider him interesting.

Note: verbs such as sketch, illustrate, photograph may be ambiguous between the noun plus adjunct reading and the SVINGO reading, e.g.:

He photographed the girl laughing.

(SVINGO = He photographed her laughing, not crying; N + adjunct = He photographed the girl who was laughing).

SVINGO may be distinguished from SOBJBE by the fact that the Ving of SOBJBE is adjectival whereas the Ving of SVINGO is not (cf. OBJLIST: (SVEN)). Therefore, the Ving of SOBJBE occurs with certain adverbial left adjuncts (quite, very, etc.):

I consider him very interesting.

whereas the Ving of SVINGO does not:

They kept him very waiting.

If N₂ is a pronoun, it is accusative (WPOS5).

WORD LIST: detect, discern, display, feel, find, have, illustrate, keep, leave, mind, observe, photograph, remember, sketch, start, watch, visualize.

OBJLIST: (SVO):

If N₂ is a pronoun, it is accusative (WPOS).

Note: to avoid confusion with OBJLIST: (C1SHOULD) (Suggest he go), use pronouns for N₂ in the test frame for SVO.

Frame:

SUBJ IV N₂ V (OBJ)

Examples:

I let him go.

I made him sign a statement.

I watched him do it.

I had him pick up Mary at the station.

WORD LIST: have, let, make, observe, see, watch.

OBJLIST: (THATS):

The verb of the embedded sentence is tensed.

Frame:

N IV that S (V of embedded S = tV)
Both the verbs for which the *that* is optional (*He believes that the earth is flat*) and those for which it is obligatory (*He argues that it is impossible*) must be classified as occurring with OBJLIST: (THATS) (cf. OBJLIST: (ASSERTION)).

It should be noted that the computational treatment of forms like *It appears that John has left* is to define a small subclass, VSENT4 (*appear, happen, remain, seem, turn out*), which can take OBJLIST: (THATS) where applicable, provided the subject of the VSENT4 is the expletive *it*.

**Examples:**
- He added that they were happy.
- He wrote that John was returning.
- We agree that the matter should be settled.
- I know that he was here.
- We estimate that it will take five months.
- It appears that John has left.

**WORD LIST:** add, agree, allow, answer, appear, argue, assume, believe, calculate, charge, claim, conclude, confirm, consider, demonstrate, deny, denote, detect, determine, discover, doubt, establish, estimate, evidence, expect, explain, feel, figure, find, follow, happen, imply, infer, intimate, know, learn, maintain, matter, mean, mention, note, notice, observe, provide, read, reason, report, rule, say, see, seem, sense, show, state, suggest, think, understand, write.

**OBJLIST: (TOVO):**
Verbs classified as occurring with the object string TOVO include the aspactual verbs those verbs which never occur with an overt subject in the contained sentence:

- John tried to go.)

and those container verbs which occur with either an overt or a zeroed subject:

- I want Mary to go.
- I want to go.

**Note:** The *to* of OBJLIST: (TOVO) does not equal in order to i.e., sequences such as *She washed to please her mother* (= *She washed in order to please her mother*), should not be considered as cases of OBJLIST: (TOVO)=

**WORD LIST:** affect, agree, appear, ask, attempt, choose, claim, come, continue, demand, determine, expect, fail, happen, have, learn, like, long, mean, need, prefer, prepare, propose, seem, start, tend, use, want.

**OBJLIST: (VENO):**
The verb *have* (*has, had*) is classified as OBJLIST: (VENO) for its occurrence with the past participle:

- John has gone.
- We have been satisfied.

**OBJLIST: (VINGO):**
The VING of the object string VINGO may occur either with an overt subject--

**Examples:**
- He appears to like her.
- He attempted to meet her.
- He claims to know her.
- He agreed to meet him.
- She expected to leave.
- She would like to see him.

**Frame:**

\[
N_1 \text{ to } V \ (OBJ)
\]
He delayed his writing for two years.

—or a zeroed subject—

He delayed writing for two years.

In either case, the subject of Ving is understood exclusively as referring to the subject of tv. Cf. OBJLIST: (NSVINGO).

Thus She began doing it is a case of OBJLIST: (VINGO) while She favors doing it is not.

Examples:
She began doing it.
He delayed writing the book for two years.
She has continued working.
They started eating at five o'clock.
They stopped eating at nine.

NOT OBJLIST: (VINGO):
She favors doing it.
These new glasses will facilitate reading fine print.
He explained seeing to the blind man.
Simon opposes rationing gasoline.
He proposed boycotting grapes.
He really understands teaching.

WORD LIST: attempt, continue, delay, start, stop, try.

OBJLIST: (VINGOFN):
The Ving in the object string VINGOFN may occur with either a possessive noun subject—

They imitated his singing of the song.

—or an article—

They imitated the singing of the song.

Since VINGOFN is more noun-like in its form than the NSVINGO object string, it is also helpful to include those phenomena which are characteristic of noun strings in the test frame, e.g.:

1) an adjective before the Ving:
You could not duplicate his tactful handling of the situation.

2) a plural Ving form:
They covered the bombings of Saigon.

Frame:
N tv [\(^s\)] T (Adj) Ving of OBJ

Examples:
You could not duplicate his tactful handling of the situation.
They imitated his singing of the song.
They covered the bombing of Saigon.
They have decreased the sending of supplies.
They delayed the signing of the contract.
These factors determine the stating of the conditions.
He directed the editing of the manuscript.
The full ashtrays evidence the smoking of many cigars.
This will facilitate my understanding of the matter.
John influenced his handling of the situation.
He noticed the wording of the passage.
They have restricted the selling of gas.

WORD LIST: advance, affect, assess, block, cause, concern, consider, control, cover, decrease, denote, describe, direct, discuss, expect, explain, facilitate, film, follow, further, include, infer,
influence, inhibit, investigate, limit, mention, notice, oppose, order, propose, question, report, restrict, review, study, time, vary.

<table>
<thead>
<tr>
<th>Frame:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁ IV P N₂ VINGSTG</td>
</tr>
<tr>
<td>N₁ IV VINGSTG P N₂</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examples:</th>
</tr>
</thead>
<tbody>
<tr>
<td>They attributed his succeeding in business to his wife's business acumen.</td>
</tr>
<tr>
<td>He charged his going home late to a heavy workload.</td>
</tr>
<tr>
<td>They reported his seeing visitors to the nurse.</td>
</tr>
<tr>
<td>They limited his seeing visitors to certain hours.</td>
</tr>
<tr>
<td>He correlated the sinking of the ships with the bad weather in Pyraeus.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dictionary Entry:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTRIBUTE.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TV: (OBJLIST: .3, . . . )</th>
</tr>
</thead>
<tbody>
<tr>
<td>.3 = VINGSTGPN: .15, PVINGSTG: .15, . . .</td>
</tr>
<tr>
<td>.15 = PVAL: (+TO*).</td>
</tr>
</tbody>
</table>

V. Passive-Object Attributes of the Verb.

POBJLIST:
Because of the frequent occurrence of the passive construction in scientific writing, it is more economical to list the passive objects for each verb V in the word dictionary than to compute them by a rule of passive 'omission'. The POBJLIST values of a given verb are listed under the past participle (Ven) form of the verb. The correspondence between active and passive objects used in the preparation of dictionary entries is as follows:

<table>
<thead>
<tr>
<th>V has passive object</th>
</tr>
</thead>
<tbody>
<tr>
<td>NULLOBJ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>If V has one of the active objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTGO, THATS, C1SHOULD, SNWH, FORTOVO, NSVINGO, VINGOFN, VINGO</td>
</tr>
<tr>
<td>PN, PVINGSTG, PSNWH</td>
</tr>
</tbody>
</table>
Appendix 3  Verb Subclasses

<table>
<thead>
<tr>
<th>VINGO</th>
<th>NTOVO, NTOBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOVO</td>
<td>NN(for N₁ or N₂), NTHATS, NSNWH</td>
</tr>
<tr>
<td>NSTGO</td>
<td>NTHATS</td>
</tr>
<tr>
<td>THATS</td>
<td>NSNWH</td>
</tr>
<tr>
<td>SNWH</td>
<td>NPN, PNTNOV, PNTNTHATSVO, PNSVINGO, PNSNWH, PVINGSTG, PNSHOWS</td>
</tr>
<tr>
<td>PN*</td>
<td>NPVINGSTG</td>
</tr>
<tr>
<td>PVINGSTG*</td>
<td>NPVINGO</td>
</tr>
<tr>
<td>PVINGO*</td>
<td>NPSVINGO</td>
</tr>
<tr>
<td>PSVINGO*</td>
<td>NPSVINGO</td>
</tr>
<tr>
<td>PSNWH*</td>
<td>SSOBJBE</td>
</tr>
<tr>
<td>OBJBE</td>
<td>SASOBJBE</td>
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<tr>
<td>ASOBJBE</td>
<td>SVEN</td>
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<tr>
<td>VENPASS</td>
<td>NA</td>
</tr>
<tr>
<td>ASTG</td>
<td>ND</td>
</tr>
<tr>
<td>DSTG</td>
<td>SVO</td>
</tr>
<tr>
<td>VO</td>
<td>DP₂, DP₃, DP₄, DPₛₐ</td>
</tr>
<tr>
<td>DPI*</td>
<td>DP₂PN, DP₃PN, DP₄PN</td>
</tr>
<tr>
<td>DPI₁PN*</td>
<td>DPN</td>
</tr>
<tr>
<td>DPI₂*</td>
<td>DPN</td>
</tr>
</tbody>
</table>

*Same P (or DP) subclass as in corresponding active object for given verb.

VI. Verb subclasses.

VBEREP:
A verb is in VBEREP if it occurs in the environments

SN--OBJ
It--OBJ SN

where OBJ is either an NSENT₁, an NSENT₃, or ASENT₁ (DOPT₄, ultimate subject routine used in SN restrictions):

That the earth might revolve around the sun seemed an unlikely hypothesis.
It seemed an unlikely hypothesis that the earth might revolve around the sun.
For John to solve that problem remains easy.
It remains easy for John to solve that problem.

Most of these verbs also occur in other environments of be, but the one defined here is the only one used in restrictions.

Frame:

SN IV OBJ (OBJ = NSENT₁, NSENT₃)
It IV OBJ SN (ASENT₁)

Examples:
That the earth might revolve around the sun seemed an unlikely hypothesis.
It seemed an unlikely hypothesis that the earth might revolve around the sun.
That John will arrive too soon appears a problem.
It appears a problem that John will arrive too soon.
To live here becomes easier as time goes on.
It becomes easier to live here as time goes on.
WORD LIST: appear, become, remain, seem.

VCOLLECTIVE:

A verb is in VCOLLECTIVE if it occur with a noun object which is PLURAL or conjoined, but does not occur with a noun object which is SINGULAR, unless the singular noun is NCOLLECTIVE (e.g., dust) or AGGREGATE (e.g., group) (WAGREE3):

He collected his tools.
He collected a pen, pencil and pad.
The bookshelf collects dust.
He collected a group around him.

Also a verb is in VCOLLECTIVE if, when it occurs with a null object (see OBJ-LIST: NULLOBJ), its subject is either PLURAL or conjoined or, if SINGULAR, then AGGREGATE or NCOLLECTIVE (WAGREE3):

People gathered at street corners.
John, Mary and Bill gather in the Commons Room at noon.

A group gathered around him.
Dust gathered in the corner.

Examples:
Dust gathered in the corners.
These books will only gather dust.
A book gathered in the corner.
The fortune accumulated while he was away.
He accumulated a fortune.
Mary accumulated while he was away.

Blood collected in the sac.
The sac collected blood.
A sponge collected in the sac.

WORD LIST: accumulate, cluster, collect, diffuse, gather, mass, scatter.

VEXP:

A verb is in VEXP if it does not ordinarily occur with a sentential SN subject, but in particular expressions specific to each verb, may occur with such a subject (WSN1, DOPT4) e.g.:

That Mary has left has come.
That Mary has left has come to his attention.

Note: verbs classed as VMOD are only those verbs which cannot be classed as VSENT2 (That he would think of running confirms my suspicions) or VMOD (That John was here presents a problem).

WORD LIST: come, go, merit.

VENDADJ:

A verb is in VENDADJ if its past participle Ven occurs adjectivally with an im-

Examples and Frames:

D Ven N
Appendix 3 Verb Subclasses

mediately preceding adverbial left adjunct other than very (WPOS12), e.g., well-spoken
Cf. VVERYVING.

He was a well-spoken man.
ʃ He was a spoken man.
He is a high-strung fellow.
ʃ He is a strung fellow.
N be D Ven.
That man was well-spoken.
That fellow is high-strung.

WORD LIST: argue, place, read, regard, speak, tell, try.

Deleted — VMOD:
a verb is in VMOD if it can occur in at least one of the following environments:

\[
\begin{align*}
SN & \rightarrow N_X \\
SN & \rightarrow N_X N P N \\
SN & \rightarrow N N_X 
\end{align*}
\]

where \( N_X \) is an NSENT3, e.g.:
That John was here presents a problem.
That John was here will give trouble for us.
That John was here will give us trouble.

VMOD can almost be defined extensionally for the verbs occurring with both \( N_X \)PN and \( NN_X \) (i.e., make, present, give). The class also includes have and such verbs as compound, accentuate, augment, etc.

WORD LIST: give, have, make, present, augment, compound, complicate, increase, limit, modify, restrict.

VMOTION:
a verb is in VMOTION if it occurs with a right adjunct locative adverb (e.g., out, down, in, up, over) (WPOS3).

The sequence VMOTION + locative adverb (John walked up) may be distinguished from the sequence \( TV + DP \) (John measured up) by the fact that the locative adverb permutes with the verb (in walked John) while the DP does not (ʃ Up measured John).

WORD LIST: come, drive, fall, flow, jump, run, shuttle, speed, swim, travel, walk.

V:PLURAL:
a tensed verb \( TV \) is in the subclass PLURAL if, in the defining environment for

Frame:
\[
SN \begin{bmatrix} N_X \ N_X \ N \ P \ N \end{bmatrix} \quad (N_X = NSENT3)
\]

Examples:
That John was here presents a problem (for us).
For John to leave now would only compound our difficulties.
For us to give up now would make trouble for those who will follow us.
That he would propose such a solution when planning to leave has inherent difficulties.

WORD LIST: give, have, make, present, augment, compound, complicate, increase, limit, modify, restrict.

Frame:
\[
N TV DLOC3 \quad DLOC3 TV N
\]

Examples:
John climbed down.
The rock fell down.
John walked out.
John sauntered in.
The Lexical Subclasses of the LSP English Grammar

TV, N — OBJ, it occurs with a PLURAL noun and not with a SINGULAR noun (WAGREEl).
The verb subclass PLURAL, then, includes present tense verbs which lack the suffix -s (i.e., 3rd person plural present tense) and were.

VSENT1: a verb is in VSENT1 if it occurs in both of the environments

SN — OBJ
It — OBJ SN

where OBJ is N or PN (NHUMAN), (DSN2, ultimate subject routine used in SN restrictions):

That no one answered alarmed him.
It alarmed him that no one answered.

Also, if a Ving occurs in the environment

It be Ving to V N.
N be Ving to V.
then the Ving is in VSENT1 (DSN6):

It is surprising to hear such allegations.
Such allegations are surprising to hear.

Cf. ASENT1: (AFORTO: (OBJEXT)).

Examples:
The men disregard the rules.
#The man disregard the rules.

Frames:
SN tV OBJ
It tV OBJ SN

Examples:
If concerned him that no one came.
That no one came concerned him.

It contents her that she is accepted by the family.
That she is accepted by the family contents her.

It disturbs him that she didn’t come.
That she didn’t come disturbs him.

It doesn’t matter to him that he failed.
That he failed doesn’t matter to him.

It has occurred to me that this is a non-problem.
That this is a non-problem has occurred to me.

WORD LIST: affect, antagonize, concern, confound, content, disturb, encourage, excite, interest, intrigue, matter, move, occur, shock, suit, surprise, trouble.

VSENT2:
A verb is in VSENT2 if its tensed form occurs in the environment SN — SN (DOPT4, WSN1):

That he lied proves that he doesn’t care.
#That he lied alarmed that he doesn’t care.

Frame:
SN tV SN

Examples:
That John left shows that he doesn’t care.
For him to say that means that he understands the problem.

How he did it explains why he did it.
That he ran the mile in 4 minutes demonstrates that it can be done.

WORD LIST: confirm, demonstrate, establish, explain, imply, indicate, mean, obscure, predict, prove, reveal, say, show.

VSENT3:
a verb is in VSENT3 if its tensed form occurs in the environment N — SN and not in the environment SN — SN:

Frame:
N tV SN (where #SN tV SN)
Appendix 3 Verb Subclasses

Examples:
He knows that we are ready.
That time is running short knows that we are ready.
The passive form of a VSENT3 can occur in the environment $K \rightarrow SN$ (WSN2, ultimate subject routine used in SN restrictions):
It was known that she left.
and in the environment $SN \rightarrow (WSN1)$:
That she left was known.
Cf. VSENT1.

WORD LIST: add, argue, ask, believe, care, claim, conclude, consider, deny, determine, discover, doubt, expect, find, know, learn, long, maintain, mention, note, notice, observe, propose, read, reason, report, require, rule, state, suggest, think, understand.

VSENT4:
a verb is in VSENT4 if it occurs in the environment $K \rightarrow SN$ but does not occur in the environment $SN \rightarrow (DSN13)$:
It seems that he left.
That he left seems.
It appears that they don’t want to come.
That they don’t want to come appears.
Cf. VSENT1.
Note: The computational treatment of VSENT4 requires that the particular SN strings (i.e., THATS, ASSERTION, etc.) that occur with a given VSENT4 verb must be named on the OBJLIST of that verb. Cf. OBJLIST: ASSERTION, THATS, FORTOVO, TOVO).

WORD LIST: appear, happen, remain, seem, turn out.

V:SINGULAR:
a tensed verb $TV$ is in subclass SINGULAR if, in the environment $N \rightarrow OBJ$, it occurs with a SINGULAR noun and not a PLURAL noun (WAGRE1). The verb subclass SINGULAR, then, includes tensed verbs carrying the suffix -s (3rd person singular present tense) and was, am.

V:VERYVING:
a verb is in VVERYVING if either its present participle $Ving$ or its past participle

Examples:
The earth revolves on its axis.
That the earth revolve on its axis.
Ven can occur in adjectival positions (i.e., as LN or as an object of be) with a left adjunct very (WPOS13):

A very surprising result
The result was very surprising.
A very reserved man
The man was very reserved.

Verbs occurring in their Ving form in predicate position which are not classed as VVERYVING are analyzed only as part of the is Ving (progressive tense) verb sequence (see OBJLIST: (OBJECTBE)).

Verbs occurring in their Ven form in predicate position which are not classed as VVERYVING (or VENDADJ) are analyzed only as part of the passive construction (see OBJLIST: (OBJECTBE)).

Note: If both the Ving and the Ven forms of the verb must be specified for the subclass VVERYVING, then the subclass is assigned to the main entry of the verb (the infinitive). If only one form of the verb must be specified for VVERYVING, then the subclass is assigned to the appropriate form.

T (very) Ving N/ N be (very) Ving,
a very surprising result
a very becoming dress
a very interesting speaker
a very walking business
The result was very surprising.
That dress is very becoming.
This speaker will be very interesting.
That business is very walking.

Ven:
T (very) Ven N/ N be (very) Ven,
a very reserved man
a very determined man
a very inhibited personality
a very killed person
That man is very reserved.
That man is very determined.
His personality is very inhibited.
That person was very killed.

WORD LIST: Ving: becoming, conflicting, designing, fitting, incriminating, intriguing, knowing, lasting, moving, stimulating, trying, understanding. Ven: concerned, contented, determined, involved, isolated. Both Ving and Ven: affect, antagonize, disturb, excite, inhibit, interest, limit, relax, surprise, trouble.