

**The layered structure of the Irish word:
An RRG account of inflectional and derivation processes
Brian Nolan
Institute of Technology Blanchardstown, Dublin IRELAND**

Abstract

This paper examines inflection and derivation in Modern Irish within a layered structure of the word (LSW) in a way analogous to the layered structure of the noun phrase and the layered structure of the clause in RRG.

In addition to characterising elements of the morphology of Irish for inflection and derivation, we examine the role of the lexicon and the need for a morpheme inventory. We consider both inflection and derivation within an account that addresses the marking and formation of nominals, adjectives, determiners, and other elements including sort type, case, agreement, gender and number. For derivation, we discuss examples of how a new member of a lexical category is formed, and how lexical meaning may be modified within the LSW in RRG. We indicate in our conceptualisation of the layered structure of the word how it would cater for derivation and inflection.

We discuss the need for an inventory of morphemes to support inflection, similar to the syntactic inventory. Morphemes will be expressed, and represented, as part of a language specific morpheme inventory. In contrast, we claim that morphemes with a meaning or concept definition, i.e., lexemes, are to be found within the lexicon and formulated as concepts compatible with Qualia Theory, and the recent Lexical Constructional templates of Mairal et al (Mairal Usón, and Ruiz de Mendoza 2008, 2009), and connect with the RRG linking system. The basic theory of RRG is to be found in Van Valin and LaPolla (1997) and Van Valin (2005), including accounts of the layered structure of the clause (LSC), the layered structure of the noun phrase (LSNP) and Qualia Theory (Pustejovsky 1995). We intend that our account of the Modern Irish data (Nolan 2006, 2007, 2008a, 2008b, 2009, and forthcoming) in the layered structure of the word be compatible with the LSNP and the LSC.

1. Introduction

- (1) Requirements of an RRG theory of morphology
 - a. Inflection processes in support of grammatical phenomena
 - b. Derivation and morphological category changing devices
 - c. The role of the RRG lexicon within a morphological perspective
 - d. A means of representing the semantic meaning of lexemes in the lexicon
 - e. Accounting for a language specific morpheme inventory within the grammar
 - f. Accounting for compounding and incorporation in grammar
 - g. Word formation in Semitic languages
 - h. The phonological word and clitics

2. The role of morphology in grammar

- (2) gluaisteán ‘car’ (N.sg) – gluaisteáin ‘cars’ (N.pl)
- (3)
 - a. banc ‘bank’ (N.sg) – bainc**éir** ‘banker’ (N.sg)
 - b. bainc**éir** ‘banker’ (N.sg) – bainc**éireacht** ‘banking’ (VN)
 - b. b**ácáil** ‘bake’ (V.past) – b**ácéir** ‘baker’ (N.sg)
 - c. scr**íobh** ‘write’ (V.past) – scr**íbhneoir** ‘writer’ (N.sg)
 - d. cáir**éis** ‘care’ (N) – cáir**éiseach** ‘careful’ (Adj, stem)
- (4) **esaontas** ‘disagreement’:
 - a. aont**ai**gh ‘agree’ V.past
 - a. **esaontas** ‘dis+agree+ment’ N
 - b. **esaontai**gh ‘dis-agree’ V.past
 - c. aont**ú** ‘agree-ment’ N

(5) Examples of words and derivational affixes.

| | | |
|-----------|----------------------------|--------------------------|
| N → N | iasc → iascaireacht | fish → fishery |
| | freagra → freagrach | answer → answerable |
| | oileán → oileánach | island → islander |
| V → V | íoc → reamhíoc | pay → prepay |
| | chéimí → fóchéimí | graduate → undergraduate |
| Adj → Adj | gné → fóghne | species → subspecies |
| N → Adj | tarbh → tarbhach | bull → bullish |
| | anam → anamach | soul → soulful |
| V → N | damhsaigh → damsa | dance → dance |
| Adj → Adv | brón → brónach | sad → sadly |

(6) Criteria for distinguishing inflection from derivation

- The application (or non-application) of inflectional morphology usually depends on the syntactic context (i.e., is the subject of a verb sg or pl, m or f, 1/2/3rd?).
- The application of derivational morphology does not depend on the syntactic context.
- Derivation generally results in i) a change in lexical meaning, or ii) the lexical category is changed for a particular word.

3. Derivation - Morphological category changing devices

3.1 The nature of derivation

(7) Assumptions regarding derivational morphology in RRG

- The features of the affix/argument percolate to the headword.
- The (derivational) affix is the head and therefore contains skeletal constituent structure in a sort changing derivation.
- Derivation operates over one 'slot' or argument per derivation while allowing for multiple derivations.
- Compounds can be treated as equivalent to derivation (while catering for endocentric vs. exocentric compounds)

We generalise the lexeme logical structure within a lexeme frame template as:

(8) $[[\alpha_{\text{ArgLexeme}}] \oplus [\beta_{\text{HeadLexeme}}]]\phi_{\text{type}}$

| | | | | |
|-----|----|------------------------------|----------|--------------------------------------|
| | | Adj | → | Adv |
| (9) | a. | <i>crua</i> 'hard' (Adj) | → | <i>go cruu</i> 'hard' (Adv) |
| | b. | <i>dona</i> 'bad' (Adj) | → | <i>an dona</i> 'very bad' (Adv) |
| | b. | <i>tapaidh</i> 'quick' (Adj) | → | <i>an tapaidh</i> 'very quick' (Adv) |

- (10) a. Derivation: [prefix₁– [[**ROOT**] –suffix₁] –suffix₂]
 b. Inflection: [prefix₁– [[**ROOT**] –suffix₁] –suffix₂] –suffix₃]

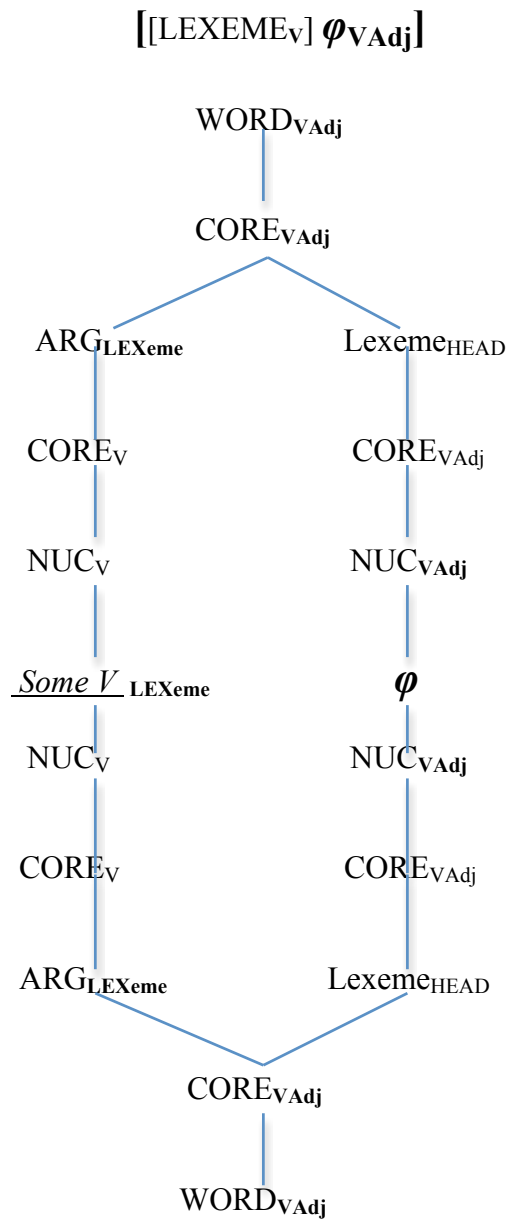


Figure 1: The RRG layered structure of the word in a derivation of $V \rightarrow VAdj$

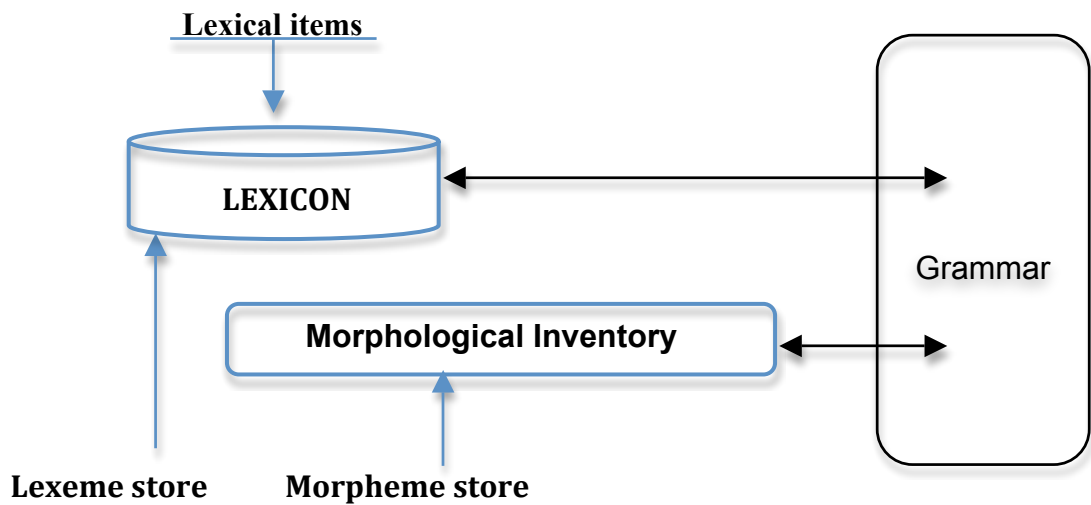


Figure 2: The morphological inventory and the lexicon in grammar

3.2 Derivation processes and adjectives

In Irish we can find derivational processes involving the following strategies (11). The lexeme template inventory for these in the lexeme inventory is indicated in (12). The lexeme template in the inventory schematically has the format of $[[\alpha] \oplus [\beta]]\phi_{\text{type}}$. We indicate how these lexemes morphologically fuse with an argument in a type changing derivation in (12), and we provide examples in the subsections following.

- (11)
- | | | | |
|--------|--------------------|---|-----------------------------------|
| a. Adj | ← intensifier+Adj | : | adjective plus intensifier prefix |
| b. VA | ← V | : | verbal adjective |
| c. Adj | ← Adj +Adj | : | adjective + adjective compound |
| d. N | ← Adj +N compounds | : | adjective + noun compound |
| e. Adv | ← Adj | : | adverb |

- (12)
- | | | | |
|--------|--------------------|---|---|
| a. Adj | ← intensifier+Adj | : | <u>Lexeme constructional template</u> [intensifier_] \oplus [Adj]] ϕ_{Adj} |
| b. VA | ← V | : | [[V] \oplus [_suffix]] ϕ_{VA} |
| c. Adj | ← Adj +Adj | : | [[Adj] \oplus [Adj]] ϕ_{Adj} |
| d. N | ← Adj +N compounds | : | [[Adj] \oplus [N]] ϕ_{N} |
| e. Adv | ← Adj | : | [[Adj] \oplus [\emptyset]] ϕ_{Adv} |

3.3 Adjectives from intensifier + adjective derivation

An intensifier can prefix an adjective with the resulting form being another adjective. That is, the adjectival sortal type is retained.

- (13)
- | | |
|------------------|------------------------------|
| a. <i>láidir</i> | b. <i>ró-láidir</i> |
| strong: Adj | too: Intensifier+strong: Adj |
| ‘Strong’ | ‘Too strong’ |

3.4 Adjectives from verbal derivation

Adjectives can be derived from verbs in several languages by changing the verbs into participles or verbal adjectives. We can see an example of the perfective passive, and the schema of its syntactic pattern, in (14).

(14) Perfective Passive

Bhí an leabhar leite agam.
 Be:AuxV.past the book:N.m read.VA at:Prep+me.PN
 ‘The book was read by me.’

Table 1 shows some of the verbal and verbal adjective forms.

| Basic verb | Verb meaning | Verbal adjectives | VA Gloss |
|------------------|--------------|-------------------|-----------|
| <i>ól</i> | drink | <i>ólta</i> | drunk |
| <i>dún</i> | close | <i>dunta</i> | closed |
| <i>las</i> | light | <i>lasta</i> | lit |
| <i>croch</i> | hang | <i>crochta</i> | hung |
| <i>stad</i> | stop | <i>stadta</i> | stopped |
| <i>buail</i> | hit | <i>buailte</i> | beaten |
| <i>sín</i> | stretch | <i>sínte</i> | stretched |
| <i>bris</i> | break | <i>briste</i> | broken |
| <i>goid</i> | steal | <i>goidte</i> | stolen |
| <i>ite</i> | eat | <i>ite</i> | eaten |
| <i>rith</i> | run | <i>rite</i> | run |
| <i>caith</i> | spend | <i>caite</i> | spent |
| <i>bog</i> | move | <i>boghta</i> | moved |
| <i>ceap</i> | catch | <i>ceapta</i> | caught |
| <i>fág</i> | leave | <i>fágtha</i> | left |
| <i>léim</i> | jump | <i>léimthe</i> | jumped |
| <i>beir</i> | catch | <i>beirthe</i> | caught |
| <i>lig</i> | let | <i>lighte</i> | let |
| <i>aitraigh</i> | change | <i>aithraite</i> | changed |
| <i>ceannaigh</i> | buy | <i>ceannaithe</i> | bought |
| <i>coinnigh</i> | keep | <i>coinnithe</i> | kept |
| <i>imigh</i> | go | <i>imithe</i> | gone |

Table 1. *Some verbal adjectives with lexeme construction template: $[[V] \oplus [_\text{suffix}]]\phi_{VA}$*

(15) a. *Bhí Dub gortuithe go holc i gcionn de na cosa deiridh.*

Bhí Dub gortuithe
 Be:AuxV.past Dub:N wounded:VA

go holc i gcionn de na cosa deiridh.
 to:Prep bad:Adj in:Prep one:NP of:Prep the:DET feet:NP back:Adj
 Dub was badly hurt in one of his hind legs.

b. *Thuit sneachta fríd an oidhche agus bhí sé curtha glan anois.*

Thuit sneachta₁ fríd an oidhche agus
 Fall:V.past snow:N.m through:ADV the:DET night:N.f and:CONJ

bhí sé₁ curtha glan anois.
 be:AuxV.past it:PN₁ spread:VA clean:Adj now:ADVtime
 Snow fell through the night and it was spread clean now.

- c. *Bhí Abha an Tríochad Mile foscailte glan.*
 Be:AuxV.past river:N.f the:DET thirty:N mile:N empty:VA clean:Adj
 The Thirty Mile River was emptied clean.

3.5 Adjective from adjective + adjective compounding

Adjectives can compound with other adjectives where the resulting form is still an adjective.

- (16) a. *bán* ‘white’ + *dearg* ‘red’ → *bán-dearg* ‘pink’

a’. Lexeme constructional template: $[[\text{Adj}] \oplus [\text{Adj}]]_{\phi_{\text{Adj}}}$

- b. *Chuir sí cóiriughadh úr-nuaidh ar an dreisiúr.*
Chuir sí cóiriughadh úr-nuaidh
 Put:V.past she:PN.f ornament:N.m fresh:Adj+new:Adj

ar an dreisiúr.
 on:Prep the:DET dresser:N
 She put a fresh ornament on the dresser.

- c. *Ar feadh chupla blian rinneadh iascaireacht mhórthairbheach timpeall na n-oileán.*

Ar feadh chupla blian
 on:Prep while:ADV couple:QTY years:N.f

rinneadh iascaireacht mhórthairbheach
 make:V.IMPERS-PASS.past fishing:VN.f hugely:Adj+profitable:Adj

timpeall na n-oileán.
 around:ADV the:DET islands:N.m
 ‘For a couple of years one made very profitable fishing around the islands.’

3.6 Nouns derived from adjective + noun compounding

- (17) Lexeme constructional template: $[[\text{Adj}] \oplus [\text{N}]]_{\phi_{\text{N}}}$

- (18) a. *Chuir eagna an tseandúine cúl mór orm.*
Chuir eagna an tseandúine cúl
 Put:V.past prudence:N.m the:DET old:Adj+person:N.m back:N.m

mór orm.
 large:Adj on:Prep+me:PN
 LIT: ‘The prudence of the old person put huge reserves on me’.
 The old folk’s prudence made me very resourceful.

- b. *Chuir na siopaí deireadh leis an tseandóigh bheatha.*
Chuir na siopaí deireadh
 Put:V.past the:DET.pl shops:N.m.pl end:N.m

leis an tseandóigh bheatha.
 with:Prep the:DET old:Adj+ways:N.f life:N.f
 The shops put an end to the old ways of life.

- c. *Rinne Eoghan é féin mion-gháire.*
 Make:V.past Eoghan:N him:PN.m.3sg self:PART little:Adj+laugh:N.m
 Eoghan made himself a little laugh.

3.7 Adverbs derived from adjectives

- (19) a. *Tá sé ag obair [go crua].*
 Be:AuxV.pres he:PN.3sg.m at:PP work:VN [to:PP hard:Adj]Adv
 ‘He is working hard.’
- b. *Bhí sí saidhbhir go deo.*
 Be:AuxV.past she:PN.3sg.f rich:Adj [to:Prep ever:Adj]Adv
 She was always rich.
- c. *Chodháil mé cuiosach maith.*
 Sleep:V.past I:PN.1sg [fairly:Adv well:Adj]Adv
 I slept fairly well.
- (20) Lexeme constructional template: a. $[[PP] \oplus [Adj]]\phi_{Adv}$
 Lexeme constructional template: b. $[[PP] \oplus [Adj]]\phi_{Adv}$
 Lexeme constructional template: c. $[[Adv] \oplus [Adj]]\phi_{Adv}$

3.8 Motivating the semantics of lexemes

- (21) Qualia theory
- a. *Constitutive role* Q_C : The relation between an object and its constituents, or proper parts.
1. Material
 2. Weight
 3. Parts and components
- b. *Formal role* Q_F : That which distinguishes the object within a larger domain
1. Orientation
 2. Magnitude
 3. Shape
 4. Dimensionality
 5. Colour
 6. Position
- c. *Telic role* Q_T : Purpose and function of the object
1. Purpose that an agent has in performing an act
 2. Built-in function or aim that specifies certain activities
- d. *Agentive role* Q_A : Factors involved in the origin or “bringing about” of an object
1. Creator
 2. Artefact
 3. Natural kind
 4. Causal chain

- (22) a. 'The door opened'.
 b. BECOME **be**'(open'(the door(x), {Q_C, Q_F, Q_T, Q_A}))
- (23) a. **Persons:** baker, dancer, gambler, driver
 b. **Animals:** pointer, retriever
 c. **Material objects:** blotter, eraser, fertilizer, shutter
 d. **Immaterial objects:** reminder, thriller, eye-opener
where: a: denotes a type of actor
 b: denotes a type of creature
 c: denotes a type of material entity in the lexicon
 d: denotes a type of immaterial entity in the lexicon

(24) Aktionsarten Types

| Verb Class | Logical Structure |
|----------------|---|
| State | predicate' (x) or (x, y) |
| Activity | do' (x, [predicate (x) or (x, y)]) |
| Achievement | INGR predicate' (x) or (x, y) |
| Accomplishment | BECOME predicate' (x) or (x, y) |

| | | |
|------------------------------|---|---|
| (25) a. Persons: | <i>Bolscaire</i> 'announcer' <i>Spásaire</i> 'astronaut' <i>Fuascailteoir</i> 'liberator' <i>Léachtóir</i> 'lecturer' <i>Báicéir</i> 'baker' <i>Rinceoir</i> 'dancer' <i>Damhsóir</i> 'dancer' <i>Cearrbhach</i> 'gambler' <i>Tiománaí</i> 'driver' | __ <i>aire</i> is suffix __ <i>aire</i> __ <i>eoir</i> __ <i>óir</i> __ <i>éir</i> __ <i>oir</i> __ <i>óir</i> __ <i>ach</i> __ <i>aí</i> |
| b. Animals: | <i>Treoir</i> 'pointer' <i>Snáthaid</i> 'pointer' <i>Gadhar</i> 'retriever' | __ <i>oir</i> __ <i>aid</i> __ <i>ar</i> |
| c. Material objects | <i>páipear suite</i> 'blotter' <i>scriosán</i> 'eraser' <i>leasachán</i> 'fertilizer' <i>comhla</i> 'shutter' | Phrase, no suffix __ <i>án</i> __ <i>án</i> __ <i>a</i> |
| d. Immaterial objects | <i>Cuimhneachán</i> 'reminder' <i>Scéinséir</i> 'thriller' <i>oscailt súl</i> 'eye-opener' | __ <i>án</i> __ <i>éir</i> Phrase, no suffix |

- (26) **Rule:** V of category type + English suffix '-er'
 → Agentive N to do with action of V
Which represents 'somebody or something whose function or characteristic is to perform a particular act'.

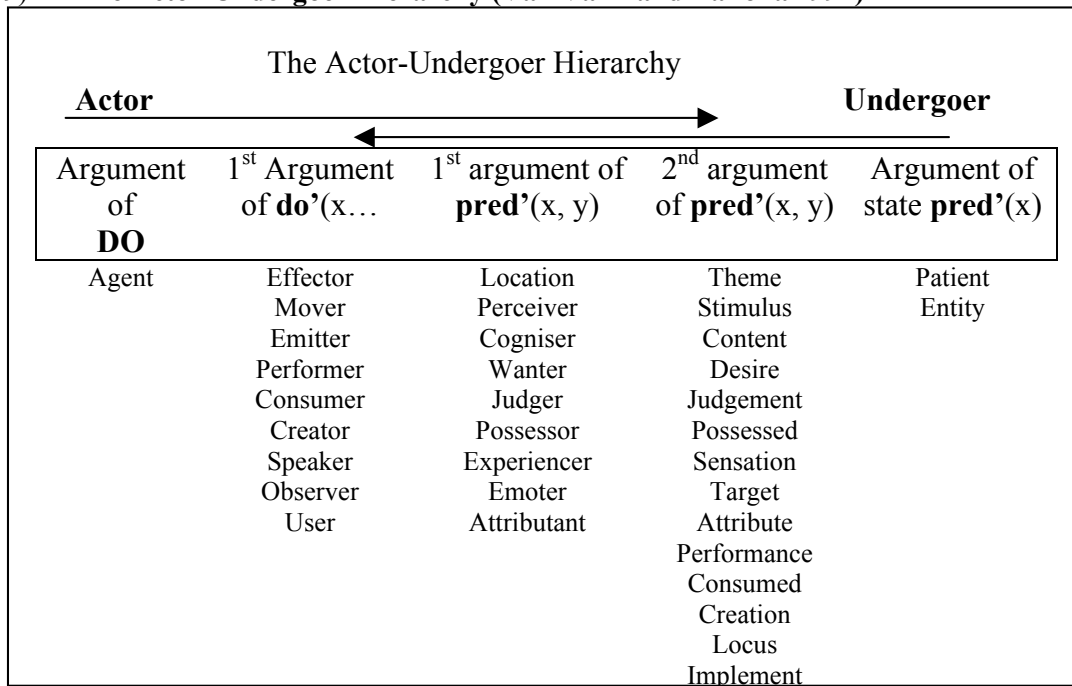
- (27) a. **Rule:** V of category type + Irish suffix set ‘-{aire|eoir|óir|éir|oir|ach|aí|...}’
 → Agentive N [+anim, +human] to do with action of V
Which represents: ‘some *person* whose function or characteristic is to perform a particular act’.
- b. **Rule:** V of category type + Irish suffix set ‘-{oir|id|ar|...}’
 → Agentive N [+anim, -human] to do with action of V
Which represents: ‘some *creature* whose function or characteristic is to perform a particular act’.
- c. **Rule:** V of category type + Irish suffix set ‘-{án|a|éir|...}’
 → Agentive N [-anim, -human] to do with action of V
Which represents: ‘some *thing* whose function or characteristic is to perform a particular act’.

(28) **Semantic Logical Structure**

bacáil ‘bake’ V.past

[do’(ACT: x, 0)] CAUSE [BECOME **baked** (UND: y)]

(29) **The Actor-Undergoer Hierarchy (Van Valin and LaPolla 1997)**



When lexemes combine to form a derivation, for example, involving type coercion then the lexemes combine according to a constructional schema. These too, we posit, are in the lexeme inventory within the lexicon, with a morphologically relevant logical structure as shown in (30), schematically.

(30) Lexeme constructional schema

$[[\varphi\alpha_{Arg}] \oplus [\varphi\beta_{Affix}]]\varphi_{type}$

- (31) a. $[[\alpha:V] \oplus [_{éir}]]\varphi_{tN} \rightarrow \varpi\varphi$ (agentive word : type N) meaning ‘doer of V’
 b. $[[bácáil:V] \oplus [_{éir}]]\varphi_{tN} \rightarrow bácéir$ ‘baker’ (N.sg)
 c. $[[scriobh:V] \oplus [_{éoir}]]\varphi_{tN} \rightarrow scribhneoir$ ‘writer’ (N.sg)

4. Inflection

4.1 Expressing morphosyntactic information

We present in figure 3 a first schematic of a structural representation of the layered structure of the word as it might occur for inflection. The symbol Φ denotes some lexeme that is to be the host of the inflectional changes. It receives a morpheme in the inflectional operation. The inflection may involve a prefix, postfix, infix or circumfix. For ease of reference, we encode the various morphemes as prefix and suffix respectively.

(32) $[[\alpha] \oplus [\text{NUC}\Phi\text{type}] \oplus [\beta]\Phi\text{type}]$

where: α and β are morphological affixes and Φ is a NUC type from the lexicon.

(33) NP, Core_N and Nuclear_N operators (from Van Valin 2005)

Nuclear_N operator

- Nominal aspect (count-mass distinction, classifiers in classifier languages)

Core_N operators

- Number
- Qualification (quantifiers)
- Negation

NP operators

- Definiteness
- Deixis

(34) Verbal operators (from Van Valin 2005)

Nuclear_V operator

- Aspect
- Negation
- Directionals (predicate)

Core_V operators

- Directionals (participant)
- Event quantification
- Root modality
- Negation (internal/narrow-scope)

V operators

- Tense
- Evidentials
- Illocutionary force

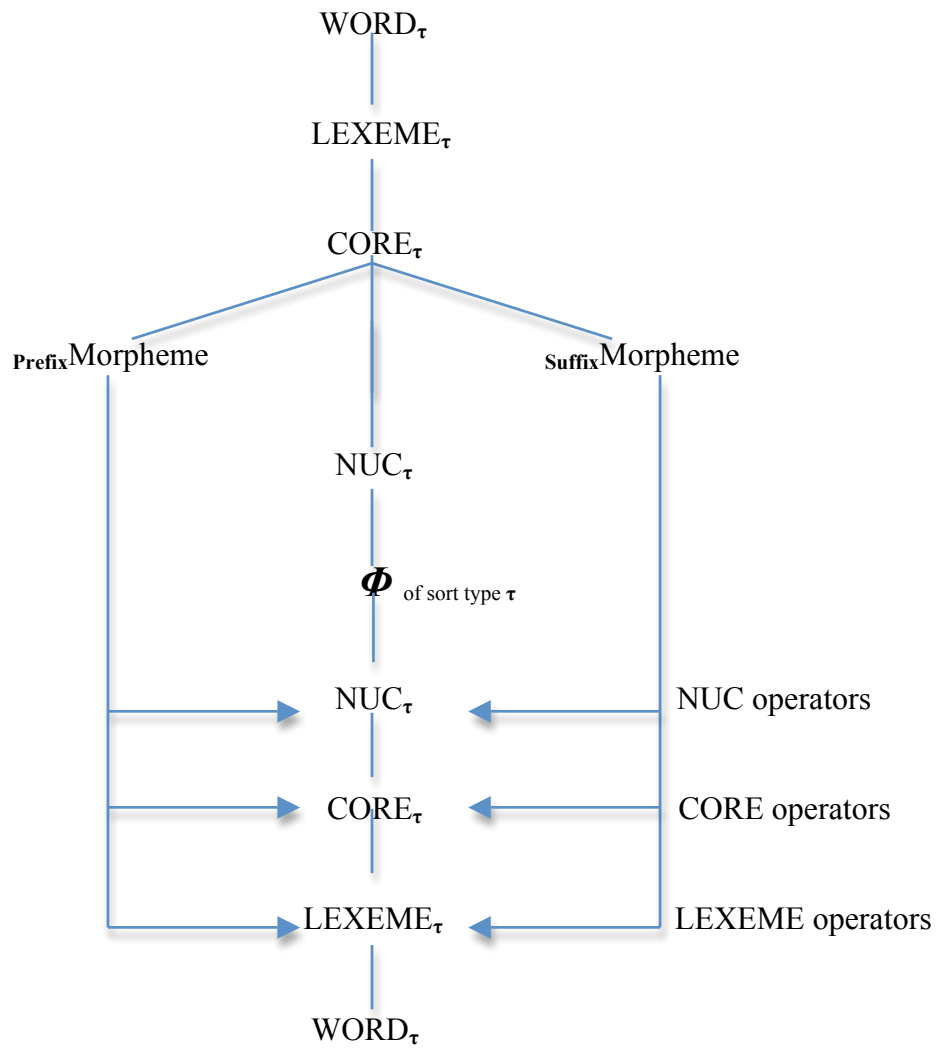


Figure 3: The RRG layered structure of the word under syntactic inflection

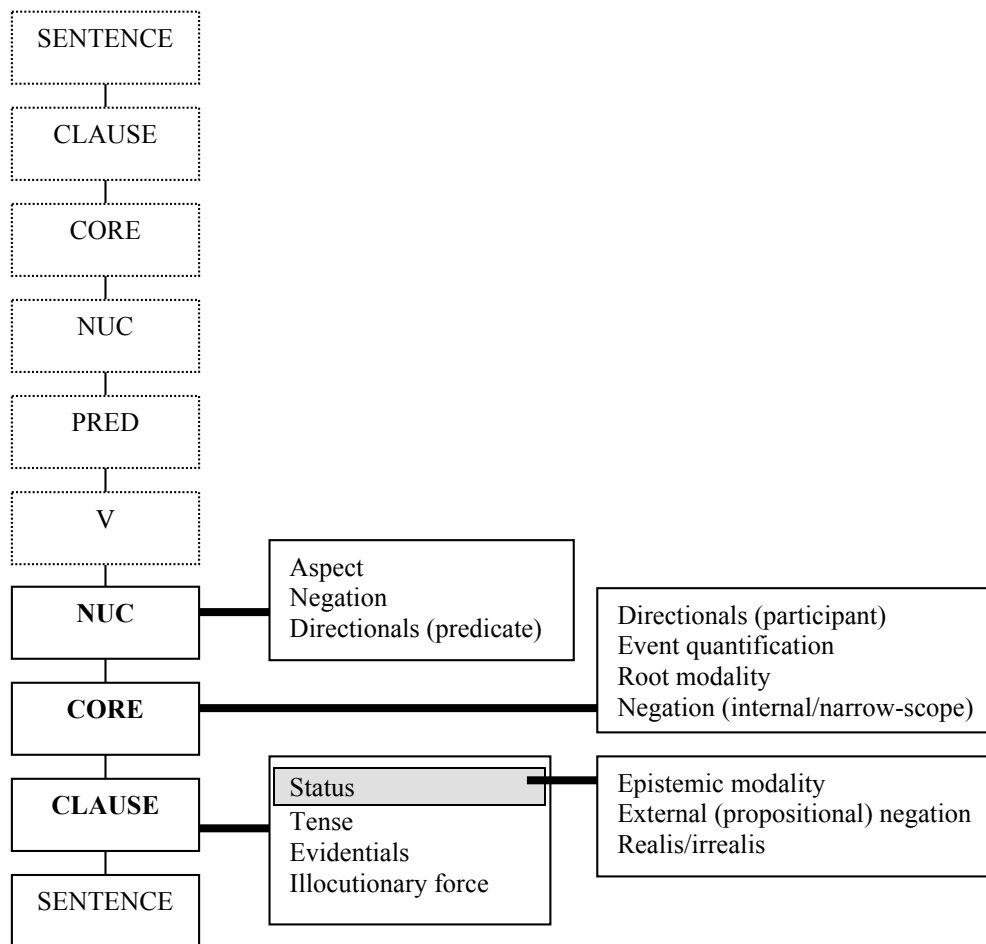


Figure 4: The operator projection within the different levels of the layered structure of the clause (adapted from Van Valin 2005: 12).

4.2 Inflectional case marking in Irish

Irish has common case marking for nominative, accusative (and generally dative), with distinct marking for dative (as the object of a preposition), genitive and vocative cases. The nominative, accusative (and generally dative) case is therefore known as common case in Irish.

- (35) a. *D'imigh an cailín abhaile*
 Go:V.Past the:DET.sg girl:N.sg.Nom home:N
 The girl went home
- b. *Cheannaigh sé an teach*
 Buy:V.Past he:PN.sg.m.Nom the:DET.sg house:N.sg.Acc
 He bought the house

(36) Simple prepositions

| | |
|----------------------------|----------------------------|
| <i>ag</i> ‘at’ | <i>i</i> ‘in’ |
| <i>ar</i> ‘on’ | <i>le</i> ‘with’ |
| <i>chuig</i> ‘towards’ | <i>ó</i> ‘from’ |
| <i>de</i> ‘from, of’ | <i>roimh</i> ‘before’ |
| <i>do</i> ‘to, for’ | <i>thar</i> ‘over, across’ |
| <i>faoi</i> ‘under, about’ | <i>trí</i> ‘through’ |
| <i>go</i> ‘to’ | <i>um</i> ‘about, at’ |

- (37) a. *ag an ngeata*
 at:PP the:DET.sg gate:N.sg.Dat
 at the gate
- b. *ar an gcathaoir*
 on:PP the:DET.sg chair:N.sg.Dat
 on the chair.
- c. *roimh an bhfear*
 before:PP the:DET.sg man:N.sg.Dat
 before the man.

The vocative case is used when the person referred to by the noun is the direct addressee of the utterance. The noun is always preceded by the leniting vocative particle.

- (38) *Dún an doras, a Sheáin!*
 Close: V the:DET door:N.sg, Voc.PART Sean:N
 Close the door, Sean!

A noun is usually in the genitive case if it is: a) the direct object of a verbal noun, b) preceded by a compound preposition, c) preceded by phrases that denote indefinite quantity, d) governed by a possessive adjective such that possession or ownership is characterised.

- (39) a. *ag deanamh na hoibre*
 at:PP doing:VN.Prog the:DET work:N.sg.Gen
 doing the work
- b. *i lár na seachtaine*
 in:PP middle:N the:DET week:N.sg.Gen
 in the middle of the week
- c. *go leor codlata*
 to:PP plenty:N sleep:N.sg.Gen
 enough sleep
- d. *siopa Sheáin*
 shop:N (of) Sean:N.sg.Gen
 Sean’s shop
- d’. *fear an tí*
 man:N (of) the:DET house:N.sg.Gen
 man of the house

4.3 Gender determination of Irish nouns

Irish has two genders, masculine and feminine. Nouns that are neuter in other languages are encoded as masculine or feminine in Irish. Sometimes the gender may not be obvious (40).

- (40) a. *cailín* ‘girl’ has masculine gender in Irish
 b. *stail* ‘stallion’ has feminine gender in Irish

- (41) Gender determination of an Irish N by its word ending

| (m) N-word endings | (f) N-word endings |
|---|---|
| -ádh, -án, -ch, -éad, -éal, éan, -eál, -éar, -eir, -eoir, -oir, -s, -in, -ún, -úr, -úir | -áil, -úil, -ail, -ilt, -int, -áint, -íocht, -aois, -is, -chan, -irt, -ach, -acht, -úil, -úint, -cht, -éir, -eoir, -óir, -úir, -lann, -eog, -óg |

4.4 Definiteness and indefiniteness of nouns

- (42) Determiner forms

- an* ‘the’
- Is used in the singular.
 - With masculine and feminine nouns, it is used in nominative, accusative, dative and genitive cases.
- na* ‘the’
- Is used the genitive singular with masculine nouns.
 - Is used in the genitive singular with feminine nouns.
 - Is used in the plural with feminine nouns.
 - Is used in the plural with masculine nouns.

- (43) Determiner - example of forms across gender

| N (m) | | N (f) | |
|----------------|---------|-----------------|-----------|
| <i>fear</i> | a man | <i>bean</i> | a woman |
| <i>an fear</i> | the man | <i>an bhean</i> | the woman |
| <i>na fir</i> | the men | <i>na mná</i> | the women |

- (44) Determiner morphological conflation

form : rule

- den* ‘from the’ : *de+an* → *den*
don ‘to the’ : *do+an* → *don*
faoin ‘about the’ : *faoi+an* → *faoin*
ón ‘from the’ : *ó+an* → *ón*
cén ‘what the’ : *cé+an* → *cén*

(45) No double determiner constraint

| Irish – single determiner only | English – dual determiner allowed |
|--|---|
| <i>hata an fhir</i> hat:N (of) the:DET man:N.m.Gen hat of the man | the ₂ hat of the ₁ man |
| <i>bean an tí</i> woman:N (of) the:DET house:N.m.Gen woman of the house | the ₂ woman of the ₁ house |
| <i>muintir na cathrach</i> inhabitants:N (of) the:DET city:N.f.Gen inhabitants of the city | the ₂ inhabitants of the ₁ city |
| <i>i lár na sraide</i> in:PP centre:N (of) the:DET street:N.f.Gen in middle of the street | in the ₂ middle of the ₁ street |

Where the DET₂ that is found in the English gloss, for example, is not allowed in Irish

4.5 Noun declension classes

Modern Irish has five noun declension classes classified according to the manner in which they form the genitive singular. This is the traditional declension system of Irish. By slender consonant we refer to consonants following one of the vowels *e, é, i, í*, and by broad consonants we mean consonants following *a, á, o, ó, u, ú*.

(46) 1st N declension class

| Common sg ending | Genitive sg ending | Example of noun: Common.sg, genitive.sg | Gender |
|--|--------------------|--|--------|
| Broad consonant, and tend to end in: -án, -ch, -éad, -éal, éan, -éar, -s, -ún, -úr, -ádh | Slender consonant | <i>fear</i> ‘man’, <i>fir</i> <i>bád</i> ‘boat’, <i>báid</i> <i>iasc</i> ‘fish’, <i>éisc</i> <i>páipéar</i> ‘newspaper’, <i>páipéir</i> | masc |

(47) 2nd N declension class

| Common sg ending | Genitive sg ending | Example of noun: Common.sg, genitive.sg | Gender |
|------------------|--------------------|--|--------|
| Consonant | -e, -í | <i>cos</i> ‘foot’, <i>coise</i> <i>bróg</i> ‘shoe’, <i>bróige</i> <i>cailleach</i> ‘hag’, <i>caillí</i> <i>geallach</i> ‘moon’, <i>gealaí</i> | fem |

(48) 3rd N declension class

| Common sg ending | Genitive sg ending | Example of noun: Common.sg, genitive.sg | Gender |
|---|--------------------|--|------------|
| Consonant and Ns tend to end in: -áil, -úil, -aíl, úint, -cht, -éir, -eoir, -óir, -úir | -a | <i>am</i> 'time', <i>ama</i> (m) <i>bláth</i> 'flower', <i>blátha</i> (m) <i>banríon</i> 'queen', <i>banríona</i> (f) <i>cainteoir</i> 'speaker', <i>cainteora</i> (m) <i>éagóir</i> 'injustice', <i>éagóra</i> (f) <i>dliodóir</i> 'lawyer', <i>dliodóra</i> (m) <i>síocháin</i> 'peace', <i>síochána</i> (f) | masc & fem |

(49) 4th N declension class

| Common sg ending | Genitive sg ending | Example of noun: Common.sg, genitive.sg | Gender |
|------------------|--------------------|---|------------|
| Vowel, or -ín | No inflection | <i>bá</i> 'affection', <i>bá</i> (f) <i>bia</i> 'food', <i>biaí</i> (m) <i>cailín</i> 'girl', <i>cailín</i> (m) <i>coinín</i> 'rabbit', <i>coinín</i> (m) <i>ceo</i> 'fog', <i>ceo</i> (m) <i>cnó</i> 'nut', <i>cnó</i> (m) <i>oiche</i> 'night', <i>oiche</i> (f) <i>slí</i> 'way', <i>slí</i> (f) <i>trá</i> 'beach', <i>trá</i> (f) <i>teanga</i> 'language', <i>teanga</i> (f) | masc & fem |

(50) 5th N declension class

| Common sg ending | Genitive sg ending | Example of noun: Common.sg, genitive.sg | Gender |
|-----------------------------|--------------------|---|-------------|
| Vowel, or slender consonant | Broad consonant | <i>cathair</i> 'city', <i>cathrach</i> <i>pearsa</i> 'person', <i>pearsan</i> (f) <i>litir</i> 'letter', <i>litreach</i> (f) <i>traein</i> 'train', <i>traenach</i> (f) <i>cara</i> 'friend', <i>carad</i> (m) <i>fiche</i> 'twenty', <i>fichead</i> (m) <i>nócha</i> 'ninety', <i>nóchad</i> (m) | usually fem |

4.5.1 Irregular nouns

(51) Selection of Irish irregular nouns

| Singular | | Plural |
|------------------------------|-----------------|---------------------|
| Nominative | Genitive | All examples |
| <i>bean</i> 'woman' (f) | <i>mná</i> | <i>mná</i> |
| <i>deirfiúr</i> 'sister' (f) | <i>deirféar</i> | <i>deirfiúracha</i> |
| <i>deoch</i> 'drink' (f) | <i>dí</i> | <i>deochanna</i> |
| <i>dia</i> 'god' (m) | <i>dé</i> | <i>déithe</i> |
| <i>lá</i> 'day' (m) | <i>lae</i> | <i>laethanta</i> |
| <i>leaba</i> 'bed' (f) | <i>leapa</i> | <i>leapacha</i> |
| <i>mí</i> 'month' (f) | <i>míosa</i> | <i>míonna</i> |
| <i>teach</i> 'house' (m) | <i>tí</i> | <i>tithe</i> |

4.6 Eclipsis and lenition on Irish nouns

4.6.1 Eclipsis of nouns

(52) The noun is eclipsed after the definite determiner

| | |
|---|--|
| <p>After the dative singular <u>except</u> : when the initial letter is ‘d’ or ‘t’ which remain unchanged</p> | <p>a). <i>ag an bhfear</i> at:PP the:DET.sg man:N.sg at the man</p> <p>b). <i>as an gcistín</i> out.of:PP the:DET.sg kitchen:N.sg out of the kitchen</p> <p>c). <i>ar an mbus</i> on:PP the:DET.sg bus:N.sg on the bus</p> <p>d). <i>ón teach</i> from:PP (the:DET.sg) house:N.sg from the house</p> |
| <p>In the genitive plural</p> | <p>e). <i>ceol na n-éan</i> music:N (of) the: DET.pl birds:N.pl song of the birds</p> <p>f). <i>rogha na mban</i> choice:N (of) the:DET.pl women:N.pl the women’s choice</p> <p>g). <i>hataí na bhfear</i> hats:N.pl (of) the:DET.pl men:N.pl the men’s hats</p> |

(53) The noun is eclipsed after some prepositions

| | |
|--|--|
| <p>The preposition <i>i</i> ‘in’, and the variant form of the <i>i</i>:PP ‘in’ that occurs before initial vowels as <i>in:PP</i> ‘in’.</p> | <p>h). <i>i gcistin</i> in:PP (a:DET.indef) kitchen:N.indef.sg in a kitchen</p> <p>i). <i>i dteach</i> in:PP (a:DET.indef) house:N.indef.sg in a house</p> |
| <p><i>dhá</i> ‘two (things)’.</p> | <p>j). <i>bhur dhá ngeata</i> your:Poss.Adj.pl two:NUM gates:N.pl your two gates</p> |
| <p><i>bhúr</i>:Poss.Adj.pl ‘your’.</p> | <p>k). <i>in bhur mbosca</i> in:PP your:Poss.Adj.pl box in your box</p> |
| <p><i>ár</i>:Poss.Adj.pl ‘our’.</p> | <p>l). <i>ár bpaiste</i> our:Poss.Adj.pl child:N.sg in your box</p> |
| <p><i>a</i>:Poss.Adj.pl ‘their’.</p> | <p>m). <i>a bpinn</i> their:Poss.Adj.pl pens:N.pl their pens</p> |

- (54) The noun is eclipsed after some fixed phrases

| | |
|-----------------|--|
| Fixed phrase-1. | n). <i>ar gcul</i> on:PP back:N.pl behind |
| Fixed phrase-2. | o). <i>ar dtús</i> on:PP start:N.pl initially / in the beginning |

- (55) The noun is eclipsed after the numerals *seacht* ‘seven’, *ocht* ‘eight’, *naoi* ‘nine’ and *deich* ‘ten’.

| | |
|-----------------------|--|
| <i>seacht</i> ‘seven’ | p). <i>seacht n-uaire</i> seven:NUM hours:N.pl seven hours |
| <i>ocht</i> ‘eight’ | q). <i>ocht gcat</i> eight:NUM cats:N.pl eight cats |
| <i>naoi</i> ‘nine’ | r). <i>naoi mbus</i> nine:NUM bus:N.pl nine buses |
| <i>deich</i> ‘ten’ | s). <i>deich bpingine</i> ten:NUM pennies:N.pl ten pence |

4.6.2 Lenition of nouns

- (56) The noun receives lenition after the definite determiner (except with a noun having an initial d-, t-, s-), when the noun is f.sg.Nom or f.sg.Acc.

| | |
|-----------------------------|--|
| N.f.sg.Nom or N.f.sg.Acc | a). <i>Feicim an bhean</i> see:V.Pres+I:PN.sg.Nom the:DET.sg woman:N.sg.f.acc I see the woman |
| | b). <i>Tá an fhairraige ag trá</i> AuxV:Pres the:DET.sg sea:N.sg.Nom at:PP ebbing:VN The sea is ebbing |

- (57) The noun received lenition after the definite determiner (except with initial d-, t-, s-) when the noun is M.sg.Gen

| | |
|------------|---|
| N.M.sg.Gen | a). <i>hata an fhir</i> hat:N.sg (of) the:DET man:N.sg.m.Gen the man’s hat |
| | b). <i>ag moladh an bhuachalla</i> at:PP praising:VN.prog the:DET boy:N.sg.m.Gen praising the boy |

- (58) *Fuair mé mar bhronntanas é*
Get:V.Past 1:PN.sg.Nom as:PP present it:PN.sg.m
I got it as a gift

4.6.3 Summary of the eclipsis and lenition mutations

(59) Summary of the morphological mutations

| Mutation name | Sounds that undergo the changes | Sounds that don't undergo changes | Sounds that undergo exceptional changes |
|--------------------------------|---------------------------------------|---|---|
| Lenition1 (^{L1}) | <i>b, m, f, t, d, s, c, g</i> | The letters <i>d, t, s</i> do not lenite after a word ending in <i>n</i> . The sequences <i>sp, st, sc</i> never lenite. | - |
| Lenition2 (^{L2}) | <i>b, m, f, c, g</i> | <i>t, d</i> | <i>s → ts</i> |
| Eclipsis1 (^{E1}) | <i>p, b, f, t, d, c, g,</i> vowels | - | - |
| Eclipsis2 (^{E2}) | <i>P, b, f, c, g</i> | <i>t, d, vowels</i> | - |
| Eclipsis3 (^{E3}) | <i>P, b, f, c, g</i> | <i>t, d, vowels</i> | <i>s → ts</i> |
| T-prefixation (^T) | vowels | - | - |
| H-prefixation (^H) | vowels | - | - |

4.7 Inflectional agreement in the LSNP with nominals and adjectives

(60) *An dá theach mhóra*
 the:Det.sg two:num house:N.sg.m big:Adj.pl.m
 The two big houses

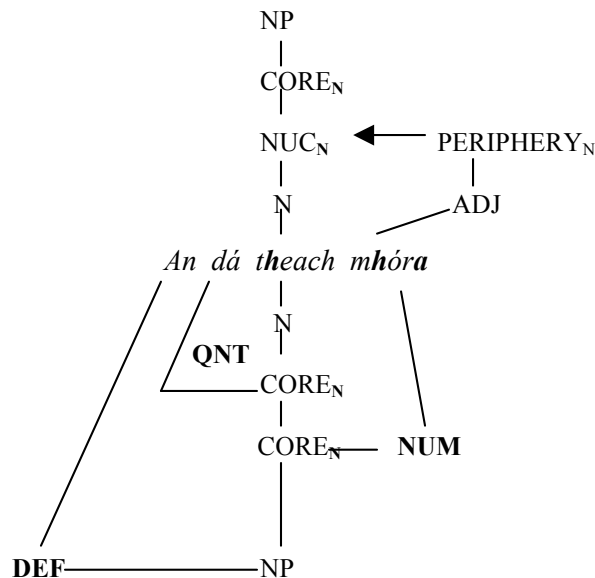


Figure 5: Representation for the LSNP with the Irish NP in (60)

| Common sg | | Genitive SG.M | Genitive SG.F | Common PL |
|------------------|------------|------------------|------------------|------------------|
| <i>bán</i> | ‘white’ | <i>báin</i> | <i>báine</i> | <i>bána</i> |
| <i>direach</i> | ‘straight’ | <i>dírigh</i> | <i>díri</i> | <i>díreacha</i> |
| <i>bacach</i> | ‘lame’ | <i>bacai</i> | <i>bacáí</i> | <i>bacacha</i> |
| <i>leisciúil</i> | ‘lazy’ | <i>leisciúil</i> | <i>leisciúla</i> | <i>leisciúla</i> |
| <i>mall</i> | ‘slow’ | <i>mall</i> | <i>maille</i> | <i>malla</i> |
| <i>maith</i> | ‘good’ | <i>maith</i> | <i>maithe</i> | <i>maithe</i> |
| <i>buíoch</i> | ‘grateful’ | <i>buíoch</i> | <i>buíthí</i> | <i>buíocha</i> |
| <i>gnách</i> | ‘usual’ | <i>gnách</i> | <i>gnáthai</i> | <i>gnácha</i> |

Table 2. Examples of morphological markings on the adjective for agreement (Christian Brothers 1997:61)

| Suffixes | Examples | Gloss |
|------------|------------------------------------|-------------|
| -án | <i>cupán</i> | cup |
| -ín | <i>cailín</i> | girl |
| -úr | <i>gasúr</i> | child |
| -ún | <i>náisiún</i> | nation |
| -as | <i>doras</i> | door |
| -(ái)ste | <i>coláiste</i> | college |
| -óir/-eoir | <i>múinteoir</i> | teacher |
| -aire | <i>cabaire</i> | natterer |
| -éara | <i>geilméara</i> | farmer |
| -aí | <i>scealaí</i> | storyteller |
| -adh | <i>moladh</i> | praising |
| -amh | <i>gaineamh</i> | sand |
| -a | <i>cóta</i> (with 2 syllables) | coat |
| -ach | <i>éireannach</i> (derived from N) | Irishman |
| -cht | <i>fuacht</i> (with 1 syllable) | cold |

Table 3. Word endings that denote masculine nouns

| Suffixes | Examples | Gloss |
|----------|------------------------------------|-----------|
| -óg/eoig | <i>fuinneog</i> | window |
| -áil | <i>candáil</i> | auction |
| -ail | <i>feadail</i> | whistling |
| -acht | <i>Gaeltacht</i> (> two syllables) | Gaeltacht |
| -ach | <i>báisteach</i> (mass nouns) | rain |
| -seach | <i>clairseach</i> | harp |

Table 4. Word endings that denote feminine nouns

(61) $V_{broad} \cdot CONSONANT \cdot V_{broad}$ OR $V_{slender} \cdot C \cdot V_{slender}$.

It is the presence of this pair of mirrored vowels occurring morphologically within the Irish word that determines whether the consonant between them is broad or slender.

| Numerals & nouns | gloss | Morphological marking |
|----------------------|-------------|-----------------------|
| <i>aon bhád</i> | one boat | Lenition on N-sg |
| <i>dhá bhád</i> | two boats | Lenition on N-sg |
| <i>trí bhád</i> | three boats | Lenition on N-sg |
| <i>cheithre bhád</i> | four boats | Lenition on N-sg |
| <i>chúig bhád</i> | five boats | Lenition on N-sg |
| <i>sé bhád</i> | six boats | Lenition on N-sg |
| <i>seacht mbád</i> | seven boats | Eclipsis on N-sg |
| <i>ocht mbád</i> | eight boats | Eclipsis on N-sg |
| <i>naoi mbád</i> | nine boats | Eclipsis on N-sg |
| <i>deich mbád</i> | ten boats | Eclipsis on N-sg |

Table 5. Examples for numbers 'one' to 'ten' + nouns

| Num & N example | Gloss | Morphological marking |
|-----------------------|------------------|--------------------------------|
| <i>trí cinn</i> | three items | |
| <i>trí huaire</i> | three times | <i>h</i> -initial vowel prefix |
| <i>trí seachtainí</i> | three weeks | N-pl |
| <i>trí bliana</i> | three years | N-pl |
| <i>trí ceathrúnaí</i> | three quarters | N-pl |
| <i>trí pingine</i> | three pennies | N-pl |
| <i>trí scilleacha</i> | three schillings | N-pl |
| <i>trí horlaí</i> | three inches | <i>h</i> -initial vowel prefix |
| <i>trí troighhe</i> | three feet | N-pl |
| <i>trí slata</i> | three yards | N-pl |
| <i>trí clocha</i> | three stones | N-pl |
| <i>trí galúin</i> | three gallons | N-pl |
| <i>trí fichid</i> | three twenties | N-pl |

Table 6. Examples of numbers 'one' to 'ten' + measurement (plural) nouns

- (62) a. *An t-aon fhuinneog amháin*
the:DET.sg one:NUM window:N.sg.f one:NUM-emphatic
The one single window
- b. *An dá fhuinneog*
the:DET.sg two:NUM windowN.sg.f
The two windows
- c. *Na dá fhuinneog*
the:DET.sg two:NUM window:N.sg.f
The two windows
- d. *Na trí fhuinneog*
the:DET.pl three:NUM window:N.sg.f
The three windows
- e. *Na cheithre shagart*
the:DET.pl four:NUM priest:N.sg.f
The four priests

(63) a. *Aon fhear mhór amháin*
 one:NUM man:N.sg.m big:Adj.sg one:NUM.emphatic
 Only one big man

b. *An dá fhuinneog mhóra*
 the:DET.sg two:NUM window:N.sg.f big:Adj.pl
 The two big windows

c. *Na dá fhuinneog mhóra*
 the:DET.pl two:NUM window:N.sg.f big:Adj.pl
 The two big windows

d. *Na trí theach bheaga*
 the:DET.pl three:NUM house:N.sg.m little:Adj.pl
 The three little houses

(64) Agreement marking on the adjective and the NUM operator

a. *Dhá bhád bheaga*
 two boat:N.sg.m small:Adj.pl.m
 ‘Two small boats.’

b. *An dá bhád bheaga*
 The:Det.sg two:Num.thing boat:N.sg.m small:Adj.pl.m
 The two small boats

c. *Dhá chat dhubha*
 Two:Num.thing cat:N.sg.m small:Adj.pl.m
 Two black cats

d. *Trí bhád mhóra*
 Three:Num boat:N.sg.m big:Adj.pl.m
 Three big boats

e. *Seacht gcapall deag bhána*
 Seven:Num horse:N.sg.m ten:Num white:Adj.pl.m
 Seven small white horses

f. *Beirt bhan bheaga*
 Two:NUM-people women:N.pl.f small:Adj.pl.f
 Two small women

(65) **NUMoperator**₂ [N ^{[AGMT} _[GEND]]₁ **ADJ** ^{[AGMT} _[GEND, NUM]]₂]

4.7 Synthetic and analytical verb forms

Irish is a strict VSOX language, in common with the other Celtic languages.

(66) Synthetic and analytical verb forms

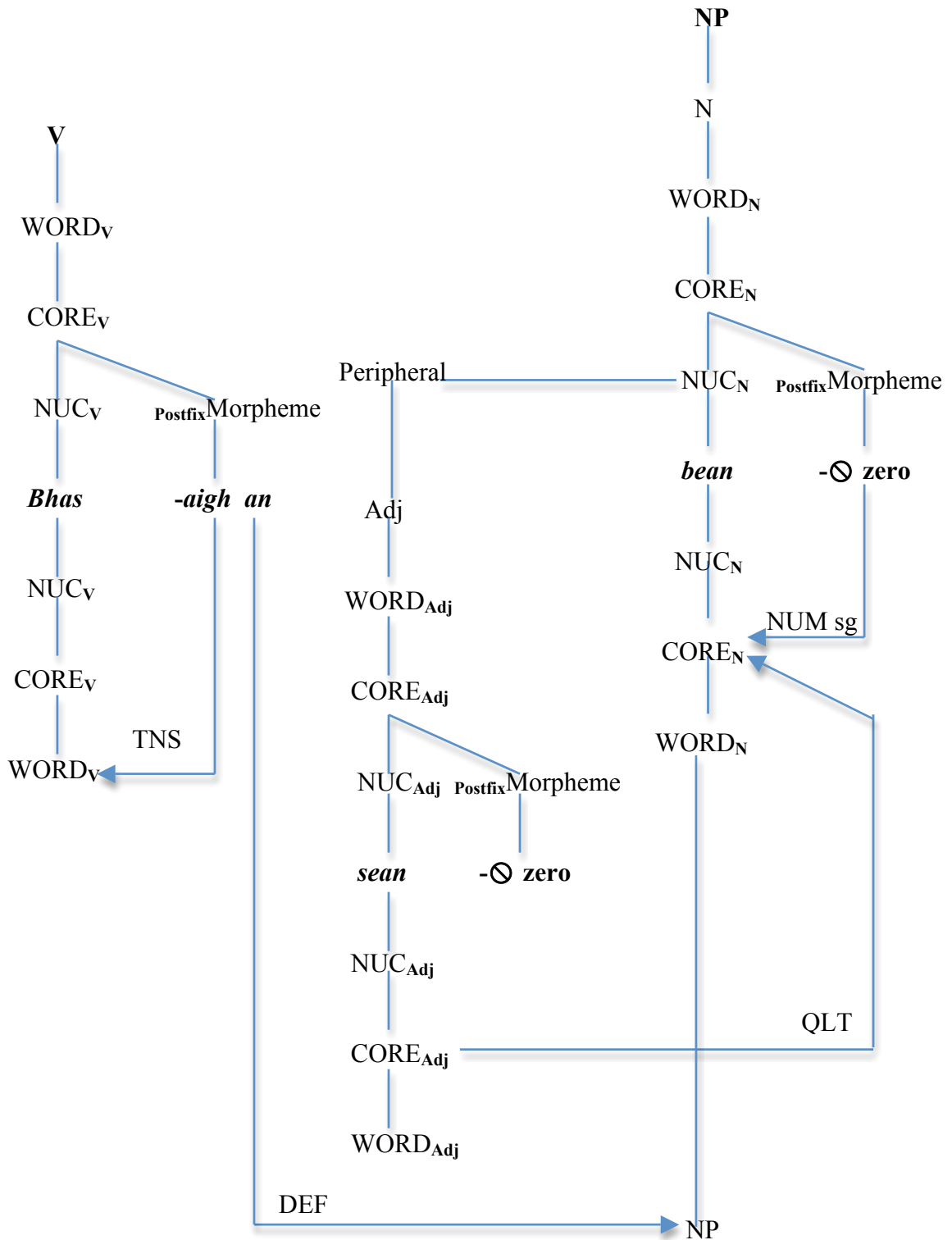
- a. *Tagann* *mé* *anois*
 came:V.pres I:PN.1sg.Nom now:Adv
 I arrive now.
- a'. *Tagaim* *anois*
 came:V.pres+I:PN.1sg.Nom now:Adv
 I arrive now.
- b. *Molann* *mé* *an* *cailín*
 praise:V.pres I:PN.sg.Nom the:DET girl:N.Acc
 I praise the girl.
- b'. *Molaim* *an* *cailín*
 praise:V.pres+I:PN.sg.Nom the:DET girl:N.Acc
 I praise the girl.

4.8. General example of the LSW

For the example sentence (67) we supply an indicative diagram of the layered structure of the word for V, N and Adj word types.

For brevity and economy, we will assume that the lexemes are obvious and need not be represented directly in **figure 6**.

- (67) *Bhasaigh an seanbean*
 Die:V.past the:DET old:Adj+woman:N
 The old woman died



Bhasaigh an seanbean. 'The old woman died.'

Figure 6: The RRG layered structure of the word for example (67)

5. Discussion

In relation to the morpheme part of the morphological inventory, we schematically represented the application of the inflectional process through the inflectional morpheme constructional schema as:

$$(68) \quad [[\alpha] \oplus [\text{NUC } \Phi \text{ type}] \oplus [\beta] \Phi \text{ type}],$$

where α and β are affixes and Φ is a NUC type from the lexicon.

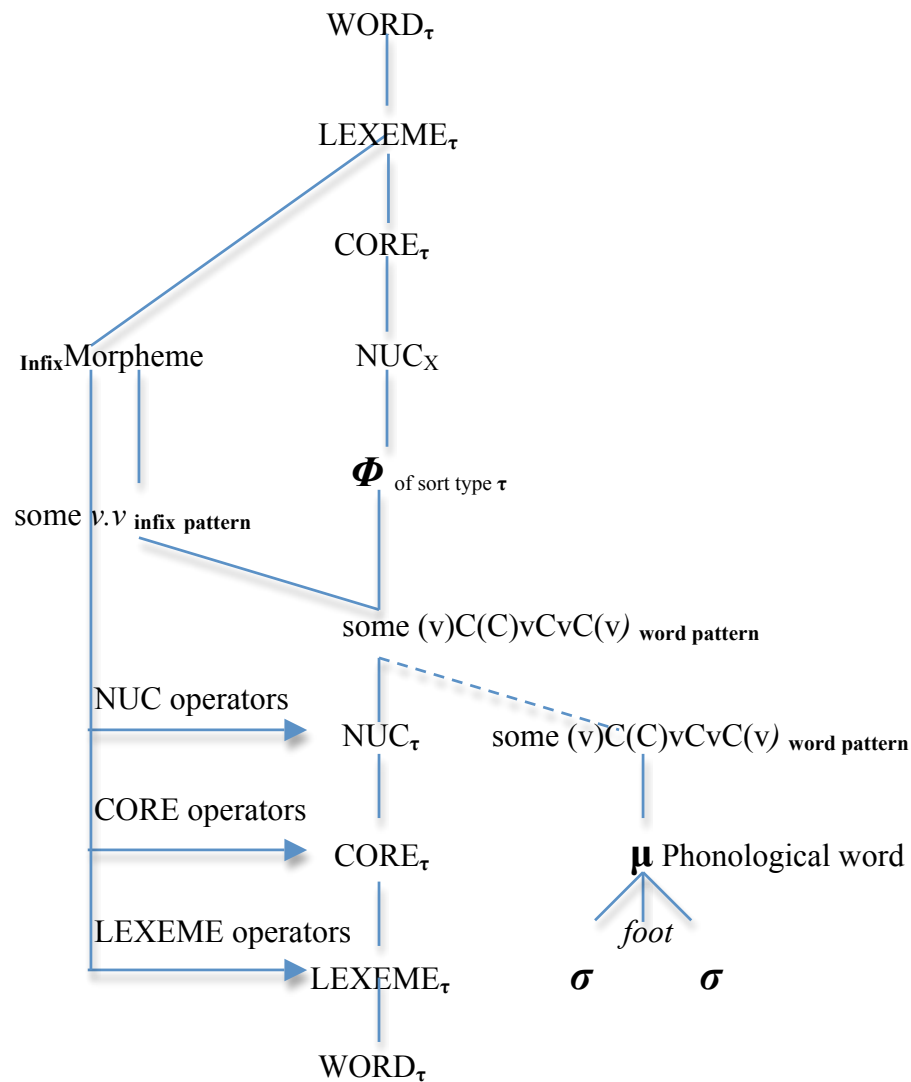


Figure 7: The generalised RRG layered structure of the word for infixation

6. References

- Aronoff, Mark and Kirsten Fudeman. 2005: *What is Morphology?* Oxford: Blackwell.
- Carnie, Andrew. 2008: *Irish Nouns*. Oxford: Oxford University Press.
- Christian Brothers. 1997: *New Irish Grammar*. Dublin: C.J. Fallon-Mount Salus Press.
- Katamba, Francis. 1993: *Morphology*. London: Macmillan
- Mairal Usón, R. and Francisco Ruiz de Mendoza. 2008: “New challenges for lexical representation within the Lexical-Constructional Model (LCM)” En *Revista Canaria de Estudios Ingleses*. Universidad de La Laguna.
- Mairal Usón, Ricardo and Francisco Ruiz de Mendoza. 2009: “Levels of description and explanation in meaning construction”. In Ch. Butler and J. Martín Arista (eds.). *Deconstructing Constructions*. Ámsterdam/ Philadelphia: John Benjamins.
- Mac Congáil, Nollaig. 2004: *Irish Grammar Book*. Indreabhán, Conamara. Galway, Ireland: Cló IarChonnachta
- Nolan Brian. 2006. *The Passives of Irish*. In Abraham, Werner and Larisa Leisiö (eds.). Passivization and Typology: Form and function. Amsterdam: John Benjamins Publishing Co.
- Nolan, Brian. 2007. *The role of definiteness in the impersonal passive of Modern Irish: Implications for the RRG theory*. In Zeituin, Elizabeth (ed.). Journal of Language and Linguistics. Academia Sinica, Taipei, Taiwan.
- Nolan Brian. 2008 a. *Modality in RRG: Towards a characterisation using Irish data*. In: Van Valin, R. (ed.). Investigations of the Syntax-Semantics-Pragmatics Interface. Amsterdam: John Benjamins Publishing Co.
- Nolan, Brian. 2008 b. *The patterns of occurrence of Irish light verb constructions*. Paper presented at the 2008 Syntax of the Worlds Languages conference held at the Freie Universität Berlin, Berlin, Germany.
Available at: <http://userpage.fu-berlin.de/~gast/sw13/>
- Nolan, Brian. 2009: The functions, semantics and syntax of the adjective in Irish. In: Guerrero, Lilián, Sergio Ibáñez, Valeria A. Bello (editors). *Studies in Role and Reference Grammar*. México: Universidad Nacional Autónoma de México. In Press.
- Nolan Brian. 2010 [Forthcoming]. *The structure of Irish; A functional account*. London: Equinox Publishing Co.
- Ó Siadhail. Mícheál. 1996: *Learning Irish*. New Haven & London: Yale University Press
- Ó Siadhail, Mícheál. 1989: *Modern Irish*. Cambridge MA: Cambridge University Press.
- Payne, Thomas. E. 1997: *Describing Morphosyntax: A guide for field linguists*. Cambridge University Press, Cambridge.
- Pustejovsky, James. 1995: *The Generative Lexicon*. MIT Press. Cambridge, MA
- Spencer, Andrew. 1991: *Morphological Theory*. Oxford: Blackwell.
- Spencer, Andrew and Arnold M. Zwicky (eds.) 1998: *The Handbook of Morphology*. Oxford: Blackwell.
- Ruiz de Mendoza Ibáñez, Francisco José and Ricardo Usón Mairal. 2008: ‘Levels of description and constraining factors in meaning construction: an introduction to the Lexical Constructional Model’. *Folia Linguistica* 42/2 (2008), 355–400.
- Van Valin, Robert and Randy LaPolla. 1997: *Syntax*. Cambridge University Press. Cambridge MA.
- Van Valin, Robert. 2005: *Exploring the Syntax-Semantics-Pragmatics Interface*. Cambridge University Press. Cambridge MA.