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A COMPARISON OF THE SEMANTIC VALUES OF MIDDLE CORNISH *LUF* AND *DORN* WITH MODERN ENGLISH *HAND* AND *FIST*.

JON MILLS

Faculty of Humanities, University of Luton, 75, Castle Street, Luton, Bedfordshire, UK

ABSTRACT

This paper sets out to discover a means to undertake corpus based semantic analysis of lexical items in a language that has no speakers who possess first language intuition. Two Cornish language lexical items, *luf* and *dorn*, were chosen for trial analyses. These items share the semantic field of "hand - part of body". Concordances of these items were produced and compared. Criteria were then sought that distinguish the items in question. Differences were found in the case roles and collocations that are entailed by these words.

KEYWORDS

Cornish; corpus; luf; dorn; semantic analysis; lexicon; case roles; collocation.

INTRODUCTION

The naive dictionary user often thinks of the translation equivalents found in bilingual dictionaries as 'meanings'. However in order to give a satisfactory account of an item’s meaning it is necessary to ascertain its semantic value through the relations that it enters into with other items in the language system. Middle Cornish is a variety of Brythonic Celtic language spoken in Cornwall during the 13th to 16th centuries. The corpus is small, approximately 120,000 thousand tokens, yielding a vocabulary of about 9,000 dictionary headwords. *Luf* and *dorn* are Middle Cornish lexical items which lexicographers have traditionally sought to explain with the English translation equivalents, *hand* and *fist*. Two problems present themselves to the lexicographer firstly he has to determine the meaning of an item, secondly he has, in addition to providing translation equivalents, to find a way to convey that
meaning to the dictionary user. The first of these problems is further compounded
by a need to establish procedures for analysis of meaning in a language which has
no living speakers with first language intuition. Explicit criteria for the
lexicographer's analyses are, thus, required to be derived from the corpus itself.
Analysis of concordances, shows differences between the semantic value of the
Cornish items and their ostensible English equivalents. These differences are attested
by the case roles and collocations that these items entail.

LEXICOGRAPHICAL SOURCES

According to a number of lexicographical sources, *dorn* and *luf* share equivalence for
the English “hand”.

The item *dorn* is attributed a number of equivalents, as follows. Lhuyd (1707:3) gives
the equivalent the “hand”. Borlase (1769: 425) gives “a Hand” and “a Handle”. Pryce
(1790) gives “the hand”, “a handle” and “the door post”. Williams (1865: 108) gives a
“fist”, “a hand”, “a handle” and “a hilt”. Whitley Stokes (1869: 170) gives “fist” but
for *dorn-skrefyz* he gives “hand-written”. Jago (1887 pp. 60 and 72) gives *dorn* as an
equivalent for the English “hand” and “fist”. Nance (1952) gives “hand”, “fist”,
“haft”, “hilt” and “handle”. Brown (1984: 40) gives “hand” for *dorn* when it is used
as a prefix. George (1991: 46) gives the equivalent “fist”.

The item *luf*, however, is attributed only the equivalent “hand”, as follows. The
*Vocabularium Cornicum* gives the Latin “manus”. Borlase (1769: 442) gives “a Hand”.
Pryce (1790) gives “a hand”. Williams (1865 pp. 230 and 237) gives “a hand”.
Whitley Stokes (1869: 197) gives “hands” as the English equivalent of *Le*. Jago (1887
pp. 60 and 72) gives *luf* as an equivalent for the English “hand”. Nance (1952) gives

LEMMATIZATION

Lemmatization was undertaken, before concordances were produced, to find all the
possible forms of these two items. Two sets of concordances were produced, using
*Micro-OCP*, one set with the contexts sorted by the right of the node, and the other
set with the contexts sorted by the left of the node.

The concordances for both items initially consisted of 18 citations. However within
the concordance for the item *dorn*, the homograph *torn* was also found. The initial *t*
mutes to a *d* after certain words (Brown 1984). Likewise an initial *d* mutates to *t*
after certain words (*Ibid.*). It was a simple matter to manually separate out these two
homographs and discard the citations of the item *torn*. After eliminating the citations
of the item *torn* from the concordance, 11 citations of the item *dorn* remained.
ANALYSIS OF CONCORDANCE OF DORN

Establishing the Collocational Significance

Sinclair (1991) recognises two types of collocation, which he calls upward collocation and downward collocation. When the node collocates with a word that has a greater frequency of occurrence in the corpus than that of the node, this is referred to as upward collocation. And when the node collocates with a word that has a lesser frequency of occurrence in the corpus than that of the node, this is referred to as downward collocation. He says that:

Upward collocation, of course, is the weaker pattern in statistical terms, and the words tend to be elements of grammatical frames, or superordinates. Downward collocation by contrast gives us a semantic analysis of a word. (Sinclair 1991: 115-117)

Sinclair suggests a "buffer area of (plus or minus) 15 per cent of the frequency of the node word". So that:

a. upward collocates - those whose occurrence is over 115 per cent of the node frequency...;
b. neutral collocates - between 85 per cent and 115 per cent of the node frequency..., this is the buffer area;
c. downward collocates - less than 80 per cent....

(Ibid.)

It should be noted that Sinclair is working with a very large corpus. The Cobuild Corpus consists of 20 million tokens (Krishnamurthy 1987). By comparison the Corpus of Cornish consisting of 120,000 tokens, is tiny.

In order to test whether such division of collocates is useful for semantic analysis of the Corpus of Cornish, the concordance of dorn was cropped to four collocates either side of the node. An alphabetical order frequency wordlist with statistics of the collocates was then prepared using Micro-OCP. This showed that of a total of 90 tokens of concordance, there was a total vocabulary of 65 word forms. The relative frequency of each collocate was determined by reference to the statistics generated by Micro-OCP. The degree of collocational significance of each collocate was calculated. The collocates were then sorted into an order of descending collocational significance (see table 1).
Table 1. Collocates of *dorn* in descending order of collocational significance.

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Upward and Downward Collocation

The lemma *dorn* has a frequency of 11 occurrences in the corpus. These were divided into upward and downward collocates using Sinclair’s criteria. A buffer area of neutral collocates, consisting of 15% of the frequency of the node word was adopted.

Forty two upward collocates were identified in the concordance, that is those whose occurrence is over 115% of the node frequency (that is 13 occurrences). Sinclair suggests that with upward collocation the words tend to be elements of grammatical frames, or superordinates. In the following list of upward collocates of *dorn* there are many closed class items. Reference to the concordance itself is necessary to see how these items form grammatical frames with the node. There are no obvious superordinates amongst the upward collocates.

*a, a’m, an, a’n, Dew, dhe, dhodho, dh’y, Ef, forth, gans, gene’, gwrys, ha, Hayl, holon, Jhesu, keth, kynth, ledhys, Lemmyn, Myghtern, na, oll, ow, par, prag, pup, pur, rak, syns, tan, tyn, war, y, Yedhewon, yn, y’n, y’th, yu, yua.*
Reference to the concordance reveals the following grammatical frames:

- a dhorn Dew: by God's hand
- a’m dorn: by my hand
- a’w dorn: by my hand
- ow dorn: my hand
- y dhorn: his hand
- yn ow dorn: in my hand
- gans ow dorn: with my hand
- settys dorn y’n: lay a hand on
- syns y’th torn: hold ii thy hand
- gans dornow: with hands/fists

Several of these suggest that dorn is instrumental in Fillmorean case grammar (Fillmore 1969). It may also be noted that dorn is locative case in yn ow dorn. The collocates which form these grammatical frames with dorn do not appear to be restricted to within any particular band of collocational significance.

There were no neutral collocates of dorn, that is those between 85% and 115% of the node frequency. 19 downward collocates were identified in the concordance, that is those whose occurrence is less than 85%. These downward collocates form a band of collocational significance from 1.07594 to 1.10916. According to Sinclair (1991) downward collocation gives us a semantic analysis of a word. It is therefore these downward collocates that are of particular interest to us here. The list of downward collocates consists predominantly of nouns and verbs. The English equivalents are taken from Nance's (1952) dictionary.

There is only 1 adjective amongst the downward collocates.

ankensy adj. grievous, dolorous.

There are eight noun collocates.

dagyer m., dagger.
gu m., lance, spear, javelin
gwelen f., rod, yard, pole, long handle, shaft, wand, switch, stem
gweilty m. bed, layer, stratum
mowes f. maid, girl
pycher m., pitcher
scath f. boat
scovarn f. ear, handle of jar, pitcher, barrow, etc.

Five of these, dagyer, pycher, gu, scath and mowes are all objects held or grasped in dorn.
There are nine verbal collocates:

- bos vb. to be, become, abide, take place, exist
- gwestkel vb. to strike, beat, knock
- gwrynya vb. to grip, hug, squeeze, grapple, wrestle
- herdhya vb. to thrust, push, shove, ram, butt
- kerghes vb. to fetch, bring, carry, get
- ledya vb. to lead, conduct, guide
- predery vb. to think, reflect, consider, meditate
- settya vb. to set, put, place, appoint, lay, fix, value, account, esteem
- sowyny vb. to prosper, succeed

Dorn relates to five of these, gwestkel, kerghes, gwrynya, herdhya and ledya, as instrumental in Fillmorean case grammar.

All the citations of dorn refer to the part of the human body that we call the hand. They also all share the component of instrumental case, as can be seen from the following examples.

A thorn Dew y festa gwryes (Gwreans An Bys line 305)
by God's dorn thou were made,

Owe doarn kethewa lethys (Gwreans An Bys line 1140)
by my dorn he is slain,

com forth ihesu yn ow dorn(Passio Domini line 2525)
Come forth, Jesus, led by my dorn.

gans ow dornow a'n gury (Passio Domini line 1130)
with my dorn I'll grip Him

Me a lead an voos am dorn (Gwreans An Bys line 1385)
I will lead the girl by my dorn.

pur ankensy gans dornow thotho war an scovornow reugh boxsusow trewysy
(Passio Domini line 1360)
very grievously, with dorn+plural, to Him on the ears give doleful slaps.

ren thotho boxsusow gans dornow ha guelynny war an scovornow bysy (Passio Domini line 1390)
let us give Him blows with dorn+plural and switches on the ears,

In addition to instrumental case, some of citations of dorn display locative case, as in the following examples.

Ev a uaske e dorn uar e dhágier dhe dhestríán dheau. (Dzhùan Tshei an Her 40)
He was clapping his dorn on his dagger to kill the pair.
otte ow fycher gyne yn ov dorn rak y gerghas (Passio Domini line 655)
see I have my pitcher in my dorn to fetch it.

suns y' th dorn an giu-na ha herthy'e gans nerth yn ban (Passio Domini line 3010)
hold in thy dorn this spear, and thrust it strongly upwards.

Dorn is also attested in combined instrumental and objective cases, as in the following example.

pup ol settyes dorn yn keth schath-ma th' y tenne (Resurrexio Domini line 2350)
let everyone lay a dorn on this same boat, to drag him,

Figure 1 shows how dorn is found in either instrumental case or in instrumental plus either objective or locative case.

![Fig. 1 Network of case roles attested by dorn.](image)

**ANALYSIS OF THE CONCORDANCE OF LUF**

There were no homographs of luf found within in the concordance. So we were able to retain all 18 citations of the form luf.
Establishing the Collocational Significance

The concordance of *luf* was cropped to four collocates either side of the node. An alphabetical order frequency wordlist with statistics of the collocates was then prepared using *Micro-OCP*. This showed that of a total of 139 tokens of concordance, there was a total vocabulary of 80 word forms. The same procedure was followed, as for *dorn* to determine the degree of collocational significance of each collocate. The collocates were then sorted into an order of descending collocational significance (see table 2).

### Table 2. Collocates of *luf* in descending order of collocational significance.

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</table>

Upward and Downward Collocation

The same procedure was followed for distinguishing upward and downward collocates as for *dorn*. We identified 44 upward collocates in the concordance, that is those whose occurrence is over 115% of the node frequency; *a, y, worth, yl, Cryst, pan,*
There were no obvious superordinates amongst these. The following grammatical frames (colligations) were identified by reference to the concordance.

Determiner + *luf*:

- **An luf**: the hand
- **ow luf**: my hand
- **dha luf**: thy hand
- **dha dhywluf**: thy hands
- **y luf**: his hand
- **yl luf**: the one hand (as opposed to the other)

Preposition + *luf*:

- **Dhe'n luf aral**: to the other hand
- **gans ow luf**: with my hand
- **Gans y yl luf**: with his one hand
- **worth luf**: to a hand
- **Yn luf Cryst**: in Christ's hand
- **Yn y luf**: in his hand
- **y'th dywluf**: in thy hands

*Luf* + preposition.

- **luf dre y woly**: hand through his wound

*Luf* + post-modifier.

- **luf aral**: to the other hand
- **luf Cryst**: Christ's hand
- **luf a'm gwruk**: hand that created me
- **dywluf kelmys**: hands fastened

Neutral collocates: between 85% and 115% of the node frequency:

- **aral** adj., pron. other, another
- **Thomas**
- **tros** m., pl. treys foot

30 downward collocates were identified in the concordance, that is those whose occurrence is less than 85% (that is 15). All apart from two of these downward collocates lie within a band of collocational significance from 0.69011 to 0.71747. *gwelen* and *dhyghow* lie outside this band at 1.43299 and 1.41931 respectively.

There are five adjectives amongst the downward collocates.

- **claf** adj. sick, ill, sore, leprous
- **dyghow** adj. right
- **gleth** adj. left
- **gosys** adj. blood-stained
- **gwyn** adj. white, pale
There are seven nominal collocates. Three of these form a meronymous relationship together and with luf, if its meaning is taken to be hand.

- **ascorn** m. bone
- **goly** m. wound
- **gwelen** f. rod, yard, pole, long handle, shaft, wand, switch, stem
- **lagas** m. eye
- **lovan** f. rope, stout cord
- **toll** m. hole
- **tros** m. foot

There are fourteen verbal collocates.

- **bones** vb. to be, become, abide, take place, exist
- **curuna** vb. to crown
- **dos** irreg. vb. to come, arrive, appear, be derived
- **dry** irreg. vb. to bring, take with one, persuade
- **dyskevelsy** vb. to dislocate, unjoint
- **gasa** vb. to leave, leave off, abandon, desert, quit, allow, let, permit, concede, relinquish, vouchsafe, spare
- **golghy** vb. to wash, bathe
- **growedha** vb. to lie down, recline, remain lying
- **gul** irreg. vb. to do, make, compose, construct, perform, accomplish, cause, make into, be fitting (for)
- **gwana** vb. to stab, sting, prick, pierce, gore with horn, transfix with weapon, spike.
- **kelly** vb. to lose, forfeit; pret. collas
- **kelmy** vb. to bind, tie, lash, knot, fasten, oblige
- **kemeres** vb. to take, receive, accept, obtain, seize, gain, assume, feel
- **takkya** vb. to nail, secure, fasten, affix

The node, luf, relates to five of these, gasa, takkya, dri, golghy, kelmy, as objective in Fillmorean case grammar. Luf relates to two of the verb collocates, dos and kemeres as locative case. Luf relates to gul as instrumental case and as agent.

There is one adverb among the downward collocates.

- **dyogel** adv. certainly, surely

There is one pronoun among the downward collocates.

- **hyben** pron. another

Several collocate nouns form a meronymous relationship with luf.

- **ascorn** m. bone
- **colon** f. heart.
- **lagas** m. eye
- **tros** m. foot

Colon occurs among the upward collocates. Ascorn, lagas, and tros are found among the downward collocates. In this instance Sinclair's procedure of separating upward from downward collocates seems less helpful. Simply sorting the collocates by their
part-of-speech would have been more effective in helping to identify this group of
meronyms. To be fair, however, Sinclair's procedure is intended for a very much
larger corpus.

Furthermore reference to the concordance shows that these co-meronyms have a
tendency to be conjoined, like this:

ha treys ha dyulef kelmys (Passio Domini line 2375)
with feet and luf+plural fastened

or:

zym na as troys na leyff vo golhys (Pascon agan Arluthstanza 46)
To me leave not foot nor luf unwashed

Alternatively they are parts of conjoined phrases or clauses, like this:

ellas bones the treys squerdys ol the yscarn dyscavylsys tel y'th dyvulef (Passio
Domini line 3170)
Alas that Thy feet should be torn, all Thy bones disjointed, holes in thy
luf+plural!

or:

yn pren crous bethens ha treys ha dyulef kelmys ha guenys dre an golon
(Passio Domini line 2375)
Let him be put on the cross, with feet and luf+plural fastened, and pierced
through the heart.

Amongst some of the other downward collocates, are some that, whilst not being co-
meronyms, are nevertheless related to the idea of the human body:

claf adj. sick, ill, sore, leprous
dyskevelsy vb. to dislocate, unjoint
goly m. wound, sore, ulcer
gosys adj. blood-stained (Nance 1952)

Case

All the citations of luf refer to the part of the human body that we call the hand. The
citations of luf display one of three cases, instrumental, locative or objective, or a
combination of two of these. Examples of luf in the instrumental case include the
following.

ef regollas an place Am leff dyghow a wrussen. (Gwareans An Bys line 2215)
he has clean lost the place which by my right luf I had made.

er na hyndlyf y golon gans ov luef dre y woly (Resurrexio Domini line 1530)
until I touch His heart with my luf through his wound.
Examples of luf in the locative case include the following.

gans an keth welen yn leyff crist a ve gorris (Pascon agan Arluth stanza 138)
with the same rod that had been put in Christ's luf

Heys crist y a gemeras an neyll lef bys yn y ben, (Pascon agan Arluth stanza 178)
The length of Christ they took from the one luf up to the other,

tel y'th dyvluef (Passio Domini line 3170)
holes in thy luf+plural

yn y leff zyghow yn weth gwelen wyn a ve gorris (Pascon agan Arluth stanza 136)
Also a white wand was put in His right luf.

Examples of luf in the objective case include the following.

zym na as troys na leyff vo golhys (Pascon agan Arluth stanza 46)
To me leave not foot nor luf unwashed

doro the luef (Resurrexio Domini line 1535)
put forth thy luf

hay yll leff a ve tackis ord an grows fast may zese (Pascon agan Arluth stanza 179)
and one of His luf was nailed to the cross on which He was fast

ha the thulef claf kyn fons (Passio Domini line 2695)
thy luf+plural be leprous,

me a tak y luefgans ol ow nel (Passio Domini line 2745)
I will fix (i.e. nail) His left luf with all my might!

ny thue y luefsur the'n tol (Passio Domini line 2755)
His luf surely won't come to the hole?

Pan deth leyff crist war en toll dre an nerth may tensons hy (Pascon agan Arluth stanza 182)
When Christ's luf came over the hole by the force with which they dragged it,

yn pren crous bethens ha treys ha dyulef kelmys (Passio Domini line 2375)
Let him be put on the cross, with feet and luf+plural fastened,
The following examples attest *luf* in combined objective and locative cases.

Then *levff arall pan dhozyans worth an grows rag y faste* (Pashcon agan Arluth stanza 180)
When they had come to the other *luf* to fasten it to the cross

Ganse worth *levff crist loven fast yn scon a ve kelmys* (Pashcon agan Arluth stanza 181)
By them a rope was speedily tied fast to Christ's *luf*.

The following examples attest *luf* in combined instrumental and objective cases.

*an luef a'm gruk me a wel* (Resurrexio Domini line 140)
I see the *luf* that created me

*y wholas y zewlagas gans y eyll leff o gosys* (Pashcon agan Arluth stanza 219)
he washed his eyes with his one *luf* that was made blood,

Figure 2 shows how *luf* is found in instrumental objective or locative case.

![Diagram of case roles of *luf*](https://via.placeholder.com/150)

**Fig. 2 Network of case roles attested by *luf***.

**A COMPARISON OF DORN AND LUF**

In all the citations containing *dorn*, it is instrumental, though it may be locative as well. In contrast, *luf* may be instrumental, locative or objective. This distinction is illustrated by the following examples.

Onon gans an keth welen yn *levff crist a ve gorris an gwyskis lasche war an pen* (Pashcon agan Arluth stanza 138)
One, with the same rod that had been put in Christ's *luf*, struck Him a slash on the head
in which *luf* is locative and:
syns y' th dorn an giu-na (Passio Domini line 3010)
hold in thy dorn this spear
in which dorn is both instrumental and locative.

The next two examples are similar.

A thorn Dew y festa gwryes (Gwreans An Bys line 305)
by God's dorn thou were made,

an luf a'm gruk me a wel (Resurrexio Domini line 140)
I see the luf that created me

The matrix in table 3 compares the case roles attested by dorn and luf.

<table>
<thead>
<tr>
<th>CASE</th>
<th>dorn</th>
<th>luf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Instrumental &amp; Locative</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Instrumental &amp; Objective</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Locative</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Objective</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

This indicates a hyponymous relationship between dorn and luf, in which luf is the superordinate of dorn, and the meaning of dorn is contained within the meaning of luf.

The lexicographical sources previously mentioned all suggest the English equivalent hand for luf. Nothing has been found in our analysis to contradict this. These same lexicographical sources give a number of alternative equivalents for dorn. The suggested equivalents "handle", "hilt", or "haft" are not attested among the citations from the corpus. The homograph identified by Pryce (1790) as "the door post" is likewise not attested. Whitley Stokes (1869: 170) equivalent, "hand-written", for dorn-skrefyz accords with our finding that dorn incorporates the component instrumental-case. The equivalent "fist" would also suggest the component instrumental-case. However not all the citations of dorn could be translated as "fist", for example:
A thorn Dew y festa gwryes (Gwreans An Bys line 305)
by God's hand (not fist) thou were made,
and:

an luef a'm gruk me a wel (Resurrexio Domini line 140)
I see the hand (not fist) that created me

Giving fist as the only equivalent for dorn, as George (1991: 46) does, is clearly not sufficient. Furthermore, although a possibility, we cannot assume that “fist”, in the sense of “hand when closed tightly with the fingers bent into the palm” is what is intended in:

ren thotho gans dornow ha war an scovornow bysy (Passio Domini line 1390)
let us give Him blows with hands/fists and switches on the ears,
and:

pur ankensy gans dornow thotho war an reugh boxsesow trewysy (Passio Domini line 1360)
very grievously, with hands/fists, to Him on the ears give doleful slaps.
Blows can be given with an open hand as in a slap or karate chop.

CONCLUSION

Establishing the collocational significance and in particular the upward and downward collocation, was found to be a useful approach in sorting the collocates of dorn. However, in the case of luf, simply sorting the collocates by part of speech would probably have been just as good. It was noted that the co-meronyms of luf had a tendency to either be conjoined or form parts of phrases or clauses that were conjoined.

The instrumental, objective, and locative cases of Fillmorean Case Grammar provided components that were true of one or more terms, but not all the terms in question. Whilst both dorn and luf both share the meaning hand, in all the citations containing dorn, it is instrumental. In contrast, luf may or may not be instrumental. A hyponymous relationship between dorn and luf, in which luf is the superordinate of dorn, and the meaning of dorn is contained within the meaning of luf is therefore indicated. Grammatical meaning may, thus, form part of the lexical meaning of an item and be expressed as a semantic component of that lexical meaning.

REFERENCES

Dzhāan Tshei an Her in E. Lhuyd (1707).


