

Static Spatial Expressions in Welsh

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List of Conventions

Glossing follows Leipzig rules, as well as:

Adv	Adverb
Adj	Adjective
AGR	agreement particle
ART	definite article
COP	3SG.PRES form of the copula
HUM	human
M / F	masculine / feminine
M.POSS\	mutation indicates the possessor is masculine (or feminine if F)
n, NP	noun, noun phrase
NEG	negator or negative form
P	preposition
PERF	perfect marker (has semantic content translated as 'after, past')
POSS	3SG possessive pronoun
V, VN	verb, verbnoun

Abstract

The study of space in language is an ambitious task, aiming to show that language is structured to reflect human cognition and our interpretation of surrounding environments. As these environments differ greatly in geographical extremes, there is theoretically a separation of geographically – culturally – specific elements from those notions common to all. The study of a large and diverse range of languages is therefore needed to reveal such distinctions. Core concepts uncovered by previous studies include ATTACHMENT, CONTAINMENT, SUPERADJACENCY, SUBADJACENCY and PROXIMITY – all of which prove to be relevant in this work. In addition, notions predicted to be more ‘culturally relevant’ are found to be ENCIRCLEMENT, CONTACT and LENGTH.

This study offers a language previously absent from this field, Welsh (Celtic, Indo-European) providing a comparison of its spatial strategies as a European language as well as providing links to more distant languages documented in the literature. These observations put to test the typological categorisation, in addition to confirming a gap for further predictions to be made according to type.

The investigation focuses on the basic locative construction used in the language, giving an overview of the possible extensions and additions by part-of-speech analysis. The semantics encoded in these are later explored having established the structural types. It is confirmed by this dissertation that Welsh has a locative construction using a copula, which can be extended by a verbnoun – common in Welsh linguistics – and the use of a predicate marker, which, as predicted for this type, mirrors existential constructions. These predicate markers prove to be identical in form to the prepositions which function also as topological relation markers. This study makes efforts to differentiate the two functions whilst acknowledging the similarity of the two in the minds of speakers, yielding a gloss ‘PRED.in’ and ‘in’ for the common preposition for containment, *yn*.

(300 words)

Declaration

No portion of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning

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Static Spatial Expressions in Welsh

1 Introduction

Spatial expression has been a popular area of research in recent years, with linguistic research motivated by cognitive theories in our perception of our world around us. Numerous typologies have been built and rebuilt from this research, including those for motion (Slobin 2006), frames of reference (Levinson 2003) and more generally, for strategies of static spatial expressions (Levinson & Meira 2003; Levinson & Wilkins 2006; Ameka & Levinson 2007). These typologies and predictions are tested against empirical evidence here in Welsh. It has been observed that many investigations are based on more ‘exotic type’ languages with large sets of dispositional verbs for example, but few concentrate on a type closer to home – which rely heavily on a ‘copula and topological relation marker’ strategy – as this is the type upon which early assumptions were originally based. This study contributes to a sample of language types currently lacking in the literature, making observations that may hold cross-linguistically, based on previous research, and some which merely hold for European languages.

In outlining the basic locative construction (BLC), this study shows the correspondence between form and meaning in Welsh, while comparing the results to languages of a similar type in order to establish its predictability across languages. Focus is primarily on contiguous relations between static figures and grounds; the FIGURE being the item in need of location with respect to a GROUND, and the corresponding statement given being a possible response to a ‘where is [figure]?’ question.

A critical approach to the literature reveals several useful notions which recur throughout this work. Proposed core concepts, such as support, attachment, containment and adjacency, become very useful in describing location, posture and position (Levinson & Meira 2003). Secondly, the idea of a figure’s canonical position is

a strong motivator for the selection of parts within the basic locative construction (Dunn et al. 2007).

A secondary outcome of the study will be a description of the parts-of-speech used in various linguistic phrases of the BLC, along with a preliminary mapping of their semantics. This analysis of topological relations markers and positional adverbials will be useful to future studies of Welsh, even outside the field of space.

Following the introduction, section 2 details the aspects of Welsh relevant to the study of its static spatial expressions. The method used to gather data is then outlined in 3, along with an introduction to the participants. Other topics in space are then briefly presented in 4. In the main body of this study, Sections 5, 6, 7 and 8 discuss the theoretical issues relating to each topic, attempting to exemplify and account for all the data types found in the study. Section 5 looks at the BLC, as a generalised form from the data. The BLC is then discussed in terms of its syntactic constructions and the parts-of-speech involved, before a glimpse at constructions competing with it in Section 6. Sections 7 and 8 deal with the semantics of topological relation markers and of posture and position respectively, according to their syntactic type as laid out in 5. The results relative to the broader typology are then summarized in the conclusion of Section 9.

Original data were gathered, in the form of interviews, and are clearly labelled in examples. This was done in order to base results on synchronic data from Welsh speakers, as well as to compare the data to those of other languages by using two sets of pre-designed stimuli used in cross-linguistic studies. A handful of examples are based on native speaker intuition, when no reference is given.

2. Notes on Welsh

Before delving into the language's structure, some background information on the language and its speakers should be considered. Welsh is an Indo-European language spoken predominantly in Wales (UK) and is of the Celtic branch of European family. In addition to a long list of cognates in the vocabulary, the Celtic languages (Irish, Scots Gaelic, Manx, Welsh, Cornish and Breton) share the word order VSO(X), inflecting prepositions and the feature of initial vowel mutation, amongst other interesting traits. The data recorded for this study does not deviate from the basic word order; although possible variation is dealt with in section 5.1.

Initial consonant mutation is a traditional term in Celtic linguistics, referring to a number of phonological processes which affect the initial consonants of words in particular environments. This is significant not only to the phonology but also to the morphology and syntax of the languages. Although too complex to be expanded upon, mutations will be glossed as follows, with their individual function named before a backslash. For example:

- (1) **eghur-odd y ferch yr enghraifft i-ddynt**
explain-3SG.PST ART F\girl ART example to-3PL
'the girl explained the example to them' (cf. *merch*)

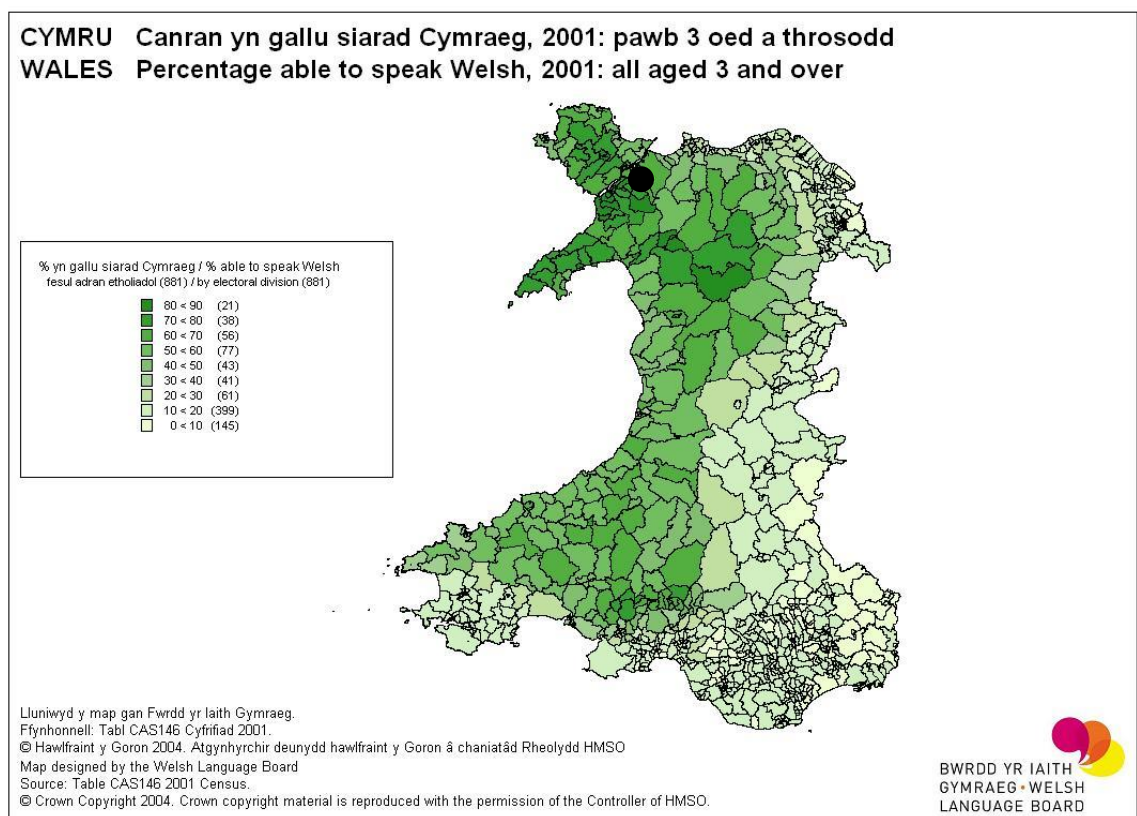
The 'F' of the gloss denotes the feminine gender of the noun, which triggers the mutation of the initial consonant from <m> to <f>. When a more complex function does not affect the spatial expression they will be glossed simply as 'MUT'.

2.1 Speakers and dialects

True speaker numbers and accurate usage figures are notoriously difficult to ascertain (Liebersohn 1966), but an estimate of half-a-million fluent speakers in Wales, which equates to 20% of the population, seems to be consistent with the figures available (Lewis 2009; Welsh Language Board 2010). Alongside Welsh, its neighbouring, globally dominant, language is also spoken. English is the most widely

spoken language in Wales, with over 80% speaking it as one of their first languages, as many native Welsh speakers are raised in bilingual environments. In fact, every Welsh speaker is at the very least proficient in English, with the exception of the very young and very old. This information is needed here to properly interpret the population density of Welsh speakers as shown in Figure 1. The Ogwen Valley in Gwynedd, chosen for this study, is shown by the map to be in a 77% Welsh speaking area.

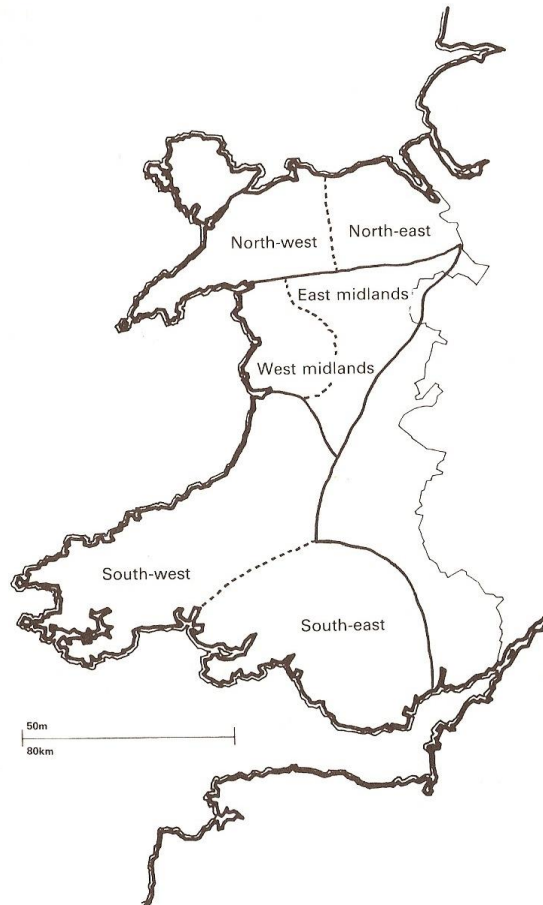
Figure 1. Population density of Welsh speakers (area studied marked with a dot)



In terms of native knowledge, Welsh speakers recognise dialects on very narrow or very broad terms, with each village having a distinguishable accent to its neighbours. Beyond the immediate surrounding communities however, less is obvious and the dialects – all mutually intelligible – are only recognised as ‘north’ and ‘south’ with quite unspecified geographical boundaries. Linguistic surveys confirm this

indecision, although a wide study by Thomas (1973) produced a fair approximation of dialect continua as shown in Figure 2.

Figure 2. Map of Welsh dialect continua (Thomas 1973)



The dialect concerned therefore falls into the North-west dialect, and although clearly part of an east-west continuum, it differs significantly enough from the eastern counterpart for earlier studies (Morris-Jones 1913) to group them separately¹. That said, the high density of this dialect's speakers and thus their regular contact with each other has led to reliable consistency in the forms possible and an awareness of what is grammatical for this particular dialect, as well as differences in formality.

¹ The information on dialect studies given here was summarised in Ball's (1988) 'Use of Welsh' which contains more detail on dialectal differences and a useful depiction of variation within the language.

2.2 Literary forms

The data are represented in dialectal form as the sentences elicited inevitably represent only this dialect and not necessarily 'standard' forms deemed grammatical in all dialects. As the constructions used may be instantly recognisable as belonging to a certain dialect, so too should the forms used to represent them – else the forms used could seem unnatural and invented if represented in purely literary writing. Welsh orthography is fairly transparent, although not reflecting exactly the same sounds as other languages using the Roman alphabet. For example, rendered in the IPA (International Phonetic Alphabet), <ch> corresponds roughly to /x/, <w> to /u/, <y> to /ə/ or /ɨ/ and <f> to /v/. Thus, the mutation seen in (1) looks quite different in the IPA, as the feminine noun following the definite article trigger the change of /m/ to /v/ and not /f/ as might be assumed from the orthography².

Literary Welsh is quite different from the standard spoken version even, with vowels and consonants standardised, pro-drop effected and periphrasis avoided in favour of concise verb forms. However, there is a present trend in Welsh magazines, newspapers, novels and websites to write in a consistent form of standard Welsh which also has clear dialectal influences. It is such forms that are emulated here, with differences in speech patterns ignored, such as the variation of the common copula form *mae* /ma/, /ma:/, /maə/, /maɨ/, /mae/. This does not represent dialect variation in all cases, but careful vs. quick speech as well as register switching. Consistent alternations and deletion, which reflect the dialectal variant as well as formal and less formal registers, are retained.

Formal registers are influenced by the written form, meaning that there is a sort of continuum for the speakers, with the formal register being closer to a mutually intelligible standard and the familiar being the less mutually intelligible (between dialects) and most geographically specific form. This concept of the literary language

² For a better idea of the sounds of Welsh any grammar may be consulted, although Ball (1988:ix) is recommended for IPA equivalents of standard orthography.

will inevitably impact upon grammaticality judgments made by the speakers, which may account for some forms being rejected by certain speakers yet produced by others. In fact, despite elicitation being carried out by a speaker of the same dialect in an informal fashion, the participants were still reluctant to use less formal forms. When they were produced, it caused mild amusement, although often it was the use of phonology and loan words and not the structure that changed, suggesting that dialectal spatial constructions may be below a speaker's level of awareness. For this reason it will not be speculated here as to which is being used.

In order for a consistent comparison of constructions, only the present tense was used in the data. This served the additional purposes of avoiding different tense constructions found in formal and informal speech as well as avoiding a narrative style which would come naturally with describing static spatial expressions in the past.

As capturing natural speech is a principal of transcription, there is inconsistency in the data forms presented. This is especially true of mutation, as noted in any work dealing with synchronic data on the phenomenon (Williams 1980; Ball 1988:70–81), and so variation will be reflected. More 'standard' mutations as taught in school will likely reflect the register of the sentence; that is, it would be unnatural not to represent mutation exactly as found as they form part of the utterance in its specific register.

2.3 Grammars of Welsh

Several grammars have been produced during the last century, with little attention given to the topic of space. It is also worth noting that Welsh lost its case system by the Early Welsh period and few traces remain in the language. This tells us not only that Welsh space will look significantly different from its neighbour and relative Irish which has retained its elaborate case system, but also that it largely relies on prepositions. Lists of prepositions are found in many grammars, but they are little more information than would be found in a dictionary in most cases and are designed

for language learning more than analysis (King 1993:268–295; Thomas 1996 337–383; Thorne 1993:385–424). A comparison of actual usage of prepositions has yet to be made and so this study will make an excellent start, with spatial semantics being explored (Section 7).

3 Method

3.1 Stimuli

A set of specifically designed stimuli has been used in most recent work, with the notion of providing a basis for direct comparability and to use visual stimuli to avoid priming effects. The output of such research is found in a volume entitled 'Grammars of Space' (Levinson & Wilkins 2006), upon which the method of this study is based, with the scope of this dissertation extending only to the study of static spatial expressions, including the BLC and competing forms, adpositional space and positional specification.

Below is a description of the stimuli provided for the benefit of the reader.

3.1.1 Topological Relation Picture Series (TRPS) (Bowerman & Pederson 1993)

This set of 71 line drawings is available (in miniature) in Appendix A and will be referred to throughout by their number. The pictures include mostly small figures in relation with larger grounds and in fairly canonical – expected – positions, for example, *the apple is on the table* (TRPS 1). This picture series was used to determine the BLC (Section 5) as well as to outline the semantic space of adpositions (Section 7). One drawback of the stimuli is that some pictures allow for more than one interpretation. For example, TRPS 30 + 34 both have bulbs hanging from the ceiling, presumably to show that what's being shown is the corner of a room, but speakers chose either the bulb or the wall as a ground in each, yielding different constructions.

3.1.2 Picture Series for Positional Verbs (PSPV) (Ameka, De Witte & Wilkins 1999)

The PSPV is a series of 68 colour photos of a figure and a ground in contiguous relation. In this series, the figures are often much larger than in the TRPS and are in less canonical positions, such as PSPV 29 which is a photo of a terracotta pot, upside-down on a thin branch of a tree. With this series, extensions to the BLC were best

revealed. The PSPV also invites the application of human posture verbs to inanimate figures. The disadvantage of using this series is that some pictures are so non-canonical that participants have trouble knowing what to describe and what level of detail is needed, as well as the fact that they were designed for global use and so a few of the situations and figures are not commonplace for participants of certain cultural backgrounds.

3.1.3 Improvised picture series (IPS)

This picture series was designed based on the results of a brief pilot study, which revealed that there may be inconsistencies in the application of human posture verbs to inanimate objects and so warranted the description of non-human animates to see if similar inconsistencies occurred. Some interesting verbal constructions were also used with humans – of which there were relatively few in the TRPS and none in the PSPV. These were photos of cats, sheep, mice and people. The advantage of using this picture series is that they were tailored to the environment and thus were photos of situations familiar to the participants who were chosen from this relatively rural area with a strong agricultural history. When used in an example, the stimuli will be described, if more detail is needed.

3.2 Data collection

Four interviews were conducted, which reflects the fact that this basic study is not concerned with reasons behind variation, but is the first study of static spatial expressions in Welsh which may be built upon in future work. In order to capture the flexibility of the language, speakers were chosen from one very limited area, as specified in section 2.1, to eliminate the confusion of grammaticality according to dialect.

3.2.1 Interviews

In the first place, speakers were asked to give the first and most natural answer to the question “where is [figure]”, but discussion was also encouraged to find alternative possibilities and variation, based on the speakers’ intuitions. These intuitions were tested in turn for other pictures, in the form of grammaticality judgments. The variation requested was in order to determine equivalent expressions, and also to hint at finer subtleties where expressions thought to be synonymous could not in fact be used alternately. The interviews were roughly two hours per person, split over two sessions each. Occasionally, a few spontaneous sentences on surrounding objects were elicited, to gain more natural data.

The data were then collated for all four interviews, enabling a comparison of adpositions and constructions used, including the presence or absence of postural information, for each picture in the series.

3.2.2 Participants

Each speaker is from a Welsh-speaking home and has Welsh as their first language, though all are also fully bilingual in English. The participants all attended the same local secondary school and had Welsh-medium education up until university, with the exception of one participant as schooling was in English at that time.

Beginning with the youngest;

- AS is 23 years old and has lived in Bethesda all her life, except for 3 years of university in England. She works in administration in a bilingual environment and currently lives with a monolingual English partner.
- OA is 27 years old and lived in the Ogwen Valley until the age of 18, before attending university in England for 5 years. Since, he has lived in another part of North Wales with a monolingual English partner, although his work life is bilingual working as a dentist.

- the third speaker, MA – the mother of OA – is 52 and has always lived in the Ogwen Valley for 42 years, living abroad at 18–28. Her family language is Welsh although she speaks English with her spouse. Working as a head of department in a large hospital, her workday is fairly bilingual.
- the fourth participant is RCW, age 75. Originally from the Ogwen Valley, RCW spent a large portion of his life in neighbouring island–county Anglesey, before returning over 10 years ago. Now continuing his life as an artist, RCW retired from his work as an art teacher in a (Welsh–medium) secondary school.

The consent forms given by each speaker are included in Appendix C.

4 Other Topics in Space

Whilst the topic of space is a broad area of linguistic investigation, encompassing motion, frames of reference and the extension of space into metaphoric uses, it is static spatial expressions and strategies only that are the concern of this dissertation, aiming for a more detailed view as a result. However, it is worth mentioning these in passing as topics in space frequently overlap.

The metaphoric extension of space is of little concern here; a complicated field in itself with extensions of posture, for example, applied to more abstract concepts. For example, Welsh couples *stand* with concepts where English uses *sit*: *sefyll arholiad* '(lit.) stand exam; to sit an exam'. Further metaphoric use of space includes the use of inflecting prepositions to express emotion:

- (2) **mae ar-naf ofn**
COP on-1SG fear
'I am afraid'

Static expressions are known to overlap with motion in many ways, including similarity between the motion template and the BLC in languages like Welsh (cf. 5.1):

- (3) **mae 'r dyn yn cerdded allan o 'r tŷ**
COP ART man PRED.in walk out from ART house
'the man walks out of the house'

Creissels (2006) is concerned with the conflation of motion and stasis, "...the use of the locative adpositions [...] is not sensitive to the distinction between localization, the source of motion and the destination of motion" (2006:19). This statement is proven to be true in the usage of adpositions, throughout Sections 5, 7 and 9.

Frames of reference (FoR) constitute a recent field of investigation, examining how languages order space by angular specification. Levinson (2003) distinguishes three types, of which the first two are most relevant to Welsh, seen in 7.2.1–7.2.3. The **intrinsic** FoR relies on the assignment of intrinsic facets to grounds, such as a house, which can be assigned a 'front', 'back' and 'sides'. The location of the figure can then be described at an angle from one of these sides. The **relative** frame of reference

describes angles between figure and ground relative to the position of the observer so that 'left' is relative to the axes of the speaker. The **absolute** frame also relies on the location of the speaker, but uses an absolute referent external to the scene, such as compass directions.

5 The Basic Locative Construction

Typologies of spatial relations adapt frequently as further analyses are made. Table 1 is taken from Ameka & Levinson (2007) and constitutes a well-exemplified typology of locative predicates and will be referred to throughout this study, with languages ranging from one locative predicate to multiple predicates expressing detailed information on the posture and position of the figure.

Table 1. Four basic types of locative predication

Type 0	No verb in basic locative construction (Saliba, Austronesian, Papua New Guinea)
Type I	Single locative verb (or suppletion under grammatical conditioning) a Copula (i.e., dummy verbs used in many other constructions; English, Tamil, Chukchi, Tiriyó) b Locative (+Existential) verb (Japanese, Ewe, Yukatek, Lavukaleve)
Type II	A small contrastive set of locative verbs (3-7 verbs) a Postural verbs (Arrernte, Dutch, Goemai) b Ground space indicating verbs (Tidore)
Type III	Multiverb Positional verbs (a large set of dispositional verbs, 9-100) (Tzeltal, Zapotec, German Laz, Likpe) (Ameka & Levinson 2007:863-864)

Whilst it is difficult to assign any one language just one type, the results are based on the Basic Locative Constructions (BLCs) of each language. BLCs are the most frequently used, naturally occurring ways of expressing a basic locative function (BLF), so although it is as possible in English to say '*the cup stands on the table*' as it is natural in Dutch, the use of *stand* is not considered part of the English BLC. English speakers prefer the construction '*the cup is on the table*', and thus Dutch and English, – two languages genetically very close – fall into two separate types in Table 1. This serves to exemplify the point that Levinson & Meira make, that this type of information

requires direct fieldwork, as the complex semantics and actual usage are rarely recorded (2003:1).

It is conjectured that the types seen in Table 1 also represent the pattern of likelihood for human posture to be generalized for inanimate objects, with Type III being the most likely to encode locative information in this way and Type I the least likely (Ameka & Levinson 2007:854–855), as is observed in the languages of these types so far. Although interest in space has grown from the study of languages with many intricate postural verbs, the literature does still make predictions for the type we expect to see in Welsh, that is, the single locative verb Type I, although few of these are relevant synchronically. What *is* said is that the single verb will likely be a copula and that such a predicate may be under pressure from postural positionals, such as seen in German (Kutscher and Schultze–Berndt 2007), which is a worthwhile avenue of investigation. Both these points will be resumed in section 8.

5.1 Schematic representation and illustration

At its most basic, the Welsh BLC consists of a copula, a figure, a topological relation marker and a ground and are encoded in the parts-of-speech shown in Figure 3 and exemplified in (4). Only the present tense was investigated, as these were the forms elicited by the stimuli.

Figure 3. [V_{LOC}] [NP_{FIGURE}] [P_{TOP REL} [NP_{GROUND}]]

(4)		Figure		Ground
	[mae]	['r goed-en]	[ar]	[y bryn]]
	COP	ART F\tree-F.SG	on	ART hill
	'the tree is on the hill' (cf. <i>coed</i> 'trees, woods')			

(AS, OA, MA TRPS 33)

The locative verb, the copula, remains unchanging throughout the data, which is discussed in 5.2. The figure of the BLC is always definite (to answer 'where is X', X must be known) and so always takes the article *'r* as its usual form *y* cannot follow or precede a vowel without the support of <r>, so is found as *y*, *yr* and *'r* in the data.

This first noun phrase contains the figure, which as a noun can take either masculine or feminine gender. The prepositional phrase (PP) containing the ground follows the NP of the figure always, unless fronted in a focus construction where it then precedes the verb, as the BLC is susceptible to the usual effects of information structure on Welsh. This fronted PP version is the only other configuration of Figure XX that would answer a ‘where is Figure?’ question and in fact the figure and locative verb can be omitted entirely following such a question in natural speech:

- (5) [ar [[silff top] y cabinet lyfr-au]]
 on shelf top ART cabinet MUT\book-PL
 (where’s the laptop?) ‘on the top shelf of the book cabinet’

(AS, IPS)

The preposition was also seen modified by *hanner* ‘half’ in the data, to signal that something was *hanner yn* ‘half in’ or *hanner ffordd i fyny* ‘half way (to) up’ the ground.

The figure and ground NPs can also both be expanded as in (5) to incorporate more NPs specifying a particular part of the figure/ground. Often when the ground is a floor of some kind, it can often be omitted altogether as in (17). In other cases, where the ground can be pronominalised, it can form a morphological part of the preposition (7).

Further topological relation specification or positional information can be added in the form of adverbials, either directly before or after the ground, referring usually to the figure. Participants stated that in order to best relate the adverbial to the figure, it should follow it directly. However, postural adverbials referring to figures are often found after the ground as well, when the shape of the ground implies that it is unlikely to be in a configuration encoded in these adverbials. These adverbials take forms problematic to analysis and are examined in 5.4.

Human posture can be encoded in the predicate, but verb periphrasis in Welsh means that it is separated from the locative verb and thus takes a predicate marker.

Expansion of the BLC can therefore yield this variety of structure:

- (6) V_{LOC} NP_{FIGURE} $pred$ $VN_{POSTURE}$ $adverbial_{POSITION}$
 [**mae**].... ['r **defnydd**] ...[**yn** **eista**] [**yn ei blygiad**]
 COP ART material PRED.in sit in POSS M.POSS\fold(n)
- $P_{TOP REL}$ NP_{GROUND}
 [ar **draws** [[**top**] **y** **fasiad**]]
 across top ART F\basket

'the material is sitting folded across the top of the basket' (cf. *basged* 'basket')

(MA PSPV 24)

5.2 Locative verb

The Welsh locative verb is of type 1a of Table 1 and takes the form of a copula, widely used in the language for the BLC, existential constructions and others. No locational or postural information is encoded in it. There are at least four types of copula in Welsh and the form seen throughout the data is exclusively used for the third person singular *mae* and plural *maent*. The plural form is partly pronominal, and so when a figure is named in response to the stimuli, agreement is dropped. Coupled with inflecting pronouns, the answer in (7) is made possible, when the figure and ground are identifiable and active in discourse:

- (7) **maent** **am-dani**
 COP.3PL around-3SG.F
 (where are the pearls?) '...they are on her/she is wearing them'
 (possible variant of TRPS 32)

Other than in the third person, a different form of copula would be used, but the forms and their motivations are too intricate to be outlined in this study.

5.3 Adpositions as topological relation markers

As common in Indo-European languages, adpositions take the form and function of prepositions. Often employed alongside case marking in similar functions, they are used for static spatial expressions but also for motion, temporal relations, instrument marking, and, in form, in phrasal verbs. Their semantic range is broad and can overlap with other word classes. All of the prepositions documented have been compiled into a table (see Appendix B) and categorised according to their part of speech. Although long too long to be displayed here, Appendix B does not encompass all Welsh prepositions, but concentrates on the spatial meanings of only those found in the data gathered of this North-west dialect.

These next three subsections attempt to account for the variety of forms found in Appendix B by selecting a few for discussion and comparison. An overview of all the topological relation markers and their semantics is found in 7.

5.3.1 Classification

Four types of preposition were found – simple and three types of compound. The first, Type A seemingly consists of two prepositions, Type B is compounds of P + N/Adj and Type C have three parts.

As hinted above, the table shows that the compound preposition types are not easily analysable and indeed, the labels given to them here are rather arbitrary and motivated by the fact that in most cases they are labelled prepositions by the grammars or dictionaries that describe them, seemingly without motivation beyond their translation, and that they resemble one another in form and use.

Simple prepositions are mostly accounted for in the literature and usually have their spatial functions noted. Of the three unaccounted for – *amdan*, *off* and *rownd* – two are commonplace English borrowings and not an example of codeswitching in these instances. *Rownd* for example is used as an alternative to *o amgylch* ‘around, about’ and *o gwmpas* ‘around, about’ in almost all the TRPS and PSPV pictures, and by

all the participants. The third, *amdan* ‘around, on’ is represented in the grammars as the stem of an inflecting preposition. Inflecting prepositions are a closed class of preposition which inflect for number, person and gender (marked * in Appendix B) as previously seen in (2+7).

Table 2. Paradigm of preposition *am*, North-west dialect.

Person	Singular	Plural
1	amdanaf ‘around/on me’	amdanym ‘around/on us’
2	amdanat ‘around/on you’	amdanych ‘around/on you(pl)’
3M	amdano, amdanddo ‘ “ him’	amdanynt ‘around/on them’
3F	amdani, amdanddi ‘ “ her’	–

Though the table clearly shows that *amdan* is the stem of the inflectional *am*, it is also found to stand alone in the data:

- (8) **mae 'r mwclis amdan ei gwddw**
 COP ART necklace around POSS F.POSS\neck
 ‘the necklace is around her neck’

(OA, TRPS 32)

It seems that *amdan* may be another compound preposition of the first type, whose second preposition or adverb has simply lost its semantic content on its way to becoming grammaticalized as a preposition. The form *dan* ‘under’ is distinguishable in it and it may have marked the location of a figure as ‘around the underside’. This is conjecture in a synchronic study, but there is other evidence of grammaticalization in progress.

5.3.2 Grammaticalization in prepositions and NP chains

Lehmann’s (1995:74–92) seminal work on grammaticalization observes an adverbial relationship between a ground NP and its verb, linked by a spatial preposition. The prepositions govern their NP complement, wherein Lehmann sees the potential for a chaining relation when more complements are joined. These Ps therefore govern NPs which “signify a local aspect (a part, dimension, spatial region) of something with respect to something” (1995:88). Whilst this view of adverbial relators

could see everything in Appendix B subsumed under ‘preposition’, there are other motivations to consider here.

There are some troublesome examples of Type B prepositions. These are the four marked by a ‘?’ in the first column of the table and resemble the English type *in the middle of*. A phrase such as this is itself less grammaticalized than *on top of*, whose lack of definite article disambiguates its position as part of the relator and whereas *ynghanol*, ‘in the middle of’, seems to have the same form as many compound prepositions, there is nothing to indicate that it does not simply form part of the following NP either, which is where this notion of ‘chains of relations’ becomes less useful to this research.

- (9) **mae ’r cwpan yn canol y bwrdd**
 COP ART cup in middle ART table
 ‘the cup is in the middle of the table’

(AS, TRPS 1)

- (10) **mae ’r llun ar ganol y stamp**
 COP ART picture in MUT\middle ART stamp
 ‘the picture is in the middle of the stamp’

(MA, TPRS 55)

Given that the noun *canol*, ‘middle’ appears with different prepositions, where in (9) *yn* ‘in’ is used and in (10) *ar* ‘on’, it seems that there is a good case to be made for these particular examples to be considered simple prepositions with an NP complement. *Canol* has not been generalised to only take one locative preposition, although the meaning is roughly the same with both prepositions. This does often occur, with frequency triggering a particular grammaticalisation path to analysis as a compound preposition, but is not the case here. The same can be said for *yn dop* ‘at the top of’ and *yn waelod* ‘at the bottom of’ of Appendix B. Further motivation for an analysis of simple prepositions is that there would be a mismatch between the compound preposition meaning and the stimulus if, for example, *ynghanol* (9) (the speaker has dropped the mutation) were taken to mean simply ‘a relator of vertical contact’. The preposition *yn* relates to *canol* ‘middle’, to which the

figure's implied relation is then 'containment' within this area and the relation to the ground, the table, is then implied. As stated above, this is not the case for all compound prepositions of type 2, as shown in (11+12).

5.3.3 Grammaticalization paths in Welsh prepositions

Certain adverbs and nouns are seen frequently in compound prepositions of types 2 (Appendix B), but are rarely or archaically used elsewhere; *amgylch* 'circumcircle'³ is rarely known as a noun. Also having undergone some semantic bleaching is *traws* in *ar draws* 'across' as well as *cwmpas* in *o gwmpas* 'around', presumably referring to a compass. Others, in compound type 3, are unable to stand alone. For example *tu* retains its meaning of 'side' and forms adverbs with a closed set of nouns; *tu ôl i*, *tu cefn i*, both meaning 'behind'. Further yet on the proposed grammaticalization scale is type 2 *i fyny* 'up'; standing alone, *fyny* has no meaning. This is especially noteworthy when compared to its counterpart *i lawr* 'down', which comprises of 'to+floor' (cf. *llawr*).

Although the compound preposition types do not correspond directly to any stages of grammaticalization, some spatial nominals are well underway to becoming full prepositions:

- (11) **mae 'r rhaff dros ben y stwmp**
 COP ART rope over MUT\head ART tree stump
 'the rope is over the top of the stump/over the stump' (cf. *pen*)

(AS, PSPV 45)

- (12) **mae 'r llinyn dros ben top y fasnad**
 COP ART string over top ART F\basket
 'the string is over the top of the basket'

(AS, PSPV 32)

In (11), it is ambiguous as to whether the speaker is using a compound preposition or a simple one as 'the stump' can be said to have a *pen* 'head, end', that

³ Etymologically *amgylch* itself is formed from the preposition *am+cylch* 'around+circle', but grammaticalised with *o* it differs subtly from the original *am* (see section 6).

is, the flat surface at the top. In (12), the reanalysis of the structure of constructions such as (11) becomes apparent, as *pen*'s semantics become redundant as part of the compound preposition and its specification of place needs to be refilled, this time by the loan word *top*. This is not to suggest that *pen* is generally less widely used in the language; there is no evidence for this as it has many semantic functions. *Top* merely exists as a lower register alternative, which is why the analysis of (11) remains ambiguous.

The shades of grammaticalization shown here are commonly seen in the languages of the world with evidence from outside the European family also in the possible reanalysis of Basque's case-marked spatial nominals as adpositions (Levinson & Meira 2003: 494).

The semantics of Welsh prepositions will become more clear in Section 7, but their compositional meanings, given in the 'gloss' column of the Appendix B, support Levinson and Wilkins' (2006: 520) observation of the importance of compositional meaning in this field.

5.4 Encoding posture and position

5.4.1 Typological predictions

Dunn et al. (2007) investigate four languages with zero, one, or one optional locative verb, with each being a slightly different type. Of these, Lavukaleve (Papuan isolate), is of the type expected for Welsh – having a single obligatory copula used for spatial expressions as well as existential constructions. The authors consider the following work by Stassen:

Figure 4. Stassen's cross-linguistic tendencies (1997: 56):

(a) If a language has a unique encoding of locational predicates, that encoding will involve the use of a locative verb.

(b) If a language allows predicate encoding by way of a support verb, locational predicates will be among the predicate categories which employ this encoding.

The data found by Dunn et al. (2007) support the second hypothesized tendency quite uncontroversially, and it seems that Welsh does too, although compare the section 5.4.2 with the notion of ‘supported verb’ suggested above. It seems that perhaps Stassen’s generalization may be too broad as there are no further consequences or predictions – it is merely observed that languages should be equally as capable in expressing position and that it is likely to be done as an extension of the predicate. The authors also note the lack of predictions made in the spatial typologies for these language types (2007:874) and the need for more investigation into their tendencies; thus the need for more data for the sample.

Their findings are that no information with regards to the figure’s position or configuration is contained in the copula of Lavukaleve, but come instead from locational adjuncts (2007:883). Although the analysis of syntactic elements containing postural information in Welsh is not consistent with this (5.4.2), other observations for this language may hold:

- No orientation or postural information is encoded in the BLC, only the location of the figure with regards to the ground;
- The BLC can be extended to include information on the configuration of the figure in verbs. This extension occurs in two situations – if the figure is human or if the figure is “in an informationally salient noncanonical relationship with respect to its ground” (Dunn et al 2007:883).

The first point is consistent with the BLC shown for Welsh in 5.1 and 5.2, and whilst the second is also seen to be true so far, the motivations for extending the BLC will be addressed in Section 7.

5.4.2 Posture and position in verb-nouns and with prepositions

This section gives a brief introduction to the form of the verb-noun, before examining the distinctions between the locative predicates they form with prepositions, and the use of prepositions with adverbials of less canonical position.

A much debated part-of-speech in the linguistics of Welsh is the verb-noun, which has qualities of both verbs and nouns. Whilst it is not within the scope of this project to argue for or against any of these analyses developed over decades, reasons for retaining the analysis of verb-nouns – noun-like elements of periphrastic verbs with predicative markers – for encoding posture will be outlined, as these are the most common forms to encode posture in Welsh.

The following examples contrast regular noun forms (13+15) with verb-nouns in copula constructions.

- (13) **mae 'r athraw-on mewn cyfweiliad**
COP ART teacher-PL in.INDEF interview(NOUN)
'the teachers are in an interview'
- (14) **mae 'r athraw-on yn cyfweld myfyr-wyr**
COP ART teacher-PL PRED.in interview student-PL.HUM
'the teachers are interviewing a student'
- (15) **mae 'r gen-od yn flin wedi 'r ffrae**
COP ART girl-PL PRED.in angry past art argument
'the girls have been told off'
- (16) **mae 'r hog-iau wedi ffraeo**
COP ART boy-PL PRED.past argue
'the boys have argued'

It is interesting to note that two versions of what seemed to be the same spatial preposition 'in' are used in (13+14), but whereas one retains an extension of its spatial meaning as the head of a PP, *yn* in (14) has changed slightly in function. This strategy is mirrored by the use of a temporal preposition *wedi* in (15+16) which acts

as a perfective marker due to the retention of its semantic content and can be interchanged with *yn*, *am* and other prepositions to mark different tenses and aspects with verb-nouns – *yn* proving to be a sort of continuous marker and *am* a near future marker. However, identical forms using only *yn* are seen elsewhere used with adjectives and with nouns to form the predicate, such as in predicative copula constructions of the type ‘the car is green’.

It is argued by Gensler (2002) that diachronically and synchronically, the preposition *yn*, verbal periphrastic *yn*, predicative *yn* and adverbialising *yn* are in fact the same spatio-temporal preposition, but have evolved to carry out different functions. Gensler follows a tradition of functionalist approaches in analysing the verb-noun as a noun, and most convincingly argues that *yn* + verb-noun are in fact just another prepositional phrase. This analysis is supported by data of the PSPV and the improvised set as well as elsewhere in the literature (Williams 1972):

- (17) **yn ei** ⁴ **gwrcwd** ⁵ **mae o ynte**
 in POSS M.POSS\crouch COP 3SG.M AGR
 ‘he’s crouching, (isn’t he)’ (a picture of a man crouching on snowy ground)
 (RCW, IPS)

Although data in (14+16) show that the verb forms are still identifiable from their counterpart nouns in these cases (ex. *ffrae*, noun versus *ffraeo*, verb), the extent to which they behave like nouns – that they can take a possessive pronoun and mutate for the gender of the possessor – shows that they are far along in the nominalisation process. However, it is not in the interest of this study to follow the analysis of Fife (1990) and Gensler (2002) in defining these Prepositions + VerbNoun or Preposition + Noun/Adj as PPs as they differ in function from true spatial PPs, as also acknowledged – synchronically – by these linguists. Rather, in these cases the prepositions function as predicate markers, playing a role within the predicate by marking tense/aspect as

⁴ The possessive pronoun *ei* agrees in number and person with the figure, acting as a sort of referent as to whether it is the figure or the ground’s posture being described. Of course, other factors such as word order can also imply the same, as seen in 5.1 and can often be redundant, as in (17) where there is no specified ground.

⁵ Compare the possessed form ‘crouch’ in (17) with the verb forms *cyrwyd* or *cyrwydu*.

stated previously, influenced by their spatial (or temporal) semantics. When these prepositions combine with adjectives and regular nouns which do not signify the ground, they can act as predicate markers but this time without the function of tense/aspect marking of course. This blurs the boundaries of prepositionhood significantly, as shown in (18–21).

- (18) **mae 'r peli ar wasgar ar lawr**
 COP DEF balls on MUT\scatter(ADJ) on INDEF\floor
 'the balls are spread on the ground' (cf. *gwasgaru*, verb)

(RCW PSPV 39)

- (19) **mae 'r pot-yn ar ei ochr wrth y bonyn**
 COP DEF pot-SG on POSS M\side near DEF stump
 'the pot is on its side by the treestump'

(RCW PSPV 40)

- (20) **mae 'r defnydd yn ei blyg ar ben y stwmp**
 COP ART material in POSS M\fold(ADJ) on ART stump
 'the material is folded on the treestump' (cf. *plygu* v., vn.; *plygiad* n.)

(AS, RCW PSPV 34)

- (21) **mae 'r ffa mewn twmpath ar y llawr**
 COP ART beans in.INDEF pile on ART floor
 'the beans are in a pile on the floor'

(AS PSPV 11)

Whilst the nouns in (19+21), *ochr* 'side' and *twmpath* 'pile', seem to form regular PPs, the adjectives *gwasgar* 'scattered' and *plyg* 'folded' – and in some cases adverbs like *mewn* 'inside' – mimic their structure. It certainly clear why one might argue that they are all in fact PPs, but it is not within the scope of this paper to develop a solution to this, and so it is enough to say that these positional adjectives behave exactly as their nominal counterparts. Note that in both the Welsh and English of (21), it is ambiguous as to whether the PP *mewn twmpath* 'in a pile' refers to their configuration or location – in fact the beans were grouped untidily together on the ground and were not part of a pile of something else, so the PP refers to their postural configuration.

Clearly the prepositions of the positional adverbials are not governed always by the topological relation of the figure to the ground as in the PP of the ground (18), but

also by the relation of 'support' as opposed to 'location relative to' as in (19) where the pot is right next to the tree stump, but supported by the forest floor. This is common at least in European languages, as it is seen in the English translation of (19) and as also attested in German (Gerling & Orthen 1979:69; Kutscher & Schultze-Berndt 2007:986). The motivation for preposition selection in (20+21) would make an interesting study, but the data of this study are insufficient to make generalisations, but could be conjectured that they are also motivated by a relation of support, using 'in' to mean they are supported by a part of themselves – in (20) by another fold of material and (21) by other beans in the pile. If this is straightforwardly the case, then it furthers the evidence for preposition + Adj being an exceptional variety of PP.

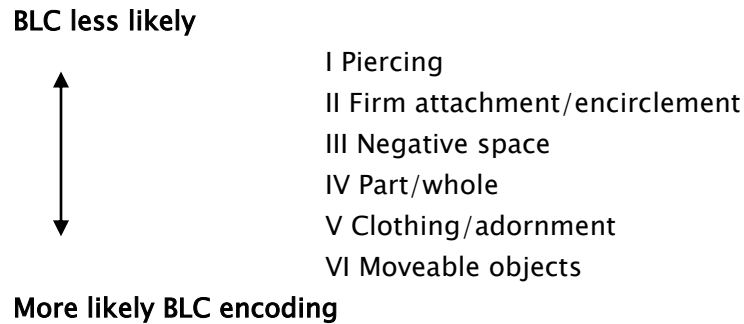
Less surprisingly, canonical human posture is found to be encoded by predicative verb-nouns (Section 8) whilst non-canonical positions in human or inanimates causes adverbial prepositional phrases and P + Adj/Adv phrases to be formed (18–21). This remains in keeping with the current typologies on posture and position in European languages, which is encoded in verbs in more canonical scenarios and adverbs and adverbials in less canonical positions (Kutscher & Schultze-Berndt 2007; van Staden, Bowerman & Verhelst 2006).

Although it has been established, not uncontroversially, by Gensler and shown in this section that locative predicates in Welsh can take the form of prepositional phrases, it is still useful to indicate that in there are at least two types of structure here, namely that of 'predicating preposition' + 'verb-noun' and 'predicative marker/preposition' + 'noun or adjective or adverb phrase' which both trigger different mutations (Thomas 1996; Gensler 2002) as well fulfil different functions within the BLC.

6 Competing structures

Predictions are made for ‘types’ seen in Table 1, including a scale of where BLCs are likely to occur:

Figure 5. Likelihood of BLC encoding



(Ameka & Levinson 2007:853)

Expressions which involve one object being held in place by piercing, such as an earring in an ear, is least like to yield the BLC, with clothing and small, moveable objects on a restricted surface are most likely to be encoded by the BLC. In the middle of the scale is ‘negative space’, which is a category for figures such as cracks or holes; these were untroubling to the speakers, who used the BLC without hesitation.

Overall it was found that the BLC could be used in all instances, although it seemed quite unnatural in one case. For TRPS 23 all the participants preferred a **presentative** construction as ‘butter on a knife’ was not a “good” figure – it is firmly attached and therefore high on Figure 5. The presentative is very similar in form to the BLC, with the prepositions at first glance seemingly motivated by the same factors and a demonstrative replacing the definite argument:

- (22) **mae** **'na** **jam** **ar** **y** **gyllath**
COP there jam on ART F\knife
'there is jam on the knife' (cf. *cylllell* 'knife')

(OA, RCW, TRPS 23)

Also mentioned for its similarity to the static space is motion, which occurred in the PSPV when a figure was only partially contained:

(23) **mae 'r cadach yn tywallt allan o 'r fasgiad**
COP ART cloth PRED.in pour out from ART F\basket
'the cloth is pouring out of the basket'

(OA, MA PSPV 16)

Motion was also preferred when the figure was a plant, seeing the verbnoun *tyfu* 'grow' in use.

The most frequent alternative to the BLC given was the resultative construction, which was used frequently for unnatural situations (and many of the PSPV were clearly staged), like a rope wrapped around a tree-stump. Resultatives present the result of an action and give the impression that something 'has been done' by an outside force. These resultatives were available in most situations, including piercing but the most frequent verbnoun to be used with them was *lapio* 'wrap' implying close encirclement.

These results do not show any definite correspondence to the scale of Figure 5, perhaps as the BLC was available in all situations, but the observations do not show random selection for alternative constructions either, suggesting that the scale does represent some tendencies at least.

7 Topological Relations in prepositions

Whilst three main categories can be identified in encoding spatial information, topological relations, posture and position, it has been presented in this study to be prepositions which encode topological relations (only), which is the object of the research documented in 7.1–7.2.

7.1 Current Typology

Anyone learning a foreign language will note that spatial relations are interpreted differently, even if subtly, in every language. However, typologists have been working under the assumption that 'core' concepts common to all languages

might be uncovered; in this case, the topological relations roughly glossed in English as *on*, *in*, *under*, *near* and others. For the past 20 years or so, these concepts have been tested and refined with more and more languages, as more spatially interesting types come to the fore. As mentioned in 3.1, the TRPS was specially designed in 1993 to elicit these relations from speakers without the influence of translation from a contact language. Since, results show not only that there is a cline as to where the ‘cut’ will be from *on* to *in* for example, when comparing cross-linguistically (Figure 6), but also, that more distinct concepts than these roughly translated prepositions as prototypical scenarios.

Figure 6. Diagram using TRPS to show possible cline of ‘on’ to ‘in’ topological relations (Levinson & Meira 2003:488)



According to Levinson and Meira (2003:503), the cline represents a sort of hierarchy which can predict where a cut will be made depending on the range of topological relation markers available in a language. This means that if a language has a narrow extension for a marker meaning roughly *on*, of say 3 TRPS pictures, then it can be predicted that the 3 will be from the left extreme of this cline. Welsh demonstrates this perfectly below, by making its cut right down the middle of Figure 6, with the cork-in-bottle scene able to take both its *on* and *in* prepositions. This shows that there is a definite spatial distinction between these two concepts, but, again, there is more to the semantics than *on* and *in*. Two basic concepts that emerge from earlier work by Bowerman and Pederson (1992, 2003) are containment, formerly glossed *in* and superposition with support, formerly *on*.

Having run statistical tests (multidimensional scaling approach) on topological relation markers depicting the TRPS in 9 genetically and geographically diverse languages, Levinson and Meira (2003:505–508) find similar categories to emerge. They label them: **attachment**; **superadjacency** (\pm contact), with a sub-category for larger figure which they call ‘on-top’; proper **containment**; **subadjacency**; and **proximity** as well as an isolate group for negative space and part-whole relations. Although it is stated in their work that a far larger language sample would be needed to confirm the findings, the groups will yield more accurate comparison of topological relations than using vague concepts such as *over* and *on* cross-linguistically. The results from the Welsh data will reveal whether these categories are directly relevant to a language internal view of the distribution of topological relation markers.

7.2 Adpositional space

As the participants were so few, it was possible to elicit several alternatives for each picture of the TRPS and so in many cases, more than one preposition was gathered. In most cases, the speakers were consistent in their choice of prepositions and alternative prepositions, and they also corroborated each others’ selections. For example, whenever *o amgylch* ‘around’ could be used, *o gwmpas* and *rownd* were also given, either by the same speaker or two or more were given by another (however, the discussion below hints at subtleties between these apparent synonyms). In the two cases where only one participant provided a particular preposition, they were accepted as they were produced without hesitation and they also showed signs of being register-based variation:

- (24) **mae** 'r **gola** 'n **hongian** **o dan** **y** **nenfwd**
 COP ART light PRED.in hang under ART ceiling
 ‘the light hangs down from the ceiling’

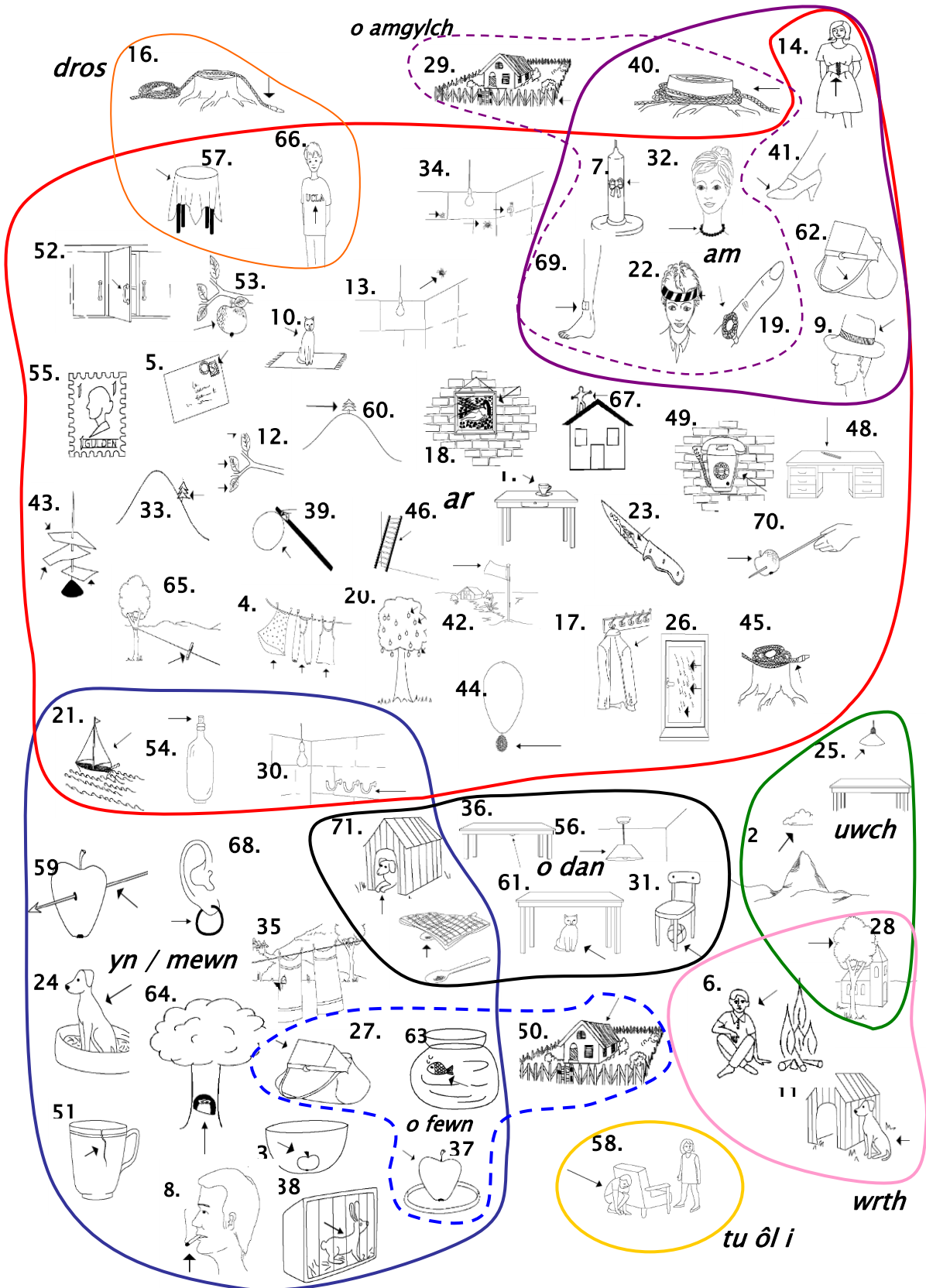
(OA, TRPS 56)

Using the word *nenfwd* for the ground in (24) marks this sentence as being more formal as the word is not in everyday use in this dialect, where it is replaced in all the

other phrases given by this speaker as well as the others with the word *tô*, 'roof', suggesting that the corresponding preposition might have been selected accordingly. All other versions of TPRS 56 used the postural *hongian* with its corresponding preposition *o*, 'from' – this might suggest the grammaticalization path for *o dan*. Certain prepositions are determined by adverbials or verbs of attachment and so these cases are not accounted for here as the figure below shows only topological relations in the BLC (see 5.3 and 8).

The data set revealed around 30 spatially related prepositions in Welsh (Appendix B), although there were a set of 10 which accounted for all situations drawn. They are represented in Figure 7.

Figure 7. TRPS grouped according to preposition elicited



The 10 prepositions shown here represent the most frequently occurring prepositions as well as the more specific in meaning. The fact that some prepositions do not extend to obviously similar drawings does not indicate that the combination can be ruled out, but simply that it did not occur in the data at hand. Conclusions must therefore be drawn on the relations that *are* present.

7.2.1 Observations on core concepts of Welsh topological relations

By far the most common topological relation marker is *ar*, which is consistent with other European languages in commonly conflating **superadjacency plus contact** and **attachment**. Similarly predictable, superposition with contact and **superadjacency** with no contact, *uwch*, is strictly differentiated (Levinson & Meira 2003:505; van Staden, Bowerman & Verhelst 2006:487). This *uwch* group overlaps slightly with **proximity**, and although this is probably due to the height of the figure and its perceived proximity to the ground and so might be considered a ‘bad picture’, it actually shows another cline with these 5 pictures, in Welsh at least. The aforementioned cline between **superadjacency/attachment** and **proper containment**, *yn*, is clearly represented in Figure 7, along with a blurring of **containment** and **subadjacency**, *o dan*.

Standing alone is *tu ôl i*, which is a preposition used with the intrinsic frame of reference. This frame of reference projects human-like features onto an inanimate object, such as the front of a house being the side ‘facing’ a street. The side *ôl*, ‘hind’, is assigned to the side of the chair from which the sitter would have their back to, and the figure is described with respect to this side of the chair. Further discussion of frames of reference entering topological relations is made in 7.2.3.

Two less frequent prepositions also overlap with the **superadjacency with contact** category, but are not entirely contained within it. The distinctions here are more subtle, as we see in the translations from the table above in 5. *Dros* is translated as ‘over’, but does not overlap with *uwch*, ‘over, above’. In all three drawings, the figure

extends from one end of the ground to another. This concept is difficult to pin down to the predefined categories, as well as any other, but in combination with data from the PSPV, the emerging theme seems to be that the figures outsize the ground in some way, whilst remaining in superadjacent contact with at least some part of it:

(25) **mae 'r rhaff yn hongian dros brigyn y coed**
 COP ART rope PRED.in hang over twig ART trees
 'the rope is draped over the branch'

(All, PSPV 33)

(26) **mae 'r defnydd yn gorwadd dros fasgiad**
 COP ART material PRED.in lie under INDEF\basket
 'the material is draped over a basket' (cf. *basged*)

(RCW, PSPV 16)

(27) **mae 'r defnydd dros damad o 'r garreg**
 COP ART material over MUT\piece of ART stone
 'the material is (lying) across one part of the stone'

(MA, PSPV 33)

This definition fits all instances in the data gathered, but is somewhat messy. More generally, it seems that all the core concepts defined in the literature do still apply, but that the relative size of the figure and ground may also be a consideration of Welsh space. This is hinted at in the results of the multidimensional scaling graphs of (Levinson & Meira 2006:507), where it was observed that smaller, moveable grounds clustered separately from larger counterparts for the **containment** relations. Another nod to the importance of relative size, are the two house drawings, TRPS 29 and 50. Neither of these adheres to the larger categories of *ar* and *yn/mewn*, and it could be speculated that this is due to their relative sizes – the house could not be said to be properly contained in something so small.

On the other hand, TPRS 29 is twice removed from the larger *ar* category as it also overlaps extensively with *am*. Clearly, here there is a notion of encirclement at work. As mentioned at the beginning of this section, *o amgylch*, the preposition which features in picture 29, is was considered by the participants to have alternates in *o gwmpas* and *rownd*. Of course, speakers' on-the-spot judgments of certain

prepositions being synonymous can only be applied to the picture at hand and perhaps a few previously seen, as it is impossible to consider all possible configurations utilising a preposition simultaneously. It is interesting that adpositions often containing relatively little in the way of semantics immediately obvious to native speakers should have such specific and instinctive applications. In many cases, *am* was also judged to be equivalent, but when it came to pictures such as 29, all the participants agreed that *am* did not apply. When pressed, they said that the encirclement was not tight enough to warrant the use of *am*, which was echoed by two speakers, MA and OA, with reference to *amdan* used with TRPS 41; the shoe wasn't tied around the foot enough. In turn, looking at the ring on the finger (TRPS 19), OA stated that if *o amgylch* were to be used, it would mean that the ring was loose. All in all, this gives us yet another cline, beginning with *ar*, for **superadjacency with general attachment**, *am* for **attachment with encirclement** (at least partial), and *o amgylch* for **encirclement with or without attachment**. Then it could be speculated that the semantics of *am* have been extended to things that are worn, which could perhaps explain why a new 'encircling preposition' has been compounded from it (cf. section 5.3) with the word for 'circle', *cylch*, so clearly marked.

Such speculation can be useful, suggesting which form is semantically marked, synchronically, so that future diachronic studies might reveal the change in implicational relations of these adpositions. Following their study Levinson and Meira hypothesize that a developmental path may be traced for the 'categories of importance' in spatial description, such as **attachment of encirclement**:

"...first, there are universal prototypes; second, there are universal constraints on category formation, requiring only neighbouring prototypes to coalesce into composite categories; third, there are constraints on synchronic sets of categories, as represented by the routes through the developmental sequence." (2006:513)

Clearly a much more extensive study would be needed to show any kind of definite distinction for the categories of *am*, *o amgylch* and their counterparts, with more

speakers and much more specific stimuli. As Welsh is one of the relatively few languages in the world with a written history long enough to then make a historical corpus study possible, an investigation of the sort may be worthwhile to test this hypothesis. A disadvantage of studying the phenomenon diachronically is that there is a very limited genetic pool to select data, which may yield data again favouring European tendencies.

Although two hours' worth of data from four speakers is quite insufficient to draw any concrete conclusions on the semantic differentiation of the above prepositions (grammaticality judgements would need to be made on every similar preposition with each appropriate picture), it is made apparent in Figure 7 that hyponymous – if not synonymous – relations must exist, if only 10 of 30 markers are represented by it.

7.2.2 Hierarchical relations within prepositional space

Figure 8 below shows finer detail of possible motivation for the selection of prepositions.

Figure 8. Hierarchical relations within prepositional space

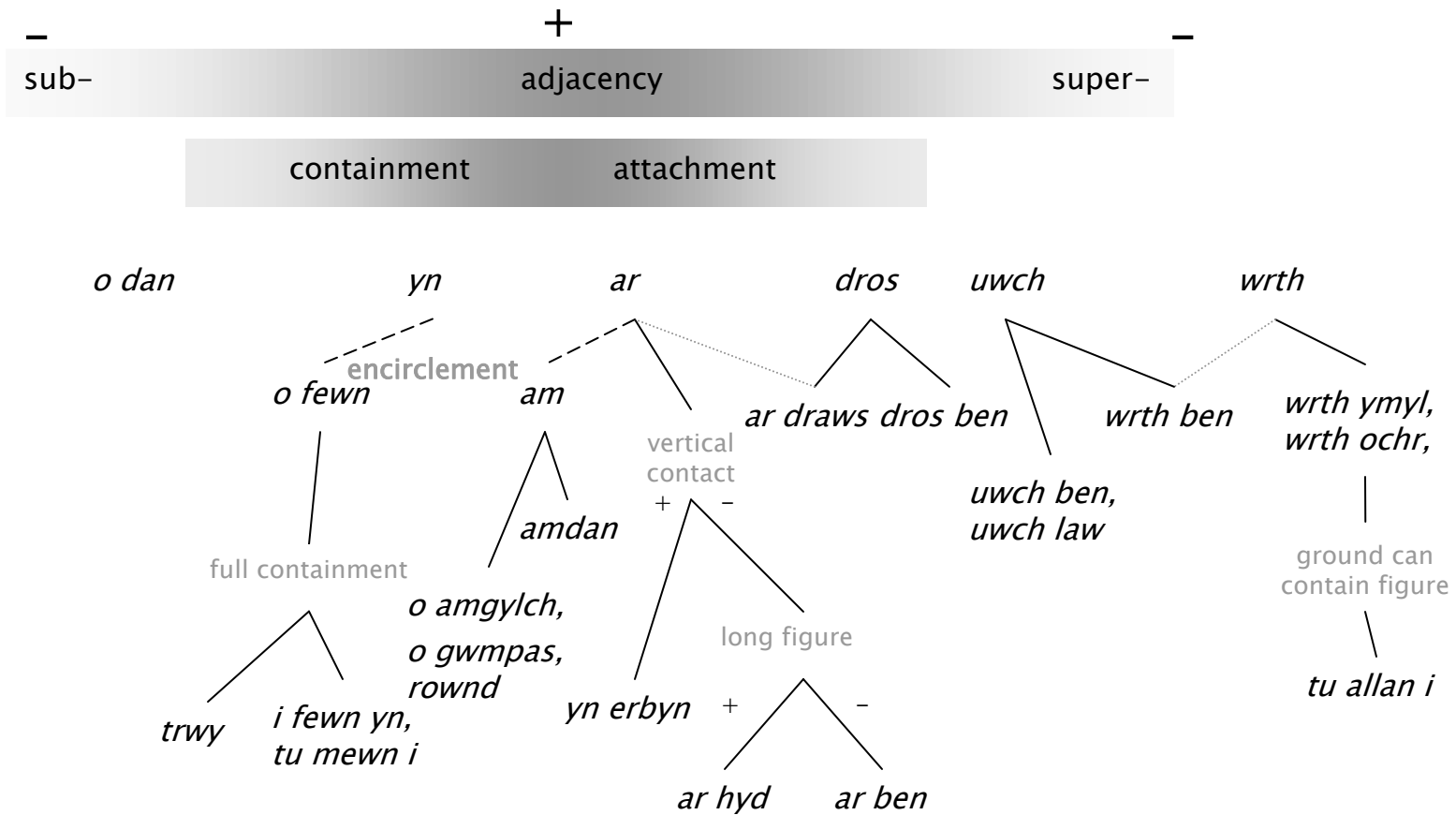


Figure 8 gives a better idea of the importance of the proposed core categories of topological relations, with **adjacency** forming one gradient scale, and **attachment/containment** being another, of course fading with adjacency. The order of the 6 most frequent prepositions underneath these scales represents the respective clines from one to another.

The interpretation of attachment here corresponds to firm contact as well as proper attachment, as no differentiation seems to be made in the language in question, and thus a continuum can be formed from mere contact with a surface, to attachment, to containment within some part of the ground. Full containment comes as a further specified feature of general containment; *tu mewn i* was said by the speakers to mean that a figure was more likely to be (but not necessarily) properly contained by the ground on all sides, whereas *yn/mewn* could mean any degree of containment. *I fewn yn* was said by three participants to emphasise the further containment of the figure, whilst the fourth participant could not distinguish between *yn* and *i fewn yn*. The differentiating branches then relate to these scales above them, for example, looking at *dros* which marks superadjacency with or without attachment, it is shown that its sub-branch *dros ben* marks superadjacency with less emphasis on attachment (or contact), whereas *ar draws* has leans more towards attachment. In both cases, *dros* can replace either compound preposition, but its meaning is more general. It is true of every solid branch of the tree, that the lower, more specific preposition can also be expressed by the node above, meaning the diagram describes a rough hierarchy.

Where there are dotted lines, a derivational relationship is suggested, and both these are instances of overlap in the clinal groups of Figure 7:

(28) **mae 'r sgwennu ar y crys-T**
 COP ART writing on ART T-shirt
 'the writing is on the T-shirt'

(All, TRPS 66)

- (29) **mae 'r sgwennu ar draws y crys-T**
 COP ART writing across ART T-shirt
 'the writing is on the T-shirt'

(AS, MA TRPS 66)

- (30) **mae 'r sgwennu ar hyd y crys-T**
 COP ART writing along ART T-shirt
 'the writing is on the T-shirt'

(OA TRPS 66)

- (31) **mae 'r sgwennu dros y crys-T**
 COP ART writing over ART T-shirt
 'the writing is on the T-shirt'

(OA TRPS 66)

Where there are dashed lines, many, but not all instances of the node above correspond to that of the node below, such as the complicated relation of *am* discussed above. The difference seems to be the subcategory of encirclement – either partial or whole – to which *ar* seems indifferent. The same looks to be true of *yn/mewn* and *o fewn*, where the latter requires a boundary to be encompassed within. Although this subcategory seems important in this region of spatial relations, its affected nodes do not form a cline this time. Instead, attachment with encirclement refers to a figure surrounding a ground, whereas the roles are reversed when encirclement influences containment. This complicates the picture somewhat, as do the additional sub-branches which do not correspond simply to the scales above them, such as 'vertical contact' and the shape of the figure or ground. Levinson and Meira suggest that these may be culture-specific isolated categories (2003:514), in which case, using the core concepts suggested could be a useful way of distinguishing culture specific items, as shown in Figure 8. In any case, the pseudo-hierarchical preposition tree displays similar features not only to the intertwining nature of Dutch prepositions, as documented by van Staden, Bowerman & Verhelst (2006) and referred to as 'family resemblance networks', but also to the hierarchical adpositional relations of Tiriyo (of the Cariban family) (Levinson 2006:489). This suggests that similar

relations might be found in all languages with a large set of adpositions or spatial nominals.

Figure 8 was drawn based on the responses to the TRPS stimuli, and so is not the most complete picture of these adpositional semantics, but is a starting point. It seems likely though that the more speakers' judgements that are considered, the more blurred the branches of the diagram will become, especially those nearest the top of the tree which do not have extra specification, forming a cline that is denser still.

7.2.3 Scale of proximity and frames of reference

The diagram of 7 shows a gap in the adjacency and attachment scales over the preposition *wrth*, expressing proximity, which implies that *wrth* is not sensitive to super- or sub- adjacent proximity and it is not concerned with attachment or containment either. However, within its derived compound prepositions are *wrth ben* which expresses superadjacent proximity on a vertical axis. Also possible, although not attested in the data, is *wrth droed*, '(lit.) by foot', meaning roughly subadjacent proximity, linking the left and right sides of this diagram along the prepositional cline. Examining the *wrth* sub-branches, whilst *wrth ymyl* also implies any general proximity to the 'edge' or limits of a ground, *wrth ochr* refers to a 'side', which, when applied to a ground such as a church, as in TRPS 28, with an identifiable front, back and sides, can either be used in a **relative** or **intrinsic** frame of reference. Similarly, a further sub-branch, *tu allan i*, is the antonym of *tu mewn i*, which can perhaps be translated as 'outside' and 'inside' respectively, resemble closely the intrinsic frame of reference marker *tu ôl i*, mentioned in 7.2.1, and further serve to prove a link between left and right sides of the cline.

It is well known in the study of static space, that the vertical axis can be a troublesome field when distinguishing frames of reference from topological relations as it describes an absolute feature – namely the influence of gravity. This is usually

resolved by including any expressions of (at least) close proximity with topological relations. This scale of proximity seems to merge with the field of frames of reference on the horizontal axis as well, at least in these data, which raises the question of the definitions of both *topological relations* and *frames of reference*, and their respective relevance to languages which do not employ an absolute frame of reference in the majority of instances.

7.2.4 Verb-motivated prepositions

There is a small set of prepositions which combine with each verb of posture (and some adverbials) dependent on that verb's semantics. As this study comprises the first concentrated examination of Welsh prepositional space, it is not possible here to also draw conclusions on the prepositions which do not stand alone in the BLC. It is interesting to note however, that these prepositions are often forms associated with motion, combined with a static verb in order to express the location of a figure which only has a minority surface area attached to the ground:

- (32) **mae 'r ceirios yn hongian oddi ar y goed-an**
 COP ART cherry PRED.in hang from onART tree-F.SG
 'the cherries are hanging off the tree' (where *ceirios* is an uninflecting form)
 (OA, MA TRPS 20)

- (33) **mae 'r llun yn hongian oddi ar ⁶y wal**
 COP ART light PRED.in hang from on ART wall
 'the picture is hanging from the wall'
 (OA, MA, RCW TRPS 18)

Or, when expressing the location of a figure which only has a minority part contained within the ground:

- (34) **mae 'r bach-a 'n sefyll allan o 'r wal**
 COP ART hook-PL PRED.in stand out from ART wall
 'the hooks are sticking out of the wall'
 (OA TRPS 30)

⁶ *Off* was given as an alternative to *oddi ar* 'from on' and *o* 'from' by the youngest speaker on several occasions.

In each of these cases, an alternative preposition independent of the verb's semantics is also possible, as proven by Figure 7.

8 Encoding posture and position

8.1 The cross-linguistic significance of posturals and positionals

The interest in posture verbs has come from the study of languages with no generic locative verb – and some without more than one preposition – which have very specific and wide-ranging verbs encoding both location and position, as opposed to encoding location in prepositions as seen in most European languages. Some of these have large sets of posturals, such as Tzeltal with 200, many with semantics as specified as *mochol* 'being located (of animal lying curved on its side) (Ameka & Levinson 2007:849). Ameka and Levinson claim that this is counter-evidence to assumptions made in neurocognition, and there are not in fact two separate "where" and "when" systems and so it is a worthy study to see whether the tendency in languages is to separate or join the two.

It has been shown that languages using a copula construction as their BLC can also be motivated to use verbs of posture, some optionally motivated by non-canonical description (Lavukaleve, mentioned in 5.4.1) and some more systematically (German; Kutscher & Schultze-Berndt 2007). It is yet to be observed whether the optional expression of posture in Type 1 languages consistently represents actual posture and orientation in some way, and the Welsh data collected suggest that it does not necessarily, at least in inanimate figures.

Animacy is a field which has been shown by several works to have an influence over the encoding of configurational information. A figure's posture and orientation is much more likely to be encoded if the figure is animate, according to Dunn et al (2007), and may also be included if a figure is in a non-canonical configuration or relationship to the ground, e.g. *the bottle is on the table* (standing upright), but *the bottle is lying on the table* (is on its side). Dunn et al (2007:887) state that their data

do not support the conjecture made in Ameka and Levinson (2007:854–855), that Type I languages are the least likely to encode configurational information of inanimates using human postural verbs. Welsh too has human posture verbs available for use with inanimates, but as portrayed in 8.2.1, it does not do so consistently. Further reasons as to why should be explored, to shed light on why human postural verbs are not used systematically used to encode configuration in a language’s BLC if such a strategy is readily available.

8.2 Postural extensions to the predicate

This section introduces the eight posture verbs found in the data: *eistedd* ‘sit’, *sefyll* ‘stand’, *gorwedd* ‘lie’, *cyrcwyd* ‘crouch’, *hongian* ‘hang’, *pwysu* ‘lean, weigh’, *cydbwysu* ‘balance’, and *dal* ‘hold’. As shown in 5.4 there can be difficulties in distinguishing verb forms from noun forms, and so although always in their verbnoun form in the data, only those with inflecting paradigms as full verbs are included in this group of seven. One form not included for precisely this reason is *sownd* ‘stuck’, despite its Germanic counterparts also forming verbs. For Welsh, this information is encoded in this adverbial of P + Adj:

(35) **mae 'r brig-yn yn sownd i 'r goed-en**
 COP ART stick-M.SG PRED.in stuck to ART F\tree-F.SG
 ‘the stick is stuck to the tree’

(AS PSPV 55)

Like with some verbs, it is the semantics of *sownd* that determine the following preposition of the PP. More on P + Adj constructions will follow in (8.3).

The data will be compared to the typology in 8.4, but first the occurrences and probable semantics of each posture verbnoun is discussed in turn, before looking in more detail at non-canonical structures in 8.3.

8.2.1 Human posture verbs

These three are the most common to arise in the spatial description of other languages and are three of the four most common in the data. Although their use is not consistent always, *sefyll* 'stand' seems to describe longer, thinner figures with their length roughly vertical:

- (36) **mae 'r botel yn sefyll ar y garreg**
 COP ART F\bottle PRED.in stand on ART F\stone
 'the bottle is standing on the stone' (cf. *potel* 'bottle', *carreg* 'stone')
 (All, PSPV 10)

- (37) **mae 'r pren-ia 'n sefyll yn y llawr**
 COP ART wood-PL PRED.in stand in ART floor
 'the sticks are standing in the ground'
 (OA, PSPV 9)

- (38) **mae 'r cassavas yn sefyll yn erbyn bonyn y coed-an**
 COP ART cassavas PRED.in stand against stump ART tree-F.SG
 'the cassavas are standing up against the treestump' (cassavas look like long potatoes)
 (RCW, PSPV 65)

The objects described as 'standing' include bottles in a vertical position, sticks stuck in a ground, and propped up cassavas, but also a pot and a ball, which do not have this long, tall shape.

- (39) **mae 'r pot-yn yn sefyll ar frig-yn**
 COP ART pot-M.SG PRED.in stand on MUT\twig-M.SG
 'the pot is standing on a branch'
 (OA, PSPV 29)

- (40) **mae 'r pel yn sefyll ar ddau brig-yn**
 COP ART ball PRED.in stand on MUT\two.M twig-M.SG
 'the ball is balanced between two branches'
 (RCW PSPV)

Similar issues arise with *eistedd* 'sit', and as a consequence no prototypical shape for a 'sitting' inanimate figure can be extracted:

- (41) **mae 'r cadach yn eistedd ar y bwr**
 COP ART cloth PRED.in sit on ART table
 'the cloth is on the table'

(OA PSPV 4)

- (42) **mae 'r ffon yn eista 'n y ddaear**
 COP ART stick PRED.in sit in ART ground
 'the stick is (standing) in the ground'

(MA PSPV 20)

- (43) **mae 'r botol yn eista 'n y llawr**
 COP ART F\bottle PRED.in sit in ART floor
 'the bottle is sitting in the ground'

(OA, MA PSPV 58)

The figures seen in (41–43) are all used with *stand* and *sit* as were; the ball, the bottle, the pot, the sticks even, with the only exception being the cloth, which was not attested in the data gathered with *sefyll* 'stand'.

This paints a confusing picture, as the speakers also stated in a number of cases that *sefyll* or *eistedd* could not be used interchangeably, for example;

- (44) **mae 'r het yn eistedd ar ben y dyn**
 COP ART hat PRED.in sit on head ART man
 'the hat is (sitting) on the man's head'

(AS, OA TRPS 9)

- (45) **mae 'r het yn eistedd yn gam ar ben y dyn**
 COP ART hat PRED.in sit ADV.in askew on head ART man
 'the hat is not straight on the man/ on the man's head'

(OA, AS variation on TRPS 9)

In these two instances, it was said that *sefyll* would be ungrammatical here and similar observations were made for *sefyll*, *eistedd* as well as *gorwedd* 'lie', although they proved not to be true for all speakers as observable from the inconsistencies in the data above. When asked about the postural implications, the participants said that the use of *eistedd* 'sit' and *sefyll* 'stand' could simply indicate that the objects had been static for a while, so that the example in (46) could be given:

- (46) **mae 'r llyfr yn eista ar y silff ers blynyddoedd**
 COP ART book PRED.in sit on ART shelf since years
 'the book has been sitting on the shelf for years'

(OA variation on TRPS 15)

In fact, both sit and stand were used for TRPS 15, again despite the book being upright, where one might expect to hear *sefyll* only.

Gorwedd 'lie' was a little more consistent in never being associated with a figure that protruded from the ground particularly, and was used with the following figures: with sticks, when not protruding but flat on the ground; with material when folded or unfolded; with rope; with cassavas; with bottles, when not vertical. The list continues similarly to build an idea of figure length versus some kind of support, although the entire length of the figure does not have to be in contact with the supporting ground:

- (47) **mae 'r cadach yn gorfadd ar draws y fsgiad**
 COP ART cloth PRED.in lie across ART F\basket
 'the cloth is lying across the basket'

(the cloth was in contact only with either side of the basket's edges and was suspended across the middle, hanging down on either side)

(OA, MA PSPV 24)

- (48) **mae 'r botal yn gorwedd ar draws y garrag**
 COP ART F\bottle PRED.in lie across ART F\stone
 'the bottle is lying on the stone' (the bottle is on its side and in contact with one point on the stone)

(AS, MA PSPV 26)

These concepts of support and length of figure were previously seen to be of importance in 5.4.2 and slightly in 7.2.2 where they were seen to determine the selection of certain subgroups of prepositions.

When tested with the improvised picture series (IPS), the results were not quite as obscure when used with non-humans. All the animals of this series were four-legged and as such, when they were supported on four legs they were said to stand, but all other postures were ambiguous as to whether they were lying or sitting. The animals were also judged to *eistedd* 'sit' in the field under certain circumstances and if not moving – in any posture – according to one speaker, MA. Only the human figures were

consistently described with their posture, as expected. In addition, the verb *cyrwyd* ‘crouch’ was seen only to occur with humans in the data as in example (17).

This shows that there may be competing motivation for use of human posture verbs, which may be why the system seems disorderly. In some circumstances it is certainly grammatical and unmarked to specify the posture of an inanimate figure in this way (45), whereas in others (44) it was judged to be more marked, unnecessary and cumbersome, although possible and not ungrammatical. The use of the *sefyll/eistedd* ‘stand/sit’ to denote the static presence of something is reminiscent of attested grammaticalization paths of European copulae (Ameka & Levinson 2007:854) and so cannot be surprising here. What can be said is that human posture verbs are not a reliable source of postural information in inanimates, although their use in non-canonical situations as in (44) may be more reliable, in every case it is also possible to use the copula and disregard postural verbs entirely. As stated previously, the level of detail required for each picture is a problem for elicitation.

8.2.2 Other positional verbs

Whilst no simple conclusion can be drawn for the role of human posture verbs with inanimates in the Welsh BLC, other positions encode more straightforwardly. The most common of these is *hongian* ‘hang’:

- (49) **mae 'r rhaff yn hongian dros gornal y bwr**
 COP ART rope PRED.in hang over MUT\corner ART table
 ‘the rope is hanging over one corner of the table’

(All PSPV 41)

- (50) **mae 'r cadach yn hongian o 'r brig-a**
 COP ART cloth PRED.in hang from ART twig-PL
 ‘the cloth is hanging from the branches’

(OA, RCW PSPV 59)

This positional was volunteered over 50% of the time in constructions which allowed it, which is much more than the others which only occurred a few times without participants being asked for grammaticality judgements. *Hongian* occurred whenever a

limp figure's ends further than contact with the ground, which also implies that the figure must be long, but in this case the fact that the figure's structure can support itself is also taken into account (although there was some overlap between *hongian* and *gorwedd* 'lie' in pictures such as PSPV 19+32). Comparison can be drawn again between Welsh and fellow type 1 language Lavukaleve as Dunn et al.'s findings (2007:885) mirror closely what is said here about Welsh. In Lavukaleve: positional verbs are rarely volunteered by their participants, but the PSPV elicitation showed that they can be, and "the verb *ligu* 'hang' was always used with hanging scenes".

Also seen occasionally were *pwysu* 'lean, weigh' (cf. *pwysau* 'weight') and *cydbwysu* 'balance' or 'co-weigh' as the second is clearly derived from the first. These occurred, as suggested, in situations where the ground supports the figure:

(51) **mae 'r pren yn pwysu 'n erbyn y fasgiad**
 COP ART wood PRED.in weigh against ART basket
 'the stick is leaning against the basket'
 (AS, MA, OA PSPV 13)

(52) **mae 'r pot yn pwysu ar brig-yn**
 COP ART pot PRED.in weigh on twig-SG
 'the pot is leaning on a branch'
 (AS PSPV 48)

(53) **mae 'r brig-yn yn cydbwysu ar draws top y fasgiad**
 COP ART twig-M.SG PRED.in balance across top ART basket
 'the stick is balanced across the top of the basket'
 (AS PSPV 43)

(54) **mae 'r bel yn balansio ar ddau garrag**
 COP ART F\ball PRED.in balance on MUT\two F\stone
 'the ball is balanced on two stones' (the two stones are side by side)
 (MA PSPV 43)

Two speakers, AS and MA, stated that *cydbwysu* was too formal for everyday use and that the adapted loan *balansio* would be preferred. The relation of support in these cases was that figures using *pwysu* were partly supported by a named ground and with *cydbwysu* they were entirely supported by the ground, but where only in contact with a small surface area of it. When *cydbwysu* was used figures were much larger

than the part of the ground in contact. In these instances the shape and structure of the figure did not seem to matter, as the figures ranged from a ball, a stick, a bottle to a rope.

The last postural verbnoun only occurred once in the data and describes the posture of a figure as a container:

- (55) **mae 'r bag yn dal y bocs**
 COP ART bag PRED.in hold ART box
 'the bag holds the box'

(AS variation on TPRS 62)

8.3 Position and configuration in adverbials

Outside of the predicate, adverbials can also express position and configuration as seen in 5.4.2, taking the form P+NP and P+AdjP/AdvP. These often express non-canonical postures for humans, animates and inanimates, for example, *ar ben i lawr* 'upside-down' can apply to anything which has an end distinguishable as a head:

- (56) **mae 'r pot-yn ar ben i lawr ar y boncyff**
 COP ART pot-M.SG on MUT\head down on ART tree.stump
 'the pot is upside-down on the tree stump'

(OA, MA, AS PSPV 12)

- (57) **mae 'r botal ar ben i lawr mewn basged**
 COP ART F\bottle on upside-down in.INDEF basket
 'the bottle is upside-down in a basket'

(OA PSPV 67)

- (58) **mae 'r dyn ar ben i lawr yn y cae**
 COP ART man on upside-down in ART field
 'the man is upside-down in the field' (a picture of a man doing a handstand)

(MA IPS)

Similarly restricted adverbials are *â'i ben/phen i fyny/i lawr* 'with its/his/her head up/down' or 'upright/head-down', *ar ei (h)ochr* 'on (her)his/its side', *ar ei hyd* 'on his/her/its length', *ar ei fyny* 'upwards', *yn ei blygiad/phlygiad* 'in its fold(n.)' and *yn ei blyg/phlyg* 'in its fold(adj.)'. As humans can bend, they can be said to be folded too, so all of these adverbials can potentially apply to humans and the restrictions only

apply to the form of the figure. The only form found to be applicable to animates only was *yn ei gwman*, meaning roughly ‘hunched over, huddled’ (cf. unmutated form *cwman*, although no occurrences in other constructions attested).

Previously noted as an anomalous and archaic construction comparable with Middle Irish (Williams 1972), possessive constructions using 3SG possessive pronoun *ei* were found to be relatively productive with adjectives as well as in novel combinations with verbnouns. It seems that these verbnouns behave like nouns in these possessed constructions and therefore it can be suggested that they belong to this category of adverbial, rather than forming part of the predicate. The four verbnouns participating in this are *eistedd* ‘sit’, *sefyll* ‘lie’ and *gorwedd* ‘lie’, as noted by Williams (1972), but also *cwrcwd* ‘crouch’ which can only apply to animates (17). With these nouns, verbnouns and adjectives *ei* serves as a device of co-reference to the figure always; it can also be pluralised to its regular plural form *eu*, with pluralisation of the possessed adjective/noun obligatory in mutation form but optionally taking a plural suffix.

A form previously seen to be ambiguous in 5.4.2 is *mewn* + noun, which could refer to a ground or a configuration of the figure. As well as *mewn twmpath* ‘in a pile’, the preposition was also seen to combine with *pentwr* ‘heap’, *rhes* ‘row’, *cylch* ‘circle’ and *plygiad* ‘fold’. Causing equal ambiguity are forms with the predicate marker/topological relation marker *yn* ‘in’, which blurring the boundaries between the predicate and a positional adjunct with *yn ddidrefn* ‘disorderly, scattered’, *yn fler* ‘untidy’, *yn groes/yn groesgongl/yn diagonal* ‘diagonal’, *yn sownd* ‘attached, stuck’, *ynghlwm* (merged preposition) ‘tied, attached’.

8.4 Significance of posture and position in Welsh

Overall, 400 utterances were elicited for the Picture Series for Posture Verbs, and of these just under half contained any overt reference to the figure’s posture or position in verbnouns or adverbials. 127 encoded posture, position or configuration as

an extension to the predicate, with 78 containing any positional adverbials, and the statistics are even lower for the TRPS, when contrasting positions were less emphasized and not necessarily the focus of elicitation. Although posture verbs were more frequent with human figures, they were optional nonetheless. Much of the time, it seems that the topological relation marker and the semantic content of the figure and ground NPs is enough to describe this information, without having to extend the predicate or include an adverbial. However, the data does show, as expected, these strategies are available to speakers when necessary. This is most frequently in less canonical situations like (45), where *eistedd* 'sit' to describe the posture and shape of the hat is unnecessary, but *yn gam* 'askew' is necessary to describe the position. This supports the prediction made by Dunn et al, relating to the distribution of spontaneous postural description.

Welsh has a large set of posture verbs available to it, like German (type III), but unlike German and contrary to the only synchronic suggested prediction relevant to this type in Ameka & Levinson's typology (2007:856), the copula does not seem to be under pressure from verbs with more specified postural or positional information.

9. Conclusion

This study has served to confirm the place of Welsh as a Type I language (according to table 1) using a copula as its main locative verb expressing no more than existence, with topological relation and position left to be expressed elsewhere. The presence of posture verbs confirm the ability of the predicate to extend to encompass posture and position, although data in sections 5 and 8 showed that the distinctions between these notions are fuzzy, as is reflected by the problematic analysis of the predicate's extensions and adverbials.

Topological relation markers reveal several correspondences with core concepts of the literature on space (Levinson & Meira 2003), utilising the concepts of **attachment**, **containment**, **contact** and super and sub-**adjacency** as well as ones which are apparently less globally relevant, like **encirclement** and **length**. What has also been demonstrated, once more, is that the semantic content of the figures and grounds themselves are often enough to imply a topological relation, as seen in 5.3.2 and 5.4.

The motivation for the extension of the BLC is clearly related to canonicity in use of Welsh adverbials, whilst the use of verbs to extend the predicate is less regular, although seems to correspond with human figure to some extent, and to other animates too. Family resemblance to other European languages may be drawn for these extensions, as posture is encoded in part-of-speech which are at least verb-derived. On the whole, the results support claims made by Dunn et al. (2007) in their studies of four languages of similar spatial types, although the tendencies are quite tentatively drawn at times. Though less important to the BLC of the language, there are surely predictions still to be made for posture and position in languages of Type 1, if not broader predictions which apply to all 'types', however they may encode the information.

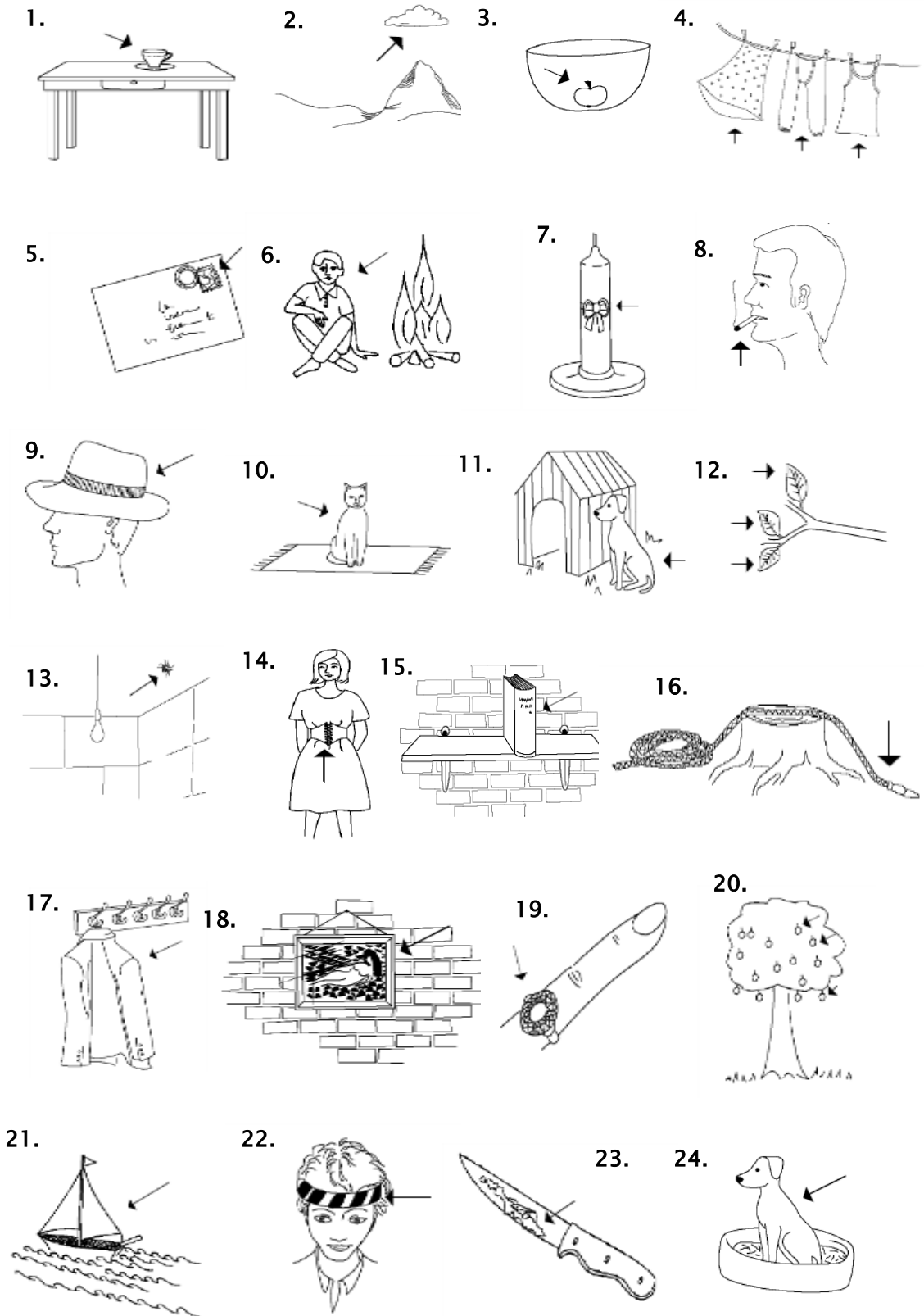
The wide use of the BLC means that no obvious patterns emerged in the use of competing constructions, meaning that the hierarchy presented in Figure 5 was of little relevance, again showing tentative correspondences in the language's

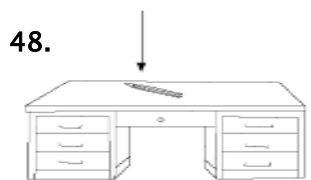
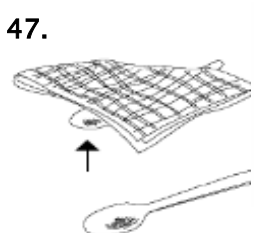
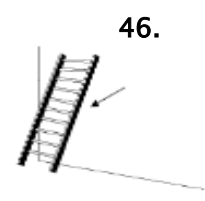
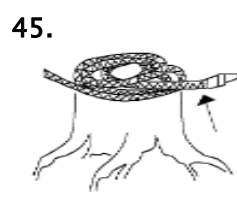
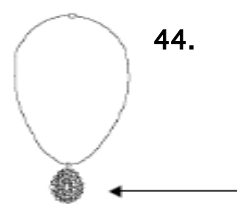
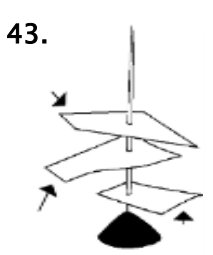
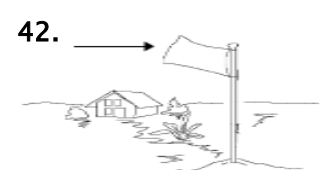
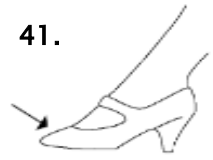
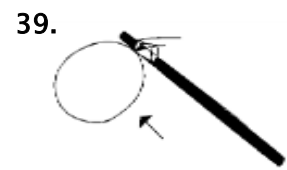
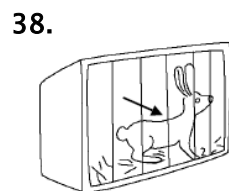
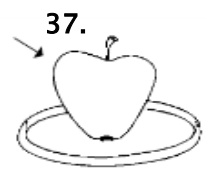
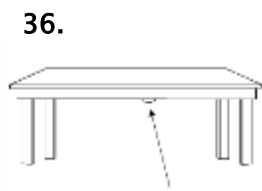
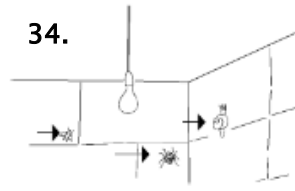
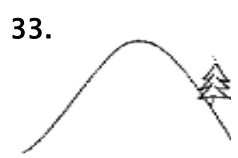
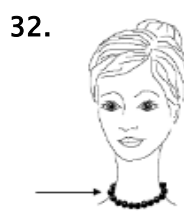
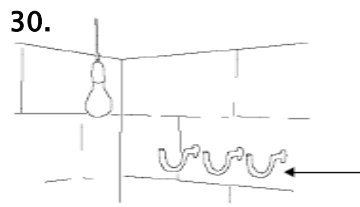
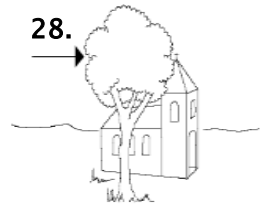
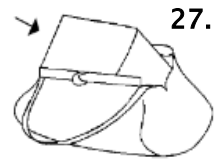
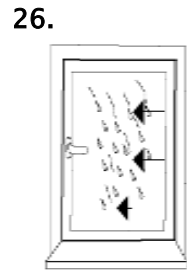
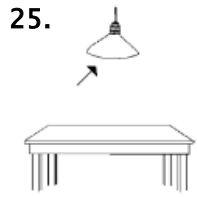
tendancies. Resultative construction allows a broader selection of verbs, meaning that more specific spatial description could be dealt with. This might suggest that less canonical situations, where deliberate interference is clear, might elicit them more frequently than the BLC.

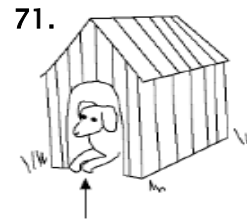
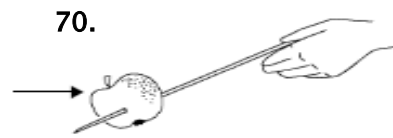
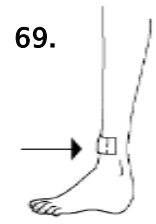
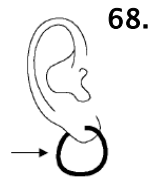
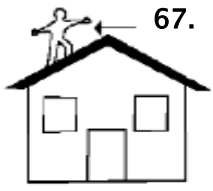
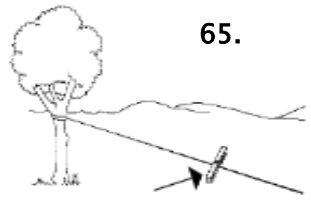
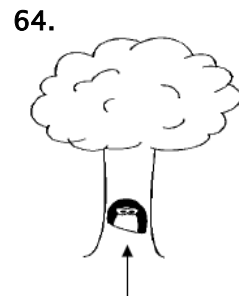
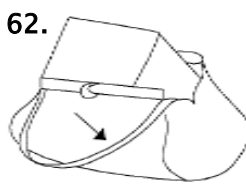
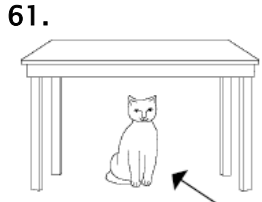
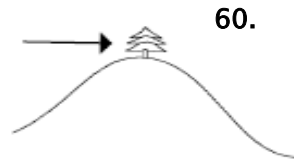
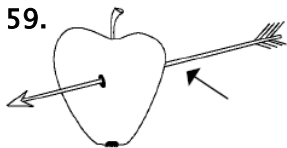
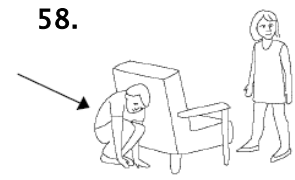
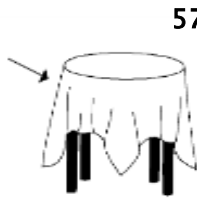
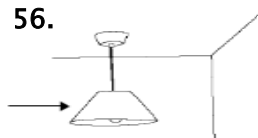
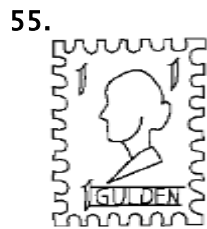
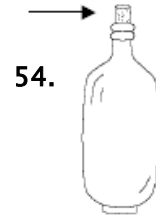
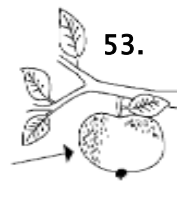
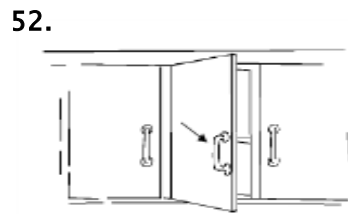
The extent to which directional notions are used to express static space is at its most apparent when used with positional verbs in this study, as well as in competing structures to the BLC. Further work remains to be done on the relation between motion and static expression as the expression of direction serves as a link between not only these two topics of space, but also frames of reference.

As well as contributing to the current pool of language samples, this study of Welsh static spatial expressions show that further comparison is yet to be drawn in the field of topological relation, position and configuration, especially concerning languages of this type with a singular locative verb. That languages as far-flung and diverse as a minority European language like Welsh and a Papuan Isolate such as Lavukaleve share strategies is a sure sign that significant steps towards the understanding of language's interaction with cognition have been made through the typologies of space.

Appendix A - TRPS







Appendix B – constructional properties of prepositions

The loose translations given below are compiled from three main works; two grammars (King 1993:267–295, Thorne 1993:385–424) and a dictionary (Evans & Meurig 1958). This is to provide the current interpretation of these adpositions, as well as to highlight the gaps in the aforementioned works when it comes to compound expressions and a method of description other than translating rough equivalents into other languages. A more detailed account of Welsh prepositions, their phonology and morphology as well as a little on their semantics can be found (Thomas 1996:337–383).

Where more than one English translation was given in the reference works, the prepositions specifically named as spatial in **bold**. Possible compound prepositions are marked ‘?’ and inflecting prepositions are marked * (always the last part of a compound, when marked). The gloss given is my own.

Table of spatial ‘prepositions’ of North–west Welsh speakers with traditional translations, where provided in grammars and dictionaries.

Preposition	Translation	Gloss
<i>am</i> *	‘for, around , on ’	
<i>amdan</i>	inflected stem for the pronoun <i>am</i> ?	
<i>ar</i> *	‘on’	
<i>dros</i> *	‘ over , for’	
<i>hyd</i>	‘ up to , until’	
<i>mewn</i>	‘in’ for indefinites and abstract nouns	
<i>o</i> *	‘from’	
<i>off</i>		
<i>rhwng</i> *	‘between’	
<i>rownd</i>		
<i>trwy</i> *	‘by, through ’	
<i>uwch</i>	‘over, above’	
<i>wrth</i> *	‘ by , at , to’	
<i>yn</i> *	‘in’	
Compound preposition 1; preposition + preposition		
<i>allan o</i>	‘out from, out of’	‘out + from’
<i>o dan</i> *	‘under, below, beneath’	‘from + under’
<i>o fewn</i>	‘inside, within’	‘from + in’
<i>oddi ar</i> *	‘from upon, off’	‘from + on’
<i>oddi wrth</i> *	‘from (sender must be animate), off’	‘from + by’
<i>tuag at</i> *	‘towards’	‘towards + to(wards)’
<i>yn erbyn</i>	‘ against , versus’	‘in? + against’
Compound preposition 2; preposition + noun/adj		
<i>ar ben</i>	‘at an end, on top of ’	‘on + head/end’

<i>ar hyd</i>	'along, the length of'	'on + length'
<i>ar draws</i>	'across, traverse'	'on + traverse'
<i>dros ben</i>	'exceedingly (no spatial definition)'	'over + head'
<i>i fyny</i>	'above, up'	'to + up'
<i>o amgylch</i>	'around, about, round'	'from + circumcircle'
<i>o flaen</i>	'in front of, before'	'from + front'
<i>o gwmpas</i>	'around, about, round'	'from + compass?'
<i>uwch law</i>		'higher + hand'
<i>uwch ben</i>	'overhead, above'	'higher + head'
<i>wrth ben</i>		'by + head'
<i>wrth ochr</i>	'beside'	'by + side'
<i>wrth ymyl</i>	'beside'	'by + edge'
<i>yn ymyl</i>	'nearby, beside'	'in + edge'
? <i>yn dop</i>		'in + top'
? <i>yn waelod</i>		'in + lowest part'
? <i>yng⁷ nghanol</i>		'in + middle'
? <i>ar ganol</i>		'on + middle'
Compound preposition 3; compound preposition type 1/2 + preposition		
<i>i fewn yn</i>		'to + in + in'
<i>i lawr o</i>		'to + floor + from'
<i>tu allan i *</i>		'side + out + to'
<i>tu cefn i *</i>		'side + back + to'
<i>tu mewn i *</i>		'side + in + to'
<i>tu ôl i *</i>		'side + hind + to'

⁷ The preposition *yn* triggers lenition (soft mutation) in following consonants and the orthography changes to reflect assimilation of place with following nasals.

Appendix C – Consent forms

WRITTEN CONSENT FORM FOR SPEAKER PARTICIPATING IN ORAL DATA GATHERING FOR MA LINGUISTICS THESIS

I,, agree to participate in this fieldwork knowing that:

- The session will be audio recorded
- The material recorded will be gathered with a specific research topic in mind.
- The material will be used by the student for work towards an MA thesis and submitted to the Department of Linguistics at University of Manchester for marking. The material may be published by the University as part of the completed MA thesis, if the quality of the work is of a sufficiently high standard.
- The data will not be stored by anyone other than the student and the university
- The session will last around two hours
- I will be clearly notified when recording begins and ends and that the recorder can be stopped at any time at my request
- Any material may be omitted from the recording at my request and at any time

I confirm that I have received and read an information sheet, explaining the aims of the research and my role in it. The student has explained how the session will be conducted and that the submitted result will be available to me, at my request, including:

- Metadata
- Audio recording
- Data used in final thesis, glossed and translated
- I do / do not (DELETE AS APPROPRIATE) wish to remain anonymous in all materials produced as a result of this fieldwork.
- I do / do not (DELETE AS APPROPRIATE) give permission for the data gathered to be used in future academic work by the student. If permission is given, the resulting work will be made available to me, as outlined above.

Signed; / 6 / 2010

THE ABOVE FORM WAS PREPARED BY THE STUDENT ELICITING THE RECORDED MATERIAL, LAURA ARMAN, FOR THE PURPOSES OF RESEARCH FOR A MASTER'S DEGREE AT THE UNIVERSITY OF MANCHESTER, OXFORD ROAD, MANCHESTER. M13 9PL UNITED KINGDOM.

**FFURFLEN GANIATÂD YSGRIFENEDIG I SIARADWR YN CYFRANNU AT
DDATA LLAFAR AR GYFER TRAETHAWD YMCHWIL 'MA IEITHYDDIAETH'**

Yr wyf i,OWEN ARMAN....., yn cytuno i gymryd rhan yn y gwaith
ymchwil hyn gan wybod:

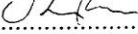
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- bod y data a'i gasglir yn ystod y recordiad yn cael ei hel ar gyfer prosiect benodol
- bydd y data a'i gasglir gennyf yn cael ei ddadansoddi ar gyfer traethawd ymchwil MA Ieithyddiaeth y bydd yn cael ei asesu a'i farcio gan Adran Ieithyddiaeth Prifysgol Manceinion (the University of Manchester). Efallai y caiff y data a roddaf yn cael ei gyhoeddi fel rhan o'r traethawd ychwil, os yd'r gwaith o ansawdd uchel iawn
- na fydd y wybodaeth a roddaf yn cael ei gadw gan unrhywun heb law yr ymchwilydd (y myfyrwraig) a'r brifysgol
- bydd y recordiadau yn parhau oddeutu dwyawr
- bydd yr ymchwilydd yn arwyddo'n glir i mi pan bod y recordio ar fin dechrau a darfod a bod posib diffodd y recordiwr ar unrhyw adeg, fel a fynnaf
- pe gofynnwn, caiff unrhyw fanylion neu wybodaeth eu gadael allan o'r data ar unrhyw adeg

Wrth arwyddo, cadarnhaf fy mod wedi derbyn a deallt y daflen wybodaeth sy'n esbonio nod yr ymchwil a fy ngyfraniad innau. Mae'r myfyrwraig wedi esbonio i mi beth fydd yn digwydd yn ystod y sesiwn recordio a bydd canlyniad yr ymchwil yn ar gael i mi, os gofynnaf, fel:

- data am y recordiad (lleoliad a.y.y.b.)
- y recordiad sain
- y data fel ei ddefnyddir yn y traethawd, gyda glos a cyfieithiad

Dymunaf / ~~ni ddymunaf~~ (CHWALWCH FEL BO'R ANGEN) i fy enw ymddangos yn unrhywle yn y data neu yn y gwaith gorffenedig.

Caniatâf / ni chaniatâf (CHWALWCH FEL BO'R ANGEN) i'r data a gasgliwyd cael ei ddefnyddio mewn gwaith academiaidd pellach gan y myfyrwraig. Os rhoddaf ganiatâd, bydd y unrhyw waith gorffenedig hefyd ar gael i mi, fel awgrymir uchod.

Arwyddwyd;..... 28/6/2010
PARATOWYD Y FFURFLEN HON GAN Y MYFYRWRAIG, LAURA ARMAN, SYDD HEFYD YN
RECORDIO'R DATA, AR GYFER YMCHWIL AT RADD MASTER YM MHRIFYSGOL
MANCEINION; THE UNIVERSITY OF MANCHESTER, OXFORD ROAD, MANCHESTER. M13 9PL
Y DEYRNAS UNEDIG.

**FFURFLEN GANIATÂD YSGRIFENEDIG I SIARADWR YN CYFRANNU AT
DDATA LLAFAR AR GYFER TRAETHAWD YMCHWIL 'MA IEITHYDDIAETH'**

Yr wyf i, Debra Cael Arman, yn cytuno i gymryd rhan yn y gwaith
ymchwil hyn gan wybod:

- y bydd sain y cyfweiliad yn cael recordio
- bod y data a'i gasglir yn ystod y recordiad yn cael ei hel ar gyfer prosiect benodol
- bydd y data a'i gasglir gennyf yn cael ei ddadansoddi ar gyfer traethawd ymchwil
MA Ieithyddiaeth y bydd yn cael ei asesu a'i farcio gan Adran Ieithyddiaeth
Prifysgol Manceinion (the University of Manchester). Efallai y caiff y data a
roddaf yn cael ei gyhoeddi fel rhan o'r traethawd ychwil, os ydi'r gwaith o
ansawdd uchel iawn
- na fydd y wybodaeth a roddaf yn cael ei gadw gan unrhywun heb law yr
ymchwilydd (y myfyrwraig) a'r brifysgol
- bydd y recordiadau yn parhau oddeutu dwyawr
- bydd yr ymchwilydd yn arwyddo'n glir i mi pan bod y recordio ar fin dechrau a
darfod a bod posib diffodd y recordiwr ar unrhyw adeg, fel a fynnaf
- pe gofynnwn, caiff unrhyw fanylion neu wybodaeth eu gadael allan o'r data ar
unrhyw adeg

Wrth arwyddo, cadarnhaf fy mod wedi derbyn a deallt y daflen wybodaeth sy'n esbonio
nod yr ymchwil a fy ngyfraniad innau. Mae'r myfyrwraig wedi esbonio i mi beth fydd yn
digwydd yn ystod y sesiwn recordio a bydd canlyniad yr ymchwil yn ar gael i mi, os
gofynnaf, fel:

- data am y recordiad (lleoliad a.y.y.b.)
- y recordiad sain
- y data fel ei ddefnyddir yn y traethawd, gyda glos a cyfieithiad

Dymunaf / ~~ni ddymunaf~~ (CHWALWCH FEL BO'R ANGEN) i fy enw ymddangos yn unrhywle
yn y data neu yn y gwaith gorffenedig.

Caniatâf / ~~ni chaniatâf~~ (CHWALWCH FEL BO'R ANGEN) i'r data a gasgliwyd cael ei
ddefnyddio mewn gwaith academaidd pellach gan y myfyrwraig. Os rhoddaf ganiatâd,
bydd y unrhyw waith gorffenedig hefyd ar gael i mi, fel awgrymir uchod.

Arwyddwyd; Debra Cael Arman / 6 / 2010
PARATOWYD Y FFURFLEN HON GAN Y MYFYRWRAIG, LAURA ARMAN, SYDD HEFYD YN
RECORDIO'R DATA, AR GYFER YMCHWIL AT RADD MASTER YM MHRIFYSGOL
MANCEINION; THE UNIVERSITY OF MANCHESTER, OXFORD ROAD, MANCHESTER. M13 9PL
Y DEYRNAS UNEDIG.

**FFURFLEN GANIATÂD YSGRIFENEDIG I SIARADWR YN CYFRANNU AT
DDATA LLAFAR AR GYFER TRAETHAWD YMCHWIL 'MA IEITHYDDIAETH'**

Yr wyf i, AMY SMITH, yn cytuno i gymryd rhan yn y gwaith
ymchwil hyn gan wybod:

- y bydd sain y cyfweiliad yn cael recordio
- bod y data a'i gasglir yn ystod y recordiad yn cael ei hel ar gyfer prosiect benodol
- bydd y data a'i gasglir gennyf yn cael ei ddadansoddi ar gyfer traethawd ymchwil MA Ieithyddiaeth y bydd yn cael ei asesu a'i farcio gan Adran Ieithyddiaeth Prifysgol Manceinion (the University of Manchester). Efallai y caiff y data a roddaf yn cael ei gyhoeddi fel rhan o'r traethawd ymchwil, os ydi'r gwaith o ansawdd uchel iawn
- na fydd y wybodaeth a roddaf yn cael ei gadw gan unrhywun heb law yr ymchwilydd (y myfyrwraig) a'r brifysgol
- bydd y recordiadau yn parhau oddeutu dwyawr
- bydd yr ymchwilydd yn arwyddo'n glir i mi pan bod y recordio ar fin dechrau a iarfod a bod posib diffodd y recordiwr ar unrhyw adeg, fel a fynnaf
- pe gofynnwn, caiff unrhyw fanylion neu wybodaeth eu gadael allan o'r data ar unrhyw adeg

Wrth arwyddo, cadarnhaf fy mod wedi derbyn a dealt y daflen wybodaeth sy'n esbonio nod yr ymchwil a fy ngyfraniad innau. Mae'r fyfyrwraig wedi esbonio i mi beth fydd yn digwydd yn ystod y sesiwn recordio a bydd canlyniad yr ymchwil ar gael i mi, os gofynnaf, fel:

- data am y recordiad (lleoliad a.y.y.b.)
- y recordiad sain
- y data fel ei ddefnyddir yn y traethawd, gyda glos a cyfieithiad

Dymunaf ni ddymunaf (CHWALWCH FEL BO'R ANGEN) i fy enw ymddangos yn unrhywle yn y data neu yn y gwaith gorffenedig.

Ganiatâf ni chaniatâf (CHWALWCH FEL BO'R ANGEN) i'r data a gasgliwyd cael ei ddefnyddio mewn gwaith academiaidd pellach gan y fyfyrwraig. Os rhoddaf ganiatâd, bydd unrhyw waith gorffenedig hefyd ar gael i mi, fel awgrymir uchod.

Arwyddwyd: Laura Arman 4/7/2010
PARATOWYD Y FFURFLEN HON GAN Y FIFYRWRAIG. LAURA ARMAN. SYDD HEFYD YN
RECORDIO'R DATA, AR GYFER YMCHWIL AT RADD MASTER YM MHRIFYSGOL
MANCEINION: THE UNIVERSITY OF MANCHESTER. OXFORD ROAD. MANCHESTER. M13 9PL
Y DEYRNAS UNEDIG.

**FFURFLEN GANIATÂD YSGRIFENEDIG I SIARADWR YN CYFRANNU AT
DDATA LLAFAR AR GYFER TRAETHAWD YMCHWIL 'MA IEITHYDDIAETH'**

Yr wyf i, MARIAN ARMAN, yn cytuno i gymryd rhan yn y gwaith
ymchwil hyn gan wybod:

- y bydd sain y cyfweiliad yn cael recordio
- bod y data a'i gasglir yn ystod y recordiad yn cael ei hel ar gyfer prosiect benodol
- bydd y data a'i gasglir gennyf yn cael ei ddadansoddi ar gyfer traethawd ymchwil MA leithyddiaeth y bydd yn cael ei asesu a'i farcio gan Adran leithyddiaeth Prifysgol Manceinion (the University of Manchester). Efallai y caiff y data a roddaf yn cael ei gyhoeddi fel rhan o'r traethawd ychwil, os ydi'r gwaith o ansawdd uchel iawn
- na fydd y wybodaeth a roddaf yn cael ei gadw gan unrhywun heb law yr ymchwilydd (y myfyrwraig) a'r brifysgol
- bydd y recordiadau yn parhau oddeutu dwyawr
- bydd yr ymchwilydd yn arwyddo'n glir i mi pan bod y recordio ar fin dechrau a darfod a bod posib diffodd y recordiwr ar unrhyw adeg, fel a fynnaf
- pe gofynnwn, caiff unrhyw fanylion neu wybodaeth eu gadael allan o'r data ar unrhyw adeg

Wrth arwyddo, cadarnhaf fy mod wedi derbyn a deallt y daflen wybodaeth sy'n esbonio nod yr ymchwil a fy ngyfraniad innau. Mae'r myfyrwraig wedi esbonio i mi beth fydd yn digwydd yn ystod y sesiwn recordio a bydd canlyniad yr ymchwil yn ar gael i mi, os gofynnaf, fel:

- data am y recordiad (lleoliad a.y.y.b.)
- y recordiad sain
- y data fel ei ddefnyddir yn y traethawd, gyda glos a cyfieithiad

Dymunaf / ~~ni ddymunaf~~ (CHWALWCH FEL BO'R ANGEN) i fy enw ymddangos yn unrhywle yn y data neu yn y gwaith gorffenedig.

Caniatâf / ~~ni chaniatâf~~ (CHWALWCH FEL BO'R ANGEN) i'r data a gasglwyd cael ei ddefnyddio mewn gwaith academaidd pellach gan y myfyrwraig. Os rhoddaf ganiatâd, bydd y unrhyw waith gorffenedig hefyd ar gael i mi, fel awgrymir uchod.

Arwyddwyd; M. Arman 30/6 2010
PARATOWYD Y FFURFLEN HON GAN Y MYFYRWRAIG, LAURA ARMAN, SYDD HEFYD YN
RECORDIO'R DATA, AR GYFER YMCHWIL AT RADD MASTER YM MHRIFYSGOL
MANCEINION; THE UNIVERSITY OF MANCHESTER, OXFORD ROAD, MANCHESTER. M13 9PL
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