

Axel Harlos, Erich Poppe, and Paul Widmer

Decoding Middle Welsh clauses or “Avoid Ambiguity”

Abstract: Middle Welsh is a language with a restricted set of morphosyntactic distinctions for grammatical relations and with relatively free word order in positive main declarative clauses. However, syntactic ambiguity rarely, if ever, arises in natural texts. The present article shows in a corpus-based study how syntactic ambiguity is prevented and how morphological features interact with two referential properties, namely animacy and accessibility, in order to successfully identify grammatical relations in Middle Welsh. Further lower-tier factors are the semantics of the verb and the wider narrative context. The article complements recent insights suggesting that subject-verb agreement is not only determined by word-order patterns, but also by referential properties of subjects.

Keywords: Middle Welsh, constituent order, animacy, accessibility

Axel Harlos: Philipps-Universität Marburg; axel.harlos@staff.uni-marburg.de

Erich Poppe: Philipps-Universität Marburg; poppe@staff.uni-marburg.de

Paul Widmer: University of Zurich; paul.widmer@uzh.ch

1 Introduction

There appears to exist a largely unexamined assumption among many linguists that languages without case endings and with free, or partially free, word order pose problems for the decoding of sentential meaning since syntactic roles are not unambiguously specified – resulting in historical linguistics in the frequent association of the reduction and loss of inflexional endings with the emergence of fixed word-order patterns which is argued to re-establish syntactic roles.¹ Middle Welsh (*ca.* 1150–*ca.* 1500) yields promising data in order to test the synchronic implications, because word order in positive main declarative clauses (PMDCs) is

¹ Compare, for example, Harris & Campbell 1995: 21–25, for a geographically and chronologically wide-ranging survey which refers to Ibn Khaldūn (1332–1406) within the Arabic tradition and to J. C. Scaliger (1540), Bernard Lamy (1675), Adam Smith (1761), and Johann Gottfried Herder (1772) and others within the European tradition(s); Sapir 1921: 66, 178; Blake 2001: 15; Haerberli 2002: 101–103.

syntactically “free” with regard to the filling of the pre-verbal position(s),² and nouns have only one form for the singular and the plural respectively, i. e., case syncretism in the singular and plural is complete.

The basic syntactic template for word order in PMDCs is a verb-medial pattern in which at least one constituent precedes the finite verb, schematically [(... X₁-)X-particle-V ...]; some examples are given in (1).³

- (1) a. *Pan doethant parth a-r llys, wynt a welynt Riannon ...*
 when come.3PL.IMPF close_to-ART COURT.SG 3PL P see.3PL
 ‘As they approached the court, they saw Rhiannon ...’
 (Pwyll, l. 591; Davies 2007: 19)
- b. *Y llys a gyrchysant*
 ART COURT.SG P make_for.3PL.PRET
 ‘They made for the court’ (Pwyll, l. 598; Davies 2007: 20)
- c. *Ac ar y kynghor hwnnw y trigysant*
 and on ART COUNSEL.SG DEM P settle.3PL.PRET
 ‘And they agreed on that [counsel]’
 (Pwyll, l. 585–586; Davies 2007: 19)
- d. *Ac yn ol hynny y kynydwys trychantref Ystrad Tywi*
 and after DEM P conquer.PRET.3SG three_cantref.SG
 ‘After that he conquered the three cantrefs of Ystrad Tywi’
 (Pwyll, l. 647–648; Davies 2007: 21)

In (1a), X₁ is realized as an adverbial clause and the pre-verbal constituent X as a pronominal subject. In (1b), a nominal object precedes the verb, and the subject is indexed on the latter. In (1c), the pre-verbal constituent is a prepositional object, whereas in (1d) it is a prepositional adverbial phrase.

Modern Welsh has [V–S–O] as its “normal” word order,⁴ and the Middle Welsh [X–particle–V ...] order is therefore traditionally, and confusingly, referred

² See Borsley, Tallerman & Willis 2007: 293 for the important restriction that only one argument phrase can appear in this position; Willis 1998: 58–78 for a detailed argument on adverb placement.

³ See Willis 1998: 51–55, 86–90 and 2009: 144–145 for surveys of the available options; Willis 1998: 52 and 2009: 145 for the forms of the pre-verbal particles (p); verb-initial PDMCs occur in restricted contexts, see Borsley, Tallerman & Willis 2007: 287–296, 298–303 on verb-second and verb-initial orders in Middle Welsh more generally.

⁴ Interestingly, Modern Welsh has grammaticalized the lenition of the direct object, in order to facilitate the processing of subjects and objects, see Evans 1964: 17; Borsley, Tallerman & Willis 2007: 60, 224, 314; in Middle Welsh, lenition of both subjects and objects is attested: “If a noun phrase immediately follows a verb and that verb is a mutation trigger, it mutates irrespective of whether it is a subject or an object” (Borsley, Tallerman & Willis 2007: 313–314).

to as the “abnormal order”.⁵ Here “no special emphasis is intended for the word or phrase which comes at the beginning” (Evans 1964: 180); this pattern has also been characterized more recently as “verb-second”,⁶ and alternatively as “verb-medial” or “X₁-order”.⁷ Negative main declarative clauses on the other hand, as well as subordinate clauses, have the order [neg/conj–V ...], as in (2); in both, nominal subjects and objects, if present, typically follow the verb in this sequence.⁸

- (2) a. *Ac ny mynnwys=ef dim*
 and NEG want.3SG.PRET=3SG.M INDF.PRON
 ‘But he wanted nothing [*lit.* did not want anything]’⁹
 (Pwyll, l. 640; Davies 2007: 21)
- b. *... yny doeth teruyn ar hoedyl Pwyll Penn Annwn*
 until come.3SG.PRET end.SG on life.SG
 ‘... until Pwyll Pen Annwn’s life came to an end’
 (Pwyll, l. 644–645; Davies 2007: 21)

Previous research very much concentrated on statistical analyses of the attested distribution in texts of subjects, objects, and prepositional and adverbial phrases in the pre-verbal positions of PMDCs, in order to establish the degree of admissible freedom with regard to the filling of these positions.¹⁰ Another, and related, line of research set out to show that the mechanisms underlying the selection of the pre-verbal constituent(s) in PDMCs are pragmatically and textually based. Within this framework the pragmatic role of these pre-verbal constituents is un-

5 Compare Mac Cana (1973: 90), who therefore prefers “the purely descriptive term ‘(unmarked noun-initial’ sentence”, which is “itself shorthand for a category comprising initial noun subject or object, pronoun subject, verbnoun object, and adverb”.

6 Compare Willis 1998: 50–101 for a detailed formal argument.

7 See Currie 2013: 44; Poppe 2009: 248; these terms avoid some theoretical implications and descriptive problems of “verb-second”. For a critique of Willis’s “top-down Principles and Parameters approach” from the perspective of a “bottom-up Construction Grammar-based approach” see Currie 2013.

8 There exists a second pattern for negative main clauses, in which a phrase precedes [neg–V], resulting in [X–neg–V]; for discussions see Evans 1964: 173, where this pattern is taken to be a variant of the “abnormal order” (see below); Schumacher 2011: 203, where the examples are taken to represent either cleft sentences or left dislocations; Borsley, Tallerman & Willis 2007: 309, where negative main clauses are interpreted as optionally verb-second.

9 The subject indexed on the verb is supported here by an optional affixed pronoun *ef*, compare Evans 1964: 57–58.

10 See, for example, the statistics given in Borsley, Tallerman & Willis 2007: 289, and the statistics quoted below for *Pwyll*.

derstood as that of a topic.¹¹ This topicalisation pattern has been equated with the “abnormal order”. A second, and sometimes formally identical, syntactic pattern involves some form of emphasis or contrast on a sentence-initial phrase, and this is the “mixed order” of traditional Welsh grammar.¹² A formal distinction between abnormal and mixed order is provided by different agreement patterns in two cases only, namely with plural phrases or with first and second person pronouns in pre-verbal position: here agreement between the subject and the verb is expected in the “abnormal order” (3a/3c), whereas in the “mixed order” the verb in the third person singular marks a relative or cleft construction (3b/3d):¹³

- (3) a. **gwyr a aethant*
MAN.PL P GO.3PL.PRET
 ‘men went’ (‘abnormal’)
- b. **gwyr a aeth*
MAN.PL REL.P GO.3SG.PRET
 ‘it’s men who went/mén went’ (‘mixed’)
- c. **mi a af*
1SG P GO.1SG.PRS
 ‘I go’ (‘abnormal’)
- d. **mi a a*
1SG REL.P GO.3SG.PRS
 ‘it’s me who goes/Í go’ (‘mixed’)

Recent research on agreement patterns indicates that verb-subject agreement in Middle Welsh appears to be less predictable and more flexible, and therefore a less reliable indication of pragmatic roles, than hitherto thought.¹⁴ There is, furthermore, formal overlap between the abnormal and the mixed order whenever

11 Compare Poppe 2000; Isaac 1996: 39–67; Willis 1998: 67, 77–78; Borsley, Tallerman & Willis 2007: 284, 306–307. Some syntactic restrictions have been highlighted by Currie (2000: 223), namely that “the degree to which the choice of the pre-verbal constituent is determined by pragmatic factors seems to vary depending on the syntactic context”, referring in exemplification to the pre-verbal placement in dialogue of first and second person personal pronouns.

12 See Evans 1964: 180, 140–141; Borsley, Tallerman & Willis 2007: 306–307; for a preliminary classification of types of focus see Poppe 1991: 84–85.

13 In Middle Welsh prose, cleft sentences in which the focused element is marked with a form of the copula, are rare, see Evans 1964: 140–141; Poppe 2009: 250–252; but see Roberts 2013: 64–65 for instances in Early Middle Welsh of “ostensibly copular *pei* [the third person singular imperfect subjunctive of *bot*] at the head of the conditional clause [...] followed by a noun, adjective, or equivalent phrase, which in turn is followed by a relative clause with a verb in the imperfect subjunctive”, and Evans 1964: 234, 241, 143–144 for other markers of focus in subordinate clauses.

14 See Evans 1971; Poppe 2009: 252–8; Plein & Poppe 2014; Poppe *forthc.*(b).

the pre-verbal phrase is a third singular subject, a nominal or verbal-noun object, or an adverbial or prepositional phrase, since here verbal agreement plays no role. It has therefore been suggested that the traditional notion of a discrete dichotomy of topic versus focus could be abandoned and the two functions collapsed into one larger pragmatic category of “centering attention”,¹⁵ which serves to organize the structure and the comprehension of a text.

What has remained uncharted to date for Middle Welsh are the mechanisms of identifying syntactic roles in a language which does not formally differentiate between nominal subjects and nominal objects, and specifically the interaction between word-order patterns and semantic features of argument constituents within the clause as a whole. The absence of formal markers for syntactic roles on nouns appears not to be compensated by restrictions on word order, at least in the “abnormal-order” pattern [N–p–V–N], since pre-verbal nominal subjects and objects are both well attested in texts. Hypothetically and outside specific contexts, the Middle Welsh clause **Pwyll a welei Riannon* is structurally ambiguous, since both nouns potentially agree with the verb and could be either subject or object. In isolation, the clause could therefore mean ‘Pwyll saw Rhiannon’, with [S–p–V–O], or ‘Rhiannon saw Pwyll/Pwyll, Rhiannon saw’, with [O–p–V–S]. Our research shows, however, that such structural ambiguity is rare in real texts and that ambiguity proper is perhaps non-existent, since a variety of morphological, syntactic, and semantic features conspire in order to distinguish subjects from objects and to avoid perceptual ambiguity for the benefit of the recipients of a text, mirroring Grice’s (producer-oriented) maxim “be perspicuous” and its off-shoot “avoid ambiguity” (Grice 1975: 46), already referred to in this paper’s title.

In this paper we present first results of our research project on strategies for the decoding of Middle Welsh clauses, and specifically for the identification of the syntactic roles of argument constituents. Our project is part of a larger research program within the Marburg LOEWE Research Focus “Exploring Fundamental Linguistic Categories”, namely its project area “The Syntax-Semantics Interface”, which sets out to explore the relations of morpho-syntactic form and meaning in a cross-linguistic and typological perspective, with a focus on the mechanisms underlying the decoding of syntactic structures and the assignment of meaning in languages which are in the process of reducing their case-systems.¹⁶ The syntactic investigation presented in this paper is based on an analysis of all main and subordinate clauses in *Pwyll Pendeuic Dyuet* with transitive verbs, specifically PDMCs with either subjects or direct nominal objects in the pre-verbal position,

¹⁵ Poppe 2009: 258, building on a suggestion by Sornicola (2006: 377).

¹⁶ See http://www.uni-marburg.de/fb09/lingbas/index_html for further information.

as well as positive and negative main and subordinate clauses with the structure [X–V–S–O].¹⁷

For the data acquisition for this study, we used a browser based database specifically designed to process syntactic as well as semantic information relevant for the cross-linguistic purpose of the Marburg LOEWE project area “The Syntax-Semantics Interface”.¹⁸ Special attention was paid to the semantic relations of verbs and argument constituents, as their interplay provides the basis for the possibility of formally underspecified and thereby structurally ambiguous constructions. The semantic and syntactic information important for our study, namely animacy and accessibility as well as clause type, argument structure, and agreement patterns, were extracted from the database using a SQL-based query, which allows highly differentiated questions to be asked of the data and which successfully enabled us to isolate the factors which contribute to the disambiguation of the syntactic role of argument constituents in Middle Welsh clauses.

Pwyll Pendeuic Dyuet is the first of the so-called *Four Branches of the Mabinogi* (or *Pedeir Keinc y Mabinogi*).¹⁹ The date of the *Four Branches* is controversial. Rodway (2007: 59) summarizes the state-of-the-art:

Fragments of *Branwen* and *Manawydan*, the Second and Third Branches, occur in NLW Peniarth 6, dated to the second half of the thirteenth century, which provides a *terminus ante quem* (for these two Branches at least [...]). This is the only fixed point. Various dates in the eleventh, twelfth and thirteenth centuries have been proposed on circumstantial evidence, but none are conclusive.

The *Four Branches* use the highly developed and flexible, standard literary language of Middle Welsh prose.²⁰ Davies (1993: 49) furthermore highlights the fact that *Pwyll* consists to 42 % of direct speech and that the “tale progresses by means of dialogue”. Direct speech is closely associated with pre-verbal pronominal subjects denoting speech-act participants.²¹ Based on Watkins 1993, Borsley, Taller-

¹⁷ Relative clauses have as yet been excluded, but will be considered during the next phase of the project.

¹⁸ The linguistic framework of the database is heavily indebted to the conceptual input of Simon Kasper; the technical implementation and design was developed by Frank Nagel, Slawomir Messner, and Raphael Stroh.

¹⁹ The text is found in Williams 1930: 1–27 and Thomson 1957: 1–23.

²⁰ Compare Mac Cana 1992: 44–45 and Davies 1993: 29–50 for slightly old-fashioned assessments.

²¹ Compare Watkins 1977–1978: 390–391. In *Breudwyt Ronabwy*, all instances of the pattern [pronS–p–V] occur in direct speech, see Poppe 1990: 455. This uneven distribution is probably text-specific, since in *Pwyll* third person pronouns are frequent as subjects in narrative: there are altogether 50 first and second person pronouns and 28 third person pronouns functioning as

man & Willis (2007: 289) give the figures in Table 1 for the distribution of word-order patterns and clause-initial phrases in PDMCs in *Pwyll*.²²

Table 1. Distribution of word-order patterns and clause-initial phrases in PDMCs in *Pwyll* (sample size n = 376)

“abnormal order”/verb-second clause-initial phrase:	
adverbial phrase/clause, including adverbial complement	38 %
nominal subject	11 %
pronominal subject	22 %
nominal object	10 %
verb-noun/non-finite verb phrase	17 %
verb-first	3 %

Our research program focuses on the interaction of word-order patterns with the realization of argument constituents within the clause as a whole and with semantic features, specifically animacy and accessibility. It aims to contribute to an understanding of the mechanisms which effect the decoding and identification of syntactic roles in a language that does not formally differentiate between nominal subjects and nominal direct objects.

2 Filters for the decoding of sentential meaning and syntactic roles in abnormal-order clauses

2.1 We suggest that two interacting filters operate in a first phase in order to decode syntactic roles, namely the morphology and syntactic distribution of pronominal subjects and objects respectively as well as agreement patterns.²³

subjects. See also Currie 2000: 223 on the high frequency of [pronS–V] order (from 63% to 90%) in Early Modern Welsh interludes, which are dialogic in nature.

22 Note that in his paper Watkins uses “cleft-fronted” for clause-initial phrases which select the following particle and therefore, in his view, cause subordination; further phrases which precede them are considered to be “left-dislocated”. In his collection of data, Watkins (1993: 133–139) lists “cleft-fronted” as well as “left-dislocated” phrases.

23 We owe the concepts of “filters” and of their hierarchy to Simon Kasper; for some preliminary orientation on case, verb-subject agreement, and serialization as filters operating in German clauses see Kasper forthc. §4.2. For a methodologically different, but compatible perspective

Personal pronouns have one independent form, which is closely associated with the syntactic role of “subject” in one specific position in the clause, and various dependent, and typically clitic, forms. One of the latter is restricted to the expression of the syntactic function of “direct object” (and very rarely “indirect object”), e. g. first singular independent *mi/mivi/minneu* versus first singular dependent (object) *-m*.²⁴ A collocation consisting in a preposition and a personal pronoun results either in specific synthetic forms consisting of preposition plus personal pronoun, e. g. *arnaf* ‘on me’ (preposition *ar* ‘on’), or in analytic forms consisting of an uninflected preposition and an independent personal pronoun, e. g. *a mi* ‘with me’ (preposition *a* ‘with’). A pronominal subject is expressed as an independent pronoun if it occurs in the pre-verbal position X, as in (4a), otherwise it is indexed on the verb, as in (4b). An independent personal pronoun at the beginning of a clause therefore signals its syntactic role as subject. Pronominal objects are clitics on the pre-verbal particle, the negation or conjunction, as in (4c) – with altogether three referents expressed pronominally.²⁵

- (4) a. *ef a welei carw*
3SG.M P see.3SG.IMPF stag.SG
 ‘he saw a stag’ (Pwyll, l. 15; Davies 2007: 4)
- b. *Ac ar hynny e ymolchi yd aethant*
and on that to washing.VN²⁶ P go.3PL.PRET
 ‘Then they went to wash’ (Pwyll, l. 84–85; Davies 2007: 5)
- c. *mi a-e rodaf idaw*
1SG P-3SG give.1SG.PRS to.3SG.M
 ‘I will give it to him’ (Pwyll, l. 560; Davies 2007: 19)

As can be seen here, direct objects and indirect objects are distinguished formally, in that direct objects are realized as (pro-)noun phrases, whereas indirect objects (recipients and locations) are typically realized as prepositional phrases – here *idaw* ‘to him’ consisting of preposition *y* ‘to’ with a suffixed third singular masculine personal pronoun, or *ar y kynghor hwnnw* ‘on that counsel’ in (1c).

on the interaction of word order, agreement, animacy, and stress as language-specific filters in identifying the actor in simple transitive clauses see MacWhinney, Bates & Kliegl 1984. We wish to thank Jona Sassenhagen for bringing this paper to our attention.

²⁴ Compare Evans 1964: 49, 55; Willis 2009: 136.

²⁵ See Borsley, Tallerman & Willis 2007: 319–322 on the pronominal system of Middle Welsh and on the exceptional use of independent reduplicated pronouns as objects.

²⁶ VN = verbal noun. See Evans 1964: 159–165 for the use and syntax of a Welsh verbal noun, which “possesses the attributes of both noun and verb. Fundamentally its constructions are those of the noun, but it may in certain cases function instead of a finite verb, and frequently forms part of a verbal predicate”.

“Structural ambiguity” in transitive clauses is possible only if both the nominal subject and the nominal direct object will potentially agree with the verb, as (5a), with the nominal object realized as a demonstrative pronoun.

- (5) a. *Y gwas a wnaeth hynny*
ART GROOM.SG P DO.3SG.PRET DEM.SG
 ‘The groom did that’ (Pwyll, l. 260; Davies 2007: 10)

In (4a) given above, both arguments are third singular, but the independent personal pronoun in the pre-verbal position formally and unambiguously defines its syntactic role as that of the subject so that structural ambiguity does not arise.²⁷ In (5b) finally, the direct object, realized as a demonstrative pronoun, is not co-referential with the first singular pronominal subject indexed on the verb.²⁸

- (5) b. *Hynny a wnaf=i yn llawen*
DEM.SG P DO.1SG.PRS=1SG gladly
 ‘I will do that gladly’ (Pwyll, l. 431; Davies 2007: 15)

In the mirror image of this clause in (5c), in which the pronominal subject is realized as an independent pronoun in the pre-verbal position X and the direct object is therefore pushed to the post-verbal position, the form and position of the personal pronoun and the agreement pattern both define the syntactic roles of the argument phrases.

- (5) c. *mi a wnaf hynny yn llawen*
1SG P DO.1SG.PRS DEM.SG gladly
 ‘I shall do that gladly’ (Pwyll, l. 237; Davies 2007: 9)

As will emerge, structural ambiguity is only rarely met with in textual reality, and even in those few instances, recipients and readers of a text will have no problems decoding and translating these clauses “correctly”. Why this should be so we attempt to find out.

The prime importance of the morphological forms of subject and object respectively and of agreement for a successful decoding of syntactic roles in abnormal-order clauses is clearly reflected in our data. Our corpus consists of altogether 66 abnormal-order clauses with subject and direct object both expressed,²⁹ 57 instances of [S–V–O] and 9 instances of [O–V–S]. Morphologi-

²⁷ Formally independent pronoun third singular masculine *ef* versus dependent object pronoun third singular masculine *-y/-e*, as in (4c).

²⁸ The pronominal subject is here additionally supported by the affixed first singular personal pronoun.

²⁹ For formal reasons we differentiate for the accessibility scales between instances of pronominal subjects contained in the verbal ending, i. e. “verbal person”, as in (7a) and (7b), and instances of

cal form and agreement suffice to disambiguate their overwhelming majority, namely 60 clauses (S–V–O 53, O–V–S 7). These processes often work in tandem, cf. Table 2.

Table 2. Morpho-syntactic means of disambiguation

morpho-syntactic structure	clause types
morphological (pronominal) form of S	56 clauses (S–V 49; O–V 7)
morphological (pronominal/clausal) form of O	20 clauses (pronominal O 15; clausal O 5)
lack of potential agreement between O and V	49 clauses (S–V 44; O–V 5)

There are only six structurally ambiguous clauses in our corpus, of which four turn out to be [S–V–O] and two [O–V–S], which shows that a syntactic system with highly reduced nominal morphology and partially free word order can successfully avoid syntactic ambiguity.

For all subjects and direct objects, approximate values on the animacy and accessibility hierarchies were assigned along the following scales:

Animacy

self > kin > human > animate > inanimate > location > abstract > mass³⁰

Accessibility

verbal person > personal pronoun > demonstrative pronoun > definite description > indefinite pronoun > indefinite description > verbal-noun phrase/clause³¹

Organising subjects and objects in the structurally ambiguous clauses according to these scales, the picture in Table 3 (p. 135) emerges.

such pronominal subjects further supported by affixed subject pronouns, i. e. “personal pronouns”, as in (2a) and (10b), with third singular pronoun *ef*, and (5b), with first singular pronoun *i*.

30 Based on Silverstein 1976.

31 The term accessibility as it is used here refers to the relationship between cognitive accessibility of a referent in the memory store of a participant in communication and the morphosyntactic encoding of the referent. The scale is based on Ariel 1988; Ariel 1991; Ariel 2008. The basic idea of Ariel’s original hierarchy is that the more accessible a referent is, the less morphosyntactic coding is needed: As we move from the left end of the hierarchy to the right, the accessibility of a referent decreases while more encoding is required.

The categories “indefinite description” and “verbal-noun phrase” have been added to Ariel’s list for the purpose of our study. The place of “verbal-noun phrase/clause” within the accessibility hierarchy may require further refinement.

Table 3. Animacy and accessibility in structurally ambiguous abnormal-order clauses (n = 6)

	S	dirO	S–V–O (n = 4)		O–V–S (n = 2)	
			S	dirO	S	dirO
animacy						
human	3	–	1	–	2	–
kin/name	3	–	3	–	–	–
abstract	–	6	–	4	–	2
accessibility						
dem. pron.	–	2	–	1	1	–
def. description	2	3	1	2	1	1
proprium	3	–	3	–	–	–
indef. description	1	1	–	1	–	1

It becomes immediately obvious that subjects, no matter whether they precede or follow the verb, consistently have substantially higher values on the animacy hierarchy than the direct objects in the same clause, whereas no pattern emerges for the distribution on the accessibility hierarchy.

Looking at these structurally ambiguous sentences now in detail, we find that there are three examples of what Evans (1964: 113) and Watkins (1993: 133) classified as optative clauses, with the definite noun *Duw* ‘God’ as subject, a verb in the present subjunctive, and a nominal or verbal-noun direct object denoting an abstract, in the structure [S–V–dirO], as in (6a).

- (6) a. *Duw a dalo itt dy gydymdeithas*
 God.SG P repay.3SG.PRS.SBJV for.2SG 2SG.POSS friendship.SG
 ‘may God repay you for your friendship’ (Pwyll, l. 134; Davies 2007: 6)

In the medieval view of the world, God is inherently likely to be an agent and may therefore be expected to be the grammatical subject; the direct objects in these clauses furthermore consistently have significantly lower values on the animacy hierarchy. Such different values on the animacy hierarchy also characterise subjects and direct objects in the three other instantiations of [S–V–dirO] and [dirO–V–S] respectively. In (6b) and (6c), both subject and direct object are highly accessible within the narrative context – the *gwas* ‘groom’ and the *makwyf* ‘young lad’ having been explicitly mentioned in the preceding sentence as the recipient of an order which they now carry out.

- (6) b. *Y gwas a wnaeth hynny*
 ART GROOM.SG P do.3SG.PRET DEM.SG
 ‘The groom did that’ (Pwyll. l. 260; Davies 2007: 10)

The mirror image of (6b) in (6c) attests to the stylistic flexibility of Middle Welsh syntax, and raises confusing and frustrating problems for a functional interpretation of word-order patterns, since both clauses describe the realization of a preceding order and mark the closure of a narrative section. This minimal pair represents a residue of stylistic choice and variation that resists easy functional analysis.³²

- (6) c. *A hynny a wnaeth y makwyf*
 and DEM.SG P do.3SG.PRET ART YOUNG_lad.SG
 ‘And the young lad did that’ (Pwyll, l. 232–233; Davies 2007: 9)

For both (6c) and (6d), the filling of the pre-verbal position with nominal phrases having low values on the animacy hierarchy will lead recipients of the text to expect that these fulfil the syntactic roles of direct objects, which the semantics of the verbs then substantiates, whereas accessibility does not play a role here.

- (6) d. *A-r ulwydyn honno a dreilwys pawb o honunt ...*
 and-ART year.SG DEM P spend.3SG.PRET each of 3PL
 ‘Each of them spent that year ...’ (Pwyll, l. 361–362; Davies 2007: 13)

2.2 Animacy and accessibility decisively control the decoding of Middle Welsh clauses only after morphology and agreement have operated – and have been found wanting. They are, however, part and parcel of the syntactic and semantic format of clauses. For structurally unambiguous clauses therefore, the overall data for the values of nominal subjects and direct objects on the animacy and accessibility hierarchies support the impression derived from the analysis of structurally ambiguous clauses, that subjects tend to have higher values on the animacy hierarchy than objects. The large number of personal pronouns functioning as subjects is furthermore striking here, but this is an effect of the literary genre of *Pwyll* and of the amount of direct speech in the narrative, cf. Table 4 (p. 137).

2.3 [O–V] clauses with a subject indexed on the verb are structurally unambiguous, but are nevertheless informative with regard to the impact of animacy on the decoding of clauses. There are altogether 23 instances of this type (cf. Table 5, p. 138), 14 in which O cannot formally be S, because it will not agree with the verb, as in (7a), and 9 in which O could potentially be S, because it could agree with the verb, as in (7b).

- (7) a. *a-m neges a wnaf*
 and-1SG.POSS request.SG P do.1SG.PRS
 ‘and I will make my request’ (Pwyll, l. 314–315; Davies 2007: 12)

³² Compare Currie 2000: 217–218, 221–222 on the important notion of stylistic variation, and compare Poppe forthc.(b).

Table 4. Animacy and accessibility in structurally unambiguous abnormal-order clauses

	S (n = 60)	dirO (n = 64)	S–V–O		O–V–S		
			S (n = 53)	dirO (n = 57)	S (n = 7)	dirO (n = 7)	
animacy							
self	30	–	27	–	3	–	
human	28	16	24	15	4	1	
kin	2	2	2	1	–	1	
animate	–	2	–	2	–	–	
inanimate	–	7	–	6	–	1	
location	–	1	–	1	–	–	
abstract	–	36	–	32	–	4	
accessibility							
pers. pron	56	16	49	16	7	–	
dem. pron.	–	6	–	3	–	3	
def. description	–	17	–	17	–	–	
proprium	2	2	2	1	–	1	
indef. description	2	18	2	15	–	3	
clause	–	5	–	5	–	–	

b. *y maestir guastat a gauas*

ART plain.SG level P reach.3SG.PRET

‘He came to the open, level plain’ (Pwyll, l. 217–218; Davies 2007: 9)

Unsurprisingly, subjects have high animacy values, whereas objects have lower ones.³³

There is only one example of a pre-verbal nominal phrase denoting a human referent here, quoted as (7c), and the semantics of the verb and its impersonal form unambiguously define its syntactic role as object in an idiomatic construction [*X a anet y Y* ‘X is born to Y’].³⁴ There are only two instances in *Pwyll* of pre-verbal nominal phrases which denote animate referents and function as objects, quoted as (7d) and (7e).

(7) c. *mab a anet idaw=ef*

SON.SG P bear.IMPERS.PRET PREP.3SG.M=3SG.M

‘a son was born to him’

(Pwyll, l. 461; Davies 2007: 16)

³³ Compare, for example Du Bois, Kumpf & Ashby 2003; Branigan, Pickering & Tanaka 2008 on animacy effects on grammatical function assignment in production.

³⁴ Impersonal verbal forms are quite frequent with pre-verbal nominal phrases functioning as objects, compare the list provided by Watkins 1993: 136.

Table 5. Animacy in abnormal-order OV clauses with pronominal subjects (n = 23)

	S	dirO
animacy		
self	2	
human	21	1
animate		2
inanimate		4
location		3
abstract		13

d. *Y march a gymerth*

ART HORSE.SG P take.3SG.PRET

'He took the horse'

(PKM, l. 217; Davies 2007: 9)

e. *Y uarch a gymhellau ...*

3SG.M.POSS HORSE.SG P URGE.3SG.PRET

'He urged his horse ...'

(PKM, l. 268–269; Davies 2007: 10)

For the recipient of the text, the semantics of the verbs will enforce an interpretation that the horses do not fulfil the roles of actor of the verbal event and of the subject of the clause respectively. This is formally substantiated when no second noun phrase which would function as object follows the verb.

A clause with the same phrase *Y uarch* as in (7e) and in the same pre-verbal position is evidence for the impact of the semantics of the verb on the interpretation of syntactic roles within a clause, since in (7f) the verb is intransitive, *pallu* 'flag, tire'; once this verb is encountered, the pre-verbal noun phrase is assigned the syntactic role of subject.

(7) f. *Y uarch=ef a ballwys*

POSS.3SG.M HORSE.SG=3SG.M P TIRE.3SG.PRET

'His horse became tired'

(Pwyll, l. 221; Davies 2007: 9)

2.4 When the object of a transitive verb is a personal pronoun, the distribution and identification of the syntactic roles of subject and direct object is formally unambiguous, because the morphological form of the pronoun establishes its syntactic function, and it is therefore not surprising that pronominal objects sometimes denote referents high on the animacy hierarchy, cf. Table 6 (p. 139).

What may appear remarkable here is the high incidence of clauses with both a pronominal subject and a pronominal object, as in (8a). However, ambiguity does not arise, since the pronominal subjects are unambiguously identified by form and position, and typically refer to speech act participants. In (8b), both pronouns refer to males, but here the narrative context prevents ambiguity: the referents of

Table 6. Animacy and accessibility in abnormal-order clauses with pronominal objects (n = 15)

	S	dirO
animacy		
self	8	
human	6	5
kin	1	
animate		1
inanimate		1
abstract		8
accessibility		
pers. pron.	12	15
proprium	1	
indef. description	2	

the pronouns have been established in the preceding clauses and the actor *Arawn* remains established via subject/topic continuity.

- (8) a. *mi a-th rodaf di y-m lle=i ...*
 1SG P-2SG give.1SG.PRS 2SG in-1SG.POSS place.SG=1SG
 ‘I shall put you in my place ...’³⁵ (Pwyll, l. 53)
- b. *‘a mi₁ a ydaf hebryngyat amat₂’. Ef₁ a-y₂ hebryghaud*
 and 1SG P be.1SG.FUT guide.SG on.2SG 3SG.M P-3SG escort.3SG.PRET
 ‘and I [Arawn] will escort you [Pwyll].’ Arawn [*lit.* he] escorted Pwyll
 [*lit.* him] ...’ (Pwyll, l. 69–71; Davies 2007: 5)

2.5 We will now turn to abnormal-order clauses with a subject and an indirect object which is realized as a prepositional phrase. It is thus formally distinguished from the subject and typically fulfils the semantic role of either location or (typically human) recipient: semantic roles and animacy here interact closely, cf. Table 7 (p. 140).

The animacy features of subjects in such clauses are quite similar to those of subjects in transitive sentences with subjects and objects expressed: they tend to denote self and human referents respectively. Indirect objects are allowed high values on the animacy hierarchy, but this trend is much stronger in [S–V–indirO] clauses than in [indirO–V–S] clauses. In the latter, subjects are highly accessi-

³⁵ Davies (2007: 4) joins this clause with the preceding one: ‘What I shall do is to put you in my place ...’.

Table 7. Animacy and accessibility in abnormal-order clauses with indirect prepositional objects

	S (n = 64)	indirO (n = 64)	S–V–indirO		indirO–V–S	
			S (n = 49)	indirO (n = 49)	S (n = 15)	indirO (n = 15)
animacy						
self	19	–	18	–	1	–
human	27	25	15	25	12	–
kin	15	2	14	1	1	1
animate	–	2	–	1	–	1
inanimate	–	6	–	2	–	4
location	–	19	–	13	–	6
abstract	3	10	2	7	1	3
accessibility						
verbal person	11	–	–	–	11	–
pers. pron	29	22	27	22	2	–
dem. pron	–	1	–	–	–	1
def. description	6	31	5	20	1	11
proprium	15	7	14	5	1	2
indef. description	3	3	3	2	–	1

ble,³⁶ and indirect objects have lower values on the animacy hierarchy, as in (9a), parallel to direct objects in [dirO–V–S] structures. [S–V–indirO] structures, on the other hand, show a different behaviour: there is a high proportion of indirect pronominal objects denoting human referents, i. e., with high values on both the accessibility hierarchy and the animacy hierarchy, as in (9b).

- (9) a. *Ac y-r neuad y gyrchwys*
 and to-ART hall.SG P go_towards.3SG.PRET
 ‘And he went to the hall’ (Pwyll, l. 77; Davies 2007: 5)
- b. *ef a uenegis idi ...*
 3SG.M P tell.3SG.PRET to.3SG.F
 ‘he told her ...’ (Pwyll, l. 576; Davies 2007: 19)

36 The impact of accessibility on a sub-type of this syntactic pattern, with pre-verbal locative phrases, has been indirectly acknowledged in Poppe 2012: 57, since the notion that “no other constituent has been made available by the narrator for fronting” implies that the subject is necessarily highly accessible in the narrative context. However, the absence of a pragmatic or stylistic need to express it, has to combine with the reciprocal need to employ the locative phrase for textual orientation.

3 X–V–S(–O) main clauses

In the category “[X–V–S(–O)] main clause” we collapse positive abnormal-order clauses with a pre-verbal constituent other than subject or nominal direct object, negative main clauses, as well as one verb-initial positive main clause (10c). Pronominal direct objects are realized as a clitic on X, as in (10c) and (10d).

Table 8. Animacy and accessibility in X–V–S(–O) main clauses

	S (n = 43)	dirO (n = 43)
animacy		
self	17	
human	24	10
kin	2	1
animate		1
inanim.		2
location		2
abstract		27
accessibility		
verbal person	25	
pers. pron.	14	5
def. description		20
proprium	2	1
indef. description	2	12
clause		5

In this type of clause, direct objects are allowed both high and low values on the animacy hierarchy, even though there are still considerably more objects in the inanimate categories (31 instances) than in the animate ones (12 instances). Direct objects display lower accessibility than subjects, but this is intimately related to the high incidence of subjects denoting speech-act participants, which are necessarily indexed on the verb.

There is only one instance of what we call “incipient” structural ambiguity, i. e., of a clause with a post-verbal constituent that could potentially agree with the verb as its subject (10a):

- (10) a. *Ac yn ol hymny y kynydwys trychantref Ystrat Tywi, a*
 and after DEM P conquer.3SG.PRET three_cantref.SG and
phedwar cantref Keredigyawn
 four cantref.SG

‘And after that, he [Pryderi] conquered the three cantrefs of Ystrad Tywi and the four cantrefs of Ceredigion’

(Pwyll, l. 647–649; Davies 2007: 21)

The post-verbal constituent here denotes a location; this value in combination with the agentive semantics of the verb makes it immediately unlikely that it functions as subject and therefore enforces the interpretation as direct object. This is further evidence for the impact of the semantics of the verbs on the decoding of syntactic roles in Middle Welsh sentences, in interaction with accessibility, since the pronominal subject referring to Pryderi is also the subject of the preceding clause and subject continuity obtains.

The structure of (10b) is similar, but here the use of the affixed pronoun *ef*, which can only refer to the subject indexed on the verb, unambiguously identifies the presence of a pronominal subject and concomitantly the status of the following nominal phrase as that of the direct object.³⁷

(10) b. *Llyna y guelei=ef teulu ac yniuerod ...*

DEM P see.3SG.IMPF=3SG.M war-band.SG and retinue.PL

‘With that he could see a war-band and retinues ...’

(Pwyll, l. 81–82; Davies 2007: 5)

The one clause with a third-singular subject indexed on the verb and a third-singular pronominal object (10c) represents the rare configuration with the verb in initial position preceded by the particle *neu*,³⁸ on which the object pronoun is a clitic. This format is structurally unambiguous and leads the recipient of the text to expect the subject to be indexed on the verb or to follow it. The same conditions obtain in canonical negative clauses with [neg–V] in sentence-initial position, as in (10d), but here with a speech-act participant as subject.

(10) c. *Neu=s rodes y uelly*

P=3SG give.3SG.IMPF ADV

‘He has given it’

(Pwyll, l. 318–319; Davies 2007: 12)

d. *ny=s diodefwn y gennyt*

NEG=3SG suffer.1PL.PRS from.2SG

‘we will not suffer it from you’ (Pwyll, l. 456–457; Thomson 1957: 52)

³⁷ Plural subjects following the verb are expected to trigger a singular form of the verb.

³⁸ See Evans 1964: 169–170.

4 X–V–S(–O) in (positive and negative) subordinate clauses

In (positive and negative) subordinate [X–V–S(–O)] clauses, subjects show consistent high animacy and high accessibility. As in [X–V–S(–O)] main clauses, direct objects are allowed both high and low values on the animacy hierarchy, even though there are still considerably more direct objects in the inanimate categories (24 instances) than in the animate ones (10 instances). Direct objects display lower accessibility than subjects, and this is related to the high incidence of subjects denoting speech-act participants, which are necessarily indexed on the verb.

Table 9. Animacy and accessibility in X–V–S(–O) subordinate clauses (excluding relative clauses; n = 34)

	S	dirO
animacy		
self	7	2
human	26	6
animate		2
inanimate		3
abstract	1	21
accessibility		
verbal person	24	
pers. pron	10	10
def. description		16
indef. description		7
clause		1

The potential for “incipient” structural ambiguity only arises in clauses in which a verb with third-singular subject indexed on the verb is followed by a nominal (singular or plural) phrase, as in (11a) and (11b).

- (11) a. ... *yny welas y llys a-r kyumanned*
 until see.3SG.PRET ART COURT.SG and-ART dwelling_place.SG
 ‘... until he saw the court and dwelling-places’
 (Pwyll, l. 71; Davies 2007: 5)
- b. ... *pann gauas llawenchwedyl y wrthaw*
 when reach.3SG.PRET joyous_news.SG about.3SG
 ‘... when she received joyous news about him’
 (Pwyll, l. 622–623; Davies 2007: 20)

This type is rare; the post-verbal nominal phrases here are typically either inanimate or abstract, as in (11a) and (11b), and in combination with the semantics of the verb which favours an animate or human subject, this successfully decodes the syntactic role of the post-verbal phrase as that of the direct object. There is only one clause with such structural ambiguity, quoted as (11c), in which the post-verbal nominal denotes a human referent, which could easily be the subject of the verb *gwelet* ‘see’. The narrative context of this clause, in which Teirnon is the dominant actor, suggests that Teirnon is the subject here too. The nominal phrase *mab a that ...* ‘a son and father’ is furthermore semantically indefinite and separated from the verb by the adverb *eiroet* ‘ever’.

- (11) c. ... *na ry welsei eiroet mab a that kyn debycket a-r*
NEG PFV.P see.3SG.PLUP EVER SON.SG and father.SG EQV similar.EQV EQV-ART
mab y Pwyll Penn Annwn
son.SG to
 ‘... that he [Teirnon] had never seen a son and father so alike as the
 boy and Pwyll Pen Annwn’ (Pwyll, l. 571–572; Davies 2007: 19)

5 Conclusions

Conclusions drawn from this small corpus will inevitably be of a very preliminary nature only. It needs to be kept in mind that the data presented here rest on a single action-driven narrative text with a high percentage of dialogue and direct speech, and of high literary and stylistic sensibility.

Even though Middle Welsh nouns have only one form for the singular and the plural respectively, and case syncretism is therefore complete, there remains enough formal information available in order to decode syntactic roles in the majority of abnormal-order clauses, which exhibit partially free word order. This formal information is provided by the morphological forms of pronominal subjects and direct objects respectively, as well as by agreement patterns. Structurally ambiguous transitive clauses with two nominal arguments are avoided in real texts. In the rare instances where such structures occur, the relative position of the arguments on the animacy hierarchy establishes their syntactic roles as subject and direct object, additionally supported by the semantics of the verb and by the context. Subjects are typically associated with high values on the animacy hierarchy, whereas nominal objects are associated with low values.

Even though indirect prepositional objects are less tied to low values on the animacy and accessibility hierarchies than are nominal objects, since the former are formally distinct from subjects and have different semantic roles (see above

§ 2.5), animacy has an effect on the distribution of possible word-order patterns. In [indirO–V–S] clauses, indirect objects have lower values on the animacy hierarchy than the (typically highly accessible) subjects, whereas in [S–V–indirO] clauses, indirect pronominal objects denoting human referents, with high values on both the accessibility hierarchy and the animacy hierarchy, are common; see above (9a) versus (9b).

On the basis of the corpus analysed, the role of accessibility is more difficult to assess than of animacy. It appears to affect [indirO–V–S], but also structurally unambiguous [dirO–V] clauses, in which O cannot formally be S, because it will not agree with the verb, for example, in (12) and (7b). They can only be realized in texts when the subject is highly accessible – they may, however, additionally convey specific contextual, pragmatic information.³⁹

(12) *Yr orssed a gyrchyssant*

ART hill.SG P go_towards.3PL.PRET

‘They made for the mound’

(Pwyll, l. 233, Davies 2007: 9)

These observations support the proposal that animacy and (though perhaps to a lesser extent) accessibility – as a second, semantic tier – have a hitherto underestimated impact on the syntax of Middle Welsh clauses, specifically on the processes of decoding, by the recipients of a text, of the syntactic roles of subject and (direct nominal) object.⁴⁰ Producers will attempt to be perspicuous, to avoid ambiguity, and to achieve the optimal textual fit for a given clause by a complex, and probably ordered, application of syntactic, semantic, pragmatic, textual, and stylistic considerations.⁴¹ Recipients of a text will decode the meaning of a given clause by a reciprocal layered system of “filters”. It is suggested here that core syntactic factors in this process are the abnormal-order template [(... X₁–)X–particle–V ...] for positive main declarative clauses, the morphological distinction between subject and object pronouns, and the rules of agreement, and that animacy and accessibility are the necessary and complementary semantic factors which operate in close interaction with the semantics of the verbs and the narrative context in order to prevent perceptual ambiguity from arising.

Acknowledgement: An earlier version of this paper was presented in April 2014 at the University of Utrecht to a workshop of the British Academy, *Datblygiad yr Iaith*

³⁹ Compare Poppe 2012: 58–60 for a tentative list of some pragmatic factors facilitating this pattern.

⁴⁰ Furthermore, the semantics of the verb has to be reckoned with as impacting on the successful identification of syntactic roles.

⁴¹ For the concept of the “optimal textual fit” see Enkvist 1984; Poppe forthc.(a).

Gymraeg/The Development of the Welsh Language, and we wish to thank the participants for their constructive response. We also wish to thank our colleagues in the project area *The Syntax-Semantics Interface* of the Marburg LOEWE Research Focus for their generous advice and for many helpful discussions of concepts and of details of analysis. All remaining errors and infelicities are our own responsibility.

Bibliography

- Ariel, Mira (1988). "Referring and accessibility". In: *Journal of Linguistics* 24.1, 65–87.
- (1991). "The function of accessibility in a theory of grammar". In: *Journal of Pragmatics* 16.5, 443–464.
- (2008). *Pragmatics and Grammar*. Cambridge: Cambridge University Press.
- Blake, Barry J. (2001). *Case*. 2nd ed. Cambridge: Cambridge University Press.
- Borsley, Robert D., Maggie Tallerman & David Willis (2007). *The Syntax of Welsh*. Cambridge: Cambridge University Press.
- Branigan, Holly P., Martin J. Pickering & Mikihiro Tanaka (2008). "Contributions of animacy to grammatical function assignment and word order during production". In: *Lingua* 118, 172–189.
- Currie, Oliver (2000). "Word order stability and change from a sociolinguistic perspective. The case of Early Modern Welsh". In: *Stability, Variation and Change of Word-Order Patterns Over Time*. Ed. by Rosanna Sornicola, Erich Poppe & Ariel Shisha-Halevy. Amsterdam & Philadelphia: Benjamins, 203–230.
- (2013). "Gradual change and continual variation. The history of a verb-initial construction in Welsh". In: *Synchrony and Diachrony. A Dynamic Interface*. Ed. by Anna Giacalone Ramat, Caterina Mauri & Piera Molinelli. Amsterdam & Philadelphia: Benjamins, 43–78.
- Davies, Sioned (1993). *The Four Branches of the Mabinogi. Pedeir Keinc y Mabinogi*. Llandysul: Gomer.
- (2007). *The Mabinogion*. Oxford: Oxford University Press.
- Du Bois, John W., Lorraine E. Kumpf & William J. Ashby (2003). *Preferred Argument Structure. Grammar as Architecture for Function*. Amsterdam & Philadelphia: John Benjamins.
- Enkvist, Nils E. (1984). "Contrastive linguistics and text linguistics". In: *Contrastive Linguistics. Prospects and Problems*. Ed. by Jacek Fisiak. Berlin: de Gruyter, 45–66.
- Evans, D. Simon (1964). *A Grammar of Middle Welsh*. Dublin: Dublin Institute for Advanced Studies.
- (1971). "Concord in Middle Welsh". In: *Studia Celtica* 6, 42–56.
- Grice, Herbert P. (1975). "Logic and conversation". In: *Syntax and Semantics*. Vol. 3: *Speech Acts*. Ed. by Peter Cole & Jerry L. Morgan. New York, San Francisco & London: Academic, 41–58.
- Haerberli, Eric (2002). *Features, Categories and the Syntax of a-Positions. Cross-Linguistic Variation in the Germanic Languages*. Dordrecht: Kluwer.
- Harris, Alice & Lyle Campbell (1995). *Historical Syntax in Cross-Linguistic Perspective*. Cambridge: Cambridge University Press.
- Herder, Johann Gottfried von (1772). *Abhandlung über den Ursprung der Sprache*. Berlin: Voss.

- Isaac, Graham R. (1996). *The Verb in the Book of Aneirin. Studies in Syntax, Morphology and Etymology*. Tübingen: Niemeyer.
- Kasper, Simon (forthc.). „Herleitung einer Instruktionsgrammatik“. In: *Zeitschrift für Germanistische Linguistik*.
- Lamy, Bernard (1675). *La rhétorique ou l'art de parler*. Paris: Pralard.
- Mac Cana, Proinsias (1973). “Celtic word-order and the Welsh abnormal sentence”. In: *Ériu* 24, 90–120.
- (1992). *The Mabinogi*. Cardiff: University Press.
- MacWhinney, Brian, Elizabeth Bates & Reinhold Kliegl (1984). “Cue validity and sentence interpretation in English, German, and Italian”. In: *Journal of Verbal Learning and Verbal Behaviour* 23.2, 127–50.
- Plein, Kerstin & Erich Poppe (2014). “Patterns of verbal agreement in *Historia Gruffud vab Kenan*. Norm and variation”. In: *Études celtiques* 40, 145–163.
- Poppe, Erich (1990). “Word-order patterns in *Breudwyd Ronabwy*”. In: *Celtic Linguistics / Ieithyddiaeth geltaid*. Readings in the Brythonic languages, Festschrift for T. Arwyn Watkins. Ed. by Martin J. Ball et al. Amsterdam & Philadelphia: John Benjamins, 445–460.
- (1991). *Untersuchungen zur Wortstellung im Mittelkymrischen. Temporalbestimmungen und funktionale Satzperspektive*. Hamburg: Buske.
- (2000). “Constituent order in Middle Welsh. The stability of the pragmatic principle”. In: *Stability, Variation and Change of Word-Order Patterns Over Time*. Ed. by Rosanna Sornicola, Erich Poppe & Ariel Shisha-Halevy. Amsterdam & Philadelphia: Benjamins, 41–51.
- (2009). “The pragmatics of Middle Welsh word order. Some conceptual and descriptive problems”. Akten der Marburger Arbeitstagung der Indogermanischen Gesellschaft. In: *Pragmatische Kategorien. Form, Funktion und Diachronie*. Ed. by Elisabeth Rieken & Paul Widmer. Wiesbaden: Reichert, 247–264.
- (2012). “*Y'r bordeu yd aethant*. Locative adverbs in Middle Welsh prose, their placement and pragmatics”. In: *Journal of Celtic Linguistics* 14, 31–66.
- (forthc.[a]). “How to achieve an optimal textual fit in Middle Welsh clauses”. In: *Cambrian Medieval Celtic Studies*.
- (forthc.[b]). “Syntactic variation in Middle Welsh. New perspectives”. In: *Proceedings of the First European Symposium in Celtic Studies*.
- Roberts, Richard G. (2013). “The functions and distribution of *pei* and *bei* in Early Middle Welsh”. In: *Cambrian Medieval Celtic Studies* 65, 57–89.
- Rodway, Simon (2007). “The where, who, when and why of medieval Welsh prose texts. Some methodological considerations”. In: *Studia Celtica* 41, 47–89.
- Sapir, Edward (1921). *Language. An Introduction to the Study of Speech*. New York: Harcourt, Brace & Co.
- Scaliger, Julius C. (1540). *De causis linguae latinae libri XIII*. Lyon: Gryphus.
- Schumacher, Stefan (2011). “Mittel- und Frühneukymrisch”. In: *Brythonic Celtic – Britannisches Keltisch*. Ed. by Elmar Ternes. Bremen: Hempen, 85–236.
- Silverstein, Michael (1976). “Hierarchy of features and ergativity”. In: *Grammatical Relations in Australian languages*. Ed. by Robert M. W. Dixon. Canberra: Australian Institute of Aboriginal Studies, 112–171.
- Smith, Adam (1761). *Dissertation on the Origin of Languages, or Considerations &c. Added to the Theory of Moral Sentiments*. 3rd ed. London: Millar, Kinkaid & Bell.

- Sornicola, Rosanna (2006). “Interaction of syntactic and pragmatic factors on basic word order in the languages of Europe”. In: *Pragmatic Organization of Discourse in the Languages of Europe*. Ed. by Giuliano Bernini & Marcia L. Schwartz. Berlin: de Gruyter, 357–544.
- Thomson, R. L., ed. (1957). *Pwyll Pendeuic Dyuet. The First of the Four Branches of the Mabinogi*. Dublin: Dublin Institute for Advanced Studies.
- Watkins, T. Arwyn (1977–1978). “Trefn yn y frawddeg Gymraeg”. In: *Studia Celtica* 12/13, 367–395.
- (1993). “Constituent order in main/simple verb clauses of *Pwyll Pendeuic Dyuet*”. In: *Language Sciences* 15.2, 115–139.
- Williams, Ifor, ed. (1930). *Pedeir keinc y Mabinogi*. Caerdydd: Gwasg Prifysgol Cymru.
- Willis, David (1998). *Syntactic Change in Welsh. A Study of the Loss of Verb-second*. Oxford: Clarendon.
- (2009). “Old and Middle Welsh”. In: *The Celtic Languages*. Ed. by Martin J. Ball & Nicole Müller. 2nd ed. London: Routledge.