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Some observations on the grammaticalization of ICM in Welsh

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1. Initial consonant mutation in Welsh

Initial consonant mutations (Welsh *treigladau*) are changes in the featural make-up of the first consonant of the lexical word that happen in certain (morpho)syntactic contexts (after certain word-forms, in certain syntactic positions).

1. 1. The mutations in Welsh

Radical	Soft mutation	Nasal mutations	Aspirate mutation
p	*b*	*mh*	*ph* [f]
t	*d*	*nh*	*th* [θ]
c	*g*	*ngh* [ŋh]	*ch* [x]
b	*f* [v]	*m*	
d	*dd* [ð]	*n*	
g	Ø	*ng* [ŋ]	
m	*f* [v]		
ll [λ]	*l*		
rh [ρ]	*r*		

Historically these derive from sandhi that could in certain conditions also affect left-edge consonants. Cf. Proto-Brythonic **ejō tatos* ‘his father’ and W *ei dad*, Br *he dad* ‘id.’ (*tad* ‘father’).

In most cases the mutation persists if the etymon of the trigger ended in the relevant sound: cf. the example above, or **min toutā* ‘my people’, W *fy nhud* (cf. **brigantinos* ‘lord’, W *brenhin* ‘king’).

1. 2. “Direct object mutation”

The basic models of the clause in Modern Welsh are $V_{fin}SO$ (1) and $V_{Aux}SV_{nom}O$ (2). In clauses of type (1) the first word of the O constituent undergoes soft mutation if possible. This applies also to pro-drop and other cases of subject gapping (4, 5, 6).

(1) *Gwelodd y bachgen* ***gath***
(2) *Mae’r bachgen yn gweld* ***cath***
(3) *Dyma fachgen. Gwelodd* ***gath***
(4) *Pwy*$_i$ *a welodd* t_i ***gath***?
(5) *Pwy*$_j$ *a welodd* ***cath*** t_j?
(6) *Daeth y dyn a welodd* ***gath***

The grammatical tradition unites these facts as “direct object mutation” (cf. also [Zwicky 1984]). However, some data contradict this interpretation.

1. Subjects (including those of monovalent verbs) can undergo soft mutation if they are separated from the finite verb by a spatiotemporal NP (7) or a PP (8).
2. Objects of verbs inflected for the impersonal do not undergo soft mutation (9). That these forms are impersonal rather than passive is shown by the behaviour

of these constructions with a pronominalized object (10) and under periphrases (11). [Harlow 1989]. It is notable that if the object NP is separated from the verb, it does undergo soft mutation.

(7) *Mae yn yr ardd* ***gath***
(8) *Mae ganddo ef* ***gath***
(9) *Gwelwyd* ***cath*** *ar y stryd*
(10) *Oni'i welwyd…*
(11) *Yr ydys yn gweld* ***cath***
(12) *Gwelwyd ar y stryd* ***gath***

Some authors see DOM as the explication of (accusative) Case. Zwicky (1984) was the first to suggest this, but cf. (9) and lack of mutation in *pwy* 'who' in (5). Roberts (2005) suggests that DOM is an expression of Case assigned in *v*P. Then the lack of mutation in (9) follows, since the impersonal does not imply any overt agent, and thus no *v* head that could assign Case (cf. Duffield's (1997) notion of "lexicalized heads"), but cf. (12).

These data point to the conclusion that Borsley and Tallerman (1996) are correct when they argue that DOM is to be explained by the "XP-trigger hypothesis".

2. The grammaticalization of ICM

As we have seen, one of the possible sources of ICM is phonological sandhi rules becoming opaque, that is, non-motivated by surface phonology.

However, some mutations cannot be explained in this way. It could be argued that mutation is the exponent of some morphosyntactic feature. For instance, Kibre (1997) argues that post-nominal soft mutation of FEM.SG adjectives is an agreement marker. However, cf. (13) (*cath* is feminine, *cî* masculine):

(13) *cath wen* vs. *cî gwyn* vs. *gwyn gî* vs. *gwen gath*

It follows that grammaticalization of ICM appears to involve mechanisms not directly connected with the expression of morphosyntactic features.

2. 1. One model for the grammaticalization of morphophonological alternations

This model is largely parallel to the one that Blevins (2005) works out for «pure» phonology.

- When the alternation loses its direct phonological motivation, each generation of learners has to internalize the set of contexts that trigger the alternation. For each generation this set is essentially arbitrary.
- The learners find "clusters" of contexts that trigger the same alternations in the "context space" (this fact has a historical reason, of course)
- Each speaker makes his/her own generalizations about the nature of these clusters and the connections between them. *The hypothesis is that the set of possible types of these connections is small and independently motivated*.
- A significant set of speakers can make similar generalizations which, in turn, influence the changes occurring to the set of contexts that trigger the alternations or fail to do so.
- This means that for every context that has the "relevant" properties (those seen as driving the alternation), the *probability* of the alternation increases.

This model makes two predictions. First, it is expected that mutation-triggering contexts will have some significant ("meaningful") common properties (this intuition forces one to look for a "unified" motivation for all the mutations). On the

other hand, it is not expected that the categories defined by different alternations be isomorphic to other morphosyntactic (or otherwise linguistically relevant) categories, since the two types of categories are in principle independent.

2. 2. The role of (non-)prototypicality in the development of mutation

I suggest the following possibility: the driving factor behind the development of soft mutation in Welsh was the prototypicality of the mutated element with regard to its category.

In other words, for any (or at least some) aspect of linguistic structure, a given language defines a set of properties that characterize the "normal" ("prototypical") token of the category. If a given token deviates from this "pure example", it becomes more probable that this fact will be marked in a specific way. (NB! I do not necessarily mean a "grammatical category" in any traditional sense).

My suggestion is that for Welsh, if there is not segmental way of marking it (simultaneously with other grammatical meanings), the word is mutated. One can point out the following "hotspots":

1. Nouns "must" be *masculine singular* (cf. soft mutation after the article in FEM.SG. nouns; plural nouns are unmutated because plural is overt).
2. Adjectives must be subordinate to *masculine singular* nouns.
3. Nouns must be *arguments* (bare NPs with locative meaning are mutated; predicate nouns are mutated).
4. The *head* must be at the *left edge* of some syntactic category it is contained in. A stronger formulation: all heads must be as close to the left edge of the clause as possible. I suggest it is this phenomenon which has led to the XP-trigger rule.

Note that in Middle Welsh subjects could also undergo soft-mutation (Simon Evans, 1961). This is probably a result of a stricter adherence to (4). Especially prone to mutations were subjects of verbs in the imperfect: interestingly, morphologically imperfective verbs interact with ICM in non-trivial ways also in Nias (Brown, 2001) and Bamileke (Larry Hyman p.c.).

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