Morphological productivity in Maltese verbs

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Abstract

This paper describes an experiment that was designed to determine the morphological productivity of two possible verb formation strategies in Maltese: root and pattern on the one hand, and suffixation on the other. Native Maltese speakers created novel words in response to nonce stimuli. The stimuli ranged from phonotactically and prosodically acceptable, but non-existent nonce forms to those that contained segments and/or prosodic patterns typically found in English or Italian, but not native Maltese words. The results show that speakers are able to utilize both non-concatenative and concatenative strategies of word formation.

Key words: Maltese, morphological productivity, psycholinguistics, borrowing

Borrowed verbs in Maltese

Most Semitic languages allow the borrowing of verbs only through intermediate forms of nouns or, less commonly, adjectives. From these forms, denominal verbs are formed using standard verbal patterns. While Maltese allows for this type of borrowing, it also provides a different strategy, allowing verbs to take on a suffix (*-ja*) and subsequent declension class instead of forcing them to conform to regular Semitic verbal patterns. Although loan verbs of both types, root-extracted and suffixed, occur in Maltese, the way in which foreign verbs have been integrated into Maltese has shifted over time. Suffixed forms are considered the most productive current loan verb integration strategy (Mifsud 1995).

Morphological productivity is the combination of two related factors (Bauer 2004). Availability determines whether or not a particular process can be used to form new words. Profitability refers to the extent to which the process is actively used. The suffixation strategy is so prevalent in modern Maltese that Hoberman and Aronoff (2003) were prompted to speculate that root and pattern morphology is no longer productive in Maltese. They argued that the lack of adherence to templatic constraints in borrowed verbs indicates that non-concatenative morphology is not actively functioning in Maltese, suggesting that the profitability of root and pattern morphology is low or non-existent.

Stolz (2003 classified Maltese as a type of mixed language with two available morphological systems. This approach puts more weight on availability of production than profitability, so that the mere fact that it is possible to use a particular strategy contributes to its

productivity, even if it is seldom used. Under this approach, the fact that Maltese exhibits little or no verb borrowing with root extraction is less important than whether or not this is a potential strategy available to native speakers.   The experiment described below was designed to explore the factors driving the use of verb formation strategies among native speakers of Maltese by creating a controlled and artificial borrowing situation.

Experiment

Participants

Forty-nine native Maltese speakers between the ages of 18 and 37 participated in the experiment on the University of Malta campus at Msida. All participants were bilingual in Maltese and English, and two were also native speakers of Italian. Participants received monetary compensation for their participation.

Methods

A total of 160 items were presented to participants in Maltese orthography. Half of the items were real nouns of Maltese, and half were possible but unattested nonce forms. The nonce forms were constructed to resemble real nouns.   Both the words and non-words were split into two groups, one representing words of Semitic origin, the other words of English origin. The term *origin* is applied to both words and non-words in this study, though technically the non-words have no origin at all. The classification of non-words was determined by a number of structural properties that influenced their construction, including consonant identity and distribution, vocalic sequences, and sonority sequencing.

   Within each stimulus origin group, the items were divided equally into two sets: more acceptable and less acceptable. These divisions were based on the general prosodic structure and segmental inventory of each item and verified by native speakers.

Table 1. Examples of test item categories.

	Real Words	Non-words
Semitic, more acceptable	*toqba* "a hole"	xesna
Semitic, less acceptable	*felliek* "bad steering"	paffien
English, more acceptable	*spid* "speed"	klid
English, less acceptable	*drill* "drill"	braff

Participants were instructed to respond verbally to each item, naming a verb associated with the item.   For the non-word items, participants were

instructed to create a novel verb. Responses were transcribed and coded for lexicality and structural features.

Results

The first step in data analysis was to establish that participants were able to perform the task accurately with real word stimuli. A 2-level analysis of variance (ANOVA) showed no significant difference in the number of acceptable responses to stimuli of different origins ($F_1 < 1$; $F_2 < 1$). In addition, results indicate that nouns of Semitic origin prompted regularly formed Semitic verbs, and English origin nouns prompted suffixed verbs.

Turning to the non-word items, another ANOVA was conducted, adding item acceptability as an additional 2-level factor. The interaction of word origin and acceptability was not significant in by-subjects ($F_1(1, 34) = 1.22$, p < .05) or by-items ($F_2(1, 56) = 1.63$, p > .05) analyses. The main effect of stimulus origin was significant in both by-subjects ($F_1(1, 34) = 92.31$, p < .01) and by-items ($F_2(1, 56) = 26.34$, p < .01) analyses. The main effect of item acceptability was significant in the by-subjects analysis ($F_1(1, 34) = 13.36$, p < .01) but not in the by-items analysis ($F_2(1, 56) = 2.58$, p > .05). Further analysis revealed that the effect of item acceptability differed according to the stimulus origin. For non-words modelled after Semitic words, the effect of item acceptability was not significant in by-subjects ($F_1(1, 34) = 2.10$, p > .05) or by-items ($F_2 < 1$) analyses. However, for English origin non-words, both by-subjects ($F_1(1, 35) = 32.94$, p < .01) and by-items ($F_2(1, 34) = 7.38$, p < .02) analyses yielded significant results. Less acceptable items elicited more -ja suffixation than more acceptable items.
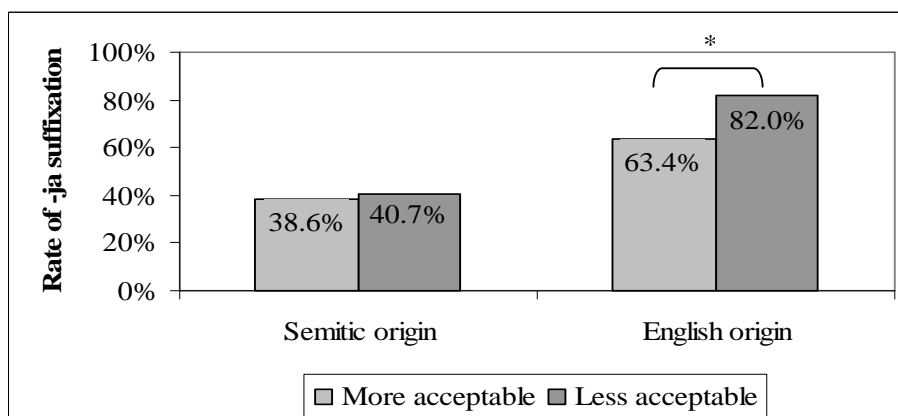

Figure 1. Rate of -ja suffixation is highest in less-acceptable verbs of English origin.

Discussion

These data show the availability of root and pattern morphology as a productive verb formation strategy in Maltese, in direct opposition to Hoberman and Aronoff's (2003) claim to the contrary. In some instances speakers chose this strategy even in response to real word stimuli with established loan verbs formed with concatenative suffixation. Responses to the nonce stimuli indicate that root and pattern morphology is a profitable strategy, at least in an experimental context devoid of influences beyond word structure, such as semantics or social context.

Although root and pattern morphology is available to Maltese speakers, a second verb formation strategy, *-ja* suffixation, is also productive. In order to decide which strategy to use to form new words, speakers must consider structural factors such as prosodic shape and phonological segments. However, these factors alone are not sufficient to explain all of the variation.

Acknowledgements

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