The Interaction between Morphology and Arity Operations: Evidence from Standard Arabic

This talk sheds light on three intriguing generalizations observed in Arabic, regarding morpho-phonological differences between passivization and four arity (valence changing) operations: decausativization, causativization, reflexivization and reciprocalization: (i) Passivization shows an unidirectional relation between input and output forms, while the other operations exhibit bidirectionality (ii) Passivization is performed by melodic overwriting only, while other opeartions involve different processes. (iii) The output of passivization is predictable, in contrast to the other outputs. I claim that these distinctions correlate with and follow from the distinction between the lexicon and the syntax. I follow Reinhart & Siloni (2005) who argue that the cross-linguistic variation in the syntactic behaviour of outputs of arity operations, is due to the Lex(icon)-Syn(tax) Parameter.

(1) <u>The Lex-Syn Parameter</u>: UG allows arity operations to apply in the lexicon or in the syntax.

Horvath & Siloni (2005) provide evidence that passivization is syntactic, while Reinhart & Siloni (2005) show that the other operations in Arabic are lexical. I argue that the setting of this parameter has morpho-phonological consequences.

1. Directionality: I adopt the theory of Stem Modification (Steriade 1988, McCarthy & Prince 1990, Bat-El 1994), which allows for internal stem adjustments, rather than root extraction (Bat-El 1986). Passivization is manifested by changing the vocalic pattern of the active verb (2). Passive verbs demonstrate uniformity with regard to the quality of vowels, as they all share the *u-i* pattern in the perfective form and the *u-a* pattern in the imperfective form.

(2) <u>Melodic overwriting in syntax (passivization)</u>:

    (i) katab → k**u**t**i**b 'wrote'   (ii) yaktub → y**u**kt**a**b 'will write/write'

Since the outputs of syntactic operations are not listed in the lexicon, they are not available as basic entries. Thus, the relationship between the active and passive forms is unidirectional. The picture is different with regard to lexical operations presented in (3):

(3) a. Causativization: raqas' 'dance' → ʾa-rqas' 'cause X to dance'

     b. Decausativization: ʾa-wqaʕ 'make X fall' →   waqaʕ 'fall'

Following Reinhart & Siloni, I assume that the unergative-transitive alternation (3a) and the transitive-unaccusative one (3b) are derived by two distinct lexical operations. I argue that as long as the operation takes place in the lexicon, the morphological system has access to all forms, giving rise to bidirectional relations. In (3a), the causative form is derived from the *CaCaC* template, resulting in the *ʾa-CCaC* template, while in (3b) the output is *CaCaC* and the input is *ʾa-CCaC*.

2. Complexity of Operation: I define a hierarchy of complexity for the observed processes.

(4) <u>Hierarchy of Complexity</u> (a is more complex than b)

     a. Prosodic modification: addition or deletion of syllables or moras.

     b. Segmental modification: melodic overwriting.

 A complex process is considered a marked one, as the higher the level of word structure (4), the more perceptually accessible it is. Passivization involves only the segmental level, which is not intrusive to the structure of the base (2). Lexical operations exhibit more complex processes. Moras or syllables are added to the stem via prosodic circumscription (e.g. *ħamal*→ *ħammal* 'carry' → 'carry-Caus.') or affixation (e.g. *maššat* → *tamaššast* 'comb' → 'comb-Refl.').

3.Predictability: The outputs of the syntactic operations are structurally predictable, since they involve only a replacement of the vocalic pattern. In contrast, the morphological output of lexical operations is unpredictable, as most operations have more than one possible input and output templates. For example, reciprocalization can derive verbs from the CaCaC template to Ca:CaC (e.g. *katab* → *ka:tab* 'write') and also to the taCa:CaC template (e.g. *madaħ* → *tama:daħ* 'praise').

The talk reveals the interaction between arity operations and morpho-phonological processes, thereby supporting the existence a morphology-lexicon interface as well as a syntax-morphology interface. The analysis lends support for the Lex-Syn parameter, adding triggers for parameter setting during the acquisition stage. It also supports the word-based approach (Aronoff 1976), according to which the lexicon consists of words rather than stems or coded concepts lacking a phonological matrix. Specifically, in demostrates the superiority of stem modification over root extraction, which does not discriminate between lexical and syntactic operations, making it virtually impossible to account for the observed generalizations. Time permitting, I will show that the same holds for Hebrew as well.