Evidence for the mora: analysis of a Japanese reversing game

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This talk provides a description and analysis of the Japanese language game sakasa-kotoba. Our analysis contributes to the phonological study of language games as sakasa-kotoba has previously received only a brief and incomplete description in the literature (Smith 1980) and it constitutes a novel language game type; namely total mora reversing. In addition, our analysis contributes to the study of Japanese phonology (i) by providing evidence for the mora, (ii) by providing evidence on the internal structure of the mora, and (iii) by providing evidence about the representation of the special moras Q, R, and N, which surface as geminates, long vowels, and coda nasals, respectively. Within the framework of Optimality Theory, our analysis uses a game specific constraint to motivate reversal (e.g. Ito et al. 1996) with other aspects of game-form shape determined through the interaction of standard markedness and faithfulness constraints.

A word in sakasa-kotoba is derived through reversing moras, as seen in the data below.

(1)	Non-game form	Sakasa-kotoba	form Gloss
	a. sakura	rakusa	'cherry'
	b. karaoke	keoraka	'karaoke'
(2)	a. /okaQpa/ [okappa]	/paQkao/ [pakkao]	'bobbed hair'
	b. /daNkai/ [daŋkai]	/ikaNda/ [ikanda]	'stage'
	c. /toreRdo/ [toreedo]	/doRreto/ [dooreto]	'trade'

The data in (1) contain only moras of the form CV or V and are compatible with either a syllable-based analysis or a mora-based analysis. The forms in (2), however, contain special moras Q, R, and N. These forms demonstrate that moras are the units reversed in the game and that special moras pattern like CV/V moras. In contrast with the widely assumed syllable structure in (3), the patterning of sakasa kotoba forms provides evidence in support of Katada's (1990) model of the syllable in Japanese (4) in which the syllable consists of one or two moras: the first mora containing an optional consonant and a vowel; the second mora restricted to the set of special moras.

(3) [$_{\text{syllable}}$ Onset [$_{\text{Rime}}$ [Nucleus Coda]]
(4) [$_{\text{syllable}}$ [$_{\text{Mora1}}$ Onset Nucleus] [$_{\text{Mora2}}$ _____]]

Following Ito et al. (1996), we use the constraint CROSSANCHOR to motivate the reversal observed between the game form and its non-game correspondent. CROSSANCHORμ requires a mora at the left edge of the input to be realized at the right edge of the output. Relative ranking of faithfulness constraints CONTIGUITYμ and LINEARITYμ determine the shape of game forms with CONTIGUITY, which maintains adjacency relations between input and output elements, ranked above LINEARITY, which maintains precedence relations. (See e.g. Ito et al. 1996, Borowsky & Avery 2009, for use of LINEARITY and CONTIGUITY in game analyses.)

The behavior of special moras also provides evidence that the game-forming evaluation does not take the surface output of the regular phonology as its input. In (2c), [toreedo],

underlying Q surfaces as the second half of the medial long vowel in the regular form. If this surface form served as the input to reversal, we would expect the vowel quality of this mora to be maintained, resulting in *[doereto]. The actual game form, [dooreto], is expected if the input to the game-forming operation contains featurally underspecified Q. This suggests that a level of representation distinct from the regular surface output serves as the input to the game. We argue that this pattern provides evidence against the classic OT model and argue that sakasa-kotoba targets an intermediate representation in a stratal model of OT.

References

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