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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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</tr>
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</tr>
<tr>
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</tr>
</tbody>
</table>

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Mora as a Weight-bearing Unit and Prosodic Category

Shin-ichi Tanaka

In this talk, I examined what prosodic structure a phonological string should have below foot, arguing that the prosodic hierarchy has the mora tier as well as the syllable tier. A mora is a unit which determines syllable weight, so may be referred to as "weight-bearing unit": the more moras a syllable has, the heavier it becomes. Moreover, it functions not only as a unit counting syllable weight but also as a prosodic category sharing its theoretical status and nature with syllable (S), foot (F), phonological word (PWord), phonological phrase (PPH), and so on. In particular, I demonstrated that if mora is regarded as a prosodic category and represented in the prosodic hierarchy, various phenomena are accounted for, such as compensatory lengthening, reduplication, vowel shortening, and high vowel deletion as well as stress facts of vast varieties of languages. My proposed prosodic hierarchy is shown as in (1):

(1) \[
\begin{array}{c}
\text{Syllable Plane} \\
\text{S Tier} & PWord Tier & Prosodic Hierarchy \\
\text{m Tier} & F Tier & PPH Tier \\
\text{a nec do tal claim} & \text{N ONG ONG ONG ONG ONG} & \text{N ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG ONG O
final mora is made extraprosodic (in English foot, the non-head must dominate a light syllable while the head may dominate either a light or heavy syllable):

\[
\text{(3) a. } \begin{array}{c} \bullet \\ \text{de termi ne} \end{array} \begin{array}{c} \bullet \\ \text{surprize} \end{array} \\
\text{b. } \begin{array}{c} \bullet \\ \text{surprize} \end{array} \begin{array}{c} \bullet \\ \text{de termi ne} \end{array}
\]

Stress of Western Aranda, Alyawarra, Madimadi, and so on is given a principled account in the same way in which mora is made extraprosodic.

Furthermore, given the representation in (1), segmental phenomena are also given a principled explanation. For example, Latin compensatory lengthening (\textit{kasnum} → \textit{kaanu} but \textit{smereoo} → \textit{mereoo}) proceeds as below (cf. Hayes (1989a)):

\[
\text{(4) a. } \begin{array}{c} \circ \circ \\ \text{kas nus} \rightarrow \text{ka nus} \rightarrow \text{ka nus} \end{array} \\
\text{b. } \begin{array}{c} \circ \circ \circ \\ \text{smere o} \rightarrow \text{me re o} \end{array}
\]

In (4a) the vowel \(a\) is associated with the floating mora and becomes long, while in (4b) lengthening does not occur since there is no floating mora. Other segmental fields such as reduplication, vowel shortening, and high vowel deletion are also accountable in the representation in (1).

In this way, if the mora tier is a prosodic category and has its own tier in the prosodic hierarchy, a unified account is possible of not only stress but also segmental phenomena.

There are other arguments in favor of mora as a prosodic category. First, mora is subject to the principles working generally on prosodic categories: the Strict Layer Hypothesis and the Minimality Condition. Second, like other categories, mora is used as a counting device. Third, mora, or strictly the second mora in a syllable, has parametric variation. Except for syllable, all other categories have also the nature.