

TO: Unicode Technical Committee
FROM: Deborah Anderson, SEI, UC Berkeley
DATE: 3 August 2009
RE: Rumi numerals : bidi property

Background: At the May 2009 UTC meeting, there was a discussion whether the bidi property for the Rumi numerals should remain as R, or be changed to AL, AN or EN. I was tasked to investigate this topic. Correspondence on the topic is below, one from Rosa Comes, who has studied Rumi (and was the expert who reviewed the original proposal), and the other email was sent to Ken Whistler from Patrick Andries, who had contacted Azzeddine Lazrek, the proposal author.

Summary: The responses seem to suggest "R" is correct, but the evidence is provided below for the bidi experts to review, in case they believe another bidi property would be more appropriate.

Responses

[Response from Rosa Comes]

> Q: When Rumi numbers occur in text (presumably in Arabic text), say "one hundred twenty", how
 > is this written in Rumi? That is, if one is reading the text right to left, does 20 come before 100
 > (100 20 <---reading this way), or does 100 come before 20? (20 100 <---reading this way)?

Referring to Rumi figures direction, my experience shows that, while abjad figures (based on ancient Arabic alphabet) keep the Arabic right to left direction, both Indo-arabic (Occidental and Oriental) (123) and Rumi figures (100 + 20 + 3) are written in left to right direction, even within an Arabic context, at least I have never seen them otherwise! although the order of Rumi figures, not being positional, is not so important.

[Response from Patrick Andries]

Just to confirm.

Got some feedback from the proposer some time ago.

When asked, imagine we want to see on the screen

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<----- reading direction ---
<ba'> <rumi ten> <rumi two> <alif>
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Namely, "twelve" after an alif et before a ba' in the visual order (right to left).

The proposer says he would prefer the in-memory order to be :

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0    1    2    3
+----+----+----+----+
|<alif>|<two>| <ten>| <ba'>|
+----+----+----+----+
```