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Title: Improving interoperability of OFF fonts with duplicated axis names

Author: Dave Crossland (Google Inc., dcrossland@google.com), Behdad Esfahbod (behdad@behdad.org), Laurence Penney (lorp@lorp.org), Liam Quin (Delightful Computing, liam@delightfulcomputing.com), Rod Sheeter (Google Inc., rsheeter@google.com)

Introduction

(This introduction is not part of the proposal)

This proposal does not introduce any new features. Rather, it provides documentation for what should happen in what might previously have been thought to be a rare edge case, so that different implementations can interoperate correctly.

Currently, a variable font can have multiple entries in 'fvar' for the same axis. The specification does not disallow this. However, if more than one such multiple entry is visible to the user interface, the result is unpredictable and may be confusing for users.

Therefore, we explicitly state that <mark>at most</mark> one duplicated axis entry may be visible, and require, for interoperability with existing tools, that it be the first.

Fonts with multiple entries for the same axis are in use on the Web today, including as part of a technique referred to as Higher Order Interpolation (HOI). It is not a new feature, but the current specification is silent about it.

https://github.com/harfbuzz/boring-expansion-spec/issues/15

In 7.3.3 fvar—Font variations table, after VariationAxisRecord, after the paragraph about the HIDDEN_AXIS tag, add a new final paragraph as follows:

Fonts may have multiple axes with the same axisTag; this can be helpful for smooth animation and for non-linear interpolation. For each set of axes that has an identical axisTag:

- At most one axis in the set shall be visible (i.e. have its HIDDEN_AXIS bit set to zero);

- If the set contains a visible axis, it shall come before any non-visible axes of that set in the axes array;

- In a UI or an API, the minimum, maximum and default values for the common axisTag shall be taken from the minValue, maxValue and defaultValue of the axis in the set that comes earliest in the axes array;

- All axes in the set shall have the same defaultValue;

- Although the axis locations for all axes in the set are defined to be identical, their normalized values may be different when their minValue or maxValue are different;

- Independent adjustment of multiple axes having same axisTag shall not be offered or processed.

NOTE 1   An implementation may choose to allow adjustment of a set of axes with no visible member, using the first member as described above, but there is no requirement to do so.

[end]