The rotation and scale features require an attribute that is within a precise range to make sense on a given map.

E.g., I have an attribute that has values ranging from 156 to 142403. I would like to give more visual meaning to the items on the map and have their sizes scale according to this attribute. However, the largest item would be huge, taking up the whole screen.

At a minimum, I would like to have a way for QGIS to interpret this attribute's values so that 156 represents a small item size, 142403 represents a large item size, and all values in between scale proportionally. I don't want it where QGIS literally interprets 142403 to be a size in some kind of fixed measurement that's consistent across all maps it creates.

This may be a separate feature request, but it would also be useful to have features like what are available with item coloring, where I can smooth out or otherwise affect the size progression to account for clustering.

I guess the need here is either for QGIS to allow me to specify limits on either end of the size or rotation scale, then use a value between the two extremes proportional to the actual value. E.g., if my actual values ranged from 1 to 1,000,000, but I set the boundaries between 40 and 60, then an actual value of 1 corresponds to 40, 500,000 corresponds to 50, and 1,000,000 corresponds to 60.

Now this is linear scaling. I guess the next logical step is to allow transformations like logarithmic scale, because available data doesn't always linearly scale in a meaningful way for human-friendly output.
in QGIS 2.13 (and in previous version), you have now expressions scale_exp and scale_linear that can be used to scale your values. There is even a size assistant which helps you write the expression.

I am closing this feature request.