We are definitely on the same path and these are good words for refining the point. I guess another way to state this would be that speaker POLARITY effects both phase AND non-linear distortion. Since our ears are phase agnostic, this leaves the distortion.

BTW, one of the things about distortion analysis is that it does not clearly indicate a polarity problem. And, it wont clearly show stuff like crossover distortion either. Bandpass filters, and simple FFT spectral analysis are especially prone to this because they are primarily interested in the sine wave energy (there are some more obscure FFT techniques that can be used). An oscilloscope view would be the better tool, but the distortion needs to be on the order of 10% to be noticed. I addressed this with one of the XY views in the WTPro by locking on to and subtracting the fundamental from the raw data, leaving just the distortion.