

The Sennheiser HD700 Journal (Mar 16, 2012)

Introduction

When [Sennheiser](#) introduced the HD800 three years ago, the resolution of its 58mm ring-radiator driver was mind blowing. However, there were two things about the HD800 that prevented it from getting public acceptance: First, it wasn't voiced quite the right way (treble issues, bass issues, et cetera). Second, the competition from Beyerdynamic with the T1, Hifiman with the HE-6, and Audez' e with the LCD-2, were quite advanced with their own offerings. And for many people, they had a more "correct" voicing than the HD800 is. Especially the planar based drivers was winning a lot of fans around the world with their fast and accurate transients. Even though the planars don't scale up as well as the HD800 on high-end set ups, it wasn't relevant because the HD800 simply didn't have the sound that they were looking for (and I agree, it was a hard headphone to enjoy).

And the fact is this:

Ten years after the release of the HD650 (2003), people are still yearning for something that sounds like the HD650 but a little more advanced in technicalities. Certainly, the HD800 was missing something important, and that is musicality.

I can imagine a hypothetical situation where the engineers at Sennheiser started the blueprint on creating the best headphone they are capable of. All the years of technological know how was poured into the design, and the result is what we know as the HD800. With the HD700, however, it was different. A different design team was gathered, and this time I would imagine they actually gathered a lot of feedback from users (especially the Head-Fi guys) and listened intensively to the planars from Hifiman and Audez' e to examine what is it about them that made them so successful.

We know for sure that Sennheiser is listening to the market, and that the HD700 should be a more musically involving headphone than the HD800 was. When the HD700 was finally unveiled, I am guessing that the headphone is going to sound a lot closer to the HD650 — the ultimate representation of the classic Sennheiser sound. Now that I have listened to the HD700, while it is mostly a darker sounding headphone than the HD800, it was completely different than what I had imagined. It was radically different and unlike anything else I've ever heard with a dynamic driver. It was

not simply a re-tuned or a scaled down HD800 as the HE-500 is to the HE-6, the LCD-2 Rev 2 is to the Rev 1, or the Beyerdynamic T5p is to the T1.

I was awestruck. The design team, which is apparently a different team from the HD800, has pulled off something brilliant. Out of this world. Genius. I wish my HD800 sounded like the HD700. I really do. I wish Sennheiser would give me an HD700 sound, with a build quality like the HD800, and label it as the new HD800. It wasn't simply a downgraded HD800 with a darker tonality. It was revolutionary and I've never heard anything like this being done with a dynamic driver.

I wish my HD800 sounds like the HD700

When the HD800 was launched 3 years ago, I received an invitation to audition it in Singapore in a private Sennheiser event. The system that we were listening to was nothing short of high end. They had that German high end audio brand T+A CD player that has this uncanny transients, paired with the highly transparent Lehmann Black Cube linear amp. They gave us private listening sessions in private rooms. They had audiophile recorded CDs that you can choose from, or a CD of your own if you happen to have one.

I thought it was an impressive headphone technically, but I had mixed feelings about it. Impressive technicalities, but it was not one of those "I had to have one of these".

I eventually bought an HD800 because I knew that it is the reference by which other headphones would be compared to. Over the years of doing reviews for Headfonia, I learned a lot about the HD800's characteristics: what makes it work and not work, how you should build a set up around it, what makes it so painful at times, and what makes it sublime when the set up is right. And I still tell my friends today with their \$3,000-\$5,000 tube amps that the HD800 is the only headphone that will let them hear every single penny they've spent on their amps. It had the highest scalability factor, period. But once again, there is something missing with the HD800.

What I Thought The HD700 Would Sound Like

Through writing reviews for Headfonia, I have learned how certain design aspects of a headphone would lead to a certain sound characteristics. We all know how different driver types have their own sound signature. Where vintage drivers tend to fall short to modern drivers. How the design of the housing and pads materials contribute to the overall sound. Why you should never mix different type of drivers in one headphone. It's like

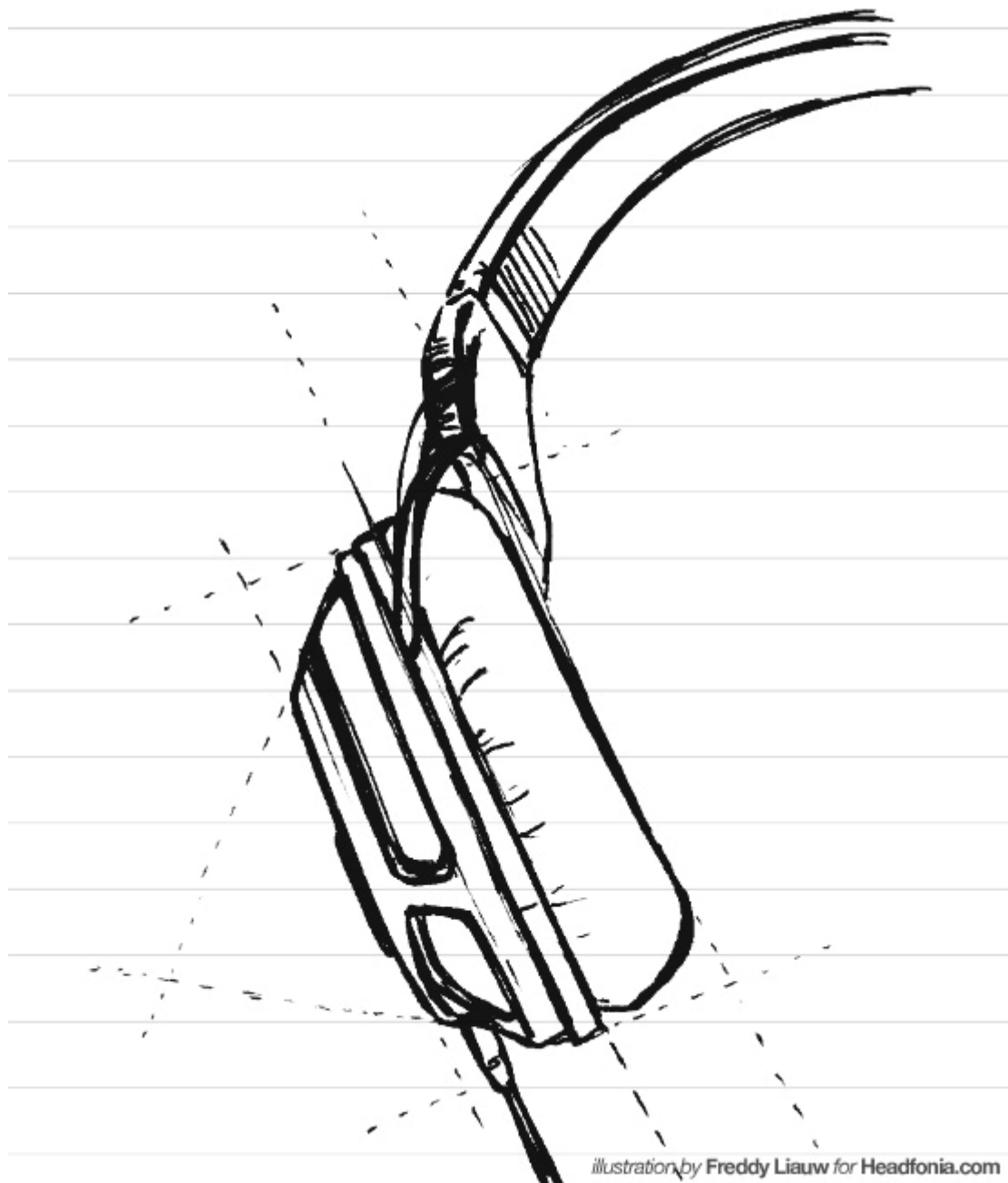
with cars: Design parameters like wheelbase, chassis width, overhang, or engine placement would tell you roughly about how the car would handle. Planars would excel in transients and have a superb black background, but weak in soundstage image. Electrostats suck when it comes to bass impact. Dynamics are always good with soundstage imaging and low level detail, but usually always have this grain in their sound (the Ultrasones are among the exception, but for everybody else Senn, Beyer, AKG, Audio Technica and so on, you would hear grain in the sound).

Using these same sets of “unwritten conventions”, I had made my own little predictions on how the HD700 would sound: It would be darker than the HD800. It would have a smaller soundstage, but better intimacy. It would still have the typical dynamic driver grain (especially [Sennheiser](#) drivers are never free of this grain), and so on. In short, it would sound a lot like the HD650, but much improved especially in bass clarity (one of the weaknesses of the HD650).

It turns out that my predictions were far off. And it’s not that I made bad predictions, but

rather because the HD700 pulled off something I have never heard before in a dynamic driver.

I knew that the HD700 had a new technology that is not found on the HD800: “Patent-pending ventilated magnet system manages airflow” as Sennheiser put it. But I didn’t think the effect is going to be so radical. Listening to the HD700 out of the RSA Dark Star amp, with the Halide Design DAC HD and Fidelia as the source, I was blown away. Simply brilliant and mind-blowing. It was had a crisp electrostatic-like transients, but without the typical weaknesses of an electrostatic driver.



Sound Impressions

The HD700 is nothing like previous Sennheiser headphones. The tonality is mostly dark, but very different than the HD650' s dark, instead more like the LCD-2. The biggest difference from the HD650 is in the clarity factor. The HD700' s dark sound simply exudes with clarity, to the extent that the sound coming out of it is clearer than the HD800, the Beyerdynamic T1, the LCD-2, or the Stax 02. No one will be making veiled comments about the HD700 that' s for sure.

It' s like getting the clarity of the Hifiman HE-6, but without the treble, and still with a cleaner sound overall than the HE-6. The background is

black and has zero grain. It is not as black as the LCD-2, but more or less like the Stax 02. I think this aspect is the most impressive part of the HD700's sound: how it manages to pull off such a clear and clean sound while having a dark tonality.

Comparisons to the LCD-2

More comparisons should be drawn to the LCD-2, as it's the only headphone that I think sound closest to the HD700.

Both have a dark tonality, but the LCD-2 is darker and has a better bass thump. I still love the Revision 1 LCD-2 the best, as I think the frequency response is more linear than the Revision 2. In this aspect, the HD700 maintains a generally linear frequency response throughout most of its range, except for a little peak at the high treble region (the HD800's is at a lower frequency). And though I feel a better extension on the low bass, it doesn't slam as hard as the LCD-2's low bass (still king in that aspect). I do hope that since this is a pre-production sample, Sennheiser can still tweak down the top treble peak, though I won't expect much changes from the bass impact.

The issue with the LCD-2 that a lot of people have is that one it is too dark sounding, and that two it sounds too closed for an open headphone. With the revision 2 they have added some treble to the mix, which helps to alleviate that treble issue and making the headphone to sound more open as well, but in the process losing some smoothness on the treble region.

The HD700 is quite different in this aspect and I think this is due to the nature of the different drivers. The overall sound is significantly clearer than the LCD-2 (again think of the clarity of the HE-6 but without its treble). Clarity level is much higher than the LCD-2 from top to bottom, but it's especially evident around the midrange area. The bass is not as meaty or as slamming as the LCD-2, but with much better clarity on the bass. The soundstage is a lot more open than the LCD-2's and the HD700 doesn't suffer from the reverb issue that plague the LCD-2.

For a long time people have been asking for a headphone that combines the best of the LCD-2 and the HE-6, and I think the HD700 is it. I won't know for sure, but it's almost like Sennheiser had a listen to both planars and see what is it about them that make people enjoy them, and went to recreate a version of their own using a dynamic driver. I can see the HD700 to appeal to people who enjoy the HE-6 because it offers the same level of clarity (and even more, in the mids and bass regions), but without the hot treble and a much better soundstage image performance. With the LCD-2, I think the HD700 still can't quite replicate the LCD-2's bass, but a

lot of people who's complained about the LCD-2 being too closed and too dark really should check out the HD700.

Comparisons to the HD650

Another comparison that I'd like to make is to the HD650 that we're all so familiar with. Though both headphones would be categorized as dark sounding, that's as far as the similarity goes. The HD650 is not exactly known for its clarity, while the HD700 shines at that. The HD650's bass often is too thick and muddy on anything short of a top-end system. The HD700 from an Ipod's headphone out still gives me a much better bass clarity than the HD650 on the RSA Dark Star, so it's not even a close comparison.

The HD650 is often described as smooth, and that's correct, but more of the lush and tubey smooth kind. The HD700 on the other hand has a smooth sound that sounds more like electrostatic driver smooth. Smooth from the precise transients. The pace, the precision, the speed of the HD700 is so much faster than the HD650, and even the HD800 (it is more comparable to the Beyerdynamic T1).

As you can see, a lot of these descriptions break the usual conventions of the typical character of a [Sennheiser](#), but also the typical character of a dynamic driver. The HD700 is crystal clear and clean, more than any other dynamic headphones I've listened to. There is absolutely no grain in the sound. The transients are crisp and fast, and everytime I listen to it, I get an impression that I'm listening to an electrostat-type driver, only this time with better frequency extension than the typical Stax headphones.

One thing that I do lament is how the HD650 still has a much better bass impact than the HD700 is. With the HD650 you just get that addictive, slamming bass, and it's still the number one reason people stick with the HD650 even now. The HD700 tremendously improves on the bass impact of the HD800, but just not quite a HD650 bass.



Comparisons to the HD800

Of course the obvious comparison is to the HD800, now priced at \$1499 which means it's \$500 more than the \$999 HD700.

First thing first: The HD700 is in no way going to replace the HD800 as the flagship model. Early in this article I've talked about how the HD800 is currently the king of the headphone technology. The HD800 driver just oozes with resolution, micro detail, and three dimensional layering. With the HD800, you hear multiple layers just on the bass region alone. It's just so rich with information, the driver scales up so much higher, and the build quality is still unmatched. For this reason, I think that the HD800 will still remain the proper flagship for Sennheiser.

The most noticeable difference between the quality of the two driver is on the layering capability. The HD700 is quite below the HD800 especially on the layering capability, and more around the level of the HE-6 and the LCD-2. The soundstage is the next thing that needs a comparison. The HD800 is much wider, but the HD700 is still relatively wide and actually has a better depth than the HD800' s. Center image is also more distinct with the HD700, making for a much better headphone for long term listening sessions. With the HD800 on some system I still like wish I had a good cross feed system. Not so with the HD700, it blends very well both the left and right soundstage areas. Overall the HD700 is very spacious, more than the LCD-2 and the T1.

The issue with the HD800 as we all know is its tonality. It' s highly resolving, but it is very easy to sound dull. It needs an über high-end system to shine. This is why I said "I wish my HD800 sounds like the HD700" . The HD700 has the most likable tonality I' ve ever listened to in any headphone to this day. The wow factor is incredibly high, it' s hard not to be impressed by it, even with a simple DACPort + O2 amp pairing. The clarity coming out of that dark tonality is really a magical combination. The first time I heard the Stax O2, I was impressed simply for the same reason: dark tonality yet still sounding very clear. The thing is, the HD700 is even clearer and also far more spacious than the O2. My jaws dropped when I listened to the HD700 the first time (I was using the RSA Dark Star system). It was just unbelievably good.

On the more practical aspects, I think the HD700 is going to be easier to enjoy due to these three points:

1. No more glaring low treble. The HD700 is totally smooth on the frequency where the HD800 glare is. There is a top treble peak which pronounces sibilance, but I hope that the production units will be free of this.
2. Much punchier bass. The HD700' s bass has some real punch. Tight and punchy, focused and fast. Brilliant bass, though not as technically capable as the HD800' s bass.
3. The PRaT factor is awesome. This is not a laid back headphone. It' s spacious, yet it can deliver an energetic and focused sound. With some fast Rock music, you are getting all that energy, as good as if you were listening from the HD25-1. And that' s remarkable, given the fact that the HD700 is a far more spacious headphone.
4. It is oh-so-easy to drive. I can listen to it straight from my iPod.

More Sound Impressions (February 27, 2012)

I wrote an email to [Sennheiser](#) today making a suggestion if it's going to be possible to add some bass body to the HD700 to make it more weighty like the HD600/HD650. At the current form, I think while the clarity, speed, soundstage are amazing, the lack of weight in the lows is like a big Achilles' Heel. Here we are with one of the best headphones we've ever seen coming from [Sennheiser](#), and yet without a proper HD600/HD650 like low end weight, it's still not as satisfying musically as it could've been. Another thing that I think should be changed for the final production batch is the top treble peak which again is bothersome, and definitely would cast a shadow to the otherwise brilliant driver.

Other than that, I've tried it with some more different music over the weekend, and the HD700 is definitely a very versatile headphone. One of the hardest genre to play on audiophile-grade headphones is Jpop recordings, which are often hot on the treble, overly forward and over compressed. The overall laid-back stance of the HD700 makes those forward sounding Jpop songs easy to the ears, while still maintaining a good vocal presence (in contrast the HD800 fails miserably when you start playing Jpop music).

I also tried the HD700 with some metal recordings and find that the presentation is quite decent. It's not as engaging as some forward sounding headphones like the Shure SRH-940, but it still carries the energy and speed of metal songs very well especially when compared to the HD650 and the HD800. Again I would've wished that there is a little more bass weight to support the bass notes, but at least you're getting a good punch out of the HD700, where the HD800 tend to soften and dull the attack on the bass notes.

One genre that I can't quite enjoy on the HD700 is techno and house, as the upper treble peak strikes a wrong synergy with techno and house recordings that are mostly hot on the top treble. Also the lack of bass weight on the HD700 doesn't make for a convincing presentation.

The way the HD700 presents the vocal is quite different than the usual thick and smooth vocals of the HD650/HD800. Vocals are more natural and uncolored. People who are used to a thick and smooth vocal sound from the HD650 would find the HD700 to be too thin and perhaps even borderline dry, but that's a matter of personal preference. The vocal presence is very good, and to my ears it's refreshing to hear a more uncolored presentation of the vocal. It's like choosing between a thick and mellow vacuum tube sound like the Minute 45 or the clearer and more transparent sound of the

WooAudio WA5 tube sound. The HD700' s sound character falls more to the latter (here is the review on [the Minute 45 compared to the WooAudio WA5](#)).

I think the bottom line is that while the HD800 remains a technically more superior headphone, it' s clear that the HD700 is easier to enjoy, less picky of the set up, and has a wider genre bandwidth. Compared to the HD650/600, the HD700 is much faster in pace, clearer sounding, and is more precise. However, I still feel that the way the HD600/650 does bass is a lot more involving emotionally, and in that way still irreplaceable by the HD700 at the current form. But what I know is that a lot (if not, all) the complaints often brought up on the HD800 and the HD650 have been addressed on the HD700. I just hope that Sennheiser would add some more bass weight on the HD700.

Final Thoughts: March 16, 2012

After a few weeks with the HD700, I don' t think I' d change most of my initial impressions, but there are some notes that I' d like to add and points that I want to elaborate further.

Headband Pressure: Pre Production vs Final Version

The biggest variable between this HD700 and the final production version is going to be the amount of headband pressure [Sennheiser](#) adds to final version. I' ve been told specifically that this pre-production version is very loose and that the final version is going to have a more proper headband pressure. To give you an idea, I' m always surprised by the added clamping pressure the HD800 has over this pre-production HD700. Those of you who' ve tried the HD800 know that the HD800 isn' t exactly the death-grip type, and in fact may be the among the most comfortable headphone ever designed. I really expect the final HD700 to have a more proper headband clamp, as this version is just way too relaxed.

Since I know that the final version is going to have a stronger headband clamp, I' ve tried to do a lot of listening impressions with my hands pushing on the cups to simulate a stronger headband pressure. The sound changes, obviously, as you' re practically compressing the effective acoustic space. One notable change is a more closed-in, less open and less spacious sound. As the driver is moved closer to the ears, to my surprise that high treble peak that tend to accentuate sibilance is reduced significantly. Very nice. Not only that but as the sound become less spacious, vocals are more engaging, midrange body is boosted up and the overall tone becomes warmer and slightly weightier. Of course the degree of the changes depend on how much pressure is applied, and so I' m eager to see how far the final version will apply the headband pressure.

With the added pressure also brings in an additional bass body, though still not enough to my ears. While nobody is going to call the HD700 a bass light headphone, I still don't think that it's weighty enough. It has a tight punch, but I still think that the HD700 can be an even better headphone with a HD650/600 like impact and weight.

The two headphones that I use mostly for comparison is the current top dynamics, the Sennheiser HD800 and the Beyerdynamic T1. Everytime I move up to the HD800 or the T1, I always feel the added resolution, the music becoming richer and more involving, so again there is no denying that the driver resolution of the HD700 is inferior, especially to the HD800. However I still stand by my initial impression that the way the HD700 is voiced is just more pleasing than the HD800. The more forward vocals of the HD800 is very impressive for short listening time, but gets tiring for long listening times. The HD700's vocals are never distant, but done just right and I'm loving vocals on the HD700. It doesn't color the vocals like on some warmer headphones, it doesn't mellow the recording or add some tubey effect to it, and yet it's never dry and never distant and with good clarity. I can listen to the HD700 for much longer periods than I can with the HD800, and a lot of it I think has to do with the way the vocals are presented with just enough presence, and the zero-grain sound of the HD700.

In comparison to the Beyerdynamic T1, I think the T1 remains unique enough in its presentation. For instance, both headphones have a fast pace, but the HD700 doesn't attack as strongly as the T1, and I'm saying this in a good context as we all know good Rock headphones need to have a strong attack to it — something that the T1 would still excel. Aside from the different sound presentation of the T1, it also remains to be the more resolving headphone, superior in low level detail, layering and three dimensionality.

All the talks about the HD700 being inferior to the technicalities of the HD800 and the T1 seem to have given the wrong impression to people, and as a result people are speaking about how overpriced the HD700 is. Thing is, I've spent many paragraphs trying explain the special thing about the HD700's sound presentation: how it is the cleanest sounding dynamics I've listened to, how it's different from any other Senns I've listened to, how it's not like any other dynamics, but at the end of the day nothing really replaces a real auditioning session. In fact despite the inferior technicalities, the HD700 remains the headphone that I listen to the most these past few weeks, not the T1 nor the HD800. I really wanted to know if all my glowing first impression is just a new toy's syndrome, but the reality is that I've been hesitant to pick up the other headphones up for a listen even now, three weeks after the HD700 first arrived here.

Three weeks of quiet listening time on my home set up, almost every night, and I still wish that my HD800 would have a sound presentation like the HD700.

I'm actually surprised to hear all the comments downplaying the HD700 due to its inferior technicalities to the HD800. We all know that the LCD-2 and the HE-6/HE-500 don't have the supreme technicalities that the HD800, but it doesn't stop people from choosing them over the HD800. At the end of the day, you only need so much technicalities, and the HD700 is way past that level, so let's stop fretting over the inferior technicalities.

Now, I made some comments about the build quality that I think I need to revise. I'm sorry for the hasty first impression comments, but while the HD700 is no HD800, it's not like RS180-like as I first said it is. The plastic frame doesn't quite have the density of the HD800's special plastic, but clearly this is better than the RS180 or HD558/598 level. The matte metallic finish also looks very sharp in real life. In some angles, the HD700 now makes my futuristic HD800 look a little outdated.

More on Amplifier Pairings

The HD700 may be the easiest to drive full size headphone I've ever encountered. Moving from small portable amps to big desktop set ups, I never really feel the small portable amps to be inferior in driving the HD700 in terms of impact and authority. Where the difference lies, however, is in the technicalities, refinement, and sound signature. Bigger, better amps would give you a bigger sound with a far blacker background and more distinct instrument separation. And if I feel the HD700 to lack strongly at its low bass impact, big amps like the RSA Dark Star helps tremendously with that, though it's still not going to turn the HD700 into an LCD-2. I also had the chance to try the HD700 with the Yamamoto HA-02 tube amplifier, and the typical mellow vocals shows through very clearly. So the HD700 definitely reacts to changes in amplifications, either in the technicalities or the sound signature department. Though as I've mentioned earlier, the HD700 doesn't quite scale up like the HD800 or the T1.

End Words

Next week I'm going to prepare to send the HD700 back to Sennheiser, and unless there are any surprise finds, I think this is going to be the end of the HD700 journal (at least the pre-production version).

The firmer headband pressure on the final version is definitely going to be something that I look forward to testing. Like room acoustic

improvements in a speaker set up, it does enough changes to improve the overall experience.

Disclaimer: This is based on a pre-production sample HD700. The final production unit will have a more proper headband fit (this one is a little loose), and that ought to affect the sound a little since I'd expect the pads to seal better then.