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Subject: Blind testing and what I would like to see done...

Posted by [Mr Vinyl](#) on Mon, 22 Aug 2005 14:04:44 GMT

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Hi, First a little background on this subject. I am not an expert on blind testing so take everything below for what it's worth. But as I see it, people who believe in the benefits of blind testing audio equipment basically say that if you can't hear the difference in a double blind test then you're only fooling yourself. There is no difference. The people against using blind testing have a host of reasons why they aren't accurate. Such as length of time, unfamiliar equipment and rooms etc. etc. They believe there are audible differences in say cables etc that are masked by the blind test procedure. Thinking on this subject I realized that I have never read about a blind test procedure where proven differences were heard with audio components. In other words, let's take a component in the audio chain where almost everyone will agree there are sonic differences such as speakers or cartridges. I don't know of anyone who would argue that there are no audible differences between different brands of speakers. So let's use them for starters. One would assume that just about anyone could tell the difference very close to 100% of the time, in a blind test, between a full range floor standing speaker and a mini monitor. But before we assume, I would like to see it done. If that assumption turns out to be correct then let's try two different speakers with similar bass responses. I think this would be considerably more difficult. But again you would "assume" that most people would be able to tell the difference almost 100% of the time between these speakers as well. Then drop down to testing preamps, amplifiers etc. My point is this, Having the bench marks created using the tests above, we could then move on to more difficult to hear components such as cables etc. In other words if people had trouble telling apart even speakers, cartridges and preamps using blind testing, this would help prove the point of view that the tests are not an accurate way of showing audible differences. If the above tests show that people can consistently hear differences between speakers, cartridges and even amps and preamp, then this would be a mark for the double blind testers. But instead of assuming people can hear gross differences from components such as speakers I would like to see it done first. Maybe I'm wrong. Can someone show me a double blind test using audio components of any kind that shows a consistent verifiable difference was heard by a number of people. Just food for thought.

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Wayne Parham](#) on Mon, 22 Aug 2005 18:24:51 GMT

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I think blind testing makes a lot of sense. The thing it (obviously) doesn't consider is aesthetics. It doesn't take into consideration status symbols and things like that either, but I guess that's the point. For sound only, and people's perception of sound, I think it makes a lot of sense. But if something sounds good and looks horrible, maybe it shouldn't be surprising that some people don't like it. I think the usual findings are kind of no-brainers. When blind tests don't find differences in cables, that should be no surprise. Take a 50 foot run of 36 guage wire and use it for speaker connections, that's something you can probably blind test a positive result compared with say a 12 guage wire. But comparing two brands of same size copper wire is going to give a

null result. The same could be said about other components that have similar performance levels. Some things are just more noticeable than others. That doesn't mean they sound or measure the same in all characteristics, but there comes a point where most people can't tell, just like a size of print they can't read. I think speakers are the easiest components to identify in a blind test. There is such a wide range of performance levels and optimizations. Speakers are electro-mechanico-acoustic devices, so even though they have relatively simple construction, they have an impossible job. That's why each designer chooses trade-offs he optimizes for, and it's those trade-offs that expose the speaker and make it possible to identify. Mini-monitors have less bass, so you can tell them right away when compared with a speaker with a larger woofer. Horns are more directional, so they have audible cues of their own, lack of reflections and what not. As long as the differences are pretty large, you can tell them right off. But once the differences become subtle, then obviously a blind test will yield a null result.

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Mike.e](#) on Wed, 24 Aug 2005 04:30:59 GMT

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Of particular interest to me is the time domain rather than the frequency domain. It also seems people have sensitivities in one or the other. Other interesting things such as Low Q resonances being more audible than high Q ones. One thing is for sure - The room and loudspeakers contribute the most distortion. As for the rest well, you can do your own blind testing but certain smart alects may dismiss the results. Does it matter if they do? Just like politics and religion, such is audio \_ it gets people passionate.

<http://www.pcavtech.com/play-rec/index.htm>

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Wayne Parham](#) on Wed, 24 Aug 2005 05:47:57 GMT

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One of these times, build yourself a sawtooth wave generator capable of making a wave with the peak on the left or the right. The difference between the two is reverse sawtooth waves have even harmonics phase shifted. Listen to the two and see if you can hear a difference. This is a good test because it uses a pair of signals with exactly the same frequency harmonic content but having different phase. It prevents the listener from obtaining frequency cues that expose a difference in phase. Cancellations of certain frequencies, beat frequencies and things that make response aberrations are pretty easy to detect, but absolute phase isn't. So you're going to have a very hard time finding people that can detect a sawtooth from a reverse sawtooth in a blind test. Try it and see.

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Manualblock](#) on Wed, 24 Aug 2005 16:19:01 GMT

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Mr. V. I hope some take this particular aspect of our hobby seriously because it is the only important test there is. It doesn't matter how a unit is measured or how well it eventually can be made to measure if no one wants to listen to it. Since assigning a value to a subjective perception is a science that is still very much in it's infancy then all we have to go by is personal preference. Therefore it is my contention that blind testing is useless. There are so many variables intrinsic to individual perception alone; forget about those variables we can control, that to create some sort of clearly controlled set of variables is impossible at this time in our history. Which brings me back to a simple observation. If you gather a group of people and assign them a task of numerically rating the quality of sound exposed to the group; how do you separate out the nine thousand issues of hearing loss/mood/the simple emotional effect the chosen piece of music has on the individual, on and on. Not to beat a very dead horse but this I know to be true. What sounds good is recognised by everyone. If you take a De'Angelis Guitar played by Julian Bream and sit people in front of it. Even if they don't like classical music, hate guitar, hate Julian Bream... I don't think you will get anyone in the group to say the sound itself is bad. That's a reference standard and we all can recognise one when we hear it. Anyone ever say that Pavorrotti can't sing? My point? What would be the criteria that indicates a unit is better sounding than another? It sounds more musical? Even if all agreed one unit sounded better than another in a blind test; what happens when you switch that unit into another system and situation? Where maybe it doesn't synergise? So I think what sounds good is recognised by all; what sounds best is a meaningless approbation. Comparing five amps is beyond pointless it seems to me. Just my opinion after doing this many times and hearing many points of view, (some that caused my head to spin.)

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Subject: You have it backwards

Posted by [Dean Kukral](#) on Wed, 24 Aug 2005 22:25:23 GMT

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You suggest that if someone cannot tell the difference in a DBT between copper cables and \$100/foot silver cables, then DBT is useless. I say that if someone cannot tell the difference in a DBT between copper cables and \$100/foot silver cables, then who in the world could possibly be stupid enough to pay \$100/foot for silver cables, when there is no audible difference??

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Subject: You might want to re-read my post....

Posted by [Mr Vinyl](#) on Thu, 25 Aug 2005 12:25:18 GMT

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I didn't suggest any such thing. I am saying that if people can't hear the difference between

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speakers or cartridges in DBT's then maybe there is something else going on. I didn't say whether I was for or against DBT's. I only suggested that we try double blind testing with components that everyone would agree has sonic differences as a reference point.

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Mr Vinyl](#) on Thu, 25 Aug 2005 12:33:53 GMT

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Hi Manualblock,As I said earlier I am no expert in DBT's. However I don't think these tests are trying to show which component sounds better but instead if a difference can be heard at all. In other words, listen to Amp "A" then switch to Amp "B" did you hear a difference, yes or no. First you would have to determine if a difference between say amps or cables can be heard at all, and then you could go from there.

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Subject: Re: Blind testing and what I would like to see done...

Posted by [Manualblock](#) on Thu, 25 Aug 2005 13:36:55 GMT

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I know Mr. V. because I am no expert either. I think what I was trying to say was these DBT have been examined to death in many venues starting back in the 60's with Floyd Toole at JBL.I have experienced this. When sitting in a room with some friends; relaxed and enjoying the company and the surroundings there are very easily heard perceptual differences agreed to by all between different components. Soon as you line them up in a straight row with organised criteria and defined critical aspects to be expressed the whole thing goes south. You get results that make your hair stand on end. Solid State amps suddenly sound best; CD's beat vinyl etc.Now the reductionists will state that that proves their point; that in a familiar group, group dynamics superceded the facts. All kinds of emotional stuff interferes with good results in a DBT. Well I argue that the opposite is true and that is my position.So; Then you go back home and sit down and voila' it's all back where it should be soundwise. My point? The tests are useless.

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Subject: You don't understand why DBT's

Posted by [Bob Brines](#) on Thu, 25 Aug 2005 14:25:06 GMT

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Beautiful! JFB!!If there ever was a post that demonstrated why I will never allow my equipment get involved in a shoot-out, this is it.The basic premise of the post is that since DBT's don't produce the expected results, the the TESTs are in error. Everyone knows that tubes sound better than SS, vinyl better than CD's, silver wire better than copper, etc.DBT's are designed to identify

differences between systems, not to assign rankings. If the tests you were involved in demonstrated "A" was better than "B", then the tests were flawed. Rankings are subjective and cannot be tested. Sure, some equipment will be universally agreed to be poor, or good, whatever, but this is NOT the result of a DBT test. You like tubes and vinyl. Maybe I don't. Therefore, either my ears are flawed, I am a fool or both. Or perhaps my program material is different from yours and might need different reproduction equipment? Maybe I just don't like the fat sound of small SET's? It has been suggested that at the next GPAF we arrange a shoot-out between Wayne's speakers and mine and whoever else wants to participate. Not going to happen. Do our speakers sound different? Sure. Do we need A-B testing to prove so. I don't think so. Our design philosophies are very different and our target audience is very different. If you were at the last GPAF, you would have seen that some folks gravitated to my suite and some gravitated to Wayne's suite. Different folks. Different ears. And this is the way it will always be with audio equipment. Bob

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Subject: Here it is - YOU wrote it!  
Posted by [Dean Kukral](#) on Thu, 25 Aug 2005 16:04:03 GMT  
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"In other words if people had trouble telling apart even speakers, cartridges and preamps using blind testing, this would help prove the point of view that the tests are not an accurate way of showing audible differences." It seems to me if you were to define "audible difference," it would be what could be heard in a well-run DBT in an acoustically dead room. Of course, this oversimplifies the problem of directionality of speakers. You might have to take sampling points in different parts of the room. I think that "if people had trouble telling apart even speakers, cartridges and preamps using blind testing, this would help prove the point of view that" there were no audible differences between the things being measured.

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Subject: audible differences or not?  
Posted by [Dean Kukral](#) on Thu, 25 Aug 2005 16:19:44 GMT  
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Mr. V is talking about audible differences, not quality, as he ably points out below. Let us start with cables. Put on Romex, 16ga speaker wire, and \$100/foot silver cable. First, do you hear an audible difference??? In not, then the issue of quality is irrelevant!! If you DO hear a difference, then the rest is subjective as you point out. But, if you do NOT hear a difference, you can save a lot of money! (Of course, older people like myself may not hear a difference, while younger people may. This kind of factor along with statistical variation and room environment have to be taken into account in a well-run DBT.) To say that DBT's are "useless," is, welllll, is just silly.

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Subject: Re: You don't understand why DBT's  
Posted by [Manualblock](#) on Thu, 25 Aug 2005 19:09:20 GMT  
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Mr. Brines allow me to state catagorically that in as far as audio goes you do not appear in any way to be a "fool". I ask your indulgence because it is apparent that a conversation like this will never happen outside of ART and as such is a priviledge for me at least to participate. This cannot be an argument because I personally have no standing upon which to argue. I hold no advanced degree in Psycho-Acoustics or Physics and therefor rely solely on personal observation and extensive listening experience and exposure. My only reason for being hear is a love of music and home reproduction.If I read you correctly we seem to be at agreement at times and disagreement at other times in the discussion.It would seem to me that to assign differences in sound implies ranking's; in order to have a difference you must have a quality descision that implicates the difference.If I gave the impresssion that I personally required expected results I have mis-lead readers of the post. As per standard test procedure I would not know if a tube or SS device was used. Since there would have to be a certified difference between components to make the test of any use and since obviously one can hear the difference between tube and SS gear that alone seems to me to negate the purpose of the test; hence it follows my statement that the test is useless for any meaningfull conclusions.Program material; here we agree. I posted a while back concerning a session I was at where the SD speaker at test reproduced some material consisting of modern pop jazz/vocals and light chamber music to a startlingly musical level. But had a hard time with very good and well recognised recordings of older jazz and more complex classical stuff.That is what piqued my interest. The vast gap between ability regarding musical choice.My likes; I listen to tubes and vinyl but have SS and CD on hand. I listen to tubes and vinyl but that doesn't mean I like it; they are a PITA and expensive. I would much rather spend money on something else.Shootouts; well I can see some value because after all; there you are truth be told, I mean at some point you have to race the horse.So thanks first of all for taking this little opinion of mine seriously because I assure you I do yours.Then in simple language I don't believe the DBT tell's you anything at all; I think was what I was trying to say originally and it almost sounds like we agree on that point. I have referenced my personal believe in a reference standard for all things of quality. I hold that believe sincerely and without question. I think everyone knows what sounds good intrinsically, that while you may prefer one musical sounding unit to another the same as you would enjoy piano sonata's more so than violin concerto's you will always recognise a good unit from a weak one. I think that is a function of human nature and it is why we have it all over measurement systems and blind testing when it comes to deciding issues of sound/art/architecture etc. to be able to make those distinctions that unite opinions into critical determinants of universal value.

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Subject: Re: audible differences or not?  
Posted by [Manualblock](#) on Thu, 25 Aug 2005 19:27:10 GMT  
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That next to last statement you make; where you state what variations both statistically and environmentally must be taken into account in all DBT's is the difficult part for me. The possible

variants multiplied by infinite sets of conditions revolving around perceptual and cognitive modulations by the subjects; wheew, it's exhausting just to think of it. So how do they accomplish this Sisyphean task? Allow me not to appear patronising. There are so many possible variables just in the existing neural conscripts of each individual unique at the time of the test it just seems impossible. And I believe you create a musical artifact internally whenever you listen. That takes in the surroundings and mood et al. Who hasn't heard a song that seemed blase' initially only to become a favorite over time. That is the best and simplest analogy I can come up with. But like I say; nobody implies Caruso can't sing; or Renoir can't paint. So we know instinctively what is good. That I think is why you build your system over time and experience. Those requisites must be accepted and that waters down any effect of DBT's.

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Subject: obviously a reading problem on your part...  
Posted by [Mr Vinyl](#) on Fri, 26 Aug 2005 01:17:16 GMT  
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Show me where I said "You suggest that if someone cannot tell the difference in a DBT between copper cables and \$100/foot silver cables, then DBT is useless." I said... "If the above tests show that people can consistently hear differences between speakers, cartridges and even amps and preamp, then this would be a mark for the double blind testers." I am only suggesting that if people couldn't hear a difference between speakers in a double blind test then maybe the tests are not accurate for this kind of thing. That's all I said. I have no idea how a DBT would come out using speakers. Don't be so combative and try understanding the post before you jump to conclusions. You say... "I think that "if people had trouble telling apart even speakers, cartridges and preamps using blind testing, this would help prove the point of view that" there were no audible differences between the things being measured." So the test must be accurate no matter what the circumstances? So if in a double blind test people could not tell the difference between water and wine then there must be no difference? Makes sense to me.

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Subject: Re: Blind testing and what I would like to see done...  
Posted by [Mr Vinyl](#) on Fri, 26 Aug 2005 01:28:46 GMT  
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We are in agreement I think. Useless? I don't know about that. But I know I hear what I consider a significant difference between cables and amps. However I doubt I could consistently and correctly pick out these differences in a DBT. Does that mean I am just fooling myself. Maybe. Does that mean the tests are flawed? Maybe. Frankly I don't care if I am fooling myself or there is a real difference. If it sounds good to me then I'm happy. And it's money well spent.

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Subject: Re: You don't understand why DBT's  
Posted by [Bob Brines](#) on Fri, 26 Aug 2005 01:58:28 GMT  
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"It would seem to me that to assign differences in sound implies ranking's; in order to have a difference you must have a quality descision that implicates the difference."No. Absolutely not.This is a binary choice. 1=There is a difference, 0=There is not a difference. The choices are not A=It sounds good, B=It sounds bad, C=There is a difference but I like both systems, D=..... Quality is not an issue with DBT, only a detectable difference."If I gave the impresssion that I personally required expected results I have mis-lead readers of the post."Well, you said: "You get results that make your hair stand on end. Solid State amps suddenly sound best; CD's beat vinyl etc." Perhaps I misread this, but it sure sounds like you expect tubes to sound better than SS and vinyl better than CD's. This was the waving red flag that caused my perhaps impolite response. What sounds best is a highly individualistic, very subjective concept and each and every serious audiophile will have a different answer."Since there would have to be a certified difference between components to make the test of any use...."Again, no. If the difference was so large that there is general agreement upon casual listening, there is no need for a test. You are again making the mistake that a DBT is to determine which is best. It is not. The value of a DBT is to determine if a difference exists at all."Shootouts; well I can see some value because after all; there you are truth be told, I mean at some point you have to race the horse."This is pure opinion and my opinion differs. My speakers are designed for a very specific niche. When I demo them, I choose conditions that present the speakers in their best light. I choose amps, program material, SPL levels, etc. In any valid shootout, the conditions for all speakers have to be the same. This gives the real potential for all the speakers to sound crappy. No, it's best to listen to good audio equipment it a proper environment, then move on to the next room with a properly optimized environment.Bob

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Subject: Definition of DBT  
Posted by [colinhester](#) on Fri, 26 Aug 2005 12:46:07 GMT  
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From everything I remember about DBT, there is nothing that says the response must be pure binary (1/0 response.) Why are not answers A-D (reference your prior post) just as valid? Am I missing something?.....Colin

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Subject: Re: Definition of DBT  
Posted by [Manualblock](#) on Fri, 26 Aug 2005 14:34:14 GMT  
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Thanks for bringing that up. The other concern I have and I don't want it to appear confrontational so I will just state simply and honestly this; if you make a distinction between two units, that



distinction requires you have a basis of comparison. If that shows a difference then by definition a quality determination must be made. You may say you like both and they are just different; but with a difference by definition there must be good aspects and bad aspects assigned. Otherwise there would be no discernable difference to speak about. It's a judgement call indicating one is something that the other is not. That's a quality decision.

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Subject: Re: obviously a reading problem on your part...

Posted by [tomservo](#) on Fri, 26 Aug 2005 16:32:01 GMT

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Hi First, blind testing is useful because it can eliminate the inputs from the senses not in question. Your example of not being able to tell any difference between water and wine is a good one. In this case one is talking about what you can "taste" as opposed to "hear". So let's look at that, let's say by blind testing, you gradually diluted real red wine with tap water and you do this progressively until the people say there is no difference between it and water half of the time. Now, at this dilution, the question is since there is no statistical correlation one way or the other, does this mean it is the same as tap water? Also, what if your one of the people who can still tell there is wine present even though most can't? Statistically speaking, in the first question, it means that in that group, there was no actual correlation and so for that group (not individuals), there is statistically no "taste" difference. Allowing the subjects to "see" the shade of the liquid would certainly produce a vastly higher positive because they could also "see" that the water is slightly "pink", giving them another mental data point for the subjective judgement. Going further, if they watched the dispensing process they would "know" even more about what they were tasting and only those daydreaming would get it wrong. This part is what's wrong about "not" blind testing, you include many other inputs other than just "what you hear" and one cannot remove that subconscious bias, one can only test "blind" where you cut off from those other inputs. So what if your one of the people in that group that could reliably tell which was wine or water? You have (statistically) a greater sensitivity than the group had, but if one continued to dilute it further, you would reach a dilution where you could not tell which was which. At that point, even for you, there would then be no taste difference even though there were still X molecules of wine in the water. On the other hand, if you were allowed to see the water's color or you watched it being diluted and distributed, you could still "taste" which was wine. Also, in medicine where big money is at stake, it is well known that "doing anything" can produce a placebo reaction. Taking a "sugar pill" that is thought to be helpful medicine causes a positive outcome between 1/4 and 1/3 of the time. It is the act of "doing something" thought to have a specific outcome, that causes a false positive. In the case of drug testing, progress was VERY slow until blind testing was used to compare the result of the test drug against the placebo while no one knew which was which. In audio, big money or life and death is not the issue and in some ways getting to the bottom of things would not improve sales figures, so it is popular to cite the approach as flawed. I suppose it really is flawed too if sales is the measure of success and you make costly hifi trinkets I would put it more like this. IF you can't hear any difference between X and Y with your ears alone, when not knowing which was which ahead of time (blind), what are you really "hearing" when the differences are then audible "with" prior knowledge (not blind)? Your looking at the wine and watching it being dispensed that's all.. Tom Danley

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Subject: Re: obviously a reading problem on your part...  
Posted by [Manualblock](#) on Fri, 26 Aug 2005 16:49:30 GMT  
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Very good explanation. In audio; what exactly would your opinion be that describes what we are testing for? Just to see a difference can be correlated with what about the equipment. I ask you because you have a good grasp of how to explain this stuff.

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Subject: Re: obviously a reading problem on your part...  
Posted by [Bob Brines](#) on Fri, 26 Aug 2005 18:30:31 GMT  
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Tom touched on an item as to why you must do blind tests if the differences are small -- the placebo effect. Replace your 16ga zip cord speaker wires with megabuck boutique cables and give them a listen. Amazing! More detail, better imaging, firmer bass, etc. Or is it? I'll give you a dollar to a donut that in a DBT, you won't be able to pick between them. Why double blind rather than single blind? Well, the operator can give you clues as to which item is under test, either inadvertently or on purpose. Remember the Coke/Pepsi taste tests? The tester gave the testee the other guy's product first, then his, knowing that the testee would usually pick the last item offered. One would presume that there is no such collusion at an audio club meeting, but single blind offers the opportunity for inadvertent giveaways. Now, why shootouts don't work. Have you ever gone into a hifi store, auditioned something that sounded wonderful, but was absolutely unlistenabe after the second CD/record? The salesman biased your selection by playing HIS selection louder and with smiley-faced EQ. In the short time you listened, all of the psycho-acoustic clues brought attention to HIS selection, but you were not given enough time for your ears and brain to recognize that the audition was unfair. Now, I am not suggesting that anyone here at ART would intentionally bias an audition, but the audition time is going to be too short for your brain to process what your ears are hearing, and again, the environment and music selection will not show each of the participants in the best light. You need at least a half hour to get a fair handle on a system. So, sit down for a while and listen. Play your favorite CD's. Get a good feel for what the system sounds like, then move on. You don't need a base level to compare, you already know what the sound is that you would like to hear. You have to listen to a system long enough to see how it compares to the standard locked in your memory. Bob

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Subject: Re: obviously a reading problem on your part...  
Posted by [Manualblock](#) on Fri, 26 Aug 2005 21:17:00 GMT  
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I absolutely agree concerning the time required to adapt to a new system. I actually favor more than a half-hour since the first hour all your brain is doing is distinguishing artifacts of the sound that are most obvious. I have a question that begs the point of the discussion. Do you yourself feel

there is any merit or possibility of actualising the term audiophile; does such a characteristic exist in reality. I mean the superficial definition that says one can be adept at perfecting the awareness of quality of sound beyond what an untutored person would be capable of.

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Subject: Re: obviously a reading problem on your part...

Posted by [tom servo](#) on Fri, 26 Aug 2005 23:03:48 GMT

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Hi Good question. Most of the time I have had to do A vs B listening, it has been in loudspeaker or driver development. In that case, I eventually reached sort of a dilemma. After some time in development, one reaches a point where any change you make may well make a "difference" BUT often one then finds that the change actually "helps" some recordings but "hurts" others. In which case, one case has different flaws than the other but there is often no way to tell which one is actually more accurate (that is assuming accuracy is the target). By listening, your judgement A over B or B over A may depend entirely on what you play through them. Specific coloration's in a person's speakers can even shape their taste in music. At this point, I usually decided to go whichever way appeared to be the most accurate when considering the various TEF measurements. It is kind of funny too, many people think of speakers as being "pretty good" reproducing the signal, yet if compared to even junky electronics, most speakers (measured the same ways) would appear to be seriously broken AND they spread the energy out in time significantly (even before being put in a room). The problem is that some things that look like show stoppers in the measurements are hardly audible, other things are audible but are much more subtle in the measurement. I would not want to scare anyone away from listening tests just because they are not blind. In hifi just as it is in Pro-Sound, there is a huge degree of preconceived notion and expectation which is normally the result of a great deal of proper and costly marketing. Even if one is aware, side by side comparisons often show large differences in loudspeakers, large enough to clearly "hear" the difference between acoustically based and marketing based performance. For amplifier testing, on the live audio board amp shootout for example, when "blind" most (all but one) of the people (who were all in audio) couldn't hear any difference between most modern pro amplifiers. In a different blind test, through revealing horn speakers, no one present including myself could hear any difference between my Threshold Stasis and a QSC pl-236, until a medium volume, when the vastly larger power of the QSC was audible (in a positive way) in the dynamics. I used pro sound amps for "home" use from then on. Many modern tube amps (as opposed to the older designs) tend to have very significant harmonic distortion, levels well above what are clearly audible in testing. It also seems like pretty often the more exotic and expensive the amp is, the more exotic the reviewer's language becomes and the greater the distortion and poorer the bandwidth is too. Here, since many parts previously thought to be "bad" (like iron core inductors, transformers etc) have significant built in non linearity, many of these designs are refined by "taste", balancing all the "flavors" into a gourmet's reconstruction of the original input signal. Personally, as opposed to a guitar amplifier etc where the right sound is everything, a re-producing amplifier is supposed to be a "straight wire with gain", not create rich, warm tapestry with everything you feed in. The flip side is that Tubes can also be made to deliver low distortion AND can have a small distortion spectrum (both very desirable from an accuracy point of view). Do tube amps sound better? Is it because they are more accurate or are is

it euphonic coloration? I don't think one can make a blanket statement about that or much else, it depends case by case. Assuming that you have already past the point where differences are obvious, then what ever it is you want to find out by testing remember you need to at least have A or B to chose from. People have a poor acoustic memory, you can't have much time between A and B and remember you can be easily fooled by not matching the levels first. Listening for a fine detail improvement alone, after you have modified something is sort of like galloping really fast on a horse, unless you have 2 horses, there can't be a race or statistical winner, even if your unable to imagine anyone riding any faster. Does that mean that last little detail you modified helped? Maybe yes, maybe no, the only way to know statistically (as opposed to just an unshakable belief) for sure is to compare side by side, "mit and mitout" as they say it Bratwurst country north of me. When the differences are small enough, then you also have to remove prior knowledge and inputs from the senses unrelated to the pressure going in the ear holes. There is a surprisingly large amount of money spent on things where the difference "goes away" when the test is limited this last way. Strong motivation to discredit the method. Tom Danley "What if" the current "gas crisis" was actually some sort of real shortage, or was not so subtle "pressure" from the Arab world (OPEC), circumventing our "unbiased" news media, instead of just another big profit grab like the other gas crisis's in the past turned out to be? Umm.

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Subject: I can live with that  
Posted by [Dean Kukral](#) on Tue, 30 Aug 2005 00:09:06 GMT  
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We are in basic agreement that the tests are not perfect because of environmental factors; also, one should purchase what one likes not necessarily what is accurate. Thousands of tube-lovers can't be all wrong!

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