Subject: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 14:35:33 GMT
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After spending much time with my newly acquired Audio Critic magazines. I have been trying to figure out a logical reason why DBT would not work with audio components. I admit I am not very technically savvy on this subject, which is the reason for this post. I have come up with the following theory. Let's just suppose that the main difference between audio components (preamp, amp etc) is in their ability to portray dynamics. In other words what makes one preamp sound better than another, is that one is more dynamic on all levels while the other is compressing the musical peaks. If this is true wouldn't matching the levels of the preamps make them sound similar or similar enough where you could no longer pick out the more dynamic preamp in a DBT? This is hard to get across in a post so let me try to make it clearer. If one preamp is compressing the music and it's volume/level is matched with a more dynamic preamp using a sound meter then in reality what you are doing is playing the preamp that's compressing the sound louder than the dynamic preamp. So now in a DBT when you try to hear the more dynamic preamp you are easily confused because of the volume match. Hope that was clear. Can someone find fault with this idea? Sorry if it's simplistic but that's the reason I am asking. Thanks for your input in advance.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Manualblock on Wed, 30 Aug 2006 15:33:52 GMT
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I have a question; how come guitar players and piano players etc never need DBT to tell if something sounds good or if they can hear a difference; they just know and all of them agree on the good sounding stuff. Why is that?No one ever needed to compare a '56 strat to see if it sounded better than a new strat.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 15:46:37 GMT
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You either believe double blind testing is accurate or it is not. If it is not then why?

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Manualblock on Wed, 30 Aug 2006 15:57:05 GMT
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Well; is "Why" the right question? It is my understanding that for a truely usefull and psychologically sound result all possible variables must be held stable. Since it appears to me that our ability to even determine what all the possible variables are; and to be able to do that is under question then is any possible result of any usefull accuracy?I know Aczel believes it is; yet don't you find it a little puzzling that these DBT results almost never coincide with results that would provide a usefull set of data? Not to mention that the samples are always way too small for a true DBT study to have any validity. In other words it is almost always a wash regarding information that would prove anything one way or the other. Which brings us back to the guitar question. How do they all come to agree?

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Wed, 30 Aug 2006 16:24:31 GMT
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"If one preamp is compressing the music and it's volume/level is matched with a more dynamic preamp using a sound meter then in reality what you are doing is playing the preamp that's compressing the sound louder than the dynamic preamp. So now in a DBT when you try to hear the more dynamic preamp you are easily confused because of the volume match."Hi Mr. Vinyl,Dynamics have to do with managing the CHANGES in amplitude (or volume). So, to take your example, if we set both initial components to, say: 90 db. Then if one setup can go upto 110 db SPL without distortion ,and the other can go to say 120 db SPL without distortion (assuming a certain speaker system of course) then if the Program material has 115 db peaks, then one should be able to handle it better. SO setting the initial volume the same DOES NOT in any way mean one can handle peaks better than the other. Hope this helps-akhilesh

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Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Wed, 30 Aug 2006 16:33:15 GMT
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All double blind testing does is it takes away the knowledge of what components are being changed, both by the tester and the subject. It eliminates all sorts of biases that can then creep up. It is widely accepted in science, and even in areas like wine tasting. The opponents of DBT in audio (well the more rational ones who have spent some time thinking about this anyway) argue that somehow DBT forces an "artificial experience" on the listener, in other words, the process of being tested destroys the highly subjective and somehow ephemereal emotional experience of listening to music. My argument to that is: why not just cover the components in anonymous looking, unmarked grey boxes, with little slots for the cables to go through and then let the subject use them as they would any visible component, for as long as they like (a few months even). Anonymous grey boxes don't cost that much. I think that vested interests in audio (most manufacturers, and the subjective magazine reviewers//editors) simply will not do this because

they are scared of what they might find. Otherwise, don;t you think they;d be doing this & shouting the results all over the rooftops?So they attack DBT. It's amusing to see. Aczel is the only one who has no fear of speaking the truth as he sees it. -akhilesh

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Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 17:48:41 GMT
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Hmm, you may be right but bare with me if you don't mind. If one preamp has better dynamics and can hit 90db on say drum hits. The other preamp at the same volume can only hit 80db on drum hits because it is compressing dynamics. Then the sound meter would show 90db on drum hits for the "dynamic" preamp and 80db for the compressed preamp. Therefore to match the preamps you would turn the volume of the lesser preamp up till it also read 90db on drum hits. This would make all the other sounds the preamp produces louder than the Dynamic preamp. See what I mean? Hard to convey. Or maybe I'm wrong. Thanks for your input. Much appreciated.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Wed, 30 Aug 2006 18:14:47 GMT
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HI Mr Vinyl,To match volume, you usually do it on a predetermined sine frequency: the norm is 1 khz. So we don't do it using program material like drun hits, rather on a preset pure frequency like a sine wave. If the SPL was 85 db for the sine frequency, the drum hit would probably be a bit higher in SPL, say the true value was 100 db. IF there was compression that was due to the component under study, then in one case the drum hit would register at 96 db, and in the other at 100 db. Or itwould do 100 db for both, but there would be more distortion. -akhilesh

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Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Leland Crooks on Wed, 30 Aug 2006 18:18:44 GMT
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How do they all come to agree?I play. It's almost indefinable. My son and I own identical guitars. Mines a couple of years newer. Dillion ripoffs of PRS guitars. His played like a dream so I went and found one for myself when I started playing electric again. Here's the deal, mine sounds better. The differences are very subtle, but are there. Real players can get whatever they want out of about any axe. It's more about the fingers than the guitar.I also think with the old stuff the quality of the wood was so much better in the 40's and 50's. The body composition does change the tone of an electric, just not as much as an acoustic. You just can't acquire the kind of lumber

they took for granted. Also, tube amps absolutely smoke solid state, if you're looking for nice sound. Solid state is fine for ultradistorted.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 18:39:00 GMT
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Hi MB,Listen I'm sorry but I find it very hard to discuss anything with you. I find your posts to be antagonistic and full of half truths. I don't mean to be nasty. It's not my intention. Let's just agree to disagree. Ok? I really don't want every post I make turned into a heated argument. Sorry if I am jumping to conclusions.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 18:50:23 GMT
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Hi Akhilesh, I understand what your saying now. But let me ask one more question. I don't know if you have ever done this. But if you matched the sound of two preamps using your predetermined sine frequency of 1khz. Does that mean that any other frequency you play through the preamps in question would also be matched in volume? Or would the preamps only be matched at that single frequency?Thanks again.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Manualblock on Wed, 30 Aug 2006 19:07:57 GMT
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Sure; except ; Waaa? Was there a half-truth somewhere in that question? I find it a legitimate question; sorry you can't see that. According to standard DBT formatt ten samples don't make a truth.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by colinhester on Wed, 30 Aug 2006 19:07:59 GMT
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That's why one is concerned about flatness of frequency responce. Did you read the review on the Boulder amp Azcel uses as a reference? This is dead-nuts flat. I'm still going through "The Audio Critic." What a great magazine!! I don't agree with him on several issues (eg., tube amps being expensive tone controls.) More later.....Colin

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Subject: Re:Thanks For a reasonable response to a reasonable question LC
Posted by Manualblock on Wed, 30 Aug 2006 19:09:08 GMT
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I have always wondered why the other side disregards that simple truth.

Subject: What is standard DBT format?
Posted by colinhester on Wed, 30 Aug 2006 19:09:26 GMT
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Got reference?

Subject: Re: Ohh; Sorry ; I didn't mean to jump the thread
Posted by Manualblock on Wed, 30 Aug 2006 19:10:28 GMT
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Pleae excuse my rudeness and see my post further below.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Wed, 30 Aug 2006 19:26:32 GMT
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Ok, for your benefit only. I don't want to debate these things but I think these statements you made are half truths. "I know Aczel believes it is; yet don't you find it a little puzzling that these DBT results almost never coincide with results that would provide a usefull set of data?" "Not to mention that the samples are always way too small for a true DBT study to have any validity. In other words it is almost always a wash regarding information that would prove anything one way or the other." "Which brings us back to the guitar question. How do they all come to agree?" Hope that helps.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Manualblock on Wed, 30 Aug 2006 20:32:19 GMT
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And what in that statement would infer to you an argument outside of taking a questioning position regarding exactly what would constitute a proper test venue?I express that the samples are too small to have any validity; not a judgement call by any means but a simple fact.The consideration of how many of the DBT test's end in a common result of either no success or a simple stand-off has always seemed peculiar to me and seems to address exactly the question you asked. Why is there not more co-relation of results with the tests? Thats my question irregardless of what position Mr Aczel takes or even if this is an audio issue. It is a puzzling thing to me to see many; in fact most musicians agreeing on what instruments are most musical yet in a DBT test on audio gear there is no commonality at all. No confusion there; I merely find it strange and also see it as a very important aspect of the questions you asked. I believe you read my response as an attack on Mr Aczel; I am way past that. I had my say and am done. These issues I bring up in addressing your question originally have been of interest to me long before I ever read or heard of The Audio Critic. I offered them in response to your questions as an example of how these subjects hold an interest for all of us who have this hobby. And the issue of "Why" muscicians are of like mind in this is you might admitt a perplexing one; at least to me and seemed likewise to you in reflecting on your question.

Subject: Re: What is standard DBT format?
Posted by Manualblock on Wed, 30 Aug 2006 20:34:59 GMT
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Earl has one example in his book on acoustics. You can find it there. I ain't hunting down the page so don't ask.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Manualblock on Wed, 30 Aug 2006 21:53:23 GMT
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Actually if the boxes are in view then it wouldn't be DBT as I know it. Usually they do it from behind a curtain or from another room. At least in clinical settings they do.There are many things that can affect the sound; humidity; ambient noise level; time of day; etc etc it is almost impossible to equalise every aspect of a test.Then of course you must allow for personal issues; are they taking medication; have they been under stress lately etc etc. All this affects perception.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by wunhuanglo on Wed, 30 Aug 2006 23:24:06 GMT
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I would suggest analternative way to match levels - I'd put a voltage to an input and monitor the voltage at the output - I'd turn up the volume (or lower the pad) until the same voltage in gave the same voltage out on both preamps.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Bill Martinelli on Wed, 30 Aug 2006 23:33:23 GMT
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I think DBT is a fine theory. Its hard to prove to someone that cost, fit and finish don't have an affect on your opinion. After all, what wold the purpose of 'marketing' be if appearance and cost didn't matter? Blind testing is more difficult for audio since the following consideration must be made. first and foremost, louder is generally perceived as a better sound. I try and make experiments with SPL settings equal, measured at key points in the music. With gear like amps, decks, stages, wires and preamps, mostly sound level is the only concern and its not a tough adjustment. with speakers and cartridges its tougher because I find there is wider gap in efficiency's. buts still not too difficult. Lastly speakers need placement. they cant sit in the same place and be switched speedily. They also may sound their best in a different position. If this is the case then its great since they don't need to be in the same spot as another pair. Anyway. DBT is great. Do it! the only people who fear it are people who have huge coin in equipment. maybe a vendor or two.To further your test experiments. you should listen at greater lengths. come back the next day to what you thought was great. listen for a few day, to different formats of music. then switch back. and back again. Don't forget some people just get tired of the way a system is voiced. then its all changed out and re-tuned. Are you sure its better? or just different, and you like it better now.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Thu, 31 Aug 2006 00:17:01 GMT
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"if you matched the sound of two preamps using your predetermined sine frequency of 1khz. Does that mean that any other frequency you play through the preamps in question would also be matched in volume? Or would the preamps only be matched at that single frequency? "They would not be matched in volume at all frequencies. That's becuase different components have different frequency curves. Only if the frequency curve were so flat as to have negligible differences would thhey pretty much match. Interestingly, most decently made solid state amplifiers and preamplifiers do have relatively flat frequency curves, with negligible difference. Hence they DO sound alike. So your theory there is correct. That is also what Aczel says, by the

way. It's common sense if you ask me...if two components measure alike, they will sound alike. -akhilesh

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Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Thu, 31 Aug 2006 00:23:45 GMT
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"I don't agree with him on several issues (eg., tube amps being expensive tone controls.) "HI Colin,I agree with you there, Aczel does tend to be allergic to tube amps. we have to understand that in the early 1990's tube amps were just coming out, and manufacturers were charging HUGE (thousands) dollars for these amps. there was then (surprise!) a lot of snake oil, as there is now too, but now we have a choice, and can get tube amps at a relatively cheapre price of only a few hundred dollars. However, in one of the older issues, in the letters section, metasonix (he has posted here on ART too, and owns a company that makes guitar amps) tells him that tube amps are not just "tone controls" (non flat frequency curve) but also produce slight amounts of euphonous distortion, and many folsk, like guitar players for example, LOVE this tone of tube amps. Aczel agrees to that in the response to the ltter, and then moves on. In my opinion, (and I pretty much use SET amps and tube amps in general), tube amps tend to make the music sound better to me. But I would neve rkid myself that they have higher fidelity than solid state. IN some cases, they may actually "correct" the recording/mastering choices that may make purely reproduced material sound harsh or brittle, and actually make it sound better. Just my 2 cents. -akhilesh

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Subject: Re: What is standard DBT format?
Posted by akhilesh on Thu, 31 Aug 2006 00:27:30 GMT
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HI Colin,In most research methodology classes, DBTs are taught. There is a standard protocol, depending on the area (medicine, social science, etc). It's really not hard at all to devise a rigorous, scientifically valid DBT test for audio component comparison. Take it from me. Except it will probably kill most of the high end audio industry. -akhilesh

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Subject: Metasonix
Posted by akhilesh on Thu, 31 Aug 2006 00:38:38 GMT
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HIs name, BTW is Eric Barbour. IN case you were looking for the letter in one of the back issues. -akhilesh

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Subject: Re: What is standard DBT format?
Posted by colinhester on Thu, 31 Aug 2006 00:45:44 GMT
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I'm somewhat familiar with DBT and think it's a superb idea. I was just wondering what the "standard" was for the audio industry. I take it there is not one.....C

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by colinhester on Thu, 31 Aug 2006 00:49:04 GMT
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You're right about the timing. The early '90s was not the era of SETs or more rightly called the S-E-whats?Intersting to compare and contrast The Audio Critic with Sound Practices, which was published at roughly the same time - complete opposites in just about every respect...C

Subject: And I love Sound Practices too
Posted by akhilesh on Thu, 31 Aug 2006 00:59:15 GMT
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They ARE totally opposite. I like Sound Practices a lot also. Great to read about the development of the whole high eff speaker/SET movement. The passion in those pages is infectious. Makes me want to grab a soldering iron and start winding a transformer! Ther eis even a cool haiku by a japanese SET manufacturer, that I printed out. Thanks for recommending it to me!-akhilesh

Subject: Re: What is standard DBT format?
Posted by akhilesh on Thu, 31 Aug 2006 01:07:38 GMT
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There sure is not. But you'll find ample magazine articles and online posts as to why some how DBTs just don't apply in the area of musical appreciation.-akhilesh

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Bob Brines on Thu, 31 Aug 2006 10:53:40 GMT
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Throughout this discussion, there seems to be an expectation that DBT can determine "better". It cannot. DBT can only determine "different". Take the example of level setting: If two pieces of equipment are set to the same level with a 1 kHz sine wave and then the test signal causes one to compress and the other not, then a difference will be heard. That the "louder" piece of equipment may be perceived as "better" is irrelevant. The test is a success if a difference is heard.Bob

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Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Thu, 31 Aug 2006 11:11:16 GMT
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Yes, you are correct. Better would be subjective. I used the word better only as an example. Apparently though, know one has been able to hear a difference in a DBT between audio components at all (amps, preamps). According to P.Aczel. And according to any DBT I have read about. Since I believe there are differences in sound It prompted me to see if myself or anyone else could come up with a scientific reason for this. This is the way I started thinking about dynamics as a possible cause. Unfortunately it would seem that I was wrong.Thanks for clearing that up.

Subject: Re: Just Pick Up A Basic Psychology Textbook..
Posted by Manualblock on Thu, 31 Aug 2006 11:31:45 GMT
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It's all in there. Find the chapter on research and look for Randomised Control trials. It is part of every research course taught in every university clinical trials class.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Thu, 31 Aug 2006 12:06:15 GMT
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Very interesting. So why not use white noise to set volume? Why just use one single frequency? Not that this would matter. Just curious.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Thu, 31 Aug 2006 13:47:10 GMT

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I agree Bob. "better" is subjective. Logically "different" is a necessary requirement before something sounds "better". So, if they are 'not different" then neither is "better". -akhilesh

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Thu, 31 Aug 2006 13:52:47 GMT
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"So why not use white noise to set volume? Why just use one single frequency?"Because you have to set it to within 0.1 db. Harder to do with white noise. -akhilesh

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by GarMan on Thu, 31 Aug 2006 20:07:57 GMT
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Sure, DBT can determine different. But so what. DBT assumes that sound it the only thing that matters. You, I, everybody knows that in reality, that's not the case. As much as most of us want to deny it, we're constantly making decisions on equipment based on factors other than sound.I'm not saying that people are willing to ignore the lousy sound a component just because it's shinier, pricier, exotic, hi-tech, low-tech, simple, sophisticated, etc. But with sound quality of most equipment available sitting in the same ballpark, and very few of them being objectionable, how something sound does not alway sit at the top of the decision tree.gar.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Bob Brines on Thu, 31 Aug 2006 20:11:32 GMT
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"Apparently though, know one has been able to hear a difference in a DBT between audio components at all (amps, preamps). "I couldn't disagree more strongly. A low-powered SET sound very different from a high-powered SS amp Two gainclones using the same chip and topology can sound very different simply because they have different power supplies. There is no way that these two examples wouldn't be declared different in a DBT.Where DBT can go seriously astray is if the participants are asked to choose which piece of equipment they prefer. The participants are very likely to make the "wrong" choice. DBT can never be used for preference.Bob

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by Mr Vinyl on Thu, 31 Aug 2006 21:37:37 GMT
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Hi Bob,It sure would make for an interesting DBT. If you ever see one with a low powered set vs SS amps let me know. Most DBT's I have read about try to determine if a difference can be heard. Not which one sounds better. But saying there is no way someone would be fooled in such a test and actually doing a test are two different things. For the record I would think I could hear the difference too. But I am not positive.

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Fri, 01 Sep 2006 12:34:27 GMT
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I agree with that. My own purchases are testimony to that!-akhilesh

Subject: Re: Can someone help me critique this theory I have been formulating?
Posted by akhilesh on Fri, 01 Sep 2006 12:37:25 GMT
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We can always try home based DBTs. Just make sure the volume is matched within 0.1 db (so you need a very accurate SPL meter) or within 0.01 volts (so you need a DMM) and it is double blind, so the person making the changes is different from the person conducting the test who is of course different from the subject. So at the minimum we need n+2 people, where n is the number of subjects. -akhilesh

Subject: Re: And I love Sound Practices too
Posted by colinhester on Fri, 01 Sep 2006 15:34:18 GMT
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...and thank you for the Audio Critic recommendation. It's sad to see the "discussions" above turn so close-minded. ART used to be friendly place, but that has certainly changed. AA is looking pretty tame about now .....Colin