TEXAS TECH UNIVERSITY SCHOOL OF LAW
Introduction to Intellectual Property
Fall 2012

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FINAL EXAMINATION

Write your exam number here: _____

All exam materials (including this booklet and your response) must be turned in at the end of the period. You will not receive credit unless you return this booklet with your exam number written above. Do not turn the page until instructed to begin.

Notes and Instructions

1. Assume that today's date is December 13, 2012.
2. You may write anywhere on the examination materials — e.g., for use as scratch paper. Only answers and material recorded in the proper places, however, will be graded.
3. Your goal is to show your mastery of the material presented in the course and your skills in analyzing legal problems. It is upon these bases that you will be graded.
4. During the exam: You may not consult with anyone – necessary communications with the proctors being the exception. You may not view, attempt to view, or use information obtained from viewing materials other than your own.
5. The only material to which you may refer during the exam, other than this exam booklet, scratch paper provided as part of the exam administration, and any special references specifically authorized by the School of Law administration for you as an accommodation, is a "reference sheet," consisting of a single 8.5-inch-by-11-inch sheet of paper, upon which anything may be written and/or printed, including on both sides, front and back. You may not consult or access any other piece of paper. No materials may be shared during the exam.
6. After the exam: You may discuss the exam with anyone, except that you may not communicate regarding the exam with any enrolled member of the class who has not yet taken the exam, and you must take reasonable precautions to prevent disclosure of exam information to the same.
7. This exam will be graded anonymously. You may not waive anonymity. Do not write your name on any part of the exam response or identify yourself in any way, other than to use your examination I.D. number appropriately. Self-identification on the exam will, at a minimum, result in a lower grade, and may result in disciplinary action.
8. All facts take place in the United States, and all questions refer to United States law, unless otherwise noted. Except where a question (including the responses offered therefor) specifically identifies a real state (e.g., by mentioning "Texas," "New York," etc.), you must answer the questions based on the federal law, prevailing common law, and typical state statutory law in the United States, including all rules, procedures, and cases as presented in class, as well as, where appropriate, the theory and history discussed in class.
9. A reference to a "patent" is a reference to a utility patent, unless otherwise specified.
10. All exam materials, including this booklet, any scratch paper you use, and your answer sheet, must be turned in at the conclusion of the period for taking this exam.

For multiple-choice questions:

11. **The multiple-choice portion is worth approximately 1/3 of the overall grade.**
12. Each correct answer is worth one point. There is no penalty for incorrect answers.
13. Choose the most correct answer based on the materials assigned and presented in class. Each question has only one most correct answer. For example, where choices (a) through (d) are correct and choice (e) is "All of the above," the last choice (e) would be the most correct answer and the only answer that will be accepted. Where two or more choices are correct, the most correct answer is the answer that refers to each and every one of the correct choices.
14. Subsequent to the exam's administration, in the sole discretion of the instructor, if error or irregularity is discovered, any affected question may be thrown out, or alternative answers may be given credit.

For the essay portion:

15. **The essay portion is worth approximately 2/3 of the overall grade.**
16. Note all issues you see. More difficult issues will require more analysis. Spend your time accordingly.
17. Organization counts.
18. Read all exam question subparts before answering any of them — that way you can be sure to put all of your material in the right place.
19. Be complete, but avoid redundancy. By way of example, do not repeat the exact same analysis with substituted parties. Computer users should probably not use the cut-and-paste function. Instead, to the extent called for, you may incorporate analysis by reference to another portion of your answer.
20. Feel free to use reasonable abbreviations.
21. **The word limit for your response for the entire essay portion of the exam is 2,500 words.** Do not exceed the word count. You are responsible for ensuring that you do not exceed the word count, whether you are handwriting or typing on a computer. Material written in excess of the word count will not receive credit.
22. Bluebooks: Make sure your handwriting is legible. I cannot grade what I cannot read.
23. Computers: Please clearly label each subpart of your answer.

24. **Good luck!**

[MULTIPLE CHOICE QUESTIONS OMITTED]

ESSAY

Cans of Cool

IN THE BASEMENT OF THE STUDENT UNION, in the studios of student-run radio station KRCT, is where Julia Jantzar and Dennis Dedesko first became friends. Both students at Ridgefield College of Technology, Julia was a double major in physiology and electrical engineering. Dennis was a fine-arts guy with a minor in computer science. But the one thing they had in common was that they were both audiophiles – people with an extreme interest in high-fidelity sound reproduction. Audiophiles might make some lifestyle choices that we wouldn't be comfortable with – like selling their car for money to buy a pair of headphones. Even in college, both Julia and Dennis had multiple pairs of headphones costing four figures each. And they definitely weren't rich. Which is why they spent so much time at KRCT, sitting on the floor, trading their headphones back and forth: They couldn't afford to do anything else.

Having graduated in 2012 – with the job market still lousy – Julia and Dennis couldn't start the careers they wanted. So they stayed near campus. Julia was able to get a part-time job as a lab technician at Ridgefield's Physiology Laboratory. It paid okay, and she didn't have to sign any kind of contract, meaning she could walk away from the job any time she wanted. So while it wasn't the kind of job that made the most of her education, she was thankful to have it. Dennis, meanwhile, pulled part-time work as a barista at a coffee house across the street from campus. In their off-time, Julia and Dennis mostly liked hanging out together listening to music. When they weren't together, they pursued separate hobbies. Dennis liked creating small polished wooden bowls. His specialty was to produce them in a unique shape that resembled a smooth, three-dimensional paisley, or a twisted-teardrop shape. Julia, on the other hand, was more bookish. She spent her extra time reading books and articles on neuroelectrophysiology – the electrical functioning of the brain and nervous system. It was interesting to her – besides, she was thinking about applying for Ph.D. programs; so, she figured, she might as well get started on the literature.

One day when they were hanging out at Julia's apartment, Dennis and Julia talked about how frustrated they were with internet radio stations. "You'd think they would find better ways to suggest new music that you'd like," Dennis complained.

"Yeah, if you click thumbs up or down enough times, you can eventually get better results. But you can't register how much you like or dislike a song. And even if you like a song when you are in a certain mood, it doesn't mean that you always want to listen to it," Julia mused.

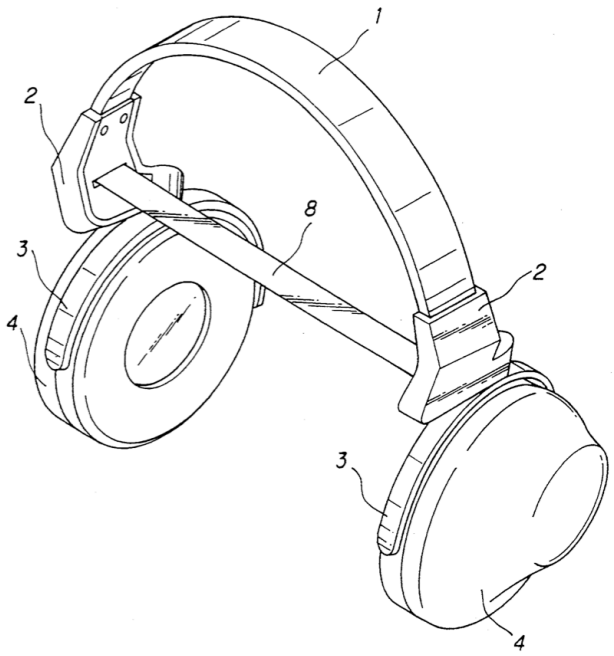

Fig. 1: Headphones, or "cans" as they are sometimes called, can allow the user to hear exceptional detail in an audio recording. Parts of a standard pair of headphones include the headband (1) and the cup-shaped unit housings (4).

"Well, Julia, it's not like the software can read your mind," Dennis said. "What would you want? Some kind of mind-reading headphones?"

"Dennis! That's it! You're a genius!" Julia shouted. "Mind reading headphones!!!"

Julia explained to Dennis what she'd been learning in the field of neuroelectrophysiology and how she could apply it: After gathering data and doing some calibration, it should be possible to use electrical field potentials recorded from a person's brain – using pick-ups in the headphones – to determine both the person's mood and the satisfaction experienced from the music. That information could then be fed into a computer algorithm loaded with a reservoir of data about various songs along with experimentally validated information about listener reactions to those songs when in a certain mood state. From there, just apply a matrix-based analytical approach and the program could prescribe the next song for the listener. It would work similarly to online shopping sites that make recommendations based on other shoppers with a similar browsing and purchasing history. (And current online music listening services work much the same way as well.) But what would be radically different here would be the direct input of brain electrical signals: That would be a much, much more rich data stream than simple binary data points such as "thumbs up," "thumbs down," or "item purchased." And a radically richer data stream would mean radically more perspicacious recommendations.

Dennis and Julia immediately made up their minds to try to build a working prototype.

The next day was Wednesday, when Ridgefield Tech was having its weekly surplus property sale. Dennis and Julia headed to the warehouse and found some old electroencephalography equipment. They took it back to Dennis' garage apartment and set to work wiring it into a computer-interface and attaching pick-ups inside the headband of a pair of headphones. They wired the pick-up leads into a circuit board which fed the information to a computer, which then recorded the brain-waves side-by-side with information about the music. Then Julia and Dennis took turns listening to music and registering their moods and reactions. They cross-calibrated with the EEG data and started writing computer code.

Fig. 2: An electroencephalogram (EEG) records the electrical activity of the brain. The tiny voltage fluctuations, varying in frequency and amplitude, result from ionic current flows within the neurons and are measurable with electrical pick-ups placed outside the skull. If the activity is the result of a stimulus – such as music – it is said to be "evoked."

Within a few days, they had the rudiments of a working system, which they called EvoFreq for "evoked frequencies." They tested it on themselves with a few dozen songs. It was crude, but it worked. To achieve EvoFreq's full potential, however, they realized they needed much more data. Actually, they needed two kinds of data. First, they wanted as much general human brain-wave data as possible to form a baseline. That way they could better filter out the background electrical potentials and focus on the electrical potentials evoked by the music. They called this the "baseline data." Second, they needed more electrical-potential data evoked by music that was

correlated with particular songs. They called this "evoked correlated data" or "EC" data.

Julia and Dennis each tried to obtain some baseline data. Julia took a hard drive into work with her and downloaded nearly a terabyte's worth of brain-wave data stored on Physiology Research Laboratory computers that had been collected over the past two decades by Eliot Enburke, a professor who was one of the nation's leaders in electroencephalography. Julia didn't ask permission, but she didn't need to in order to get access – it was downloadable from any computer in the lab.

Dennis managed to find a commercial supplier of brain-wave data: Hexetron Health, which offered something called the Neuronext database. Unfortunately, the data was behind a paywall – that is, you had to sign up and pay for a subscription in order to get access to the data. Dennis was going to buy a subscription, but it was pricey. So he decided to look around on the internet to see if anyone had posted it for free. And he found exactly that on a website created by someone who pseudonymously identified himself as "Pirate Phil."

Welcome to Pirate Phil's Website!

Hi there! My name is Pirate Phil, and I created this website as my legacy to all of humankind. Just a few weeks ago – although now it seems like a lifetime ago – I was diagnosed with stage-IV glioblastoma – a very fast moving brain cancer. My prognosis was that I had less than six months to live. Naturally, I wanted to do my own research on my cancer, and I quickly found one of the world's leading databases of brain-cancer information: Hexetron Health's Neuronext database. Unfortunately, you have to pay Hexetron to get access to this information. In fact, for an unlimited-use license, you must pay millions of dollars! But for just $12,000 – not that that's cheap – they offer a "limited educational/personal" license. It gives you access to the data on the condition that you use it only for personal use – not for research with any possible commercial applications – and that you do not re-distribute it. And guess what? They take credit cards! So I put it on my American Express. (I won't be able to pay it off, but at this point, I'm not really worried about ruining my credit rating! Besides, think of the money I'm saving by not finishing college!) The links are below, along with links to the poetry I've written since my diagnosis. I know the poetry's not as valuable as the science data, but I felt like leaving something more personal behind. So enjoy it all. And if you feel guilty about having this access for free, then make a donation to a cancer charity. Or don't feel guilty! Give my regards to the future!

Yours very truly,
Pirate Phil

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Hey all – This site is a mirror. Pirate Phil died last spring. I anticipated
that his web-host account would be turned off if no one was paying the bills
(which did happen, eventually). To keep this site alive, I archived it and then
made it available from my host server. I've also updated it. I'm hosting Pirate
Phil's poetry locally on this server, but I'm only linking to the Hexetron data
which you can download peer-to-peer. Best wishes, Buccaneer Bill
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Fig. 3: The website that that enabled Dennis to download the tarball of Hexetron EEG data.

Thanks to Pirate Phil's site, Dennis was able to get all the Neuronext brain-wave data as a tarball,[1] downloadable via the BitTorrent peer-to-peer file-sharing protocol. (Although Dennis was happy to get the data for free, he found himself making a little donation to the National Brain Cancer Foundation after reading Pirate Phil's story.)

For the second kind of data – the EC data – Dennis and Julia gathered their own compact discs and vinyl records, and they started loading them onto a hard drive and indexing them. After several all-nighters, they had more than 10,000 songs loaded up into the computer in their test rig. After wiring up the electroencephalographic headphones, they dubbed the machine the EvoFreq Alpha. Now they needed more brains. So they began inviting friends and acquaintances over to the garage to plug in and find their groove. After about 40 people had tried the system, there was enough data for the algorithms that the performance of the system was quite astounding. It was the 43rd person to use EvoFreq who first said, unprompted, "I feel like it's reading my mind!" The 45th reported, "The machine knows what song I want to listen to next better than I do!"

To go beyond their circle of friends and acquaintances, Dennis brought the EvoFreq Alpha to the coffee house he worked at so that people could plug in while they sipped lattes and worked on their laptops. Since Dennis was too busy frothing milk to take notes of people's feedback, he asked patron-testers to make comments on Dennis' publicly accessible Facebook page.

After the EvoFreq's algorithms had access to data from a total of 200 people, the performance of the machine was leveling out somewhere north of incredible. So Dennis and Julia decided it was time to take the next step and start producing units for sale. They began developing a package called the EvoFreq Mark I, consisting of electroencephalographic headphones packaged with software for a user to install on a personal computer. The user-installed software was relatively simple. It consisted of a very basic music-player program that, to work, required an internet connection for communications with the EvoFreq server. The user-side software collected the brain-wave data from the headphones, did some first-level processing and compression, and then sent that data to Dennis and Julia's EvoFreq server along with a list of all the songs that were on the user's computer. The server would then run the algorithms to determine what song to play next, sending the result to the client-side program on the user's computer, which would then play the song. The great advantage to keeping the algorithm processing on the server-side was that it would allow Julia and Dennis to accumulate even more data on brain waves, increasing the ability of software to pick great songs. While this set-up meant the Mark I was limited to using the music already loaded on the user's computer, it did create a list of recommendations for the user of additional songs that would be worth acquiring.

Fig. 4: Denon AH-D7000 headphones. You can see the Denon logo on the cup-shaped unit housings. Retail price: $1,000. How badly do you really need a car?

To create unique headphones for the Mark I, Dennis and Julia purchased Denon AH-D7000 headphones to start with. Then they customized the Denons by adding a signal processor,

[1] A "tarball" is a single archive file that, when opened, contains multiple internal files. It allows the transferring of large volumes of files in a single download.

electrical pick-ups inside the headband, and a USB connection for the computer. Then, to make the headphones unique to the EvoFreq brand, they decided to replace the cup-shaped unit housings with something different. Julia had an inspired replacement: Dennis' paisley shaped bowls. Julia was worried that Dennis wouldn't want to use the bowls, since he regarded them as works of fine art, but once Dennis saw them installed into headphones, he was completely enthused. The awesome looks had a tradeoff, however: The paisley concavity affected the sound of the headphones slightly, making the audio, in Julia and Dennis's judgment, "warmer" and more "liquidy." But the effect was slight, and it arguably was an advantage.

Fig. 5: A simple paisley shape – also describable as a twisted teardrop. This is the shape of the wooden bowls that Dennis made, which were used on the EvoFreq Mark I headphones.

Fig. 6: A strip of the paisley fabric, designed by Rem Renard, that Julia and Dennis glued onto the top of the headband of their EvoFreq headphones.

To customize the headphones further, they bought some cool paisley fabric from the craft store and glued it on top of the headband. There had long been an association between paisley patterns and music. Paisley prints were popular during the Summer of Love in 1967 – which in turn was associated with artists like the Beatles, Bob Dylan, and Jimi Hendrix. An even closer tie was Paisley Park Records – a record label started in 1985 by recording megastar Prince, which was active until 1993. Yet no one had ever used paisley as a motif for headphones before Dennis and Julia.

With the first unit manufactured, Dennis and Julia offered the EvoFreq Mark I for sale through their website. The Denon AH-D7000 headphones were so expensive, Dennis and Julia decided to wait to sell their first unit before they would manufacture a second. With fingers crossed for good luck, they listed the EvoFreq Mark I for a price of $2,000. Astoundingly, the first Mark I sold within five minutes. Then the next sold 30 seconds later! Before they could take down the listing, they already had orders for nine! Clearly it was time to raise the price. They relisted a single unit – specifying that it was the only unit in stock – and offered it for $10,000. It sold immediately! Before they got to work on producing the nine additional units they would have to ship, they thought to check the audiophile blogs. The EvoFreq Mark I was a bona fide sensation. Everyone was talking about it, and Dennis and Julia were amazed to see that some of the headphones they'd committed to ship were already being offered for re-sale for as much as $80,000! It was right around then that their cell phones started ringing. The first call was from a venture capital firm proposing a multi-million-dollar investment to get the headphones into wide-scale production.

But not all the attention was good. They quickly received an e-mail from the legal department of Congvay Corp., manufacturers of EV-FreqFit™ ear buds – cheap in-ear headphones that some airlines give away free to coach passengers on long flights. The letter claimed that "EvoFreq" infringed Congvey's EV-FreqFit™ trademark.

Well, this was a problem, but, in a sense, it was a good problem to have. It meant they had hit the big time. One thing was clear. It was time to talk to a lawyer.

That's you.

QUESTION
Word limit: 2,500 words

Analyze the parties' legal positions and explain how you would advise Julia and Dennis. What do they have that is or could be protected by intellectual property law? What steps should they take – if any – to get the full benefit of what the law will allow them? (If there is anything they should do by a certain date, please explain that as specifically as possible.) Do they face any potential liability? Also, did Pirate Phil incur any liability? How about Buccaneer Bill?

Organize your response as follows, clearly labeling the subparts:

Subpart A: Discuss any issues concerning copyright and, if applicable, moral rights.

Subpart B: Discuss any issues concerning patents and trade secrets, and, if applicable, any sui generis rights or other forms of IP protection for inventions, industrial designs, or the like.

Subpart C: Discuss any issues concerning trademark (including trade dress, unfair competition, and related doctrines).

Subpart D: If there is anything else you wish to discuss, which does not belong in any of subparts A through C, please put it under this Subpart D.

A few things to keep in mind: The subparts will not all be given equal weight. The subpart structure is provided for organizational purposes only. Thus, it may be entirely appropriate for one subpart to be answered with considerable brevity even as other subparts demand detailed analysis. Pace yourself appropriately, and plan ahead to put information where it belongs.

Also, avoid needless repetition. Do not repeat the exact same analysis with substituted parties. Computer users should generally avoid the cut-and-paste function. You may incorporate analysis by reference to another portion of your exam answer to the extent appropriate.

A few suggested abbreviations for your answer:

BB	Buccaneer Bill	HH	Hexetron Health
CC	Congvay Corp.	JJ	Julia Jantzar
DD	Dennis Dedesko	NN	Neuronext
DJ	Dennis & Julia	PP	Pirate Phil
EE	Eliot Enburke	RR	Rem Renard

NOTES AND CREDITS: (The following real-life information is not part of the hypothetical facts of the exam.) Fig. 1 illustration from U.S. Pat. No. 5.406.037. Fig. 2 uploaded by Der Lange (http://de.wikipedia.org/wiki/Benutzer:Der_Lange), from http://commons.wikimedia.org/wiki/File:Spike-waves.png. Fig. 3 pirate boat illustration by yeKcim (http://openclipart.org/media/people/yeKcim). Fig. 4 from product photo by Denon. Fig. 5 adapted from clip art authored by Jason Rebuck / jaschon (http://jasonrebuck.com; http://openclipart.org/user-detail/jaschon). Fig. 6 from a fabric pattern by Karen Combs (http://karencombs.com), used with permission.

This printing differs in insubstantial ways from the exam as administered. Notably, the exam originally used "EV-FreqPhase" instead of "EV-FreqFit." It turns out that a company was actually debuting "FreqPhase" headphones when exam was administered. Released: March 30, 2015.