The AIPLA's
2017-2018 Giles Sutherland Rich Memorial
Moot Court Competition Problem

This year's problem involves a dispute between the University of Neptune School of Medicine ("UNSM") and a company called HeadSpace over a United States Patent, referred to as the '873 Patent. Two issues are on appeal to the United States Court of Appeals for the Federal Circuit:

(1) Whether the '873 Patent is obvious under 35 U.S.C. § 103.

(2) Whether Federal Courts have jurisdiction to hear the dispute under 28 U.S.C. § 1338(a).

Oceania is a fictional state in the continental United States, located in the fictional Thirteenth Circuit. The University of Neptune is located in the town of Atlantis. Atlantis is a small town and the University is its largest employer. The University has a number of initiatives to support the town of Atlantis and it is well respected among Atlantis' residents.

HeadSpace is a social media app company that focuses on text-to-speech input to allow users to post messages on public profiles and engage in personal and group messaging conversations. Its headquarters is in the state of Oceania, in the large city of El Dorado on the opposite side of the state from Atlantis.

The dispute stems from the UNSM's Advanced Neuro Technologies Laboratory (the "ANT Lab") and a HeadSpace product called the Chat Hat.

The ANT Lab

The ANT Lab's goal is to investigate brain-machine interface technologies and to help develop thought-to-text and thought-to-thought enabled communication devices through medical neuroscience research. HeadSpace partnered with the UNSM and launched several initiatives to support the ANT Lab.

Under the partnership agreement between the UNSM and HeadSpace, HeadSpace has a right to license and commercially develop any patent that is developed at the ANT Lab arising from the partnership. The royalty rate of 4% is favorable for HeadSpace and the terms are pre-negotiated. In return, HeadSpace must: "Fund a UNSM-led study to investigate the social and economic impact that the development of devices covered by each valid ANT Lab patent has had on both the United States and the world as a whole." ("Study Clause"). The UNSM maintains the right to enforce ANT Lab patents, and HeadSpace agrees to join as a co-plaintiff in enforcement actions if necessary for standing purposes. The agreement provides that it "shall be interpreted exclusively in accordance with Oceania law."

The University of Neptune is a private institution. Its mission requires it to pursue the public interest and greater global good. It relies heavily on donations and grants for financial support. The Study Clause is designed to help the ANT Lab stay true to the University's mission, and to help produce evidence of results that will lead to donations and other financial support in the future.

The '873 Patent

On January 15, 2012, the '873 Patent issued to the UNSM. The application that led to the '873 Patent was filed on October 12, 2009. No claims were made during prosecution to an earlier priority date. The technology underlying the '873 Patent was developed at the ANT Lab. Claim 1, the only independent claim in the '873 Patent, reads:

1. A method for translating human thoughts into text comprising:

    receiving unique user calibration brainwave data collected by a plurality of brainwave sensors during performance of a predetermined customization protocol;

    customizing a thought-to-text translation algorithm based on the received calibration brainwave data using a machine learning model;

triggering collection of the user's triggered brainwave data to be translated after repetition of a predetermined trigger word by the user;

filtering non-thought brainwave data from the collected triggered brainwave data; and

translating the filtered data into text using the customized translation algorithm.

The specification of the '873 Patent describes: A device that is a portable collection of sensors coupled with a small but powerful computer processor, transceiver, and memory. The device builds on the fundamental fact that the human brain produces electrical signals when a person "thinks." In a laboratory setting, the brain's various electrical signals, or brain waves, can be measured by sensors using electroencephalography (EEG). The device also builds on basic principles of technology-assisted mind-to-mind communication. Mind-to-mind communication works by collecting the signals produced by a sender's brain using EEG and using those signals to stimulate a response in a receiver's brain using Transcranial Magnetic Stimulation (TMS). More specifically, the electrical impulses detected by the sender's device may be converted into transmittable data packets that are received by the device, which converts the data packets into corresponding electrical pulses and delivers those pulses to the recipient's brain in the form of electrical stimuli. In this way, the receiving person receives the "thought" created by the sender. These signals may be transmitted over a wide range of distances, via a local or closed communication network, or even the Internet.

The device sensors measure a specific subset of the brainwaves produced by a user's brain. This discrete subset of brainwaves was identified following the discovery by the ANT Lab inventors that, unlike a human recipient, a computer only needs a subset of the signals produced by a human brain to produce a translation of "thoughts of speech, characters, or text" into text with acceptable

accuracy. Because of this discovery, the device requires fewer sensors than a laboratory-scale EEG, which requires a large machine that measures all the brain's electrical signals. The device thus provides a portable, lower cost alternative to the larger and more cumbersome laboratory EEG machines.

Before the device can be used, however, it must be "trained" to a particular user. The full translation algorithm and database are too large to store on a small device. Instead, the full database is stored on a remote server. The device utilizes a sophisticated machine learning model that optimizes the device and the translation algorithm for that user, which reduces the amount of memory required such that the device may be used without a permanent Internet connection. To "train" the device, the user must wear the device and perform a standardized series of steps that the machine learning model can use to isolate specific patterns from the user's brainwaves that correspond to certain sensory inputs. During training, the device may also identify brainwave patterns that are unique to an individual user. The training exercises include steps such as singing nursery rhymes printed in the user's manual; inhaling a variety of scents provided on a scratch and sniff page of the user's manual appendices; and viewing a series of short video clips taken from well-known films and television shows. The device collects brainwaves from the user during this calibration procedure and transmits them over the Internet to the remote server. A machine learning model stored on and implemented by the remote server analyzes the user's brainwaves, optimizes the translation algorithm, and returns the optimized algorithm to the user's device.

Even with the training procedure, it is difficult for the device's processor to isolate brainwaves that correspond to conscious thoughts, because a user's brain produces a chaotic collection of signals. In order for the processor to successfully isolate the signals produced by an individual's conscious thoughts, a user of the device must repeatedly "think" a specific keyword before he or she "thinks" the message to be translated. The keyword must be something fanciful

that a user is unlikely to think casually. Repetition of the keyword prevents accidental triggering of the device's translation algorithm by random thoughts, and also provides the device multiple chances to recognize and verify the keyword amongst the complex collection of brainwaves. The current version of the device requires the user to "think" the word "xylophone" three times.

If all training procedures are precisely followed, the device can translate a user's thoughts into text with greater than 95% accuracy. If training is not properly completed or the user does not think the designated initialization word three times before beginning to think a message, the accuracy of the device's translation may drop dramatically.

The Chat Hat

HeadSpace exercised its right to license the '873 Patent and developed a device called the Chat Hat using the underlying technology. The Chat Hat embodies the '873 Patent as described above.

The License Agreement

The UNSM has multiple licensing agreements with other entities for various ANT Lab technologies; however, the UNSM believes the most exciting technology is the '873 Patent's technology, which is implemented in the Chat Hat. HeadSpace was thrilled when the '873 Patent issued, and HeadSpace immediately expressed its desire to enter into a licensing agreement with the UNSM for this technology. HeadSpace did not have an immediate commercial plan for the Chat Hat but strongly believed in the technology. In fact, HeadSpace was so excited that prior to signing the licensing agreement with the UNSM it did not look at the '873 Patent. When asked if he wanted to discuss the patent, HeadSpace's Chief Executive Officer sent an email to the Agreement Specialist at the UNSM saying that he was "sure the patent is valid because it had been granted and that means the claims must be valid." HeadSpace and the UNSM quickly and readily entered into the agreement on February 5, 2012.

HeadSpace is currently the only licensee of the '873 Patent. The UNSM, however, plans to license the '873 Patent to other entities in the future to generate additional revenue. The UNSM plans to pursue these agreements once the Chat Hat generates enough publicity for the UNSM to be confident that the Chat Hat will be an immediate commercial success in the United States. The UNSM believes the study performed under the Study Clause will be instrumental in eventually marketing the Chat Hat in the United States.

After entering into the licensing agreement, HeadSpace manufactured and provided the Chat Hat for free to doctors, UNSM students, and UNSM staff working in foreign aid medical clinics in remote areas of the world. In such areas, properly sterilized gloves are a precious commodity due to supply limitations, and the Chat Hat allows the staff to communicate about patients as well as to update patient records, without requiring the staff to remove their gloves to use the associated computing device, or risk contaminating their gloves by using the computing device directly.

HeadSpace is certain that the Chat Hat is making a difference in the lives of clinic workers and patients. Everyone who uses the Chat Hat has told HeadSpace how they "could not live without it" and how it has dramatically reduced the number of patient infections due to contamination. There has been one complaint of an alleged glitch in the Chat Hat software. Reportedly, the Chat Hat shut down in the middle of surgery. HeadSpace knows there will be irreparable harm to the reputation of the Chat Hat if this allegation is true or if it leaks out to the public. After a two-hour investigation, HeadSpace determined that the shutdown was caused by user error and it was not an error with the function of the Chat Hat itself.

At this time, HeadSpace is only interested in providing the Chat Hat for the charitable purpose of assisting foreign aid workers in their daily activities. HeadSpace's founders, who are already very wealthy, have found enjoyment building a side of their company that is committed to public service. The Chat Hat is also outside what they view as their core business and they are not

yet ready to commercialize it as a product in the United States. HeadSpace is not even interested in distributing the Chat Hats in the United States for the same charitable purposes because it believes the United States already has relatively good standards of cleanliness in its medical facilities.

HeadSpace is fortunate to be able to manufacture and provide the Chat Hats without receiving compensation because of a sizeable donation from an anonymous donor. The donor sent a note with the donation describing how much he or she appreciates HeadSpace's newfound commitment to public service and how the money should be used to further establish HeadSpace's charitable causes. The UNSM has not diligently monitored any licensing revenue it may be owed by HeadSpace for the Chat Hat, since it is aware that HeadSpace uses the Chat Hat for charitable purposes and assumes that little, if any, licensing revenue is due. There are no lump sum, milestone, or other payments due under the agreement.

The UNSM and HeadSpace both have headquarters about ninety-five miles apart in the state of Oceania. The state's economy thrives on innovation. To promote and retain innovation within the state, the state has appointed a patent agent to a state-created (and state-funded) position to seek opportunities to file patent applications and to prosecute and maintain the patents worldwide.

More importantly in the eyes of the public institutions, the state also provides yearly funding to public institutions based on the number of and potential economic impact of valid patents each institution owns. While the UNSM does not receive such funding, it benefits from collaborations with other state-funded institutions.

The Sandcastle Technology Institute and the Continuation Patent

The Sandcastle Technology Institute (the "STI") is a public institution located in a neighboring city of the UNSM. The STI has the most granted patents of any entity within the state, and its success as a worldwide leader in technological advances in cardiac devices, among other devices, makes it one of the largest generators of revenue for the state. The UNSM and the STI

have had a successful working relationship for over two decades and are oftentimes co-owners of patents with shared technologies. Although the parties are not co-owners of the '873 patent, the UNSM assigned to the STI its rights to a second patent which was originally filed as a continuation of the '873 patent. UNSM's assignment of rights to this continuation patent occurred after the continuation issued, and there are no other issued or pending patent applications claiming priority to either the '873 patent or the continuation patent. The UNSM and the STI both independently believe it is likely that the patent claims of the continuation are an obvious variation of the claims in the '873 patent, although during prosecution the continuation patent never received an obviousness type double patenting rejection and the UNSM never filed a terminal disclaimer.

The state has provided a significant amount of funding to the STI for the continuation patent because it believes the technology could be a game-changer in the field of medicine. The STI has used the bulk of this funding to rapidly develop the next-generation Chat Hat (called the "Convo. Cap"). Both the state and the STI anticipate the Convo. Cap to eventually be a blockbuster worldwide, including in the United States. STI's long-term planning anticipates that the Convo. Cap will bring in one of the highest revenues in the history of medical advances. STI plans to out-license the technology to the highest bidder.

The UNSM's Demand for a Study

HeadSpace had been distributing the Chat Hat to foreign countries for approximately 3 years when trouble first began. The Study Clause in the licensing agreement dictates that HeadSpace must fund a "UNSM-led study to investigate the social and economic impact that the development of devices covered by each valid ANT Lab patent has had on both the United States and the world as a whole." The UNSM relies on such studies to promote its research and public interests policy, with the end-goal of receiving donations and grants in return. Doctors enjoy using the Chat Hat and the UNSM is sure that the Chat Hat actually leads to better patient outcomes. Accordingly, the UNSM

began developing the study that will analyze the safety of the Chat Hat and the net socio-economic impact of Chat Hat compared to more "archaic" communication methods. In particular, the study will involve the doctors, students, and staff that used the Chat Hat, as well as patients exposed to the Chat Hat during treatment. It will be a first-of-a-kind study design that could have significant ramifications not only for the UNSM but for the town of Atlantis and the state.

Recently, word has spread throughout the town of Atlantis, where the UNSM is located, that the Chat Hat has been saving lives in remote foreign clinics and that the utility of the Chat Hat could potentially be broadened to non-clinical uses such as use in gaming systems and in virtual meetings. The ANT Lab has modeled a Chat Hat statue that is 100 times the size of an actual Chat Hat, and has mounted the statue in the main entryway of the UNSM. There has been an influx of visitors from outside Atlantis, and even outside the state, to see this newly emerging and mysterious technology. In fact, a large café opened one month ago in downtown Atlantis, and it was appropriately named the Chat Hat Café. To support the increasing number of out-of-state visitors, the town of Atlantis also saw an increase in the number of boutique hotels in the area. These hotels were also named in honor of the Chat Hat (Chat Hotel, Chat Hat Inn, and Chat Hat B&B). The town also recently passed a proposal to increase its local tax, and the increased revenue is slated to be used to construct walking trails and bike paths and to repair all of the roads' potholes. Before the town becomes too much more reliant on the revenue the Chat Hat visitors bring in, the state is urging the UNSM to complete the study and confirm that the Chat Hat is indeed safe and beneficial within one year.

The study itself will be challenging to fully develop and to implement within the given timeframe. The study protocol will have to be modified at various junctures based on relatively fluid criteria, which will lead to uncertainty for the study completion date. In order to expedite the study, the UNSM plans on using study funds, to be provided by HeadSpace, to add three additional study

coordinators (each paid more than customary and usual because of the remote location and potential hardships).

Further, the study also is likely to be very expensive. The location of the clinic chosen for the study is in a remote and developing part of the world. Neither the UNSM nor HeadSpace have any other operations in the area, and as such, HeadSpace would have to fund, and the UNSM build, a temporary living quarters for the study coordinators. In addition, there is no local market for food or essential items, and so extra resources would be needed to fly in food, water, and other required items on a weekly basis. These items would be obtained from a village approximately fifty kilometers south of the study location and flown in by a helicopter rented with funds to be provided by HeadSpace.

The UNSM is almost finished planning the study and has sent a request to HeadSpace for $1.2 million dollars to provide the required funding under the licensing agreement. Two days after HeadSpace received the request, HeadSpace's CEO sent a reply letter to the UNSM stating that "HeadSpace will not fund the study because the '873 patent is not valid and therefore the Study Clause is not applicable." To further support its position of non-payment, HeadSpace's reply letter further emphasized that HeadSpace has not profited from the Chat Hat and only distributes it in a charitable capacity.

The UNSM responded that the patent is valid and emphasized that the United States Patent and Trademark Office granted the patent without issuing any rejections. The UNSM further explained that according to an Oceania statute enacted in 1973, "a patent licensee cannot challenge the validity of the underlying patent to the license agreement." According to the state legislative history associated with this statute, the public policy and rationale behind the implementation of the state statute is fairly straightforward. This policy is that a licensee should not enter into a licensing agreement that contains a provision(s) dependent upon a patent's validity, wherein the licensee

either has not obtained legal advice regarding the validity of the patent or the licensee determines the patent to be valid at the time of signing the agreement and later changes its mind to avoid fulfilling a contractual obligation.

The state has suffered economically in the past from validity attacks on patents owned by state-sponsored institutions and high-profile companies in the context of licensing agreements. The number of attacks on patent validity has been reduced since the implementation of this statute, since the majority of the patented technologies are out-licensed. Consequently, more institutions and entities within the state are filing more patent applications and entering into an increased number of licensing agreements. The result has been economic growth within the state.

There is no such statute in Oceania that protects a patent outside the context of a licensing agreement. Recently, an *ex parte reexamination* was ordered for the '873 patent. The *ex parte reexamination* was ordered before UNSM filed its complaint against HeadSpace. The decision from the *ex parte reexamination* is expected to be reached soon. The STI is anticipating an *ex parte reexamination* order for its continuation patent based on the similarity between the claimed subject matter.

The UNSM Sues

The UNSM sued HeadSpace for breach of contract in Oceania Superior Court in Atlantis. The UNSM strongly prefers that the case be tried in Atlantis with a local jury. It sought damages for HeadSpace's breach of the Study Clause.

HeadSpace timely removed the suit under 28 U.S.C. § 1446 to the United States District Court for the District of Oceania. The parties do not dispute that the Chat Hat is an embodiment of the '873 Patent. HeadSpace's only defense is that the '873 Patent is invalid as obvious and, accordingly, it had no obligation to fund a study pursuant to the Study Clause. Through negotiations the parties have agreed the validity of the entire patent rises and falls with the validity of claim 1.

HeadSpace's Obviousness Contention

HeadSpace relied on two references to support its position that the '873 patent was invalid for obviousness in the District Court. The primary reference was HeadSpace's own speech-to-text interface, the main features of which are now ubiquitously available. The second reference was a lecture by Dr. Stefan Kohlbehr who was in charge of the ANT research that lead to the development of the Chat Hat and is named as an inventor on the '873 Patent. Dr. Kohlbehr's lecture was recorded and posted on YouTube on April 7, 2008.

HeadSpace's speech-to-text interface translates spoken words into printed text using a computer coupled to a microphone input device. Since its development, the interface has been incorporated into computers and mobile devices worldwide. The HeadSpace speech-to-text interface receives the electrical signal produced by a microphone and uses computer software to filter out non-speech noise. The HeadSpace interface then translates the filtered signal into text using complex software that compensates for dialect, accent, and other individualities in human speech.

HeadSpace's speech-to-text interface does not require large amounts of processor resources to compensate for differences in individual speech, making it ideal for mobile devices. HeadSpace's speech-to-text technology uses an advanced machine learning model that "learns" a specific individual's particular style of speaking to optimize the translation algorithm and reduce translation time and consumption of processing resources. Before using the interface, a user reads a prepared text (most new versions use the Gettysburg Address) into the device, which the machine learning model analyzes to adjust for the user's individual speech patterns. HeadSpace's interface also improves the more the user speaks into the device, but the pre-optimized translation algorithm saves processor time and, therefore, battery life. As a result, HeadSpace's technology is superior to other

speech-to-text translation technologies and has been incorporated into many devices, especially portable devices like smartphones.

Dr. Kohlbehr's lecture presented the combination of his two great passions, neuroscience and transcendental meditation. Dr. Kohlbehr revealed that two sufficiently trained practitioners of transcendental meditation can share complete thoughts across substantial distances using technology-assisted mind-to-mind communication. Technology-assisted mind-to-mind communication is generally limited to extremely simple messages and required the messages to be pre-translated into binary code. Technology-assisted mind-to-mind communication was limited to on-off/one-zero messages. Dr. Kohlbehr discovered that this limitation stemmed from the fact that that the human brain is too distracted by random thoughts and sensory inputs to receive anything but the most rudimentary signals that can pierce through the noise. Dr. Kohlbehr discovered that if the sender and receiver could both enter the same mental state using transcendental meditation, full sentences could be transmitted from mind to mind without resorting to binary code. Dr. Kohlbehr called the mental state shared by the sender and receiver the Kohlbehr Rapport.

The Kohlbehr Rapport requires the two users to meditate on the same mantra so that each achieves a similar mental state. Using Dr. Kohlbehr's technique, a sender connected to an EEG meditates on a particular mantra until he or she reaches a meditative state. Then the sender "thinks" the message to be delivered. The EEG records continuously throughout the session and the electrical signal can be transmitted in real time to the receiver or electronically stored. The receiver meditates on the same mantra as the sender, while receiving the sender's electrical signal through Transcranial Magnetic Stimulation (TMS). The combination of meditation and TMS creates a sympathetic response in the receiver so that the receiver achieves the same mental state as the sender—the Kohlbehr Rapport. At this point, the receiver's mind is sufficiently aligned with the sender's thoughts that the receiver "thinks" the same thoughts the sender sends. The mantra acts as

a sort of carrier wave to keep the two minds synchronized long enough for the sender's thoughts to be received.

In his lecture, Dr. Kohlbehr noted that a computer would not suffer from the mental distractions of a human receiver and hypothesized that a computer would not require meditation to receive the electrical signals produced by the sender. Dr. Kohlbehr also said that no computer would be sophisticated enough to translate anything but the most rudimentary messages because the electrical signals produced by a sender's brain were too complex to be translated by any computer less sophisticated than a human brain. According to Dr. Kohlbehr, a person's brainwaves include too much "noise" produced by sensory input and everyday distractions. Furthermore, the signals differ substantially from person to person, even when those individuals think the same thoughts.

Nevertheless, to prove the concept, Dr. Kohlbehr presented preliminary results translating by computer some simple messages using the electrical signals produced by a sender's brain. In a first experiment, Dr. Kohlbehr recorded the electrical signals produced by a volunteer who repeatedly "thought" the same word twenty-five times while connected to an EEG. Using the combined signals from all twenty-five repetitions, Dr. Kohlbehr produced a software program that successfully translated the one-word "thought" 60% of the time when the same volunteer had the same "thought" again during a test reading. Dr. Kohlbehr was able to reproduce this result with three different, single word "thoughts." However, the translation accuracy fell below 5% when a different volunteer repeated the same single-word "thought." The computer was unable to distinguish a second individual's "thought" unless it was pre-programmed with twenty-five repetitions of each single-word.

Dr. Kohlbehr performed a second experiment having a volunteer meditate on a specific mantra for five minutes while connected to an EEG. Using the data collected from the meditation, Dr. Kohlbehr created a computer program that could identify the signals produced by the mantra

when the volunteer meditated a second time on the same mantra while attached to the EEG. In this way, Dr. Kohlbehr speculated, a computer might be able to filter out the non-conscious thoughts from the user's conscious thoughts.

Combining aspects of the first two experiments, Dr. Kohlbehr performed a third experiment. Using the repeated one-word thoughts from the first experiment and the data collected from the meditation in the second experiment, Dr. Kohlbehr produced a new translation program. In the third experiment, a volunteer meditated for five minutes on the same mantra used to create the computer program and then projected the one-word "thought" from the first experiment. In the third experiment, the computer could translate the "thoughts" with greater than 95% accuracy.

Dr. Kohlbehr provided two possible explanations for the improved result. Dr. Kohlbehr explained that the result improved because the computer was better able to identify the patterns in the user's brainwaves that corresponded to the user's "thought." One explanation, Dr. Kohlbehr said, was that meditation reduced the distracting brain activity that made the "thought" difficult for the computer to identify. Alternatively, the meditative mantra could act as a carrier wave that the computer could identify and isolate from the noise of distracting brain activity. Dr. Kohlbehr was unable to test which mechanism was responsible, and acknowledged that the result could be a combination of both.

When a second volunteer meditated on the same mantra for five minutes prior to projecting the same thought, the computer was able to successfully translate the one-word thought 50% of the time. Again, Dr. Kohlbehr offered two possible explanations. Dr. Kohlbehr explained that the meditation allowed the second volunteer to produce a similar pattern of signals as the first volunteer. As a result, the computer was better able to identify the pattern produced by the second volunteer that corresponded to the "thought" to be translated. Alternatively, or possibly in combination, the

mantra placed the two individuals in a sufficiently similar mental state that the computer was able to overcome the individual differences between the two volunteers.

Dr. Kohlbehr performed a final experiment attempting to compensate for individual differences between users. Dr. Kohlbehr collected data from twenty volunteers who, while meditating, repeated the same one-word "thought" twenty-five times, while connected into an EEG. Using the combined data from all twenty-five repetitions from all twenty volunteers, Dr. Kohlbehr created an improved translation algorithm. Using the improved algorithm, the computer successfully translated the same one-word "thought" used to create the algorithm with 75% accuracy from ten different test subjects who had not participated in the creation of the algorithm. However, the improved algorithm only worked when the subjects meditated on the same mantra used to create the algorithm. If a test subject did not meditate or meditated on a different mantra, however, the accuracy fell to 15%. Dr. Kohlbehr explained that the input from twenty original volunteers provided enough data to compensate, in part, for individual differences between the test subjects and the original volunteers. Dr. Kohlbehr speculated that using data from more volunteers to produce the algorithm might improve the accuracy further, but said he ran out of volunteers sufficiently practiced in transcendental meditation to produce more data and still have enough practitioners left to test the new algorithm.

After presenting these experimental results, and the evolution of the Kohlbehr Rapport, a member of the Lecture audience asked Dr. Kohlbehr if his discovery could ever be used by average people who were not practitioners of transcendental meditation. Dr. Kohlbehr answered that the technique would probably work with any mental discipline that allowed two different people to achieve a similar mental state. From his experiments, Dr. Kohlbehr concluded that a user probably needed to be able to achieve a similar mental state as the individuals used to create the translation algorithm, or else a computer could not identify the signals created by conscious thoughts from the

background noise. An "average" person might, Dr. Kohlbehr said, be able to achieve the necessary mental state by repeating a specific word or phrase in their mind enough times that a sophisticated computer program would be able to recognize the word in the user's thought patterns and therefore separate the signals produced by that person's conscious thoughts from the background noise. But Dr. Kohlbehr stated that such an idea was "pure speculation based on theory" and that he had no data upon which to support his hypothesis.

At the conclusion of his presentation, Dr. Kohlbehr lamented that mind-to-computer communication was probably impractical because the amount of data necessary to produce a translation for anything but the most rudimentary messages would be staggering. Even using meditation, a one-word 'thought' would require data from more than twenty different people repeating the 'thought' twenty-five times. Because individuals do not think in one-word increments, multi-word phrases have different signals than the individual words that make up the phrase. "It might work," Dr. Kohlbehr said, "if a person could be forced to think individual words instead of entire thoughts or sentences." "But the only time that happens" Dr. Kohlbehr said, "is when a person separates every word with a counter, like 'One Mississippi, two Mississippi' or when a novice translates words into a foreign language."

The District Court Verdict

The case was tried to a jury. The UNSM argued that that the '873 Patent is valid and that HeadSpace breached the Study Clause. It sought $1.2 million in damages—the amount required to fund the study. HeadSpace argued that it had no obligations under the Study Clause because the '873 Patent was invalid as obvious.

The jury found the patent not invalid, found that HeadSpace breached the Study Clause, and awarded damages to the UNSM. However, the jury only awarded $20,000 in damages and the UNSM is disappointed. It will not be able to fund the '873 Patent study with the award.

The Appeal

HeadSpace appealed the jury's verdict to the United States Court of Appeals for the Federal Circuit, challenging its finding that the '873 Patent is not obvious. Even though the damages award is small, its founders are very sensitive to the optics of the adverse verdict and are highly motivated to have it overturned. The UNSM cross-appealed, challenging for the first time the district court's subject matter jurisdiction under to hear the case under 28 U.S.C. § 1338, *Gunn v. Minton*, 568 U.S. 251 (2013), and its progeny. Given the small damages award, it would rather have the District Court verdict thrown out and have a chance to re-try the case in Superior Court in Atlantis.

The parties have stipulated that only two issues will be presented on appeal: the obviousness of the '873 patent and the district court's subject matter jurisdiction under 28 U.S.C. § 1338. The parties further stipulated to proceeding under standard, unilateral appeal rules and foregoing cross-appeal procedures of Fed. Cir. Rule 28.1, with HeadSpace proceeding in all respects as the appellant and the UNSM as appellee. The Federal Circuit Clerk captioned the appeal "HeadSpace, Inc. v. University of Neptune School of Medicine."