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The demon-haunted sentence: A skeptical analysis of reverse speech

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Feature

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Advocates of reverse speech propose that it is a direct path to the unconscious mind. However, there is no evidence of its existence, and accepting this pseudoscience could prove tragic.

In the past several years, a researcher named David Oates has been advocating his discovery of a most interesting phenomenon. Oates claims that backward messages are hidden unintentionally in all human speech. The messages can be understood by recording normal speech and playing it in reverse. This phenomena, reverse speech, has been discussed by Oates in a number of books (Oates 1996), magazines, newspapers, and radio programs, and even on television with Larry King and Geraldo Rivera. His company, Reverse Speech Enterprises, is dedicated to profiting from his discovery. The basics of Oates's theory are outlined in his book Reverse Speech: Hidden Messages in Human Communication. He also outlines his theories on Reverse Speech Enterprise's large and detailed Web page (http://www.reversespeech.com). The following quotes taken from that page define the main characteristics and implications of reverse speech; similar statements can be found in his publications.

Human speech has two distinctive yet complementary functions and modes. The Overt mode is spoken forwards and is primarily under conscious control. The Covert mode is spoken backward and is not under conscious control. The backward mode of speech occurs simultaneously with the forward mode and is a reversal of the forward speech sounds.

These two modes of speech, forward and backward, are dependent upon each other and form an integral part of human communication . . .

Covert speech develops before overt speech. Children speak backwards before they do forwards . . .

Reverse speech is the voice of truth and it is complementary with forward speech. The two modes occur simultaneously yet are formed in different areas of the mind. Simply, forward speech is from the left brain and Reverse Speech is from the right brain. . . . If a lie is spoken forwards, the truth may be spoken backwards. Any thought that is on a person's mind has the potential to appear in Reverse Speech . . . it can reveal hidden memory and experiences. . . . Employers can use it for employee selection, lawyers for deposition analysis, reporters for politicians' speeches. Its applications are endless. . . . Put simply, the discovery of reverse speech means that the human mind is no longer private. Any thought, any emotion, any motive that any person has can

appear backwards in human speech. The implications are mind boggling because reverse speech opens up the Truth.

It is the great potential for harm evident in the last and most disturbing item that prompted this article. We argue that there is no scientific evidence for the phenomena of reverse speech; and that the use of reverse speech as lie detection in courts of law or any other forum, as advocated by Oates, is entirely invalid and unjust.

Where Is the Evidence?

The burden of proof for any phenomenon lies upon the shoulders of those claiming its existence. To our knowledge there is not one empirical investigation of reverse speech in any peer-reviewed journal. If reverse speech did exist it would be, at the very least, a noteworthy scientific discovery. However, there are no data to support the existence of reverse speech or Oates's theories about its implications. Although descriptions of "research papers" are available on the Reverse Speech Web site, there is no good indication that Oates has conducted any scholarly or empirical investigation. We found only two outside analyses of reverse speech. The first, Newbrook and Curtain (1998), is a Web-published document discussed below, and the other is a brief review of Oates's aforementioned book that appeared in Library Journal. The reviewer, Susan Brombacher, concluded that Oates's theories are difficult to prove and that he seems more interested in making a profit than educating others. We concur with both points. The Reverse Speech Web page contains a plethora of merchandise and services available to consumers at considerable prices. These include reverse-play tape recorders ($225), T-shirts ($18), signed copies of Oates's book ($29.95), and various training workshops ($850-$1,500). Furthermore, we believe that the reason the phenomenon of reverse speech is difficult to prove is it does not exist.

The very existence of reverse speech is ecologically invalid. "Backwards" language does not convey meaning to a listener-in other words it does not make any sense. This has been put to empirical test. Subjects who hear recordings of words played backwards are unable to report what words they heard (Vokey and Reid 1985). The ability to communicate through language is an incredibly complex marvel of evolution. If reverse speech existed, it would not be comprehensible and would have no practical value. Therefore, there would be no selection mechanism by which it would evolve. It would truly be a "miracle." And, as for all miracles, we do not have a shred of supporting evidence.

Hearing Things

We are not claiming that reverse speech is a simple hoax. In fact it is quite possible that Oates and his followers are convinced of its existence. As far back as the 1930s, controlled scientific studies were conducted demonstrating the tendency for people to "hear" things that were not there. One of the methods employed to study such phenomena was the verbal summator, as described by the American psychologist B.F. Skinner (Skinner 1957, 1936). The verbal summator consisted of a phonograph (or tape) of random vowel sounds that were grouped together in such a way as to not produce any systematic phonetic groupings. These random

phonetic sounds were arranged into patterns that approximated common stress patterns in everyday conversation.

After such strings of nonsense syllables were arranged, they were played for subjects at barely audible volume levels. After repeatedly listening to these sounds, subjects reported “hearing" the phonograph or the tape “say” things. These sentences, or sentence fragments, did not actually exist and, as such, were considered to be utterances that were already strong in the subject's repertoire. Put another way, they were “projecting” their own thoughts onto the sounds they were hearing.

Oates frequently plays examples of reversed-speech phrases in which the listener can hear what appears to be meaningful speech. It is not difficult to hear something that sounds like English phrases when they have been pointed out. However, as in messages heard from the verbal summator, the phonemes may sound similar to a meaningful phrase but are really sound salad. A listener expecting to hear a certain phrase will likely do so. In their critique of Oates's theories, Newman and Curtain (1998) conducted a simple experiment in which subjects under various conditions tried to detect examples of reverse speech from Oates's audiotapes. As expected, they found that subjects who were told what to listen for were much more successful in hearing the phrases than those not expecting what they would hear. This is analogous to seeing a certain image in a cloud formation only after another person has pointed it out. Fortunately, most of us recognize that a cloud that looks like Elvis is not really Elvis. Backward phonemes, however, may convincingly sound like a real sentence and are not as readily dismissed as coincidence.

Potential for Harm

Oates's claims have dangerous implications. He states not only that reverse speech is real but also that it always “tells” the truth. He calls it the “ultimate lie detector test.” Although some types of nonverbal communication (e.g., facial expressions) may be of limited use for lie detection, the search for a surefire mechanism that uncovers whatever truths lie in the unconscious is best left to science fiction writers and kept out of courts of law; no such mechanism exists. Adding to the insidious nature of these claims, Oates states that one has to be specially trained to hear reverse speech; those who pay him a hefty sum and go through his training can then serve as expert witnesses and command hefty sums themselves. As expert witnesses they could analyze testimony played backwards and inform a court what a witness is truly saying. The judge and jury, not having the training, will be unable to verify this information. The potential damage could be enormous since the "truth” may be invented from the subjective interpretation of nonsense syllables. Furthermore Oates advocates the use of reverse speech not simply as a lie detector, but as a useful tool for psychotherapists. Although Oates states that he and his colleagues "are not therapists,” he describes the goal of one of his training programs as to “Prepare the student to establish their own therapeutic practice” (available at http://www.reversespeech.cpm/courses.shtml). It seems that no matter what Oates and his colleagues call themselves, they are engaging in practices that most people would deem clinical in nature. Advocating therapy based on such questionable theories is unethical.

Hopefully the questionable validity of reverse speech will be recognized before history repeats itself. Not so long ago, belief in facilitated communication, another invented form of

communication, led to witch-hunt investigations based on information that had absolutely no basis in reality. In facilitated communication, a nonspeaking individual receives assistance from a "facilitator" who guides his or her hands across a keyboard so that a message can be typed. Curiously, many nonspeaking individuals who seemed to benefit from facilitated communication did not have motor deficits. Therefore, it was unclear why motor assistance would help them communicate. Controlled studies repeatedly demonstrated that the facilitator in fact manifested the messages communicated by the nonverbal individuals either intentionally or unintentionally. (See James A. Mulick, John W. Jacobson, and Frank H. Kobe, "Anguished Silence and Helping Hands: Autism and Facilitated Communication," Skeptical Inquirer, 17(3): 270-80, Spring 1993.) As stated by Gorman (1998), "When the assisting facilitator could not see or hear the questions presented, autistic individuals could not communicate correct answers, and what was typed was actually what the facilitator saw" (64).

Far from being innocuous, facilitated communication led to false accusations of sexual abuse and resulting court trials that severely disrupted the lives of innocent people. (For a comprehensive history of facilitated communication see Gorman 1998 or Jacobson, Mulick, and Schwartz 1995.) It is easy to see how reverse speech has the same maleficent potential as facilitated communication. The person trained to hear reverse messages could intentionally or unintentionally report that speech contains hidden incriminating evidence. Many people are not prepared to refute such contrived evidence.

The danger of facilitated communication was recognized, and it is no longer considered to be scientifically valid by most professionals working in the disability field (Gorman 1998). In 1994, the American Psychological Association adopted a resolution stating that facilitated communication is a controversial and unproved communicative procedure with no scientifically demonstrated support for its efficacy. We advocate a similar stance on reverse speech. Without validation of its existence, the potential for harm greatly exceeds any benefits. Until that time, we should not allow the use of reverse speech in any situation in which important decisions must be made.

Other Issues

Although we seriously doubt the existence of reverse speech, we may be wrong. We encourage Oates or anyone interested in the possibility of reverse speech to conduct empirical investigations. Oates has said that he desperately wants research conducted on reverse speech (Lamorte 1997). Many of his claims involving unconscious thoughts and metaphors are by their nature untestable. However, some simple investigations of his claims could be easily conducted. For example, subjects could listen to samples of reverse speech and report what they heard. Interobserver agreement, the percentage of times that different subjects reported hearing the same thing, could be calculated. Such measures can be used to minimize biases that individual observers may have (Kazdin 1982). High rates of agreement would at least confirm the ability for humans to hear the same messages in the absence of specific expectations.

Another simple investigation could test the claim that reverse speech can be used for lie detection. Researchers could arrange for confederates to lie on tape about some verifiable personal information (e.g., age, height, weight, etc.), and tell the truth about other similar

information. If reverse speech always detects the truth, the subjects should be able to separate facts from lies at rates better than chance.

Both of these studies could be conducted with minimal cost and effort. If Oates is truly interested in the truth, he could set aside a few hundred dollars (much less than the cost of enrollment at one of his training programs) and fund an independent researcher.

Numerous other claims of doubtful validity can be found in Oates's writings and on the Reverse Speech Web page. Because the very existence of reverse speech is likely invalid, we will not address each of the minor points here. However, two assertions are particularly amusing and cast further doubt on Oates's credibility. Although Oates does not use specific neurological terminology, he claims that the left hemisphere of the cerebral cortex produces forward speech, and the right hemisphere produces reverse speech. He offers no evidence for this. Years ago, it was discovered that both forward and reverse speech sounds are identified most accurately by the left hemisphere (Kimura 1968). Regardless, hemispheric lateralization is not that specialized even for normal speech. Often people who sustain damage to the left hemisphere early in life develop some speech control by the right hemisphere, and some language deficits can occur after right-hemisphere damage (Springer and Deutsch 1993). Furthermore, speech production is controlled by the right-hemisphere in a segment of the left-handed population. Oates's appeal to neuroscience is uninformed and unsupported. In another example, Oates claims that children learn to speak in reverse before they speak in the typical forward fashion. As stated by Newbrook and Curtain (1998), this is contrary to everything we know about language development.

The reader may notice we gathered much of our information from the Internet. This was not done by choice. Information on reverse speech (aside from that authored or championed by Oates) does not appear frequently on the printed page. This suggests that reverse speech has for the most part escaped scientific scrutiny. It also suggests that the Internet supplies a means to distribute pseudoscience under the pretense of science. Of course, researchers do not have the time to investigate every fantastic claim that pops out of the woodwork. However, in this case the potential for the abuse of an untested theory is considerable. If reverse speech enters courtrooms and therapists' offices, lives may be seriously affected. We hope that readers can help expose this potential disaster before damage is done.

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