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Fiery Tongues and Mystical Motivations: Glossolalia in a Forensic Population is Associated with Mania and Sexual/Religious Delusions

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ABSTRACT: Comparisons are made between a nonrandom sample of 18 glossolalists and 130 non-glossolalists admitted to a maximum-security forensic hospital. The glossolalic mentally disordered offender exhibited a predominance of diagnoses in the manic spectrum, and was typically psychotic. The delusions, hallucinations, and crimes were predominately of a religious and sexual nature. Glossolalist perpetrators tended to be female. We review the extant research on glossolalia in both normal and clinical samples, and integrate our findings, the first study of glossolalia in a forensic setting.

KEYWORDS: forensic science, forensic psychiatry, forensic psychology, glossolalia, speaking in tongues, religion

The word glossolalia originates from the Greek roots for "tongue" or "language" and to "speak," and simply means to talk languages (1). Glossolalia is colloquially known as "speaking in tongues," and in Western society is commonly associated with the Pentecostal religion. It has been practiced for centuries in many parts of the world. Prophets and mystics of ancient religions in the Near East, Assyria, Egypt, and Greece reportedly spoke in foreign tongues during states of ecstasy and uttered unintelligible phrases said to be revelations from the Gods (2).

Biblical writings document glossolalia in two locations in the New Testament, the Pentecost (Acts II) and the practice at Corinth (I Cor.12–14). The act of glossolalia is described differently in these writings. On the day of the Pentecost, "the gift of tongues was a miracle of speech or hearing by which Jewish pilgrims of various linguistic backgrounds were able to understand, each in his native language what was said by those upon whom the Holy Spirit came" (3). This mysterious phenomenon has been termed Xenoglossia (4). Later in the New Testament at Corinth (I Cor.12–14) another form of glossolalia was described as unintelligible ecstatic utterance. An interpreter was needed to translate or make sense out of the utterance, an act called Ermeneoglossia (5). It is evident, from the beginning of the New Testament description, that the basic definition of glossolalia was not clear.

The early Christians argued over the meaning and/or relevance of glossolalia. The Apostle Paul viewed tongues as threatening to the church, the speaker, and the influence of the Church on the outside world (3). Paul was concerned that individuals outside the Church would believe that the Church fostered insanity (3). Pattison and Casey (2) pointed out the debate that ensued over the first two centuries among various Christians regarding the meaning of glossolalia: the Spirit of God speaking through the person (God possession); the Devil speaking through the person (Demon possession); the person was given the supernatural ability to speak in a natural language; the person was given the supernatural ability to speak in a supernatural language; or the person was speaking in an oracular or cryptic manner that was a particular manifestation of a supernatural state.

Although there was confusion regarding its meaning, and Paul was very pessimistic about its use, glossolalia still continued. Throughout the centuries the utility and meaning continued to change, although evidence for tongue speaking was scant at best. Most accounts are confined to abilities to speak in foreign languages that had not been learned (3). At one point in the seventeenth century, glossolalia was associated with somatic behaviors such as seizures and trances. In this regard, the glossolalist was viewed as possessed by God.

The first decade of the Twentieth century appears to be the beginning of a Pentecostal movement, which continues to the present. Over time, more conventional religions joined in. The popularity of glossolalia in the 1960s and 1970s is apparent by the number of books and journal articles authored during this time. As in the West, glossolalia remains in almost every area of the world (2).

The earliest scientific studies of glossolalia began in spiritualism. Many studies were reported in the proceedings of the Society for Psychical Research (e.g., Jung, 1902–1970; Le Baron, 1986–1987; Richet, 1905) in which the researchers examined the linguistic characteristics of glossolalia (4). None of these studies had any relation to glossolalia as a religious phenomenon. Many of the studies looked at glossolalia from the standpoint of spirit-messages, clairvoyance, automatic writing, and apparitions by persons at the point of death (4). The benefit of these studies was not only in initiating the research but also in developing the themes for understanding glossolalia as an anomalous behavior.

Glossolalia today, as in the past, remains a mystery regarding its true meaning. This has spawned many different disciplines to study and analyze it. Linguists, psychiatrists, psychologists, sociologists,

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anthropologists, and theologians have all added opinions to the question. The studies have differed on whether glossolalia is associated with psychopathology, but with most not ascribing an association.

The typical patient one encounters in a forensic hospital suffers from a high degree of comorbidity. These patients have a chronic thought disorder with underlying Axis II pathology and harbor many clandestine disorders such as polysubstance abuse, a chaotic life usually starting at childhood, head injury many times with permanent sequelae, and a home on the streets, in the jails, or in prison. Many have medical diseases that have not been treated, some permanently affecting the central nervous system. This complexity is not addressed in the DSM and therefore necessitates somewhat of a paradigmatic shift with greater reliance on observation of the patient's behavior and questioning the diagnostic significance of unusual behavior. Our observation of several manic patients speaking in tongues was the genesis for this study.

Methods

All patients admitted to a forensic treatment team in a maximum security hospital were psychiatrically evaluated. A one-hour interview was performed with a mental status exam and a diagnosis. All patients were asked the question, "Do you speak in tongues?" An affirmative answer led the interviewer to ask more questions to determine if the patient fully understood the concept. If the patient described and explained his or her history of speaking in tongues to include a belief that the Holy Spirit or other religious/supernatural entity had entered his/her body and caused him/her to speak a language unknown to him, the patient was then considered to be a "glossolalist." It is noteworthy that staff noted incidents of glossolalia occurring on the unit with three of the patients identified in this study.

An archival study was then performed on 148 charts of patients admitted after the above-noted procedure had been instituted. The data collected were age, race, sex, marital status, and diagnoses (from Axes I and II). Commitment type and alleged crime were also recorded. The crime was then analyzed to determine if there was any religious theme. This was considered consistent if the crime had a religious motivation, the perpetrator exhibited hallucinations, or delusions, and fantasies focused on a powerful force such as the demon, devil, or god, which precipitated the crime. Evidence was gathered from the perpetrator's recollection of the event, police reports, and from others who observed the crime. The location of the crime (e.g., church) and weapons used (e.g., rosary) were also considered. Dreams of a religious theme, which seemed to influence the behavior, were noted. The religious motivation for most of the crimes was evident from a combination of the above characteristics.

The crime was then analyzed in the same way to determine motivation and role of sex. A sexual motivation was determined when the perpetrator exhibited hallucinations, delusions, and fantasies that caused the perpetrator to feel sexually victimized, commonly in a homosexual context driven by fear or paranoia. Some perpetrators did not feel victimized; instead they raped. Others harassed by stalking due to a sexual drive. Dreams of a sexual nature were also noted which appeared to play a role in the crime. Most of the crimes exhibited a combination of the above characteristics.

The religious and sexual psychotic symptoms and fantasies as well as the dreams noted above caused the crimes in several ways. Some acted directly from the content, such as a command hallucination. At other times the content would deepen the paranoia resulting in the crime.

Final Axes I and II diagnoses were determined by comparing the diagnoses made by the treating psychiatrist with the diagnoses made by other past treating psychiatrists, both at the same and different hospitals from the patient's past. To further increase validity and reliability, comparisons were made with psychological evaluations performed in the patient's past and/or after the initial admission diagnosis. Consequently, most patients' final diagnosis used for the study was determined from a combination of at least two, and at most six, different diagnosticians. Regarding the glossolalic group, a weighted kappa coefficient of 0.74 indicated a high level of agreement among 28 diagnosticians comprised of psychiatrists and psychologists.

All patients were determined to fit one of three broad Axis I categories: 1) thought disorder = *T* (all disorders which are predominately thought disorders, such as all forms of schizophrenia, psychosis NOS, delusion disorder, etc.); 2) mood disorder = *M* (major depressive disorder, bipolar disorder, and schizoaffective disorder); 3) organic = *O* (all disorders secondary to a general medical condition or chronic disorder caused by long-term use of substances). Patients were also labeled with whatever substance disorders they had, and all Axis II (personality) disorders were recorded. It should be noted that the mentally retarded offender was not part of the diagnostic spectrum since all patients with an IQ below 70 were sent to a different treatment team.

Results

The valid sample size was $N = 148$ and the chi-square test was used to study the effect of the following variables on the relationship between the glossolalist group versus the non-glossolalist group: 1) gender, 2) race, 3) marital status, 4) diagnosis, 5) sex-related crime, and 6) religion-related crime. This particular method of analysis (chi-square test) was utilized due to the absence of the normality assumption that is necessary to apply an analysis of variance procedure.

The archival study from a pool of 148 patients showed that 18 patients admitted to glossolalia (*G*) and 130 denied glossolalia (*NG*). The mean age for the (*G*) perpetrator was 36.7 years ($SD = 10.9$) vs 37.8 years ($SD = 11.4$) for the *NG*. This difference was not significant.

There were 127 males (86%) and 21 (14%) females. The female percentage increased when glossolalia was introduced to 7 (39%) (*G*) females and 11 (61%) (*G*) males. This gender difference was significant, $\chi^{-}_{df=1}(10.27, N = 148) \leq .005$ (2-tailed).

The racial distribution of the 148 sample was white = 52 (35%), black = 69 (47%), Hispanic = 25 (17%), and Asian = 2 (1%). The (*G*) white = 6 (33%), (*G*) black = 9 (50%), (*G*) hispanic = 3 (17%), and (*G*) Asian = 0. These results were not significant, $\chi^{-}_{df=3}$ $(0.35, N = 148) > 0.95$ (2-tailed).

The marital distribution was single = 123 (83%), divorced = 12 (8%), and married = 13 (9%). The (*G*) single = 14 (78%), (*G*) divorced = 2 (11%), and (*G*) married = 2 (11%). These results were not significant, $\chi_{-df=2}$ $(0.42, N = 148) > 0.82$ (2-tailed).

The diagnostic distribution showed mood = 26 (18%), thought = 99 (67%), and organic = 23 (15%). The glossolalists showed a mood diagnosis = 14 (78%), (*G*) thought = 4 (22%) and (*G*) organic = 0 (0%). This relationship between diagnosis and glossolalia was significant, $\chi_{-df=2}(51.59, N = 148) \leq 0.0004$ (2-tailed).

The role that sex played in the motivation for the crime was evaluated by studying both the (*NG*) and the (*G*) perpetrator. (*G*) yes = 10 (56%), (*NG*) yes = 22 (17%), (*G*) no = 8 (44%), (*NG*) no = 108 (83%). This relationship was significant, $\chi_{-df=1}(13.92, N = 148) \leq .001$ (2-tailed).

The role that religion played in the motivation for the crime was evaluated by studying the crimes of both the (*NG*) and (*G*) perpetrator. (*G*) yes = 9 (50%), (*NG*) yes = 21 (16%), (*G*) no = 9 (50%), (*NG*) no = 109 (84%). This relationship was significant, $\chi_{-df=1}(11.21, N = 148) \leq .002$ (2–tailed).

Case Studies of Patients Who Speak in Tongues

Case A

Ms. A is a 32-year-old Hispanic female who was found not guilty by reason of insanity for the charge of robbery. Her psychiatric history began when she was 21 years old when she experienced a severe depressive episode, which was resolved after three months of treatment with antidepressants. She suffered her first manic episode at age 28. She exhibited psychotic symptoms at that time consisting of paranoia and auditory hallucinations. Her symptoms were resolved with haloperidol and an unknown mood stabilizer. Ms. A became noncompliant with her medications, which precipitated a manic episode. She became psychotic with auditory hallucinations, "The devil was telling me to rob the bank so I could die" and her delusion was that if she robbed a bank her mother would not be killed. Ms. A put her hand under a sweater, imitating a holdup and left with $700 from a local bank. She was then arrested. Ms. A had a family history that was positive on both sides of the family for major depression. She had no legal history and no substance abuse history.

At the time of admission, Ms. A was still delusional and occasionally experienced auditory hallucinations of the devil talking to her. The combination of olanzapine 20 mg and valproic acid 1000 mg improved her condition to allow transfer to a less restrictive hospital. Her hallucinations had ceased but she still had residual fears about the devil; she also exhibited fears of becoming bisexual.

Final diagnosis:

Axis I:	Bipolar I disorder
Axis II:	Deferred

Case B

Ms. B is a 23-year-old black female who was found not guilty by reason of insanity for capital murder. Her psychotic symptoms began at age 17 when she first experienced depression but never received treatment, even though her family suggested she see a psychiatrist. She became very involved in a religious group from an early age and she began speaking in tongues at age 10. Her religious activity precipitated her being arrested on several occasions for barricading the doors to an abortion clinic (she is a pro-life activist). Her family history was significant for one sibling diagnosed with schizoaffective disorder and a maternal uncle with a psychiatric disorder of unknown etiology. Her legal history was significant for two counts of resisting arrest regarding the abortion clinic, and she had a substance history of abusing alcohol and marijuana. Ms. B reported that for several days prior to and on the day of the homicide, she had been having nightmares regarding the devil being after her. She also experienced extreme irritability, racing thoughts, hyper-religiousness, and delusions. She believed that her one-year-old baby was possessed by evil spirits. This belief precipitated her beating the child to death and disposing of the body in the ocean. She was arrested soon after the homicide.

At the time of admission Ms. B exhibited rapid and pressured speech. She was circumstantial but overall goal directed and organized. There was definite sadness in her mood when discussing the crime. Her mental status improved significantly from her initial presentation at the jail when she was extremely delusional and disorganized. At the jail she was initially treated with valproic acid 500 mg a day and had improved significantly. Then at the hospital Ms. B responded to valproic acid 1000 mg in combination with olanzapine 10 mg; sertraline 75 mg needed to be added due to the depressive symptoms she exhibited. When Ms. B's mood and thought disorder cleared, she exhibited a borderline personality disorder along with periods of extreme flirtatiousness with males. Ms. B continued to exhibit a preoccupation with the Roman Catholic religion. With time, medications, and psychotherapy, she improved to the point of no longer requiring maximum-security hospitalization, and was sent to a less restrictive hospital.

Final diagnosis:

Axis I:	Bipolar I disorder History of alcohol and marijuana abuse
Axis II:	Borderline personality disorder with antisocial traits

Case C

Mr. C is a 22-year-old Hispanic male who was arrested for aggravated assault on a public servant and was deemed incompetent to stand trial. Mr. C had always been a dependable but quiet individual until approximately eighteen months prior to his arrest. His behavior became erratic with Mr. C disappearing at night for long walks and complaining of "feeling schizophrenic." He was subsequently treated as an inpatient on two occasions and as an outpatient. He was diagnosed with schizoaffective disorder.

His behavior continued to deteriorate to the point where he stabbed his sleeping uncle with a knife. During his first hospitalization he attacked another patient. He also repeatedly stalked a female that he was attracted to since the age of 16. He had been using marijuana, tried amphetamines on two occasions, and started using alcohol at age 18. Mr. C was preoccupied with the occult and psychics. He had never dated or had any contact with the opposite sex besides stalking. He believed he was becoming a serial killer and received an assignment from God: "to kill somebody and have sex with a female." His family had a psychiatric history. His father was treated for bipolar disorder and his paternal grandmother suffered from a "mental illness." Alcohol abuse was pervasive on the extended paternal side of the family.

On a routine traffic stop, Mr. C became angry and struck a police officer with his fist, believing that the evil spirit would make him invincible against the policeman. After his initial arrest and for several months in jail, Mr. C was extremely psychotic. He was disorganized and emotionally labile, exhibiting both manic and depressive symptoms with delusions and auditory hallucinations involving Satan. He remained psychotic during his four months in jail.

At the time of his second hospital admission Mr. C was psychotic, disorganized, and bizarre. He believed he was the son of the Antichrist. He was started on haloperidol 10 mg for his psychosis and diphenhydramine hydrochloride 50 mg po q hs for sleep. When his psychosis began to improve he became depressed and sertraline 100 mg po q am was added. Due to the side effects of haloperidol, it was discontinued and olanzapine was initiated. Mr. C improved significantly on the olanzapine and eventually was given 20 mg and sertraline 150 mg. Mr. C was also seen for individual psychotherapy and showed progressive insight into his illness. He was seen speaking in tongues on the unit on several occasions. Mr. C remained with residual fears of "the evil forces" bothering him at

times. He was discharged to a less restrictive hospital when it was determined he no longer needed maximum security.

Final diagnosis:

Axis I:	Schizoaffective disorder, bipolar type
	Polysubstance abuse
Axis II:	Deferred

Case D

Mr. D is a 33-year-old white male who was found not guilty by reason of insanity for murder. Mr. D had a significant substance abuse history predating his psychiatric disorder. He began using marijuana at age 14 and continued until his crime. He experimented with cocaine as a youth. He admitted smoking marijuana laced with PCP and embalming fluid, and used LSD, amphetamines, and inhalants on a few occasions.

His first of eight hospitalizations began when he was 22 years old. His initial hospitalization was significant for mania and psychosis, whereupon he would hear the voice of Jesus. His later hospitalizations were also notable for delusions and hallucinations centered on Jesus while in a manic state. Prior to the murder he had just been released from a psychiatric hospital where he had been involuntarily detained due to his acute psychosis.

After release, he lived on the streets for several weeks and began preaching, believing he was "an agent of the Lord" and receiving command hallucinations from God. Mr. D reported speaking in tongues on occasion during this time. His family history was unknown with the exception of his father being a violent alcoholic. Mr. D had previous legal charges of indecent exposure, church trespassing, disorderly conduct, and public intoxication.

On the day of the crime Mr. D went to his father's house and believed his father was "sexually coming on" to him. Mr. D had also had a dream 10 years earlier that his father had tried to kiss him with a sexual intent and this dream remained clear to him and had bothered him over the years. Mr. D subsequently believed it was God's will to kill his father and beat him to death with a baseball bat. He walked to the police station and turned himself in. Mr. D remained psychotic for several months while in jail and refused all medications.

Upon admission Mr. D was hyper-religious, hyper-verbal, and very grandiose. He reported auditory hallucinations coming from God. Mr. D responded partially to a combination of neurontin 1200 mg and olanzapine 25 mg at hs. He occasionally hears voices and still believes he was justified in acting out the will of God and killing his father. He has no insight into being mentally ill. He is still hyper-religious, delusional at times, and remains at a maximum-security hospital.

Final diagnosis:

Axis I:	Schizoaffective disorder, bipolar type
	Polysubstance abuse
Axis II:	Antisocial personality traits

Case E

Mr. E is a 49-year-old black male who was found incompetent to stand trial for the alleged criminal offense of assault on a peace officer. Mr. E's psychiatric history began when he was 29 years old. Just prior to this hospitalization he had joined a Jehovah's Witness sect in South America. He lived a very nomadic life, walking and hitchhiking through South America. From that time on he was hospitalized on multiple occasions throughout the United States. Typically he would be hyper-religious, labile, pressured in speech, sometimes exhibiting glossolalia, with delusions centering on sex and religion. There was no history of drug or alcohol use and there was no information regarding his family or past arrests. He did have a history of being involuntarily hospitalized due to homicidal threats, and on one occasion while in jail he struck an officer, believing the officer was trying to put an object up his rectum. Mr. E's crime was precipitated by his harassing three women on the street. When an officer tried to intervene Mr. E struck the officer in the face with his fist and several civilians had to restrain him. Mr. E's rationale for harassing the women: "They were three lesbians and that's a sin." Mr. E remained psychotic and manic while in jail and refused all medications.

At the time of admission Mr. E was hyper-religious, grandiose, and exhibited florid mania. For several months he was resistant to taking his medications, which included haloperidol, valproic acid, lithium, and lorazepam. He occasionally would begin the medicines but then refuse.

It was found that if the treatment team started with a prayer asking God to help Mr. E take his medications, Mr. E then became very compliant. Eventually on valproic acid 1000 mg, lithium 600 mg, and olanzapine 15 mg, Mr. E's condition improved to the point where he was not labile, hyper-verbal, or floridly manic. He still was hyper-religious and preoccupied with prayer. He was found not manifestly dangerous and sent to a less restrictive hospital.

Final Diagnosis:

Axis I:	Schizoaffective disorder, bipolar type
Axis II:	Deferred

Discussion

The results are significant regarding the relationship between self-reported glossolalia on a forensic unit and being diagnosed with a mood disorder, specifically one with a manic component. The two mood disorders accounting for all glossolalists in the study were Bipolar I disorder and Schizoaffective disorder, Bipolar type.

Hine (6) reviewed multiple studies and came to the conclusion that theories which explain glossolalia as indicative of psychopathology are inadequate. She noted several studies that documented a lack of psychopathology and glossolalics in the Pentecostal church. Alland (7) reported that tongue-speaking members of the Pentecostal church were well adjusted and behaved normally, with the exception of their glossolalic experiences. He believed this weakened the contention that glossolalia was indicative of schizophrenia. Boisen (8) compared members of a Holy-Rollers church with psychiatric patients who displayed superficially similar behavior. He noted a conceptual similarity between the Pentecostal's interpretation of tongue speaking as possession by the Holy Spirit and the psychiatric patients' feeling that they are controlled by a power external to themselves; but he could find no evidence of mental illness in the tongue speakers from the church (8).

Hine (6) also discussed a study by Kiev (9) where he compared ten West Indian schizophrenics in English mental hospitals with a group of normal West Indian immigrants who were Pentecostals. He found that, "unlike nonpsychotic individuals who participate in various religious cults and in revivalists sects in which dissociative phenomena and possession are permitted and encouraged, the schizophrenic patients could not maintain sufficient control of autistic and regressive behavior to fit into the described ritual patterns" (6). Kiev (9) reported that the difference between the glossolalic behavior of psychotic individuals and that of nonpsychotic individuals was perfectly clear to the normal Pentecostals. Hine also reported on several studies which had utilized psychological

testing in evaluating for psychopathology among glossolalists. She noted that none of the studies showed that Pentecostal glossolalics as a group were more psychotic or even neurotic than the control groups or the societal norms. Hine concluded that available evidence required that an explanation of glossolalia as pathological must be discarded (6). Spanos and Hewitt (10) reported no reliable empirical support for the psychopathology hypothesis concerning glossolalia. They compared glossolalics and non-glossolalics matched for age, sex, and level of education on measures of self-esteem, psychosomatic complaints, depression, neuroticism, and dogmatism. Their data provided no support whatsoever for the notion that glossolalia was symptomatic of psychopathology. Grady and Loewenthal (11) reported that the literature suggested that glossolalia is not associated with maladjustment and felt not to be a form of psychopathology. Goodman's study (12) of 29 glossolalists also found an absence of psychosis in this group.

From the beginning of tongue speaking in Christianity, the insinuation has been that those who spoke in tongues were deluded or beside themselves. On the day of the Pentecost, the Bible (Acts II: 12–13) reports that "all were amazed and perplexed, saying to one another 'what does this mean?'" But others mockingly said, "They are filled with the new wine." The Apostle Peter tried to dissuade the onlookers by saying drunkenness was not the cause of glossolalia (Acts II: 14b–15), nevertheless one suspects that many remain unconvinced because this tongue speaking was strange behavior at best and abnormal behavior at worst (4). Glossolalia has been considered by many to be abnormal and those who practice it have been thought to have been mentally ill.

Cutten's 1927 book, *Speaking with Tongues* (13), is the earliest of the modern works on this subject. His belief was that glossolalists were almost, without exception, devout but ignorant and illiterate people. He also described many as psychiatrically disturbed, which he believed would account for the visions and voices typically described. Cutten's contentions concerning psychopathology, quoted and requoted through the years, have taken on an aura of fact among non-Pentecostal churchmen who are critical of the movement (6). The assumption that glossolalia is linked to schizophrenia and hysteria was put forth in his book, and was the genesis of modern writings describing glossolalia as psychopathological. Cutten was a Baptist minister and his book included little or no scientific research. Most of the literature associating glossolalia with disturbance of thought are individual case studies with a predominance of the psychopathology labeled schizophrenia.

The concept of intense religiosity as symptomatic of psychiatric disturbance can be found in many writings. Pentecostal leaders describe an attraction to disturbed persons when the Pentecostal movement began early in the twentieth century (4). Spencer's study (14) of 50 Jehovah's Witnesses admitted to the Mental Health Services of Western Australia suggest that this section of the community are more likely to be admitted to a psychiatric hospital than the general population. He found that followers of this sect are three times more likely to be diagnosed as suffering from schizophrenia and nearly four times more likely to have paranoid schizophrenia than the rest of the population at risk. He reported that, "extreme religious views may represent a form of expression of a psychotic disorder" (14). Spencer also suggested that the schizophrenic—his thoughts in turmoil and plagued with doubts about his identity—may turn to a sect like the Jehovah Witnesses for nonpharmacological tranquilization.

The results of Grady and Loewenthal's study (11) on glossolalia suggested two forms of glossolalia, the public and the private, the former more consistent with psychopathology. The authors also noted that some parishioners reported their psychopathology was relieved by glossolalia.

Pattison and Casey (2) reported several studies that associated paranoid schizophrenia and glossolalia. They hypothesized that when glossolalia is practiced as part of an expected ritual, one would not find psychopathology; whereas in situations where glossolalia is not a cultural expectation, or the group is already a part of a deviant subculture, one would find a correlation between glossolalia and psychopathology. A parallel idea was put forth by Alland (7), who hypothesized that the initiator of religious trance-like behavior may be psychotic and act as a model for the behavior, then be copied by receptive normals. There have been further case reports associating glossolalia with schizophrenia (12, 15).

The majority of the empirical studies have not supported a relationship between mental illness and glossolalists. The evidence for this relationship has only been found in case and small sample studies describing thought disorder. The diagnosis used when describing glossolalists who are mentally ill has been schizophrenia, yet this is not consistent with the predominance of mood disorders found in our sample of glossolalists. We found no references which labeled the glossolalist as schizoaffective or bipolar. There could be several reasons for this.

Kaplan, Saddock, and Greeb noted, "a great deal has been published about the clinical difficulties separating a manic episode from schizophrenia" (16). Merriment, elation, and infectious mood are much more common in manic episodes than schizophrenia. The combination of a manic mood, rapid or pressured speech, and hyperactivity weighs heavily towards a diagnosis of manic episode. All of the above characteristics are commonly seen at Holy Roller churches and Pentecostal churches where glossolalia is common. Kaplan, Saddock, and Greeb (16) also reported that the onset of mania is often rapid and is perceived as a marked change from the patient's previous behaviors. Again this is typical for the glossolalist when the "Holy Ghost" quickly takes over the practitioner's body and drastic behavioral changes are noted. The description of mania is more similar to an initial glossolalic experience than one of schizophrenia.

The criteria for diagnoses also have changed over time. From 1933 to 1970, patients whose symptoms resembled a mixture of schizophrenia and mood symptoms were variously classified as having schizoaffective disorder, atypical schizophrenia, good prognosis schizophrenia, remitting schizophrenia, and cycloid psychosis, terms that emphasized the relation to schizophrenia (16). Since most of the relevant literature on glossolalia was done from the 1950s to mid 1970s, it would suggest an overuse of the diagnosis of schizophrenia.

Thirty years ago two sets of data caused a shift from schizoaffective disorders as schizophrenic illness to mood disorder (16). First, lithium carbonate (a mood stabilizer) was effective; and second, Cooper et al. (17) showed that the frequency of patients classified as schizophrenic in the U.S. when compared to the U.K. was the result of an over-emphasis on the presence of psychotic symptoms as a diagnostic criteria for schizophrenia.

We think the past references describing mentally ill glossolalists as schizophrenic are misleading. The above evidence, along with our findings, suggests a mood disorder in the manic spectrum. Goodwin and Jamison (18) noted the predominance of many mystics, religious leaders, and saints who may have suffered from manic-depressive illness (bipolar disorder), a finding related to our results.

The crime or alleged crime that was responsible for the hospitalizations of many of our glossolalist subjects was significantly as-

sociated with sexual and religious delusions, hallucinations, or behaviors. Most of the glossolalist perpetrators were hyper-religious in their initial psychiatric assessment, and many remained in that state throughout their hospitalization. Many of the crimes appeared to be motivated by psychosis, with a predominance of hyper-religiosity. Most had a history of past arrests for crimes that also were associated with excess religious content. Our results also show a significant predominance of sexual content or theme involved in the crimes of the glossolalic group versus the non-glossolalist group. Stalking and attempted sexual assault were seen in several cases. The few (22%) glossolalists who suffered from a thought disorder unrelated to mood did not exhibit any sexual or religious theme in their crime.

As the cases illustrate, psychodynamic content blended religion and sexuality. Ms. A says she is driven by God's voice to rob a bank, but also has concerns about being bisexual. Mr. C is preoccupied with auditory hallucinations and delusions about Satan, thinks about homicide, and wants to have sex with a female. Mr. D hears the voice of God telling him to kill his father, but at the same time believes that his father is seducing him. Mr. E harasses three women in the street whom he believes are betraying his God because they are lesbians.

It should not be surprising that sex and religion are co-occurring themes since they are both powerful forces in human psychology. Religion answers the mystery of creation and death, while sex is a biological necessity for procreation and an intensely pleasurable instinctual drive. Some religions, such as Christian fundamentalists, incorporate strict rules regarding sexual behavior in their doctrine. Violation of these rules could result in eternal damnation. Both themes are commonly associated with expansive, omnipotent feelings. A psychotic mind would condense these themes since many non-psychotic people interpret religious doctrine in ways that find sex evil, or conversely appropriate, depending on their interpretation.

The cyclic nature of mania and depression may also cause sexual confusion in two ways. First, gender identity could change. Goodwin and Jamison (18) note that men and women's perceptions of their masculinity and femininity can fluctuate depending on what mood state they are in. Some of our patients exhibited fears related to sexual identity by direct statements about self or others. Ms. A exhibited the former by stating to the hospital treatment team her fears of becoming bisexual. Mr. E exhibited the latter by harassing three female strangers and claiming they were lesbians. Second, sexual desire also changes depending on mood state. Depression tends to dampen desire while mania causes an increase. Some of the patients were manic at the time of the crime or past crimes, and the relationship between abnormal sexual desire and the aberrant act is apparent. Mr. C never dated due to low self-esteem but used stalking of females and fantasy of serial homicide as a way of quelling his manic sexual desire. Two depressed female subjects shunned sexual advances by male patients but were hypersexual when manic, one becoming pregnant.

Most of the glossolalist perpetrators experienced clinically obvious psychotic symptoms: delusions with congruent command auditory hallucinations. There was also a predominance of voices coming from God or the Devil in the mood-disordered glossolalist. Virtually all of this group were manic while exhibiting these psychotic religious hallucinations and delusions. This finding is consistent with information presented by Goodwin and Jamison: "hallucinations during mania are frequently ecstatic and religious in nature. . .Manic delusions are usually grandiose and expansive in nature, often religious and not infrequently paranoid" (18). Sexual themes in delusions are also commonly seen in the manic state.

Our data also showed that there was a significantly higher number of female glossolalists when compared to total gender admissions. May (19) reported that in Christian religions women speak in tongues more often than men. All our glossolalists were Christian. Alland (7) noted that women spoke in tongues more often than men. Goodman found in her studies of glossolalists in Mexico that women go into glossolalia much more easily than men, and almost all of them are habitual glossolalists (12). Cutten (13) also reported glossolalia to be more common among women. Our data found no disproportionate differences in race among glossolalists. Cutten agreed: "there seems to be no differences in nationalities regarding the frequency of the gift for it is regulated more by individual psychology than by racial traits" (13).

What would motivate a religious sect to embrace glossolalia? The sect may need more mysticism or religious excitement. Goodman (20) suggested that the modern Pentecostal movement highlighted a conflict that was inherent in the Christian church from its inception. The core of this conflict is a need for experience rather than believing without seeing. "We might say that Pentecostalism is the latest attempt in Christianity to try and remedy what could be called ecstasy deprivation, rebelling against a divine service that does not include the trance" (20). Pentecostalism's use of glossolalia makes it easier to believe.

Why would an emotionally disturbed individual—much less a normal individual—be attracted to glossolalia? Kildahl (21) reported that the preoccupation with internal psychological factors seems to create the necessary atmosphere in which a person is ready to speak in tongues and subsequently finds some kind of answer. Loneliness and a sense of purposelessness made the glossolalia experience an answer to self-doubt. He found that 30% of his control group (non-glossolalists) had experienced an anxiety crisis, while 85% of the glossolalic group had an anxiety crisis. Anxiety appeared to be a correlate for developing the ability to speak in tongues.

Stag, Hinson, and Oates (3) noted that glossolalia acted as a mechanism to release built-up tension. They also reported an association between anxiety and glossolalia. Kiev (22) likewise noted a sense of security or relief from anxiety by these practices. Samarin further reported, "glossolalia is also indulged in, because speakers appear to derive pleasure from the experience" (1). If glossolalia does serve as a reduction in anxiety, it would attract anxious people. Grady and Loewenthal (11) reported that some practitioners claim psychopathology is relieved by glossolalia. Their results based on interviews with glossolalists suggested that it was a frequent and very relaxing activity. Glossolalia was described as a spiritually helpful part of daily life and a powerful form of prayer by the glossolalists themselves. Kildahl (21) reported that glossolalists were characteristically less depressed than non-glossolalists.

We do not conclude that glossolalia is beneficial to all; in fact, it may be psychologically dangerous to some, especially those predisposed to psychiatric illness, such as some or all of our glossolalic patients. Meadow and Kahoe (23) reported that religion may also indirectly precipitate serious disturbance. The mentally ill may use religious explanations for their strange feelings in an attempt to avoid further mental deterioration. Such rationalizations of strange behavior can compound psychopathology and precipitate delusions of omniscience or grandiose identification with the deity. This is experientially known by many Pentecostal leaders, since they have developed ways of evaluating potential converts, and do not en-

courage the glossolalic experience in persons they consider to be in questionable mental or emotional health (6).

The research suggests that glossolalists as a group do not exhibit emotional disturbance any more than any other religious group. There is actually evidence to suggest that the act of glossolalia may be beneficial and calming for some. It is our opinion that there is a disturbed although very small sub-population that is attracted to and will practice glossolalia. This practice may be beneficial, but with some people it may intensify or precipitate hyper-religiosity leading to deeper psychosis. We found this disturbance is most likely to be represented in the manic spectrum of mood disorders and not the schizophrenic spectrum so widely reported in the literature. The mentally disordered offender who speaks in tongues tends to commit crimes motivated by psychosis with a religious and sexual theme, and women tend to be over represented in this group.

Forensic Implications

Most of the glossolalic perpetrators experienced auditory hallucinations with many commands. There has been some debate in the literature regarding the magnitude of effect of command hallucinations on violence (24). When the voice of a command hallucination is familiar or known to the perpetrator, the chances are greater that the perpetrator will carry out the command (25). If the perpetrator's delusional system is congruent with the command hallucination, this will increase the risk of the command being acted upon (25). Most of our glossolalic perpetrators who acted on a command met both circumstances, with many exhibiting congruent persecutory or grandiose delusions; they did not hear a familiar voice, such as a friend, parent, or sibling, but did hear a voice familiar from their mystical life, such as God. If the perpetrator psychotically identifies himself as an agent of God, wouldn't his perception of "God's voice" be familiar? It would then seem plausible for the perpetrator to act in accordance with a command from God.

An auditory hallucination that is not a command may also heighten the risk of a dangerous act, especially if it occurs in concert with a congruent delusional system. For example, hallucinations with a persecutory theme may act to reinforce the paranoid delusions of the person. Paranoid delusions have been noted as a risk factor for violence (26).

A delusional certainty concerning a religious or mystical belief may also be used as an omnipotent defense against a sexual threat and lead to violence. Would a motivation driven by two congruent themes of religion and sex be more powerful than an action driven by sex or religion alone? Could religion and sex act additively or synergistically and substantially increase the risk of a violent act? We do not yet know.

It would be beneficial to gather details about the religious history of the patient and his family. Was the glossolalia part of his family or culture's religious custom, or was he an initiator of the tongues? Is his glossolalic experience private or public? An initiator of glossolalia, and the individual who speaks in public when not part of a cultural or religious norm, should heighten suspicions of mental disorder in the subject. The chances of instability are also elevated if the glossolalist could not function in the religious sect and was expelled or voluntarily left. More information should also be gathered regarding the age when the person started speaking in tongues, his or her psychological state at the time, and concurrent stressors.

We recommend that forensic admission interviews include a routine question, "do you speak in tongues?" This should help raise questions of a mood component along the manic spectrum. Religious or sexual themes may predominate their thought processes, fantasies, dreams, hallucinations and/or delusions, and relate to current and past crimes.

In an inpatient unit, the psychiatrist or psychologist may need to develop a risk management plan that takes sexual and religious motivations into account. The glossolalist perpetrators in this study were very concrete in their Biblical interpretations. This can lead to crimes or violent acts associated with their literal beliefs, such as autoenucleation or enucleation of other's eyes (27). The familiar Biblical injunction (Mathew 5:29: "And if thee right eye offend thee, pluck it out . . .") has been quoted often by psychotic perpetrators of eye gouging. Staff need to be alert to the religious statements, activities, and readings of the patients on the unit.

The details gathered above allow the forensic professional to develop a better understanding of the patient's past and present motivations and current mental state. Future risk assessment and management may benefit by having a more detailed understanding of religion in an individual patient's psychology, most notably the glossolalic perpetrator.

Limitations

There were some weaknesses in our study. There needed to be a larger number of subjects. More details, such as a questionnaire regarding the age of acquisition of glossolalia, the psychosocial stressors around this time, and more details regarding the subject's social history and family psychiatric history were needed. Crime reports of some of the 130 non-glossolalist perpetrators were not available for detailed analysis. This could have caused a false elevation in the statistical significance regarding the relationship between the crime and the role of sex and religion.

We believe our patient population was skewed regarding diagnosis. The mentally disordered offender typically suffers from a major mental illness such as a thought or mood disorder. Further skewing could have occurred since the treatment team in which the perpetrators were admitted was made up of long-term patients, with malingerers having already been sent back to court. The mentally retarded were also not admitted to this treatment team. This resulted in a smaller spectrum of disorders to diagnose, which could help explain the very significant weighted kappa, representing the high agreement rate among the different diagnosticians.

In the four years that one of the authors spent in the maximum-security unit, only one report of glossolalia occurring on the unit came to his attention. A patient participant shared this. This probably is an underestimate due to several reasons. First, our data suggest a higher prevalence of glossolalia. Second, staff that work closely with the patients may not recognize speaking in tongues as anything more than odd or psychotic behavior. Lastly, private glossolalia would not be noted, especially since the question "Do you speak in tongues?" is rarely if ever asked.

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