What Was Tad Lincoln’s Speech Problem?

JOHN M. HUTCHINSON

Thomas “Tad” Lincoln (1853–1871), the fourth son of the sixteenth president, had a speech problem. This came to my attention shortly after assuming the presidency of Lincoln College. In an effort to find out more about the man for whom the college is named, I visited the Abraham Lincoln Presidential Library and Museum in Springfield, Illinois. In the rotunda of the museum are life-sized sculptures of the Lincolns and three of their sons, Robert, William, and Thomas (Tad), which present accurate likenesses of the family as they appeared during the White House years. As I examined the sculptures, I was intrigued by the sculptor’s creation of a small fissure just to the left of the midline on the upper lip of Tad Lincoln (see Figure 1). As an academically trained speech/language pathologist who has taught courses in cleft palate and served on interdisciplinary cleft-palate teams, I recognized that such a deformity often signals other midface anomalies, including some form of cleft palate.

A cursory inspection of the literature reveals many references to both communicative and cranio-facial deformities in Tad Lincoln. For example, Benjamin P. Thomas makes several references to Tad’s speech, contending that “he had a cleft palate and lisped.” Thomas also avers that Tad’s speech was marked by a rapid rate and low intelligibility. David Herbert Donald attributes the reduced intelligibility, in part, to dental abnormalities that were severe enough to require special dietary preparations. Other authors have described the speech problem as “baby words,” “baby tongue,” “tongue-tied,” “stammering

2. Ibid., 482.
6. Ibid., 156.
7. W. A. Evans, Mrs. Abraham Lincoln: A Study of Her Personality and Her Influence on

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utterances,"8 "stuttering,"9 "mix[ing] words in a lisp,"10 and a fluency pattern described as “words fairly tumbling over each other.”11 Added to these descriptions are a number of references to other developmental, behavioral, and medical problems. There is agreement among biographers that Tad was slow in learning to read and write, signaling a possible generalized delay in speech and language development.12 Some have suggested that Tad’s communication problems resulted from intellectual delays and limitations.13 He has been described as impulsive, hyperactive, and slow in reaching certain developmental milestones (e.g. learning to dress himself).14 Finally, Milton H. Shutes, upon examination of photographs of Tad and Willie, concluded that

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“the post-nasal cavities of the two younger boys were fairly well occluded with adenoids.”

From the perspective of the clinical discipline of speech/language pathology, the aforementioned array of descriptors creates a confusing, uncertain, and potentially inconsistent assessment of Tad Lincoln’s communicative problems. This is understandable because most of the descriptions have been offered by historians unfamiliar with terminology in speech/language pathology or by eyewitnesses and family members who lived prior to the development of speech/language pathology as a discipline during the twentieth century. Nevertheless, based upon descriptions in the literature, it is possible to establish with some degree of confidence Tad Lincoln’s communication problems.

Categorization of speech and language disorders

Before conducting a more thorough examination of the speech and language problems presented by Tad Lincoln, it is helpful to provide a brief overview of the different types of communication disorder. For purposes of this study the following simple six-fold categorization scheme will be used:

1. Disorders of language. A disorder of language occurs when a child or adult exhibits some level of incapacity in encoding or decoding the symbolic structure and content of his/her native language at the highest central nervous system level. Such disorders may result from limitations in brain development and/or maturation, inadequate environmental stimulation, disease, hearing loss, or trauma to the brain. Language disorders may involve difficulties in semantic (meaning), syntactic (grammatical structure), and/or phonemic (sound unit) processing. Often speech/language pathologists distinguish between receptive language disorders in which the patient cannot process incoming language symbols and expressive language disorders where the person cannot produce appropriate language, even though it may be understood. In childhood language development, expressive language competence lags behind receptive language ability.

2. Disorders of programming. In some cases, a person may be able to understand language and encode a message but cannot translate the centrally generated message into a motor pro-

gram that can be executed by the peripheral speech mechanism (lungs, larynx, tongue, jaws, soft palate, etc.). Disorders of programming are referred to as **apraxia**, which means inability to use a tool. For example, a patient might know intellectually what a table fork is used for and may have the muscular capacity to manipulate a fork but cannot translate the central understanding into muscular patterning that will allow proper use of the utensil. Similarly, when one has apraxia of speech, he/she cannot translate the centrally coded message into meaningful patterns of speech. Thus, a patient with apraxia may look at the picture of a tornado and call it variously a “tornoodie,” a “nortado,” or a “tednado.” In a case of pure apraxia, the patient will know that such attempts are in error.

3. Disorders of fluency. A disorder of fluency occurs when the “flow” of speech is disturbed in some way. Historically, three terms have been used to describe disorders of fluency: **stuttering**, **stammering**, and **cluttering**. Stuttering is a generic term referring to either a complete stoppage in the flow of speech or a repetition of a sound, syllable, word, or phrase that has no linguistic purpose. In the United States, the term stammering is archaic. However, in Europe and elsewhere stammering may refer narrowly to speech blockages as opposed to stuttering, which is reserved for repetitions. Cluttering is characterized by a rapid speech rate, articulation (pronunciation) errors, repetitions, and “telescoped speech” wherein the last portion of an utterance may be produced with an accelerated rate and less precision. Cluttering is typically one component of a broader syndrome with other behavior disturbances.

4. Disorders of the voice. Vibration of the vocal folds (cords) within the larynx produce a buzzing sound that generates the voiced portion of speech. Certain sounds require voicing (all vowels, the nasal consonants /m, n, ŋ/, and other orally articulated consonants such as /z/, /v/, /b/, /l/, /r/, etc.), whereas other sounds are unvoiced (e.g. /s/, /t/, /p/, etc.). When a condition causes a disturbance in the vibration of the vocal folds, a disorder of the voice may result. Terms such as “strained,” “hoarse,” “tense,” and “breathy” are often used to describe a voice disorder.

5. Disorders of articulation. The stream of voiced and unvoiced air emanating from the lungs and larynx is modulated as it enters the oral cavity (mouth). This modulation gives rise to the distinctive sounds of speech (vowels and consonants) and is
accomplished by the articulators (tongue, jaw, lips, palate, and to a lesser extent the throat or pharynx). Any disturbance in the proper placement of the articulators gives rise to a disorder of articulation. Sounds may be substituted one for another (such as /w/ for /r/ in “wed wobin”), added, distorted, or deleted.

6. Disorders of resonance. In the English language, three sounds are produced with the soft palate in a lowered position. These are the so-called nasal consonants /m, n, ŋ/ and involve resonance of the nasal cavities. All other English sounds are produced with the soft palate in an elevated position, which occludes the opening to the nasal cavities. If there is a deformity or malfunctioning of the soft palate (such as a cleft palate), the nasal cavity may not be properly closed off and a nasal quality pervades the person’s speech. Alternatively, if there is some obstruction in the nasal cavity, it cannot properly resonate for the nasal consonants, which gives a cold-in-the-nose quality to the speech. Properly speaking, disorders of resonance are disorders of articulation, but for purposes of this study, they will be classed separately.

Cleft lip and palate

Because there is incontrovertible photographic evidence that Tad Lincoln had some form of notching just to the left of the midline on his upper lip (see Figure 2), a brief overview of cleft lip and palate, as it occurs in human beings, is warranted. Cleft lip can occur with or without a cleft of the palate. Clefts of the palate may be partial, involving a portion or the entirety of the uvula, soft palate, hard palate, and/or alveolus (gum ridge). Some children are born with complete clefts of the uvula, soft palate, hard palate, alveolus, and lip. One form of partial palatal cleft is the so-called submucous, occult, or occult submucous cleft. With a submucous cleft, the peripheral tissue of the palate may be complete but the underlying muscle and/or bone is incomplete. As with clefts of the palate, clefts of the lip can be partial or complete. With rare exception, clefts of the lip occur to left or right of the midline. Cleft lip alone and cleft lip + cleft palate are much more common in males, while cleft of the palate alone is more common in females. Left-sided clefts of the lip are more common than right-sided clefts.16

Cleft lip and/or palate can result from a variety of etiological fac-

tors both genetic and environmental. Of particular importance is the heritability of the disorder. There is mounting evidence that clefts of lip and palate run in families, with a high probability of recurrence in first-degree relatives (siblings, parents, offspring) and a rapidly decreasing frequency with decreasing degrees of relationship. It would appear that cleft lip and cleft lip + cleft palate constitute a qualitatively different disorder than cleft palate only.

Tad Lincoln’s speech and language problems

The six-fold categorization provides a framework for analyzing Tad Lincoln’s speech and language problems. Special attention will be de-

17. Ibid., 341.
voted to the probable cranio-facial anomalies and consequent speech problems signaled by the left-sided lip fissure shown in Figures 1 and 2.

Disorder of language

There is indirect evidence in the literature that Tad Lincoln presented a language problem during childhood. References to baby talk, delayed development, and slow learning would certainly suggest the possibility of a language problem during his early years. Indeed, language problems are often co-morbid with multiple articulation disorders and, as will be shown later, in all probability Tad had a complex articulation problem.

Another indicator of Tad’s potential language problems derives from his difficulties in learning to read. It is well-documented that early delays in language development put a child at risk for later problems in learning to read. It must be understood that not all children who have difficulty reading have language development problems. Conversely, not all language development problems inevitably lead to later literacy issues. However, the very strong correlation lends credence to the possibility that, because Tad Lincoln had undisputed problems in learning to read, he may also have suffered from delays in language development as well.

It has also been suggested that Tad had an aversion to formal schooling—one that was condoned by his father—and that it led to his delay in reading. However, his illiteracy was extensive for the entire period of the White House years. Elizabeth Keckley, who attended Mary Todd Lincoln in the White House, recounts the familiar story of Tad’s inability to read the simple word *ape,* as late as age twelve. When shown a picture of an ape, Tad insisted it was a monkey and that the single-syllable, three-letter word *a-p-e* spelled *monkey.* His illiteracy is confirmed by Mary Todd Lincoln in a letter written from Chicago to Alexander Williamson, dated December 16, 1866. She wrote, “Taddie is well Can now

read, quite well—as he did not know his letters when he came, here, you will agree he learns rapidly.”

It seems improbable that such a massive deficit characterized by simple failure to learn even the letters of the alphabet can be attributed solely to parental indulgence and childhood aversion to school. Tad did have formal schooling, not dissimilar to that of his older brother Willie, and one might assume that with even a limited attention span, he would have learned the alphabet and spelling of simple words. That his brother flourished in the same educational environment suggests that Tad may have had some linguistic deficit that delayed his learning to read. Today, he would be characterized as a “late bloomer,” because he eventually did learn to read and became increasingly proficient in the mastery of his studies. His capacity to “catch up” would imply normal intelligence and the development of coping skills that ultimately allowed him to overcome his probable language impairment.

**Disorder of programming**

Clearly, Tad Lincoln had limited intelligibility that made it difficult for those who did not know him to understand what he was saying. One possible cause of limited intelligibility is childhood apraxia of speech. In addition to limited intelligibility, childhood apraxia of speech is characterized by several principal symptoms including:

1. Limited babbling in infancy
2. Receptive language competence substantially exceeding expressive language competence
3. Slow, effortful, halting speech production; evidence of struggle behavior
4. More evident in volitional, intentional speech than in automatic speech

Comparison of these symptoms with Tad Lincoln’s speech patterns reveals some similarities beyond limited intelligibility. There is a possibility that he had delayed language development, and it is likely this would have differentially affected receptive and expressive language competence, with the latter being more compromised. However, there is no evidence that Tad had limited infant babbling, and

he certainly did not have speech characterized by slow, effortful, or halting utterances. In fact, his speech was characterized as a “flood,”26 “jabbering,”27 or “tumbling,”28 hardly the descriptors of labored and effortful expressions. Finally, there is no evidence in the literature that his speech problems became exacerbated during volitional utterances. In short, despite limited intelligibility and delayed language, it is unlikely that Tad suffered from childhood apraxia of speech.

Disorder of fluency

There is a 1930 reference to Tad’s speech fluency while he was a student at the Elizabeth Street School in Chicago. A correspondent writing in the Chicago Tribune reported that Tad had a nervous demeanor characterized in part by “stuttering.” Indeed, the reporter stated that the children in the school called him “Stuttering Tad.” However, it was the reporter’s contention that Tad did not stutter but had a “slight deficiency of speech” and was teased by students because of this speech problem and his timidity.29 This is a passing reference and there is no available information regarding the correspondent’s sources or observations. There are no other references in the literature indicating that Tad stuttered or exhibited the essential symptoms of stuttering, namely, involuntary blockages in the flow of speech or repetitions of the smaller units of speech (sounds, syllables, words of one syllable). Laypersons, particularly in the mid-nineteenth century, prior to the development of a generally accepted terminology for speech disorders, might easily have used a term such as “stuttering” to refer to any number of speech problems, including the “slight speech impediment” noted by the aforementioned correspondent, among others. It seems unlikely that Tad was a person who stuttered.

A careful examination of Tad’s speech pattern and his behavioral profile do lend some support to the possibility of cluttering. Cluttering is characterized by a rapid speech rate, telescoped speech, articulation errors, and dysfluencies. The evidence from the literature certainly confirms the presence of articulation errors and a rapid rate of speech in Tad.30 There is no firm indication of telescoped speech or dysfluency. However, since persons who clutter are often unintelligible because of the telescoped speech problem, it is tempting to speculate that Tad’s unintelligible speech occurred for the same reason. Moreover, those

26. Thomas, Abraham Lincoln, 482.
27. Donald, Lincoln, 428.
28. Randall, Lincoln’s Sons, 6.
30. Randall, Lincoln’s Sons, 6.
who clutter often present other sequelae such as lack of awareness of the speech problem, language difficulties, social and vocational problems, distractibility, and hyperactivity. It would seem that in the early years Tad was relatively unconcerned about his speech problem and had certain social/vocational problems (e.g. delayed ability to dress himself). Arguably, he was distractible and hyperactive. If, as noted earlier, he had language problems, the evidence begins to mount that he may have had a cluttering disorder. However, cluttering is difficult to diagnose, even by contemporary and competent speech pathologists. Consequently, caution is necessary in applying the label “cluttering” to Tad Lincoln’s speech pattern.

Disorders of the voice

There are few descriptors of Tad Lincoln’s voice. The president’s secretary, John Hay, described his voice as a “shrill pipe.” The context in which Hay offered this description is one describing Tad as high-spirited, over active, and undisciplined. The incidence of vocal nodules or vocal polyps on the margins of the vocal folds is much higher in children who are hyperactive. These growths appear when there is abnormal strain on the voice, causing the vocal folds to hyper-adduct or occlude with high degrees of force. Evidence suggests that the hyperactivity is often associated with shouting and screaming which, in turn, causes hyper-adduction of the vocal folds. Vocal nodules and polyps typically produce a combination of breathy voice with a strained, strangled voice quality. It is possible that Tad had vocal nodules or polyps at some point during his childhood years, though there is no direct reference in the literature.

Disorders of articulation

Repeated references to Tad Lincoln’s lack of intelligibility give virtual assurance that he had an articulation disorder, perhaps of some severity. At least four firsthand accounts confirm Tad’s difficulties in pronouncing the sounds of English: (1) Sometime baby-sitter to the Lincolns’ younger boys, Julia Taft Bayne, noted that “a slight im-

32. Oates, With Malice Toward None, 288; Bayne, Tad Lincoln’s Father, 78.
33. Michael Burlingame, ed., At Lincoln’s Side: John Hay’s Civil War Correspondence and Selected Writings (Carbondale: Southern Illinois University, 2000), 111.
pediment in his speech made it difficult for strangers to understand him.”35 (2) Elizabeth Keckley, who attended Mrs. Lincoln, confirmed that Tad “suffered from a slight impediment in speech.”36 (3) Tad is reported to have consistently mispronounced the surname of William H. Crook, a bodyguard for President Lincoln.37 (4) In correspondence between Robert Lincoln and Judge David Davis, Tad’s older brother makes reference to his “bad habits of speech.”38 A possible fifth eyewitness reference to Tad’s articulation difficulties appears in the correspondence of Mary Todd Lincoln. Thomas F. Schwartz and Kim M. Bauer, presenting a series of unpublished works by Mary Todd Lincoln, note a letter from the president’s wife to Col. Benjamin W. Richardson, in which reference is presumably made to Tad’s speech problem. Specifically, Mrs. Lincoln wrote, “Taddie in Germany became quite proficient in the language, but in the mean time, his own mother tongue, was so much neglected, that it has become necessary to place him with an English tutor.”39 Schwartz and Bauer contend that this statement is an attempt by Mary Todd Lincoln to “rationalize” Tad’s speech problem.40

The available eyewitness accounts also provide insight into the specific articulation difficulties encountered in Tad’s speech. Elizabeth Keckley wrote that Tad always called her “Yib,” presumably substituting /y/ for /l/ in the nickname “Lib.” Crook reported four articulation errors in his account. First, Tad pronounced Crook’s name as “Took,” substituting /t/ for /k/. Second, he omitted the /r/ in the /kr/ consonant cluster. Third, he called his father “Papa day,” a substitution for “Papa dear.” The second and third error patterns would suggest difficulty in pronouncing the liquid consonant /r/. Fourth, when referring to Tom Pendel, Tad dropped the non-stressed second syllable of Pendel. He would say “Tom Pen.” Ruth Painter Randall recounts a story of Tad’s referring to a neighbor, Mrs. Sprigg, in an “appealing lisp” as “Mith Spwigg.”41 If this is an accurate transcription, it confirms Tad’s difficulty in producing /r/ and suggests inconsistent substitution of

35. Bayne, Tad Lincoln’s Father, 3.
36. Keckley, Behind the Scenes, 216.
37. Randall, Lincoln’s Sons, 155.
40. Ibid., 3.
41. Randall, Lincoln’s Sons, 35
“th” (θ) for /s/. If the substitution of /θ/ for /s/ were consistent in all contexts, Tad would have said “Mith Thpwigg.” In a fictionalized account of Tad Lincoln’s life (Tad Lincoln: A True Story by Wayne Whipple), the author contends that Tad could not produce the /s/ sound and omitted it in the initial position when producing such words as “Tanton” for “Stanton” and “pankin’” for “spanking.” Though these latter examples would be consistent with a child exhibiting developmental articulation problems involving /s/, not much credence can be placed in their accuracy because the reference is from a fictional account, despite the title’s claim to veracity.

All of these articulation errors are consistent with immature speech patterns that typically disappear by age five. Three sounds (/r/, /l/, and /s/) are particularly difficult for children to produce because of the necessary lingual precision. Moreover, these sounds are among the last to be accurately and consistently produced in all contexts as children progress through normal phonological development. The dropping of “weak” syllables such as the unstressed syllable “del” in “Pendel” is also typical of immature speech patterning but usually disappears by age three. The substitution of /t/ for /k/ is a phenomenon known as “fronting” or “velar fronting.” Fronting involves substituting a sound with a more anterior lingual placement for one with a posterior placement. Accordingly, “kiss” becomes “tiss,” “go” becomes “do,” “sing” becomes “sin.” Fronting is typical of immature speech development and can be a compensation found in the speech of children with cleft palate. If the aforementioned reference to the presence of hypertrophied adenoids in Tad Lincoln’s nasopharyngeal region is true, it is also possible that he had enlarged tonsils, which can result in more anterior placements of the tongue as a compensation for the reduced space in the tonsilar region at the rear of the oral cavity. These speech problems continued into Tad’s teen years. Robert Todd Lincoln disclosed that he had secured the services of a Mr. McCoy, an elocution teacher, who had begun to work successfully with Tad in helping him to “pronounce correctly.” Tad was fourteen at the time.

Wayne Whipple’s fictionalized account does make an interesting suggestion. Whipple contends that because of Tad’s cleft palate, he

45. Robert T. Lincoln to David Davis.
could not pronounce /s/; therefore he said such things as “I want hum - [some] one to . . .”46 or “abhunt” for “absent.” This is an astute observation, if true, because it reveals the substitution of a laryngeal fricative /h/ or perhaps a pharyngeal fricative /?/ for /s/. Such substitutions are very rare in children with developmental articulation problems. However, /h/ and /?/ for /s/ substitutions are extremely common in children with cleft palate. The sound /s/ is a fricative characterized by the impounding of air pressure in the mouth behind the tongue, which permits the creation of a turbulent or sibilant sound. However, if the soft palate is absent, short, or weak, it cannot occlude the nasal cavity, which impairs the ability to impound intraoral air pressure. The air leaks through the nose, and the speaker can neither initiate nor sustain sufficient pressure to produce the required turbulence. This often forces the speaker with an incompetent soft palate to create a turbulent sound source below the point where nasal leakage would occur; namely, deeper in the pharynx or at the level of the larynx. Alternatively, some speakers with oral clefts, simply omit fricative sounds, which is consistent with Whipple’s account of Tad’s omission of the /s/ in “Tanton” and “pankin’.” The term “lisp” has been used to describe Tad’s speech problem. Typically, a lisp refers to some disturbance in the production of /s/ or /ʃ/ (“sh”). Conceivably, the presence of pharyngeal and/or laryngeal fricatives in Tad’s speech could have prompted use of the term lisp to describe his speech. It is interesting that Whipple would have reported these rather insightful observations, and one is tempted to speculate that he had some source unknown to this author upon which he based his writing. Perhaps, on the other hand, he simply had experience with individuals having a cleft palate and, as an astute observer of their speech patterns, simply assumed that Tad would have exhibited the same errors in production.

Disorders of resonance

There is no mention in the literature of a nasal quality to Tad Lincoln’s voice, which would indicate the absence of a resonance disorder. However, as will be shown later, it is probable that he had at least a partial cleft of the soft and/or hard palate. If the cleft were very mild, involving only the uvula or a small segment of the soft palate, his capacity to valve the nasal cavity may have been essentially normal, thereby explaining the absence of any commentary about a nasal voice quality. Further, if Shutes is accurate in his observation that Tad had

an adenoid facies (thus hypertrophied adenoids), there would have been partial obturation of the nasopharynx by the enlarged adenoid pad. This would have augmented the valving of the nasal cavity and perhaps compensated for a marginally deficient soft palate. Of course, a more severe cleft would have given rise to a resonance disorder and, with the absence of palatal surgery in those days, he would have exhibited a resonance disorder that was simply not recorded in any surviving accounts.

**Tad Lincoln’s cleft lip (and palate)**

Re-examination of Figure 2 reveals that the notching or fissure to the left of the midline runs from the lower margin of the upper lip up to the left naris or nostril. It is not a complete cleft of the lip and, using contemporary parlance, would be termed a microform cleft or forme fruste. Figure 3 depicts a clear image of the forme fruste pattern of clefting, and one can see the clear similarity of this example with that in the photograph of Tad Lincoln shown in Figure 2. Without question, the forme fruste is a less severe variant of cleft lip and has sometimes been referred to as a “congenital healed cleft lip,” suggesting spontaneous and nearly complete closure of the cleft lip in utero.47

Of particular significance is the suggestion in the literature that this particular phenomenon runs in families.48 Close inspection of a photograph presumed to be that of Tad’s grandfather and namesake, Thomas Lincoln, shows the same forme fruste of the upper lip on the

Figure 3.

48. Ibid., 27.
left side (see Figure 4). Though there are too few cases upon which to base firm conclusions, it would appear that forme fruste clefts have a higher degree of heritability than open cleft lip and/or palate. Thus, the grandfather-grandson recurrence in the Lincoln family points to an almost certain inheritance that skipped the sixteenth president.

It should be noted that the presence of cleft lip often signals deeper anomalies involving the alveolus and palate. There are repeated references in the literature of a cleft palate or partial cleft palate in the case of Tad Lincoln. In addition, there is ample evidence of dental abnormality. For example, in the January 1868 letter from Robert Todd Lincoln to David Davis, reference is made to an early form of orthodontic appliance that had been placed in Tad’s mouth to straighten his teeth. Dental anomalies, particularly in the upper jaw, are common in children with cleft palate. In addition, with more severe clefts of the palate, the child has difficulty chewing and swallowing. The previously mentioned reference to preparing Tad’s food so that he could more easily consume it might imply not only dental problems but a cleft palate as well. It should be noted that the forme fruste variant of cleft lip is associated with a lower heritability of cleft palate than open variants of cleft lip. This would suggest that Tad’s forme fruste lip problem was more likely to have been an isolated anomaly than if it had been an open deformity. Of course, it is impossible to know if he had a cleft of the palate and/or alveolus and, if so, to what extent.

Conclusion

Table 1 provides a summary of the various forms of communicative disorder and their respective likelihood in the case of Tad Lincoln. Inspection of Table 1 reveals a developmental articulation disorder to be the only certain pathology. This certainty is derived from the evidence of multiple firsthand accounts of Tad’s speech difficulties.
It is also highly probable that Tad had a language problem. Developmental articulation problems and delayed literacy are both associated with delayed language. The co-occurrence of articulation and literacy disorders renders delayed language much more probable. If Tad Lincoln had an overt or submucous cleft of the soft and/or hard palate, the possibility of a cleft-related articulation problem, along the lines suggested by Whipple, would be possible. In addition, as noted earlier, cluttering cannot be ruled out, nor can the possibility of a laryngeal voice disorder or a resonance problem. It is unlikely that Tad stuttered or had childhood apraxia of speech.

Table 2 summarizes the likelihood that Tad suffered from one of the several forms of oral cleft. The only certain form, based upon the photographic evidence and the heritability of the problem, is the forme fruste notching in the lip. Because of the frequency of citations in the literature regarding clefting, dental problems, and chewing/swallowing difficulties, it is likely that Tad also had some form of cleft palate, more probably a partial cleft of the soft and hard palate.

Given the evidence reviewed in this study, it is probable that Tad Lincoln had a complex speech and language disorder that today would have necessitated early and extensive intervention by a speech/language pathologist to address, at a minimum, a delay in language development and the developmental articulation problem. In addition, today, his cleft would have been repaired within the first few years of life by a plastic surgeon; special educators and child psychologists could have helped with potential learning differences or attention deficit/hyperactivity disorder; an orthodontist could have substantially improved

Table 1. Probabilities of the occurrence of speech and language problems in the case of Tad Lincoln

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<tr>
<th>Disorder</th>
<th>Certain</th>
<th>Probable</th>
<th>Possible</th>
<th>Unlikely</th>
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<td>Programming Disorder</td>
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<tr>
<td>(Childhood Apraxia)</td>
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<td>Fluency Disorder</td>
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<td>Stuttering</td>
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<tr>
<td>Cluttering</td>
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<tr>
<td>Voice Disorder</td>
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<tr>
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<tr>
<td>Disorder of Resonance</td>
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the alignment of his teeth with considerably less pain and interference with speech. In a larger sense, today’s dramatically improved medical care would no doubt have given the child of a prominent American citizen such as Tad Lincoln a much longer life span with possibility for greater fulfillment of his potential, including normal speech.

Table 2. Probabilities of the occurrence of cleft lip and palate in the case of Tad Lincoln

<table>
<thead>
<tr>
<th>Deformity</th>
<th>Certain</th>
<th>Probable</th>
<th>Possible</th>
<th>Unlikely</th>
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<td>Complete</td>
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<tr>
<td>Cleft of the Hard Palate</td>
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<tr>
<td>Partial (Including Submucous)</td>
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<tr>
<td>Complete</td>
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<tr>
<td>Cleft of the Soft Palate</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partial (Including Submucous)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Complete</td>
<td></td>
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</tr>
</tbody>
</table>