

Running Head. Giving Voice to the Transgendered Woman

**OUT OF A SILENT PLACE:
GIVING VOICE TO THE TRANSGENDERED WOMAN**

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Abstract

The special problem of achieving feminine-sounding speech and voice is a concern of critical importance to most transgendered women (“*new women*”). Because hormone therapy for the male-to-female (MTF) transsexual does not have a pitch-raising effect on the voice (unlike the pitch-lowering effect of testosterone in the female-to-male (FTM) transsexual), transgendered women are faced with the unique challenge of learning to modify their speech in order to “*pass*¹” as a woman. Although some male-female voice differences can be attributed to anatomical differences between the two genders, there is mounting evidence that social and cultural influences contribute significantly to gender differences in speech. Male-to-female transsexuals can learn to enhance the feminine aspects of their voices, and to modify their manner of speaking in such a way that the perceptual characteristics of their speech need not be an obstacle to successful transitioning from male to female identities. As writings and research proliferate in the area of transgender studies, it becomes increasingly apparent that this epidemiologically unknown and underserved minority group, known as the “*gender community*²”, has been not only invisible for the most part, but also *silent* and *silenced* in more ways than one. In presenting this paper, the authors strive to explore the multi-leveled meanings and significant inter-relationships between *voice*, *silence*, *gender*, and *the transgendered*. Voice, as it relates to the transgender journey, will be viewed literally, from the perspective of the individual transsexual and her speech modification needs. Voice and silence will then be explored more metaphorically, from the perspective of the transgendered woman and her struggle to claim her own new voice and her own new social identity.

¹ The term “*passing*” comes from the transgendered individual’s desire to be perceived or pass as the self-perceived gender of choice.

² The “*gender community*” is typically defined as consisting of transsexuals (pre/post operative), transgenders (those who are hormonally modified but choose not to have the genital operation), cross-dressers, and others with gender self-perceptions other than the Western dichotomous gender world-view (*i.e.*, including only male and female).

*Three silences there are: the first of speech,
the second of desire, the third of thought.
(Longfellow, The Three Silences of Molinos)*

0.0 Prologea. In ordering these three silences as he did in his work, Longfellow perhaps was implying that to be silent of speech is just the first step in a complex web of silences. To be indefinitely silenced of speech (regardless of whether this silencing is for some reason imposed by self, or by others), is eventually to be deprived of more than just words. Longfellow may have been suggesting that what begins as mere verbal silencing will ultimately lead to silenced thought-- a diminishing of cognitive activity or even capability. Along the way, it would also be a robber of desire, of emotional and physical drive.

“You must remember that a sentence is a thing of movable parts, an endlessly adaptable structure that is completely subject to the speaker’s/writer’s will, shrinking or expanding to fit the sound and sense he chooses to give it.”³

1.0 Introduction. The ability to speak is one of the most remarkable of human capacities. From the basic ability to produce voice, to the capacity for coordinating minutely precise articulatory movements, to the high level cognition required for the acquisition and use of language, human beings possess the capacity to both comprehend and express thoughts of unlimited complexity and novelty. Language is used to express basic needs, to transmit and exchange information, and to communicate our emotions. Through spoken words, we are able to share our opinions, socialize, and cooperate with others. Further, we use speech, not only to convey existing thoughts, but also to explore, clarify, and sort through *new* ideas. Talk is one way that we are able to establish our ideas as being representative

³Quote from the Woodcock Reading Mastery Test Form H.

of what we, as unique individuals, think and feel. In addition, it is through our attempts to articulate our thoughts and feelings that new language and speech evolve. Hence, we evolve our language to express our own evolution and the evolution of our culture. Yet, as our outer shell (the body) defines and limits us [36], so too do language and speech define and limit us. The lack of it silences us as individuals and as a group.

Based on this view of the multifaceted functions of human communication, it could be suggested that an individual who is without, or limited in, speech is an individual who is somehow misperceived and subsequently dehumanized. Further, this perception of the silent individual as “*less-than-fully-human*” could tend to be held not only by the silent person him/herself, but also by those who come in contact with him or her [21]. To cite an example, consider the extreme but unfortunately familiar image of walking into a nursing home and seeing rows of residents sitting silently in hallways or dayrooms. We may not know why each individual we see is sitting without verbalizing, but if we allow ourselves to think about it, we appreciate that it must take constant effort and sensitivity on the part of their caregivers to remind themselves that, although silent at the moment, these residents are still human beings with their own life stories and families and accomplishments and thoughts. Think of how, in some of the saddest scenarios, these senior citizens might be referred to or spoken about-- right in their presence-- as though they are not there. Because they are not asserting their presence through their speech, they are invisible, or at least presumed to be non-hearing and/or non-comprehending. Even though their lack of speech may be due to nothing more disabling than depression or boredom, their silence has in some ways diminished them as human beings.

Dehumanization, in an absolute or relative sense, can and does often lead to violence. When people become things, slaves, objects without a voice of their own, this leads to a loss of humanity, “objectification”, or a loss of stature within the human social stratum. Clearly, dehumanization of the transgendered individual (see footnote [3])

occurs via the explicit, as well as implicit, assumption that transgenders are transgressing societal normality definitions by toying with the fundamental male/female dichotomous view point held by western society. Societal reactions to the transgender community range from indifference at best to fear, hostility, hatred, and a conviction that these individuals must be removed lest they cause others to follow their transgressive ways.

Observe that this perspective is not dissimilar to the analogy of transgression as a mental illness (DSM IV - Gender Dysphoria) and consequently of “*transgression as a disease.*” Transgression of the classically accepted Western dual gender (male/female) roles and presentation is deemed unacceptable and is likened by some to the potential spread of some type of plague (consider the arguments used by the religious right that AIDS is God’s way of punishing mankind for the sin of non-heterosexual or non-biblically sanctioned sexuality). When we fear that a plague has potential to spread in a population, like an army invading a country, we go to metaphorical war with it. We become focussed on stopping the spread of the disease, killing the virus, and eliminating the enemy. In this way, the transgressors become the enemy and the metaphor becomes one of war against the enemy. No war is without violence. It follows therefore that, the metaphorical war against the transgressor of the traditional Western dualistic gender archetype is, by its very nature, violent. It is motivated by fear, and it is motivated by the fact that the transgressor appears to be invading the “home space” (and in this case, even calling into question, the identities) of the non-transgendered individuals. It is also natural to conclude that, when one is at war with a transgressor of one’s fundamental internal self-representative archetypes, such a war is going to be extremely emotional and often wrought with verbal and physical abuse. To the degree that we can liken one’s religion to a core identity, in the same class as gender self-perception, it then becomes easy to draw the analogy of gender violence against the transgressing transgender hoards with the great religious wars of the past in which the transgressing religion was the enemy (rather than the transgressing gender definitions) and the armies of the righteous would do anything to annihilate the invader with its polluting (different) metaphorical structure of reality and truth.

In the United States, many states mandate reporting of hate crimes, but gender-related violence and abuse are not adequately included in these statutes. Even statistics underestimate the prevalence of gender-based attacks, as these are severely underreported (*i.e.*, it is estimated that no more than ten percent of sexual assaults are reported to law enforcement agencies; [7]). With regard to hate crimes based upon gender presentation, anecdotal reports indicate that members of the gender community are also frequently victims of violence. Primarily orally transmitted evidence has, for many years, suggested a pattern of emotional intimidation and physical attacks against transsexual, transgendered, and cross-dressing persons, principally stranger violence (“*bashing*” crimes). Certain elements of these violent attacks are reminiscent of either anti-gay/anti-lesbian criminal behavior, gender violence (perpetrated against women by men) or both. In 1995 alone, five high profile homicides (in which hatred of transgenderism is either believed or known to be the motivation for murder) received national media attention (Brandon Teena, Falls City, Nebraska; Deborah Forte and Chanel Pickett, Boston environs; Tyra Hunter, Washington, DC; and Carmen Marie Montoya, Oakland, California). As is common in hate crime assaults, these episodes involved several forms of violence (such as multiple stab wounds, strangulation, and genital assault) but in contrast to the norm for investigation of other hate crimes (*e.g.*, neo-Nazi attacks) response by the law enforcement officials and medical providers was allegedly or demonstrably sub-standard in several of these cases.

As trans-identified persons also experience child abuse, partner violence, and elder mistreatment, epidemiologic and qualitative data on the needs and experiences of this epidemiologically invisible and highly stigmatized community have been strongly needed and sorely lacking. An attempt to alleviate this need has been instigated by the University of Michigan Medical Center, Comprehensive Gender Services Program, which initiated the International Longitudinal Transsexual and Transgender Aging Research Project two years ago⁴. Details of the violence module of the International

⁴ The ongoing longitudinal survey currently has three comprehensive modules in the initial wave. These models address basic demographics, health needs and experiences, and experiences of violence and abuse across the lifespan. Other modules are currently being developed and will include longitudinal modules on social networks, self-image, medical needs and health status (ADL, IADL, for example) as well as more in-

Longitudinal Transsexual and Transgender Aging Research Project may be found in [7]. Given the harshness of this violence experience and the stigma associated with being a transgendered individual in a society that sees only black and white (and being black isn't even a good thing), it is not difficult to see that violence can act as a silencing mechanism, both at the individual as well as the population level.

“*Silence*” in certain contexts, could be defined rather literally as meaning, “*lack of speech*.” In the transgender world, sometimes individuals remain silent because they feel their voices do not sound “gender appropriate;” they therefore do not speak for fear of being “*outed*.” When the transgendered patient does not allow his/her medical insurance to pay for the necessary psychiatric/psychological visits or the medications (hormones, anti-depressants, blood tests) concomitant with gender change, again for fear of being outed, this is also a form of both silencing and being silent.

In other contexts, the definition of “*silence*” could be approached more metaphorically, to include the notion of “*lacking a voice*,” or “*lacking a say*.” [21]. For example, because of the social stigma associated with being a transgendered person, members of the transgender community are highly reluctant to make themselves known. What *is* known tends to be hand-me-down, anecdotal information. The transgendered group has not spoken out on its own behalf until recently. It has remained silent, not having a say as to what happens in their world.

Beginning around the time of the initial 1965 publication of Tillie Olsen’s book, **Silences** [28], there has been continued and deepening attention to the figurative meanings of silence, and its relationship to circumstances that include “class, color, sex; the times, the climate into which one is born....[28].” The consideration of *women and silence*, in particular, has seen proliferating and intriguing new analysis during the past two decades. Interdisciplinary interest in “*Women’s Studies*” has grown world-wide, with contributions from scholars in diverse academic areas including psychology,

depth psychological and epidemiological analyses having to do with hormonal dynamics, self-health status, wisdom, and finances.

education, business, linguistics, sociology, history, religion, medicine, law, science, literature and the arts. Indeed, it can be said that a key strength of women's/ feminist scholarship has been "the involvement of many disciplines and their divergent terminologies and interests [8]."

Within the past decade, the scope of "*Women's Studies*" has expanded to include a broader range of issues, such that a more inclusive discipline, "*Gender Studies*", is quickly becoming established on college campuses, in libraries, and in bookstores. Included in "*Gender Studies*" are not only examinations of topics addressing women and feminism, but also male studies, gay/lesbian studies, and most recently, *transgender* studies.

In the upcoming sections of this paper, we will examine the topic of "*voice*" from both literal, as well as figurative perspectives. A key goal will be to explore the multi-leveled meanings and complex inter-relationships between *voice and gender*, as well as to give focused attention to the particular voice needs of the *transgendered* segment of our society. Voice and transgenderism will be viewed in terms of both the private or individual voice needs of the transgendered, as well as the more public voice-related issues of this minority community.

2.0 Voice Production in Humans: Overview of Anatomy and Mechanics. In order for us to discuss voice production, it is necessary that we first define a few of the most commonly occurring terms. Frequently, some of these terms are used interchangeably; however, for the purpose of clarity, distinctions will be made here. To begin, the term *communication* is the most general, and it refers to the *process* of expressing or imparting to one another ideas, thoughts, feelings, or opinions through the use of signs, signals, or symbols, such as written or spoken language, gestures, *etc.* These expressions can occur either consciously or unconsciously. *Language* refers to the *means* by which thoughts or

feelings are transmitted; this could include vocal means, written means, *etc.* The term *speech* refers specifically to oral communication, *i.e.*, using the mouth, lips, tongue, *etc.* to produce oral symbols (words) for communication purposes. *Phonation* is the *production* of voiced sound by means of vocal cord vibrations, while the word *voice* refers to the actual *sound* that is produced by the vibration of the vocal cords [39].

The anatomical structures that are called into play during phonation are collectively known as the “vocal tract [10].” These structures include parts of the mouth, the throat, and the larynx (sometimes referred to as the “voice box”). The mouth, or oral structures, consist of the teeth, lips, tongue, hard palate, velum (soft palate), uvula, and alveolar ridge (portion of hard palate that lies directly behind the upper front teeth). At the back of the oral cavity, just beneath the uvula, is the pharynx, or pharyngeal cavity. The windpipe, or trachea, houses the larynx, which contains the vocal cords (sometimes known as vocal folds). Sometimes the space between the vocal folds is referred to as the “glottis,” while a “glottal tone” refers to the tone generated by the vibrating vocal folds [39].

During normal breathing, air passes from the lungs, through the trachea, to the oral cavity, and eventually escapes from either the nostrils or the lips. The air passes freely during such breathing, without any obstacles or restrictions [10].

During speech, however, the air stream meets with interference at various points along the way. First, air from the lungs is directed to the vocal cords, which are two membranes

configured in a V-shape, and located at the top of the trachea. To produce voice, the speaker closes his/her vocal cords (i.e., brings the folds together); when the air from the lungs reaches the cords, they are forced open and immediately begin to vibrate. The vibration of the vocal cords results in a buzzing sort of sound, which gets projected throughout the vocal tract, and which resonates within the spaces of the mouth, throat and nose. The effect of the resonances is that the initial “buzzing” sounds produced by the vocal cord vibrations, take on a quality that becomes perceived as “voice-” or “speech-like [10].” Individual differences in voice quality/sound are determined not only by the larynx, but also by variations in the size and shape of speakers’ resonating cavities. This process can be compared to the different sound qualities produced by a violin versus a cello; not only are the lengths and thicknesses of the vibrating strings different, but the size and shape of the instruments’ resonating cavities also differ.

In describing or characterizing human voice, there are a number of acoustic or perceptual features that differentiate one voice from another. The most frequently cited features, particularly when describing male and female voice differences, include pitch, prosody, intensity, resonance, and quality.

Pitch: Pitch, a perceptual (*i.e.*, auditory perceptual) term, refers to how high or low a voice tone is. In acoustic terms, pitch’s corresponding parameter is fundamental frequency. Fundamental frequency is determined by the frequency of vocal cord vibration, with greater frequency producing a higher pitch, and less frequency (*i.e.*, slower vocal cord vibration), resulting in lower pitch. Vocal pitch is affected primarily by

length and thickness of the vocal cords. During running speech, there is not only continuous closing and opening of the vocal cords, but also ongoing “shortenings and elongations of the folds as needed for continuous variations in pitch [1].” Also relevant to the discussion of voice pitch is vocal frequency range, which refers to the range from lowest to highest pitch notes attainable by an individual speaker. Fundamental frequency is measured in Hertz (Hz), or cycles per second (cps).

Prosody/Intonation: Prosody is a term that represents the “linguistic use of the vocal aspects of speech”, excluding speech sounds. **Prosody**, a multifaceted entity, consists of many voice features (*e.g.*, pitch, loudness, duration, and pause) and many components (*e.g.*, intonation, tempo, stress, and rhythm) [12]. **Intonation** is the component of prosody that has most frequently been cited as being gender-related (*i.e.*, different in males and females). Intonation refers to the variations in pitch that occur on selected syllables and words during the production of a string of words, such as a sentence or phrase. Intonation is the “tune to which we set the text of our talk [23].” Although intonation certainly has been shown to be salient in the discussion of male-female vocal behavior patterns, it would appear that all of the above-listed components and features of prosody are worthy of examination in this regard.

Intensity: The perceptual parameter that corresponds with intensity is the feature of voice loudness [26]. Intensity, which is measured in decibels (dB), can range considerably in the human voice, for example, from a faint sound to a loud yell or shout. The approximate difference in intensity between the faint sound and the yell can easily

exceed seventy decibels [40]. The intensity of average conversational speech is approximately fifty decibels. Intensity, or loudness of speech is affected by rate of air flow through the vocal cords, tension at the glottis, and air pressure below the glottis [1].

Resonance: Sound produced by vibrating vocal cords would be “very thin” if it were not for the resonating structures and cavities which act to concentrate the energy present in the laryngeal tone ([1]; [16]) Vocal resonance refers to the changes in tone that occur when the vibratory sound generated by the vocal cords is subsequently modulated, or shaped, by the adjacent resonators. When the vocal organs (in this case, the tongue, the lips, and the soft palate) are moved into different positions, the air in the vocal tract correspondingly vibrates in different ways. That is, with each different position of the vocal organs, a characteristic mode of air vibration results. If we were to view a diagram (known as a “spectrum”) which shows the frequency components of a sound, the peaks on the spectrum would correspond to the basic frequencies of the vibrating vocal tract air. Regions of the spectrum in which we would see relatively larger frequency components (*i.e.*, regions around these peaks) are known as the *formants* [18]. The formants of a sound are those aspects of the sound “which are directly dependent on the shape of the vocal tract, and are largely responsible for the [sound’s] characteristic quality [18].”

To illustrate the basic mechanics of resonance using a more familiar image, we might return for a moment to the earlier example of musical instruments. We can imagine the effects of the various resonance-related features when thinking of how a certain musical note on the scale will sound different, based on whether that note is being played, for

example, by a stringed instrument (with resonating chambers composed of wood, and structures including sounding boards, *etc.*), or a brass instrument (with resonating chambers composed of various metals and configured in varying ways with coils, slides, *etc.*). Resonators are of either the cavity or the sounding board types. The speech mechanism has both of these types. Examples of cavity type resonators would be the mouth and the nose. Resonating structures of the sounding board type include the chest walls, ribs, and bones of the head, *etc.* [16].

In the human vocal tract, there are resonating cavities that are located above the level of the larynx (*i.e.*, the “supraglottal” chambers), and these include the pharynx, the mouth (oral cavity), and the nasal cavity. Resonating structures below the level of the vocal cords (“infraglottal” structures) include the trachea, bronchial tubes, lungs and rib cage. The role of the infraglottal structures is not as well understood as that of the supraglottal structures, but all are considered to have an impact on phonatory sound. Speakers are capable of influencing their resonance through such behaviors as adjusting tongue position (which contributes to changes in size of the pharyngeal cavity), and varying/modifying the size and shape of the oral cavity [1].

Quality: Voice quality is a highly complex matter, with numerous factors involved. In general, quality of voice is determined by the manner in which a voice tone is generated. Voice quality is a topic that is usually discussed in the context of “voice disorders” or at least in terms of a tone that in some way may be considered less than, or different from, the “typical” auditorily acceptable tone.

The four most widely cited types of vocal quality include breathiness, harshness, hoarseness, and nasality [40]. With the exception of nasality, which is most likely the result of faulty articulation behavior, the other three voice qualities are most often the result of some pattern (and usually an abnormal or atypical pattern) of vocal cord behavior. A brief characterization of each of these qualities follows: *Breathiness* results when the vocal cords fail to close completely during the adduction or approximation (closing) phase of the vibratory cycle. When this happens, there is “a continuous flow of air during the entire vibratory cycle.... The implication is that air leakage is generating a strong frictional noise component which accompanies the tone generated by the vibrating vocal folds [40].” *Harshness* is generally explained by an irregularity of vocal cord vibration, which results in “aperiodic noise.” The irregular vibration of the folds is oftentimes caused by excessive laryngeal tension, which may be the result of excessively hard or sudden glottal attack when phonating, and/or “phonating at an inappropriate pitch level, usually slightly low for [the speaker’s] vocal mechanism [40].” Some research is revealing that the glottal tone characteristics of *vocal jitter* and *vocal shimmer* contribute to the perception of voice quality in general, and voice harshness in particular. “Vocal jitter” refers to cycle-to-cycle variations in fundamental frequency, *i.e.*, during vocal cord vibration, while “vocal shimmer” refers to cycle-to-cycle variations in amplitude during vibration [26]. [Amplitude of the sound wave determines intensity, or loudness.] *Hoarseness* is considered to be a combination of both harshness and breathiness, with the harsh component being more predominant in some voices and breathiness predominating in others. In most cases, hoarseness is the result of some kind of laryngeal pathology

(either temporary or chronic), with a very common cause being acute laryngitis, “with its associated swelling and thickening of the vocal folds [40].” The final quality to be discussed here, *i.e.*, *nasality*, is a quality that may or may not be considered as objectionable or undesirable. Nasality results when there is a “coupling of the nasal passages to the oral and pharyngeal cavities in such a manner that the quality of the emitted sound is noticeably affected by the added resonating cavity [40].” Depending on the degree to which the nasal passages are isolated, or kept uncoupled from the oral cavity, the quality/degree of nasality will be lesser or greater. There are a number of medical causes of nasality (*e.g.*, cleft palate). However, certain speaking habits can also result in nasality, for example, when a speaker insufficiently closes the soft palate and thus speaks with excess resonance into the nasal passages.

3.0 Gendered Voices: Male and Female Phonatory Differences. The typical female and male voices can be distinguished one from another by a number of different features. Some gender-related voice differences can be accounted for largely by the anatomical differences between the two genders. For example, men typically have larger and thicker vocal cords than women do. Since vocal pitch is determined by the frequency of vocal cord vibration, and because longer, thicker cords will tend to vibrate more slowly than shorter, thinner cords, it follows that most males will produce a lower habitual pitch than will most females. Similarly, it would be expected that vocal resonance would be different, given the fact that men generally have larger vocal tracts than women do, and given the fact that larger resonating cavities generally will produce lower resonant frequencies [11].

On the other hand, there are also gender-associated voice differences that do not depend strictly on anatomical differences. For example, women tend to speak using a greater variety of pitch levels than men do. Another difference that does not seem to be anatomically based is that females will tend to end an utterance with a rising intonational contour more frequently than will male speakers [6].

Speech and voice variations, such as the above-mentioned examples, are known to not only play a significant role as “a vehicle for linguistic communication” (*e.g.*, rising pitch at the end of an utterance can convey that a question is being asked; an excessively loud voice can convey the meaning of anger; *etc.*), but they can also fulfill another very important role -- that is, the role of **social marker** ([22]; [26]). When, for example, you are speaking for the first time to a new acquaintance or stranger, the unique sound of your voice can help give the listener some clues as to your social identity; the *sound* of your voice serves a social marking function. Your voice can mark your age. It can mark your ethnic background. And perhaps most obviously, the way your voice sounds can mark your *gender*. **Gender markers** in speech are “those features of speech... that constitute the clues by which we consciously or unconsciously assign gender to a speaker when other (for example, visual) clues are lacking or ambiguous [5].”

To date, pitch and intonation are the two most frequently studied and cited gender-marking parameters in the voice-gender literature [35]. However, investigations of other features continue to be initiated and reported as well. Selected remarkable, research

findings regarding gender-related voice differences, and/or the gender-marking functions of specific vocal behaviors, are cited below:

- *Pitch* -
 - The approximate mean pitch for adult males is 128 Hz, with a range of 60 - 260 Hz. The approximate mean pitch for adult females is 227 Hz, with a range of 128 - 520 Hz (Note the overlap in the two ranges [26].
 - There is a progressive lowering of fundamental frequency in males from early adulthood to 40- 60 years of age. Then a reversal of this downward trend occurs at ages over the 40 - 60 year level. In females, there is not this trend. In females, fundamental frequency continues to decline above the 50 - 60 year age range (Thus, in older age, the sex differences in vocal pitch are reduced considerably) [13].
 - Neither females nor males utilize the full range of pitch that they are capable of producing when they speak [27].
- *Intonation* -
 - Women demonstrate greater intonational variability than men do [23]; [29].
 - Men use a greater proportion of falling pitch tones than rising pitch tones in their running speech, as opposed to women's use of proportionally more rising tones (versus falling tones) in their speech [29].
 - "The standard deviation of women's fundamental frequency from the female mean is much greater than is the case for men.... [There] is general agreement that women's speech shows more intonational dynamics [11]."
 - "Men consistently avoid certain intonation levels or patterns; they very rarely, if ever, use the highest pitch that women use. That is, it appears that most men have only three contrastive

levels of intonation, while many women, at least, have four. Men avoid final patterns which do not terminate at the lowest level of pitch, and use a final, short upstep only for special effects (for example, for deliberateness), for incomplete sequence, and for certain interrogative sentences. Although they also use short down-glides also, occasionally, they seem in general to avoid the one-syllable, long pitch glides, and completely avoid the reverse glides on one syllable. From this brief study it seems clear that there are indeed specific differences in male and female intonation patterns [3].”

- *Intensity* -
 - Men speak with greater average vocal intensity than women in interpersonal communication, although both men and women speak more loudly to a member of the opposite sex than to a same-sex listener [24].

- *Resonance* -
 - Males have lower average vowel formant frequencies than females [19]; [30].
 - Although male-female differences in vowel formant frequencies can be explained on the basis of shorter vocal tracts in women (longer tracts in men), it is also possible that “sex-specified phonetic variations, such as smaller mouth openings and greater degrees of lip rounding used by males, contribute to this speech marker [26].”

- *Quality* -
 - The female voice is characterized by significantly less vocal shimmer and greater vocal jitter than the male voice. (Recall from previous section that differences in jitter and shimmer are likely to contribute to differences in perceived vocal harshness.) [26].

A sub-group of the research on voice-gender relationships focuses specifically on the

issues of *social/cultural* versus *anatomical/physiological* bases of sex-related speech differences. This area of exploration is particularly intriguing and pertinent when considering the topic of transgender acquisition of voice patterns. Questions get raised such as, “Which features of voice can we ourselves control, and which features are beyond our control?” “What are the social marking functions of selected voice characteristics?” “What are the implications of trying to alter voice patterns in order to pass more comfortably or unambiguously among a new or different social/cultural group of people?”

Evidence that people can *learn* to speak with gender-appropriate voices comes from two main types of data. First, there are cross-cultural studies that demonstrate that voice features can be variable based on social/cultural factors. Second, there are studies that show how the genders of pre-pubescent boys and girls can be distinguished on the basis of their voices (*i.e.*, before reaching maturation of their vocal apparatus, and therefore prior to reaching an age when their voice differences can be accounted for in terms of anatomical differences [10]). To briefly illustrate each of these two types of evidence, below are two highly condensed summaries of selected published findings, one from each category:

- *Cross-cultural*: Ohara [27] found that female native speakers of Japanese employ higher relative pitches when speaking Japanese than when speaking English. Japanese males, on the other hand, do not show a similar pattern. “These findings are in accordance with the theory that the differences in overall pitch level cannot be adequately explained solely by the sex-differences.” Ohara

suggests that these findings can be explained by the notion that in different societies, “different values may be assigned to different pitches based on expectations and attitudes concerning the relationship between pitch and its significance for the speaker -- and/or his gender -- in the society. Each culture determines what is the appropriate pitch range for each gender ... [27].”

- *Pre-adolescent children:* Sachs, Lieberman, and Erickson [31] studied pre-pubertal boys and girls between the ages of 4 and 14. The children had no obvious anatomical differences to account for sex-based voice differences. Adult judges, who listened to tape recorded voice samples of the children, were able to reliably identify the genders of the speakers. The authors suggest that vocal pitch may not be totally determined by anatomical structure, but also by learned behavior [31].

Continued exploration of the socio-cultural aspects of voice would seem to be a valuable avenue of further research. The implications of such research can potentially raise further questions and provide insight for scholars from a wide array of disciplines. In terms of gender and transgender studies, the implications of such studies can potentially prove to be truly compelling and beneficial, not only to theoreticians, but also to those in the helping professions whose clinical work focuses on virtually any aspect of transgender care.

4.0 Voice and the Transgendered Woman. The special problem of achieving feminine-sounding speech is a concern of critical importance to most transgendered women. In the process of transitioning from male to female social identities, the transsexual works very

hard to assume the role and appearance of her new gender. This includes initiation of a life-long hormone treatment regimen, which is necessary in order to develop and maintain the gender-appropriate secondary sex characteristics. In the case of male-to-female transitioning, electrolysis is undertaken to remove unwanted facial and body hair, while head hair is grown out (unless hair transplants and/or wigs are required, as in the unfortunate case of an individual with male-pattern baldness, for example). Fingernails are grown and groomed, female clothing is donned, and make-up is applied. Of the many measures taken to assure that she will be recognized and treated as belonging to her target gender group, the transgendered woman must also be acutely sensitive to the ways in which she interacts and communicates with others. This includes developing not only socially appropriate behavior and comportment, but also the skills needed to *speak* in such a way as to “pass” as female.⁵

4.1 Transgender Speech and Voice: Background Review. As a topic of clinical research, transsexual speech, including speech/voice augmentation (also referred to as rehabilitation, modification, *etc.*) has received only fairly recent and limited attention. A very small minority of researchers have explored the topic, with most published material until more recently being comprised of Speech-Language Pathology case studies, including descriptive reports of clinical methods and procedures used with specific transsexual clients.

⁵Because hormone therapy for the male-to-female transsexual does not have a pitch-raising effect on the voice (unlike the pitch-lowering effect of testosterone in the female-to-male transsexual), transgendered women are faced with the unique challenge of learning to modify their speech in order to “pass” as a woman.

In her popular 1993 book, **He Says, She Says** [9], Speech-Language Pathologist Lillian Glass recalls how in the mid- 1970's, upon being asked to evaluate the speech of a male-to-female transsexual client, "there wasn't much information available on this topic with the exception of linguist Robin Lakoff's research and her classic book, **Language and Women's Place** [20]." The topic of Lakoff's book actually was that of male-female communication differences in general, and did not address transgender issues at all. However, it could be said that Glass's appreciation of Lakoff's work reflected insight and resourcefulness on her part. Glass apparently had an underlying awareness of how, before even attempting to facilitate gender-appropriate behavioral changes in a transsexual client, it would be crucial for the treating clinician to have background knowledge in gender-related communication issues.

The earliest published reports of transsexual speech intervention focus primarily on modification of fundamental frequency. Kalra's 1976 article reports on therapy conducted with a 32-year-old male-to-female client who, after four months of treatment, had increased her habitual pitch from 150 Hz to 165 Hz [15]. In 1978, Bralley *et al.* [2] described therapy methods used during seven one-hour sessions with a 49-year-old male-to-female transsexual. The authors reported that although their client had been able to increase her pitch from 145 Hz to 165 Hz, resulting in a more feminine-sounding voice, they felt that her voice still was distinguishable from a genetic female's voice [2].

The first comprehensive review of Speech Pathology considerations in the management of transgendered speech was published in 1983, in the *British Journal of Disorders of*

Communication. In this article [26], authors Oates and Dacakis presented a much-needed overview of the relevant empirical data on sex-associated speech and language characteristics, emphasizing these as the necessary basis for speech pathology intervention with the transgendered. As part of their work, Oates and Dacakis summarized research that served to distinguish between *speech markers* (linguistic features that have empirically been shown to differentiate male and female speech), and *speech stereotypes* (features that have become associated with male and female speech, regardless of their linguistic reality). To further define speech markers, the authors also distinguished between the sub-classifications within this category, namely the **non-segmental markers** and the **segmental markers**. The non-segmental markers, which are discerned through the listener's auditory/perceptual system, include fundamental frequency, intonation, intensity, glottal tone or quality, and resonance. The segmental speech markers, which are processed on more of a symbolic or linguistic level, include articulation, syntax, conversational style, and vocabulary usage [26].⁶

Research from the late 1980's and into the 1990's reflects expanded knowledge of the relevance of such vocal features as resonance and intonation when evaluating and treating transsexual voice. Mount and Salmon's [25] longitudinal study 1988 involved a 63 year old post-operative male-to-female transsexual whose speech therapy goals were to not

⁶The authors wish to note here that the voice and speech features being examined in the present paper, comprise the *non-segmental* markers, or the gender-linked features that are processed, usually on unconscious/automatic levels, through our perceptual systems. Although some would argue that these non-segmental markers are "the most informative clues to speaker sex within a given language, [32]" we do not at all underestimate the great significance of the other type of markers, *i.e.*, the *segmental* markers, which are the language-related features as mentioned above. In order to do justice to both highly complex and salient topics, the segmental markers, although alluded to intermittently here, will be the topic of a separate paper.

only raise pitch, but also to change resonance through modifying tongue carriage. After eleven months of therapy, and then again five years post-treatment, objective measures revealed that the client was still using increased fundamental frequency and increased formant frequencies for isolated vowel productions. In addition, reported subjective judgments indicated that she was perceived to be using a feminine post-treatment voice [25] Spencer [33] found that male-to-female subjects who had been most successful in adopting *female* speech characteristics (as evidenced by reliable perceptions of the voices as female during a listener judgment task), had succeeded not only in elevating their pitches, but also had made other concurrent speech alterations. These subjects themselves, when asked to describe what measures they had taken, mentioned “precision and prominence of consonant production and differences in the characteristic ‘*tone*’ of the voice, with female voices perceived as ‘*softer*’. Of particular concern to them was mimicking what they felt to be a characteristic intonation pattern [33].”

Wolfe *et al.* [38], in an attempt to more precisely identify specific acoustic features that result in perceptually salient gender markers, conducted a study in which, first, transsexual (male-to-female) conversational samples were recorded and analyzed by means of a computerized speech analyzer; and second, listeners were presented with these samples and asked to judge whether each speaker was male or female. The investigators found that the transsexuals who were categorized as having female voices “had higher fundamental frequencies, less extensive downward intonations, a higher percentage of upward intonations and downward shifts, and a smaller percentage of level intonations and level shifts than transsexuals categorized as having male voices [38].”

They also found that the “lowest fundamental frequency identified as belonging to a female speaker was 155 Hz.” In addition to these objective, measurable findings, the authors also suggested some potentially useful conclusions, which they based on comparisons of several individual subjects from their study. They found it noteworthy that intonational patterns seemed to influence the perception of female voice quality among those subjects with the relatively lower fundamental frequencies. For example, the rated-female speaker with the lowest average fundamental frequency (155 Hz) produced a conversational speech sample that was characterized by a high percentage of upward intonations and a low percentage of level intonations. Using this and several other individual examples from the study, the authors suggested that “more variable intonation could contribute to a more representative female voice [38].”

Gunzberger [11] was interested in obtaining descriptive data of some possibly systematic speech/voice changes that occur when a transsexual transitions from male to female. Her research study, which was based on intra-individual comparison, was designed to allow for analytical comparison between an individual transsexual subject’s “female” voice, and her former, “male” voice. In the first segment of the study, six male-to-female transsexual subjects were asked to produce words and phrase-length utterances two times each, first with their female voices, and then using their pre-transition male voices. Samples were subjected to *acoustic* analysis. Next, selected, recorded samples were presented to listeners for their *perceptual* judgements of the intended speaker gender.

Highlights of Gunzberger’s findings follow:

- *Perceptual* results corroborated *acoustic* findings.

- *Acoustic* data demonstrated:
 - *Duration* - Mean duration of isolated words was significantly longer in the female version, in all but one subject.
 - *Pitch* - Fundamental frequency, for isolated words, was higher in the female version, in all but one subject
 - *Pitch range and intonation* - In phrase-length productions, all but one of the speakers showed significantly greater range in the female speaking mode
 - *Intensity* - With the exception of one speaker (who had undergone vocal surgery), all subjects produced both the single words and the phrases with a lower vocal intensity when speaking in their female voices.
 - *Resonance* - When studying spectrograms of the subjects' male and female speech versions, it was noted that the frequency of formant 3 (F3) was systematically higher in the female versions. The significance of this finding related to the fact that:
 - formant 3 is known to influence voice “timbre;”
 - a decreased mouth cavity length results in overall increased formant 3 values [11].

Given that *duration*, *pitch*, *intonation*, and *intensity* can all be adjusted by the speaker (*i.e.*, these features can be under the speaker's control), and speculating that at least some aspect of *resonance* is volitionally controllable, Gunzberger [11] suggests that, despite anatomical constraints in genetically male speakers, male-to-female transsexuals do seem to be able to “intuitively adopt a number of vocal characteristics that are known to add to a feminine voice quality.” Further, considering these conclusions, she strongly urges professional speech therapists to focus on developing these characteristics with their transgendered clients [11].

It is this kind of information, and this kind of thinking, that would seem to be the most facilitative to the Speech-Language Pathologist who is engaged in transsexual clinical work. The transgendered client is not going to be able to magically or miraculously change her voice merely because she has reached the point of “coming out” as a full-time female. In the next section of this paper, we will discuss issues related to speech therapy intervention with the transgendered individual.

4.2 Speech-Language Pathology Services and the Transgendered Client.

Traditionally, Speech-Language Pathologists have focused their clinical efforts toward understanding, evaluating and treating behaviors that are considered to be *abnormalities* or *impairments* of language and/or speech and/or voice function. As salient and significant as gender is in relation to speech and language output, the characteristics and patterns associated with gender-linked speech production are rarely considered to be disordered; they rarely would be seen as constituting any kind of “*speech deficit*.” Speech is considered defective “when it deviates so far from the speech of other people that it calls attention to itself, interferes with communication, or causes its possessor to be maladjusted [24].” That is, to be considered problematic or defective, speech must be characterized in one or more of the following ways:

- the output must somehow be conspicuous and/or,
- it must be unintelligible or otherwise limited in its capacity for optimal conveyance of the desired message and/or,
- it must be unpleasant, unusual, or in some other way incongruous, so as to cause the speaker to feel unduly

uncomfortable about it.

Given this definition, it becomes evident why gender-related speech and language issues, while certainly potentially significant in terms of impact on communication style, efficacy, etc., would not typically be considered to be abnormal or defective in the “average” speaker. As a result, this realm of study and attention has not typically been relevant to the work of Speech-Language Pathologists.

However, with rapidly increasing awareness of the transgendered segment of our population, it has become increasingly apparent that at least for this group of individuals (the transgendered) the relationship between gender and communication is anything but a trivial matter. In fact, when given the opportunity to express their concerns, many transgendered women clearly report their feelings of maladjustment and discomfort, specifically with regard to their speech. They fear and strongly suspect that their speech calls negative attention to itself, or worse yet, to them. The sound of their speech interferes with their attempts at communication. That is, it is “defective,” if defined by the criteria established by Speech-Language Pathologists, and presented here.

Therefore, the general goal of Speech-Language Pathology intervention with the transsexual, is to enhance the client’s overall female communication and presentation, through addressing both verbal and non-verbal issues. Specific areas that are appropriate to be addressed in both evaluation and management include:

- 1) *Voice modification* (pitch, prosody/intonation, intensity/volume, and resonance);

- 2) *Speech/articulation* (precision, articulatory contacts, glottal onsets);
- 3) *Verbal -symbolic communication* (language formulation, linguistic structures, vocabulary);
- 4) *Non-verbal communication* (presentation, underlying goals of communication conversational style, social skills, body language, gesture, facial expression).

It is not the authors' intention in this paper to present an exhaustive prescription or description of specific therapy methods for the transgendered client. Instead, the purpose is to highlight key underlying therapy concepts and components. An uncomplicated and reasonable approach to this work was suggested by Bryan-Smith [4], when she wrote, "The aim of therapy in male-to-female transsexuals is to incorporate the female vocal features within a framework of comfortable voice production, giving the impression of femininity [4]." Chaloner's advice to speech therapists also emphasizes the straightforwardness of the endeavor:

"It sounds very simplistic to state the following, but what one is attempting to do is instruct the speaker in ways to modify his own speech production. In realistic terms this means that one should try to bring about as little vocal change as possible, and still carry off the illusion of a female voice [5]."

Therefore, although some clients will hope to achieve a dramatic or complete voice "make-over," the reality is that for most, it is more effective to focus on identifying and developing aspects of their communication that are already gender-ambiguous. To illustrate, we can look at the element of vocal pitch. Given that the male pitch range and the female pitch range naturally overlap in adult speakers, it is not necessary to establish a new, "never-before-produced" vocal pitch in the transgendered client. Instead,

treatment will aim at identifying and increasing her use of the feminine end of her range while decreasing or eliminating her use of the lower, or male, tones. In line with Chaloner's [5] therapeutic approach, we suggest that speech therapy should not teach the client to become an "actor," but rather to enhance her female presentation by augmenting and maximizing feminine aspects and skills that she already possesses while minimizing, modifying, or eliminating certain other aspects, as indicated.

In order for a transitioning transgendered woman to be able to receive maximal benefit from her work with a Speech-Language Pathologist, we suggest that there are ideally a number of factors that would be operative throughout the therapeutic encounter. These factors, discussed below, fall into three general categories: attributes of the *Speech-Language Pathologist*; attitudes and expectations on the part of the *client*; and specific *components of the intervention* process itself.

The Speech-Language Pathologist- Participating in speech intervention with transsexual clients is admittedly an unconventional area of practice for most Speech-Language Pathologists. Certified clinicians have been trained and prepared to evaluate and manage the full range of disorders of language, speech/articulation, voice, pragmatics (social communication skills, including non-verbal features), and cognitively-based communication disorders (memory impairment, *etc.*). Given that many or even most of these areas are relevant to the transitioning transsexual client, the clinician already possesses the essential educational background and clinical skills needed to assess each of these areas in an *objective* manner. What might be lacking is the perspective needed

which assists the clinician in distinguishing between communication behaviors that are characteristically *male* versus those that are characteristically *female*. Included in this would be knowledge of differences in the male versus female anatomical constraints that affect speech/voice production. As a result, for many therapists, additional readings and self-education specifically in the areas of *gender-linked* communication behaviors would be necessary. Additionally, it would be useful to gain basic knowledge regarding the topic of *gender as a sociolinguistic variable*. Included in this would be information regarding the socio-cultural versus the anatomic-physiologic influences that are operative in the production of gender-marking speech features.

The clinician's overall therapeutic approach, both clinically and philosophically, also warrants discussion. In terms of approach to the **assessment**, it is important with this client population that the therapist be very in tune to what exactly each individual client wishes to achieve in her therapy. Clients enter speech therapy at varying stages of their gender journeys, and with different needs and objectives. Some have no intention of transitioning completely, but rather wish to be able to be flexible and fluid in terms of gender identification-- for example, to speak as a man at work, and as a woman at home. Some may be planning to present themselves rather androgynously, and wish to feminize their speech somewhat, without acquiring fully unambiguous female speech. Other clients want to achieve speech that is as female sounding as possible, for full-time female living. Additionally, it is important to understand each client's individual priorities in treatment. What specific areas need to be targeted? For example, one client who was raised in a family of boys and who spent her entire adult life working on a factory

assembly line, wanted not only to enhance her voice, but also to learn what topics women typically converse about with one another. Another client, a college professor, felt satisfied with her female voice during one-on-one conversations, but felt she needed work on speaking to a large group; she needed to improve her ability to maintain her higher pitch while also increasing her volume. Another client, a high level business management consultant, felt she needed to adjust her manner or style when leading business meetings at work; as a male, he had tended to be quite authoritative, but the “new woman” felt this was not the way she wanted to present herself as a female consultant. Thus, in addition to performing the standard evaluative tasks during the assessment (*e.g.*, measuring fundamental frequency, assessing habitual pitch, *etc.*), the clinician needs to approach transsexual speech assessment more broadly and openly, with an understanding of the need for *mutual goal-setting*.

Not only the assessment, but the **therapy** itself needs to be conducted with a more open or even somewhat *exploratory* or *experimental approach* at times. It is suggested that the clinician ideally be willing to engage her client in vocal experimentation, or “vocal play.” A client may need encouragement to enjoy trying out her new voice possibilities, and the clinician needs to be able to model this relatively uninhibited activity in sessions. If the client can feel freed up to actually have fun finding her new voice, to speak in her “fantasy voice”, if you will, then the clinician has a better idea of where to aim therapeutically, while the client is on her way to actualizing her identity to the extent possible. This kind of therapeutic experimentation of course does not replace the voice drills, the articulation practice, and the other kinds of exercise that are necessary for

learning and habituating a new skill, but it does have its place in transsexual speech therapy.

It should be acknowledged here that some clinicians may view this type of speech therapy as personally or philosophically uncomfortable, and may legitimately feel that this is not the kind of clinical work they choose to do. In such cases, it is absolutely appropriate and understandable that a Speech-Language Pathologist may simply choose to work with other client populations, in just the way that any professional is free to decide where and how to apply his or her particular skills. For those who do choose to evaluate and assist the transgendered, however, an accepting and non-judgmental attitude of course would be seen by the client as the most facilitating. And for many clinicians, the opportunity to become familiar with members of this small minority is an enriching experience -- one that they feel privileged to have.

The Transgendered Client- The attitudes and the expectations that the client herself brings to Speech Therapy are just as significant as are the attributes of the Speech-Language Pathologist whom she is seeing. As in most any therapeutic relationship, the active participation of the client is an essential component of successful intervention. Unlike some of the medical specialists the client may concurrently be seeing, for example to receive hormones or to undergo plastic surgery, the Speech-Language Pathologist will not have a “quick fix” for the transitioning individual, and the client cannot expect to be the passive “recipient” of a new voice. Some clients may feel frustrated or impatient when they realize that they will need to have an active role and sometimes work hard in

order to achieve their desired voice. Some may be surprised by the notion that this speech endeavor is a **process**, not a procedure. There are of course those clients who understand this well, and who are very motivated to try whatever they can to approximate a more feminine communication sound and style. Others may ask the clinician or their physicians about the possibility of **vocal surgery**⁷, perhaps hoping that they can surgically acquire a female-sounding voice.

The issue of vocal surgery has been a controversial one. Such surgeries have more frequently been performed in countries outside of the United States, although there are a number of American surgeons performing these procedures as well. In general, surgical procedures to the larynx are considered to still be in the experimental stages, and many believe that there have not been the longitudinal studies needed to assure their safety and/or effectiveness [35]. Although there are various techniques that have been used, vocal augmentation surgery generally involves a tightening of the vocal cords (in male-to-female transsexuals) in order to hopefully raise the pitch range of the voice. In their newly published **Transgender Care: Recommended Guidelines, Practical Information and Personal Accounts** [14], authors Israel and Tarver report that out of eight individuals that they contacted post-vocal surgery, two reported good results, while the others reported undesirable results including “loss of voice well beyond postoperative recovery time, undesirable tones, unexpected pitch and huskiness, and shortened duration

⁷ It is interesting to note that this surgery, performed under local anaesthesia so that the surgeon can ascertain the speaking voice quality of the client by direct interaction during the surgery, is also very risky. Not only can the client’s vocal quality end up perceived to sound more like Minnie Mouse than like that of a “genetic woman”, but there is a risk of loss of speaking ability all together, not to speak of the risk of loss of life or permanent injury due to the general operation. Clearly, the fact that some transgenders are willing to risk all of this against the option of “sounding feminine” indicates the deep importance placed on the perceived voice, by the transgendered client.

of conversations. One individual [they] spoke with found herself unable to speak more than a few hours per day. Another stated that within six months of surgery, her voice became an octave lower than it had been prior to the procedure [14].” These authors, who appear to be expressing the opinion most commonly held in the current medical community, conclude that, “with its inherent risks, [voice augmentation surgery] should not be considered a substitute for skills that can be learned through individual effort and training.” They suggest that consideration of such surgery “is indicated only after an individual has made a dedicated effort at adjusting her speech in collaboration with a speech pathologist [14].”

Components of Transgender Speech Intervention- As in all Speech-Language Pathology interventions, the components of treatment will include the **assessment**, the **therapy/intervention**, and, ideally, the **follow-up**. The assessment phase involves both evaluation of the client’s status with regard to the relevant communication areas discussed earlier (*voice, speech, language, non-verbal behaviors*), and mutual establishment of long-term goals, also discussed earlier. Further, assessment involves strategizing and selection of the shorter-term treatment objectives that will ultimately/hopefully lead to achievement of the long-term goals decided upon by client and clinician.

During the course of both evaluation/assessment and treatment, it is the task of the speech clinician to educate and counsel the client about the nature of speech/voice augmentation, to assist the client in setting realistic goals, and to explore the many possible approaches

and methods available to client and clinician. Specific voice-related (*non-segmental*) goal/treatment areas to be considered with the transsexual will include: *pitch, resonance, intensity, prosody/intonation, and quality*. Although not the focus of the present paper, the language-related (*segmental*) features will also be considered, including: *articulation, vocabulary usage, language formulation (syntax, style, etc.), conversational dynamics, and non-verbal communication*.

In planning and conducting therapy, the Speech-Language Pathologist can choose from among a number of methods and techniques. In addition to some of the more traditionally utilized activities (such as directed speech or voice exercises, structured language-oriented tasks), other therapy techniques that can be considered with the transgender population might include:

- **voice experimentation** (or vocal play, as discussed above)
- **use of instrumentation** (*e.g.*, computer programs, such as VisiPitch or VideoVoice, designed to acoustically measure and/or provide biofeedback re: fundamental frequency, intensity, etc.)
- **use of musical approach for clients who seem to relate best to these concepts** (*e.g.*, using musical notes of the scale for work on pitch range, ear-training, use of musical analogies such as staccato versus legato speech rhythms, etc.)
- **role-plays** (*e.g.*, practicing, rehearsing hypothetical interactions, conversations, social skills, telephone, etc.)
- **audiotaped feedback** (tape recorder to provide feedback, to increase self-monitoring skills, to reinforce progress, etc.)
- **videotaped feedback** (for visual feedback re: non-verbal features; can be useful with groups)
- **suggestion/discussion of relevant readings to potentially educate or provide insights to clients** (*e.g.*, selected sociolinguistic literature, popular linguistic/ “self-help” genre books re: male-female

communication issues)

- **relaxation exercises** (to decrease laryngeal tension, promote optimal speech breathing patterns, etc.)

Treatment **follow-up**, which optimally occurs at some point following completion of therapy (or perhaps following a period of suspended treatment), can be planned flexibly, depending on the individual situation and needs of the client. For some, an informal visit or a telephone contact may be helpful. Others may want to schedule a more formal follow-up appointment, to allow for re-evaluation, consideration of further treatment needs, or confirmation and reassurance that therapy goals have essentially been met and that progress is being maintained.

The concept of **group** speech/communication sessions for transgendered clients is also one that could potentially be very effective to implement. Group activities could be planned for clients who are still actively participating in individual speech therapy, for those who have completed therapy but perhaps need some ongoing opportunities for habituation practice and feedback, or for a mixed group of clients who are in various stages of their journeys.

5.0 Voices and Silences in the Transgendered Community. When a male-to-female transsexual visits a Speech-Language Pathologist for her first Speech/Voice session, she almost invariably will convey that her goal is to attain a new, more *feminine* voice. In

expressing such a desire and therapeutic goal, she (the “*new woman*”⁸) is of course - at that moment - using the word “*voice*” in the most literal sense, that is, she is referring to her “*speaking voice*.” She wishes to learn the skills needed to physiologically produce speech that sounds (*perceptually* or, in the parlance of the digital acoustic speech analysts, *spectrally*), as though it was uttered by a “*genetic*” woman⁹.

However, by taking the step of learning to “speak like a woman,” *i.e.*, “*woman born woman*,”¹⁰ it would seem that the transgendered woman - although she may be unaware of it at the time - is also claiming or seeking new kinds of voices in other dimensions as well. In point of fact, some of these new voices may even be ones of which she is not yet consciously aware. These latent voices will emerge in the process of actualizing her new persona. In the course of transitioning from living as a socially empowered genetic male (*man born man*) to living as a self-actualized female (*woman born man* - see footnote [7,8], albeit with the associated social restrictions), there are a pantheon of new voices to be learned and claimed by this evolving, newborn woman. She now has the opportunity to live her life in such a way that her internal perception of her gender, *i.e.*, her “*gender identity*” and her external representation of that self-perception, *i.e.*, her *morphology* and the expectations of others which are based upon that morphology, are no

⁸ The phrase “*new woman*” is a commonly used phrase in the literature of the transgendered. TMW finds it misleading and tends not to use it as it implies that, for some reason or not, there was not “*womanhood*” beforehand. However, the gender journey is about being true to one’s soul and identity. Hence, the “*woman*” part has always been there and is not “*new*.” Rather, it is newly expressed. Perhaps a better, more politically correct and descriptively correct terminology would be to call her a “*newly emerged woman*.” But then, why do we need to categorize anyway?

⁹ One can easily ask the question: “What does it mean to be a genetic woman.” For the purposes of our discussion, and based upon what we will assume is common understanding and useage, we assume that a genetic woman is one who has chromosomally at least XX. We do not in any way wish to get into issues of congenital adrenal hyperplasia, or of chromosomal arrangements of the form XX(something), *e.g.*, XXY. We accept that there are terminology issues here and intend to point out reasonable objections to the terminology but to also try to navigate within its constraints in order to try to get our points across.

longer in opposition or at odds either internally or externally¹¹.

As the new woman moves closer to the point of unambiguously passing, or at least being accepted as the woman she has psychologically felt herself to be, usually for as long as she can remember, she is deeply and poignantly empowered in any number of newly realized ways. She now becomes increasingly aware of her new voices on several hierarchical levels:

- her *perceived/acoustic/phonated voice*,
- her *voice as a member of a highly persecuted and stigmatized and invisible minority group* (the transgendered),
- her *voice as a member of the gender group* (women),
- and her *voice as a now “whole” individual*.

With this realization, she becomes empowered, but also more aware of her newly assigned and acquired social status. She becomes aware of how the media (television shows like Oprah and Jerry Springer), in their attempt to gain audience and to make a

¹⁰ See item 7 above for a diatribe on categorization.

¹¹Witten [36] points out that, “We are told not to judge a book by its cover. We are reminded that beauty is only skin deep. We are told to look beneath a person’s skin to find out what they are made of. And yet, when a person searches to find the core of being and identity, and in that search ends up choosing a path that is not the way of the world, that person is chastised by those outside. We go to museums and see collections of shells from all over the world. We stand in awe at their beauty. Do we not admire, then, the beauty that is without and fail to question what beauty there was in the organism that once lived within those shells? We listen to music that springs forth from the flute and admire the beauty of the instrument. Do we not forget that it is the breath from within that gives the shell of the instrument its beauty? Without that breath, the instrument, no matter how beautiful a work of art, contains no music. It is from the hollow within and the breath of life from within from which the music derives its existence and its beauty. The shell helps to shape the sound of that music. It protects the sound, allowing it to form and grow. We must have our shell to protect us and to allow us to function in this life. For those who travel the journey of the transgendered, the shell is like armor that does not fit, that is too restrictive, that does not allow the wearer to breathe and, in many cases suffocates its inhabitant. The transgendered person is like the snake who must shed its skin or die from binding constriction. It is the harmony between that which is within and that which is without that allows us to flow through life. While we cannot go through life without a shell, it is important to remember one’s center as being of importance as well.”

living/profit, manipulate and prey upon people's fear of human differences. The media portrays the transgendered as queer, as freakish, as not only laughable but also socially unacceptable. Using the premise that "different is bad"¹² or abnormal, the media plays upon the preconceived notions of the public, thereby magnifying the public's prurient and distorted perception the transgender community. One consequence of this is that the public then reacts negatively to the transgender's attempts to participate in society at large. For example, until only very recently, it was possible to fire an employee for being transgendered. It is still possible, in most places, to discriminate in hiring policy with respect to transgendered applicants. Such examples of discrimination are reflections of the fact that the voice oftentimes assigned to the transgender community has been shaped by inaccurate and unfavorable perceptions of others in the society. The public is not only ill-informed of the truths about the diversity within the gender community, but is - in point of fact - presented with a variety of distorted images so that it sees the gender community as a threat, which leads to perpetrated violence and abuse against the community¹³.

While anecdotal and autobiographical literature is now available to researchers and to the lay public, little is quantitatively known about the transgender community, its diversity,

¹² The concepts of difference equals bad and the consequences of such a philosophy is discussed, in great detail, in Witten [37].

¹³ In 1995 alone, five high profile homicides (in which hatred of transgenderism is either believed or known to be the motivation for murder) received national media attention (Brandon Teena, Falls City, Nebraska; Deborah Forte and Chanel Pickett, Boston environs; Tyra Hunter, Washington, DC; and Carmen Marie Montoya, Oakland, California). As is common in hate crime assaults, these episodes involved several forms of violence (such as multiple stab wounds, strangulation, and genital assault) but in contrast to the norm for investigation of other hate crimes (*e.g.*, neo-Nazi attacks) response by the law enforcement officials and medical providers was allegedly or demonstrably sub-standard in several of these cases [7].

and its needs. Little is known about the subsequent life course voices of these “new women.” The International Longitudinal Transsexual and Transgender Aging Research Project was established (now the ILTTA Research Institute), in an effort to provide rigorous data concerning the needs and experiences of the transgendered minority. Through this survey, as well as the current literature, the transgendered individuals and community are being given an opportunity to have a voice, not only individually, but as a group as well.

6.0 Closing Comments. Prior to, and all along her angst-ridden gender journey, the transgendered woman has had to dance a delicate dance, just in order to survive. Perhaps she has coped by dancing in and out of self-awareness, allowing herself to confront her innermost fears and yearnings only during intermittent moments of relative strength. Perhaps she has danced in and out of relationships, uncertain as to what kind of person she should be seeking out, wondering who would “get it” if she actually tried to explain. During moments to herself, she has experimented with different ways of dressing, talking, and moving her body. Over the years, she has searched and searched for a solution -- maybe by training to work in a “man’s” job, maybe by marrying and subsequently fathering children, maybe by participating in rugged sports, maybe by engaging in highly risky “manly” behaviors such as auto racing, maybe by joining the armed forces, maybe by focusing narrowly on one interest or pursuit -- to the exclusion of all others.

While on her journey the transgendered traveler sometimes has struggled just to stay on the road, perhaps finding that she could keep moving along by somehow weaving in and out of visibility, in and out of silence. She has dared not let others know of her “unacceptable” thoughts and feelings. Initially, her invisibility and silence were self-imposed, functioning as a means of protecting herself from the reactions she would be met with, should her secrets be spoken aloud. However, this kind of self-silenced existence has had other consequences, many of them insidious. Without true self-expression, be it through speech or through physical presentation, it is not possible for any person to establish his or her rightful place among others. The consequence of “hiding” is that one’s presence is not known. Until now, the identity of the transgendered individual has not been recognized. Their lives have been organized around maintaining invisibility -- the kind of invisibility that is borne out of silence and fear. The authors hope that through such explorations (physical and metaphysical) as that presented in this paper, as well as through the gathering and publication of empirical data of the kind obtained through the ILTTA Research Institute (see Section [7] below), this diverse, and currently epidemiologically invisible, minority segment of the world’s population will become not only more visible, but will also be able to make their voices heard in an enabling fashion.

7.0 Contacting the ILTTA Research Institute. If you are interested in contacting the ILTTA Research Institute, please send email to either **tmwitten@earthlink.net** or **ilttar@hotmail.com** . Ongoing details concerning the project may be found at:

<http://www.int-trans.org> (currently under construction)

Continue to visit it on a regular basis. Additionally, you may write to the Research

Institute at the following address: Tarynn M. Witten, Ph.D., ILTTA Research Institute, P.O. Box 28089, Richmond, VA 23228-28089 USA.

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Transgender women can have voice surgery, but it can sometimes cause a Minnie Mouse-like falsetto or the complete loss of the voice. As a result, many transgendered women turn to specially trained voice therapists to learn how to speak more convincingly like women. The voice's pitch, although important, is not the only factor in creating a more female sound. ABSTRACT The human voice is an important indicator of a person's gender. For male-to-female transgender individuals (or transsexuals) the voice is one of the most difficult parts of the gender transition. Males have larger and heavier vocal apparatuses (larynx and vocal folds), which generally produce a lower sound. One transgender woman revealed an interesting difference she spotted - since becoming female, men give her much more eye contact when passing by but less in conversations: "They're more likely to be looking around the room or at their phones or something," she explained. Eye contact from women has stayed the same though. Then all of a sudden they want to talk to me. "Or you get the creepy guys who will go out of their way to talk to me over everyone else and will ask me a bunch of questions that don't really have to do with my job. Women are way friendlier around me, and will come up to me and compliment my outfit choices and makeup and whatnot. I could tell that women always thought I was attractive before but they were definitely more reserved with talking to me." Coming out as transgender can be a scary step to take. Fortunately, there are some things you can do to help make the coming out process easier for yourself and the people around you. Over time, your confidence will grow as you find... Consider seeing a counselor. Coming out as transgender can be tough, and the ensuing transition process isn't always easy. A counselor can help you cope with the challenges, and offer advice on handling difficult times. They can also treat anxiety, depression, and other illnesses that trans people can be at risk for. demographic data self-evaluations: Transexual Voice Questionnaire (TVQ), Voice Handicap Index (VHI) if signs of voice disorder audio recordings: reading of a standard text and narrating to a series of pictures in habitual voice comprising a Speech Range Profile (SRP), Voice Range Profile (VRP) to document voice range for frequency and sound pressure level (SPL) videolaryngostroboscopy. Voice Assessment for Trans-masculine. demographic interview self-evaluations No valid or reliable test exists yet If showing signs of voice disorder, the VHI is used. Pitch-raising surgery.