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## Voice Disorders and Personality: Understanding Their Interactions

Miriam van Mersbergen

Department of Allied Health and Communicative Disorders, Northern Illinois University, DeKalb, Illinois.

### Abstract

*This article will address some of the theory and research in personality psychology that are used to answer questions associated with the relation between personality and voice disorders. The study of personality is important to consider in voice disorders, because personality determines the manner in which each person shapes and reacts to his or her environment. In this article, a review of personality psychology is presented along with research findings from voice science and personality. Implications for clinical practice in particular groups of individuals with voice disorders are discussed.*

When the topic of the psychology of voice disorders arises, there seem to be more questions than answers. Are concurrent psychological issues a result of the voice problem? Do unforeseen life events contribute towards the overwhelming sense of having a communication disorder? Are there inherent factors within an individual that predispose that individual to having a voice disorder? Are there factors within an individual that predict how well they will perform in therapy? Unfortunately, without a strong understanding of normal psychological processes and individual differences that exist across both clinicians and patients, we may tend to rely upon popular psychology or our own personal biases. This article will address some of the theories and research in personality psychology that are employed to answer these questions.

### Psychology of Personality

To begin to answer the abovementioned questions, I will offer a short overview of personality psychology and its theory. Personality is the study of differences among individuals (Ottmans & Emory, 1999). It is used to answer the question, "What are some of the dimensions in which people can express their uniqueness?" Specifically, differences can occur in the cognitive, perceptual, and temperamental domains (Winter & Barenbaum, 1999). Individuals differ along a continuum of cognitive styles; while some individuals prefer to solve problems visually, others prefer a logical, linear path. They can differ in their taste for salty foods versus sweet foods or in their propensity to become sad or happy with unexpected news. Indeed, cognition, perception, and temperament all make up one's personality.

Research in this area is ensconced in debate over how to best typify and analyze differences among individuals. While some researchers, such as Albert Bandura (1999), stress concepts of social learning in the development and expression of personality, other researchers favor biological predispositions (Pickering & Gray, 1999) in the development of personality and its subsequent expression. Research traditions of personality testing stress empirical methods and rigorous statistical analysis (John & Srivastava, 1999), while other traditions focus on

psychodynamic interpretation and expert analyses of qualitative data (Westin & Gabbard, 1999). Some may see this disparity of consensus of the field as a weakness. However, despite such a wide base for inquiry, the common themes in personality research are consistent and widely accepted. The field maintains that individuals differ on a few general dimensions and that these differences shape an individual's personality. No two of us are alike.

Personality is considered a stable trait, meaning that individuals acquire personalities early in life and tend to follow their personality preferences throughout their lives (Caspi & Roberts, 1999). The importance of these preferences is highlighted in how these differences shape and create behaviors (Plomin & Caspi, 1999). Simply stated, an individual's personality will determine the manner in which that person shapes and reacts to his or her environment. The study of personality is the study of how individuals express themselves behaviorally.

With this background, we can start to answer some of the questions about why some individuals develop voice disorders, while others do not. We can determine more effective ways to administer voice therapy if we are sensitive to individual differences in learning. We can even begin to predict whether generalization might be a problem and, in these cases, start to identify ways to mitigate individual barriers. However, before we begin to apply this knowledge to voice disorders, it is important to review what is known from the research base in this area.

### ***Personality Research in Voice Disorders***

Historically, the research into personality and voice began with Sigmund Freud and his patient, Dora (pseudonym; as cited in Matas, 1991). Dora was a young woman with conversion aphonia who was a victim of sexual abuse by her neighbor. Freud's interpretation of her aphonia relied heavily on his psychodynamic model of personality and clearly linked her inability to vocalize with her psychological well-being as a result of her inability to speak out. Interestingly, her dysphonia cleared following her confrontation of both the neighbor who assaulted her as well as those who did not believe her when she reported the offense.

Dora's voice problem today would have had many names; these are shown in Table 1 and are listed from a historical perspective. The pure form of Dora's type of voice disorder relies on the belief that there is a strong link between an individual's psychological well-being and his or her vocal behavior. Indeed, our field has shown through case studies, self-report measures, and experimental paradigms that these relationships exist.

Table 1. Historical terminology for the disorder characterized by dysphonia that occurs in the absence of organic or neurologic vocal fold pathology.

<b>Terminology</b>	<b>Authors (Historical Order)</b>
Habitual Hyperkinetic Dysphonia	Arnold (1962)
Ventricular Dysphonia	Aronson, Peterson, & Litin (1966)
Habituated Hoarseness	Kaufman & Blalock (1982)
Psychogenic Dysphonia	Elias, Raven, Butcher, & Littlejohns (1989); Gerritsma (1991); Schalen & Andersson (1992)
Conversion Dysphonia	Matas (1991)
and Phononeurosis	Milutinovic (1991)
Muscle Misuse Dysphonia	Morrison & Rammage (1993)
Hyperfunctional Dysphonia	Goldman, Hardgrave, Hillman, Holmberg, & Gress (1996)
Functional Dysphonia	Roy & Bless (2000)
Non-organic Habitual Dysphonia	Demmink-Geertman & Dejonckere (2002)
Hysterical Aphonia	Roy (2003)
Primary Muscle Tension Dysphonia as Tension-fatigue syndrome	Roy (2003)
Primary Muscle Tension Dysphonia	Verdolini, Rosen, & Branski (2006)

In the 1960s, Arnold (1962) and Aronson and colleagues (Aronson, 1966) analyzed a series of case studies and noted several psychological influences in those with dysphonia. Specifically, these researchers observed coincident anxiety, emotional conflict, lack of assertiveness, and perceived loss of personal control among those with certain types of voice disorders. They suggested that these seemingly normal psychological disturbances were behaviorally expressed through abnormalities in vocal technique. These observations led Aronson to suggest particular approaches to “release[ing] the inherently normal voice suppressed by excessive muscular tension” (Aronson, 1980, p. 195). Specifically, Aronson noted that this release could be accomplished through mechanically relaxing the musculature (i.e., laryngeal massage) or by psychologically releasing the anxiety causing the tension.

As psychometric measurement techniques improved in the field of personality psychology, the field of voice science employed these measures to investigate the link between personality and voice. House and Andrews (1988) found elevations in a subscale of the Bedford Life Events Scale called “Conflict Over Speaking Out” in a group of women with functional dysphonia. They surmised that, in the presence of this conflict, those with functional dysphonia developed difficulty voicing. Using various validated personality inventories of life events, other researchers (Kinzl, Biebl, & Rauchegger, 1988; Schalen, Andersson, & Eliasson, 1992) discovered interpersonal and social disturbances in individuals with functional dysphonia. They concluded that these individuals responded to their psychological environment by developing a voice disorder.

Goldman and colleagues (1996) compared patients with vocal nodules, patients with functional dysphonia, and healthy controls using standardized and non-standardized

psychological inventories. They found personality patterns in those with functional dysphonia and vocal nodules that differed from those of healthy controls. Goldman and colleagues suggested that psychosocial factors, specifically the amount of vocal expression, anxiety, and stress, might be important in the development of dysphonia in these groups and that, in turn, these could influence the presence or absence of laryngeal pathology. The factors that underlie some of these personality types will be presented next.

## ***Personality Factors and Voice Research***

Theoretical frameworks of personality based on factor analysis have been employed extensively in the field of voice and voice disorders. These frameworks include Big-Five personality constructs (i.e., Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism; c.f., John & Srivastava, 1999) and the Big Three constructs (Clark & Watson, 1999). The Big-Three constructs include Extroversion/Positive Emotionality (E/PE), Neuroticism/Negative Emotionality (N/NE), and Psychoticism/Behavioral Constraint (CON). These factors have gained the interest of biological psychologists who have discovered neuro-biological underpinnings that explain the behavioral propensities of each area (Gray, 1991). Although these terms have strong connotations in vernacular speech, they relate to specific definitions. To correctly interpret their meaning, we must review these definitions and not make unwarranted assumptions based on the vernacular.

E/PE is a trait associated with well-being, social potency, social closeness, and achievement (Clark & Watson, 1999; Tellegen, & Waller, in press). Biologically, E/PE is linked to the tendency to see and seek reward in the environment. Those who score high on E/PE are people who see their glasses as half full. N/NE is the temperamental trait associated with increases in stress reactivity, alienation, aggression, and anxiety (Clark & Watson, 1999; Tellegen, & Waller, in press). Biologically, it is linked to the tendency to avoid harm and punishment in the environment. Those who score high on N/NE tend to be careful and cautious in people. One must note that, although we use the word “neurotic” freely in vernacular speech, scoring high in N/NE does not imply that an individual presents with a “Woody Allen-type” personality. It is important for us to make this distinction in order to avoid inaccurate or pejorative conclusions about those who score high in N/NE. Behavioral Propensities is the third factor in this triad (Clark & Watson, Tellegen & Waller). CON is the degree to which individuals express or act upon their temperamental traits and incorporate factors of control harm avoidance and traditionalism. It is associated with the degree of activation of behavioral inhibition observed in the pre-frontal cortex. CON is of particular interest in the study of how personality shapes behavior, because it is the degree to which individuals outwardly act out their temperament (Patrick, Curtain, & Tellegen, 2002). These three traits are orthogonal and thought to be driven by different biological systems. So, it is entirely possible for an individual to score high in both N/NE and E/PE (Clark & Watson, Tellegen & Waller).

Using inventories and scales that measure the Big Three personality traits, we have gained understandings of the link between personality and the development of voice disorders. White, Ian, and Wilson (1997) used the Eysenck Personality Questionnaire (a Big-Three inventory) and found increased scores on the N/NE (punishment avoiding), decreased scores on the E/PE (reward blind), and decreased CON (behavioral inhibition) in those with functional dysphonia compared to healthy controls. Gerritsma (1991) found similar results when he administered the Amsterdam Biological Questionnaire to individuals with functional dysphonia and healthy controls. The Amsterdam Biological Questionnaire is a Dutch personality inventory patterned after the Eysenck Personality Questionnaire. Results revealed that individuals with functional dysphonia experienced increases in the N/NE and decreases in the scales similar to the E/PE scale.

Although this research specifically addressed functional dysphonia, the link between voicing behavior and personality also has been investigated in studies involving participants with other behaviorally based voice disorders. In this context, behaviorally based voice disorders are those disorders caused by inefficient technique or a maladaptation in vocal behavior (Kaufman & Belafsky, n.d.). For example, Roy and colleagues (Roy & Bless, 2000; Roy, Bless, & Heisey, 2000b) proposed the Trait Theory of Voice Disorders based on a series of investigations using two Big-Three personality inventories. On the Eysenck Personality Questionnaire, they found that individuals with functional dysphonia demonstrated increased N/NE (punishment avoiding) and decreased E/PE (reward blind) compared with performance of healthy controls and those with organic voice disorders. They also found that individuals with vocal fold nodules (VN) demonstrated increased N/NE and increased E/PE compared with performance by the same groups. In their discovery of temperamental differences between participants with functional dysphonia and VN, they concluded that the development of these disorders may be the result of personality tendencies. Specifically, those with functional dysphonia presented with personality dispositions of heightened propensity to note punishment in their environment (increased N/NE) and reduced propensity to note reward (reduced E/PE). These findings were consistent with previously published reports in the literature (Gerritsma, 1991; White, Ian, & Wilson, 1997).

In a follow-up investigation using another Big-Three personality inventory, the Multiphasic Personality Inventory, Roy and colleagues (Roy, Bless, & Heisey, 2000b) compared those with functional dysphonia and VN to a healthy control group and two other groups with medically acquired voice disorders and found similar results. Those with functional dysphonia and VN scored high on N/NEM (punishment avoidance). However, what really differentiated the two groups was their score on CON (tendency to express their personality traits): those with functional dysphonia scored high in CON, suggesting their tendency to inhibit their behaviors, while those with VN scored low in CON, suggesting that they tended to over-express behaviors.

Although these investigations used well-validated and established psychometric measures of personality, differences in personality in individuals with voice disorders remained empirically untested until recently. We investigated reactions to negative and positive emotional stimuli in a group of individuals with functional dysphonia, those with social anxiety, and a group of healthy controls (van Mersbergen, Patrick, & Glaze, 2008). The results showed that individuals with functional dysphonia did not behaviorally express their mood when exposed to negative and positive emotional stimuli; the reactions of this group were significantly different from those of the healthy controls and those with social anxiety. These results provided behavioral support for personality traits of CON previously found in other studies (Roy et al., 2000a). Further investigations into the extent and nature of this behavioral constraint in other behaviorally acquired voice disorders are currently underway.

## ***Implications for Practice and Research***

There is clear evidence that personality traits, particularly those traits that are temperamental in nature, present themselves in patients with behaviorally acquired voice disorders. But what should we, as speech-language pathologists, do with this information? Should we begin handing out personality inventories to our patients with the goal of diagnosing personality tendencies? The obvious answer is no, because it is not in our scope of practice to do so. In addition, we always need to remember that these traits are not disordered traits, just propensities to behave, or not, in certain ways. However, there are a number of research directions and clinical applications that might capitalize on these findings.

Developing a model of how personality influences the development and perpetuation of a voice disorder can influence our research into the bio-behavioral underpinnings of voicing and usher it in the right direction. As more research employs sophisticated brain imaging, it is important for us to have a firm grasp of theoretical frameworks so that interpretation of data

remains valid. The field of personality psychology has a rich history of links to bio-behavioral research in animals and in humans. Understanding individual differences in humans can assist participant selection in research and help explain findings that appear vague. For example, a researcher may want to investigate the reaction to a laryngeal irritant using the P300 measure of electroencephalography (i.e., a common measure in EEG). If that investigator also has knowledge about personality traits (e.g., a high score on N/NE, which is strongly associated with stress reactivity), then he can draw valuable conclusions. One also might be able to avoid difficulties in replicating these research methods in other populations, if information related to personality traits is known a priori.

Developing a model for how voice disorders arise may allow us to identify factors in our patients that require additional attention. If we are working with an individual with VN who may score low in CON with a tendency toward vocal over-expression, we may choose to substitute the tendency to be expressive with non-vocal activities such as journaling, dancing, art, or instrumental music. In this way, we are not working against the nature of a patient who wants to engage in behavioral expression, and, at the same time, we are allowing that patient to experience some vocal rest. Only by fully understanding these underlying propensities will we increase the efficiency of our therapy approaches.

Furthermore, by incorporating these underlying propensities into the practice of therapy compliance and generalization, we can achieve more favorable outcomes. Expecting compliance may be reasonable when one provides homework to an individual with high levels of traditionalism, a factor that loads onto CON. However, the same homework exercises presented in the same manner to a patient with high levels of stress reactivity may result in poorer compliance if the homework is perceived as difficult. However, both patients may be equally motivated to resolve their voice difficulties. Understanding personality differences enables the clinician to avoid erroneous judgments of motivation and therapeutic success based on homework completion. It also may direct more effective homework presentation by allowing the clinician to address the issues of perceived difficulty (for example, using assistive homework devices such as audio or video recordings to support home practice; van Leer & Connor, 2010).

Finally, a word must be said about the interactions of these factors in individuals with various vocal demands. While some of these patterns have been noted among individuals with different diagnoses (e.g., those with behaviorally based voice disorders), it remains to be seen how personality differences are expressed in vocal performers. Although the personality type of a vocal performer has been described as having ambition, drive, perfectionism, and tight control (Rosen, Heuer, Levy, & Sataloff, 2003), actual psychometric and experimental investigations into these observations still need to be completed to serve this population with equanimity. Understanding the interaction between an individual's temperament and performance demands can illuminate the best practice for voice habilitation or rehabilitation. Thus, it is not only incumbent upon us to recognize personality factors that predispose one to voice disorders, but also to understand how personality interacts with the psychological consequences of voice disturbances and how these factors affect therapy implementation and success. Future research in both of these areas is important in our field to provide the best possible care for our patients.

## **References**

- Aronson, A. (1980). *Clinical voice disorders: An interdisciplinary approach*. New York, NY: Brian C. Decker.
- Aronson, A. E., Peterson, H. W., & Litin, E. M. (1966). Psychiatric symptomatology in functional dysphonia and aphonia. *Journal of Speech and Hearing Disorders, 31*(2), 115-127.
- Arnold, G. E. (1962). Vocal nodules and polyps: Laryngeal tissue reaction to habitual hyperkinetic dysphonia. *Journal of Speech and Hearing Disorders, 27*(3), 205-217.

- Bandura, A. (1999). Social cognitive theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 154-196). New York, NY: Guilford.
- Caspi, A., & Roberts, B. W. (1999). Personality continuity and change across the life course. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 300-326). New York, NY: Guilford.
- Clark, L. A., & Watson, D. (1999). Temperament: A new paradigm for trait psychology. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 399-423). New York, NY: Guilford.
- Demmink-Geertman, L., & Dejonckere, P. H. (2002). Nonorganic habitual dysphonia and autonomic dysfunction. *Journal of Voice*, 16, 4, 549-559.
- Elias, A., Raven, R., Butcher, P., & Littlejohns, D. (1989). Speech therapy for psychogenic voice disorder: A survey of current practice and training. *British Journal of Disorders of Communication*, 24(1), 61-76.
- Gerritsma, E. J. (1991). An investigation into some personality characteristics of patients with psychogenic aphonia and dysphonia. *Folia Phoniatica*, 43(1), 13-20.
- Goldman, S. L., Hargrave, J., Hillman, R. E., Holmberg, E., & Gress, C. (1996). Stress, anxiety, somatic complaints, and voice use in women with vocal nodules: Preliminary findings. *American Journal of Speech-Language Pathology*, 5, 44-54.
- Gray, J. A. (1991). The neuropsychology of temperament. In J. Strelau & A. Angleitner (Eds.), *Explorations in temperament: International perspectives on theory and measurement* (pp. 105-128). New York, NY: Plenum.
- House, A. O., & Andrews, H. B. (1988). Life events and difficulties preceding the onset of functional dysphonia. *Journal of Psychosomatic Research*, 32(3), 311-319.
- John, O., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102-138). New York, NY: Guilford.
- Kaufman, J., & Belafsky, P. (n.d.). Demise of behavioral voice disorders. Retrieved from <http://www.ucdvoice.org/demise.html>
- Kaufman, J. A., & Blalock, P. D. (1982). Classification and approach to patients with functional voice disorders. *Annals of Otolaryngology, Rhinology & Laryngology*, 91(4 Pt1), 372-377.
- Kinzl, J., Biebl, W., & Rauchegger, H. (1988). Functional aphonia: Psychosomatic aspects of diagnosis and therapy. *Folia Phoniatica*, 40, 131-137.
- Matas, M. (1991). Psychogenic voice disorders: Literature review and case report. *Canadian Journal of Psychiatry*, 36, 363-365.
- Milutinovic, Z. (1991). Inflammatory changes as a risk factor in the development of phononeurosis. *Folia Phoniatica et Logopaedica*, 43 (4), 177-180.
- Morrison, M. D., & Rammage, L. A. (1993). Muscle-misuse voice disorders: Description and classification. *Acta-Oto-Laryngologica*, 113(3), 428-434.
- Ottmans, T. F., & Emery, R. E. (1999). *Abnormal psychology* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
- Patrick, C. F., Curtin, J. J., & Tellegen, A. (2002). Development and validation of a brief form of the multidimensional personality questionnaire. *Psychological Assessment*, 14(2), 150-163.
- Pickering, A., & Gray, J. (1999). The neuroscience of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 277-299). New York, NY: Guilford.
- Plomin, R., & Caspi, A. (1999). Behavioral genetics and personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 251-276). New York, NY: Guilford.
- Rosen, D. C., Heuer, R. J., Levy, S. H., & Sataloff, R. T. (2003). Psychologic aspects of voice disorders. In J. S. Rubin, R. T. Sataloff, & G. S. Korovin (Eds.), *Diagnosis and treatment of voice disorders* (2nd ed.) (pp. 479-508). Clifton Park, NY: Thomson Delmar.
- Roy, N. (2003). Functional dysphonia. *Current Opinion in Otolaryngology & Head and Neck Surgery*, 11, 144-148.
- Roy, N., & Bless, D. M. (2000). Personality trait and psychological factors in voice pathology: A foundation for future research. *Journal of Speech, Language, and Hearing Research*, 43(3), 737-748.

- Roy, N., Bless, D. M., & Heisey, D. (2000a). Personality and voice disorders: A multitrait-multidisorder analysis. *Journal of Voice*, 14(4), 521-548.
- Roy, N., Bless, D. M., & Heisey, D. (2000b). Personality and voice disorders: A superfactor trait analysis. *Journal of Speech, Language, and Hearing Research*, 43(3), 749-768.
- Schalen, L., & Andersson, K. (1992). Differential diagnosis and treatment of psychogenic voice disorder. *Clinical Otolaryngology and Allied Sciences*, 17(3), 225-230.
- Schalen, L., Andersson, K., & Eliasson, I. (1992). Diagnosis of psychogenic dysphonia. *Acta-Oto-Laryngologica-Supplement*, 492, 110-112.
- Tellegen, A., & Waller, N. (in press). *Exploring personality through test construction: Development of the multidimensional personality questionnaire*. Minneapolis, MN: University of Minnesota Press.
- van Leer, E., & Connor, N. (2010). Patient perceptions of voice therapy adherence. *Journal of Voice*, 24(4), 458-469.
- van Mersbergen, M. R., Patrick, C. J., & Glaze, L. E. (2008). Functional dysphonia during mental imagery: Testing the trait theory of voice disorders. *Journal of Speech, Language, and Hearing Research*, 51(6), 1405-1450.
- Verdolini, K., Rosen, C. A., & Branski, R. C. (2006). *American speech-language-hearing association special interest division 3, voice and voice disorders, classification manual for voice disorders-I*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Westin, D., & Gabbard, G. (1999). Psychoanalytic approaches to personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 57-101). New York, NY: Guilford.
- White, A., Ian, J. D., & Wilson, J. A. (1997). Psychiatric disturbances and personality traits in dysphonia patients. *European Journal of Disorders of Communication*, 32, 307-317.
- Winter, D., & Barenbaum, N. (1999). History of modern personality theory and research. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 3-27). New York, NY: Guilford.