

Chapter 5

THE USE OF METAPHOR IN VOICE TEACHING

Introduction

No matter how knowledgeable teachers may be, their information is of little use to their students if it is not imparted in a manner that is comprehensible. This is especially so with singing teaching because ‘communication in discussing our invisible instrument is very difficult, and so misunderstandings happen constantly between teacher and student, teacher and teacher, student and student’ (Salaman, 1989, p. 16). This chapter will therefore explore the communication strategies that have been developed during this century – and especially examine the current controversy surrounding the role of metaphor as a teaching strategy. For the purposes of the study, the term ‘metaphor’ was defined as the term used for any symbolic language that instigates a metaphor process (this subsumes categories like simile and analogy). The ‘metaphor process’ is that which transforms understanding by comparing known information with unknown concepts, in order to create new comprehension. The resultant new beliefs then influence behaviour.

The communication strategies of E. G. White

White’s teaching practices seem to have been different to others in that he developed a systematic communication procedure that was aimed at awakening his students’ awareness of the sensory processes of tone creation. To do this, he used metaphors that were explicit and always drew on every-day life experiences to which his students could relate (referred to here as experiential metaphors) to evoke imagery that could influence tone outcome. He combined this with reinforcement procedures that used visual, auditory and kinaesthetic strategies to make his explanations more vivid. For example, he corrected the forced tone of a young girl by saying:

You know that when you have finished your bath and the water is allowed to run down the waste pipe, it does not leave the bath moving in a straight line, but it circles round and round . . . that is just the way the air leaves the little boxes in your head. If you will

think of the air circling in that way, you will get the correct tone.
(White, 1951, p. 43)

During his students' lessons he also showed them a sectioned human skull and charts of the sinuses as he explained his theory and played notes on the ocarina to give an auditory experience of tone that flowed horizontally. He would then encourage his pupils to visualize the sinuses and the ocarina while experiencing the vibrations of their own humming.

Whilst frequently using his own style of metaphor, White did not approve of the more obscure metaphors of others. For example, he was derisive when he cited Mr. St. John Rumsey as writing that stammerers should create a mental image of a smooth stream of vocal sound passing through their mouths in order to overcome stop-start vocal output. White (1951) replied:

With all due respect to the Instructor for Speech Defects at Guy's Hospital, it would be just as sensible to say that the mental picture of a mansion in Park Lane solves all the difficulties of poverty. (p. 79)

Similarly, when one of his colleagues asked a choir to think of frying sausages in order to gain an effect, White declared that he was at a loss to know how that could possibly help. He was also very disparaging when another colleague required 'a more beefy tone . . . more juicy' (White, 1938a, p. 12). Yet another asked his choir not to sing in a 'club-footed' style (p. 12) to which White retorted that even a club-footed man could sing. He was delighted whenever singers told him that they could find no sense in this kind of instruction. As a result, White thought these metaphors were highly inappropriate for instructive purposes because they had no direct bearing on the matter in hand. From his comments it may be deduced that White was a very literal-minded person who made sure that his use of metaphor left his students in no doubt as to what he was saying and what they were expected to do.

The current Sinus Tone Production approach

A shift in the focal point of White's theory occurred in the early 1980s when VCT research evidenced that audible tone was created by a complex relationship involving sub- and supra-

glottal air pressure with vocal fold vibration and resonances within the vocal tract (Sundberg, 1987). From that time onwards the Ernest George White Society adopted the position that tone creation resulted from an 'integral activity of the vocal tract comprising the organs and air spaces extending from the lungs to the sinuses' (Hewlett, 1981, p. 7). As a result, teachers and students were instructed 'to proceed *as though* the sinuses were the point of production' (p. 7). According to some VCT teachers (Chapman, personal communication, 16 October 1994) this directive established Sinus Tone Production (STP) as a non-scientific, metaphoric approach. From the VCT interpretation of 'metaphor' this meant that the approach had no foundation in reality but relied on imaginary notions to achieve the desired outcome.

The current Vocal Cord Theory attitude towards metaphor

Since the 1940s Vocal Cord Theory (VCT) teachers have been divided by a debate about metaphor as an effective teaching strategy. According to Günter (1992a) a growing number of scientifically-oriented VCT teachers have turned away from the use of metaphor and a 'psychological' approach in favour of literal explanations of physical procedures. The reason for this was explained by Chapman (personal communication, 16 October 1994) and Estill (personal communication, 11 April 1995) who claimed that past teachers taught by trial-and-error, superstition and myth before the advent of endoscopy enabled the processes of voice creation to be observed. Literal descriptions dispelled the mystery surrounding tone creation, and as a result metaphor was perceived to be obsolete now that teachers could tell their students 'what really happens' (Chapman, personal communication, 16 October 1994).

Miller (1986) contended that the reason metaphors like 'open the throat' had the potential to cause dysfunction in singing was that the student had no way of knowing what such imprecise language meant. In his opinion 'vocal pedagogy could probably take a major step forward if these and other subjective terms were replaced with, or augmented by, more exact language' (p. 58). For this reason, teachers were trying to find strategies for communicating more effectively by understanding

the scientific explanations for tone creation. In support of the move away from metaphor, Light (1991) stated:

When I first started studying the science of the singing voice, I was deeply concerned that demystifying the voice would rob me of the emotional contribution – that impulse to sing. I was fearful I would be left with a diminished grab bag of tools if I used imagery for interpretational purposes only. But not so, I now have a veritable arsenal of correct teaching terms so that today's students leave my studio and become informed teachers of tomorrow. (p. 16)

She went on: 'I now think of the voice as an aerodynamic instrument . . . hear the voice as an acoustic instrument . . . see the output of the voice through spectral analysis . . . teach from basic facts of acoustics, physiology and science, facts on which I can rely' (p. 16). These comments are noteworthy if only for the amount of metaphor they contain.

On the other hand, the rejection of metaphor was hotly disputed by psychologically-oriented teachers who argued that singers expressed their ideas in metaphor and also relied on the awareness of the sensory perception it awakened to control vocal outcome (Green & Gallwey, 1986; Günter, 1992a; Hines, 1994; Salaman, 1989, 1995). According to Günter (1992a) literal descriptions could not provide the awareness of the sensory elements needed to create the memory patterns that set up the physical responses necessary for tone creation. To support his claim he maintained that Pavarotti had to 'think' the tone before he was able to sing it, and that Lotti Lehmann not only relied on her awareness of physical sensations during her singing, but also believed in showing visual aids when she taught. Günter recounted how Lehmann showed her students a chart of the head depicting the areas where vibratory sensations for various pitches were best focused, and stated that he had found the concept of providing visual stimulus and clarification to be very effective.

His assertions were echoed by Salaman (1989) who wrote extensively about the need for singers to develop the sensory awareness essential for the skilful placement of tone-enhancing vocal energy. She also emphasized that sensory awareness was vital for the delicate physical adjustments required for vowel creation.

In the same vein Green and Gallwey (1986) stressed the importance of metaphor and the role it played in eliciting imagery that could change perceptions and behaviours. Green stressed that performance was enhanced when metaphor was used to recall visual, auditory and kinaesthetic imagery, and recalled how his musical performance came to life once he was able to visualize the music on the page, imagine the sound to be created and focus attention on the sensations and emotions being evoked by the performance.

The science/metaphor debate

Despite this modern disagreement, the argument about metaphor is not new. Its role has been disputed since the 17th century when philosophy and science became separate entities. At that time scientists began to insist on explicit descriptions that were less ambiguous than other forms of enquiry. They called for ‘literal’ language – or descriptions that used ‘words in their usual or primary sense . . . [to which were applied] the ordinary rules of grammar, without mysticism or allegory or metaphor’ (“Literal”, pp. 709, 710). Many of their theories became supported by tangible evidence and because of this the general public began to believe that the literal language of the scientists described the ‘truth’ about the quickly changing world. As a result, by the 1800s literal language and metaphor were perceived to be totally divergent, with literal language accepted as the truth and metaphor as literary embellishment that was often ‘deviant, lacking in cognitive content, and not very worthy of serious scientific study’ (Gibbs, 1989, p. 707). The attitude of researchers towards metaphor began to change when extensive research was undertaken which convinced many educators that metaphor was not only a valuable explanatory device but that it was probably indispensable to learning. Petrie (1979) believed that this was because it played the ‘crucial epistemic role of rendering the acquisition of radically new knowledge intelligible’ (p. 441).

He counteracted claims that metaphor was purely useless embellishment with the argument that

even though metaphors may turn out to be dispensable to a logical characterization of the subject being taught and learned, they may be indispensable to the pedagogical process of acquiring that subject.
(p. 439)

When some researchers pointed out that metaphor could be misleading, lead to sloppy thinking and the acceptance of easy explanations Petrie agreed, but claimed that these problems could be overcome by alertness to the listener's responses. Similarly, Denicolo (1983) observed that students who tended to overextend or take metaphor literally became confused, and her solution was to explain which metaphors were 'true-in-the-model' and which were 'true-in-fact', and to make sure that the students comprehended the difference. According to Dalton (1989), pausing from time to time allowed students to process what had been explained. She also advocated eliciting feedback from the students as a means of corroborating that the concept had been understood.

Despite this, metaphor could be very effective, and during his investigations Gibbs (1989) found that it was most effective if the listener was made aware that they must discover the relationship between what was said, and what was meant by the similarities contained within the comparisons. He also thought that both parties should understand the context and belief structures behind the metaphors, because these influenced the interpretation.

Morgan

(1993) agreed and added that metaphors that vividly provided definite links between comparisons created a much greater impression than either abstract or academic theories – provided they were as close to the understanding and experience of the listener as possible. He also cautioned against 'spelling out' information or using only an academic description because he had found that this prevented listeners from using their imaginations and stifled the desire to learn.

His findings supported those of Cassels (1980) and Carter (1993) who maintained that when imagery was elicited it triggered the process of interpretation that gave the students a feeling

of ownership of the metaphor as well as a feeling of participation in the new knowledge. Like others, these researchers found that information was accepted more readily when the speaker and the listener had understandings in common, because the metaphor ‘rang true’ (Bandler & Grinder, 1979; Carter, 1993; Gibbs, 1989; O’Connor & Seymour, 1993).

The construction and understanding of reality through metaphor

In the late 1970s Gallagher (1978) investigated the relationship between metaphor and creative artists. Her interest was captured by Piaget, who perceived people ‘not so much as logicians, but as scientists who invent and construct their own understandings’ (p. 77). As a result Gallagher drew on his concept that mental activity was

relational when each new understanding is connected logically in a more complex way to an earlier understanding. Therefore, in both thought and action, the growth mechanism in knowledge must be considered both *retrospective*, drawing upon previous sources for its elements, and *constructive*, inventing new relationships. (pp. 78, 79)

From this perspective she deduced that people interacted with their environment and constructed or invented new, unique understandings, which were richer than the information supplied by the original environment. Her developing theory also had Piaget’s system of correspondences at its heart – that understanding is enriched when resemblances are found and comparisons made. At the completion of her research Gallagher concluded that creative artists accessed a metaphor process in that they referred back to past images and then added new dimensions, therefore combining the known elements of their world with the unknown in order to create something new.

Lakoff and Johnson (1980) took this theory further and claimed that metaphor was

pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature. (p. 3)

Their findings revealed that individuals defined and understood the world by comparing new impressions with known experiences, interpreting the resultant information, perceiving a new reality and behaving accordingly. They also stressed that although metaphor was often thought of as fantasy, in fact metaphors were very real. They cited the example 'argument is war' to explain that people arguing really felt besieged and needed to fight back, and their thoughts and feelings were expressed in words through corresponding metaphors. The authors therefore maintained that feelings are real and language is literal, but 'human *thought processes* are largely metaphorical' (Lakoff & Johnson, 1980, p. 6).

Thought processes were investigated by Pope and Gilbert (1981) who found that when teachers had different perceptions of reality their perspectives were also different and this influenced the manner in which they imparted information. For instance, 'constructivists' adhered to the theory that people constructed their own reality, but 'realists' believed that reality was a static domain containing information that was available to everyone, in a world that was perceived by everyone in the same manner. Nevertheless, when metaphor was used to describe events the gaps between individual constructs of reality could often be bridged. This occurred because elements known to both teacher and student were combined with the unknown in order to form new understandings.

When Pearson (1990) joined the debate about metaphor, she tested pre-school children to measure their use and understanding of both metaphor and literal language. Her results showed that they were used and comprehended equally. In her opinion this evidenced that both descriptive styles were basic to knowledge. Others maintained that language itself refers 'to the whole body of words (vocabulary) and ways of combining them (grammar) that is used by a nation, people or race' (Hartley, O'Sullivan, Saunders & Fiske, 1988, p. 125). The words are signs or symbols that represent an event, which are organized into sentences through the rules by which they are governed, thereby activating the metaphor process in order to voice thoughts and feelings.

Abraham (1997) also maintains that language is made up of metaphors. For example, the eye of a potato bears little, if any, resemblance to an eye. The tongue of a shoe just

reminds us of a tongue, and ‘a glaring error isn’t really glaring’ (p.1). Yet these words are now names for everyday objects – useful symbols to describe what they are not.

This idea was pursued by Morgan (1993) who reached the conclusion that the ‘literal’ and ‘metaphor’ approaches were just different symbols for different perceptions of the same phenomenon. He maintained that both were merely language representations that served as symbols to facilitate the communication of the particular speaker’s interpretation of an experience. To support his argument he quoted Kuhn’s (cited in Morgan, 1993) assertion that it was the mind-sets of the scientists involved that shaped scientific knowledge as it is understood today. He also cited the works of the scientists Heisenberg and Bohr (cited in Morgan, 1993) who demonstrated that

even the most scientifically controlled experiments are shaped by the assumptions and views of the scientists involved. If one studied light as a particle, it revealed itself as a particle. If one studied light as a wave, it revealed itself as a wave. (Morgan, 1993, p. 272)

A well-known illustration of this concept (Schwartz. 1987, p.79) is shown in Figure 5.1 in which the image can be seen as either a vessel or two faces, depending on where attention has been focused.

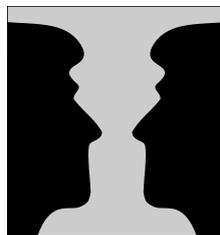


Figure 5.1 An illustration of perception where recognition depends on the focus of attention.

The process of transmitting and assimilating information

The manner in which knowledge is acquired and comprehended has been extensively explored by cognitive psychologists who, according to Neisser, examine ‘all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used’ (cited in Best, 1989, p. 4). The process by which the teachers’ metaphors could be transformed into the sound of their students is explained by the communication system outlined by these researchers, which will now be transposed to the teacher/student situation for ease of description and comprehension. Information is assimilated through the five senses. For ease of reference and later analyses, the parameters of the senses will follow the interpretation of Bandler and Grinder (1979): visual (to do with sight), auditory (to do with hearing), kinaesthetic (to do with sensations – including touch and emotions), olfactory (to do with smell) and gustatory (to do with taste). In the case of the teacher the procedure commences when he or she instructs the student by means of a metaphor (‘think of this tone flowing smoothly’). The student’s part in the metamorphosis begins when the metaphor reaches the receptors of their ears. According to Best (1989) a sensory system then converts the vibrations of sound, this ‘physical energy into neural energy, or as a cognitive psychologist might say, physical stimulation is encoded into neural events’ (p. 4).

Hernegger (1995) continued that when the stimulus signal (in the case of the singer, the metaphor) is received, it is unconsciously analysed before perception. A sense quality is then projected onto the physical stimulus in order to understand its function, and a cognitive structure is developed by which to comprehend the information being transferred from the stimulus through the senses to the brain. By this process a cortical representation (or blueprint) is created, stored and then consulted for recognition pattern-matching purposes whenever the stimulus is met again.

When a physical reaction is called for, the ‘stimulation of various regions of the primary motor cortex . . . [produces] movement in muscles of various parts of the body’ (Carlson, 1986, p. 300) including the lips, tongue and throat. According to McElroy (1997) the resultant variations in the shape of the vocal tract (due to moving the tongue and the mouth)

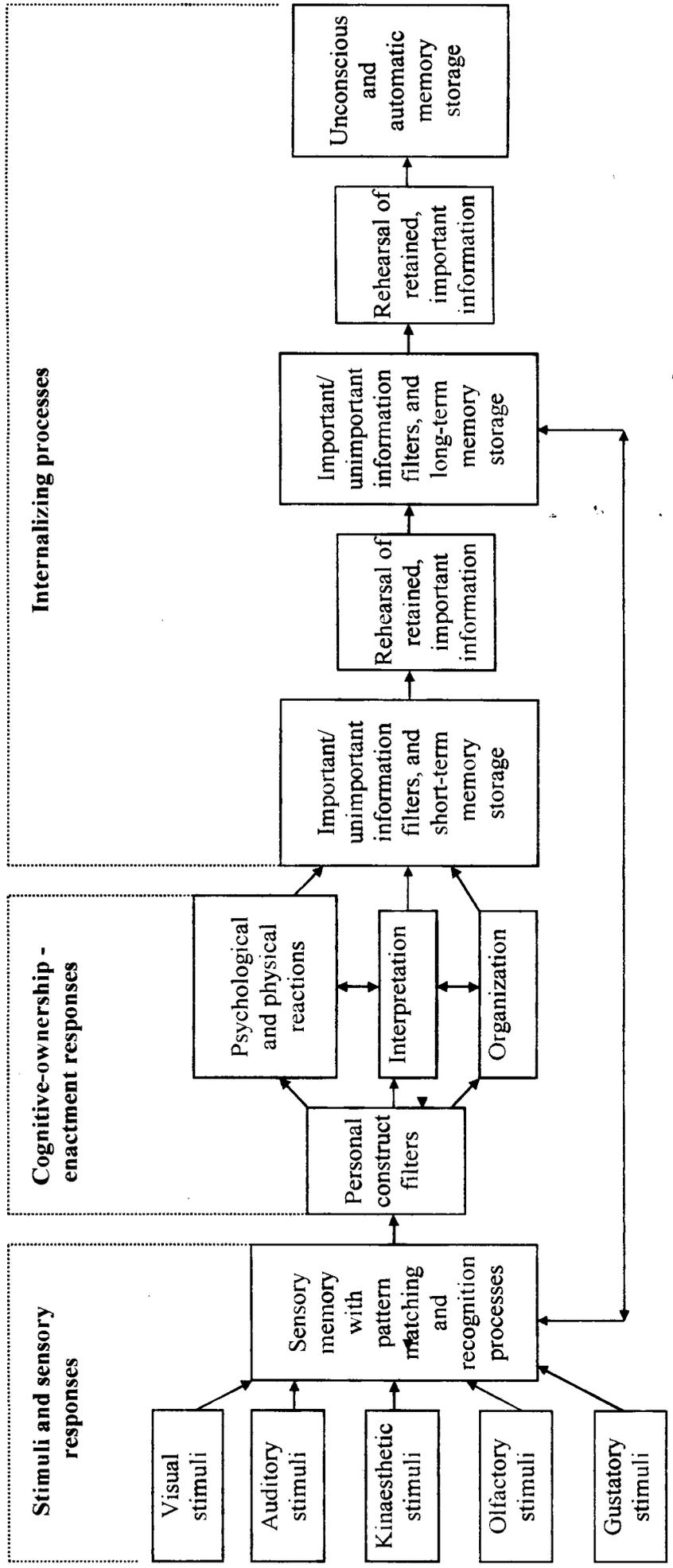
along with the varying state of the vocal folds, produce what we recognize as speech (or song). This suggests that at this point the vocal instrument assumes the appropriate configuration for the particular tone the singer constructed from his or her own understanding, enhanced by the teacher's metaphor.

Information storage stages and learning

Carlson's ideas were supported by Ashcraft (1989) who explained how important the repetition of information and rehearsal of learning patterns were if blueprints were to be remembered. He repeated that sensory information was gathered from the external environment, encoded and stored very briefly in sensory memory. The data then passed from sensory memory into short-term memory where a sifting process occurred and any information perceived to be unimportant was discarded. A search then took place in long-term memory to find identical or similar patterns to match with the short-term patterns for identification purposes (i.e. a cat shape would be recognized as a cat). The information was then sent to the appropriate area (for example speech – "it's a cat"). According to Ashcraft, when data were especially vivid or when there was adequate rehearsal a cognitive blueprint was created and stored in long-term memory. Information that was not continually refreshed was discarded. Kemp (personal communication, 18 October, 1996) perceived this model to comprise three stages: the stimuli (in the case of the singer, the metaphors that trigger imagery), the sensory response (the cognitive-ownership-enactment response), and the internalizing processes (see Figure 5.2).

Gleitman (1986) confirmed that learning began at the stimulus phase where the organism decided whether it had ever encountered the stimulus before and that each repetition of the stimulus strengthened the organizational pattern until the diminishing amount of processing eventually made the resultant behaviour automatic. As a result, although the language that triggered the responses was a metaphor, and the process that intervened was metaphoric, the outcome was nevertheless very real.

Figure 5.2 A blueprint for the collection, organization and storage of sensory and cognitive information.



Decoding and recall strategies

According to Hernegger (1995) all patterns (or blueprints) stored in long-term memory required constant renewing or they would decay. Gleitman (1986) added that entire blueprints were recalled when even one word triggered the memory, and that the recall was experienced by the creation of visual, auditory and kinaesthetic images. By the use of a trigger metaphor (the word that instigated the recall) a metaphoric process was instigated, and by 'creating a mental image, the subject joins two unrelated items so that they form a new whole' (p. 246).

The above information explained how it could be that White's use of explicit experiential metaphors could have transmitted knowledge, and how the new information could have been combined with the student's old knowledge to be transformed through the resultant psychological and physical changes into the student's vocal outcome. However, White had a second stage in his communication strategy – he used visual, auditory and kinaesthetic reinforcement procedures, and modern research has demonstrated that this process makes information more vivid, comprehensible and memorable. The strategy was recommended by a number of modern communication researchers as being the most effective manner of teaching. In addition, the findings of Denicolo (1985) and Carter (1993) confirmed that teachers needed to transmit information in a number of different sensory modes in order to provide the greatest opportunity for students to find comprehension.

Perception and personal filters

Their findings supported those of Sutton (1981) and Gleitman (1986) who also cautioned that knowledge was fragile due to information being lost in the initial encoding stages. Gleitman maintained that 'selective attention acts as a kind of filter . . . [so that] what we perceive does not directly correspond to what the proximal stimulus gives us' (pp. 194, 195). He explained that people were often unaware of information that was not perceived to be important to them (for instance, background noises would be blocked out when the focus of attention was on a conversation). As a result their constructs of reality relied on the

encoding of the external information that had received attention. In addition, the perception of reality was filtered and interpreted through the conscious and unconscious influences of gender, culture, history and class (Ashcraft, 1989; Bandler & Grinder, 1979; Morgan, 1993; Taylor & Fiske, 1978).

O'Connor and Seymour (1993) supported the filter theory, and cited the work of Bandler and Grinder (1979) who observed that when all five sensory modes were presented simultaneously to subjects they could not be processed equally. Usually one sensory mode predominated and in most instances the preference was for one of the major modes – visual, auditory or kinaesthetic. Because much of the encoding occurred through the preferred sensory mode other modes became less important and there was a subsequent loss of information through lack of attention.

In other words, one person's preferred representational system would encode information by what was *seen* ('I *saw* the aeroplane *streak* over the house'), another may describe the *sounds* that were present ('I *heard* it *roar* overhead'), while a third would focus on *kinaesthetic* sensations ('It *felt* as if it was *hard* work for it to keep flying'). In that case, the sensory mode that was least preferred may take in very little information. For example: 'She had a beautiful voice (auditory) but I didn't notice the colour of her hair (visual)'.

O'Connor and Seymour acknowledged that normal conversation usually contained a mixture of sensory-based descriptors, but maintained that over all the 'habitual use of one kind of predicate will indicate a person's preferred representational system' (p. 31). In addition, individuals could have one preferred mode for both encoding and decoding, but it was not unusual to encode in one mode and decode in another.

In the experience of Bandler and Grinder (1979) and O'Connor and Seymour (1993), the most effective communication took place when the speaker addressed the hearer in the hearer's preferred encoding mode. If the speaker was not able to discover what that was, they advised the use of all three major sensory strategies to be sure of covering the preferred

strategy. The least successful communication occurred when the speaker addressed the hearer in the speaker's mode, and there was a conflict between preferences – for example, if a teacher used predominantly visual language while instructing a highly kinaesthetic student.

Meyer-Troeltsch (1996) cited his own and other findings that indicated that there was no such thing as a totally visual or kinaesthetic person. Nevertheless, his results confirmed that each individual had one representation system which predominated over the others.

The importance of providing visual, auditory and kinaesthetic information in metaphoric instructions was further emphasised when O'Connor (O'Connor and Seymour, 1993) investigated the manner in which music was memorized by talented musicians. His results revealed that the most skilful students had an awareness of using all three major sensory modes and moved fluently within them. They reported how

the feeling, sound and picture were built up together on the first listening. The feeling gave an overall context for the detailed image. Subsequent hearings were used to fix parts of the tune that were still uncertain. The harder the tune, the more important these feeling and visual memories were. The students reheard the tune mentally immediately after it had finished, in its original tonality, and usually at a much faster speed. (p. 188)

The findings supported Ashcraft's (1989) conclusions that when people were aware of their cognitive/emotive strategies they could control behavioural outcomes more effectively. Because of this Ashcraft maintained that the most effective learning involved the development of metacognition, which he described as

an awareness and monitoring of one's own cognitive system and its functioning. Metacognitive awareness is thus a prompt that we need to rehearse information that we want to remember, is a checking mechanism by which we assess our level of comprehension or performance, and is a source of strategies and plans to be used for improving memory performance. (p. 64)

Research into the link between physical responses and vocal tone

As this chapter has evidenced, much of the research until the 1990s focused on how cognition and behaviour were affected by perception and personal constructs of reality, and how metaphor could enhance or change these belief structures and behaviours. Nevertheless, there had been little empirical research into the psychological aspects of vocal tone creation until Scherer (1989) demonstrated that a change in emotions also changed pitch. For example, he found that during times of anxiety or fear the subject's pitch would automatically rise. These findings were later confirmed by Sataloff (1995). Similarly, Carter (1995) described the work of Gendlin (1980; 1981) and Sheikh and Jordan (1983) whose results revealed that not only psychological changes but also physical changes could be brought about by imagery.

The research hypothesis that voice teachers use metaphor to generate the visual, auditory and kinaesthetic imagery that triggers the neural responses needed to adjust the physical environment to that appropriate for the creation of the desired tone outcome was supported by Sundberg (personal communication, 27 February, 1997). He conducted informal laboratory tests in which the teacher used metaphors (such as 'place the tone more forward') to enable singers to deliberately focus tone into different areas of the vocal tract. Although he was testing voice placement and not metaphor, Sundberg found effects in the source characteristics and also in the formant frequencies, and concluded that 'placement seemed to be a makro type of adjustment affecting the entire tone production mechanism'. Sundberg was also of the opinion that different people reacted differently to the same directions, and cautioned that words like 'pressure' are best avoided because they can be misleading and lead to the student's development of self-defeating behaviours.

Another concept was explored by Lewis (1992) who investigated the Alexander Technique and found that when body-awareness was developed, intangible ideas could be incorporated into tone outcome. She discovered that the body's behaviour was so closely integrated with vocal tone outcomes that she could alter her sound even by tensing or relaxing her toes. As

a result of her research she concluded that the Alexander Technique taught a control of physical behaviours and tone outcomes through imaging techniques that were of inestimable value to both singers and teachers.

The same observation was made by Carter (1993) who interviewed professional singers and found that body-imaging techniques (including the Alexander Technique) were frequently used by teachers and singers to obtain control over their bodies and emotions without inhibiting the capacity to be creative. In the light of the research to date it may be assumed that these body-imaging techniques were learned by a metaphor process, whereby the singers instructed themselves to proceed in a new manner which triggered imagery that set the metaphor process into action and so transformed the behavioural outcome.

Singers also maintained that they found metaphor helpful because the gaining of fresh insights brought greater self-knowledge that helped them to overcome inhibitions and old habits. This meant that they could perform emotional works without restricting their creative abilities. Carter's test results also revealed that

kinaesthetic imagery . . . [undergirded] all aspects of training, performance, and teaching of singing. Auditory and visual imagery were also reported. Imagery cited by respondents most frequently involved mental recreations drawn simultaneously from more than one sense modality. (p. iii)

These findings were supported when Hines (1994) interviewed forty famous singers to discover the secrets of their success. He found that although they knew exactly what it was they did in order to sing, they had great difficulty in explaining their techniques.

Instead of providing technical details, their explanations were rich with metaphor. The following quotations were taken at random from his book *Great Singers on Great Singing*:

1. Expression and quality of voice go with the meaning of the words. You see, I think in terms of qualities. I feel I can see the tone. You have to treat one note with velvet cloth, another taffeta, another chiffon. I think very much in terms of texture (Licia Albanese, p.21).
2. My voice was different from the others. I had a dark sound (Fiorenza Cossoto, p. 71).
3. We decided to really work to make the high notes come to fruition . . . They were there, but they didn't blossom as they should. And one of the things we did . . . we really tightened up the middle and especially the *passagio*. We squeezed on that *passagio* to get it really . . . you could say 'tight' [Hines' italics and editing] (Marilyn Horne, p. 138).
4. It's amazing how many singers have a terrible chin wobble. . . . It's a dancing tongue and a quivering chin [Hines' editing] (Jan Peerce, p. 228).
5. Oh, chest voice is a meaty sound, it has a more open feeling (Gilda Cruz-Romo, p. 91).
6. Good singing is tone riding on breath, completely unimpeded by any tension of the tongue or jaw (John Alexander, p. 26).

Many of the singers also told him that they must first hear a sound in order to be able to reproduce it, and that the development of dependable feedback strategies was of utmost importance, so that when a sound was acceptable the process could be remembered and repeated.

Hines' account left no doubt that the forty famous singers used highly developed visual, auditory and kinaesthetic encoding and decoding processes in order to sing and that they thought and expressed themselves through metaphor.

Famous singers are not the only people to think and talk in metaphor. Eminent teachers also express themselves in metaphor: 'The breath should be taken with an open throat. The gesture should be of "happy surprise" (not shock), as when we suddenly meet a friend, or

when the sun comes out on a cloudy day’ (Salaman, 1995, p.21). ‘Caruso felt the space in the throat to be rather square – “like a letter box” (Salaman, 1995, p. 21)’. ‘Most composers have in mind the mosaic-like possibilities of the entire dynamic palette when writing for voice’ (Miller, 1986, p. 171).

As it is agreed that when metaphor and the metaphor process are understood they are very powerful teaching tools, White’s sinuses-as-a-wind-instrument metaphor may have the capacity to place vocal energy into areas of the vocal instrument (whatever that may ultimately be found to be) that allows the unimpeded enhancement of tone. If words are viewed as symbols that can be combined with prior knowledge to instigate the metaphor process that transforms information into vocal tone it may also be argued that the skull, models, diagrams and pictures used by White, therapists and teachers are also symbolic representations or metaphors that trigger the metaphor process. In that case, when they are used as teaching strategies that reinforce by providing additional visual, auditory and kinaesthetic information from a number of different perspectives, it would seem that the teaching becomes more vivid, comprehensible and memorable. This in turn may create a vivid cortical blueprint and ensure more accurate decoding that could lead to reliable tone outcome (see Figure 5.3).

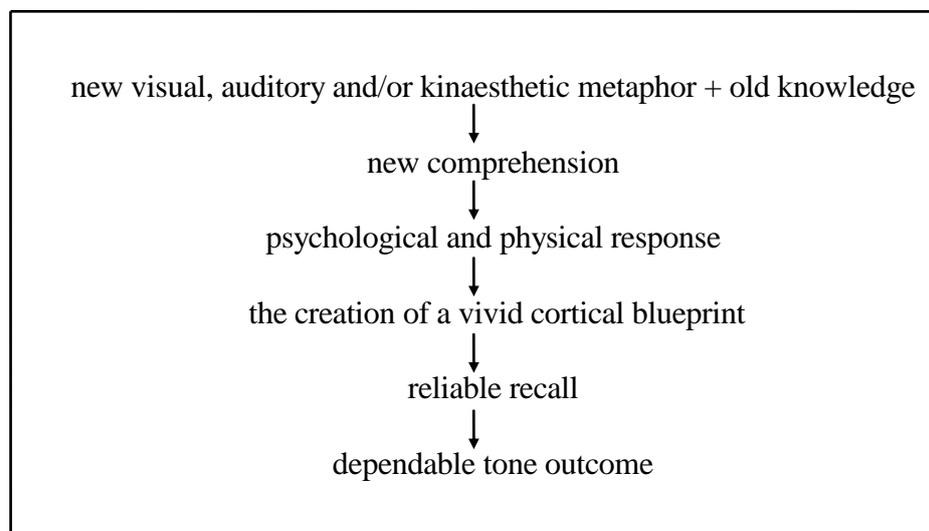


Figure 5.3 The metaphor process for singers

For this reason, the strategy that was developed by White in the early 1900s would seem to be ahead of its time, and the strategies that have been developed since then could provide an effective model for teachers in general.