

## **The Use of Music on *Barney & Friends*: Implications for Music Therapy Practice and Research**

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*This descriptive study examined the music content of 88 episodes from the PBS television show Barney & Friends, which aired from September 1992 to September 1998, in an attempt to quantify musical examples and presentations that may be considered introductory music experiences for preschoolers. Using many of the procedures identified by Wolfe and Stambaugh (1993) in their study on the music of Sesame Street, 25% of Barney & Friends' 88 episodes were analyzed by using the computer observation program SCRIBE in determining: (a) the temporal use of music; (b) performance medium; and (c) intention of music use. Furthermore, each structural prompt presentation (n = 749) from all 88 episodes was examined for: (a) tempo; (b) vocal range; (c) music style; (d) word clarity; (e) repetition; (f) vocal modeling; and (g) movement. Results revealed that the show contained more music (92.2%) than nonmusic (7.8%), with the majority of this music containing instrumental sounds (61%). The function of this music was distributed equally between structural prompt music (48%) and background music (48%). The majority of the structural prompt music contained newly composed material (52%), while 33% consisted of previously composed material. Fifteen percent contained a combination of newly composed and previously composed material. The most common tempo range for presentations on the show was 80–100 bpm, while vocal ranges of a 9th, 8th, 6th, and 7th were predominant and most often sung by children's voices. The adult male voice was also common, with 84% of all adult vocals being male. The tessitura category with the greatest number of appearances was middle C to C above (n = 133), with the majority of the presentations (n = 435, 73%) extending singers' voices over the register lift of B above middle C. Children's music and music of the American heritage were the most common style categories observed, and these two categories combined on 260 (35%) presentations. The use of choreographed movement and props/costumes was*

*also prevalent, and may have contributed to high inter-observer reliability of tempo. Implications for music therapists and teachers working with young children and music researchers examining various epistemological questions of music learning and behavior are discussed.*

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With an increasing number of opportunities for preschoolers to encounter music outside traditional establishments of assistance, the boundaries as to where music therapy occurs have broadened. It is important that music therapists be aware of the disparate places children access musical information in order to be more knowledgeable about clients' prior experiences, thus becoming more effective practitioners. There is much evidence which suggests that television is becoming more and more important in children's—particularly preschool children's—lives. While presenting the *Ready to Learn Act* before the Committee on Labor and Human Resources of the 102nd Congress, Senator Edward Kennedy said, "By the time the vast majority of children go to kindergarten, they will have attended electronic preschool, and spent 4,000 hours in front of the television set" (S.3134: *Ready to Learn: Television as Teacher*, 1992). Minow and Lamay (1995) noted that by the time the average child reaches first grade, he or she already would have spent the equivalent of 3 school years in front of the TV. Indeed, empirical studies have shown that the typical 2- to 11-year-old may average between watching 2.1 hours of television per day (Stanger, 1997) to up to 28 hours per week (Comstock & Paik, 1991; Healy, 1990). For preschool children, there is more of an abundance of educational programs (Jordan & Woodward, 1997), and they typically watch more of such programs than any other type of programming (Huston & Wright, 1998; Stanger, 1997).

Casual viewing of most children's programming reveals that these shows often use music either as background or as an essential part of the shows' content. Some music professionals believe that the practice of delivering and receiving music in this manner has had broad implications for music and its therapeutic effects. Radocy and Boyle (1988) stated that, "music's constant availability via various electronic media . . . may directly influence musical responsiveness, as well as have effects on many nonmusical behaviors" (p. vi). Campbell and Scott-Kassner (1995) posited that media, in the form of radio, recordings, and television, rather than

reducing children's singing, "may be stimulating their songfulness as well as adding to their repertoire" (p. 127). Other evidence has shown that electronic media is both a common and preferable way for children to learn songs. Harwood (1987), in a study investigating children's demonstrable song repertoire, found that, among her informants, media was the most frequently cited means for learning songs. More than half of her informants also stated that they preferred learning songs from those sources than from any other means (p. 191). It appears that even traditionally accepted social transmission norms, such as "playground music" (Newell, 1963; Opie & Opie, 1985), have not evaded the influence of television. Observations of children performing (playing with) music on playgrounds suggest that mass media frequently is becoming a "place" where children are finding ideas to construct their song repertoire (Harwood, 1994; Merrill-Mirsky, 1988; Riddell, 1990).

Myriad research investigations have examined the phenomenon of "television as therapist/teacher" and its effect on children's social attitudes (Milgrim & Shotland, 1973), cognition and development (Anderson & Collins, 1988; Lesser, 1977), language acquisition and comprehension (Friedrick & Stein, 1985; Lesser, 1977), morality (Noble & Crabtree, 1981), violent behavior (Cater & Strickland, 1975; Centrewall, 1992; Pearl, Bouthilet, & Lazar, 1982), and memory development (Abelman, 1995). Specific television programs also have been examined for their role in educating children. One of the most widely and often-studied programs for educational use has been the Public Broadcasting Station (PBS) show, *Sesame Street* (Spring, 1994). Since 1969, *Sesame Street* has been a catalyst for supplementing school readiness skills for preschoolers, and from 1969 to 1992 no other preschool television program on PBS was watched more by its target population, including children in various economic and ethnic groups (National Audience Report, 1992; Zill, Davies, & Daly, 1994).

Nearly since its inception, *Sesame Street* has garnered an extensive amount of research and discussion on its positive effect on body part identification and function, naming of geometric shapes, knowledge of roles of community members, sight reading of words, school adaptation, sorting, classification (Ball & Bogatz, 1970; Bogatz & Ball, 1971; Reeves, 1970), cooperativeness (Paulson, 1974), viewing styles, viewer modeling (Lesser, 1972, 1977), naming of letters, alphabet recitation (Minton, 1972; Yankelovich & White-

Clancy, 1989), number recognition, naming numbers, counting (Ball & Bogatz, 1970; Bogatz & Ball, 1971; Yankelovich & White-Clancy, 1989), and vocabulary development (Rice, Huston, Truglio, & Wright, 1990; Yankelovich & White-Clancy, 1989). The show also has been studied from a musical perspective. Wolfe and Stambaugh (1993) did a descriptive study on the use of music on *Sesame Street* in order to categorize and quantify the various ways music was used to enhance and convey social, motor, and academic information. They found that music played a "prominent part" in show production with 71% of the analyzed segments containing music. Additionally, the authors suggested that the program had multiple benefits for teachers and therapists who wished to use it to "supplement instructional material" (p. 234).

This is a very interesting notion. By utilizing something as a teaching/therapeutic device that exists within the immediate world of children, therapists may be able to provide a bridge between the outside world and the clinical environment. Instead of lamenting over the seemingly powerful influence television has on young children, Wolfe and Stambaugh suggest music therapists embrace this medium and use it to their advantage. They also provide useful thought for future investigation into other venues of children's programming. They state, "through systematic observation and categorization, important musical aspects of televised programming for young children have provided ample ideas and thoughts that could lead to further investigations" (Wolfe & Stambaugh, 1993, p. 234). Thus, the present investigation was undertaken in an attempt to further classify sources of music to which young viewers are exposed, and from which they, and their music therapists, may benefit. Since the introduction of the television show *Barney & Friends* in 1992, until fall 1997, it maintained the position as the most popular program on PBS for children between the ages of 2 and 5 years old, overtaking *Sesame Street* (National Audience Report, 1992, 1997). In addition, the producers of *Barney* purport to "set the foundation for young children" (C. King, personal communication, October 6, 1997) and prepare them with the prerequisite academic and social skills necessary to succeed in life. Mr. King also stated that "the use of music is integral to enhancing the show's concepts" (C. King, personal communication, October 6, 1997). Hence, it seemed timely to build upon the notion concerning the importance and content of music on television by examining the musical content of

this popular show for preschoolers, and providing useful information for practicing therapists/teachers and researchers.

### Method

The method chosen for examination was a content analysis of all music presented on the program.

#### *The Program*

Between September 1992 and September 1998, there were a total of 88 one half-hour episodes of *Barney & Friends* produced for PBS. The 88 episodes were produced across four *series*. A series is a succession of one half-hour episodes typically produced within the same calendar year and telecast chronologically. In 1992, series 100, containing 30 episodes (#101–130) was produced. Following 2 years of daily telecasts, a second series, containing 18 episodes was produced. It was called the 200 series and contained episodes #201–218. Upon the arrival of series 200, all 48 episodes were aired successively in cyclic fashion, beginning with episode #201 and ending with episode #130. This broadcast cycle continued and the 300 series, containing another 20 episodes (#301–320), was produced and included into the rotation beginning with episode #301 and ending with #218. In autumn 1997, series 400, containing 20 more episodes (#401–420) was released, making a total of 88 episodes, which aired once again in a cyclical manner. In order to assure that all 88 episodes were collected for the present investigation, the producers of *Barney* and a local PBS affiliate in upstate central New York were contacted for purposes of identifying episode titles and numbers. The local PBS affiliate provided information as to when each individual episode would be telecast. Subsequently, each episode was videotaped from signals received via television antenna.

#### *Procedure*

Using procedures identified by Lang and Heiss (1991) regarding content analysis, and following the lead of Wolfe and Stambaugh (1993), the first step taken in this investigation was identifying the unit to be analyzed. Thus, all musical sound heard on each of the 88 episodes became the unit of study. Next, categories or variables of interest were developed and identified, followed by execution of the schema, which included time measurements and frequency counts of the categories. Categories included music/nonmusic, perfor-

mance medium, and background/structural prompt/discriminative stimulus music. Whereas Wolfe and Stambaugh (1993) categorized *Sesame Street* episodes into "segments," the present study examined *Barney* episodes as intact entities because the show seemed to flow in a more continuous manner than did *Sesame Street*; given these circumstances, statistical comparisons between the two programs were not considered. Moreover, whereas data for Wolfe and Stambaugh's study were nearly 10 years old, data for the present investigation were more recent making a comparison between the programs impracticable. However, since many of the techniques used by Wolfe and Stambaugh and the type of data they studied were also relevant for this investigation, they were maintained. Upon selecting a systematic random sample of 25% of the episodes ( $n = 22$ ), an additional tool, *SCRIBE* (Simple Computer Recording Interface for Behavioral Evaluation), a computerized observation program that enables an observer to time specified aspects of observed events, was used to help examine the following categories.

*Music/nonmusic.* How often is music heard during a typical half-hour program of *Barney*? Time was analyzed as being filled with music or not filled with music. The two theme songs, which opened and closed each episode, were excluded from analysis due to their consistency of appearance across all programs. Sound effects were not counted as "music" unless they contained some sense of rhythmic and programmatic purpose and lasted longer than 2 seconds in duration.

*Performance medium.* Music was categorized as being instrumental (performed by a single instrument or a combination of instruments), vocal (unaccompanied voice[s]), or a combination of both vocal and instrumental sounds.

*Background, structural prompt, and discriminative stimulus music.* The primary function of music was also categorized. Music that was used as a background for other actions and activities (not the primary focus) was classified as *background* music. When it was the primary center of attention in which academic (musical or otherwise) or social concepts were integrated within the melodies for the purpose of teaching, the music was considered *structural prompt*. Music used to cue or introduce a character or action was categorized as *discriminative stimulus*. Hence, when the song "Everyone Is Special" was performed in order to teach the concept of individual uniqueness, it was categorized as structural prompt music; and, whenever "The Barney

Theme" (a.k.a. "Yankee Doodle") was played concurrently as Barney entered the screen, it was counted as discriminative stimulus music.

*Structural prompts.* Although a systematic random sample was employed for the above categories for the purpose of making inferences across all episodes, the music presentations (structural prompts) of all 88 episodes ( $n = 749$ ) were additionally analyzed for familiarity/originality, tempo, word clarity, vocal range, music style, repetition, vocal model, and movement using File Maker Pro 4.0 software.

*Familiarity/originality.* To what extent were the melodies familiar (previously composed) or not familiar (newly composed)? Since all structural prompt presentations contained some combination of either words, rhythm, and/or melody, and either previously composed or newly composed material, each presentation was analyzed for having one of the following: (a) previously composed music and words; (b) previously composed melody only (no words); (c) previously composed words only (no melody); (d) previously composed music but newly composed words; (e) newly composed words only; (f) newly composed melody only; (g) newly composed melody with previously composed words; and (h) both newly composed words and melody (completely new song).

In each of these instances, I, a musician with over 20 years' experience in performing and teaching children's music, determined familiarity. However, where questions did arise as to the familiarity category of a particular presentation, the presentation was cross-referenced with the on-line catalogs of *Broadcast Music Incorporated* (BMI), and the *American Society of Composers, Authors, and Publishers* (ASCAP) on the internet. Both groups are performing rights organizations that provide information on all the music in their catalogs, including authors, and titles and dates of compositions. Additionally, if further questions persisted, the producers of *Barney* were contacted for clarification.

*Tempo/word clarity.* The variable of tempo was studied because speed of presented material may affect listeners' comprehension of that material. Given the confusion that often exists between the perception of the true and felt beat, this investigation used the movements of the characters and/or puppets on the screen to help determine the beat. Upon establishing the beat, a stopwatch was used to time the number of beats that occurred within 1 minute of each presentation. Of additional interest was determining the pos-

sibility that tempi contributed to or inhibited the comprehension of the words and melody; therefore, in those presentations where words and melodies were deemed unclear, tempo was examined to see if a pattern developed in relationship to fast or slow speed.

*Vocal range/vocal intervals.* The vocal ranges and intervals of the presentations were studied because a song's pitch range and intervalic limitations may influence children's singing of the material. Using an electronic keyboard, the keys, melodic ranges, and interval ranges of these presentations were transcribed in order to determine highest and lowest terminal pitches, and to compare/contrast this information with previous research and scholarly opinion on the topic of vocal ranges for preschool children.

*Music style.* Musical style was analyzed because of its potential affect on children's familiarity and preference for a variety of musical stimuli. Categories of music style were chosen, for the most part, from Wolfe and Stambaugh (1993); however, additional categories of *march*, *rap*, and *circus* music were created in order to represent more accurately those styles that appeared on *Barney* but perhaps did not appear on *Sesame Street*. In determining most of these styles, scenarios and dialogue from the show assisted in authenticating the choices. For example, in Episode #125 (A World of Music), the cast traveled to different countries around the world where they encountered various indigenous people who shared a bit of their culture with them, including their music. Presentations included a traditional Jewish dance to the tune, "Havah Nagila," which was classified in the style category of *ethnic*.

For presentations containing lyrics in which children were likely to be interested and where repetitious words and melody predominated, the style *children's music* was given. Hence, presentations such as "Mary had a Little Lamb," and "When I walk Across the Street" were considered to be in this category. Presentations crossing over more than one category were thus counted simultaneously in those categories. For example, "De Colores," from Episode #125, met the criteria for both children's and ethnic music, and, therefore, was counted as being in both styles. However, "Hava Nagila," a song about wishing a couple good fortune, and usually performed at weddings, was counted as *ethnic* but not *children's* style.

*Repetition.* Repetition was studied because repeated material may effect children's learning and recall of that material. Did certain presentations appear in more than one or two episodes, thereby in-



creasing the number of times children might hear them? To what extent were the words and melodies of these presentations internally repetitious? If melodic phrases were repeated more than once within a presentation, then the presentation was considered to be melodically repetitious. Likewise, if word phrases were repeated, then the presentation was considered to have lyrical repetition. One example of this was the selection, "London Bridge," which fit the criteria of having both repetitious words and melody.

*Vocal modeling.* Vocal modeling was studied because the use of certain vocal models may influence children's singing skills and attitudes. What voice classifications were found in these presentations; that is, were they primarily solo or group presentations sung by male/female voices, child/adult voices, or some combination of the above? Presentations where more than one type of modeling occurred were counted simultaneously in all applicable classifications. For example, "Here We Go Looby Loo" in Episode #301 contained children's group singing, two solos by girl's voices, and one boy solo; thus each voice classification within this singular presentation received one frequency count.

*Movement.* The use of movement to convey material on *Barney* was studied because movement may effect children's understanding of the musical and verbal material. What role did movement play during the presentations? Incidental observation prior to this study revealed that movement was a very important aspect of this program. Therefore, although Wolfe and Stambaugh did not examine this variable in their 1993 study on the music of *Sesame Street*, it was of interest to the present investigation. In order to observe this variable, four types of movement were classified: (a) no movement; (b) general movement; (c) props and costumes; and (d) choreographed movement.

(a) *No movement* meant that during the musical presentation being observed, no character moved along with the music in any way. All characters on screen, for the most part, stood still.

(b) *General movement* meant that characters moved individually or collectively to the beat without any apparent preplanned gesture. In other words, expression and gesture tended to be individualized and spontaneous similar to what one would expect when witnessing a young child respond to music incidentally. However, also included in this category were situations where characters acted out or mimed the lyrics in a literal manner (e.g., In "Mary Had a Little

Lamb," one person took on the movements of Máry, while another assumed the role of the sheep, etc.).

(c) Whenever a physical transformation of a character's wardrobe was made or use of a visual aid or prop was implemented in conjunction with movement, it was counted as *props/costumes*. This category also included situations where computer generated graphics were utilized. For example, during the presentation "Riding in the Car" in Episode #317 (Are We There Yet?), Barney and the cast went for a ride in a cardboard or wooden toy car while computer generated scenery was used to create the illusion of the car traveling along through the countryside.

(d) Whenever synchronized dance steps or movements were implemented where it seemed obvious that participants were trained to do exactly the same thing at the same time, it was counted as *choreographed movement*. Hand claps in "B-I-N-G-O," and the dance steps in "The Gaggle Giggle Wiggle Dance" from Episode #419 fell into this category.

To assess reliability of the above structural prompt categories, a trained observer, with also over 20 years experience of teaching and performing music, independently observed and classified 20% of the total number of episodes ( $N = 18$ ) using the computer software program *File Maker Pro*. To assess the reliability of the episodes evaluated with *SCRIBE* (music/no music, performance medium, background/structural prompt/discriminative stimulus music), the same observer assessed 20% of the total number of those episodes ( $N = 4$ ) also using *SCRIBE*.

## Results

Based upon the systematic random sample drawn for this investigation, a typical episode of *Barney & Friends* contained music  $M = 92.2\%$  of the time. The percentage of time that music was absent was  $M = 7.8\%$ . The preferred performance medium was instrumental ( $M = 61\%$  of time), with the simultaneous occurrence of both vocal and instrumental sounds placing second ( $M = 38.9\%$ ). The exclusive use of vocal sounds was seldom heard ( $M = 0.1\%$  of the time) (see Table 1). As noted in Table 2, the function of music on *Barney* was divided equally among time spent as background ( $M = 48\%$ ) and as structural prompt ( $M = 48\%$ ), with its use as a cue being minimal ( $M = 4\%$  of the time).

Of the 749 presentations used as structural prompts, nearly half

TABLE 1

*Percentage of Time Music Was Heard on Barney & Friends*

Use/Medium	Percentage
No music	7.8%
Music	92.2%
Total	100.00%
Instrumental	61.0%
Vocal & instrumental	38.9%
Vocal only	0.1%
Total	100.00%

contained both newly composed words and melodies ( $n = 356$ , 48%). When those presentations containing new words with no melody ( $n = 17$ , 2%) and new melodies with no words ( $n = 14$ , 2%) were added, the total number of presentations containing completely newly composed material made up a majority of all presentations heard on *Barney & Friends* ( $n = 387$ , 52%). Over one quarter of the presentations contained a combination of previously composed words and melody ( $n = 193$ , 26%). When those presentations containing previously composed words with no melody ( $n = 21$ , 3%) and previously composed melody with no words ( $n = 29$ , 4%) were added, the total number of presentations containing completely previously composed material equaled nearly 1/3 ( $n = 243$ , 32.4%). One particularly noticeable musical and educational tactic that *Barney's* producers used was combining familiarity with originality. Most often, this was accomplished by pairing newly composed words with previously composed melody ( $n = 101$ , 13%). Few songs contained newly composed melody with previously composed words ( $n = 18$ , 2%). The tempo range with the most structural prompt presentations on *Barney* was 80–100 beats per minute (bpm) ( $n = 238$ , 33%). When all of the presentations with tempi of 100 bpm and less were added, they made up a majority of all presentations on the program ( $n = 470$ , 64%).

As reported in Table 3, vocal pitch ranges within *Barney* melodies covered a minimum of a minor third ( $n = 4$ ) to an extension of a sharpened eleventh ( $n = 1$ ), with the most frequent ranges being a ninth ( $n = 161$ , 27%), an eighth ( $n = 151$ , 25%), a sixth ( $n = 123$ , 21%), and a seventh ( $n = 90$ , 15%). More of the pieces had ranges of less than an octave ( $n = 259$ , 44%) than over an octave ( $n = 183$ , 31%). Table 4 also shows exact intervals (letter names identifying exact ranges) for all structural prompts. The interval category with

TABLE 2

*Percentage of Time Music Functioned as Background, Structural Prompt, and Discriminative Stimulus on Barney & Friends.*

Music function	
Background	48%
Structural prompt	48%
Discriminative stimulus	4%

*Total Number and Percentage of Structural Prompt Music Employing Previously Composed/Newly Composed Melodies and Words*

Structural prompts	Total number	Percentage
Newly composed words & melodies	356	48%
Newly composed words only	17	2%
Newly composed melody only	14	2%
Previously composed words & melody	193	26%
Previously composed words only	21	3%
Previously composed melody only	29	4%
New words, previously composed melody	101	13%
Previously composed words, new melody	18	2%

*Tempo Ranges of Barney & Friends' Structural Prompt Music*

Beats/minute	Number of presentations	Percentage
40-59	29	3.9%
60-79	203	27.8%
80-100	238	32.6%
101-120	120	16.4
121-140	116	15.8%
141-160	17	2.6%
161-180	6	0.8%
181-200	1	0.1%
201-220	—	—
221-240	—	—
261-280	—	—
Total	730	100.0%

the greatest number of appearances (across all selections) was middle C to C above ( $n = 133$ ). The next closest category was middle C to D above high C ( $n = 45$  selections), followed by middle C to A above ( $n = 42$  selections).

As can be seen in Table 5, the most common musical style employed in structural prompt presentations on *Barney* was children's music ( $n = 704$ , 94%) with American heritage second ( $n = 261$ ,

TABLE 3

*Vocal Ranges of Structural Prompt Music on Barney & Friends*

Interval range	Number of presentations	Percentage of presentations
m3	4	0.7%
M3	8	1.3%
P4	4	0.7%
TT	2	0.3%
P5	28	4.7%
m6	38	6.4%
M6	85	14.3%
m7	75	12.7%
M7	15	2.5%
P8	151	25.5%
m9	58	9.8%
M9	103	17.3%
m10	9	1.5%
M10	9	1.5%
P11	3	0.5%
#11	1	0.2%
Total	593	100.0%

*Note.* M = Major interval, m = minor interval, P = Perfect interval, TT = Tritone interval, # = sharped or augmented interval.

35%). Additionally, several of the presentations were simultaneously classified in more than one style category. The two styles that were most often paired were children's music and American heritage music ( $n = 260$ , 35%). In fact, the only American heritage presentation not simultaneously grouped with children's music was "Reveille," otherwise known as "The United States Wake-Up Song," which was heard in episode #103 (Playing It Safe). Unsurprisingly, all of the styles had some presentations concurrently grouped as children's pieces; and some styles had presentations that were all classified in this manner. For instance, all rock, country, rap/chant, and blues presentations were, likewise, considered to be children's style because of their lyrical and repetitious content.

Although most of the presentations labeled as ethnic, jazz, and march styles were also considered children's pieces, those that were strictly instrumental, with no previous association with child-like lyrics, were not given this paired categorization. Finally, all classical presentations were instrumental, with 50% of them also being considered children's selections. For the most part, these presentations were given this distinction because they originally came from

TABLE 4

*Exact Vocal Intervals of Structural Prompt Presentations on Barney & Friends*

Exact interval (from low to high)	Number of presentations	Interval
G <sub>1</sub> -A	1	M9
G <sub>1</sub> -C <sup>1</sup>	1	P11
G <sub>1</sub> -Db <sup>1</sup>	1	#11
Ab <sub>1</sub> -Bb	1	M9
Ab <sub>1</sub> -B	1	m10
Ab <sub>1</sub> -C <sup>1</sup>	2	M10
A <sub>1</sub> -D	1	P4
A <sub>1</sub> -A	1	P8
A <sub>1</sub> -B	2	M9
A <sub>1</sub> -C <sup>1</sup>	5	m10
A <sub>1</sub> -Db <sup>1</sup>	1	M10
A <sub>1</sub> -D <sup>1</sup>	2	P11
Bb <sub>1</sub> -Ab	3	m7
Bb <sub>1</sub> -A	2	M7
Bb <sub>1</sub> -Bb	2	P8
Bb <sub>1</sub> -B	5	m9
Bb <sub>1</sub> -C <sup>1</sup>	33	M9
Bb <sub>1</sub> -Db <sup>1</sup>	3	m10
Bb <sub>1</sub> -D <sup>1</sup>	5	M10
B <sub>1</sub> -E	1	P4
B <sub>1</sub> -G	3	m6

Tchaikovsky's ballet, "The Nutcracker," which has a long history of being associated with children.

Of 711 presentations containing melody, 667 (94%) were considered to have repetitious melodies (pitches and rhythms), while 660 (93%) of the 706 presentations containing words had repetitious lyrics. In those presentations containing words, 688 (97%) were considered to have clearly understandable words, while 13 (2%) did not.

The vocal model category heard most often on *Barney & Friends* was children's group ( $n = 619$ , 88%), followed consecutively by solo children's voice (girl = 207, 29%; boy = 128, 18%; total = 335, 47%), Barney's solo adult male voice (324, 46%), and Barney's voice within an ensemble ( $n = 280$ , 40%) (see Table 6). In regard to vocal models on the program, there are two characters that need further clarification. Although adults played the roles of B. J. (adult male voice) and Baby Bop (adult female voice), these characters

TABLE 4  
*Continued*

Precise range (from low to high)	Number of presentations	Interval
B <sub>1</sub> -Ab	2	M6
B <sub>1</sub> -Bb	2	M17
B <sub>1</sub> -C <sup>1</sup>	29	m9
B <sub>1</sub> -Db <sup>1</sup>	21	M9
B <sub>1</sub> -D <sup>1</sup>	3	m3
B <sub>1</sub> -Eb <sup>1</sup>	4	M3
C-F	1	P4
C-G	13	P5
C-A	42	M6
C-Bb	26	m7
C-C <sup>1</sup>	133	P8
C-Db <sup>1</sup>	22	m9
C-D <sup>1</sup>	45	M9
C-E <sup>1</sup>	1	M10
Db-F	1	M3
Db-Ab	3	P5
Db-A	3	m6
Db-Bb	3	M6
Db-B	20	m7
Db-C <sup>1</sup>	7	M7
Db-Db <sup>1</sup>	9	P8
Db-D <sup>1</sup>	2	m9
D-F	1	m3

appeared to be portraying their voices as preschoolers. Hence, the voices of these characters were classified as "adult" even though their portrayals were purported to be children. In addition to the voices of Barney, B. J., and Baby Bop, the show also periodically featured other adults who appeared as singing guests. In order to distinguish the difference between regular cast members and guests, noncast members were put into a separate category. There were 25 solos by adult female guests and 19 by adult male guests.

It should be noted that when the percentages of all vocal models in Table 6 are added, their total does not equal 100%. Presentations often featured several combinations of vocal modeling. For example, in episode #303 (Room For Everyone), the presentation "Home on the Range" begins with a boy's solo voice, but also includes children's group singing and a solo by Barney; thus, three

TABLE 4  
*Continued*

Precise range (from low to high)	Number of presentations	Interval
D-Ab	2	TT
D-A	8	P5
D-Bb	27	m6
D-B	27	M6
D-C <sup>1</sup>	21	m7
D-Db <sup>1</sup>	4	M7
D-D <sup>1</sup>	3	8
Eb-Bb	3	P5
Eb-B	3	m6
Eb-C <sup>1</sup>	7	M6
Eb-Db <sup>1</sup>	4	m7
E-G#	3	M3
E-A	1	P4
E-C <sup>1</sup>	1	m6
E-Db <sup>1</sup>	3	M6
E-D <sup>1</sup>	1	m7
E-E <sup>1</sup>	3	8
F-C <sup>1</sup>	1	5
F-D <sup>1</sup>	1	M6
F#-D <sup>1</sup>	1	m6

*Note.* Superscripts denote pitches above middle C; subscripts denote pitches below middle C.

different categories of vocal modeling were tabulated for this presentation. Upon comparing presentations performed by all adults (combining guests and regular characters), the adult male voice was found to be more prevalent than the adult female voice. Of 836 occurrences of adult voices, 705 (84%) were sung by an adult male voice while 131 (16%) were sung by an adult female voice. However, out of a total number of 1790 vocal presentations, the child voice was heard most often than any other vocal model ( $n = 1361$ , 76% for child's voice;  $n = 705$ , 39% for adult male's voice; and  $n = 131$ , 8% for the adult female voice) (Table 6).

As mentioned previously, movement categories were devised in order to facilitate observation of this variable. By far, the most often employed movement on *Barney* was choreographed movement ( $n = 655$ , 87% of presentations). Presentations in which the entire cast or selected members engaged in synchronal activity were more the



TABLE 5

*Styles of Music Employed in Structural Prompt Presentations on Barney & Friends*

Style of presentations	Number	Percentage
Children's	705	94.0%
American heritage	261	35.0%
Rock	32	4.0%
Ethnic	39	5.0%
Blues	6	0.8%
Classical	10	1.3%
Country	12	1.6%
Jazz	17	2.2%
March	13	1.7%
Instrumental	42	5.6%
Circus	5	0.7%
Rap/chant	5	0.7%

*Barney & Friends' Structural Prompt Music Categorized Simultaneously in Two Styles*

Styles of presentations	Number of all presentations	Percentage
Children's/American heritage	260	35.0%
Children's/rock	32	4.3%
Children's/ethnic	24	3.2%
Children's/blues	6	0.8%
Children's/classical	5	0.7%
Children's/country	12	1.6%
Children's/jazz	13	1.7%
Children's/march	11	1.5%
Children's/instrumental	12	1.6%
Children's/rap/chant	5	0.7%
Instrumental/classical	10	1.3%
Instrumental/jazz	4	0.5%
Instrumental/march	1	0.1%
Instrumental/circus	5	0.7%

norm than the exception on this show. Props and costumes were also used frequently during presentations ( $n = 462$ , 62%). Although not as apparent as choreographed movement, general movement was additionally important ( $n = 420$ , 56%). Singers seldom stood still utilizing no movement of any kind ( $n = 13$ , 0.02%).

As mentioned previously, a trained observer was employed for establishing interobserver reliability for 20% of the structural

TABLE 6

*Vocal Models Employed in Singing Melodies of Structural Prompt Music on Barney & Friends*

Model	Total number	Percentage
Children's group	619	(88%)
Child female solo	207	(29%)
Child male solo	128	(18%)
Barney solo	324	(46%)
Barney w/ensemble	280	(40%)
Baby Bop w/ensemble	72	(10%)
B. J. w/ensemble	55	(8%)
Baby Bop solo	34	(5%)
B. J. solo	27	(4%)
Adult Female solo (guest)	25	(4%)
Adult Male solo (guest)	19	(3%)
All adult male solos (regular cast & guests)	370	(52%)
All adult female solos (regular cast & guests)	59	(8%)

prompt variables evaluated with *File Maker Pro* and 20% of the variables evaluated with *SCRIBE*. Interobserver reliability was calculated for all categories by totaling the number of agreements divided by the total number of agreements plus disagreements  $\times 100$  (Wolfe & Stambaugh, 1993). Reliability for the structural prompt categories analyzed with *File Maker Pro* were: familiarity ( $r = 1.00$ ), tempo ( $r = .99$ ), vocal range ( $r = 1.00$ ), song key ( $r = 1.00$ ), style ( $r = .76$ ), word repetition ( $r = 1.00$ ), melodic repetition ( $r = 1.00$ ), word clarity ( $r = 1.00$ ), voice classification ( $r = 1.00$ ), movement ( $r = .79$ ), and structural prompt theme ( $r = 1.00$ ). Reliability for the category times that were analyzed with *SCRIBE* were: background music ( $r = .95$ ), structural prompt music ( $r = .94$ ), discriminative stimulus music ( $r = .83$ ), music ( $r = 1.00$ ) and no-music ( $r = .81$ ).

### Discussion

The purpose of this study was to shed further light on the use of music on television by analyzing the musical content of the most popular preschool television program on PBS for most of the 1990s. Furthermore, it sought to investigate how music was presented within this televised setting in order to understand the situations and manner in which children may be hearing, responding

to and learning music. With families finding more informational choices due to today's technological advancements, more children may be accessing musical information and traditions through alternate means.

From the descriptive data collected, it appears that music played a prominent role in the production of *Barney & Friends*. Ninety-two percent of the show's time was occupied by music. The fact that a majority of this music (61%) was performed exclusively by instrumental sounds might seem surprising, however, since time was distributed equally between music as a structural prompt (48%) and as background (48%), and structural prompt music tended to be a combination of vocal and instrumental sounds. One possible reason for this could have been the accuracy of *SCRIBE*. Due to the nature of the software, the observer could instantaneously click from one observational category to another (i.e., when singing ceased and instrumental sounds took over); thereby decreasing any temporal delay between observed variables. This included instrumental introductions, interludes between verses, and codas inserted into presentations otherwise performed vocally. Therefore, the temporal accuracy of *SCRIBE* provided a more precise account than what one would normally view casually. Another possible reason that instrumental music was so prevalent could have been that 6% of all structural prompt presentations were exclusively instrumental, thus providing unbalanced weight in favor of instrumental sound.

Given this, the producers of *Barney* might consider devoting more time to vocal sounds in light of research which suggests that children respond to, enjoy, and are affected by the human voice (Gaston, 1951) possibly more so than instrumental sounds (Middleton, Fay, Kerr, & Amft 1944; Schoen & Gatewood, 1927). Indeed, LeBlanc (1981) found that fifth-graders preferred vocal renditions of rock/pop and country songs to those performed instrumentally. Furthermore, if the intent of *Barney's* producers is to help children remember verbal material through music, then the use of more music with words might facilitate song recognition (Feierabend, Saunders, Holahan, & Getnick, 1997; Halpern, 1984; Hubbard & Stoeckig, 1992; Morrongiello & Roes, 1990; Samson & Zatorre, 1991; Serafine, Davidson, Crowder, & Repp, 1986), and reproduction (Welch, Sergeant, & White, 1995). This is not to suggest that the producers are being negligent in the use of vocal mu-

sic. Indeed, 39% of all the music on *Barney & Friends* contained vocal sound. Rather, they might be aware that when vocal music is used, its effectiveness is likely very powerful, and perhaps an increase of its time on the show would be judicious.

In regard to the structural prompt presentations, 36 of the 749 pieces were chanted with no sung pitches. Since previous investigations have revealed that infants' operant singing is more chant-like than singing-like, with a heavy emphasis on words (Davies, 1992; Fox, 1982; Ries, 1982), the producers of *Barney* might explore the possibility of incorporating more of this type of song presentation. By providing more experiences with which viewers can accurately participate, there might be an increased level of confidence among viewers that could, in turn, lead to an increased level of music-making between viewers and their parents, teachers, and music therapists. For music therapists looking for music that their clients would enjoy and already know, *Barney & Friends* is replete with a variety of vocal pieces particularly suited for children in the preschool or early elementary age-range. The instrumental structural prompts also could be helpful to music therapists who are looking for music to enhance listening and movement activities. As mentioned previously, many of these selections were taken from the "Nutcracker Suite," making them ideal for this age group.

Commensurate with practices supported by Pestalozzi (as cited in Krusi, 1875) and Dewey (1944, 1947), and more recently Tellstrom (1971), Burnaford (1993), Gehrke and Young (1993), and Gardner and Boix-Mansilla (1994), it seems that the producers of *Barney* realize the popularity of using music to communicate academic and social information. Forty-eight percent of all music on the show was used to help convey these "extra-musical" concepts. Since music has been shown to be successful in facilitating student learning and patient healing in the arenas of education and medicine for some time (Gfeller, 1983; Madsen, 1981; Madsen, Dorow, Moore, & Womble, 1976; Standley, 1996; Wolfe & Hom, 1993), music therapists should find *Barney & Friends* helpful as an aid or enhancement in music therapy settings outside the home.

About 1/3 of the structural prompt presentations on *Barney* contained completely previously composed material. Since some research has shown that the use of more familiar material while teaching may promote greater learning (Gfeller, 1983; Wolfe & Hom, 1993), it appears that *Barney & Friends* has been responsive

to this literature: although there is certainly room for an increase of familiar material on the program. One particularly noteworthy tactic that the producers of *Barney* used was combining familiar words with new melodies, and, to a larger extent, new words with familiar melodies. Fifteen percent of the selections contained these modes of presentation. Although the practice of combining originality with familiarity was certainly not ubiquitous on this show, the technique was noticeable, and is commensurate with many practices in advertising (Shea, 1988), music education (Madsen, Madsen, & Michel, 1975) and music therapy (Gfeller, 1983; Wolfe & Hom, 1993).

Of course, a major factor in enabling music to become familiar to people is repetition. Most of the music on *Barney & Friends* contained some amount of melodic and/or verbal repetition. Additionally, as more episodes are televised as repeats the chances for the presentations within those episodes to be heard increase as well. What effect does this have on preschoolers' music acquisition? Previous research has shown that viewing *Barney & Friends* does, perhaps, facilitate viewer learning among young children (Singer & Singer, 1993). Future investigations might include determining how repetitious viewing of the show enhances music learning and music responsiveness. On the other hand, is there a point where repetition loses its effectiveness due to viewers reaching an "aesthetic point of diminishing return" (Hevner, 1937) concurrent with the onset of "listener fatigue" (Getz, 1966, Moskovitz, 1992)? Do viewers become tired of the show and/or its music because they have seen it numerous times? Future research might investigate the ramifications of excessive repeated viewing on viewer preference for music heard on the show. However, if music therapists want their clients to remember multiple words or a sequence of verbal information, then using songs that have been assimilated into clients' long-term memories through repeated listening may be a sensible approach to use, despite any decline in preference. In fact, if therapists cleverly insert some temporal delay between repetitions, that is, from preschool to first grade, then preference may also be maintained or restored (Hargreaves, 1984; Moskovitz, 1992). Hence, music therapists, working with clients of various ages, might find structural prompt presentations from *Barney* useful as aids in the clinical setting. This seems to be an area ripe for future exploration.

The majority of the structural prompt presentations on *Barney & Friends* were perceived to have tempi that could be considered on the slow side of moderately fast (64% were 100 bpm or slower). Previous research has shown that children prefer music with a fast rather than a slow tempo (Baker, 1980; Flowers, 1988; Huebner, 1976; LeBlanc, 1981; LeBlanc & Cote, 1983; LeBlanc & McCrary, 1983; Sims, 1987). Future investigations might compare preference for selected pieces in an attempt to find out if tempo is indeed a factor in preference for these selections. Although tempo reliability for the Wolfe and Stambaugh study on *Sesame Street* music was not very high ( $r = .64$ ), it was for the present study ( $r = .99$ ). One likely reason for this could have been that both reviewers in this study used the movement of on-screen characters as a determinant for tempo. This simple maneuver added more stringent control over a situation that could otherwise have been less successful. It is suggested that others investigating tempo within a visual/aural environment implement these procedures as well. Although other investigations have shown a superiority of aural discrimination tasks over visual ones when detecting tempi (Brittin, 1993; Sheldon, 1994), the present study shows that when the two tasks are combined, accurate observations can be achieved. Since tempo is considered a primary variable in determining whether or not a perceived or felt grouping of beats conforms to a notated grouping (i.e., the grouping indicated by the meter signature) (Creston, 1964), high interobserver reliability of the present investigation might suggest that children's rhythmic perceptions of presentations on *Barney & Friends* may be somewhat augmented by the movement variable. Implications include the possibility that these presentations are being assimilated similarly among viewers in terms of rhythmical structure (Fraisse, 1982; Sink, 1984). Follow up investigations along these lines could provide evidence in support of or in contradiction to these proposals.

There may also be hints within the present study that suggest viewers may be receiving commingled information on tempo due to the movement of the characters on the show. Some of the presentations that appeared in more than one episode showed inconsistent tempi with each appearance. For example, the tempo for the presentation "Johnny Works With One Hammer" was determined to be 132 bpm when it appeared in episode #118 (When I Grow Up), but was perceived as 66 bpm when it appeared in

episodes #309 (A Welcome Home) and #319 (Hats Off to B.J.). The presentation "Down By The Station," was altered slightly between episodes: in episode #216 (The Alphabet Zoo), it was determined to be 61 bpm, in #316 (Who's Who on the Choo Choo?), it was perceived at 72 bpm, and in #108 (Going Places), it was given a tempo of 110 bpm. It has been suggested that to maximize music learning for children, material should be presented in the same key and with the same tempo each time children hear it (Nye & Nye, 1985). Additionally, listeners may prefer certain songs performed at consistent tempi (Geringer & Madsen, 1987). Given these observations, questions arise as to the musical effectiveness being achieved by altering tempi (or creating the illusion of altered tempi) of presentations appearing on multiple episodes. The small number of presentations in the present investigation with tempo inconsistencies might be explained similar to previous research showing the variability by which people perceive doubling or halving of beats (Duke, 1987; Duke, Geringer, & Madsen, 1991; Sheldon & Gregory, 1997; Wapnick, 1980). This may have been why Wolfe and Stambaugh (1993) encountered difficulties when establishing reliability for the music of *Sesame Street*.

Although most presentations on *Barney* were considered to have words that were clearly understandable, 13 were not. Wolfe and Stambaugh suggested that of the *Sesame Street* structural prompts believed to have unclear words, most were labeled as having faster tempi, complex instrumental accompaniments and/or poor vocal models. Of the 13 presentations from *Barney* considered to have unclear words, three had tempi over 100 bpm, and four had words that were paired with quickly moving rhythms, which likely effected word clarity. Instrumental accompaniments on the show tended to be simple and servile to the vocals, thus probably not contributing to word misunderstanding. As for vocal model clarity, three of the selections labeled as being unclear were sung by the character Baby Bop, an adult female voice heavily affected by the actor's efforts at sounding like a preschooler. This "accent" did have an adverse effect on vocal clarity for these investigators. Another presentation had special effects on the vocal part in order to make a boy's character sound like a robot, thus weakening communication of the lyrics. Three others were sung in a foreign language (without translations), which, understandably, made them difficult for the English-only speaking observers to comprehend. Future investigations

might attempt to determine which variables play a role in either helping or hindering listeners' understanding of lyrics to songs. Wolfe and Stambaugh (1993) suggested that the variables of tempo, complexity and intensity of instrumental accompaniment, and the vocal model of singers might be isolated as possible contributors.

Unlike *Sesame Street*, which featured the adult male voice more than any other vocal model, *Barney & Friends* most often employed children's voices to communicate structural prompt material. The combination of children's group singing together with Barney's adult male voice was also common: 288 (41%) of the presentations featured children's group with solo(s) by Barney, and 275 (39%) contained the two vocal models in consort. Given previous research, which suggested that the female voice (Clegg, 1966; Gould, 1968; Sims, Moore, & Kuhn, 1982; Yarbrough, Green, Benson, & Bowers, 1991; Yarbrough, Bowers, & Benson, 1992) and the child voice (Green, 1990; Welch, 1979), seem to be more effective than the male's at eliciting correct pitch matching in children, these results may cause feelings of ambivalence for those relying on the show to provide guidance in the area of pitch matching. However, the results of this study seem to be in agreement with other research and opinion in the area of male vocal models and children's pitch matching, which suggests that where male vocal models are used, the models could be enhanced by instrumental and/or child vocal model assistance (Gould, 1968; Greenburg & MacGregor, 1972; Nye & Nye, 1985; Sims et al., 1982). Several writers also have suggested that adult male vocal models could improve effectiveness in children's pitch matching by implementing the use of falsetto (Krammer, 1986; Montgomery, 1988; Nye & Nye, 1985; Wolf, 1984). This suggestion has come, in large part, from evidence regarding apparent difficulty treble voices have making the octave transposition necessary for pitch matching (Price, Yarbrough, Jones, & Moore, 1994; Roe, 1983; Sims et al., 1982; Yarbrough et al., 1991). Children often seem to try to match the register of the stimuli rather than the actual pitches. However, Price et al. (1994) found that although girls in grades one through eight responded to a male vocal stimulus with falsetto more accurately than one without, boys were found to be more accurate when presented the model without falsetto. Since the independent variable of grade level was not isolated, it is not possible to separate these results for boys in



the lower grades and boys in the upper grades; therefore, definitive answers on the effect of vocal model register on pitch matching among certain populations remain unanswered. Moreover, since many of the structural prompts on *Barney* were presented concurrently by both treble and bass vocal models, it may not be as crucial for viewers to hear the male vocal model sung in falsetto in order for them to reproduce the prompts effectively. Future investigations might examine the effectiveness of vocal models presented by simultaneous treble and bass voices versus those presented by male falsetto on children's singing accuracy. Pedagogically, male music therapists might trigger familiar aural memories in clients by utilizing those prompts from the show that clients have previously heard sung with concurrent treble and bass models, thus maximizing instructional effectiveness.

For music therapists experiencing vocal attrition (Bernstorff & Burk, 1996), the presentations on *Barney & Friends* also could be used in song leading, in the form of video or stereo cassettes, thus helping to alleviate vocal strain brought on by excessive overuse. Additionally, by using tapes of the selections, music therapists might increase clients' preferences for them. As mentioned previously, Harwood (1987) found that, among her informants, the most frequently cited approach, and the most preferred way, to learn songs was via media. Recent research has also shown that the immersion process may be superior in enabling children to perform songs more accurately (Klinger, Shehan-Campbell, & Goolsby, 1998; Moore, Brotons, Fyk, & Castillo, 1997), compared to phrase-by-phrase successive approximations approaches. Results of the Klinger study revealed that children benefited from initially hearing multiple repetitions of the entire song in context, rather than immediately isolating single phrases for rote repetition. Certainly, children have the opportunity to hear presentations on *Barney* performed in their entirety due to the availability of videos and reruns on TV.

Given that more of the presentations on *Barney & Friends* had a vocal pitch range of less than an octave, it appears that the show's practices are commensurate with research on preschoolers' vocal ranges. Younger singers tend to have narrower ranges than older singers (Cleall, 1970; Nye & Nye, 1974; Plumridge, 1972). Perhaps more important, however, was the location within the child voice where most of these melodies fell. Although the interval of a ninth

was the most prevalent single interval used across all sung selections, the range category with the greatest number of appearances (across all selections) was middle C to C above ( $n = 133$ ). The next closest category was middle C to D above high C ( $n = 45$  selections), followed by middle C to A above ( $n = 42$  selections). By placing these pieces in and around middle C and slightly upward from there, the producers are maximizing the likelihood that viewers can reproduce or sing along with them, according to some authorities (Campbell & Scott-Kassner, 1995; Hackett & Lindeman, 1997; Nye & Nye, 1974).

Music therapists looking for repertoire that encourages upper range singing should be happy with many of the presentations found on *Barney & Friends*. Investigations into the developmental progress of the child voice reveal that children, unless instructed otherwise, have a tendency to sing in their chest voices, which, in turn, negatively effects future singing development (Levinowitz et al., 1998; McGraw, 1996; Rutkowski, 1990, 1995). Children who exercise these tendencies do not learn to use their head voice, and therefore proceed in developing low, narrow ranges. The majority of the vocal selections on *Barney & Friends* ( $n = 435$ , 73%) extended singers' voices over the register lift (B above middle C) identified by Rutkowski (1990). Music therapists, wishing to utilize familiar musical information and, at the same time, extend clients' ranges, could benefit by tapping into this show's catalogue. The vocal pieces could be used in conjunction with instruction on register transformation and use of the head voice. Thus, children who vacillate between ranges in their speaking and singing voices (Levinowitz et al., 1998), could be helped by alleviating these tendencies. Indeed, McGraw (1996) found that such instruction could improve both vocal acuity and range extension in children as old as eight years. Although some research suggests that preference for lower range singing among children is germinating from media sources (Chinn, 1997; Killian, 1990; Levinowitz et al., 1998), it is encouraging to find that there are models existing on television, which music therapists and scholars can point to, that contradict these examples. For those who believe that expanding vocal ranges in children is positive for vocal growth (Flowers & Dunne-Sousa, 1990; McGraw, 1996; Moore, 1991; Rutkowski, 1990, 1995; Wassum, 1979; Zimmerman, 1971), these findings should be especially encouraging.

The representation of various styles and music from various cul-

tures on the show seemed well represented. However, future research might examine the affect of these presentations on the autochthonous people of these cultures, and to what extent musical and cultural integrity is upheld. In addition, such investigation might look to see how preference reacts with these variables. Although *Barney & Friends* is replete with both authentic and unauthentic examples of music from many cultures, it is the coalescence of children's musical style that makes them palatable to young viewers. By combining preferable elements commonly found in children's music, the producers may have discovered an effective way of presenting music to children that, perhaps, would not otherwise be accepted. Given that the style of a piece of music may be one of the strongest determinants of students' preference (LeBlanc, 1981), and by presenting music in a popular way, perhaps preference for other cultures' music will be enhanced (Greer, Dorow, & Randall, 1974; LeBlanc, 1979, 1981; May, 1985; O'Hagin, 1998).

Whereas the music analysis of *Sesame Street* (Wolfe & Stambaugh, 1993) revealed a minority amount of music from the American heritage (4%), 35% of all presentations on *Barney & Friends*, conversely, were found to be derivatives of American culture. It appears that the producers of *Barney & Friends* seem to be more conscientious about this inclusion than were the producers of *Sesame Street* nearly 10 years prior. Since styles supported by the broadcast media are generally preferred over those that are not (i.e., pop over art music) (LeBlanc, 1981), it would be interesting to see if the art/classical music presented on *Barney & Friends* would be preferred over other art/classical music not presented on the show. Possible implications could include the effectiveness of the show to increase preference for certain selections of art/classical music. Only 10 of the presentations (1.3%) on the show were classified as being in a classical style. If future studies determined that the program had a positive affect on children's preference for classical music, then the producers might consider increasing the amount of classical music presented on the show. By presenting classical music in a fun and entertaining way, and through repeated exposure, children may grow to consider classical music as a viable choice the next time they encounter music style choices (Flowers, 1988, Teicher, 1997). The show may also be helpful in shaping musical preference due to the nature and age of its viewers. If it is true that preferences for some styles steadily decline as children

progress through their elementary years (Flowers, 1988; Greer et al., 1974; May, 1985; Montgomery, 1996; Sims, 1987), it seems logical that music therapists could capitalize on younger children's receptiveness by providing opportunities for them to encounter various styles before then (Daniels, 1994; Peery & Peery, 1986; Schuckert & McDonald, 1968; Teicher, 1997; Wassum, 1980).

This descriptive study examined, in part, the practice of using music on television, which might be used to enhance current practice in the music therapy or education setting or spur future investigations. Perhaps one of the most important things to consider when contemplating the concept of "television as therapist/teacher" is that few vehicles, like TV, are as potent communicators as human beings. However, for those children who do not have access to music professionals, TV and other media, such as audio and video recordings, might be the only source where they can access musical information.

It is important to remember that caution should be exercised when inferring results from data investigating televised instruction. While researching the effects of *Sesame Street* viewing on children's learning, Cook et al. (1975) and Yankelovich and White-Clancy (1989) found that any benefits attributed to the program also may have been influenced by parental encouragement during the viewing of the show and not merely the viewing itself. Other studies have determined that *Sesame Street* actually has had limited ability to teach messages that could be understood by children (Clark & Clark, 1977; Hoff-Ginsber & Shatz, 1982; Lesser, 1972; Rice et al., 1990; Wolfe & Jellison, 1995). It appears that absent of adult intervention, children may not explicitly benefit from televised instruction; therefore, the findings presented here, in order to be most effective, should be interpreted with thought as to how music therapists, teachers, and parents might use the information. Perhaps, if adults can pair knowledge of how children learn with where children gather their information, then chances for therapeutic and educational advancement may increase.

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