

Full Length Research Paper

“To those who feel rather than to those who think:” Sound and emotion in Poe’s poetry

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In his critical writings, Edgar Allan Poe stressed the importance of the impressionistic use of sound and emotion in poetry. This research quantifies Poe’s use of emotionally communicative sounds and demonstrates that he wrote in accordance with his expressed principles praising the use of pleasant and sad emotions in poetry and decrying the use of active ones. Poe’s poems were submitted to a phonoemotional analysis and proportions for the usage of sounds in eight emotional categories were obtained. Frequently anthologized English poems, some of Poe’s non-poetic writings, and poems of two other 19th century American poets were compared to Poe’s poetry. As predicted, Poe used several classes of emotionally-toned sounds at significantly higher than normal rates (Pleasant, Sad, Soft, Passive, and Cheerful ones), and several at significantly lower than normal rates (Unpleasant, Active, and Nasty ones). His poetry was significantly more extreme in the employment of his preferred emotional sounds than his other writings, and than other poetry, especially with respect to the use of Pleasant, Sad, and Soft sounds.

Key words: Poe, poetry, sound, emotion.

INTRODUCTION

This article applies measurements of speech sounds based on psychological theories of emotion to the study of literature. It belongs to a research tradition which has analyzed the ways in which sound is used for literary effect in poetry in general (Whissell, 2004a) and in the poetry of Pope (Whissell, 2004b), E. Fitzgerald (Whissell, 2000a), Tennyson (Whissell, 2002), and Dickinson (Whissell, 2004a) in particular. Nist (1962) and Tsur (1992) discussed the importance of sound in poetry, and nominated several likely sources of its effects including the abruptness of the sound signal, place of articulation (e.g., front versus back), and tension in the vocal apparatus during sound production. Alexander Pope and Edgar Allan Poe, who wrote as critics as well as poets, both pointed to the importance of the message conveyed by sounds in poetry. According to Pope, “the sound must seem an echo to the sense:” a study of his translation of the Iliad demonstrated that he used sounds to convey emotional information (Whissell, 2004b). For Poe, an appreciation of verse, which was a form of music, depended on the perception of sounds (*Rationale of Verse*, Poe, 1965, XIV, p. 219).

Poe and sound

The fact that Edgar Allan Poe crafted his poems with attention to sound messages is so widely recognized (Fletcher, 1973, p. 62) that the study of Poe’s poems in terms of their sounds has come to be regarded as a fitting exercise for high school students (Scholastic Scope, 2001, p. 50). When Poe referred to the importance of sonority and liquidity (in his critique of Bryant, Poe, 1965, IX, p. 278) and to the poetic character of vowels as opposed to consonants (in his *Rationale of Verse*, Poe, 1965, XIV, p. 262), he was giving some hint as to the characteristics of sounds which he believed were responsible for the planned effects of his poems. The research described in this paper analyzes Poe’s poems in terms of the emotions conveyed by their sounds, which were interpreted in terms of the theory of phonoemotionality (Whissell, 2000b). The interpretation consults a full palate of English language phonemes categorized in terms of eight emotional tones. Quantitative analyses are employed to demonstrate Poe’s preferences for sounds that are emotionally both sweet

and sad. These preferences are in perfect accord with Poe's assertion that "beauty is the sole legitimate province of the poem" and that "its supreme development invariably excites the soul to tears," so that "melancholy is thus the most legitimate of all its poetical tones" (The Philosophy of Composition, 1965, XIV, p. 198). Poe's theory of composition and his sound choices are the outcomes of his emphasis on effect and affect (emotion) rather than cognition, on dream-like creative states, and on semi-conscious right-brain processes rather than alert left-brain ones.

Phonoemotional theory and measurement

Phonoemotional theory ties the innate or natural emotional meanings of sounds to the characteristics of the sound signal (e.g., sonority, liquidity) and to the muscular effort and facial expression involved in sound articulation (Whissell, 2000b). Plosive consonants such as g and p produce a noisier and more abrupt sound-signal (and spectrogram) than bilabial consonants such as b and m. Phonoemotionally, g and p convey a sense of activation while b and m convey a sense of passivity. Sounds that produce a sad facial expression when enunciated (such as the ones in the word "alone"), convey a sense of sadness while those that produce a cheerful expression (such as the ones in the word "cheese") convey a sense of cheerfulness. The enunciation of the o sound in "alone" produces the elongated cheeks and dropped jaw characteristic of sadness while the enunciation of long e in "cheese" raises the lip-corners and mimics a smile. Phonoemotionally, o is classified as a sad sound, while long e is classified as a cheerful one.

The phonoemotional classification (measurement) of sounds was accomplished on the basis of induction rather than deduction. It did not rest on any theory, but rather on the tendency of various sounds to appear at higher or lower rates in words with known (that is, rated) emotional characteristics (Whissell, 2000b). Thousands of English words were used to establish categories of phonoemotional measurement. The n and o sounds in "alone" were phonoemotionally classified as Passive sounds because they appeared more often in words that volunteers rated as more Passive. Long e, along with the ch sound in cheese, were classified as Cheerful sounds because they appeared more often in words which volunteers had rated as more Cheerful. These two sounds also appear in the word "cheerful" itself. Although sound classification was based strictly on sound usage in words of known emotionality, *post hoc* analyses revealed the importance of both sound characteristics and facial expressions (exemplified in the foregoing) to the emotional character of sounds (Whissell, 2000b).

An emotional character was identified for roughly three dozen of the 41 basic sounds or phonemes in spoken English (Whissell, 2000b). This character was described

in terms of eight possible emotional categories arising from a model of emotional space defined by the dimensions of Pleasantness and Activation, which are included in most lexical theories of emotion (Osgood, 1969; Russell, 1978). The emotional categories were (1) Pleasantness, (2) Cheerfulness, (3) Activation, (4) Nastiness, (5) Unpleasantness, (6) Sadness, (7) Passivity, and (8) Softness. Odd-numbered categories are based on dimensional extremes of Pleasantness and Activation and even-numbered ones on combinations of dimensional extremes from two adjoining categories. Sadness is a label for the combination of Unpleasantness and Passivity, Cheerfulness for the combination of Pleasantness and Activation, Nastiness for the combination of Unpleasantness and Activation, and Softness for the combination of Pleasantness and Passivity. As a result of the inductive process, phonemes could be classified in terms of more than one emotional character. Long e, for example, was classified as both Soft and Cheerful phoneme, and g as both Active and Nasty. Each of these sounds appeared at higher-than-normal rates in words which were rated as extreme in the directions indicated.

Cognitive (denotative) and emotional (connotative) meaning

The psychologist Charles Osgood (1969), who studied meaning, concluded that there were at least two different kinds of meaning attached to concepts. These were denotative (literal, descriptive, cognitive) meaning and connotative (intuitive, emotional) meaning. When listeners or readers respond to poetry they do so in terms of both kinds of meaning. Poe's *To Helen* is an example of a critically acclaimed poem. It is the 28th ranked poem on the scale of those most frequently included in English language anthologies (Harmon, 1992). This poem's fame rests in part on its use of mythical and historical, that is, denotative referents:

Helen, thy beauty is to me
Like those Nicéan barks of yore...
Thy Naiad airs have brought me home
To the glory that was Greece,
And the grandeur that was Rome. (Stovall, 1965, p. 47)

The audience for this poem would have to know something about Nicéa, Naiads, Greece, and Rome in order to make sense of it, so the poem would have to be cognitively processed in order to deliver its effects. At the same time, the audience would receive sound messages embedded in the poem, such as the strength conveyed by the g sound in the last lines (Fletcher, 1973, p. 38). Rather than being cognitive and denotative, this second class of messages would be connotative and emotional.

Fletcher argues that Poe's poetic revisions were connotative: they were made with a view to enhancing the

sound-picture of his poetry (p. 38). Early poems such as *Israfil*, *Tamerlane*, and *Al Aaraaf* depended on historical and mythical referents for some of their effects. By this criterion they are more cognitive poems. In contrast, later poems such as *The Bells* de-emphasize cognition in favor of emotion, in lines where emotion is conveyed by sound:

And the people – ah, the people –
They that dwell up in the steeple,
All alone,
And who, tolling, tolling, tolling,
In that muffled monotone,
Feel a glory in so rolling
On the human heart a stone - ... (Stovall, 1965, p.112)

Those who hear this poem can appreciate the tolling of the bells in the repeated l, o, and n sounds (which are phonoemotionally Sad) without consciously having to engage their cognitive apparatus to any great degree. Emotions associated with the enunciation of the poem's sounds convey the author's intended meaning. Having once heard *The Bells*, naïve listeners are more likely to remember its effect on them (thanks to its sound patterns) than they are to remember the effect of a poem such as *To Helen* which is loaded with cognitive referents but less emphatically patterned in sound.

Poe's emphasis on emotion in poetry

Poe explicitly addressed the distinction between cognition and emotion and specified emotion – in the form of an appreciation of beauty - as the appropriate goal for poetry. He did this on several occasions, for example, when affirming that “just as intellect deals with truth, so it is the part of taste alone to inform us of BEAUTY. And poetry is the handmaiden but of taste” (Poe, XI, 1965, p. 71). Poe's poetic principle (1965, XIV, p. 275) addressed a similar dichotomy, stressing the factual nature of truth in contrast to the experiential nature of poetry. Poe has been both praised and vilified for his “betrayal” of cognition in favor of emotion. He himself noted that the cognitive mode of poetry “will find stern defenders ... so long as the world is full to overflowing with cant and conventicles” (in his *Marginalia*, Poe, 1965, XVI, p. 69). Those who require cognitive content in their poetry find Poe's to be jejune and trivial in effect, according to Elmer (1995, pp. 2-3), who provides examples of such reactions from the “curators of cultural order.” Stovall (1965, p. xxxvi) emphasized the musical nature of Poe's poetry but noted that some of Poe's critics complained about the “absence of ideas” in it and its “lack of substance.”

It is those who respond to connotative meaning who appreciate Poe's working of his raw materials and sounds. The French poets who most appreciated Poe (e.g., Beaudelaire) were themselves sound- impressionists

(Tsur, 1992, pp. 57-58). Critical opinions of Poe's poetry depend on individual critics' expectations from it. Poe attempted to inform these expectations in his critical writings, where he maintained that poetry was music (Fletcher, 1973, pp. 17-23), and that it had no business attempting to convey information, knowledge, morality, or even truth. The fact that Poe's poetry was intended for effect (holistic impact) and affect (the sense of beauty and melancholy), was highlighted in one of his last works, *Eureka!*, which he addressed “...to those who feel rather than to those who think – to the dreamers and those who put faith in dreams” (Poe, 1965, XVI, p. 183).

Poe's emphasis on the importance of affect extended to his nomination of the ideal state for the achievement of revelation (Buranelli, 1961, p. 26). This was the hypnagogic state – the waking but dream-like state immediately preceding sleep during which less literal, more impressionistic ideas are birthed. Poe's preoccupation with dreams is illustrated by his inclusion of the words “dream” in the titles of four of his poems (*Dreams*, *Dream-Land*, *A Dream*, *A Dream within a Dream*). In the first paragraph of the short story *Eleonora* (Poe, 1965, IV, p. 236), Poe informed his audience that “they who dream by day are cognizant of many things which escape those who dream only by night.” Additionally, Poe maintained that activation in poetry (which he referred to in his *Philosophy of Composition* as “a species of fine frenzy – an ecstatic intuition:” Poe, 1965, XIV, p. 94) was incompatible with the creative state (which he called “the condition” or “the point,” Poe, 1965, XVI, pp. 89-90). Elsewhere Poe affirmed that “a passionate poem is a contradiction of terms” (Poe, 1965, XVI, p. 56), and recommended that authors distance themselves from extreme passion when writing. Thus grief, translated into its hypnagogic equivalent, appeared in Poe's poems as woe: love and joy were similarly transformed into awe, losing their more frenetic components. What seems to be a contradiction in Poe's philosophy of poetry – his focus on affect and his avoidance of passion – can be explained in terms of a preference for some emotions (soft, sad, and passive ones) and an avoidance of others (active and negative ones).

Hemispheric specialization

Research in the last half of the 20th century produced considerable evidence of hemispheric specialization in the human brain (Bradshaw, 1989; Springer and Deutsch, 1981). This specialization is best described in terms of several continua. The right side of the human brain functions more strongly (but not exclusively) in situations involving spatial skills, holistic (gestalt) perception, intuition, music, and unconscious creativity, while the left side functions more strongly (but not exclusively) in situations involving words, analytical perception, logic, intellect and consciousness (Springer and Deutsch, 1981,

Table 1. A summary description of Poe's theory of poetry in terms of his own and others' continua: Poe strongly emphasized the left side of each continuum.

Poe	Not Poe
Dimensions of Poe's theory of poetry	
Feeling	Thinking
Beauty	Truth
Imagination	Knowledge
Impression	Interpretation
Natural processes	Artificial processes
Poem for poem's sake	"Ulterior" Motive
Dimensions of Osgood's theory of meaning	
Emotional	Cognitive
Connotative	Denotative
Dimensions related to the hypnagogic state	
Semi-conscious	Conscious
Surreal	Real
Dreamlike	Focused
More passive	More active
Dimensions related to hemispheric specialization	
Right hemisphere	Left hemisphere
Music	Words
Intuition	Logic

pp. 15-16,185, 195). Poetry involves words: although words are often preferentially processed by the left hemisphere there is strong evidence to support the contention that poetry also speaks the language of the right hemisphere (Haverkort and de Roder, 2003; Kane, 2007). Poe's poetry employed words musically and holistically with a focus on an intuitive rather than an intellectual response. His poetry and his theory of poetry both emphasized activities known to be preferentially associated with the right side of the brain (Canada, 2001; Kane, 2007). What Poe had discovered, and what he struggled in his critical writings to describe, was a remote and surreal mental realm distanced from logical consciousness but dominant in the creation of poetry – the realm of the right brain hemisphere. It is entirely possible that Poe's alcoholism (Grant, 1981) had something to do with this discovery.

Phonoemotional predictions

Table 1 offers a summary description of the introductory section of this article in terms of continua based on Poe's theory of poetry, on Osgood's theory of meaning, on the characteristics of the hypnagogic state, and on hemispheric specialization. According to Poe, the anchor on the left-hand side of each continuum would be the one appropriate to a poet in the act of poesis. The four main

predictions of this research are based on Poe's theory of poetry. Because of Poe's emphasis on beauty and melancholy, it was predicted that (1) the sounds which Poe used preferentially in his poetry would have a Pleasant and Sad phonoemotional character. In view of Poe's respect for the inspired hypnagogic state, it was also predicted (2) his poems would be Passive rather than Active in their sound choices, and also phonoemotionally Soft (Soft sounds are both Pleasant and Passive). When Poe discussed the importance of emotion rather than cognition, he was almost always addressing the creation of poetry: it was therefore predicted (3) the emphasis on emotion which characterized his poetry would not be present to the same degree in his short stories and critical writings. Finally, because Poe consciously manipulated sound for effect, it was predicted (4) that although poetry as a whole would show evidence of the impressionistic use of sound, Poe's use would be more extreme or distinct than that of poets in general. "Poets in general" were represented by the 100 poems most frequently included in English language poetic anthologies (Harmon, 1992; Whissell, 2004a) and by the poetry of two other celebrated 19th century American poets, Longfellow and Whitman.

METHODS

Poe's poems (49 in all) were phonoemotionally transcribed by a

Table 2. Sounds¹ and categories of sounds used at above and below normal rates² in Poe's poetry.

Above-normal	Below-normal
ow sound in "how"***	oy sound in "toy"*
th sound in "three"***	u sound in "full"***
o sound in "lone"***	j sound in "jump"***
v sound in "very"***	sh sound in "share"***
aw sound in "lawn"***	y sound in "yet"***
ai sound in "hide"***	g sound in "glory"***
er sound in "her"*	ah sound in "but"*
m sound in "mud"***	p sound in "poem"***
neutral e sound in "the"***	oo sound in "fool"***
long e sound in "thee"***	ey sound in "hey"***
ae sound in "fat"***	aa sound in "father"***
l sound in "lull"***	dh sound in "that"***
d sound in "dream"***	k sound in "kit"***
r sound in "raven"***	s sound in "sun"***
	short e sound in "bit"***
	t sound in "tell"***
Tense vowels***	Lax vowels***
Front consonants***	Plosive consonants***
Sad sounds***	Active sounds***
Pleasant sounds***	Nasty sounds***
Cheerful sounds***	Unpleasant sounds***
Passive sounds***	
Soft sounds***	

¹Sound pronunciations are exemplified in accompanying words

²Significance is based on a two-tailed z test comparing a sample proportion (Poe's poetry) to a population proportion (everyday English corpus) * $Z > 1.96$ or $Z < -1.96$, $P < .05$, ** $Z > 2.58$ or $Z < -2.58$, $P < .01$, *** $Z > 3.06$ or $Z < -3.06$, $P < .001$

computer program written by J. Wasser for the Naval Research Laboratory. The program is now in the public domain and can be found, for example, at <http://www.cs.cmu.edu/afs/cs/project/ai-repository/ai/areas/speech/systems/eng2phon/0.html>. Each of the 51,913 phonemes in the poems was emotionally categorized. In previous research (Whissell, 2000b), it had been noted that different phonemes occurred disproportionately often in different categories of emotionally scored words. The exact assignment of phonemes to emotional categories depends on data reported in Table 1 and summarized in Table 2 of the article (Whissell, 2000b). A normative usage level for each of the eight emotional categories (Pleasant, Cheerful, Active, Nasty, Unpleasant, Sad, Passive, and Soft) has been established with the help of a broadly sampled corpus of everyday English (Whissell, 1998). This corpus of 348,000 words includes samples of English which North Americans would encounter on a daily basis such as excerpts from books, articles from newspapers, transcripts of television programs, essays written by young people, and transcripts of meetings.

Two predictions of this research involved comparisons of Poe's poetry to other works. Comparative materials included the 100 most frequently anthologized English poems from Harmon (1992), the first 49 poems from Walt Whitman's book *Leaves of Grass*, and all poems from Henry Wadsworth Longfellow's *Ballads and Other Poems*. The first sample had been used in previous research (Whissell, 2004a), and the latter two samples were obtained from the Project Gutenberg website (www.gutenberg.org). Poe's critical writings and *The Fall of the House of Usher* were accessed on the net (<http://bau2.uibk.ac.at/sg/poe/works/criticis.html>). The anthologized poems, which represent poems from Shakespeare's day to

the Modern era, were chosen to represent English poetry in general: because of their inclusion in anthologies, they would be familiar to most students of poetry. Longfellow (1807-1882) and Whitman (1819-1892) represented Poe's (1809-1849) peer group and they were, like him, eminent 19th century American poets.

RESULTS

General background

Table 2 lists all individual phonemes which Poe employed at significantly higher or lower than normative rates in his poems (Z test for the difference of a proportion from a normative value, $P < 0.05$, two-tailed). Those used at higher rates include the sounds of n, v, er, and o which appear repeatedly in *The Raven's* refrain (Nevermore!), and the sonorous l, which appears to such great effect in *The Bells*. Poe used the plosive consonants g, k, t, and p at significantly lower than normal rates, while using front consonants such as m and n at significantly higher than normal rates. Although Poe expressed a preference for vowels (because they are sonorous), his poems showed a higher than normal use of tense vowels only. Poe avoided using lax vowels such as the u sound in the word "full" and the ah sound in the word "but."

Table 3. A comparison of the proportional usage of various emotional categories of sound in Poe's poetry to the usage in his other writings and in the work of other poets.

Categories	Everyday English	Poe			Comparative poetry		
	norm	Poetry	Usher	Philosophy	Top 100	Whitman	Longfellow
Pleasant	0.196	0.238+	.202*√	0.198*√	0.228*√	0.218*√	0.234
Cheerful	0.295	0.304+	0.302	0.307	0.289*√	0.295*√	0.290*√
Active	0.338	0.302-	0.318*√	0.329*√	0.298	0.310*√	0.296
Nasty	0.359	0.316-	0.339*√	0.343*√	0.328*√	0.329*√	0.320
Unpleasant	0.239	0.227-	0.218*X	0.222	0.240*√	0.222*X	0.235*√
Sad	0.195	0.218+	0.200*√	0.188*√	0.219	0.201*√	0.214
Passive	0.403	0.420+	0.403*√	0.401*√	0.426	0.423	0.417
Soft	0.259	0.309+	0.273*√	0.277*√	0.290*√	0.291*√	0.292*√
N	≈1 million	51,913	27,999	18,636	84,040	105,262	12,447

+ This proportion is significantly higher than the proportion for Everyday English (Table 2).

- This proportion is significantly lower than the proportion for Everyday English (Table 2).

* This proportion is significantly different from the proportion for Poe's poetry (z test for comparing two proportions, two-tailed, $Z > 1.96$ or $Z < -1.96$)

√ This proportion is accord with the prediction that Poe's poetry would be more extreme in its given direction which is indicated by a + or - in the second column of data (26 cases).

X This proportion contradicts the prediction the Poe's poetry would be more extreme in its given direction which is indicated by a + or - in the second column of data (2 cases).

Predictions 1 and 2: Phonoemotional character of Poe's poetry

Tests comparing a sample value to a normative proportion indicated that Poe used all classes of phonemes at significantly different rates than the norm (Table 2). Poe used significantly more sounds than normal in the emotional categories representing Sadness, Passivity, Softness, Pleasantness, and Cheerfulness. He used significantly fewer sounds than normal in categories representing Activation, Nastiness, and Unpleasantness. The first prediction of the research, that Poe would employ more Pleasant and Sad sounds, was confirmed. The second prediction, that Poe's poetry would be Passive in tone, was also supported: Poe used significantly more sounds from Passive and passive-toned (Soft, Sad) phonoemotional categories, and relatively fewer from the Active category.

Predictions 3 and 4: Emotional extremity of Poe's sound choices

Table 3 compares the use of sounds in Poe's poetry to the use of sounds in Poe's other writings and in the writings of other poets. The first column of data in this table reports the proportion for each emotional category in the everyday English norm, and the second for the proportion for Poe's poetry. In the second column, + and - signs are employed to summarize significant differences of Poe's poetry from everyday English: these differences are noted in Table 2. The third data column presents proportions for Poe's short story *Usher*, and the next proportions for Poe's *Philosophy*. The three final columns report data for the remaining poetry samples.

The proportion in each of the last five columns of Table 3 was compared to the proportion for Poe's poetry with Z tests comparing two proportions. Significant differences ($P < .05$, two-tailed, $Z > 1.96$ or $Z < -1.96$) are marked with an asterisk. There were significant differences between Poe's poetry and each of the remaining samples. In order to evaluate the prediction of Poe's extremity, an additional comparison was conducted for every proportion where a significant difference from Poe had been noted. For example, it is evident that Poe employed more Pleasant sounds than the norm in his poetry. If Poe's rate of usage (from the second column) was higher than that noted for any of the proportions significantly different from his, these were marked with a check mark (√). A check mark indicates support for the prediction of Poe's extremity. In Table 3, significant differences from Poe's poetry for the use of Pleasant sounds were noted for *Usher*, for *Philosophy*, for the top 100 poems, and for Whitman's poetry. In all these cases, proportions were closer to the norm of 0.196 than Poe's poetry, and therefore less extreme, so all proportions were annotated with a check mark. Proportions which differed from Poe's but also contradicted the prediction of his extremity are marked with an ex (X). There are only two such proportions in Table 3 and both involve the use of Unpleasant sounds. In *Usher* (0.218), and in Whitman's poetry (0.222), there is a significant difference from Poe's poetry in the contradictory direction. Poe (0.227) uses fewer Unpleasant sounds than the norm (0.239), and these two samples use even fewer.

Two meta-analyses were performed for the data in Table 3. The first addressed the total number of significant differences observed at $P < .05$. Twenty-eight significant differences (0.70) were observed in 40 tests (five comparative samples X eight emotional categories). By

chance, only two such differences might have been expected (0.05 of 40). The Z value for a test comparing the actual proportion of significances (0.70) to the null value of 0.05 was 17.39 ($P < .00001$). There were many more significant differences from Poe's poetry than might have been predicted by chance. The second meta-analysis tested whether the significant differences observed supported or contradicted the prediction of Poe's extremity. Of the total of 28 differences, 26 supported the prediction and two did not. A Z test for a proportion was employed to test the null hypothesis that the pattern of significance (supportive, contradictory) was random (0.5/0.5). The hypothesis of a random pattern was rejected ($Z = 4.53$, $P < .0001$): by far the majority of significant differences supported the prediction of greater extremity for Poe's poetry.

In overview, data reported in Table 3 indicate that when Poe's poetry scored above the norm (e.g. for the use of Soft, Sad, or Pleasant sounds) it scored further above it than other samples, and when it scored below the norm (e.g. for the use of Nasty and Active sounds) it scored further below it than other samples. Not only did Poe communicate his preferred emotions in his sound choices (Predictions 1 and 2), but he did so in a more extreme manner than the comparative materials (Predictions 3 and 4). Poe's poetry was emotionally more extreme than his other writings (Prediction 3), and more extreme than the poetry of others (Prediction 4).

DISCUSSION

This research employed Edgar Allan Poe's critical writings about poetry, and his appreciation of the importance of sound expressiveness, to make predictions about the manner in which he would use sounds in his poetry. Poe's sound usage was quantified, and four specific predictions were tested.

Poe emphasized the importance of melancholy – a combination of beauty and sadness – in the writing of poetry. Because of this, it was predicted that Poe would employ more Pleasant and Sad sounds such as f and n in his poetry. This first prediction was fully supported (Table 2). Poe decried the ascendancy of passion in poetic creation and favored instead a dream-like passive creative state: this led to the prediction that he would include more Passive and Soft sounds such as d and m in his poetry while avoiding more Active sounds such as t and g. This second prediction was also fully supported (Table 2). The third prediction rested on the Poe's conscious employment of sound for effect in poetry, but not necessarily in his other writings. As predicted, Poe's poems were more extreme in their use of various categories of sounds than his other writings (Table 3). For example, his poems contained even fewer Active sounds than his philosophy of composition, and even more Sad sounds than his short story *The Fall of the House of Usher*. Poets in general may have used sound

impressionistically in their works, but it was expected that Poe would be even more extreme in his usage patterns because of his emphasis on the importance of sound. This expectation was met (Table 3) when Poe's poetry was compared to that of others: for example, Poe's poems contained more Soft sounds than Whitman's *Leaves of Grass* and fewer Unpleasant sounds than Longfellow's *Ballads*.

Edgar Allan Poe strategically employed sounds to enhance the emotional effects of his poetry. He explicitly nominated emotion as the goal of poetry, and he successfully manipulated sounds in his poems in order to produce what he considered appropriate emotions in his audience. Whissell (2000b) demonstrated that naïve volunteers writing nonsense poetry on themes such as sadness, love, and war were able to use sounds differentially in order to convey emotion. These volunteers likely called upon some non-verbal processes in their poems because they had been forbidden to use real words (poems that did were excluded). Not being blessed with Poe's theory of poetry, several volunteers complained to the experimenter of the impossibility of the task and were incredulous when informed, at a later debriefing, that the appropriate emotion had been clearly conveyed by their sound choices – blind readers had guessed the emotional theme of the poetry just by looking at it and sounding it out.

Poe may have called upon the same process as these volunteers in his creation of poetry but he did so systematically rather than unwittingly. He also attempted to describe the process in his critical writings. The process resulted in poetry which was emotionally rather than cognitively focused, and, by inference, characteristic of right-brain rather than left-brain functioning. The final "worthiness" of poetry is not dictated by its preferential emotional or hemispheric emphasis. What this article has successfully demonstrated is not specifically that Poe was a "good" poet but rather that he had a distinct theory of the role of sounds in poetic communication, and that his poetry bore out his theory. Because of this, it was appreciated much more by some members of his audience than by others.

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