

## Commentary

### THE DIFFICULTY OF MEASURING MUSICAL QUALITY (AND QUANTITY): Commentary on Weisberg

Bruno H. Repp

Haskins Laboratories

In a recent article in this journal, Weisberg (1994) examined the hypothesis that creative individuals suffering from manic-depressive disease not only are more productive during hypomanic phases (which they commonly are) but also produce works of higher quality than during normal or depressed periods. As his test case, he took the composer Robert Schumann (1810–1856), who suffered from a bipolar affective disorder (Jamison, 1993; Ostwald, 1985; Slater & Meyer, 1959) and who left extensive records of his mood swings in letters and diaries. A plot of the number of Schumann's compositions by year of completion (Weisberg's Fig. 1) reveals two periods of particularly intense activity: the years 1840 and 1849–1851, especially 1849. According to Slater and Meyer (1959), the years 1840, 1849, and 1851 coincide with hypomanic periods in Schumann's life. Years classified as mostly depressive periods, by contrast, show very low productivity.

This correlation between mood state and productivity seems robust and plausible, despite the crudity of the analysis. As Weisberg acknowledged, neither Schumann's periods of increased or reduced productivity nor his corresponding mood states necessarily extended over full calendar years, and there were other factors that impinged on his productivity, such as editorial work and periods of travel (see Ostwald, 1985). The measure of compositional quantity is also problematic. Weisberg's definition of *composition* (not stated, but following Slater & Meyer, 1959) is music published with a single opus number. However, works with different opus numbers may vary widely in size and complexity. In Schumann's case, they range from single short pieces such as the *Toccata*, op. 7, to extended works such as the *Three String Quartets*, op. 41. Alternative measures of compositional quantity worth considering would be the number of movements of comparable length and complexity, or even the number of distinct musical themes ("ideas").<sup>1</sup> Defining musical quantity is not a trivial problem.

There are also dangers in assuming that a composer's published works fully represent his creative output. Composers, like scientists, generally publish only the works that meet a certain self-imposed criterion of quality. However, that criterion may vary with the cycles of manic-depressive disease. If Schumann lowered his criterion for what he deemed publish-

able during his hypomanic periods, then the data would be biased against Weisberg's hypothesis that average compositional quality increases during these periods.

The most serious flaw of Weisberg's research, however, is his measure of quality. To assess the relative quality of Schumann's works in different years, Weisberg counted the number of recordings listed in two popular record guides. He placed the responsibility for this choice on an earlier author, in whose view these numbers represent "the combined judgments of musicians, recording companies, and the record-buying public" (p. 363). However, what the numbers really reflect is popularity, not artistic quality. There may well be a positive correlation between these two attributes, but because the quality of a work of art is extremely difficult to quantify, the strength of the correlation is unknown.<sup>2</sup> In most other domains (such as literature, films, or food), the items that appeal to the largest number of people are not those of the highest quality. The same principle may well apply within the select group of classical music listeners. Beethoven's Fifth Symphony is surely his most popular work, but is it his best? Schumann's *Carnaval*, op. 9, is far more popular than his *Humoreske*, op. 20, but is it of higher quality? Even the people who know these works most intimately, namely, musicians and musicologists, may have no simple answers to these questions. It seems naive to assume that indices of commercial value can substitute for experts' opinions.

Weisberg defined the relative quality of Schumann's compositions in a given year as the average number of recordings per work or, alternatively, as the proportion of works listed at least once in the guide. These measures showed no significant difference between hypomanic and depressive years, which led to the main conclusion that "Schumann's mood affected the quantity of his work, but not its quality" (p. 366). This may well be so, but it does not follow from the data, even if "(future) popularity" is substituted for "quality," because of additional complicating factors.

Consider the relationship between genre and popularity. Up to 1840, Schumann composed virtually only piano music and only a few works per year. In his first exceptionally productive year, 1840, he suddenly turned to song. According to Weisberg's calculations, that year was relatively undistinguished in terms of relative quality. However, German *lieder* are definitely

Address correspondence to Bruno H. Repp, Haskins Laboratories, 270 Crown St., New Haven, CT 06511-6695; e-mail: repp@haskins.yale.edu.

1. I have carried out such an alternative count based on a catalogue of Schumann's works (Hofmann & Keil, 1982), using the sonata movement as the basic unit and assigning fractional weights to smaller works, such as short piano pieces or songs. Although Schumann's productivity histogram changed in certain details, it still showed a correlation between mood state and productivity across calendar years.

2. Simonton (1987) reported a correlation of .66 between "compositional popularity" (measured by frequency of mention in record-buying guides, anthologies, etc.) and "aesthetic significance" of Beethoven's works, as rated by one musicologist. This article illustrates the correct approach, but the validity of the ratings is unclear, and the magnitude of the correlation is likely to vary from composer to composer.

less popular with the record-buying public than are solo piano music, symphonies, or chamber music. *Lieder* are intimate and require knowledge of the language to be appreciated fully, and there is only a small number of outstanding performers in this special repertoire. Some of Schumann's songs are for two or more voices, which further reduces their popular appeal. As a result, fewer recordings are made of these works. Those song cycles that have been recorded relatively often, such as *Liederkreis*, op. 39, *Frauenliebe und Leben*, op. 42, and *Dichterliebe*, op. 48, are generally believed to contain some of the finest German songs ever written. But who is to say that the many other songs of that year are of lesser quality? One biographer of Schumann wrote: "In originality, in beauty—in everything, indeed, that makes for his greatness as a composer—Schumann had reached his peak by the 'Liederjahr' [year of songs] of 1840" (Taylor, 1982, p. 191).

Changes in Schumann's compositional style over time represent another complicating factor. Taylor continued: "What followed, *pace* the occasional return to the heights in moments such as the Piano Concerto, was a slow decline, the companion of the irreversible deterioration of his physical and psychological condition" (p. 191). This opinion, which was widespread until recently, has been challenged by some musicologists who argue that the stylistic characteristics of Schumann's later works were the result of artistic choice, not deterioration (e.g., Struck, 1984). Whatever the cause may be, the later works are rarely performed. Weisberg's statement that "the proportion of high-quality compositions was essentially constant over the years of Schumann's career" (p. 365) not only has uncertain literal accuracy, but becomes false when "popularity" is appropriately substituted for "quality." The later compositions include such unwieldy works as the oratorio *Der Rose Pilgerfahrt*, op. 112, the dramatic poem *Manfred*, op. 115, songs for chorus, pieces for wind instruments, and piano duets, all of which are genres for which there is little demand in record shops and concert halls. The relative paucity of recordings of Schumann's later compositions is thus explained not only by their stylistic properties but also by their unusual form and instrumentation, neither of which has a direct bearing on quality.

Finally, the origin of Weisberg's hypothesis is unclear. He attributed it to Kraepelin (1921), who observed that "mania can produce qualitative changes in thinking, that is, changes in the kinds of ideas that the person produces" (Weisberg, 1994, p. 361). However, a qualitative change can be either an improvement or a deterioration—or neither. Kraepelin (p. 17) talked only about a "certain furtherance" of artistic activity. Jamison (1993, pp. 54–55) cited the same passage to exemplify the view

that increased artistic productivity is linked to manic-depressive illness. Weisberg called Jamison a "recent advocate of Kraepelin's view" (p. 361), but she too talked only about changes in quantity and quality—"increased fluency and frequency of thoughts," "speed increase," "unique ideas and associations" (Jamison, 1995, p. 66)—not about improvements. In fact, there is a high likelihood of a deterioration in quality during hypomania: "The real capacity for work invariably suffers a considerable loss. The patient no longer has any perseverance, leaves what he begins half finished, is slovenly and careless in the execution of anything . . ." (Kraepelin, 1921, pp. 57–58). The idea of increased creativity that Weisberg derived from Kraepelin and Jamison may merely denote an increase in a creative person's productivity. To make the hypothesis of increased relative quality plausible, it would be necessary to consider in detail how the cognitive demands of musical composition might be furthered by the specific changes in cognitive functioning associated with hypomania. For example, it is quite possible that song composition benefits from increased fluency of thought whereas composition of large-scale works does not.

In summary, although Weisberg's study raises many interesting questions, it provides no answers because of serious empirical and theoretical inadequacies. The issues he meant to address are very complex, and a simplistic approach will not do.

## REFERENCES

- Hofmann, K., & Keil, S. (1982). *Robert Schumann. Thematisches Verzeichnis sämtlicher im Druck erschienenen musikalischen Werke mit Angabe des Jahres ihres Entstehens und Erscheinens*. Hamburg: J. Schuberth.
- Jamison, K.R. (1993). *Touched with fire: Manic-depressive illness and the artistic temperament*. New York: Free Press.
- Jamison, K.R. (1995, February). Manic-depressive illness and creativity. *Scientific American*, 272, 62–67.
- Kraepelin, E. (1921). *Manic-depressive insanity* (R.M. Barclay, Trans.). Edinburgh: E. & S. Livingstone.
- Ostwald, P. (1985). *Schumann: The inner voices of a musical genius*. Boston: Northeastern University Press.
- Simonton, D.K. (1987). Musical aesthetics and creativity in Beethoven: A computer analysis of 105 compositions. *Empirical Studies of the Arts*, 5, 87–104.
- Slater, E., & Meyer, A. (1959). Contributions to a pathography of the musicians: I. Robert Schumann. *Confinia Psychiatrica*, 2, 65–94.
- Struck, M. (1984). *Die umstrittenen späten Instrumentalwerke Schumanns: Untersuchungen zur Entstehung, Struktur und Rezeption*. Hamburg: Karl Dieter Wagner.
- Taylor, R. (1982). *Robert Schumann: His life and work*. London: Granada.
- Weisberg, R.W. (1994). Genius and madness? A quasi-experimental test of the hypothesis that manic-depression increases creativity. *Psychological Science*, 5, 361–367.

(RECEIVED 12/8/94; ACCEPTED 5/22/95)