REPLY TO ALEXANDER

MEASURING INDUSTRY CONCENTRATION, DIVERSITY, AND INNOVATION IN POPULAR MUSIC*

Richard A. Peterson
Vanderbilt University

David G. Berger
Temple University

We are delighted to have this opportunity to reflect on some important issues raised by researchers concerning our *ASR* article "Cycles in Symbol Production: The Case of Popular Music" (Peterson and Berger 1975). Contrary to the thinking then prevalent in economics, that innovation is most likely in oligopolistic industries (Schumpeter 1950), we found that the greater the competition in the popular music industry in a given year, the greater the innovation in the music. Analyses by Alexander (1996, henceforward Alexander) and other researchers prompt us to comment on the measure of concentration/competition, the measure of musical diversity, the difference between diversity and innovation, and the likely range of the positive relationship between industry competition and product innovation.

MEASURING CONCENTRATION

To measure the degree of control of the music industry held by a few firms we used the conventional four-firm concentration ratio, which gives the proportion of the market controlled by the top four firms. The concentration ratios depicted in Alexander's Figure 1 clearly show the over-time dynamic we projected in 1975. Studies of concentration in the music field continue to use either this measure, or a more sophisticated derivative (Carroll 1985) that measures the average market share of all firms (Rothenbuhler and Dimmick 1982; Burnett and Weber 1989; Burnett 1990; Dowd 1992; Lopes 1992; Schulze 1994; Christianen 1995; Alexander 1996).

These ratios are accurate measures of the concentration of musical product *ownership*, but, as we and others show, they are no longer good measures of the concentration of *creative* control (Lopes 1992; Anand and Peterson 1995; Dowd 1995). This is because the major firms, like Time/Warner, now have autonomous competing divisions (Time/ Warner currently has three), which, in turn, release popular music on numerous labels (Time/ Warner currently has 62).[1] Therefore, a more accurate index of creative control should be based not on the number of financially independent corporations but on the number of creatively independent divisions or labels that successfully compete in the market.

MUSICAL DIVERSITY

Like Dowd (1992, 1995), Alexander uses musical characteristics of hit songs to measure diversity. Unlike Dowd, however, Alexander takes his five measures from sheet music rather than from the hit record itself, arguing that sheet music is a blueprint for what is recorded. This may be an adequate assumption for the era up to 1955 (which Alexander does not study). At that time, bands generally recorded songs, reading from printed music charts. In the rock era, however, pop music increasingly has been composed while being recorded. If sheet music is published at all, it is produced *after* the song has become a hit (Tagg 1982).

Musicologists of popular music advise that *any* written transcription is an inadequate representation of a recording (Winkler forthcoming) and of the nuances that made it a hit (Keil and Feld 1994). In any case, the commercially available sheet music of the sort used by Alexander does

* Direct all correspondence to Richard A. Peterson, Department of Sociology, Box 1635 Station B, Vanderbilt University, Nashville, TN 37235 (Internet: petersra@ctrvax.vanderbilt.edu). We are grateful for help and advice from Timothy Dowd, Eric Fine, Larry Griffin, Roger Kern, Barbara Kilbourne, Holly McCammon, Claire Peterson, David Sanjek, Darren Sherkat, and Peter Winkler.

[1] Through the mid-1970s the correlation between the number of firms with records in the Top 10 of the weekly *Billboard* chart and the number of labels reaching the Top 10 is nearly perfect. See Peterson and Berger (1975).

not faithfully represent what is recorded. His claiming that it represents the hit recording is analogous to saying that the Mona Lisa printed on a T-shirt accurately represents the painting on display in the Louvre. Sheet music is a simplified version of the hit, made to be sold to amateur pianists or guitarists and to club-date professionals who are expected to play the latest pop hits at weddings and bar mitzvahs. Consider for example, time and meter, the most objective of Alexander's five diversity variables. From the sheet music, he codes each song as 4/4 or 2/2 versus anything else, but this poorly represents the hit record. Dowd (personal communication) reports that in his sample of number-one songs of the 1955–1988 period, fully 20 percent of the 105 songs shift meter and do so for an average of 11 percent of the duration of the recording. Thus, measures of the characteristics of music must be generated directly from the hit recording, as Dowd (1992) has done. Moreover, an index of diversity should also include measures for song lyrics because lyrics are vital in making a record into a hit (Frith 1987).

A SUMMARY MEASURE OF DIVERSITY

We applaud Alexander for combining the several measures of songs in a single index of diversity.[2] The particular measure that he calls entropy does not, however, take into account the *degree* of difference between songs. Thus, for example, if half the songs fit in one cell and are like the other half of the sample except for a single characteristic, the same difference score is obtained as when the two homogeneous halves are different from each other in every single characteristic! Since Alexander neither provides annual plots of the distribution of songs, nor computes a measure of the distances of the songs from each other, it is not possible to estimate the actual diversity of songs from what he calls entropy. Network analysts have developed just such measures, and so has Dowd (1995).

[2] It would be useful to know the degree to which the individual items are correlated and how much each contributes to the diversity index.

DIVERSITY DOESN'T EQUAL INNOVATIONS

Alexander faults us for using the number of records that in a year reach the Top 10 of the weekly pop *Billboard* chart, ignoring completely the numerous independent lines of evidence we developed to show that this simple measure of diversity did in fact fairly represent innovation in the period we examined. This measure, Peterson (1994) argues, cannot be used uncritically now because a rapid turnover of songs "may no longer indicate aesthetic innovation but rather *aesthetic exhaustion*, as trivially different songs quickly reach the top of the charts—and as quickly fade because they are derivative" (Peterson 1994:176).

There must be diversity if there is innovation, but the opposite is not true, because there can be great diversity with no innovation. For example Christianen (1995) describes a number of streams of music in the Dutch music market that have maintained their distinctiveness over decades. This is a situation of considerable diversity in which the innovativeness may be slight. Nontrivial innovation in music is generally signaled by the wide use of a new name for a style of music and an associated group of performers. Possible examples of innovation include rave, techno, acid jazz, grunge, rap, house, New Age, disco, funk, punk, acid rock, Motown, big beat, folk-rock, soul, rockabilly, do-wop, bop, torch, swing, etc. In focusing on diversity alone, Alexander, among others, has forgotten that the master question deriving from Schumpeter (1950) is the relationship between industry concentration and innovation.

LINKING CONCENTRATION AND INNOVATION

Given our concerns about Alexander's measures of concentration and diversity, we will not comment on his testing of their relationship. Suffice it to say that we are heartened that he finds that there is still a strong linear relationship between our measure of diversity-as-innovation and music industry concentration as seen in Alexander (1996) column 5 of Table 1. The failure of the nonlinear model shown in column 6 adds weight to

our assertion that the relationship between concentration and innovation is linear.

Future studies that use regression models to test the relationship between concentration and innovation (or diversity) will need to be sensitive to the assumptions underlying the methods of time-ordered analysis of historical processes. Burnett and Weber (1989), Peterson (1990), Lopes (1992), and Anand and Peterson (1995) show that the structure of the music industry has changed several times since 1948, and as Isaac and Griffin (1989) suggest, such change necessitates the historicization of quantitative methodology.

PROBABLE LIMITS OF THE GENERALIZATION

Looking beyond popular music, a positive relationship between competition and innovation has been found in a wide range of fields, but this does not mean that the relationship should apply universally. We believe it is most likely to hold in regulation-free market situations where demand is elastic, barriers to entry are low, and research and development costs are not high.

Richard A. Peterson *is Professor of Sociology at Vanderbilt University. With Narasimhan Anand, he is researching the role of new forms of information in restructuring the commercial music field. With Roger Kern and others, he is exploring the changing stratification of taste with the emergence of omnivores and lower status univore taste groups. The next installment in this set (forthcoming in* ASR*) deals with the displacement of highbrow snobs by omnivores. In addition, he is completing a monograph on the fabrication of authentic country music in the second quarter of the twentieth century.*

David G. Berger *is Associate Professor of Sociology at Temple University. He is currently researching and shooting a film documentary on the life and works of Jazz bassist and photographer, Milt Hinton.*

REFERENCES

Alexander, Peter J. 1996. "Entropy and Popular Culture: Product Diversity in the Popular Music Recording Industry." *American Sociological Review* 61:171 –74.

Anand, Narasimhan and Richard A. Peterson. 1995. "When Market Information Constitutes Fields: The Music Industry Case." Owen Graduate School of Management, Vanderbilt University, Nashville, TN. Unpublished manuscript.

Burnett, Robert. 1990. "Concentration and Diversity in the International Phonogram Industry." Ph.D. dissertation, Department of Journalism and Mass Communication, University of Gothenburg, Sweden.

Burnett, Robert and Robert Philip Weber. 1989. "Concentration and Diversity in the Popular Music Industry: 1948–1986." Paper presented at the annual meeting of the American Sociological Association, August, San Francisco, CA.

Carroll, Glenn R. 1985. "Concentration and Specialization: Dynamics of Niche Width in Populations of Organizations." *American Journal of Sociology* 90:1262–83.

Christianen, Michael. 1995. "Cycles in Symbol Production? A New Model to Explain Concentration, Diversity, and Innovation in the Music Industry." *Popular Music* 14:55–93.

Dowd, Timothy J. 1992. "The Musical Structure and Social Context of Number One Songs: An Exploratory Analysis." Pp. 130–57 in *Vocabularies of Public Life*, edited by R. Wuthnow. London, England: Routledge.

———. 1995. "The Song Remains the Same? The Musical Diversity and Industry Context of Number One Songs: 1955–1990." Department of Sociology, Emory University: Atlanta, GA. Unpublished manuscript.

Frith, Simon. 1987. "Why Do Songs Have Words?" Pp. 77–106 in *Lost in the Music: Culture, Style, and the Musical Event*, Sociological Review Monograph 34. London, England.

Isaac, Larry and Larry Griffin. 1989. "Ahistoricism in Time-Series Analysis of Historical Process." *American Sociological Review* 54:873–90.

Keil, Charles and Steven Feld. 1994. *Music Grooves*. Chicago, IL: University of Chicago Press.

Lopes, Paul D. 1992. "Innovation and Diversity in the Popular Music Industry: 1969 to 1990." *American Sociological Review* 57:46–71.

Peterson, Richard A. 1990. "Why 1955? Explaining the Advent of Rock Music." *Popular Music* 9:97–116.

———. 1994. "Cultural Studies Through the Production Perspective." Pp. 163–89 in *The Sociology of Culture*, edited by D. Crane. Oxford, England: Blackwell.

Peterson, Richard A. and David G. Berger. 1975. "Cycles in Symbol Production: The Case of Popular Music." *American Sociological Review* 40:158–73.

Rothenbuhler, Eric and John Dimmick. 1982. "Popular Music: Concentration and Diversity in the Industry, 1974–1980." *Journal of Communication* 32:143–49.

Schulze, Rolf. 1994. "Hit Record Trends on the German Music Market for Popular Music

1975–1993" Paper presented at the 8th International Congress on Cultural Economics, August 24–27, Witten, Germany.

Schumpeter, Joseph A. 1950. *Capitalism, Socialism, and Democracy*. New York: Harper and Row.

Tagg, Philip. 1982. "Analyzing Popular Music: Theory, Method, and Practice." *Popular Music* 2:37–68.

Winkler, Peter. Forthcoming. "Writing Ghost Notes: The Poetics and Politics of Transcription." In *State of the Art: Refiguring Music Studies* edited by D. Scharz and A. Hassabian. Richmond, VA: University of Virginia Press.