Historia de la Música Electroacústica

VI
Computer Music clásica
décadas de 1970 y 1980

Center for Computer Research in Music and Acoustics – CCRMA

- 1974, Stanford University, California
- John Chowning

Institut de Recherche et Coordination Acoustique/Musique – IRCAM

- 1977, Centre Pompidou, París
- Pierre Boulez

Barry Truax [1947]

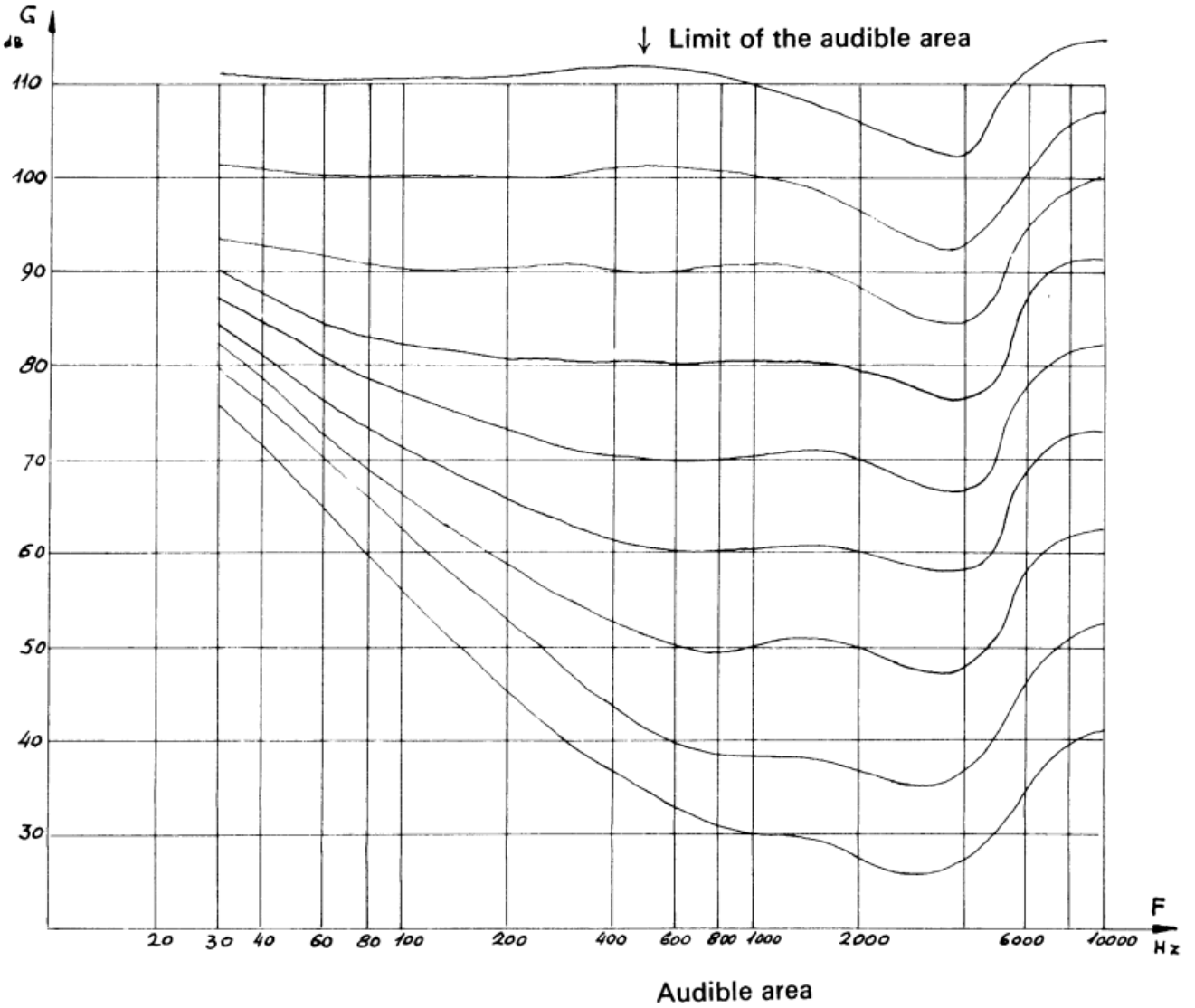
Arras [1980]

James Dashow [1944]

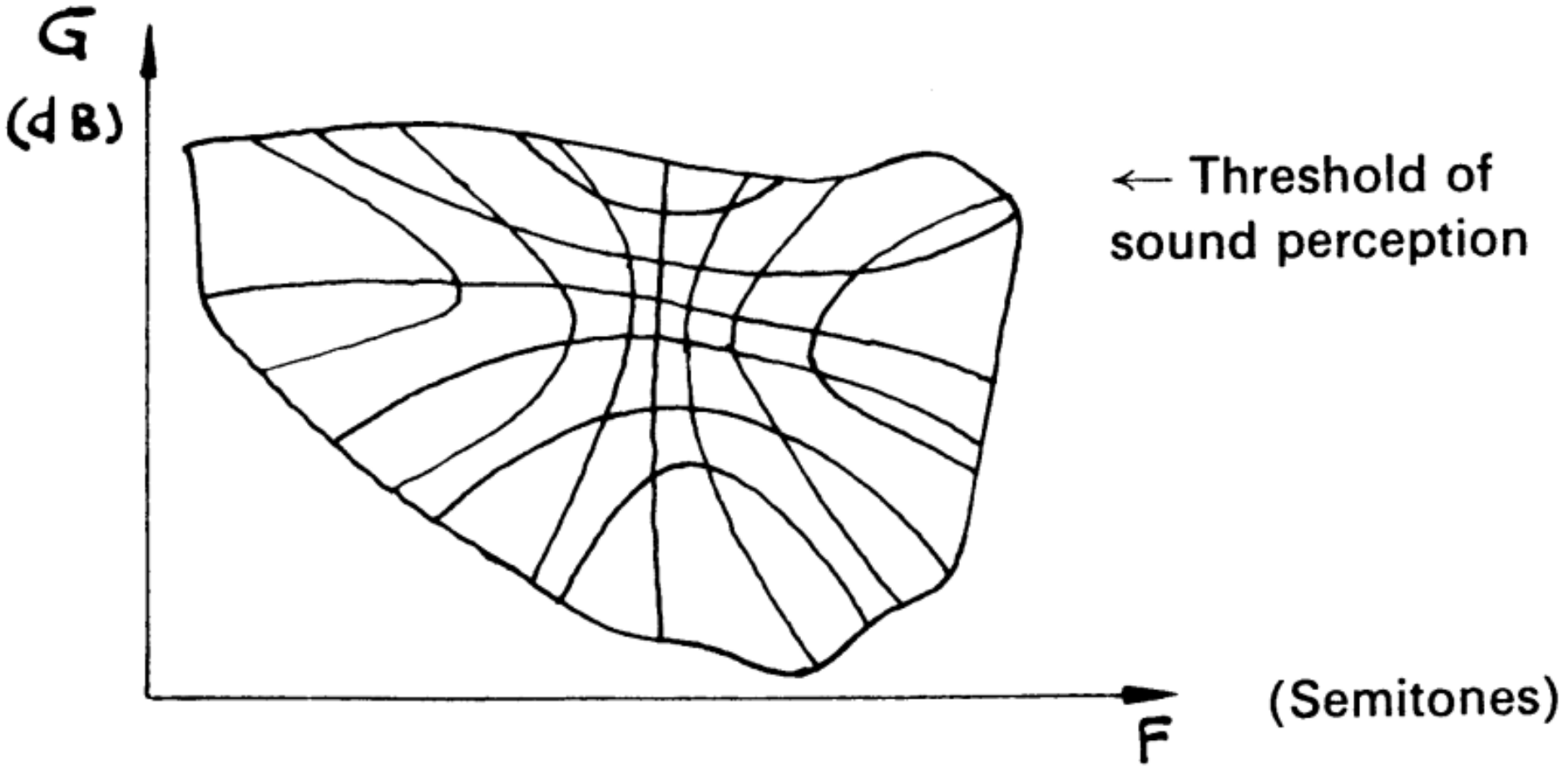
In Winter Shine [1983]

síntesis granular

- modelo acústico de Gabor
- Dennis Gabor (1900 – 1979)
  1949: modelo granular del sonido
- Iannis Xenakis (1922 – 2001)
  1960: modelo de síntesis granular
- Curtis Roads (1951 –)
  1974: primera implementación por computadora
- Barry Truax (1947 –)
  1986: primera implementación en tiempo real



Fletcher-Munson Diagram Equal Loudness Contours


G
(dB)
← Threshold of
sound perception
F
(Semitones)

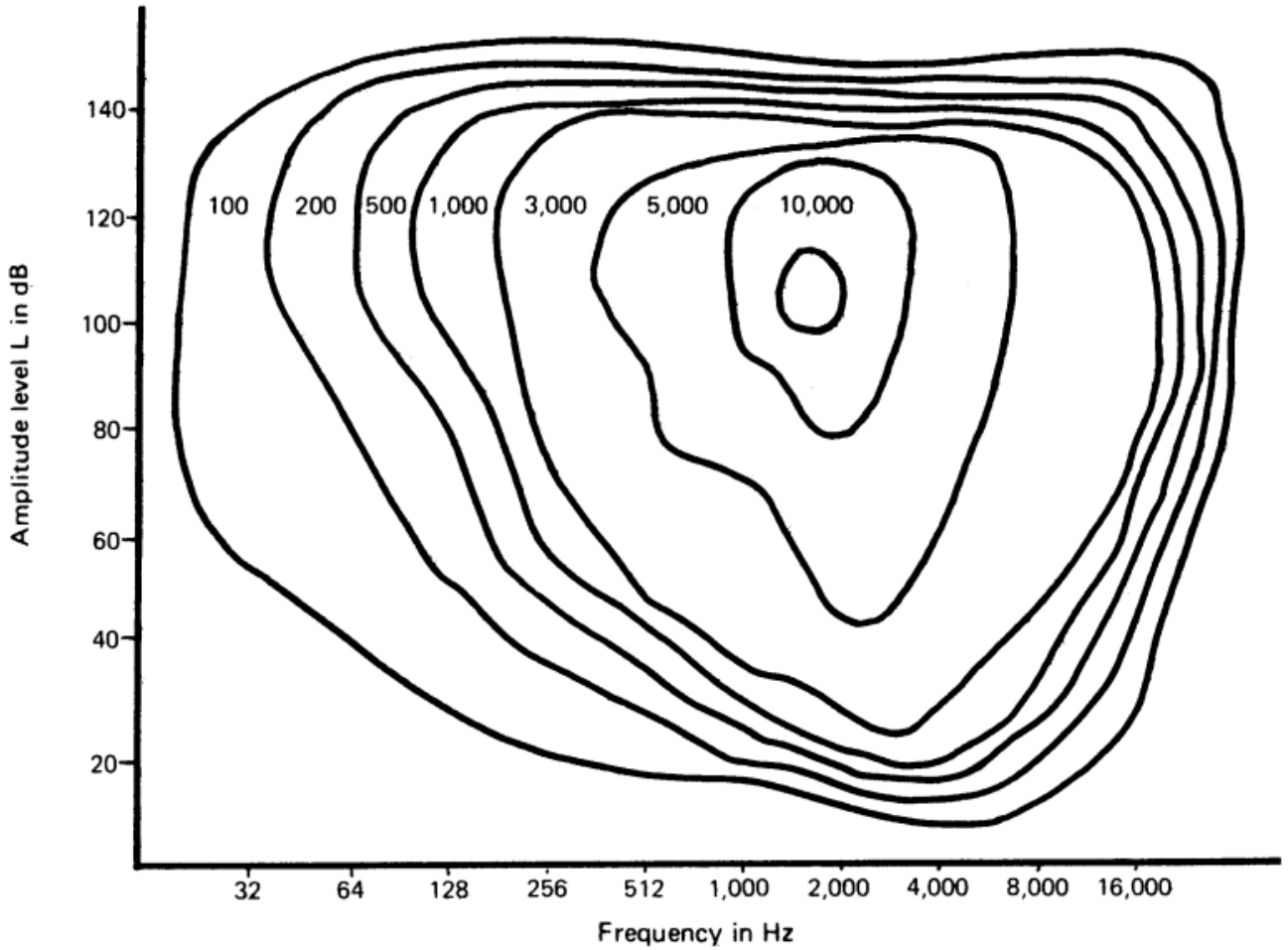


Figure 10.1
Map of the audible domain in the plane: sound pressure level versus frequency of sine waves. The closed curves indicate the level of acoustical information: number of quantified squares $\Delta L \Delta f$ per unit of surface. After Moles 1968; reproduced with permission of University of Illinois Press.

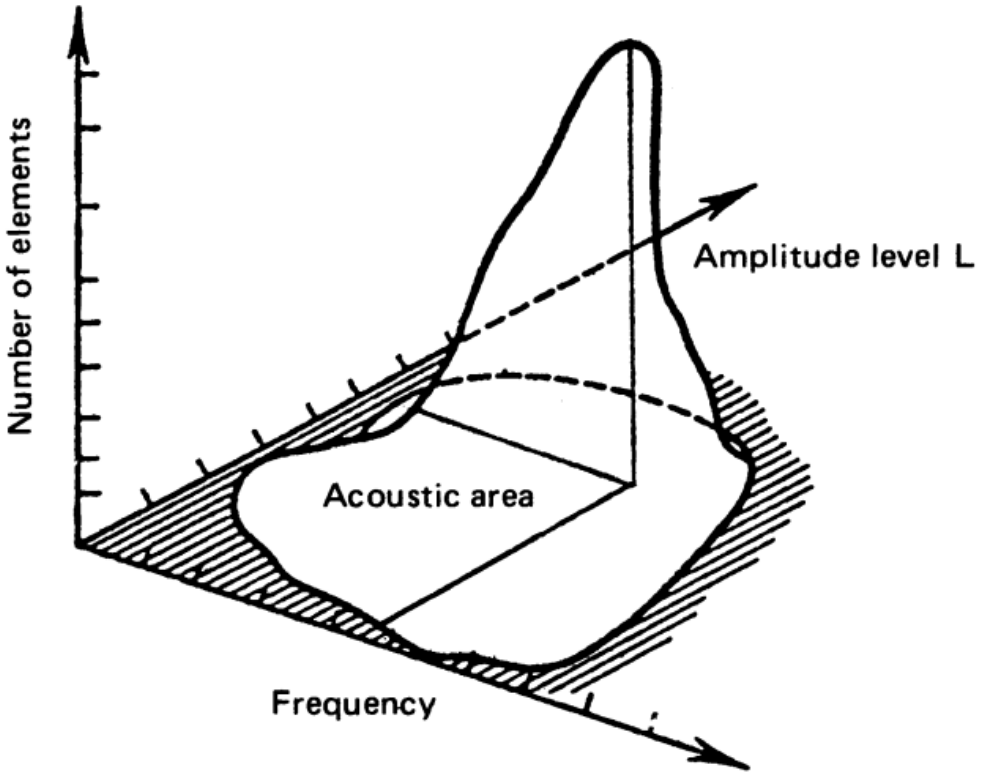
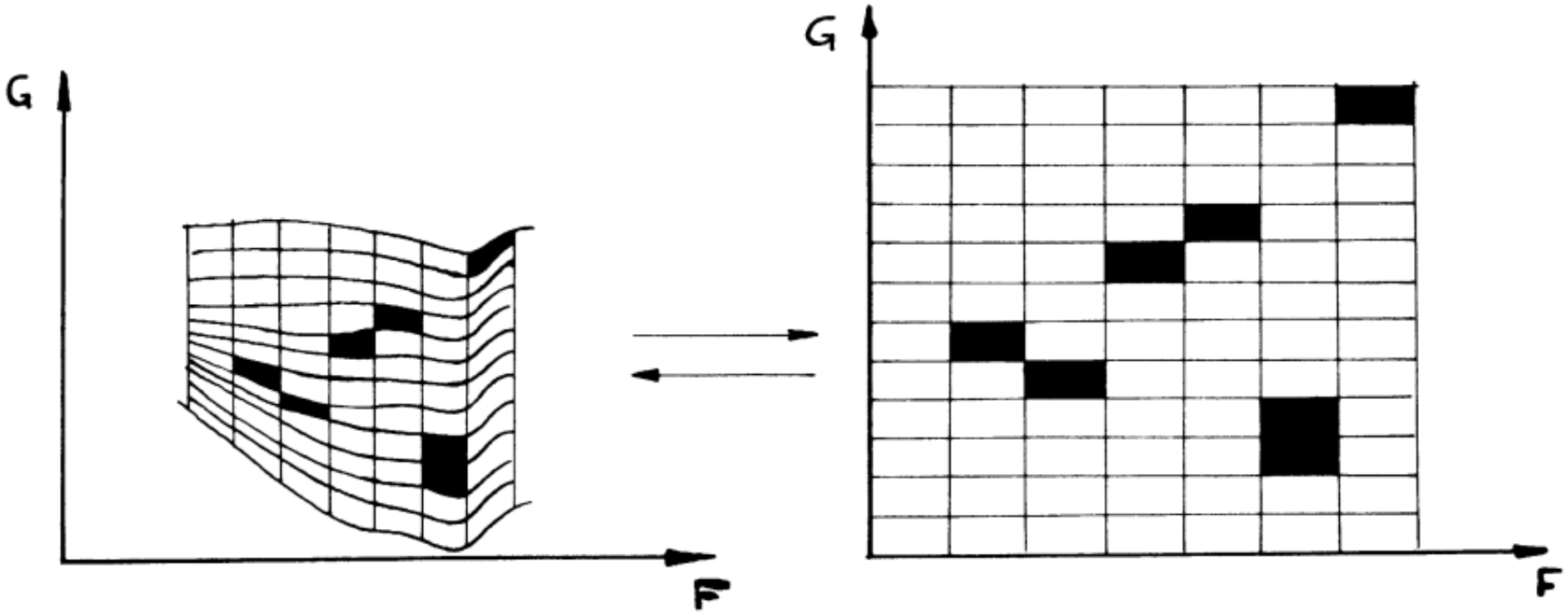


Figure 10.2
Extent of the repertoire of pure elementary sounds of limitless duration. Since the "resolution" of the ear is greater toward the center of the audible area, this repertoire assumes the form of a mountain, the base of which is circumscribed by the audible area. Hence, the vertical axis shows the ear's ability to resolve small differences in frequency and amplitude. After Moles 1968; reproduced with permission of University of Illinois Press.


G
F
G
F

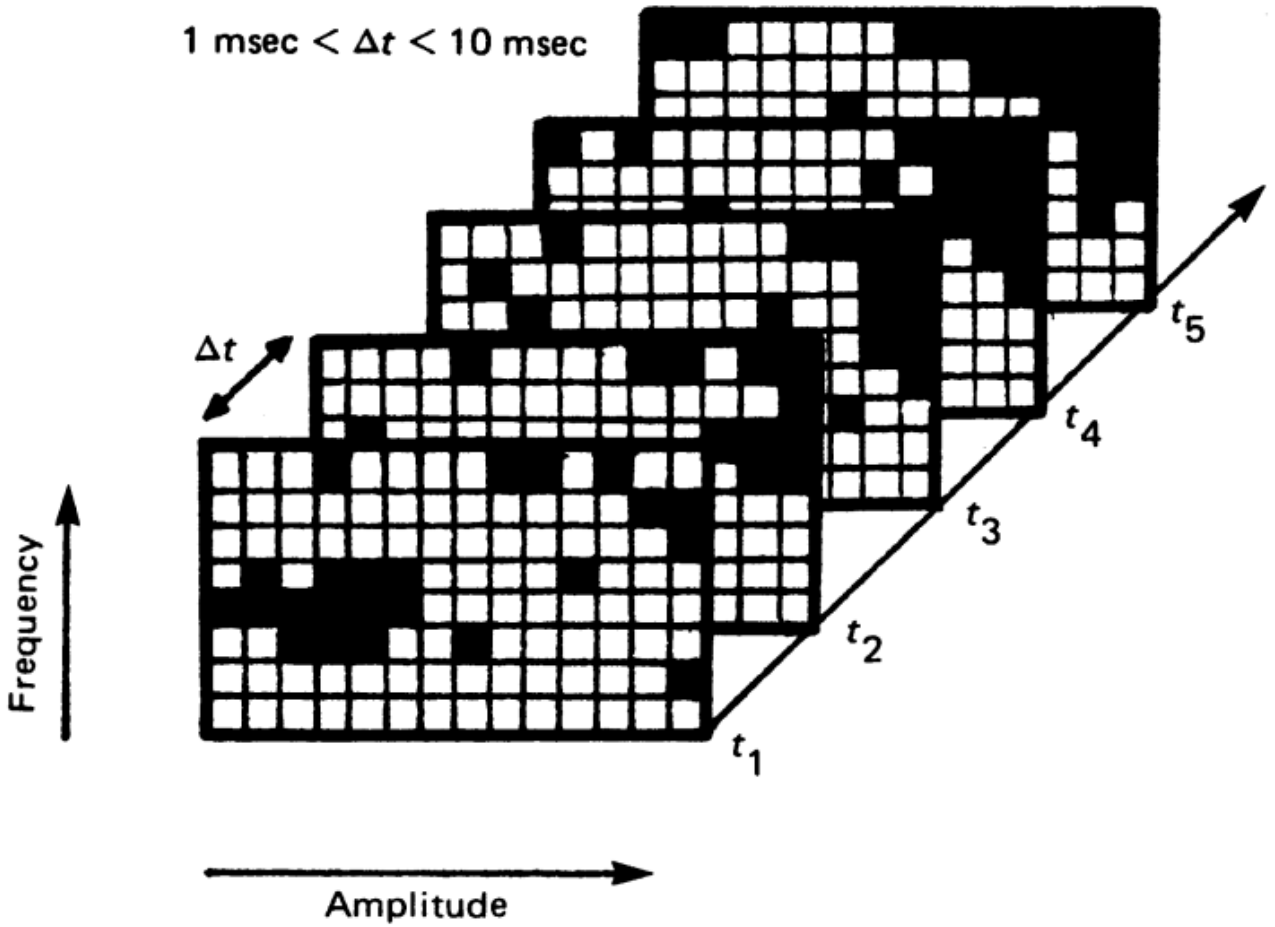
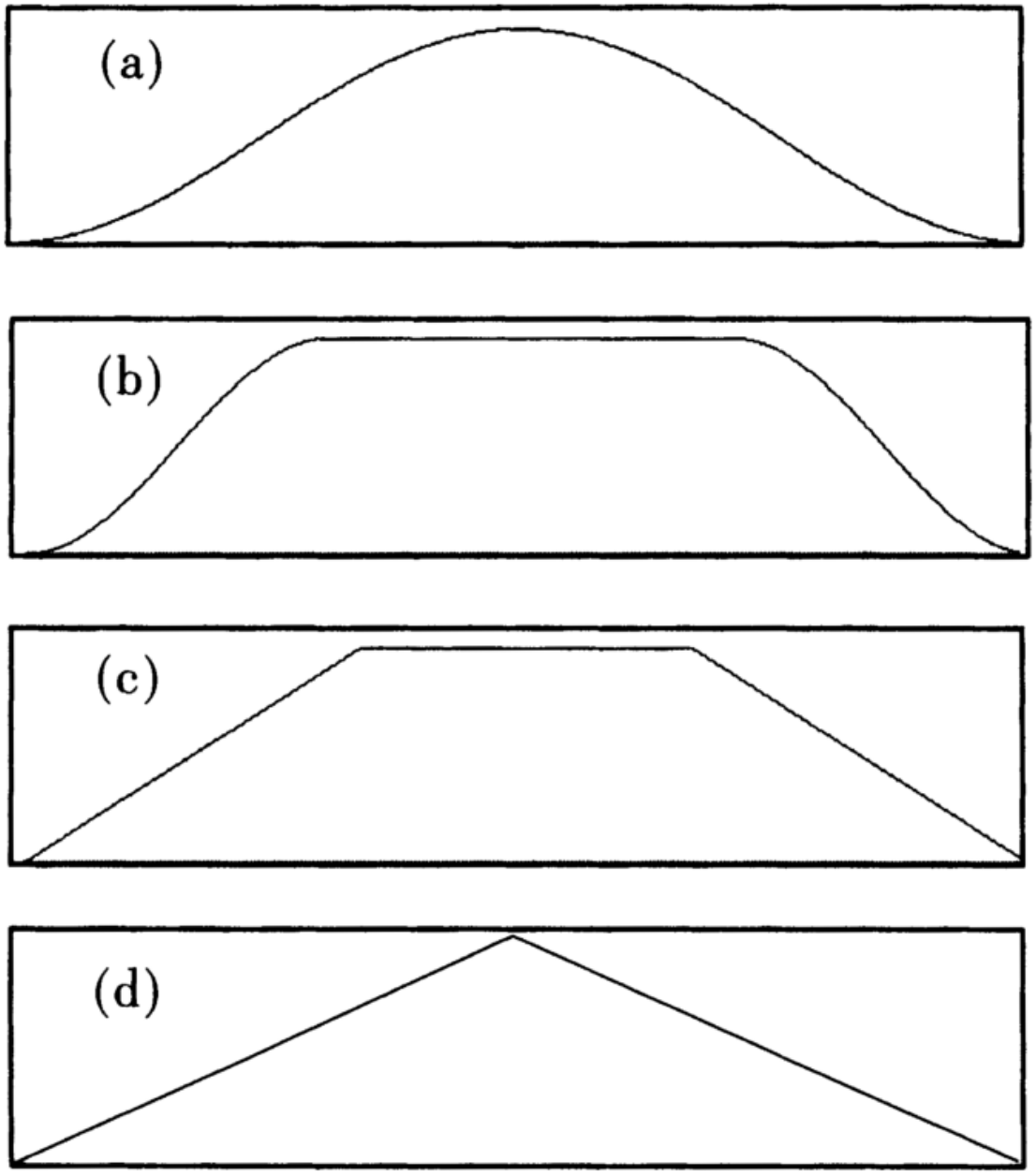
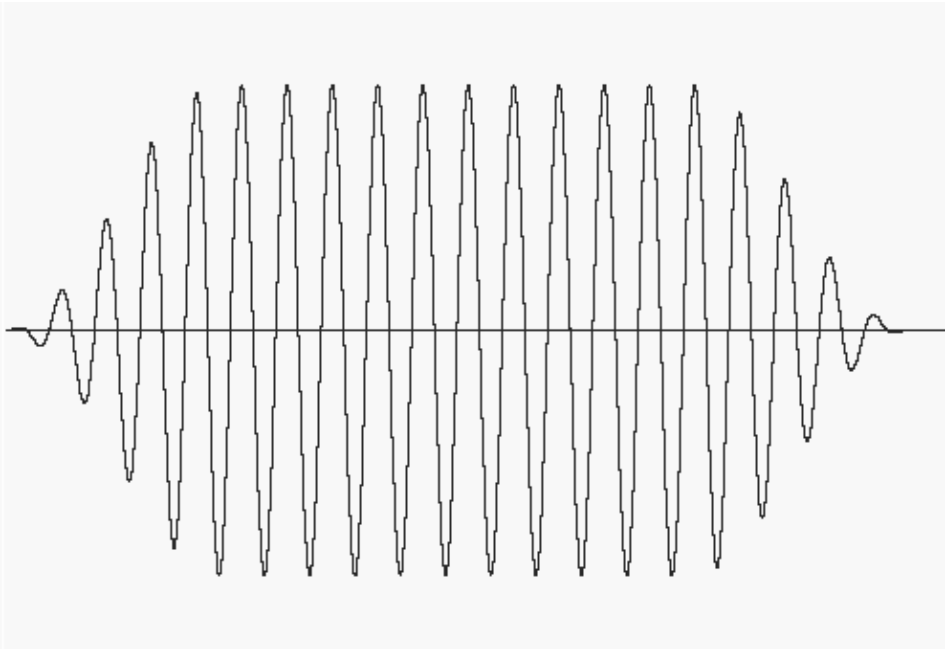
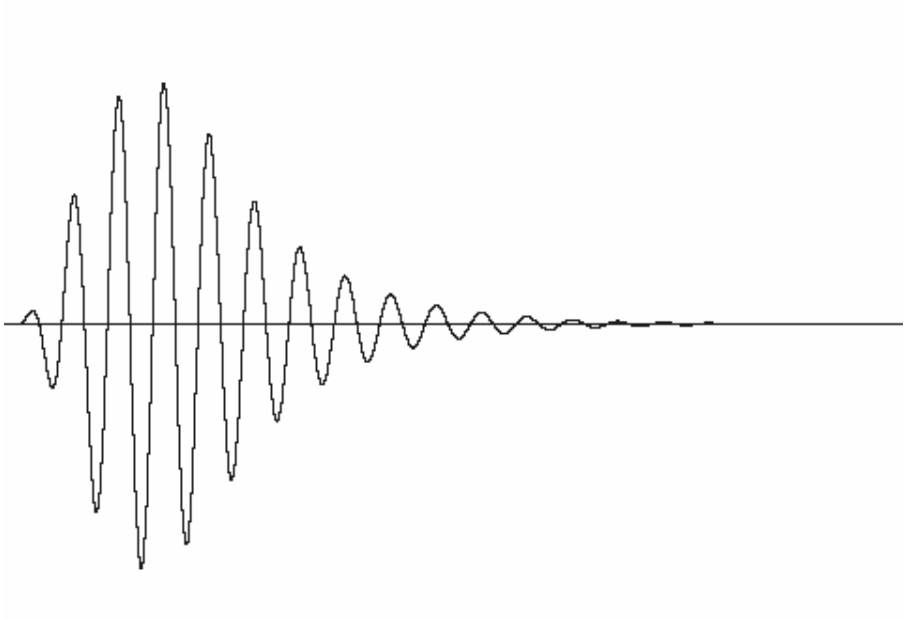
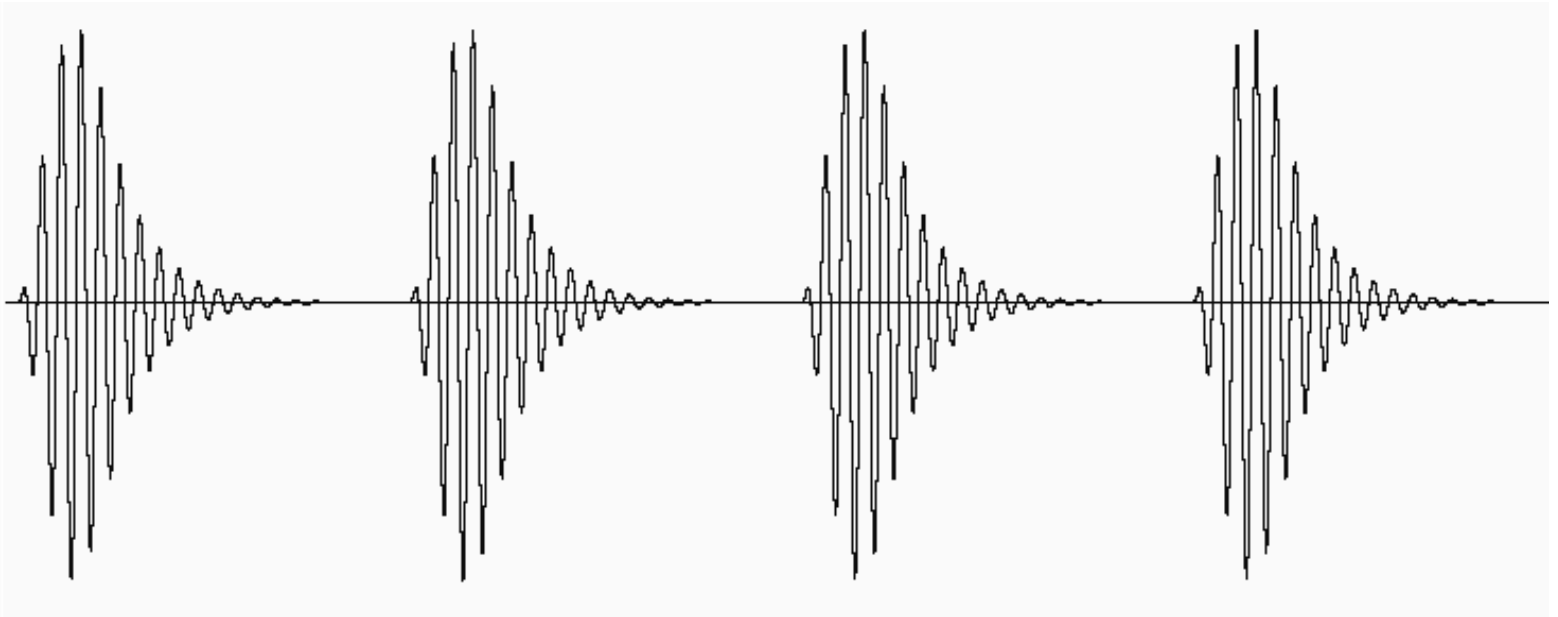


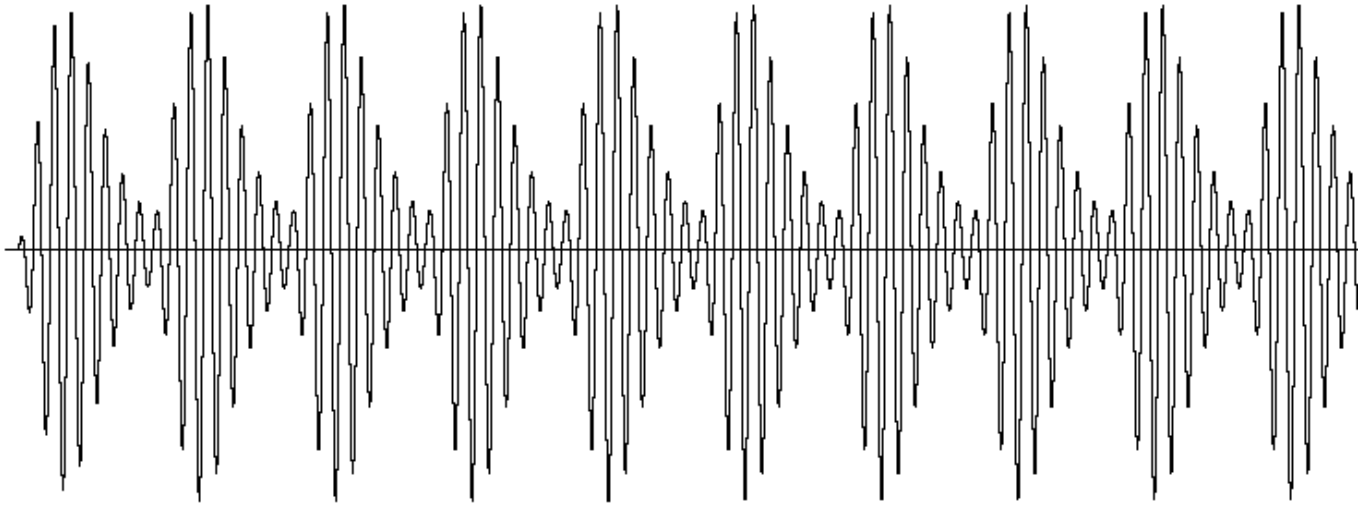
Figure 10.3
A book of screens containing simultaneous grains. Each screen represents a time slice in the evolution of a complex sound. In practice, the mesh on each screen would be much finer.


(a)
(b)
(c)
(d)









Barry Truax [1947]

Riverrun [1986]

Jean-Baptiste Barrière [1958 –]

Chréode [1983]

resíntesis

- Phase Vocoder
- Linear Predictive Coding

Paul Lansky [1944]

Idle Chatter [1985]

Paul Lansky [1944]

Six Fantasies on a Poem by Thomas Campion [1986]

Charles Dodge [1942]

Any Resemblance is Purely Coincidental [1980]

Frances White [1960]

Ogni pensiero vola [1985]

modelos físicos

- Karplus – Strong
- waveguide synthesis

David Jaffe [1955]

Silicon Valley Breakdown [1982]