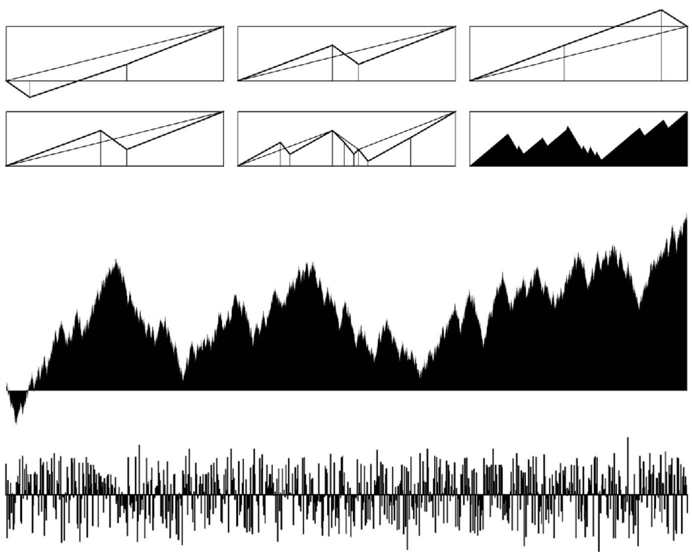

FIGURE C1-1. A recursive cartoon of Brownian motion that allows a limited extent of randomization represented by the term "shuffled." The construction begins with an initiator: a straight trend from $P(0) = 0$ to $P(1) = 1$. Three generators are available, as drawn on the top panel: the only differences between them is that they are distinct permutation of two congruent UP intervals and one DOWN interval. The construction's first stage replaces the initiator with one of the three available generators, selected at random. Further stages start with a broken line and replace each of its intervals by choosing a generator at random among the three available ones, and then squeezing it to fit. The second panel shows the first three stages of construction, the third panel a mature (and more detailed) approximation, and the bottom panel, the increments of that mature approximation. When made into sound, those increments are perceived as a "hum" very much like radio static. They are a cartoon of Gaussian white noise.

began to be widely studied. Most emphatically, I continue to view FBM as the basic illustration of long dependence but only a gross approximation for prices. Therefore, Chapter H30 of M 2002H adds very substantially to M 1997E and is very strongly recommended to this book's readers.

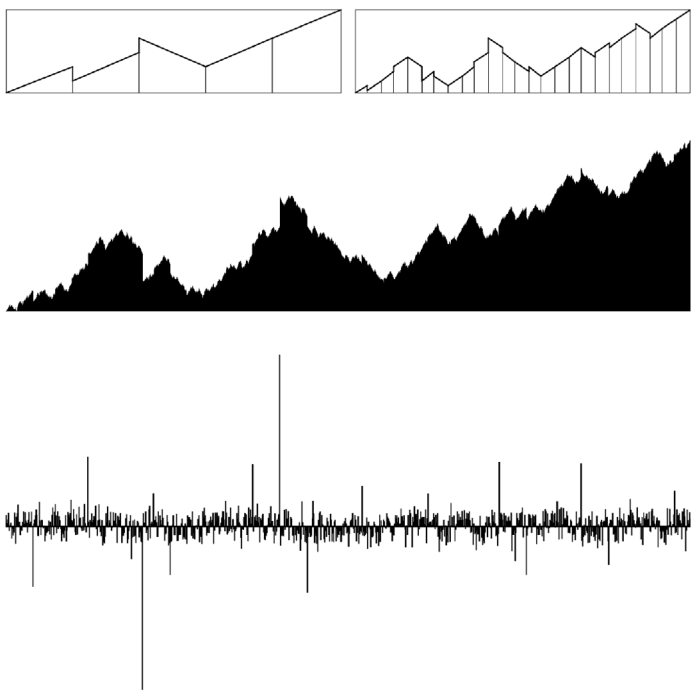

FIGURE C1-2. A shuffled recursive cartoon of a Lévy stable process with $\alpha = \log 5 / \log 3 = 1....$ In order to obtain this α and accommodate up and down discontinuities, the simplest generator combines more than three non-vertical intervals with two discontinuities that illustrate the Noah Effect. The tails and the middle of the distribution were hastily patched up by hand and the match between them leaves room for improvement in the future.

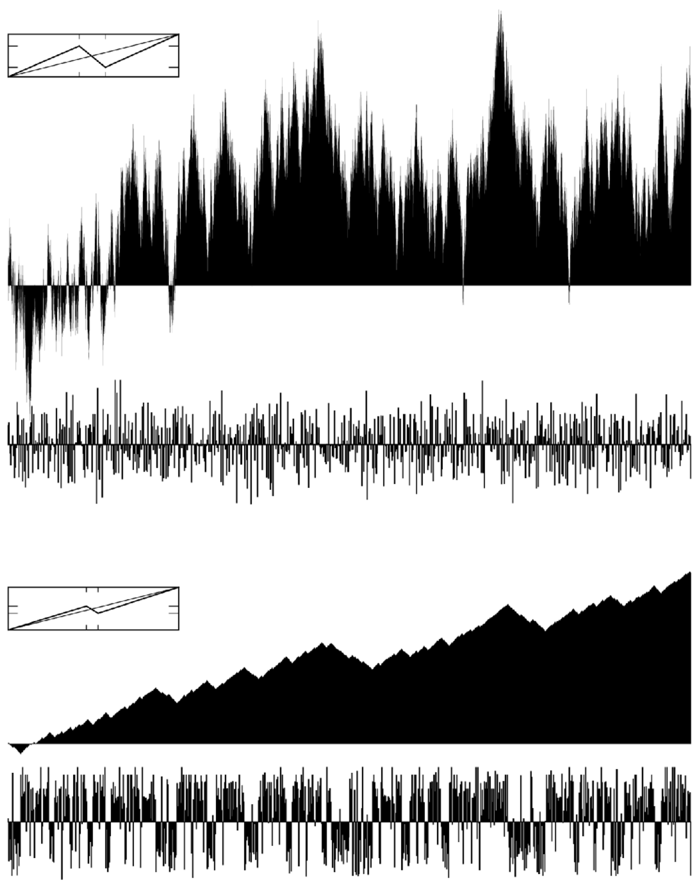

FIGURE C1-3. Shuffled recursive cartoons of fractional Brownian motions. The bottom panel – for $H = 0.75$ – is best appreciated by examining the increments: they exhibit symptoms of the Joseph Effect (seven fat and seven lean cows), long runs of mostly positive or mostly negative values. To the contrary, the upper panel – for $H = 0.3$ – is best appreciated by examining the rapid up and down flipping of the function itself.

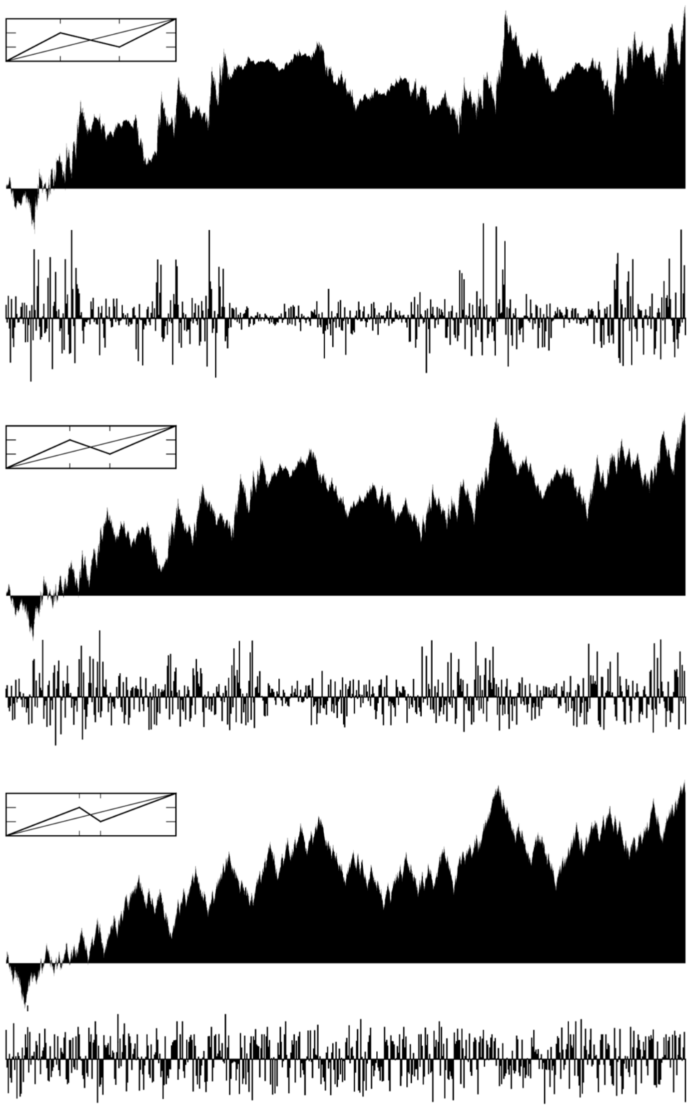

FIGURE C1-4. This figure and the next collect six shuffled recursive cartoons of multifractal functions. Both figures step back to the symmetric three-segment generator that was used in Figure 1 and is repeated here in the bottom panel. But it is subjected to a deformation different from that used in Figure 3. In the top two panels, the junction points between the UP and DOWN and DOWN and UP intervals are positioned farther away than in the bottom panel but on the same horizontal levels. This suffices to create two features that are characteristic of real price data, as will be argued in Section 2.5.

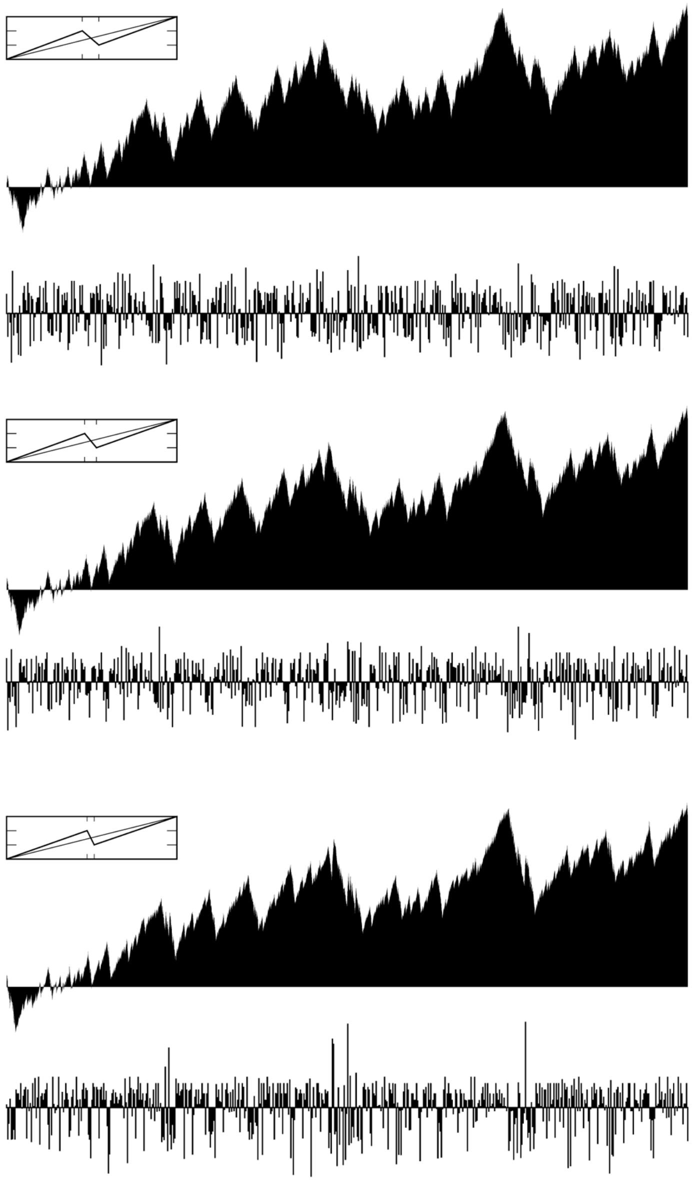

FIGURE C1-5. Compared to Figure 4, the difference is that here the positions of the generator's junction points are *not* positioned *farther* from each other than in the Brownian case but *closer*. Result: a different way of achieving large deviations and clustering, less realistic in the case of prices but bound to be of use elsewhere.

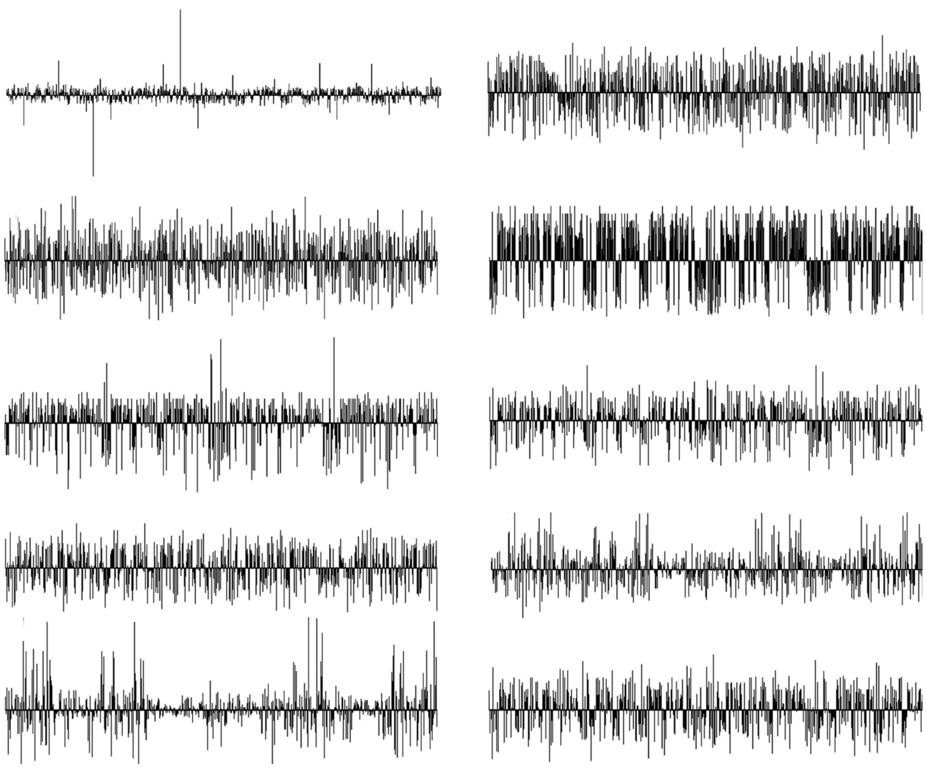

FIGURE C1-6. Side-to-side comparison of several cartoons. The Brownian static "radio hum" stands out as a "fake."