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### **The Evolution of Allocyclic and Autocyclic as Sedimentary Concepts**

Beerbower, 1964, originally defined autocyclic and allocyclic to distinguish cyclic sedimentation resulting from external changes in energy supply and material input to a sedimentary system (allocyclic) from those related to variations within the system (autocyclic). Mechanisms traditionally considered autocyclic are pert and local (e.g., river meandering, delta lobe switching, carbonate accumulation, etc.). Cyclic deposition driven by such regional and long-term external forcing mechanisms as sea level, tectonic, and climatic variation are generally considered allocyclic. Research focused on cyclic sedimentation since these concepts were introduced has caused a gradual paradigm evolution. Autocyclic processes may be expressed at a variety of scales and durations, and thus scale now offers little distinction between intrinsic and external processes. It is now known that typically autocyclic processes tend to be selected, triggered, and/or influenced by coeval variations in external controls (e.g., channel patterns changing locally across active faults, etc). In turn, such mainstay allocyclic manifestations as regional transgressive/regressive cycles can apparently occur even without external change, or autocyclicly. Autocyclic processes tend to do most of the depositional work, even where deposition is strongly allocyclicly controlled. Considering autocyclic and allocyclic controls as unique may be an oversimplification of these concepts today, as processes reasonably ascribed to each rarely appear to happen in mutual exclusion. Perhaps a better approach would be to continue to ascribe those processes that are intrinsic to the system as autocyclic, and refer to the degree to which external mechanisms impact these intrinsic processes as the allocyclic component, regardless of scale.