momentum.js: Integrating Generative Art and Timeline-Based Animation

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Generative art expanded the vocabulary of design, but its main history has centered on interactive, real-time, and web-based output [1]. By contrast, offline rendered motion remains underexamined even though short-form video and motion graphics are central to contemporary visual communication. Creators still rely on indirect workflows between coding environments and animation software, leaving a gap between generative art and motion design.

`momentum.js` is an open-source toolkit for Adobe After Effects that integrates generative art into timeline-based animation [2]. Inspired by Processing and p5.js, it brings drawing-oriented APIs, procedural composition, and animation logic into AE while leveraging the host application's interface, timeline, composition system, and keyframe editing.

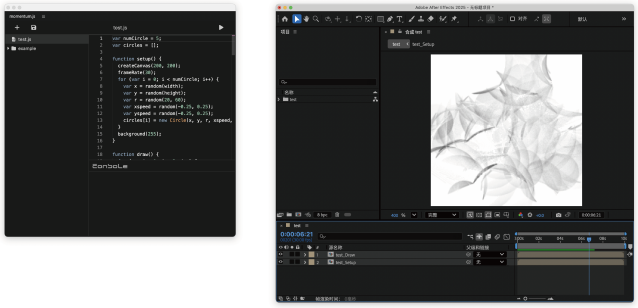

Figure 1: `momentum.js` inside Adobe After Effects.

`momentum.js` also introduces a mechanism that allows variables defined in code to be exposed as editable controls and animated directly with keyframes. This creates a tighter connection between procedural systems and timeline-based authoring: artists can write generative rules while still shaping rhythm, transitions, and emphasis through familiar animation tools. The result is not only a way to generate motion in After Effects, but a workflow in which code and keyframing can operate on the same structure.

This mechanism allows procedural logic and keyframed animation to operate within the same workflow, rather than as separate stages. In this way, `momentum.js` treats the timeline not only as an output structure, but as an active space for generative art-making.

REFERENCES

[1] Casey Reas and Ben Fry. *Processing: A Programming Handbook for Visual Designers and Artists*. MIT Press, 2014.

[2] Hu Chenrui. momentum.js. https://github.com/barium3/momentumjs, 2026. GitHub repository.