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Jemma Lorenat* (jlorenat@pitzer.edu), 1050 North Mills Ave, Claremont, CA 91711. *The inner imagination without sensory media: Jakob Steiner and the figure in geometry.*

The transition away from figure-based reasoning during the long nineteenth century is often framed in terms of intuition and rigor. However, the use of the figure could also be attacked from the perspective of intuition, as shown in the geometer Jakob Steiner's injunction that certain geometric considerations could only be properly understood when viewed purely through the inner imagination without any intermediary sensory medium—such as a drawn representation or figure. Steiner reinforced his commitment to the inner imagination by occasionally teaching geometry with the lights out and the curtain drawn, so students would have to see figures internally. Yet in his publications Steiner often used illustrated figures to introduce new definitions, describe constructive procedures, or simplify statements of theorems. This talk will consider Steiner's evolving approach to figures in three comparative contexts: his early articles in the *Journal für die reine und angewandte Mathematik* and the *Annales de mathématiques pures et appliquées* (1826-1832), his famous monograph *Systematische-Entwicklung der Abhängigkeit geometrischer Gestalten von Einander* (1832), and his posthumously published *Vorlesungen über synthetische Geometrie* (1867). (Received August 26, 2015)