I’m not sure I get the pebble algorithm. I think an example in class would clear it up.

MOUNT HOLYOKE

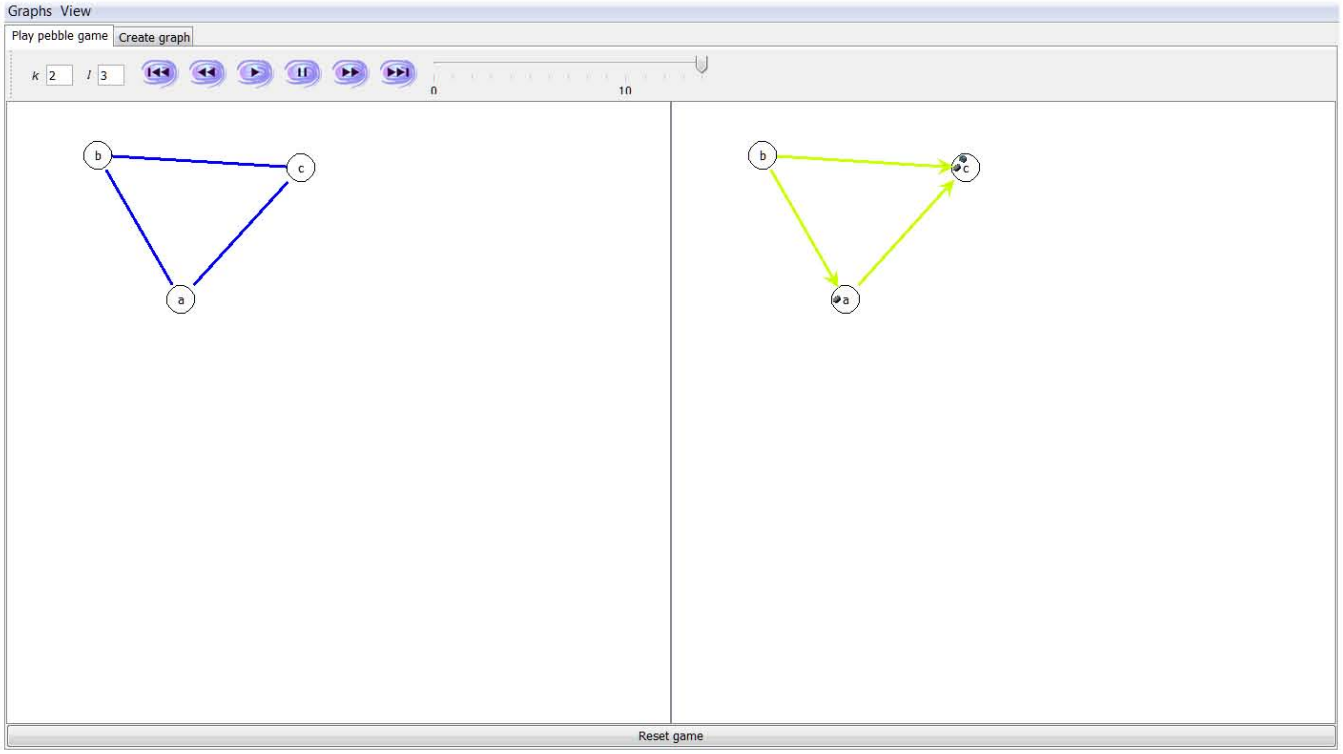
Audrey Lee-St. John

CV
Java Demos
Pebble Games
2D bar-and-joint
3D body-and-bar/hinge
2D Motion Simulation
Research
Teaching

2D Pebble Game Demo

This applet demonstrates the *(2,3)*-pebble game introduced by Jacobs and Hendrickson in 1997 and used to solve the **decision, spanning, extraction, optimization, components, redundancy,** and **Henneberg** problems for 2D bar-and-joint rigidity.

You may also be interested in the pebble game for 3D body-and-bar/hinge rigidity.



Courtesy of Audrey Lee-St. John. Used with permission.

http://minerva.cs.mtholyoke.edu/demos/pebbleGames/2dbarjoint.php

MOUNT HOLYOKE

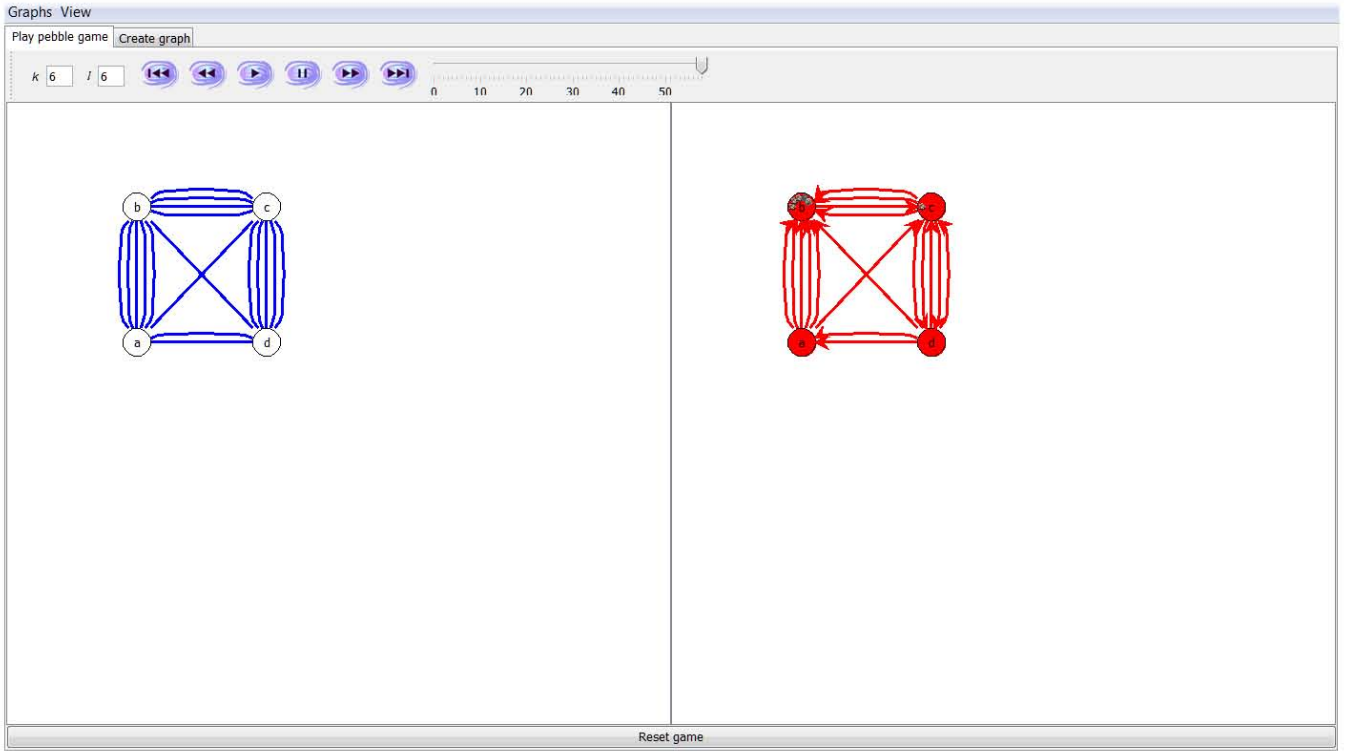
Audrey Lee-St. John

CV
Java Demos
Pebble Games
2D bar-and-joint
3D body-and-bar/hinge
2D Motion Simulation
Research
Teaching

3D Body-and-Bar/Hinge Pebble Game Demo

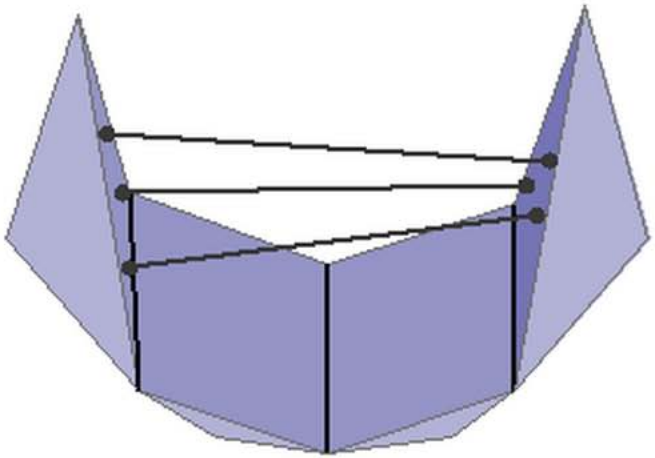
This applet demonstrates the *(6,6)*-pebble game used to solve the **decision, spanning, extraction, optimization, components, redundancy,** and **Henneberg** problems for 3D body-and-bar rigidity.

You may also be interested in the pebble game for 2D bar-and-joint rigidity.

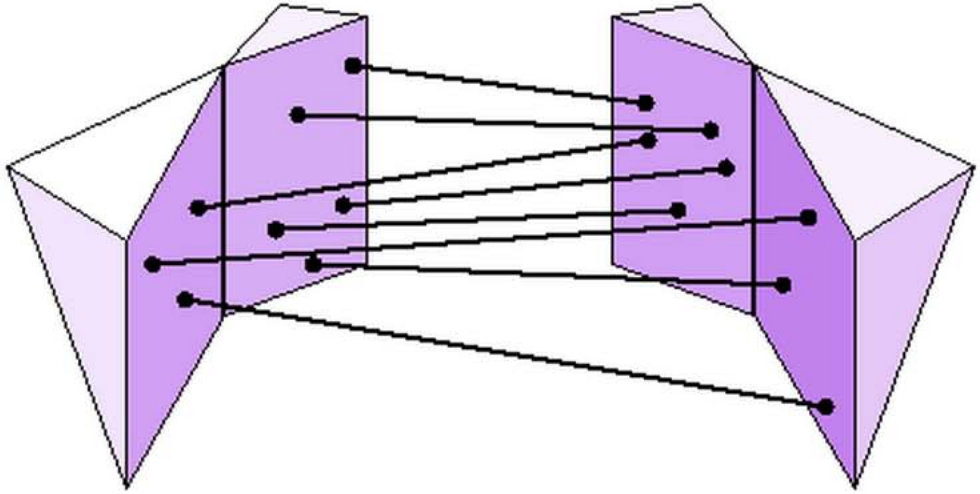


Courtesy of Audrey Lee-St. John. Used with permission.

http://minerva.cs.mtholyoke.edu/demos/pebbleGames/3dbodybarhinge.php



Example 1 of a body-and-bar/hinge structure



Example 2 of a body-and-bar/hinge structure

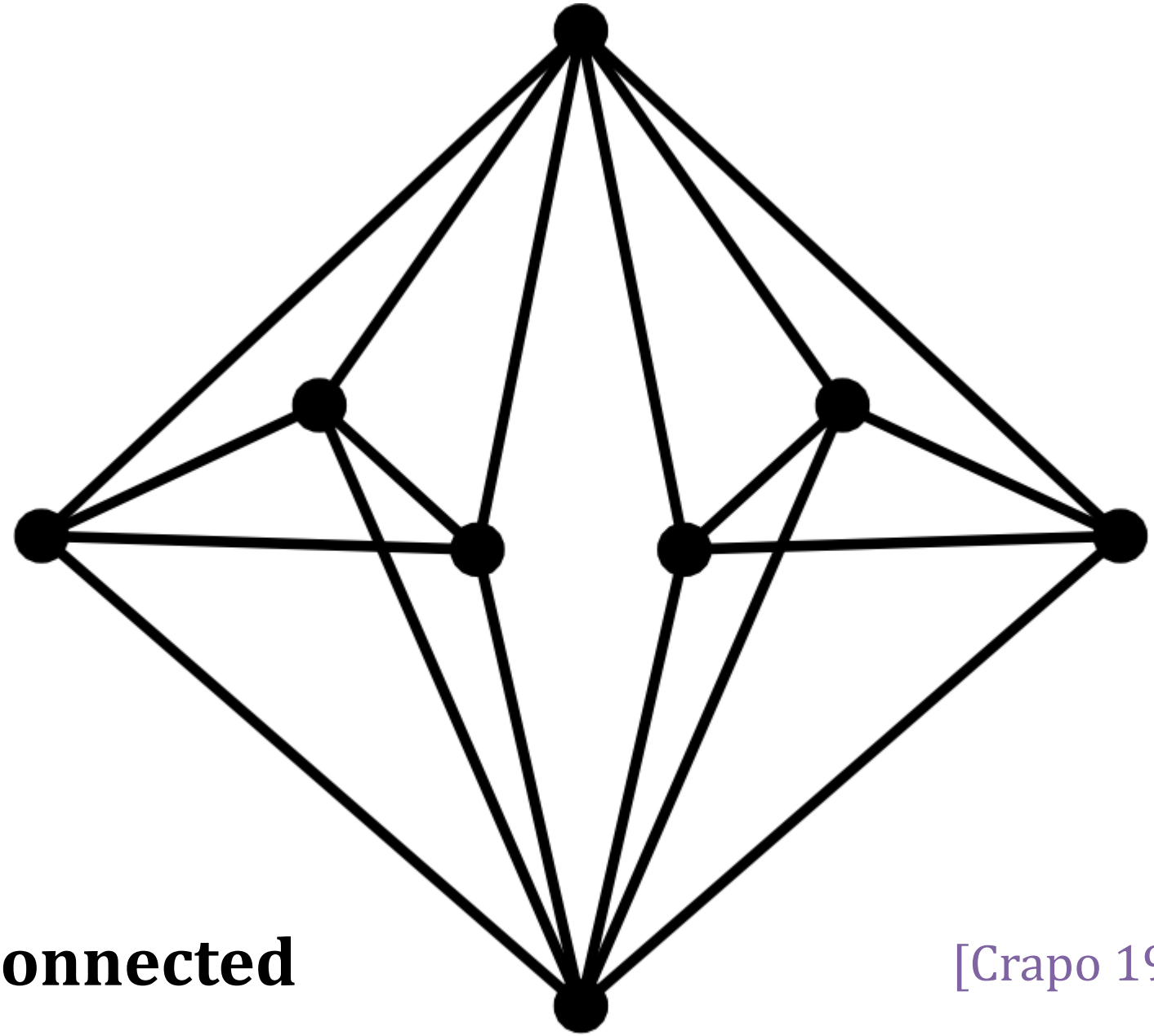
Courtesy of Audrey Lee-St. John. Used with permission.

[Audrey Lee-St. John]

Fig. 1 and 2 removed due to copyright restrictions.
Refer to: Lee-St.John, A., and I. Streinu. "Angular Rigidity in 3D: Combinatorial Characterizations and Algorithms." *Proceedings of the 21st Canadian Conference on Computational Geometry* (2009): 67–70.

[Lee-St. John & Streinu 2009]

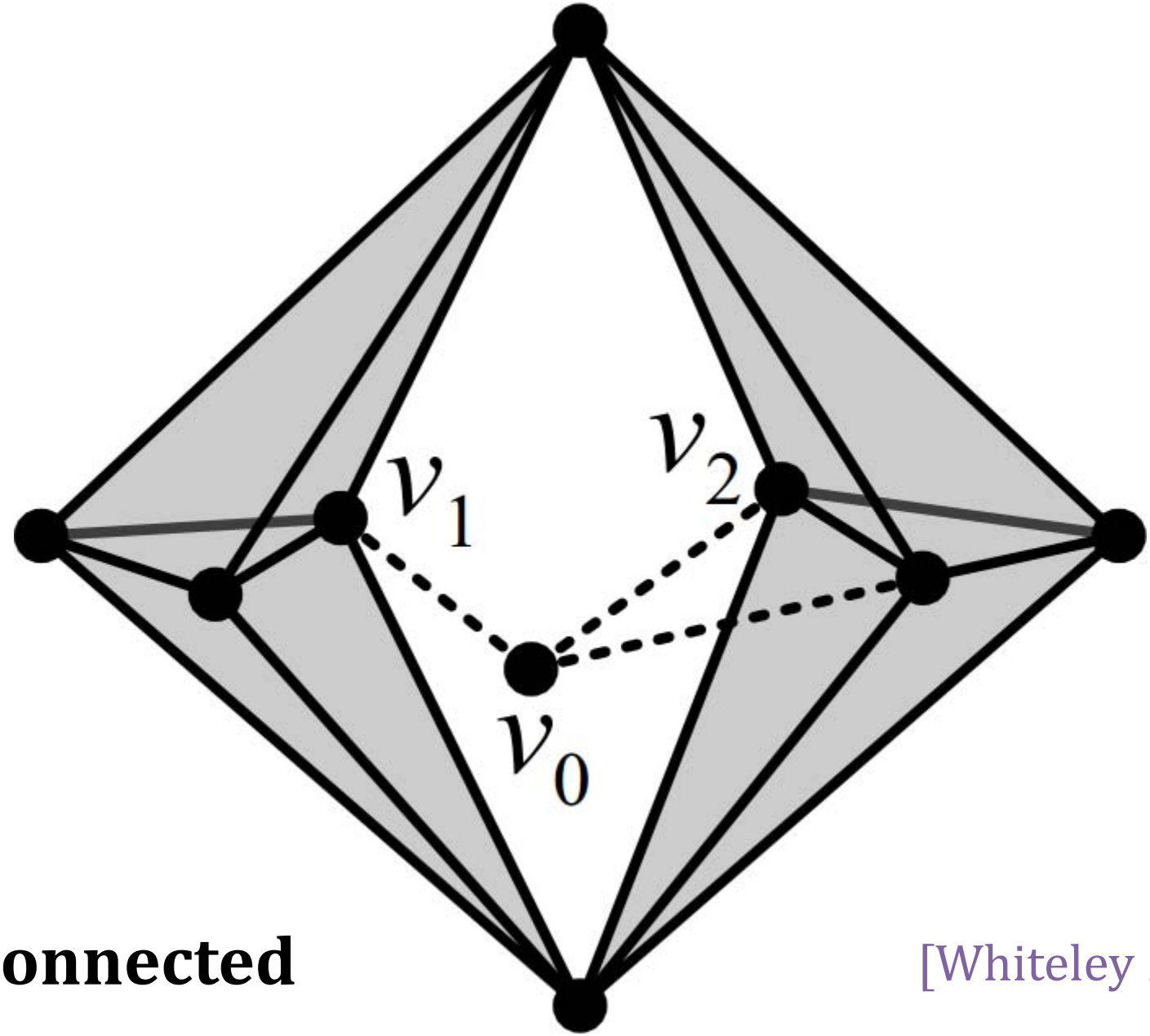
Topic of interest: the connected bananas. Are there any 3-connected examples?



2-connected

[Crapo 1979]

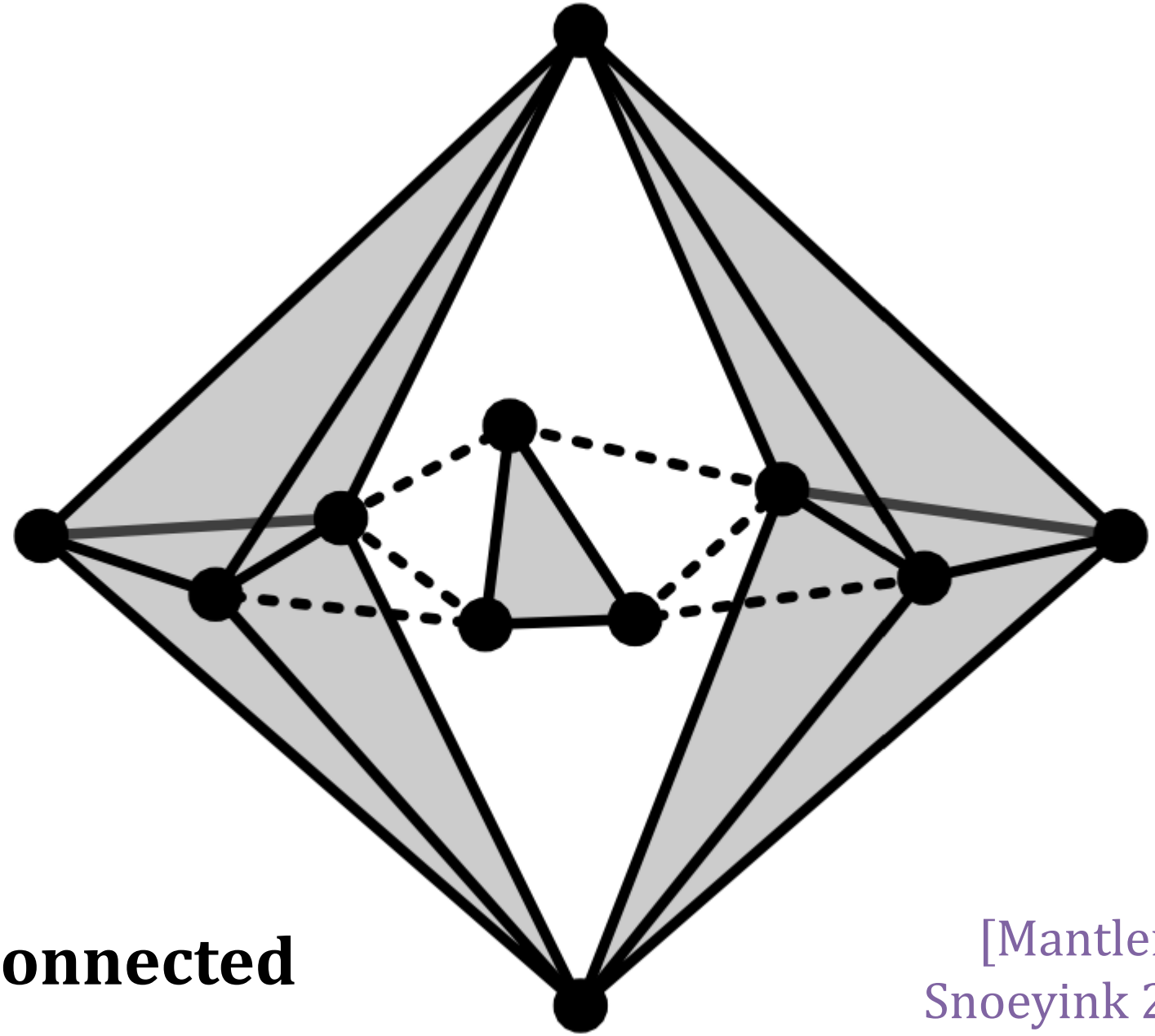
Courtesy of Andrea Mantler and Jack Snoeyink. Used with permission.



3-connected

[Whiteley 2004]

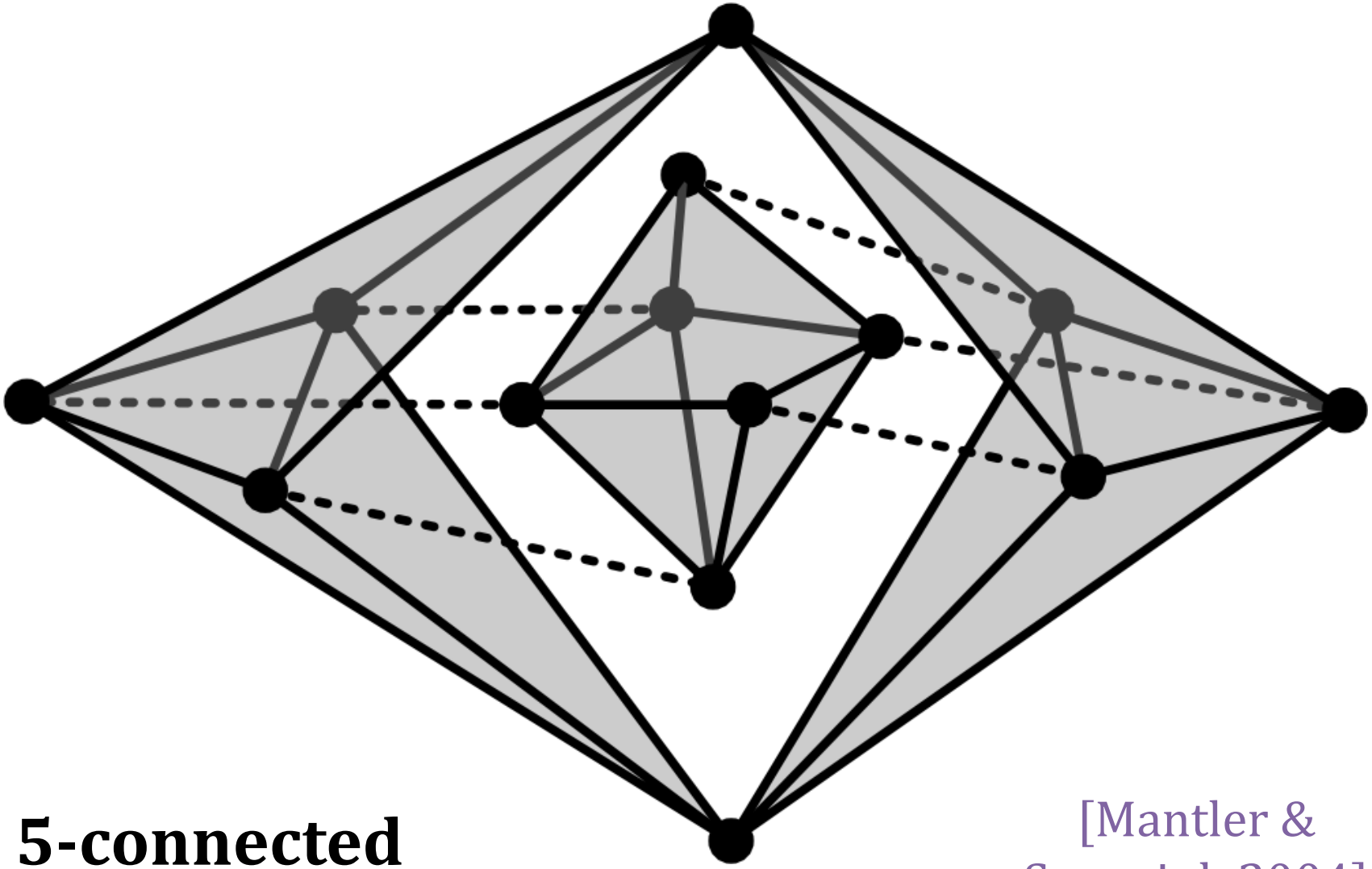
Courtesy of Andrea Mantler and Jack Snoeyink. Used with permission.



4-connected

[Mantler & Snoeyink 2004]

Courtesy of Andrea Mantler and Jack Snoeyink. Used with permission.



5-connected

[Mantler & Snoeyink 2004]

Courtesy of Andrea Mantler and Jack Snoeyink. Used with permission.

MIT OpenCourseWare
http://ocw.mit.edu

6.849 Geometric Folding Algorithms: Linkages, Origami, Polyhedra
Fall 2012

For information about citing these materials or our Terms of Use, visit: http://ocw.mit.edu/terms.