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Noah Snyder* (nsnyder@math.indiana.edu). *Trivalent categories.*

If $N \subset M$ is a 2-supertransitive subfactor, then the bimodule ${}_N M_N$ splits up as ${}_N N_N \oplus {}_N X_N$ for some simple bimodule X . This bimodule X has some nice properties, for example the multiplication map on M restricts to a map $X \otimes X \rightarrow X$. I'll discuss work with Scott Morrison and Emily Peters where we classify what other ways you can have a bimodule with such a multiplication map which don't come from a subfactor. The techniques are planar algebraic and involve the discharging argument used in the proof of the 4-color theorem. (Received August 29, 2016)