Analyzing networks involves understanding the complex relationships between entities, as well as any attributes they may have. The widely used node-link visualizations excel at this task, but many are difficult to extract meaning from because of the inherent complexity of the relationships and limited screen space. To help address this problem we introduce a technique called **motif simplification** [1,2], in which common patterns of nodes and links (or *motifs*) are replaced with compact and meaningful *glyphs*. Last symposium we presented two frequently occurring and high-payoff motifs: fans of nodes with a single neighbor and *connectors* that link a set of anchor nodes. In this talk we discuss visual refinements of the connector motif glyph, a new glyph for clique motifs that replaces completely connected nodes (shown in Fig. 1), and results from a task-based controlled study with 36 participants.

All told it appears that motif simplification is beneficial for many analysis tasks. Identifying maximal motifs is faster, more accurate, and we can estimate their sizes more accurately when we have glyphs and interaction. Counting nodes in the network turned out to be slower, but more accurate when using the glyphs. Finding unsimplified labels became quicker and more accurate, while simplified labels were only slower in one case and no less accurate. Finally, it seems like topology-based tasks are a mixed bag. Finding cut nodes is more accurate, but path length task results widely varied. Comparing the number of neighbors and shared neighbors turned out slower and less accurate in a few cases, while counting them was more error-prone. We believe that as users become accustomed to using the motif glyphs their performance on these tasks will improve substantially.

**DOWNLOADS**
M motif simplification is available free and open source in NodeXL [3], downloadable from [nodexl.codeplex.com](http://nodexl.codeplex.com).

**ACCOMPANYING VIDEO**
youtu.be/mlxbW1HzQg

**PAPERS**