The structure and value of modularity in software design

by Kevin Sullivan, William Griswold, Yuanfang Cai, Ben Hallen

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This paper describes a study to find some quantitative means of measuring the value of a module in a software design. To do this, the authors make use of design structure matrices (DSM), one of the components of Baldwin and Clark's options model. The other component is the Net Option Value formula. The authors adapt both parts of this model to the subject of software modularity and show how they applied it to Parnas's famous KWIC example. Their results did yield the same conclusions that Parnas came to, predicting that the modularized design of KWIC was better than the strawman.

The authors claim that their results serve as evidence for the potential to quantify the value of a design and thus support a discipline of "design for added value." This was written eight years ago so I am curious to find out if time has lead to more concrete results in this matter since it would have very practical effects to my daily work as a developer. As it relates to ISVis, It would certainly be beneficial to be able to measure the potential benefits of different modularization options before deciding on one.

Questions from the reading:
-Is science of design possible?
-Did XP refactoring design principle come from work like this?

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