The Ethical Implications of the 4-R-U.S algorithm used in Redistricting Reform software.

This software, the Redistricting Reform program, is meant to be used as a tool for the redistricting process that occurs every ten years. Because its purpose is so specific, the structure of the code is such that it cannot be fitted to serve any other type of application without altering the code. Hard-coded into the software are several “redistricting specific” or “Census Bureau specific” lines of code. The program can only function if you have a specific Census Bureau population density map which uses a specific key. That key is central to the algorithm. In this sense, the software is very limited. The algorithm puts limits on the drawer by literally “blocking” an errant district line that was intended to gerrymander. Again, the Constitution remains the final arbiter of the law when it comes to the redistricting process. The program cannot approve a map. It can merely aid the map-makers in a map’s construction, a map that still must pass approval. So in its current form, the software cannot do anything that a person could not do without the software’s help. It does, however, make the process faster by creating a starting point for forming districts.

If you wanted to corrupt the program, there would have to be a corrupted population density map from the Census Bureau. Perhaps, if the map-makers enlisted this software’s help, this program would motivate a change in how density maps are constructed, even falsification of density maps.

We realize that ethical considerations in software design extend even to small scale programs. In response, we consider four categories (supplied by professor Chuck Huff, St. Olaf College).

I. Quality of Life

Our software deals with drawing district lines for the purpose of fair representation in government. It is important to realize that though we take great pride in the functionality and performance of our program and our algorithm, the estimates that it produces require human review. Our program should not be used to draw final political districts. As a disclaimer, the algorithm is designed to block a state into rectangles of equal population. Much like estimation of functions, extreme gradients in population density will distort the estimate and make a solution more difficult. We offer transparency in the statement that our program will not divide a population density map into exactly equal blocks.

II. Use of Power

The abuse inherent in the current redistricting process was the primary motivation for creating this software. Of course, the program could still be used to make poorly drawn districts, but the final map is approved by people, not the software. This check alone should insulate this software from serious ethical charges or scrutiny. The injustices that result from the current process have only the potential to be reversed with this algorithm. At worst, the process remains unchanged.

III. Property Rights

This program is intended to be public tool, employed by elected officials. As such, there should be no compensation involved with the distribution of this software. However, it is our hope that others (including us) will make many iterations of this program, refining and improving upon the existing algorithm.

IV. Privacy

The output of the program will be public domain, holding the map-makers accountable.