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Your paper is difficult to evaluate because you seem to have misinterpreted arbitrary scaling.

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## Ethical Dilemma: Arbitrarily Scaling Graduated Circles

The use of arbitrary scaling of graduated circles in cartographic <sup>?</sup> models stems from human perceptual tendencies for underestimating values of larger circles; as a result, cartographers enhance the size of the <sup>larger</sup> circles to compensate for these misperceptions. The problem is that <sup>the</sup> map user often is not aware of these adjustments, and may misperceive the map. This brings in an issue of ethics for the cartographer as to whether to scale the data arbitrarily or proportionately (mathematically) as both methods have arguments as to which is more suitable ethically.

The ethical dilemma regarding the arbitrary scaling of graduated circles in cartographic models is based on the consequences it may have. For the given example, the percentage of out of wedlock births by teenagers in various metropolitan areas in the U.S., the parties that could potentially be <sup>a</sup>ffected in some way by this include: the inhabitants of those cities, potential migrants to or from the cities, the parents of the <sup>out-of?</sup> wedlock child and the child itself, among others. Consequentially, the act of unproportionately representing one city in comparison to other cities with data that holds a negative social stigma will have equally adverse effects on people viewing that map.

This is a difficult question ethically because the common map user is not aware of any misperceptions they may have. In one sense it seems the responsibility of the cartographer to be aware of these misperceptions and adjust the map accordingly so that it may best suit the user. <sup>?</sup> Adversely, all users may not have such misperceptions and it would not be fair to these users to scale the data incorrectly. This puts the cartographer in a difficult situation. If arbitrary scaling is ethical for some users, its practice still would not be ethical for all users. Which brings the question, is it ethically suitable to cater to the majority of users?

One way in which harm may come as a result of the skewed map could come in the form of economic growth for the given city. If a family looking to relocate were to <sup>use?</sup> this map they

you seem to mix up perceptual work arbitrary scaling

could develop inappropriate ideals as to the number of wed-lock births by teenagers and tend to develop a false negative image of the city. Parents with children looking to migrate may be led to assume that education, particularly sex education is not as strong in that city and that the city does not induce an environment that fosters parental control and consent. The same would be true for parents with young children currently living in that city that may look to move to a city that seems more fitting for raising teenage children. Additionally, the city may see less tourism as a similar result. All of these factors would contribute in a way that would not benefit the local economy for the given city. With less citizens and tourism the city's economy see the same amount of growth as it would if the data had been represented mathematically.

would  
this  
apply to  
all  
circles??

Another group affected by this would be the authoritative figures of the cities. The politicians, those involved in education, law enforcement, etc. All of these groups may be seen in a negative light, <sup>in what sense?</sup> as they may be held or hold themselves responsible to keep teen pregnancy rates low. The last major group affected would be religious clergy. Considering Christianity is the religion of the majority of Americans, and that Christianity (although it may not be biblical) is against pre-marital sex, this could lead the user to believe that the religious leaders of the city are not doing their part in reaching out to the area youth. Also, high teen pregnancy rates may reflect on a city being more secular than others, discouraging people from living there. To be ethical, it should be noted that a secular society may also attract certain people. <sup>lost me</sup>

It is my personal opinion that arbitrary scaling when the user is unaware is an unethical practice when being used for any data. Initially, I felt it was only unethical to arbitrarily scale data with a negative connotation. After consideration, I can conclude that it is unethical for all data as there is always the opposite effect. For example, if the given example, teenage pregnancy, was mapped so that the largest circles represented the cities with the lowest percentages, the cities with the larger circles wouldn't be viewed as better than the other cities; the other cities would be viewed as worse than their compliment of cities. <sup>lost me</sup>

Here you seem to assume that the scaling can be completely arbitrary - this is not the case