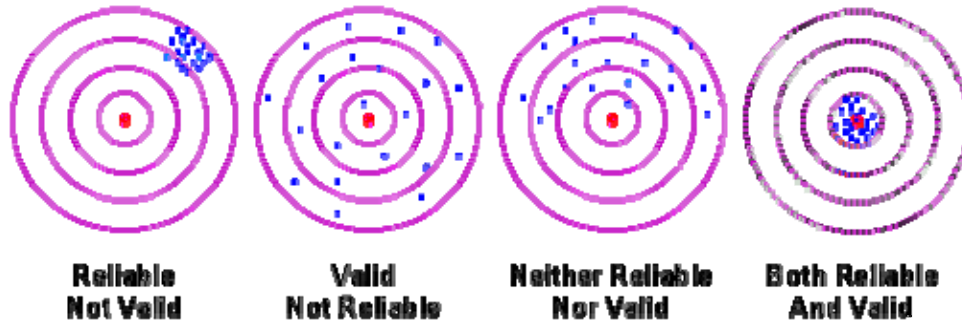


One of the favorite metaphors for the relationship between reliability is that of the target. Think of the center of the target as the concept that we are trying to measure. Imagine that for each person we are measuring, we are taking a shot at the target. If we measure the concept perfectly for a person, we are hitting the center of the target. If we don't, we are missing the center. The more we are off for that person, the further we are from the center.



The figure above shows four possible situations.

1. In the first one, we are hitting the target consistently, but we are missing the center of the target. That is, we are consistently and systematically measuring the wrong value for all respondents. This measure is reliable, but no valid (that is, it's consistent but wrong).
2. The second shows hits that are randomly spread across the target. We seldom hit the center of the target but, on average, we are getting the right answer for the group but not very well for individuals. In this case, we get a valid group estimate, but we are inconsistent. Here, we can clearly see that reliability is directly related to the variability of your measure.
3. The third scenario shows a case where our hits are spread across the target and we are consistently missing the center. Our measure in this case is neither reliable nor valid.
4. Finally, we see the "Robin Hood" scenario -- we consistently hit the center of the target. Our measure is both reliable and valid.