Below we reproduce Figure 13 from Bright et al. Internal validation of STRmix™ – A multi laboratory response to PCAST, Forensic Science International: Genetics, Volume 34, 2018, Pages 11-24. In the paper text we described Fig.13 as "a plot showing the level of over and under-estimation of the apparent N compared to the known N (number of contributors) in the 31 laboratory study". This plot has been perhaps misunderstood and we acknowledge our contribution to this misunderstanding. We take the opportunity in this note to explain the meaning behind the data. We make the distinction between known, experimental, and apparent N. Experimental N is the number of different donors that were added to the PCR. This is sometimes referred to as known N but it will only be known by the analyst who prepared the mixture and is never known in casework. Apparent N is the number of distinguishable contributors to a profile from reviewing the profile directly. If in the experimental design only 1pg of DNA is added to the PCR for one contributor their alleles are not likely to appear above analytical threshold and therefore apparent N will be less than experimental N. Another example that would lead to a smaller apparent N compared with experimental N would be if all of a minor contributor's alleles were shared by a major contributor. Apparent N could be assigned as being greater than experimental N in the presence of larger than expected stutter peaks and/or pull-up and/or large heterozygote imbalance.

As part of the 31 lab compilation, we requested DNA profiles from apparent three, four, and five person mixtures. These are plotted against known N in Fig 13. This plot can be read as 3% of known 6 person mixtures appearing as 3 person mixtures (i.e. three of the six known contributors had dropped out or were sufficiently masked that they were not represented in the profile). Consider the known 6 person mixtures. Since only apparent 3,4, and 5 person mixtures were submitted whether any of the known 6 person mixtures were also apparent 6 or even 7 person mixtures is unknown to us and not shown in the figure. Equally if any of the 3 person mixtures appeared as a 2 person mixture they would not have been reported to us.

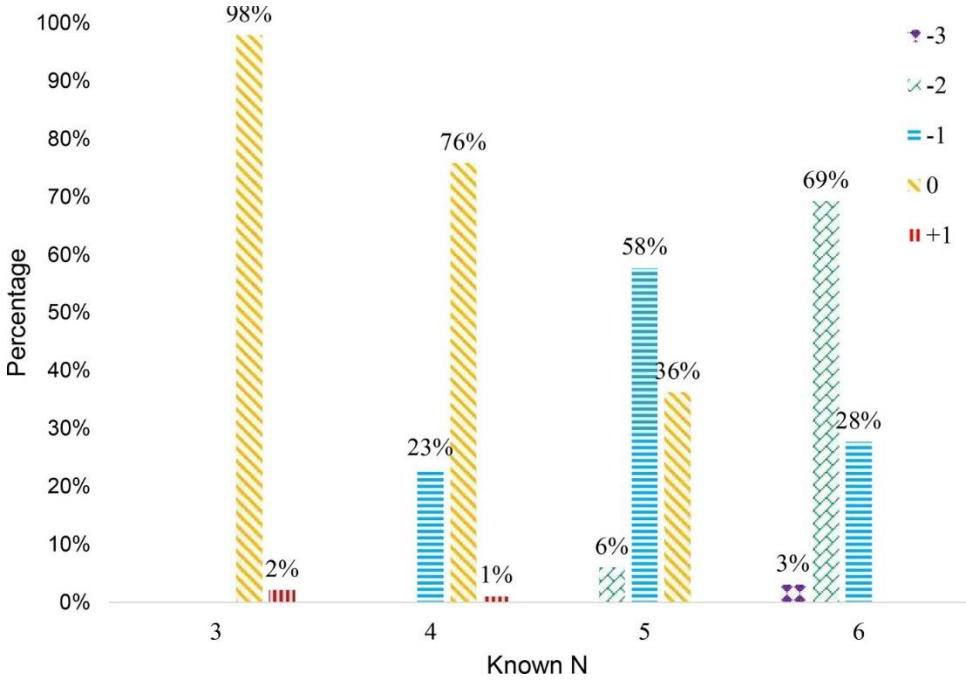

Fig. 13. Plot of percentage of mixtures showing various differences between apparent N and known N against known N. As an example, −1 indicates apparent N was one fewer than known N.