# Response to the Editor

We thank you for your pointing out how to improve our manuscript. Accordingly, we have further revised it. Our point-by-point responses are listed below in blue font.

## Editor decision: Publish subject to technical corrections

You have responded to the latest set of comments from reviewers, and I am pleased at this stage to accept your paper for publication in ACP.

I have noted below a small number of technical points that you may wish to address before publication in the interests of clarity -- whether you do this is really up to you. (If you prefer to make no changes then simply resubmit the unchanged manuscript.)

319: 'sample spaces' -- 'sample space' is a technical term in mathematical probability which means the set of all possible outcomes of a random experiment. I think more standard terminology would be to say that you have two 'populations', not two 'sample spaces'.

Following is the first paragraph in chapter 5 from Spiegel et al. (2013):

> "Often in practice we are interested in drawing valid conclusions about a large group of individuals or objects. Instead of examining the entire group, called the population, which may be difficult or impossible to do, we may examine only a small part of this population, which is called a sample. We do this with the aim of inferring certain facts about the population from results found in the sample, a process known as statistical inference. The process of obtaining samples is called sampling."

After consulting the excerpt, we have changed "sample space(s)" into "sample(s)" in our paper.

322: Correspondingly these are not really 'random variables', they are sampled characteristics (of the two populations).

Following are two more paragraphs in chapter 5 from Spiegel et al. (2013):

> "In the general case a sample of size n would be described by the values $x_1, x_2, \ldots, x_n$ of the random variables $X_1, X_2, \ldots, X_n$. In the case of sampling with replacement, $X_1, X_2, \ldots, X_n$ would be independent, identically distributed random variables having probability distribution $f(x)$. Their joint distribution would then be
>
> $$P(X_1 = x_1, X_2 = x_2, \ldots, X_n = x_n) = f(x_1)f(x_2)\cdots f(x_n) \quad (1)$$
>
> Any quantity obtained from a sample for the purpose of estimating a population parameter is called a sample statistic, or briefly statistic. Mathematically, a sample statistic for a sample of size n can be defined as a function of the random variables $X_1, X_2, \ldots, X_n$, i.e., $g(X_1, X_2, \ldots, X_n)$. The function $g(X_1, X_2, \ldots, X_n)$ is another random variable, whose values can be represented by $g(x_1, x_2, \ldots, x_n)$. The word statistic is often used for the random variable or for its values, the particular sense being clear from the context."

According to the excerpt, we have changed "random variable(s)" into "statistic(s)" in our paper.

328: 'we refer to ... respectively, in this subsection and section 3' -- actually I can't find any reference to [am] and [Psi'] beyond this point. So 'in this subsection and section 3' is a bit misleading.

For clarity, we added an additional sentence after the above-mentioned phrase: "In other words, we will no longer use the mnemonic notations [am] and [$\psi'$] in this subsection and section 3 wherein we will instead employ A and $\Psi'$, respectively, for brevity."

## Reference

Spiegel, M. R., Schiller, J. J., and Srinivasan R. A.: Schaum's outline of probability and statistics, 4th ed. McGraw-Hill Education, 432 pp, 2013.