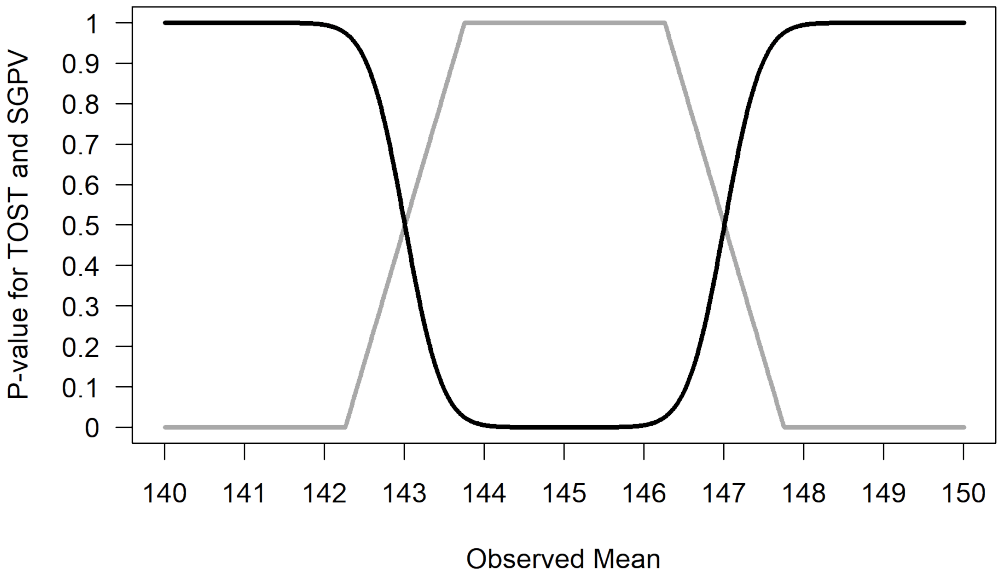

Figure 1. Comparison of *p*-values from TOST (black line) and SGPV (grey line) across a range of observed sample means (x-axis) tested against a mean of 145 in a one-sample *t*-test with a sample size of 30 and a standard deviation of 2, illustrating that when the TOST *p*-value = 0.5, the SGPV = 0.5, when the TOST *p*-value is 0.975, 1-SGPV = 1, and when the TOST *p*-value = 0.025, 1-SGPV = 0.

1), or with the alternative hypothesis (SGPV = 0), or when the data are strictly inconclusive (SGPV = 0.5).

These three points of overlap are indicated by the horizontal dotted lines in Figure 2 at TOST *p*-values of 0.975, 0.5, and 0.025.

When the observed sample mean is 145, the sample size is 30, and the standard deviation is 2, and we are testing against equivalence bounds of 143 and 147 using the TOST procedure for a one-sample *t*-test, the equivalence test is significant, $t(29) = 5.48$, $p < .001$. Because the 95% CI falls completely within the equivalence bounds, the SGPV is 1 (see Figure 1). On the other hand, when the observed mean is 140, the equivalence test is not significant (the observed mean is far outside the equivalence range of 143 to 147), $t(29) = -8.22$, $p = 1$ (or more accurately, $p > .999$ as *p*-values are bounded between 0 and 1). Because the 95% CI falls completely outside the equivalence bounds, the SGPV is 0 (see Figure 1).

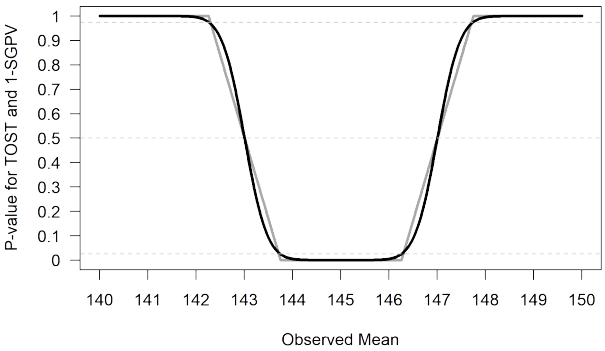

Figure 2. Comparison of *p*-values from TOST (black line) and 1-SGPV (grey line) across a range of observed sample means (x-axis) tested against a mean of 145 in a one-sample *t*-test with a sample size of 30 and a standard deviation of 2.

SGPV as a uniform measure of overlap

It is clear the SGPV and the *p*-value from TOST are closely related. When confidence intervals are symmetric we can think of the SGPV as a straight line that is directly related to the *p*-value from an equivalence test for three values. When the TOST *p*-value is 0.5, the SGPV is also 0.5 (note that the reverse is not true). The