How to run a two sample approximate t test in SPSS

In this example, we want to test the claim that the mean day rating of TAMU students who received a compliment is different than (not equal to) the mean day rating of TAMU students who didn't receive a compliment (see class notes for details). Theses are the hypotheses:

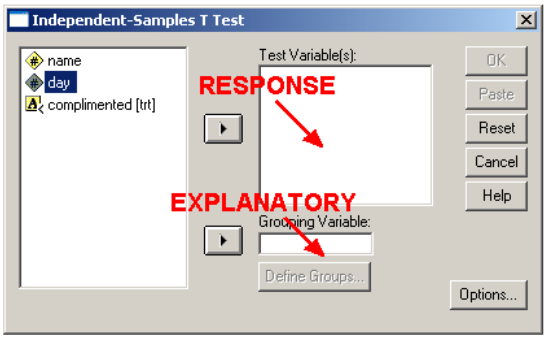
H_a: $\mu_1 \neq \mu_2$ H_o: $\mu_1 = \mu_2$

where μ_1 = the true mean day rating of TAMU students who received a compliment
and μ_2 = the true mean day rating of TAMU students who didn't receive a compliment.

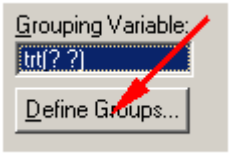
The data set is called "**flattery**" and can be found on the class website.

1) In SPSS:Go to Analyze→Compare Means→Independent samples T test…

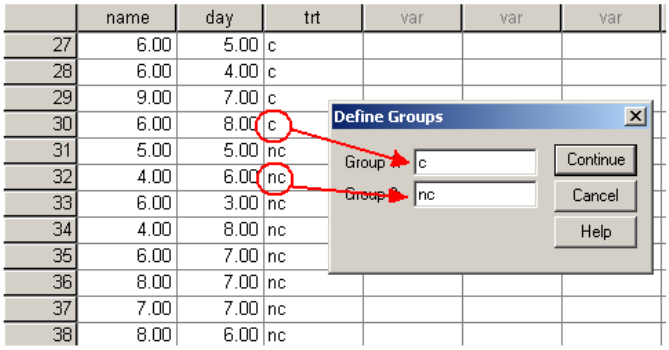
2) Click the resp. variable (in this case, it's "day"), then click the upper right arrow button, , to move it to the "Test Variable(s):" list. Click the expl. variable (in this case, it's "compliment(trt)"), then click the lower right arrow button, , to move it to the "Grouping Variable:" list



4) Under where it says "grouping Variable", click "Define Groups".



5) This will bring you to a window titled "defined groups". Enter the labels used as explanatory values where it ways "Group 1" and "Group 2". In this example, since the two values of the explanatory variable have been coded as "c" (for compliment) or "nc" (for no compliment), these are the values entered into the windows marked "group 1" and "group 2". After entering in the groups, click "Continue"



6) When you get back, click "OK".

7) The output you get should look like this:

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
DAY	Equal variances assumed	.285	.596	2.750	58	.008	1.3667	.49693	.37196	2.36137
	Equal variances not assumed			2.750	57.456	.008	1.3667	.49693	.37176	2.36157

This is the p-value for the test of
$H_a: \mu_1 \neq \mu_2$ $H_o: \mu_1 = \mu_2$

If we were testing $H_a: \mu_1 > \mu_2$ $H_o: \mu_1 \leq \mu_2$, the correct p-value would be 0.008/2 = 0.004 since the sample mean for group 1 (6.6333) is greater than the sample mean for group 2 (5.2667) and this supports H_a.

If we were testing $H_a: \mu_{1<} \mu_2$ $H_o: \mu_1 \geq \mu_2$, the correct p-value would be 1 - 0.008/2 = 0.996 since the sample mean for group 1 (6.6333) is greater than the sample mean for group 2 (5.2667) and this supports H_o.