**Assignment**

Now it's time to flex your critical evaluation skills. Read the following descriptions of an experiment and its analysis, identify the flaws in each, and describe what you would do to correct them.

1. The Sith Lords are concerned that their recruiting slogan, "Give In to Your Anger," isn't very effective. Darth Vader develops an alternative slogan, "Together We Can Rule the Galaxy." They compare the slogans on two groups of 50 captured droids each.  
In one group, Emperor Palpatine delivers the "Anger" slogan. In the other, Darth Vader presents the "Together" slogan. 20 droids convert to the Dark Side after hearing Palpatine's slogan, while only 5 droids convert after hearing Vader's. The Sith's data scientist concludes that "Anger" is a more effective slogan and should continue to be used.

Soln:  
-Use of droids is questionable because they don’t simulate actual humans.

-Other factors should be considered such as length of exposure to the slogans

-Some slogans like “Together we can rule the galaxy” may appeal to some creatures like droids but may not appeal to actual human beings.

2. In the past, the Jedi have had difficulty with public relations. They send two envoys, Jar Jar Binks and Mace Windu, to four friendly and four unfriendly planets respectively, with the goal of promoting favorable feelings toward the Jedi.  
Upon their return, the envoys learn that Jar Jar was much more effective than Windu: Over 75% of the people surveyed said their attitudes had become more favorable after speaking with Jar Jar, while only 65% said their attitudes had become more favorable after speaking with Windu. This makes Windu angry, because he is sure that he had a better success rate than Jar Jar on every planet. The Jedi choose Jar Jar to be their representative in the future.

Soln:

-This analogy of planets is questionable.

-Other factors like the period of time Ja Jar and Windu spent at the planets might have influenced the favorable preference towards Ja Jar.

-It is unclear whether the heritage of Ja Jar and Windu played an effect into the decision. It is possible that Jajar’s heritage belongs to the planets that Ja Jar visited.

3. A company with work sites in five different countries has sent you data on employee satisfaction rates for workers in Human Resources and workers in Information Technology. Most HR workers are concentrated in three of the countries, while IT workers are equally distributed across worksites. The company requests a report on satisfaction for each job type. You calculate average job satisfaction for HR and for IT and present the report.

-It may present inconsistencies if average satisfaction overall is calculated without considerations of individual preferences by country.

4. When people install the Happy Days Fitness Tracker app, they are asked to "opt in" to a data collection scheme where their level of physical activity data is automatically sent to the company for product research purposes. During your interview with the company, they tell you that the app is very effective because after installing the app, the data show that people's activity levels rise steadily.

-This hypothesis assumes that prior to installing the app, people’s activity levels were low which is not necessarily true.

-Additionally, it is plausible that this increase in activity is because the product is relatively new. Many people like to try out new products avidly. It is possible that after a short period of time, the product will not be as attractive.

-It is unclear which age group is using the app or social group. This data may apply to this particular group but may not bear similar impacts to other groups.

5. To prevent cheating, a teacher writes three versions of a test. She stacks the three versions together, first all copies of Version A, then all copies of Version B, then all copies of Version C. As students arrive for the exam, each student takes a test. When grading the test, the teacher finds that students who took Version B scored higher than students who took either Version A or Version C. She concludes from this that Version B is easier, and discards it.

-The level of intelligence was not pit into account. It’s possible that the students who took exam B were generally smarter or more hardworking than all the others.

-It is also possible that test B comprised past questions that students were previously exposed to. Therefore, the students that took test B found it to be easy.

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