John B. Dilworth's Commentary on "Testing by a CO-OP Student"

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Testing by a CO-OP Student

Did co-op student Jack Jacobs falsify the test data? Let us assume that he did, to keep the case ethically interesting. Then we can quickly agree that he should not have done it, and that he should be approached to find out why he did it. Also, clearly there is a need for much more stringent monitoring of co-op students, given that one of those in whom the supervisors had the highest confidence nevertheless betrayed it. The most pressing question above concerns why he did it. Not, I hasten to add, as a question about Jack's individual psychology, but rather as a question about his social and scientific attitudes insofar as these were molded by his education. We need to discover what was missing in his training, or what was present yet in some very inadequate form, which resulted in him being able to do such a thing. Or, to put the matter in another way, what factors should we emphasize more in education, in order to effectively prevent students such as Jack from falsifying data in future?

The case queries us as to whether material on professional ethics should be included in student education. This should certainly be of some help in cutting down on the amount of data falsification, plagiarism, and other unethical practices. However, ethics by its very nature has two separable aspects or sides, a theoretical and a practical side. The theoretical side concerns ethical knowledge and truth. The practical side concerns personal motivation and commitment to act upon one's ethical beliefs. Unfortunately, an intelligent student could fully understand (or seem to fully understand) and even agree with ethical claims such as that is unethical to falsify data, but still have little or no commitment or motivation to actually live up to such ethical beliefs. Another way to put this point is that unless the person him/herself is significantly changed by the ethics course (or in no need of change), the practical goal of preventing data falsification is unlikely to be achieved.

Ideally we would ensure that students achieved (or already possessed) a good moral character at school, because merely changing their knowledge and beliefs

will not guarantee good behavior or any real commitment to morality. Is there anything else we can do, in case students fail to acquire or have enough moral character? Fortunately there are still some other fairly powerful motivators, which involve the self-interest of students. Methods based on self-interest are admittedly second-best methods, because students influenced by them do the right things for self-interested rather than specifically moral reasons.

Nevertheless, we should not despise any legitimate methods which can help to prevent moral evils such as data falsification. 'Self-interest' methods can be divided, as in the traditional fable about a donkey, into 'carrot' and 'stick' approaches. A donkey can be encouraged to move forward by hope for the reward of a carrot, while a stick is available to punish any refusal to move forward. Similarly, in the present case we can convince students that there will be rewards for them if they behave as good scientists should, while on the other hand there will be punishments if they do not behave correctly.

On the positive, 'reward' side, one of the more interesting approaches would be to convince students that it is actually in their interest to acquire a good moral character. For example, a good case can be made that if students work on becoming more conscientious, concerned about the truth, etc., they are much more likely to find scientific work satisfying and enjoyable, and much less likely to perceive science as often tedious and pointless. Other self-interested rewards of science for good individual behavior are more closely linked to potential punishments for bad behavior. For example, the reward of a long, secure career in science is available only to those who avoid certain punishments, such as being dismissed from a post after falsification of data is discovered.

An education which stresses both how attractive a successful scientific career can be, and also how disastrous to one's career even a trivial immoral act might be, has the best chance of ensuring self-interested good behavior from students during their careers. At the same time, we may continue to hope that such 'self-interested' educational methods will become increasingly unnecessary.