Incentives, Rewards, and Recognition - What Really Motivates a Researcher?

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The deadline for the big grant proposals are almost upon us, and throughout the corridors of the different departments everything seems normal, at first glance. However, a closer inspection reveals tired faces, slumped postures, and nervous chatter around the coffee machine. It is easy to understand why. Being awarded a large grant paves the way for years to come. It allows you to hire students and postdocs and to purchase equipment. It also makes it easier to get the next grant you apply for. But perhaps the grant system is not the best way to reward researchers with seemingly good ideas?

When starting to write this essay I asked a few researchers what kind of reward system would motivate them the most. The most important reply that I received was both the most obvious and the most startling: "Just make sure that we're happy". This can mean a lot of things, but to the people I asked it meant that **researchers want to do research**. If you take away unnecessary admin work, the worry about finding the next temporary position, and the enormous task of writing research proposals, generally good science follows. In the end, a scientist is no different from an entrepreneur or a software engineer. With all the basic necessities covered, good business and good code will follow.

That is not to say that good science should not be rewarded. My institute has an annual prize for the three most productive graduate students. This is a nice gesture and it makes us feel appreciated. According to research, this is actually of crucial import. It has been shown that public recognition makes workers feel more appreciated than a cash prize [1]. However, it seems that this kind of recognition is rare in academia, as is the more mundane yearly bonus. This brings me back to research grants. They are, in a way, a *reward* for a good track record and good ideas. But does it really work? In fact, studies suggest that whatever the incentive, be it gold stars, good grades, or pizza, dangling rewards in front of people seems to backfire more often than not [2, 3]. Making the size of the reward contingent on how well the task was performed seems to be even worse, making workers cut corners and only focus on the pot of gold at the end of the road [4].

In the end, the hollow-eyed assistant professor and the sleep-deprived graduate student huddling in the corner by the coffee machine are only human. Academia is not intrinsically different from any other field or business, so if we are to be rewarded for doing a good job, do it smart. Start by making sure that we are paid enough, that we are taking time off, and give us enough stability to start families. This would be the greatest reward any researcher could receive.

That is not to say that scientists should be without expectations to perform. As in any job there should be clear demands and responsibilities. The question of how to evaluate researchers is a hard one and requires careful thought. There are an array of metrics to go by. Publications, impact factors, citations, and Hirsch indexes all attempt to quantify research output. In one sense, it works. Highly successful researchers with many years of experience will have an easier time to land a new grant than someone with fewer accomplishments. But this accurate only if the competition consists of scientists with roughly the same amount of experience. An early-career researcher will be hard-pressed to win against a professor with decades of citations under their belt. A better way to evaluate these people might be to use a normalised index. In [5] the authors suggest just that, a metric normalised by discipline, career stage, number of authors, and the like. This kind of metric would foster an environment which emphasises *quality over quantity* and would greatly improve the chances of a young researcher with new ideas and skills to win grants. It would be an improvement but not a complete solution, as there is also another side of the coin; what are they being evaluated for? The important factors will differ depending on whether it is a postdoctoral position, a professorship, a grant, or a prize. Therefore there is no clear-cut solution. However, a big step forward would be to stop simply looking at number of papers and citations and instead implement a normalised system as suggested in [5].

In conclusion, my answer for how to reward scientists is not "don't". It is simply to do it smart. Start from the bottom of the pyramid of needs and provide stability for researchers to carry out their work in peace. If the department wants to praise scientists, they should do it in a public way and not simply with cash bonuses. In the end, something so simple as making the coffee free may have a big impact on how researchers feel about their role as scientists. Good science will follow.

References

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