

When Organizational Identification and Control Prevent Sharing Scientific Discovery

Jeffrey J. Wolynski
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Rockledge, FL 32955

Abstract: A short overview of how academics control each other and some flaws induced by too much identification, control and discipline. It is argued and researched that too much of all three latter concepts can counteract the stated goals of teams in large organizations. In fact, too much identification, control and discipline reduces quality, stamps out creativity and decreases employee involvement. This can lead to peer review reinforced group think and the overall stalling of progress in science and of sharing scientific discoveries. As well it shows that resistance to discoveries is rooted in cultural norms and shared misguided definitions.

When a young researcher moves past their bachelor's degree and into graduate school, they begin to define themselves in terms of the larger organization. This leads to an increased sense of belongingness and security inside of a larger group. They form their identity from the subject matter they are researching over a few years time, as they adopt the larger communities' values and experience an extensive socialization process. The language they use socializes them. (Baghdadi, 2017) Their worldview is formed at a perceptively high level and is given the highest value, while simultaneously becoming personalized due to extreme amounts of dedication and discipline invested in their specific course of study. The values of the group become more and more internalized and the researcher begins identifying not only as an individual, but as their specific group, meaning they become tribal. The values, beliefs and core assumptions about the world are then in place by the time the astronomer receives their master's, and made to match the larger astronomy community so that the specific researcher can maintain their identity. This is the first step in the researcher's path towards being able to be controlled by being placed in team environments, and makes the new astronomer easier to control by people with similar backgrounds.

Once a clear identification and strong self-identity of the researcher is established and accepted by the newly minted astronomer, they are now faced with learning to navigate the control methods their larger organization will impose on them to get specific tasks done. Simple control, which relies on threats of being fired, or losing a grant are not necessarily common in astronomical academia. The time and energy the researcher put forth in obtaining a degree means the classic old school way of getting

people to work harder will not suffice, nor is it really required. The astronomer has already established an identity so they will be more easily controlled with other methods. Threatening a researching astronomer by mentioning that they can be fired for being late to work will not be effective, as lateness does not equate in the world where you are paid for your supposed advanced knowledge. This is opposed to a job in the restaurant industry, where being late can get you fired on the spot. Threatening to fire them would more effective if the person did not form a very strong identity with their respective field. They are an astronomer now, firing them will not remove their identity, nor remove their job security, nor their values, beliefs and worldview, as they will easily transfer to other astronomy communities that have research fellows and an overall hierarchy that does not micromanage as the restaurant industry does.

More advanced methods need to be used to control astronomers, and it is easy to do so especially when they absolutely need technology. Astronomers need extremely expensive telescopes and the bigger, more expensive they are, the higher quality their research can be, thus the better papers they can write, and the further they can move up the ladder of success. Though if an astronomer does not maintain the identity of the group and wishes to study something other astronomers do not believe is important, managing astronomers and committees will vote and will prevent you from obtaining telescope time. Parent organizations that control the purse strings for running the largest and more expensive telescopes will compare their own values and identities and decide if your new, outlandish theory or idea deserves to be considered. They will only grant time on the telescopes for ideas they already consider correct, which removes the transcendent qualities of astronomy, which naturally stamps out creativity and quality of the work that could be done, instead preferring ideas everybody already accepts is possible regardless if it has never been discovered, such as astronomical Dark Matter. Therefore if you want to study something that does not mesh with the values of the group, then you will not be allowed to use the technology you need. It is best to only accept what the group already believes is true to get telescope time, even if the committee granting the time is scientifically misguided. Therefore technology, the telescope time in this case, is the technology that is held over the prospective researchers head. As well, the control over technology by people with specific worldviews, regardless of scientific correctness, will reduce the quality of work that could possibly be done by more insightful researchers.

Even before any type of other control mechanism is used on an individual to work in a team environment, bureaucratic controls have long been put into place. The very act of receiving an advanced degree is a bureaucratic control, a sort of ultimate rule book on what ideas you are allowed to accept as true, how to think, how to socialize and how to work in teams of people whom you have never met. The employee handbooks are the astronomy and physics textbooks themselves. Obtaining the astronomy degree precedes any type of contracting/grant funded work, as it shows you have fully read and understood how things are done, and what ideas are not allowed. This is especially important because many ideas are simply wrong, and the process of graduate education acts as a grinder to help prevent any wild ideas to seed in the

researchers minds. This makes teams easier to form and more work can get done because of it. Reading thick astrophysics textbooks itself also acts as a deterrent for inquiring minds, and has the latent effect of thinning out the herd, so that only the minds that are the easiest to condition into a specific way of thinking are allowed into the larger community. As well, the astronomer learns to adopt similar meanings of words, regardless if those meanings are ill-suited to describe nature. This means that their mediated experience of nature, their ability to store correct knowledge and to enable communication with previously closed off communities depends on how they define simple words. (Eckert, 2017). This by default by itself reduces creative problems solvers from entering if words do not have shared meaning, and can reduce employee involvement even after the studying astronomers have entered the field, if those words change meaning. For instance, in the author's case, it has been discovered that stars are young hot planets, and the reverse, planets are old, cold stars, therefore their mutually exclusive, socially accepted definitions are what are preventing understanding, regardless. Combining two objects into one via a changing definition and streamlining huge amounts of astrophysical research that describes nature, no matter how correct, will prevent any possible research or acceptance of a dissident astronomer, because it is socially unacceptable.

In astronomy academia using unobtrusive control is the best option for managers, as the vision of the organization is protected by the academic's personal identity. Their commitment to the values, beliefs and ideals instilled in them in graduate school will strongly prevent thinking differently than what the organization considers valued, thus in turn prevents them from challenging the values, beliefs and ideals of their larger community. Commitment also helps them to make decisions that they would not regard as false or ineffective. Forming that identity gives them an illusion of being a streamlined, well-to-do researcher, and that above all is the most important aspect, regardless if the accepted values, ideals and beliefs could be misinformed or wrong. The researcher will also want to be viewed as disciplined, so they do not waver from their commitment to the parent organization. Rejecting some aspect of an ideal the organization accepts is therefore considered undisciplined behavior, which could snowball into the possibility that they could be irrational and cannot be relied upon, thus do not deserve to be handed large amounts of cash, or granted special opportunities. Thus has the potential to damage the astronomer's career in some form, even after they have been through the process of obtaining an advanced degree. It is taboo to reject an ideal in a professional setting, even if the ideal is clearly wrong or outdated. In other words, a researcher would rather be viewed as disciplined and rational by committing to ideals and beliefs of the parent organization, than stumble upon an accepted ideal or misguided definition that is clearly false and change it. This is all supported by a final type of control, when group members discipline and monitor themselves in a larger group without a hierarchy called peer review.

Concertive control is simply peer pressure to conform, which is more powerful in a group that does not have true leadership. A sort of mob mentality takes over as, "The locus of control shifts significantly from management to workers who collaborate

to create rules and norms that govern their behavior." (Papa, Auwal & Singhal, 1997). Group members may criticize, give the silent treatment, monitor and heavily rely on in-group norms to control the actions and behaviors of possible creative and clear thinking astronomers that are stepping out of line. Controlling others in this fashion can be a hidden, if not sinister form of control, as human beings will always attach meaning to communicating habits, even if nothing is being communicated. For this example giving a dissident astronomer the silent treatment by not acknowledging his/her ideas will lead to confusion and disgust on part of the dissident, until they mention an idea that is already agreed upon by the group. Thus social acceptance equates to the dissident self-censoring ideas that the group thinks are ridiculous or false. As well, "concertive control acts as a barrier to management directed organizational change." (Larson & Tompkins, 2005)

The types of controls used by any umbrella organization can prevent new, great understanding from being shared, due to multiple layers of control centered around having the seemingly correct ideals, the illusion of being disciplined and a systemic method for crushing creative thought with textbooks. Creativity is weeded out with bureaucratic means of attaining credibility by only accepting ideas that are already accepted, and defining words in ways that have already been accepted as valid (albeit can prevent understanding the subject matter), thus could continue reduction of quality of work. Such as the continued acceptance of the Nebular Hypothesis regardless if all of its tenets have been shown to be false. The control mechanisms the organization uses naturally prevents new ideas from flourishing, due to them being used to keep the organization from falling apart. In order to help the organization grow, it has to have some of its ideals replaced, and words redefined, but the mechanisms designed to keep the organization together naturally prevent it. A rejection of any part of the ideals, beliefs, values and definitions of the umbrella academic institution is taken as an attack, regardless if the attack is designed to help the organization thrive. Therefore to make any significant progress in astronomy, you have to avoid all types of controls. Their beliefs and methods of control can prevent true solutions to major mysteries from being brought to light. Unfortunately providing this means changing the culture, which in turn means changing what words are used to define the very objects that are central to those cultures. (Morita, 2009)

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