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ABSTRACT

This paper addresses whether theoretical skills, meaning skills in evaluating and improving existing theories and in creating new theories, should be taught in psychology programs. Three questions are posed: (1) Should theoretical skills be taught at all?; (2) How are theoretical skills best taught?; and (3) Which theoretical skills should be taught? In answering the first question, it is conceded that all psychologists employ theory in their work and so theoretical skills should be taught. For the second question, the current pedagogical difference between teaching theoretical skills and research skills is endorsed. While there seems to be no need for classes devoted solely to theory skills, it is suggested that curriculums be sprinkled with the demonstration and practice of such skills and that there should be more emphasis on the difference between declarative knowledge and skills. On the question of which theoretical skills should be taught there are two sources of dissatisfaction: one concerns overall neglect of these skills and the other concerns which skills are being taught. However, the paper claims that schools already teach theoretical skills and this instruction has been at the center of North American psychology curriculums for decades. (RJM)

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## Teaching Skill in Theorizing

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By "theoretical skills" we mean something different from knowing about theories in psychology or from having skills in conducting empirical research; we mean skill in evaluating and improving existing theories and in creating new theories. In this talk I want to present some ideas about whether such skills should be taught, and if so, how they might be taught.

The very existence of this symposium seems to presuppose that present psychology programs teach theoretical skill inadequately. I don't think it is necessarily obvious that this is true, and I think that a session hoping for discussion like this one often benefits from having a devil's advocate, so I want to organize my comments around the reasons a devil's advocate might present for defending the status quo. The answer to the question "are theoretical skills taught adequately at present" presupposes an answer to three fundamental questions: "should theoretical skills be taught at all?", "how are theoretical skills best taught?", and "which theoretical skills are the ones that ought to be taught?" Let us consider these one at a time.

1. "Should theoretical skills be taught at all?" Our devil's advocate would of course give a negative answer to this

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question. One might be that beginning students are in no position to theorize, and training in these skills should be saved until a student is advanced. This is plausible enough, but it really isn't a negative answer; it's a positive answer with a quibble about the timing. What might a real negative answer be? Perhaps that not every psychologist needs to do theory or is capable of doing theory, that psychology should acquire the distinction between theoretical and experimental that characterizes many of the physical sciences. But this won't suffice. Even the applied psychologist has need for theoretical skills, and the experimental psychologist certainly needs some. Even if a psychologist never develops or modifies a theory, all psychologists are in a sense "consumers" of theory; they use them and must decide between them, so some theoretical skill is clearly useful, and a good psychology education should teach them. So the devil's advocate must concede that theoretical skills ought to be taught.

2. What about the next question, the issue of "How are theoretical skills best taught?" If the development of theoretical skills in students is just as important as the development of research skills, why are the latter the subject of numerous books and required classes? It could be that theoretical skills have been neglected, but it also could be that it is believed that these skills should not be taught the same way as are research skills. This is certainly what our devil's advocate believes. Most of us were never given a text on

theoretical skill, nor were many registered in classes on critical and analytical thinking, yet many of us have acquired proficiency as theoreticians. Clearly, then, these pedagogic devices are not necessary for theoretical skill development. An interesting possibility is that these pedagogic devices are not even optimal for theoretical skill development!

Consider an analogy to the teaching of skill in the arts. Students typically receive lots of training in the techniques of their art, be it anatomy and painting, or harmony and counterpoint, or what have you. And they get training in the history of their art, and they get told what seems to have made the masters better than the second rank. But are they trained to be creative? No. What analogy can be made to psychology? The devil's advocate might try to conclude that theoretical skills should not be taught, but I think that this would be the wrong conclusion. The artists get an idea about what is good and what is mediocre, about how greatness is achieved within a paradigm, about why and how greatness is achieved by creating a new paradigm. Interestingly, the training is not always explicit, but it is nevertheless analogous to training in theoretical skill.

And so it may be in psychology. The way that conventional programs may work is by including theoretical skills in classes in the history of psychology and in the philosophy of science and, generally, sprinkled throughout the curriculum. Good programs require such topics, and good teachers use the context

of such topics to draw morals about how theorizing is best done. Students learn not only how to be critical of existing theory but also how to generate original theoretical ideas. The devil's advocate may have a minor point in that requiring a class titled "Theoretical Skill" is unnecessary, but it otherwise seems clear that the entire psychology curriculum should be sprinkled with demonstration and practice of theoretical skills.

One possible vehicle for teaching theoretical skill would be to include it in classes on research design. Many texts on research include a section or chapter on this topic, suggesting a natural home for an expanded treatment of the subject. One method for teaching these theoretical skills is to study the history of science in a way that includes the thought processes leading up to new theories. This provides students with models to imitate. It also permits theorizing to be included in sections on philosophy of science or on the history of a particular discipline. It would seem important for instructors to seek generalizations from such examples. Such rules of thumb are difficult to arrive at, inevitably must be contradicted by some cases, and may even differ in different areas of psychology, but they can aid the psychology much like general principles of composition help the art or music student.

Does this imply that theoretical skills are already taught in the optimal manner? Hardly. One way in which conventional methods can be improved upon involves emphasizing the difference between declarative knowledge and skills. Skills are learned by

practicing them, and existing programs often don't give students much of a chance to do this. This is really a pity, because the non-cumulative nature of psychology--which otherwise makes us so gloomy--actually makes it possible for students to begin seriously grappling with real theoretical issues much sooner in their training than is possible in many other disciplines! In my own field of human emotion I have been able to teach theoretical skills to students before the end of their first semester studying the subject. Some of the basic concepts and controversies in the field can be considered by gathering a collection of examples and then reflecting on them. I teach the class what I call the "shoe box technique," which involves collecting examples from everyday life that pertain to a topic, and when enough have been collected, examining them for regularities and subtypes. This skill, of course, is basic to science. And its reliance on everyday examples rather than on laboratory data seems to assist in breaking free of traditional approaches and encouraging creativity. It helps that emotion is a subject in which everyday experiences constitute an important part of the data base; nevertheless, the basic technique could be adapted effectively for other topics by having the instructor give more help in establishing the data base.

3. Having presented some ideas about how theoretical skills might be taught, I wish to address one final question, "Which theoretical skills are the ones that ought to be taught?" I think that this issue is more important than it might sound,

because I think it is important to distinguish two sources of dissatisfaction with the way that theoretical skills are presently taught. One source concerns their overall neglect, and that I have already tried to address. But another source concerns which skills are taught, and I suspect that some of the dissatisfactions being expressed in this symposium can be traced to this concern. Let me illustrate this by again presenting my devil's advocate, who this time around will finally get some interesting lines.

The devil's advocate might now concede, "Okay, theoretical skills ought to be taught, and they need to be explicitly taught and practiced throughout the psychology curriculum. But guess what? There's no need to change the curriculum! Your wishes are already granted, and have been for decades! Theoretical skills are explicitly taught all over the land. Students from PSYC 001 to PSYC 999 are told the importance of operationalizing their definitions, of avoiding unobservable variables, of proposing testable models of the causes of behavior. They get practice in developing these skills, with thoughtful, constructive feedback about deviations from proper empiricist doctrine. They are given literacy, too, starting off with Boring's history of psychology, then with the major works of Karl Popper and B. F. Skinner. Clearly, then, theoretical skills have been at the center of the North American psychology curriculum for decades!"

Now, what our devil's advocate has presented here is clearly a postmodernist's nightmare. But it's not a nightmare about a

world lacking training in theoretical skills. Rather, it's a nightmare about a world with an abundance of such training, just in what some would consider the wrong theoretical skills. I don't want to suggest that the devil's advocate view is right, but I don't want to refute it just yet either, because I thought that this nightmare might be useful for starting some discussion.

