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Using Case Studies in Teaching Research Ethics¹

Kenneth D. Pimple, Ph.D.

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It is widely believed that discussing case studies is the most effective method of teaching the responsible conduct of research (Kovac 1996; Macrina and Munro 1995), probably because discussing case studies is an effective way to get students involved in the issues. (I use the word “student” to cover all those who study, including faculty members and other professionals.)

Case studies are stories,² and narrative – the telling of stories – is a fundamental human tool for organizing, understanding, and explaining experience. Alasdair MacIntyre offers an amusing example of how one might make sense of a nonsensical event by embedding it into a story.

I am standing waiting for a bus and the young man standing next to me suddenly says, ‘The name of the common wild duck is *Histrionicus histrionicus histrionicus*.’ There is no problem as to the meaning of the sentence he uttered; the problem is, how to answer the question, what was he doing in uttering it? Suppose he just uttered such sentences at random intervals; this would be one possible form of madness. We would render his act of utterance intelligible if one of the following turned out to be true: He has mistaken me for someone who yesterday had approached him in the library and asked: ‘Do you by any chance know the Latin name of the common wild duck?’ Or he has just come from a session with his psychotherapist who has urged him to break down his shyness by talking to strangers. ‘But what shall I say?’ ‘Oh, anything at all.’ Or he is a Soviet spy waiting at a prearranged rendez-vous and uttering the ill-chosen code sentence which will identify him to his contact. In each case the act of utterance becomes intelligible by finding its place in a narrative. [MacIntyre 1981:195-196, italics in original]³

Just as unintelligible actions invite us to put them into a story, stories invite us to interpret them. Stories imply causality, intention, and meaning; in the forms of parables, fables, and allegories, stories are favored vehicles for moral and religious instruction worldwide.

¹ Portions of this paper are adapted from a presentation at the Planning Workshop for a Guide for Teaching Responsible Science, sponsored by the National Academy of Sciences, the National Science Foundation, and the National Institutes of Health, February 1997.

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² Some of the many forms case studies can take are described in the Appendix, starting on page 5.

³ The young man is mistaken, by the way. Ducks belong to the family *Anatidae*, not *Histrionicus*.

An in-depth discussion of a case is the closest approximation to actually confronting an ethical problem that can easily be set up in a classroom. Experience is the best teacher, but we can't predict whether or when our students will face an actual ethical conflict in research, and we would not want to wish such an experience on them. Although a good case discussion is not the same as dealing with a real ethical problem, it can be an *approximation* of such an experience, just as watching a film about the decline and death of an aged friend can be a highly affecting approximation of the actual experience. Watching the film The Dresser can bring a person to real tears; discussing a case can bring a student to genuine ethical development.

The value of case study discussion can be illustrated with an anecdote. In the first year of the Teaching Research Ethics Workshop, we might have spent a bit too much time talking about using case studies and how to lead case study discussions. By Wednesday (the workshop began on a Sunday that year), one participant complained, saying something like, "Aren't you going to talk about anything but cases? I've used them and students get bored with them."

We spent less time on case studies thereafter, but I mention the incident because of an evaluation we did in the third year of the workshop. We hired an external evaluator to talk to past workshop participants about its impact on them. I asked our evaluator to talk to several specific participants, including the one who had complained about case studies. To my complete surprise, the report showed that this participant "identified mastery of the case study approach as having had the greatest direct impact" on his teaching. The other past participants interviewed made similar comments.

Like all teaching techniques, case study discussion can be done well or poorly, and I hope to provide some guidance to help you avoid the worst pitfalls. I will assume that you already know how to lead a discussion and limit my comments to considerations pertaining directly to using case studies in research ethics. My comments are rooted in what has worked for me with the assumption that most of it will work for you, too – but probably not all of it. Teaching is an art, and success depends a great deal on the skills and personality of the teacher.

Much of what follows might sound dogmatic, but that should be taken as a stylistic quirk. I could add all the hedges and exceptions of which I can think, but that would only muddy things. Use your own judgment and take the advice for what it's worth. Also note that this is general advice; some cases are designed to be used in a particular way (see Bebeau et al. 1995).

Preparing to lead a case study discussion is much the same as preparing to teach anything – figure out what you want to accomplish, how much time you can spend on it, and the like.

In the classroom, start by laying out **ground rules**. In many settings this step does not have to be overt – if it is a group you have been meeting with already, and you have established a tone of respect and openness, there's no need to go over this again. If the group has not established this kind of rapport, then it is important to make it clear that everyone's opinion will be heard – and challenged – respectfully.

You might also want to offer your students some strategies and tactics before plunging into the discussion.

Strategies cover the broad direction for the discussion. For example, you can tell your students that you want them to:

- Decide which of two positions to defend – “Should Peterson copy the notes? Why or why not?”
- Solve a problem – “What should Peterson do?”
- Take a role – “What would you do if you were Peterson?”
- Think about how the problem could have been avoided – “What went wrong here?”

Clearly these are not mutually exclusive, and there are probably other strategies you could use.

It is often also helpful to suggest some **tactics**. Sometimes students see a case study (or ethics) as an inchoate mass – or as too well integrated to analyze. It can be useful to give them some specific things to dig out of the case.

For example, in Moral Reasoning in Scientific Research: Cases for Teaching and Assessment, which I developed along with Mickey Bebeau, Karen Muskavitch, and several other colleagues (Bebeau et al. 1995), we suggest that students try to identify (a) the ethical issues and points of conflict, (b) the interested parties, (c) the likely consequences of the proposed course of action, and (d) the moral obligations of the protagonist.

Lucinda Peach (included in Penslar 1995) offers a different approach, suggesting the value of paying attention to six factors: facts; interpretations of the facts; consequences; obligations; rights; and virtues (or character). I have found it particularly helpful to point out the distinction between the facts presented in the case and the interpretations of facts that are sometimes made unconsciously.

When the time comes to start the actual discussion, I always **distribute a copy** of the case study to all students, and I often also display it using an overhead projector. If a case is at all complex or subtle, or has more than one or two characters, it is very difficult to take part in the discussion without having the case on hand for reference.

I usually ask one or more students to volunteer to **read the case aloud**. If there are several characters in the case, I often take the part of narrator and ask students to read the parts of the characters. Reading the case aloud ensures that everyone finishes at the same time; asking students to take part gets their voices heard early.

Then I give students a chance to ask any **questions of factual clarification** they might have. The answers might already be in the case, but they aren't always. I don't always answer all of these questions at this point, saying instead, “Let's make sure we get to that when we discuss the case.” For example, if a student were to ask: “What kind of student is Peterson? Is she any good?” I would want to wait until the discussion period, when I would respond by asking, “What difference does it make?” (Not to imply that it doesn't make a difference, but to see why the students think it does.)

I often then give students a few minutes to **write** some thoughts – perhaps to answer the strategic question, or identify the tactical elements I had already outlined. I usually don't collect the papers;⁴ the object here is to give students a chance to collect their thoughts and make a commitment, however tentative, to a few of them. Ideas that remain only half-formed in the mind

⁴ I do collect the papers when I use Moral Reasoning in Scientific Research; it's part of the method outlined in the booklet.

often fly away when the discussion begins, but the written ideas are there for the students' reference.

If the group isn't too large, I find it very useful to go around the room and ask **every student** to make one short response to the case. When the strategy is to defend a position, I first ask them each to answer the first question – “Should Peterson copy the notes?” – yes or no. I tally their answers on the board. Then I go around again and ask each student to offer one reason for their answer. (If the responses are unbalanced – say 10 yes and 2 no – I give the students who said “no” the chance to state their case first.) In larger groups, I get a random sample of responses.

Then I plunge into the discussion, trying to be as quiet as I can and to get the students to talk as much as possible. My part is to keep things orderly, to clarify points in the case (including relevant rules and regulations), and to gently direct the discussion toward profitable paths. I usually write main points on the board.

Finally, the case should be brought to some kind of **closure**. Sometimes this means describing what I take to be the areas of agreement and disagreement and the relative weight of each (“Almost everyone agrees on X, but we're still pretty divided on Y”). Sometimes it even includes a pronouncement: “It would be wrong for Peterson to copy the notes.” But I would generally qualify the pronouncement by describing some of Peterson's other options.

Case study discussion can work even if you use it only once, but the more often a group discusses cases, the better. Using case studies is not the only technique for teaching responsible science, but it is, I think, one of the best.

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Appendix: Types of case studies

I don't know of any thorough typology of case studies, but it is clear that case studies take many forms. Here are some of the forms that I have come across. The list is not intended to be exhaustive, and the descriptive names are my own – they should not be construed as definitive or in common use.

Illustrative cases are perhaps the most common form. They are included in textbooks written specifically for instruction in the responsible conduct of research and are generally found at the end of each chapter to illustrate the chapter's major points. For examples, see Barnbaum and Byron 2001; Elliott and Stern 1997; Harris, Pritchard, and Rabins 1995; Macrina 2000; and Seebauer and Barry 2001.

Historical case studies start with a particular controversy, event, or series of related events. Good examples can be found in The Human Use of Animals (Orlans et al. 1998). The first case, "Baboon-human liver transplants: The Pittsburgh case," describes an operation performed in 1992 at the University of Pittsburgh to replace a dying man's defective liver with a healthy liver from a baboon. The case itself is presented in two pages, followed by about a page of historical context. The bulk of the chapter, about eight pages, consists of commentary on the ethical issues raised by the case. (See also King et.al 1999.)

Historical cases are good because they are real, not made up, and students cannot dismiss them by saying, "That would never happen." On the other hand, though, some students will view historical cases as settled and over with; the very fact that they have been written up can seem to imply that the issues raised have all be solved.

Historical synopses are shorter, often focusing on a well-known event. Fundamentals of Ethics for Scientists and Engineers (Seebauer and Barry 2001), for example, includes sixteen "real-life cases," generally one or two pages long with a few questions for discussion. The first three cases are titled "Destruction of the Spaceship *Challenger*," "Toxic Waste at Love Canal," and "Dow Corning Corp. and Breast Implants."

Journalistic case studies are historical case studies written by journalists for mass consumption. A recent example, "The Stuttering Doctor's 'Monster Study'," can be found in the

New York Times Magazine (Reynolds 2003). It is the story of Wendell Johnson's research in the late 1930's that involved inducing stuttering in orphans. Journalistic accounts generally are written in a more literary, less academic style – they are often more passionate and viscerally engaging than case studies prepared by philosophers and ethicists.

Cases with commentary present the case study first and then follow it with one or more commentaries. The six-volume series Research Ethics: Cases and Commentaries (Schrag 1996-2002) presents a short case (about two-four pages) followed by a commentary by the case's author and a second commentary by another expert. (See also King et.al 1999.)

Dramatic cases are formatted like a script, which allows the characters' voices to carry most of the story. I find them very good for conveying subtleties and have written several (available online at <http://mypage.iu.edu/~pimple/>).

Trigger tapes are short videos intended to trigger discussion. Among the best available are the five videos in the series "Integrity in Scientific Research" (see <http://www.aaas.org/spp/video/>).

Finally, a *series of casuistic cases* presents several very short, related cases, each one in some way a variation or elaboration of one or more of the previous cases in the series. The first one or two cases are generally straightforward, presenting, for example, a clear-cut case of cheating and a clear-cut case of acceptable sharing of information. Later cases are less straightforward, pushing the boundaries that make the earlier cases clear-cut. Excellent examples can be found in Penslar 1995 (see, e.g., Chapters 5 and 6). This book also includes examples of many of the other kinds of case studies described here.