**Teaching Tips (“Illustrations That Work”) for Sexton 6e**

**General Introductory comments**:

It is not the purpose of this section to tell professors how to teach economics. You do not need to be told to be sure to use Figure X to illustrate concept Y, or to remember to develop some implications of important principles or techniques, unnecessary advice which makes up a large part of many instructor’s manuals. You don’t need to be reminded to talk about critical concepts that every introductory course develops. You don’t need a “one size fits all” approach, which conflicts with the various unique teaching styles you have found to be effective. That would be a waste of time and effort.

The intent of this section is to provide analogies, illustrations, examples and extensions that instructors may find helpful in bringing economics to life in their classroom. They closely parallel the order of presentation of the text, but can be utilized in any manner desired.

**Chapter 1: The Role and Method of Economics**

1. The connection between economics and other social sciences can be illustrated by behavior modification in psychology. Behavior modification can be shown to be an application of the rule of rational choice, where you raise the marginal benefit or lower the marginal cost of behavior you want to encourage (like a market subsidy) and lower the marginal benefit or raise the marginal cost of behavior you want to discourage (like a market tax).

2. A useful illustration of self-interest is to ask what kind of nails a steel maker would likely make if it was rewarded on the basis of the weight of nails produced (railroad spikes, as it is less costly to produce a given weight of nails that way) and contrast it to what it would likely make if it was rewarded on the basis of the number of nails made (pins, as it is less costly to produce a given number of pins than of larger nails). Those results can then be compared to what would happen if the steel maker was rewarded by being allowed to keep any profits (it would make those products it thought people valued at more than the cost of producing them, which depends on what people value in their current circumstances).

3. Students sometimes struggle with economics’ self-interest assumption because they often consider themselves to be acting altruistically. Point out to students that the belief that they are more altruistic than they really are is consistent with self-interest (we want to think well of ourselves), and then ask them whether they think self-interest or altruism is a more reliable way to get others to coordinate behavior in a society (as in Adam Smith’s famous quote). This can result in an interesting classroom discussion.

4. The text emphasizes economics as a disciplined way of thinking, not the source of clear-cut answers for every circumstance. It is worth emphasizing why the economic way of thinking points towards “it depends” as the first part of the answer to general questions (because the expected marginal benefits and expected marginal costs of choices depend on so many factors).

5. It is worth emphasizing that that economic principles allow economists to know better what not to do than what to do. We can identify choices that would do poorly in achieving intended goals, but we don’t know what course of action will be the best possible in a complex world of uncertainty.

6. As an example of the approach used in economic theorizing and modeling, ask students whether an airplane model needs to have wings and seats. Typically some will say both and others will say only wings are necessary. Then ask what difference it makes whether the model is intended to train stewardesses in their jobs or to investigate its aerodynamics. They will quickly see that the right sort of model will reflect its intended use; abstracting from those aspects that are unimportant to the question at hand to better focus on the important considerations you want to investigate.

7. A useful illustration of how models come to be accepted in science is the replacement of the Ptolemaic geocentric model of the solar system (everything revolves around the earth at the center) with the Copernican heliocentric model of the solar system (everything revolves around the sun). With the development of improving telescopes, more of the solar system could be seen. But as a result, it eventually became impossible to construct a geocentric model that was consistent with empirical observations, while those observations were consistent with a heliocentric model, leading to the replacement of one previously accepted model with another.

8. The text’s emphasis on empirical testing of theories can be reinforced by getting students to see that a major part of economic research is the search to design tests that will discriminate among different hypotheses proposed to explain something. When something is consistent with multiple hypotheses, we don’t have much of an idea of what is going on, so that a test that distinguishes among hypotheses in that circumstance can be very valuable.

9. I find rain dancing to be a good illustration of confusing correlation with causation. If a group of people decides that a deity that brings them rain needs its anger appeased by rain dancing at the beginning of the normal rainy season and they dance long enough, it will rain. It will not rain because they danced, but because the rainy season started. But once a belief in the necessity of rain dancing has begun, it can be very hard to change, since every time they dance (if they dance long enough), it rains.

10. Weather can be used to illustrate problems of establishing causation. Since heaters come on in the winter and air conditioners in the summer, one could conclude that heaters cause the house to be colder and air conditioners cause it to be hotter. Similarly, chill drafts can be blamed for catching a cold in the winter (since looking back, its easy to remember being exposed to some recent draft in the winter), even though the more scientific reason is that you are inside more, closely exposed to more of other people’s “bugs,” in the winter than in the summer.

11. In addition to the fallacy of composition illustrations in the text, you could add leaving early to beat the traffic (similar to arriving early to beat the crowd) and cutting your price to take sales from rivals (which doesn’t work if all rivals lower their prices).

12. Emphasize that disagreements about economic policy can occur even when people agree on the list of benefits and costs of an action or policy (positive statements), as long as they disagree about the relative weights or values to place on those outcomes (normative statements). This is often the case of when people perceive conflicts between freedom and fairness (the text example). President Harry Truman’s famous complaint that he couldn’t find a one-armed economist (who would tell him which policy was the right one), but only the two-armed kind, whose policy answers were always on the one hand (the benefits)...and on the other hand (the costs)..., forcing him to decide whether the list of benefits was more valuable than the list of costs, is also an excellent illustration.

**Chapter 2: Eight Powerful Ideas**

1. It is crucial to clearly discuss the basic paradigm that underlies all that we do in economics. Show what we mean by scarcity; how scarcity implies the necessity to making choices; how choices imply the bearing of opportunity costs; and how, when combined with the assumption of self-interest, that results in the Rule of Rational Choice: whatever the choice or action, do "it" if and only if E(MB)>E(MC). This, in turn, when continued as long as that inequality holds, becomes the basic intuition leading to what economists define as equilibrium (there is no incentive to change your behavior, absent a change in incentives). When this is clear, it can become the focus for student retention (e.g., how is this technique or diagram an application of the rule of rational choice), and there is almost no end to the examples and illustrations that can be made to show students the applicability of the economic way of thinking.

2. A useful way to integrate student understanding of how value is created and the crucial role of entrepreneurship in the process is to show students that all forms of creating value involve one or more of the following: Resources are being moved from less to more valuable forms (what we typically thing of as production does not create atoms; it simply rearranges them); from less to more valuable locations (the value created in transportation); from less to more valuable time periods (the value created in speculation); or from lower valuing to higher valuing uses and/or users (the value created in exchange). In each case, there is a large aspect of entrepreneurship in trying to discover higher valued forms, locations and times, and higher valuing users than others have discovered. Further, this reinforces the fact that the incentives facing entrepreneurs are crucial to the value creating process.

3. A good way to illustrate entrepreneurship to students is to discuss in class how each of them is an entrepreneur when it comes to discovering the best way to “produce” higher grades in the course. Different people learn better in different ways, handle pressure differently, have different attitudes toward the risk of getting a lower grade if they do less well than expected, different time constraints, etc. Further, not all courses are the same, and what works well in one course (e.g., memorization of terms) may not work well in another (e.g., one requiring application). Should you always go to class? Is it more effective to read before class or after class or not read at all? Should you use a study guide? Should you study in groups? All these questions are entrepreneurial in nature.

4. A good way to get students thinking about scarcity is to ask them what is scarce when one is dieting. We usually think of food as being scarce, yet in this case, it is healthier food (with fewer calories rather than more) and self-restraint in eating that are scarce.

5. An unusual, literate illustration of scarcity and opportunity cost comes from Homer’s *Odyssey*. In it, Calypso, the sea princess and immortal child of the gods, envies Ulysses’ mortality, because he gets to make decisions that will have real consequences, particularly life or death consequences (Calypso will live no matter what she chooses to do). That makes Calypso feel that Ulysses’ life is more meaningful than hers.

6. A good opportunity cost illustration is that of celebrities donating their time and services for “good causes.” If they are turning down an alternative “gig” to show up, the foregone income is an opportunity cost to the celebrity; but if they are not turning down a potential paid opportunity to appear, the opportunity cost of them appearing may be far less than their “asking” price for an appearance.

7. Since this chapter introduces appropriate handling of the concept of opportunity cost, it needs to be emphasized that costs attach to choices, not goods. One effective way to do this in class is to ask "What is the cost of a car?" One can then lead students to see that their answers do not make sense without a verb describing what action involving a car is being contemplated. One can speak of the varying costs of different ways of *verbing* (buying, owning, driving, insuring, borrowing, selling, etc.) a car, but not sensibly of the cost of a car.

8. A good, close-to-home illustration of opportunity cost for students is to discuss with them why there is less dating during finals week, then leading them to see that the reason is that the opportunity cost of time for dating is higher during finals week than at other times of the school year. Another education illustration that can get their attention is to ask why people ever stop going to school, and leading them to see that the reason is that the opportunity cost of additional time spent in education rises, the greater the market value of the skills and knowledge you already have. At some point, it becomes too costly to continue going to school. The same reason helps explain why those who go straight from graduation to MBA programs typically go during the day, while experienced, working managers (with higher opportunity costs of foregoing daytime jobs than those who have just graduated) tend to go in the evening.

9. A good way to illustrate opportunity cost to students is to ask them whether a human life is of infinite value. Someone in class is bound to say yes. Then you can show them that saving lives in “costly” ways can result in a net reduction in lives saved, if those resources would have been spent instead on lower cost ways of saving lives. This can also be presented in terms of a production possibilities curve with different types of lives saved on the axes, to show the tradeoffs involved.

10. There are several ways to illustrate the importance of the rational behavior assumption of economics. One way would be to show how traditional detective work is an example--the search for a weapon, an opportunity and a motive presume the criminal is rational. Another way is to ask students for illustrations that clearly violate rational choice, where the difficulty they have coming up with such illustrations will help reinforce the power of the assumption of rationality in predicting behavior.

11. A potential mugging illustrates the importance of focusing on the relevant margin with muggers. Say you are walking through Central Park with $200 in your wallet. When someone tries to mug you, you don’t start negotiating: You can have $200 if you leave me alone, $150 if you rough me up a little, $100 if you take a swipe at me with a knife...How much a mugger will take and how he will treat you are not choices under your control. In this situation, you basically have an all-or-nothing choice between handing over the money and taking your chances by resisting. This illustration can then be extended to other examples of the often crucial importance of focusing on the relevant margin (the choice actually being made).

12. An interesting illustration of marginal incentives is the case of bounty hunters in the Old West. If a posse is chasing a bandit who just robbed the local bank, they do not have incentives to catch the bandit if they can more easily chase him into another territory where he will rob other areas’ banks. The posse has an incentive to stop chasing him at that point. However, a bounty hunter, faced with a “Wanted: Dead or Alive” reward, knows that all his previous costs are sunk, and continues to chase, as long as the expected additional costs of catching the bandit from that moment on are less than the benefit of the reward. Similarly, a railroad company (as in “Butch Cassidy and the Sundance Kid”) would want to hunt them down, since chasing them away would only result in more robberies of their trains in other locations.

13. You can illustrate the role of incentives by discussing with your class whether you should reward marginal exam improvement by giving higher grades to the students who improve the most from their first exam results to the final. There are conflicting incentives facing students here. There are great incentives to improve (you don’t stop studying because you think you will get a C no matter what you do on the final), but such a grading system would also give students incentives to do terribly on the first test, so that they could improve more.

14. An analogy to the question of whether we want zero pollution discussed in the text is to ask whether the goal of education is zero ignorance. The answer is no, and for the same reason. The cost of eliminating some forms of ignorance is greater than the benefits. This can also be extended to show that one of the advantages of specialization and exchange is the vast saving in the costs of becoming informed.

15. There are many illustrations that can be used to emphasize the importance of recognizing differences in the incentive structures that are faced by different parties. Examples include why your athletic team’s coach wants you in better shape than you do (he gets some of the benefits, but none of the costs), why your mother wants you to get better grades than you do (she gets some of the benefits, but none of the costs), why military draftees tend to be used inefficiently (those in charge need not incur the true opportunity cost of using human resources), why a dictator might choose to move a society inside its otherwise attainable production possibilities curve (they can benefit themselves by policies which hurt their citizens), why damage deposits arise as a way to make renters act more like they were owners (otherwise renter damage costs will be imposed on owners), etc.

16. A birdwatching analogy can help students see the usefulness of the economic way of thinking. Just as training and experience shows birdwatchers “where to look" and “what to look for” to spot various birds (everything from what a bird looks and sounds like to where they tend to nest, what they feed on and when, when and where they migrate, etc.), the economic way of thinking shows students to look at decisionmakers’ incentives to "see" the predictable consequences of actions and policies. This is why those trained in economics can often find predictable policy consequences others are unable to grasp very easily (for example, the predictable consequences of price controls).

17. Another analogy that can help students understand the power of the economic way of thinking is to the framing of a building: Just as buildings will not be structurally sound if the framing is not done correctly, economic analyses will be faulty unless they build on the framework of the set of incentives faced by the relevant decisionmakers. This is why economists spend so much effort trying to properly specify the incentives facing actors involved, because predictions that are inconsistent with actors' incentives are likely to be incorrect, and more so the longer the train of reasoning (the larger the building) that is built on a poor foundation.

18. In talking about incentives, one helpful illustration is to show that sometimes it is cheaper to make mistakes than to be right. This is true whenever the costs associated with being wrong a certain fraction of the time are expected to be low compared to the costs of avoiding such mistakes (although these expectations themselves may prove incorrect). Examples run the gamut from dating ("you've got to kiss a lot of frogs before you find your prince") to exams (you don’t generally want to incur the costs to get every problem on an exam correct, because you can miss some and still get an A) to buying "off brands" when shopping (where you trade off lower prices for greater risks of unsatisfactory product performance).

19. A good way to get students to see that incentives matter is in terms of gold-wired or copper-wired electric motors. Gold is a better conductor of electricity, so that it is more efficient from an engineering perspective, but since gold is so much more expensive than copper, copper is typically more economically efficient for wiring, which is why copper is typically used for that purpose. However, there are cases, such as in satellites, where gold wiring is used to conserve on even scarcer orbital lift capacity (to carry the necessary power source or solar power collection devices).

20. One way of introducing the issue of specialization and exchange vs. self sufficiency is to ask students why people are always portrayed as being so self-sufficient in Westerns, then lead them to see that the reason was that when the cost of trading (particularly transportation) was very high, the cost of trading outweighed the gains from specialization. However, when the costs of trading become lower, increasing specialization and trade is the result.

21. A useful connection between property rights and specialization and trade can by made by asking students whether there would be any bicycles produced if someone owned a bike only as long as he or she was sitting on it. Bicycle production would stop because no one would be willing to pay the cost of producing a bicycle for the benefit of just one ride.

22. An interesting ethics question can be used in class as an example of specialization and exchange, by asking why students aren’t allowed to buy papers. The reason is that the point of education is more that of teaching the process of how to do something than the final product, per se. Buying a paper allows students to “produce” a paper without learning anything, which is the real purpose of writing papers (where the final product is used to judge the extent of learning). If all that mattered was the final product (say, a paper), and who did it and how were unimportant (as is typical in most market purchases of goods and services), then purchasing a paper would be fine.

23. A good analogy to the importance of the price mechanism as a form of communication is foreign travel, where one does not speak the language of the country. Ask if any of the students have ever traveled in a country where they did not speak the language. Ask one of those who have how well they found out what they wanted to know and how well they did at achieving their objectives as a result. For most, the honest answer is not so well. For those who insist they did just fine, ask them how often it was because foreigners knew English, and how often it was because prices were clearly indicated in those countries.

24. Since most students have heard that market systems built on private property rights are based on the selfishness of people, it is often interesting to ask students whether market systems are based on people’s selfishness or on protecting people from others’ selfishness. They will tend to answer “selfishness.” Then you can show that property rights, while they do allow you to do “selfish” things with your own property, also prevent others from selfishly using or abusing your property without your consent or without paying sufficient compensation to acquire your consent. Given that each of us is vastly outnumbered by “others,” property rights’ protections against others’ selfishness may well be its most important function.

25. One way to get across the idea that our wants will always exceed our productive abilities is to imagine a genie who gives students a minute to write down their wishes, which he then grants, with the proviso that they come back in 6 months. Would students discover new wishes in the meantime? If they did it again (and again…), would they continue to discover new wishes? If that answer is yes, we cannot produce our way out of scarcity.

26. Another good example of opportunity cost is the cost of going to a particular class meeting. For example, does it include the cost of driving to campus? (It depends—would they have driven even if they skipped that particular class) Does it include the cost of depreciation? (Yes, for mileage related depreciation; no, for time related depreciation—unless it is Dad’s car). Does it include one day’s worth of insurance? (No—you are on the hook for this anyway) Does it include gas? (Yes, if you are paying for it; no, if Dad is paying for it)

27. Choosing a major is a useful example of specialization and trade (including why, in markets systems, no one needs to force students to choose something they are relatively good at for career preparation) that students can easily identify with.