For the most part, labor economics is just micro theory, when applied to individuals and firms. (I like the “individual” side of things more, and that prejudice will be apparent in these notes.) For that reason, it’s important to review a bunch of concepts from micro class.

1.1 Preferences and utility

Economics is based on an assumption that people have “rational” preferences. This has three very simple rules. First, people care about final goods, and they are inherently indifferent toward wealth and prices. A twenty-dollar bill does not give me any happiness on its own; however, it will indirectly provide happiness because I can use it to purchase food and beer, goods that I like. The high price of gasoline does not cause me any distress on its own; however, it can indirectly cause unhappiness if it means that I can’t afford to drive to the beach for vacation.

Second, we assume that if you ask a person to compare two choices, they can state that one is preferred to the other or that they are equally good. If you ask me whether I would prefer to have the sesame beef dish or the kung pao chicken, I should be to give you some answer. (This is so trivial that I don’t feel the need to explain it further, but it is an assumption.)

Third, we believe that these judgments are “transitive”: if I like the sesame beef better than the kung pao chicken, and I like the kung pao chicken better than the twice-cooked pork, then it should also be the case that I like the sesame beef better than the twice-cooked pork. Otherwise, I’m just crazy.

If people do have preferences like these, then they should be able to rank any list of alternatives. Beef would be my first choice, chicken would be my second choice, and pork would be my third choice. Then we can construct a utility function representing these preferences. A simple one would be \( U(X) = \text{the number of things that } X \text{ is preferred to} \). In other words, I implicitly have a utility function, and \( U(\text{beef}) = 2 \), \( U(\text{chicken}) = 1 \), and \( U(\text{pork}) = 0 \).

This is probably an unfamiliar explanation of utility. Most likely, your micro teacher (like mine) presented “utils” as some abstract units that measure happiness. I imagined them as the number of neurons that were fired off in the pleasure center of the brain—and indeed, some economists (like Dan McFadden at Berkeley) literally believe that this is what they are. I was never really satisfied with this abstract interpretation of utils (how could we ever measure them? how could we ever know if they really exist?). On the other hand, thinking of utils as measuring something...
concrete—the number of options that are inferior to something—is much easier for me to believe. And here’s the nice thing: *it doesn't really matter what units we use to measure utility, since they'll all be equivalent*. It's like Dan McFadden is measuring happiness in degrees Celsius, while I am measuring things in degrees Fahrenheit.

Anyhow, this explanation was intended to give you one way of thinking about “utility”. In addition, it explains why we can use utility functions as a “convenient fiction” in economics. We don’t really believe that people have these functions and that they consciously maximize them. (I don’t sit in a restaurant and calculate the utils obtained from each dish, and then pick the steak because it gives me eight utils more than the salmon.) However, preference-maximizing behavior (just picking what you like best) can be represented *as if* people were maximizing some mathematical function; namely, the one that I just created.

We like this because sometimes it’s easier to express things mathematically.

### 1.2 Discrete choices and continuous choices

A “discrete choice” involves selecting from a limited number of options. Sometimes these are yes/no decisions (“do I want to order out for dinner tonight?”), and sometimes they offer several alternatives (“to get to work today, should I take the bus, my car, or my bike?”) When a person is faced with a “continuous choice”, he can pick almost any numerical value (“how much money do I want to put into savings this month?”)

When a person makes a discrete choice, we presume that he calculates the net benefit of each option—the benefit minus the cost—and he selects the one that gives him the highest net benefit.

<table>
<thead>
<tr>
<th></th>
<th>Car</th>
<th>Bus</th>
<th>Bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit of making the journey</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>Enjoyment (another benefit)</td>
<td>$5</td>
<td>$0</td>
<td>$10</td>
</tr>
<tr>
<td>Monetary cost</td>
<td>-$3</td>
<td>-$0</td>
<td>-$0</td>
</tr>
<tr>
<td>Time cost</td>
<td>-$4</td>
<td>-$7</td>
<td>-$8</td>
</tr>
<tr>
<td><strong>Net benefit</strong></td>
<td><strong>$8</strong></td>
<td><strong>$3</strong></td>
<td><strong>$12</strong></td>
</tr>
</tbody>
</table>

I would choose to take my bike, since it gives me the highest net benefit. Discrete choices are always this simple.
Continuous choices involve deciding how many. An individual still wants to maximize net benefit, and the maximum always occurs where marginal benefit equals marginal cost. Of course, you know this, but I just want to remind that that’s the answer to just about every economics question—the only trick is figuring out what are the costs and benefits in some specific case.

1.3 Indifference curves

In models where an individual can divide his consumption between two goods, we use indifference curves to represent combinations that the person feels give him the same utility. For example, if you offered me the choice to take a four-day trip to Paris and stay in a fancy hotel, or to take a ten-day trip to Paris and stay in a grimy hostel, I would have a hard time making up my mind. These two bundles must lie on the same indifference curve. (What are the two “goods” being consumed? Number of days in Paris is one, and the other is “quality of lodging”.)

There are three rules for drawing indifference curves. First, they always curve in a particular direction (usually described as convex or concave). Basically, the closer they get to the axes, the more similar their slopes are to the axes. In other words, they become more vertical as you move further up on the curve, and they become more horizontal as you move further right on the curve. This means that an indifference curve shouldn’t curl around, and it shouldn’t bulge away from the origin.

A higher indifference curve—up or to the right—represents higher utility.

A person’s indifference curves never intersect. (Sometimes, there will be models where we graph the preferences of two different people, it is okay to have Mr. A’s indifference curves intersect Ms. B’s curves. However, two of Mr. A’s curves will never cross.)
1.4 Discounting

Giving me $\100$ today is more valuable than giving me $\100$ a year from now. Think of it this way: if you were to give me $\100$ right now, I could stick it in the bank and get 4.25% interest; I’d have $\104.25$ in a year. If you were to offer me $\100$ today or $\104.25$ in a year, I’d be indifferent between those amounts. Economists say that they have the same present discounted value.

In general, the present discounted value of $\$X$ given to me $t$ years in the future is:

$$\frac{X}{(1 + R)^t}$$

where $R$ is the interest rate (expressed as a decimal, so 6% means $R = 0.06$).