1.3 Preference for Flexibility vs Preference for Commitment

We have shown above how problems of temptation and self control can lead to a preference for *commitment.* Before moving on, it is worth considering a countervailing force that can lead to a preference for *flexibility*, or larger choice set. To do so, let us go back to consider the 'standard' model of a decision maker who has no temptation issues and so values a menu just by looking at the best available alternative:

$$U(A) = \max_{x \in A} u(x)$$

Consider such a decision maker who is faced with two possible menus, A and B. Can it ever be that the DM prefers the union of A and B to either A or B? The answer is no: either the best available in A is better than that in B, in which case

$$U(A \cup B) = \max_{x \in A \cup B} u(x) = \max_{x \in A} u(x) = U(A) \geq U(B)$$

or the best available alternative in B is better than that in A, in which case

$$U(A \cup B) = \max_{x \in A \cup B} u(x) = \max_{x \in B} u(x) = U(B) \geq U(A)$$

More generally, this standard model implies the following condition:

$$A \succeq B \;\Rightarrow\; A \cup B \sim A$$

This is a condition which is somewhat stronger than the set betweenness condition, and it implies that the DM has no intrinsic 'preference for flexibility': For any menu A, they would be just as happy with a menu which contained only one element - the best element in A.

Is this condition plausible? Arguably not. Consider the following story: I am going to offer you different menus of clothes that you can choose from on October 1st this year. One menu contains only a summer outfit: t-shirt, shorts and flip flops. The second menu contains only a winter outfit: jeans, jumper and boots. What would your preferences be over the menus $\{s\}$, $\{w\}$ and $\{s, w\}$?

It seems perfectly sensible that you would strictly prefer the menu $\{s, w\}$ both to menu $\{s\}$ and $\{w\}$. Why is that? Well, as of today, you have very little idea what the weather will be like on the 1st October. It may be sunny and warm, in which case you would like to wear the summer outfit. Or it may be cold, in which case you would like to have the winter outfit. Thus, you would prefer to have a menu which offers both options, meaning that you can delay the choice of outfit until you know what the weather is: the fact that you do not know what the weather will be leads to a preference for flexibility, or a desire for a bigger choice set.

In order to capture this effect, we want to modify the standard above to allow for some uncertainty. We will allow for the fact that there are different *states of the world*, and that your utility depends on the state of the world as well as what you choose. So, in the above example, there would be two states of the world - the temperature could be either hot or cold - so if we use S to be the set of states of the world, we have $S = \{h, c\}$ Moreover, the utility you get from choosing the summer outfit is high if the weather is hot, but low if it is cold and vise versa for the winter outfit, so (for example)

$$1 = u(h, s) = u(c, w) > u(h, w) = u(c, s) = 0$$

When evaluating a menu, we assume that we do not know what the state of the world will be: we only know how likely they are - so for example there might be a 50% chance that it will be hot on the 1st October and a 50% chance that it will be cold. However, when we choose *from* the menu, we will know what the temperature actually is. Thus, the utility of the three menus described above are

$$\begin{aligned} U(\{s\}) &= \frac{1}{2}u(h, s) + \frac{1}{2}u(c, s) = \frac{1}{2} \\ U(\{w\}) &= \frac{1}{2}u(h, w) + \frac{1}{2}u(c, w) = \frac{1}{2} \\ U(\{s, w\}) &= \frac{1}{2}u(h, s) + \frac{1}{2}u(c, w) = 1 \end{aligned}$$

The menu $\{s, w\}$ is strictly preferred to both $\{s\}$ and $\{w\}$ because the DM can wait until they know what the weather is before choosing their outfit.

More generally, this model implies that the value of a menu is given by

$$U(A) = \sum_{s \in S} \pi(s) \max_{x \in A} u(s, x)$$

where S is the set of states and $\pi(s)$ the probability of each state.

It is easy to show that this model implies that

$$A \succeq B \;\Rightarrow\; A \cup B \succeq A$$

Thus, we have three different models on the table which say different things about what happens when we combine a menu A with an inferior menu B. The 'preference for flexibility' model says that you may strictly prefer $A \cup B$ to A, because you can delay your choices until after finding out some potentially valuable information. The standard model says that you should be indifferent between $A \cup B$ and B: if the best available alternative is in A, then adding the contents of B has no effect. The temptation model says you may strictly prefer A to $A \cup B$, because B may include some tempting alternatives.

What happens if you have uncertainty about the future *and* a problem with temptation? This sets up a trade-off: on the one hand, larger choice sets are good because you can be flexible. On the other, they are bad, because they allow for more temptation. How best to solve this trade-off is a complex and interesting problem, beyond the scope of this course.[4] However, the important take home message is that, when the future is uncertain, commitment is costly. This may explain why we do not see as many 'real life' examples of commitment as we might expect.

[4] Though if you are interested, see Amador, Manuel, Iván Werning, and George-Marios Angeletos. "Commitment vs. flexibility." Econometrica 74.2 (2006): 365-396.