**Probability Weighting Functions and Ambiguity Aversion: How are they related?**

People misperceive objective probabilities or have a tendency to subjectively weight them. An example is the result observed in experiments where people overweight “low” probabilities and underweight “large” probabilities. Either could be captured by *decision weights.*

Si sacas una bola roja te inspecciono. Si sacas una negra no. te dice el regulador. Vos no sabes cuantas bolas rojas y negras hay en la urna. Sabes que hay 100 en total.

Sabes que existe una probabilidad p que es la probabilidad objetiva de sacar una roja. Es igual, obviamente, al número de rojas sobre el número total de bolas.

Te formas una subjective probability pi(p) del número de rojas, **para cada valor de p** (entre 0 y 100). Al hacerlo, por los procesos sicológicos del riesgo, le asignás más peso a unos valores y menos a otros. Típicamente, le asignas una probabilidad baja a que p sea 0 o muy chiquito y más alta a la probabilidad de que sea “alta”. Sos pesimista. Crees que es muy probable que te inspeccionen. Claro que no estás seguro. Sos ambiguio respecto a tus beielfs pi. Entonces le asignas una probabilidad f(pi(p)) a cada uno de los valores pi que vos crees que puede tomar p.

**Is it correct to model ambiguity aversion as a mean preserving spread? How is it done in the literature?**

En la realidad hay x número de bolas rojas en la urna. Esto es, el valor de p es x/100. Este es el valor objetivo. Pero no lo sabes. Enfrentás uncertainty. Le tenes que asignar probabilidades al valor de x (y p). Las probabilidades que le asignás son f(x) = pi(p). Si no tuvieras uncertainty, sabrías que p=x/100 and you would be in EUT again. But because you have uncertainty you construct your subjective probabilities pi(p). If it were only uncertainty, you would calculate your estimated value of x as an expected value. In other wrds, your would calculate your expected value of *p, ,* with . So the expected value of *p* can also be written as you’re your estimated probabilities pi(p)Grant, et al.

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| Event | A red ball is drawn | The firm is inspected |
| Probability (objective) | P=x/100, x=number of red balls in the urn | p |
| Uncertainty | The agent does not know x (or p) | The firm does not know p |
| Given the uncertainty about p, the agent forms a probability distribution about x; it assigns a (subjective) probability to each possible value of x (or p) | | |
| Subjective probability | f(x) |  |
| The process by which the agent forms its subjective probabilities may include some form of distortion of objective probability. In particular, (or f(x)) may be a probability weighting function of the “usual” inverted-s-shaped form. | | |
| Expected value of p |  | , or |
| Now, ambiguity measures the degree of uncertainty. The degree of comfortableness of the agent with its (subjective) probabilities assigned to each possible value of x (or p). | | |
| Ambiguity: captures de degree of uncertainty | , where *a* is an index of ambiguity, as in Snow and Warren | , where *a*  is an index of ambiguity, as in Snow and Warren |
| Is Ambiguity a mean preserving spread of *F relative to the* improper distribution with mass at p = p? |  |  |