**PSY310 Lab in Psychology**

**Lab report**

**Tutorial - 2**

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**Introduction:**

At its most basic level, signal detection theory asserts that a stimulus's ability to be detected relies on the individual's physical and psychological health. Basically, the strength and level of our attention determine how much we notice things. SDT, or signal detection theory, is a method for assessing sensitivity in decision-making. Cognitive scientists rapidly realised the potential of SDT and modified it for use in human decision-making. SDT's main concept is that decisions are made against an uncertain backdrop, and the decision-objective maker's is to separate the decision signal from the background noise. SDT may be used in any circumstance involving a binary choice where the decision-reaction makers can be compared to the target's actual existence or absence. SDT has the benefit of providing a unit-less measure of sensitivity, independent of subject bias that can be compared to other sensitivities over a wide range of decision-making scenarios.

**Method:**

Details of procedure and design of the experiment designed in the lab

Details of how the experiment was conducted on PsychoPy –

Stimuli – polygon

* Basic – name: fixation, time: 0.0, duration: 1.0, shape: triangle
* Layout – size: (10,10), spatial units: pix

Stimuli – grating

* Basic – time: 1.0, duration: 0.3
* Orientation – tilt (set every repeat)
* Layout – size: (0.2,0.2)
* Appearance – contrast: 0.3
* Texture – mask: gauss, spatial frequency: 5

Responses – keyboard

* Basic – start: 1.0, allowed keys: ‘up’,’down’
* Data – (tick store correct) correct answer: $corrAns

Custom – code

* Begin Experiment

if random() > 0.5:

tilt = 0;

corrAns = 'up'

else:

if random() > 0.5:

tilt = randint(1,5)

corrAns = 'down'

else:

tilt = randint(-5,-1)

corrAns = 'down'

End Routine

trials.addData('tilt',tilt)

if random() > 0.5:

tilt = 0;

corrAns = 'up'

else:

if random() > 0.5:

tilt = randint(1,5)

corrAns = 'down'

else:

tilt = randint(-5,-1)

corrAns = 'down'

* Flow - Insert loop

Name: trials

nRep: 100

Performed the experiment and now open the data file and make a sheet consisting of tilt, key\_resp.keys, key\_resp.corr and then categorise them in hit, miss, false alarm and correct rejection then find prop, prop fa, d-prime and c.

**Results:**

D-prime = 1.252118601

C = -0.40633638

**Discussion:**

Proportions of hits and misses represented under the signal distribution. β reflects the subject criterion, c **reflects bias**, and d' reflects sensitivity which represents the difference in position between the two distributions. (Symbol: d′) A measurement of sensitivity or discriminability derived from signal detection theory that is unaffected by response biases. It is a way to gauge a person's capacity for signal detection. D' (d prime), which is the standardised difference between the means of the Signal Present and Signal Absent distributions, is the most often used SDT sensitivity measurement. We simply need to know a person's hit rate and false alarm rate in order to compute d'.