Class-work Activity 1

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1a. Briefly describe the SEEV model and its role in understanding attention processes

Ans. The SEEV model is a model of selective attention. It is a multiple-resource model of divided attention, where the 4 (Salience, Effort, Expectancy, Value) play a role in filtering out what we pay attention to.

1. *Salience*: A bottom-up process capturing unusual properties of events, like an orange square in a grid of blue squares. Salience is relative, the same orange square would not be as "salient" in a grid of red or yellow squares.
2. *Effort*: Another bottom-up process. The effort required to process information sets limits on what can be processed, such as requiring to move one's head to observe something.
3. *Expectancy*: A top-down process. It's the likelihood of seeing an event in a particular context, calibrated by the frequency of occurence of the event in that context
4. *Value*: Another top-down process. It is the importance served to the task by attending to the event.

1b. Use the SEEV model to compare the search efficiency for the following tasks:

i> searching for a friend in a crowded place, where the crowd feature profile matches versus not matches with your friend

Crowd feature profile matches your friend

For example, if my friend is returning from an office during peak rush hour. This will be a *conjunctive search*, where we will need to look for the facial features of our friend among many people who are dressed similarly, we cannot simply glance over a mass and instantly recognise by processing the information in parallel. Since there is no salient feature identifying the friend, significant effort is needed to scan each and every feature.

Crowd feature profile does not match your friend

For example, if my friend is a clown wearing a clown costume in the middle of the train station. Or a Halloween costume, does not matter. The search is *disjunctive*, there is a very salient feature we can look out for and identify even among many other people in the search space. It is low effort. Even if we aren't

expecting to see our friend in the clown setup, we are drawn to it due to the saliency and from then value-matching is quick.

ii> a conference attendee, who is not familiar to you, in a crowded place where the crowd feature profile matches versus not matches with the attendee

Crowd feature profile matches the attendee

This is harder than the previous task - in addition to the lack of Saliency, we are also faced with a poor idea of both the value of the event (we do not know if any event will affect our understanding of who the attendee is, unless they shout their name out), and poor expectation, as we are not familiar with said attendee. So the search task is hard: there is no salience, the effort needed is high (we need to manually check against a mental checklist that does not include a proper representation of their features), the expectancy is absolutely minimum, and the value is also negligible.

Crowd feature profile does not match the attendee

Here, it is still hard, but if we are aware the attendee is a clown in the midst of suits, it's a rather easy task. Even if we don't know, as it is the first face that pops out to us, we can quickly compare with the parameters we are aware of.

iii> Compare the aforementioned comparisons with the varying set-size of the crowd

If the feature profile of the crowd does not match, due to the disjunctive search process, the search time will not increase appreciably with larger crowd size, unless the effort needed is more (if it's a 360 degree surround crowd, searching will still be harder than just 90 degree).

However, *it is assumed that the crowd is homogeneous.* If it is varied - there are multiple clowns, some stilt-walkers, a number of dressed up and homeless-in-appearance people side by side, it's a far more complex search, as saliency is no longer as much of a help. It is more like a conjunctive search at this point.

If the feature profile of the crowd matches, then as it is conjunctive, more time will be taken to search the larger the crowd gets as it's a serial process.