1. What was the broad question being asked by this research project? What was the specific question being asked by this research project?

Can you prepare for affective disturbances? (most broad)

What types of control processes are used to protect goals from affective distractors? (a little less broad)

Specifically, can the disruption of information processing by affective stimuli be curbed either by experience (experience-based control) or by cuing beforehand (expectancy based control)? (the most specific)

a. Summarize the background information on the research topic in three sentences

One type of cognitive proactive control is experience based, which depends on the high frequency of distractors that will overall lead to a decreased effect that affective distractors have on task performance. Another type of cognitive control mentioned is expectancy based, which is cuing the congruence of an upcoming stimuli beforehand, which seems to only work under discrete conditions (relatively low congruence/conflict was a major condition).

b. What is the gap in the literature identified by the researchers? What question(s) are they trying to answer? What is their hypothesis and what should happen if the author's hypothesis is true?

The expectancy theory, in my opinion, seems to not have much support to be widely replicable, and only seems to work under numerous and discrete conditions to observe, so I don't see why the authors would want to test it. The question they are trying to answer is; which of the two types of proactive control is going to protect against distractions?

The authors hypothesize that: "Experience-based proactive control should shield information processing from affective distraction under a high proportion of irrelevant affective distractors." And if this proves to be true, then the results will show a decrease in distractor effect (improved performance comparatively) if there is a high frequency of affective distractors.

"... Expectancy- based proactive control should shield information processing from affective distraction after predictive valence cues." If this hypothesis proves to be true, we should see that the participants can successfully prepare for an upcoming trial if they are given a cue that it is incongruent beforehand, and thus will perform better.

2. What experiments were done to test the hypothesis or investigate the research question?

a. Explain the task design – what are participants instructed to do and what is being measured? Think about the independent and dependent variables.

They conducted 3 different experiments.

Commented [c1]: The reason I point this out is that you'll notice the Introduction has a certain structure: first the broad real-world example, then a broad intro to experience vs. expectancy based proactive control, then getting into the literature on affect x attention, proactive vs. reactive control, cueing, etc. With "high impact" (meaning they tend to get cited more, people pay more attention to these) journals, you have to start out immediately saying this is what makes our paper unique, this is the gap. That's to capture people's attention. Then they can get into the relevant literature. In journals that are not as high impact, people can just go on in the Introduction about relevant literature before they point out the specific question.

Commented [c2]: Yes what you have is good – basically their conclusion paragraph before Experiment 1 tells you what they wanted you to get out of that introduction in summary

Do you get the difference between reactive vs. proactive? And the expectancy vs. experience manipulations?

Commented [c3]: Well, even if a handful of studies haven't found it, it's not necessarily a thing that can't happen

Commented [c4]: Good. What does improved performance mean in this case for them?

Commented [c5]: You mean if they're given an informative cue beforehand

(they had noninformative & informative cues.)

Experiment 1:

- letter classification task- participants' task was to classify whether a letter precedes or succeeds M in the alphabet via button presses on a standard keyboard.
- They used the letters A to L and O to Z, and press the "," or the "." key .
- Cue before either informative (100% predictive) or uninformative.
  - question mark in white in a gray frame= uninformative
  - A white plus sign in a blue or yellow frame signaled a neutral distractor
  - A white minus sign in a blue or yellow frame signaled a negative distractor
- The trial was accompanied by either a negative or neutral picture (both irrelevant).
- Two lists of 20 images each, one being neutral and the other being negative
- ~~question mark in white in a gray frame= uninformative~~
- ~~A white plus sign in a blue or yellow frame signaled a neutral distractor~~
- ~~A white minus sign in a blue or yellow frame signaled a negative distractor~~
- 4 blocks, 100 trials each

Experiment 2

- Dropped predominantly negative condition
- Doubled trials in predominantly neutral condition
- Stimuli and procedure same as last experiment

Experiment 3

- conducted an additional experiment in which we varied the levels of the proportion of infrequent negative stimuli
- Instead of 20% and 80% negative distractors, changed it to 15% and 30%

3. What evidence supports each of the conclusions?

Figure 2 discussion

- There was essentially no difference in response time between negative and neutral stimuli in predominantly negative trials.
- RTs were far slower for negative stimuli compared to neutral stimuli in predominantly neutral trias (negative images rare) whether the cue was informative or uninformative.

Figure 3 discussion

- Concluded that frequently shielding the main task from affective stimuli eliminates affective distraction
  - Percent error was lower I guess?

Commented [c6]: Also want to mention the experience manipulation – 80% neutral/20% negative in 2 blocks that turns to 20% neutral/80% negative distractors in the next 2 blocks & vice versa for people

And ~ how many subjects each study had

Also: Accordingly, valence frequency and cue type were manipulated blockwise, whereas distractor valence was manipulated trialwise.

Nice summary of their 3 variables of interest, which you've already covered here (trial accompanied =distractor valence; valence frequency = experience manipulation; cue type = informative/uninformative)

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Commented [c7]: When actually presented in lab, we'll go through E1, then E2, then E3

Commented [c8]: May want to mention why – what question do they address w/ E2 and E3?

(may want to point out in Fig 2 specifically how it looked like there could be a trend towards using the informative vs. uninformative cue in mostly neutral condition)

Commented [c9]: Again make sure here to mention before getting into e3 what q they're asking that necessitates these changes

Commented [c10]: Yeah and if you're curious which stats support the figure:

"significant two-way interaction of distractor valence and valence frequency, F(1,34)=19.66, p < .001,.p 0.37. RTs were longer with negative distractors as compared to neutral distractors in the predominantly neutral condition, t(34)=5.59, p < .001, dz 1.34, whereas there was no difference between negative and neutral distractors in the predominantly negative condition, t (34)=0.12, p=.907, Dz 0.03"

Commented [c11]: Do you see how this relates to the experience vs. expectancy accounts

Commented [c12]: Also from E1 – so even though they're in a context w/ a lot of negative images that should distract them from doing the task, they have fewer errors in mostly negative condition than mostly neutral condition. Since it's lower in mostly negative vs. mostly neutral, it is also mimicking the RT patterns, but isn't quite as clear (which is why their results here are "trending" p = 0.075 but not significant)

And like with the Fig 2, you can see very little differences in informative vs. uninformative cues across both contexts. (so experience wins over expectancy again)

...

    - Not sure how they concluded this
- There was opposite effect when cue signaled upcoming negative picture, the percent error was in fact higher in trials that negative pictures were rare.

Figure 4 discussion

- Negative stimuli trials had longer response times and higher percent error than neutral (especially when cue was uninformative for percent error)
- Cues indicative of distractor valence did not affect performance in the presence of negative trials

Figure 5 discussion

- RTs were longer with negative distractors as compared to neutral distractors in 15% condition
    - This difference was smaller in 30% condition

Figure 6 discussion

- Participants were more accurate when distractors were neutral compared to negative
    - Smaller affective distraction effects with higher proportion of negative distractors
        - This agrees with experience-based proactive control

4. What are the major conclusions?

Dual mechanism framework- no sequential modulation

An explicit warning of upcoming aversive stimuli does not help shielding from their distracting influence. Frequent experience of successfully ignoring aversive stimuli, on the other hand, does de- crease their impact.

They get a little into the discussion of implicit vs. explicit intentions too. How exactly does experience impact these adjustments in control? And they cite one of Tobias's reviews suggesting that people are basically implicitly learning the distractor valence proportion and adjusting their control

They also tried relating their research to trigger warnings… which who knows if that's appropriate

a. What do the results add to the field? How do the researchers interpret their findings? Summarize any limitations identified by the researchers.

Commented [c13]: Basically in error rate, the informative vs. uninformative cue lines are nearly parallel, and that's almost the same thing in RT, although there's a slight but nonsignificant slope for the neutral distractors… (lines being parallel meaning that it didn't matter whether the cue was informative vs. uninformative – it was just the distractor valence that mattered)

Commented [c14]: Exactly, which relates directly back to E1 and how they had no difference in the mostly negative vs. mostly neutral case

Commented [c15]: yes

Commented [c16]: Also some of the alternate explanations for their findings:

-block order effects in E1 – they point out that it's significant for people who start with mostly neutral and mostly negative images, but the affect distraction is so much more prominent in the people who start w/ mostly neutral blocks (they called this a lack of habituation)

-a reviewer probably also asked them about sequential adaptations, since they tried analyzing for that as well

(although you might mention this after presenting on E1 first)

Limitations: the task WM load: With relatively higher working memory load, participants may be unable to use predictive cues

They also briefly mention individual differences – that people might only use predictive cues when they think it's worth it. And they don't incentivize using the cues in this task.

One thing that I'm interested in here is that they've pitted the experience and expectancy based accounts against each other in the same task. Could it be that when they're in competition with each other that participants just learn to adapt, so they don't need to use the informative cues? Whereas if they've been separated or separately manipulated, perhaps participants would still use the informative cues.

And in that case, I'd be interested in knowing how people's adjustments via cues vs. via experience are related