Learning to selectively ignore distractors
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Learning and Selective Attention
Performance on selective attention tasks like Stroop (1935) and flanker (Eriksen & Eriksen, 1977) have been shown to be experience-dependent.

Example: Proportion Congruent Effects
Manipulating the proportion of congruent vs. incongruent items modulates the size of the interference effect.

(e.g., Bugg & Crump)

Proportion congruent effects can be highly specific (item-specific) but also general (list-wide, context-specific)

What is being learned?

Learning is general
Reduce task conflict or engage in voluntary strategies (e.g., Botvinick, et al., 2001; Gratton, et al., 1992)

What happens when you are trained on one set of Stroop items and then introduced new items?

Learning is specific
Stimulus-response associations or stimulus-attention associations (e.g., Abrahamse, et al., 2016; May, et al., 2003)

What happens when you are trained on one set of Stroop items and then introduced new items?

Exp 1: Learning fails to transfer when new related Stroop items are introduced

Exp 2: Learning fails to transfer when new unrelated Stroop items are introduced

Exp 3: Learning fails to transfer when neutral items are introduced

Concluding Comments

Summary
• The Stroop effect was reduced (or eliminated) during the practice phase suggesting participants were learning to ignore the word distractor
• However, learning failed to generalize to new items and any learning for the trained item set failed to transfer to the mixed phase

What is learned?
• The failure of learning to transfer from the practice to mixed phase is surprising and inconsistent with all the cognitive control model predictions
• These phenomena may be better understood in terms of traditional learning phenomena like habituation (Davis, 1970) and extinction (Bouton & Ricker, 1994)

Questions?
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