Search templates can be adapted to context, but only for unfamiliar targets
Mary J. Bravo¹ & Hany Farid²
¹Rutgers & Dartmouth

When observers search repeatedly for a target in a particular context, they develop a target template that is adapted for that context. We have shown that observers can learn multiple templates for a single target and they can switch among these templates depending on the context (VSS 2012):

Session 1, Training: observers practiced searching for the target in three contexts (three distractor types), each associated with a number cue. The three contexts were presented in different blocks.

Session 2, Testing: the three contexts were intermixed. Half of the trials had a valid context cue, half had an uninformative cue. As a comparison, the experiment was also run with one context, three targets, and target cues.

Do observers develop multiple templates for a target that is already familiar?
Session 1: Observers learned to discriminate the target watch from 20 similar watches.

Is the target on the left or the right?
Session 2, Training: Observers practiced finding the target in three contexts.
Session 3, Testing: Observers searched for the target with and without context cues.

Observers do not develop multiple templates for a familiar target. If observers develop the templates first, can they maintain them after the target becomes familiar?
We repeated the previous experiment interchanging Sessions 1 & 2.

What's going on? Are observers unable to learn multiple templates for a familiar target? Or do they have no reason to learn them? We had assumed that context-specific templates are optimal for search, but maybe they are merely sufficient.