Hidden in Plain Sight: Expectation Congruency and Encoding Context Influence Object-Feature Memory

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Abstract

An important component of episodic memory is the ability to bind together objects and their constituent features. Past research suggests that this binding process might be influenced by prior expectations about the relationship between objects and their features, as well as the contexts in which they are encoded. Yet it remains unclear how robust an effect these factors have in influencing memory for task-relevant and irrelevant features during recognition and recall. The current study explored how encoding context and congruency interact to shape memory. Recognition and recall were assessed following memorization and visual search for objects embedded in expectation-congruent or incongruent locations. While overall congruent locations were better remembered, incongruent locations were better recalled following visual search compared to memorization. Further, memory confidence may play an important role in individuals' ability to recall incongruent information. These findings highlight the contributions prior expectations and task demands make in shaping object-feature memory.

Keywords: episodic memory; visual search; congruency; recognition; recall;

Introduction

In everyday life, individuals are tasked with encoding and recalling information about objects and their features from memory. For example, individuals often need to recall where they parked their cars in a parking lot, the color of their toothbrush to distinguish it from others (e.g., family members), and which size shoes they need to purchase. Past research suggests that the storage and retrieval of this object feature information is influenced by two critically important factors – 1) the congruence between the object features we study and our prior expectations about them (Macias & Persaud, 2026; Persaud et al., 2025; Ramey et al., 2022; Stahl & Feigenson, 2017) and 2) the specific task employed to encode the object and features (Archer & Persaud, in review; Draschkow et al., 2014; Hu et al., 2021). In general, people have expectations about where objects should be located, which can be used to guide visual search (Chun & Jiang, 1998; Oliva & Torralba, 2007; Torralba et al., 2006) and impact subsequent memory. Further, whether object features are learned following visual search versus another encoding task can also influence object-feature memory. While both expectation congruency and encoding context can influence memory for objects and task relevant features (i.e., location during visual search), it remains unclear whether the influence of these factors extend to memory for all other object features (e.g., exemplar, object-state). As such, the current study sought to explore how encoding context and congruency influence which features are prioritized in memory (e.g., state vs. location).

Congruency Effects in Memory

Through interacting with the environment, individuals develop expectations about what and where objects belong, which has downstream implications on what they remember (Hemmer & Persaud, 2014; Persaud & Hemmer, 2024; Ramey et al., 2025). On the one hand, research has consistently found that people exhibit an overall congruency benefit, where they have better memory for studied information that matches their expectations (Anderson, 1981; Brod & Shing, 2019; Craik & Tulving, 1975; Macias & Persaud, 2026; Ramey et al., 2022; Staresina et al., 2009). On the other hand, some studies have found an incongruency benefit, whereby expectation-violating information is better remembered (Greve, Cooper, Kaula, et al., 2017; Pezdek et al., 1989; Prull, 2015; Rosner et al., 2015; Stahl & Feigenson, 2017). While the reason behind the congruency advantage is likely due to our ability to use prior knowledge to fill in the gaps in our memory (Hemmer & Persaud, 2014; Hemmer & Steyvers, 2009), the incongruency advantage may stem from expectation violations that generate prediction errors leading to improved encoding of incongruent information (Brod et al., 2018; Greve, Cooper, Kaula, et al., 2017).

Research examining the influence of expectation congruence on episodic memory has demonstrated that expectation congruency can impact memory for task relevant features such as item memory, location memory, and associative memory (Pezdek et al., 1989; Ramey et al., 2022, 2025). However, far less research has explored how congruency impacts memory for task irrelevant features such as specific object exemplars and state features. Of the research that has examined memory for task irrelevant features, they have produced mixed results. For example, Persaud, Macias, & Bonawitz (2025), manipulated the congruence of object colors and tested memory for object shape. They found no difference in memory for object shapes when paired with congruent versus incongruent colors. In contrast, Greve and colleagues (2019) trained individuals on a schema rule for object pairs where one object had a higher value than the other. Once the rule was learned, on a penultimate trial, they manipulated whether the rule was maintained (congruent trial) or reversed (incongru-

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ent trial). Importantly, they assessed memory for the number of exemplars presented on each trial (expectation-irrelevant) and found better memory in the incongruent condition compared to the congruent and expectation-unrelated conditions (Experiment 4 - Greve, Cooper, Tibon, and Henson, 2017). While differences in memory for expectation-irrelevant features between these studies may be attributed to stimuli and task based differences, together these studies highlight the need for more research evaluating how expectation congruence impacts memory for diverse features. Further, neither of these studies examine how different encoding contexts interact with congruency to shape memory.

Memory Across Contexts

The context in which information is learned has been shown to play an important role in retrieval processes (Craik & Lockhart, 1972; Godden & Baddeley, 1975; Tulving & Thomson, 1973). This influence of context extends not only to the learning environment, but the encoding task as well (Draschkow et al., 2014; Hu et al., 2021). Certain encoding tasks (e.g., visual search) may shift what information gets prioritized in memory relative to other tasks. For example, when searching for an object, the location becomes an important feature of that object as it is relevant to the task. As such, visual search tasks have been shown to lead to both enhanced object and location memory compared to intentional memorization (Draschkow et al., 2014; Helbing et al., 2020). However, it remains unclear how these different encoding contexts might influence object-feature binding, and in particular for task irrelevant features (e.g., exemplar and state features). While visual search studies have shown that congruent information is better remembered than incongruent information (Ramey et al., 2022, 2025), it is possible that encoding context and congruency may interact to influence whether additional features are encoded. As a first pass, we examined whether object-feature and location memory differed between traditional visual search tasks and explicit memorization tasks based on congruency.

Current Study

The current study aimed to investigate how encoding context (visual search vs. standard memorization) and congruency shape recognition and recall of object features. We examined object-state (e.g., open-close, empty-full, etc.) recognition and location recall for objects presented in semantically congruent or incongruent locations. Objects were encoded during either an intentional memorization task or incidentally during visual search. Participants were instructed to either search for target objects in naturalistic scenes or memorize the target objects, followed by either a surprise or expected memory test. Given past findings demonstrating that congruency effects can differ based on how memory is probed (Persaud et al., 2025; Sherman & Frost, 2000), we tested both recognition and recall. Object-state memory was measured using a 4-Alternative Forced Choice (4-AFC) recognition task to assess both memory for the exemplar and state. Object-location memory was assessed using a cued recall task.

Based on prior research investigating the effects of encoding context (Archer & Persaud, in review; Draschkow et al., 2014; Helbing et al., 2020), we predicted that visual search would enhance object-feature recognition for task irrelevant features (e.g., exemplar and state) compared to objects highlighted in scenes. However, given mixed findings of how expectation congruence shapes memory for task-irrelevant features, we did not have an apriori prediction for how congruence would influence object-state recognition.

For object-location recall, we predicted an overall memory benefit for objects encoded during visual search compared to explicit memorization based on previous research showing search superiority effects in memory for object locations (Helbing et al., 2020). Additionally, we predicted an overall congruency effect independent of encoding task (Ramey et al., 2022). Further, we predicted that incongruent locations would be better remembered following visual search compared to explicit memorization. The study design, hypotheses, and analyses were pre-registered on AsPredicted prior to the collection of any data: https://aspredicted.org/cp7ps9.pdf.

Method

Participants

51 undergraduate students from Rutgers University - Newark participated in the study in exchange for course credit. According to pre-registered exclusion criteria, 3 participants were dropped for low visual search accuracy (VSA > 2 *SD*), 3 participants were dropped for reporting non-normal color vision, and 3 participants were dropped due to technical errors during data collection. All other participants reported normal or corrected to normal vision and normal color vision. The final sample consisted of 42 participants[1] (M_{Age} = 20.17, *SD* = 3.29; 81% Female).

Stimulus and Apparatus

Stimuli consisted of 72 real-world indoor and outdoor scene images presented in color at 1728 × 972 pixels. Original scene images were licensed through Adobe Stock and adapted to create a new stimulus set. Using Adobe generative AI (Adobe, 2024), all objects that could potentially create interference were artificially removed (e.g., a coffee mug in a scene when the target was a coffee mug). There were nine scene categories with four scene exemplars per category (e.g., four bathroom scenes) and two target object categories for each scene exemplar. In each scene, only one target image appeared at a given time. A total of 72 object categories were used, with four exemplar-state combinations in each object category for a total of 288 object images. The images were randomized across 8 sets to ensure that all possible exemplar/state combinations were studied across participants. Object images included a subset of images used in Brady et al. (2013), as well as images licensed through Adobe Stock.

[1]Sample size was pre-registered and determined based off previous work (Helbing et al., 2020; Ramey et al., 2025).

Two versions of each scene were created, one where the target appeared in a congruent location, and one where the target appeared in an incongruent location. Object congruency was manipulated within-subjects such that each participant saw 36 objects in congruent locations and 36 objects in incongruent locations. To validate congruency, a separate group of participants ($n = 40$) rated the congruency of each target object's location within the scenes. Participants were asked to rate how congruent the object's location was on a scale of 1-7. Congruent objects were rated as significantly more congruent than incongruent objects ($t(40) = 32.89$, $p < .001$).

Scenes were split across two blocks, to create a memorization block and a search block. Scenes were identical across blocks except for a red bounding box which appeared around the target image in the memorization block. The experiment was programmed and displayed in Matlab version R2019b (MathWorks, 2024) and presented on a Windows computer with an 11th Gen Intel(R) Core(™) i5-11500 processor (75 Hz at 1920 x 1080 resolution).

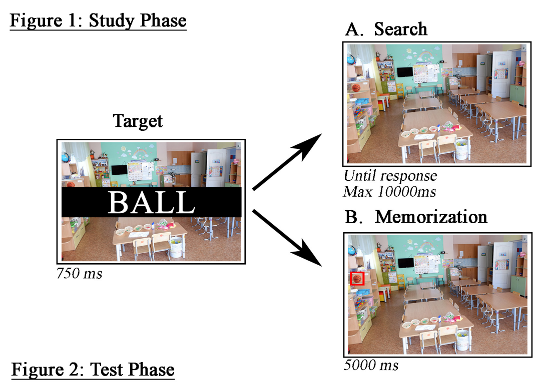
Design and Procedure

A 2 (Encoding Task: Visual Search or Memorization) x 2 (Congruency: Congruent and Incongruent) within-subjects design was employed. All participants completed two blocks: a visual search block and a memorization block. Block order was randomized across participants, and scene-exemplar combinations were counterbalanced. On each trial, participants viewed objects in semantically congruent or incongruent locations. Each task was followed by a 4-Alternative Forced Choice recognition test (4-AFC) and a cued-recall location test. After each memory decision, participants provided confidence ratings on a 7-point Likert scale. We also collected response times at each measurement which are not reported here due to focus limitations but will be addressed in future work.

The experiment lasted approximately 30 minutes and consisted of two blocks. Within each block there was a study phase followed by a test phase. In between blocks there was a 5-minute break in which participants completed an unrelated task. In each block they completed either a visual search task (Figure 1A) or an explicit memorization task (Figure 1B). Each task was followed by a 4-AFC test and a cued-recall location test.

Study phase The study procedure was adapted from previous work exploring the search superiorty effect (Draschkow et al., 2014; Helbing et al., 2020). Across both blocks participants viewed 36 scenes one at a time. At the start of each trial, a target word was presented in the center of the screen for 750 ms. In the Search block, participants were instructed to search for a target object and were required to click on the object once it was found and then press the spacebar to proceed to the next trial. Participants were instructed to locate the object as fast as possible and were not aware their memory would be tested later. Scenes were visible for a maximum of 10s or until the object was found. In the Memorization block, participants were instructed to memorize the target (5s) because their memory would be tested later. Target objects were surrounded by a red box. After every trial a fixation cross appeared (500ms).

Test Phase Following each block, participants completed a test phase. For each object, they completed a 4-AFC recognition test where they were presented with 2 exemplars (e.g., two different balls) in 2 different states (e.g., full vs. deflated) and asked to select the object they remembered seeing in the state it was presented in. Afterward, participants provided a confidence rating on their decision. Participants were then asked to recall the location of each object by completing a cued recall task. The object was presented in the top left corner of the screen and participants were instructed to place the object in the location they remember seeing it, and they again provided a confidence rating on their decision (see Figure 2 for complete test phase).



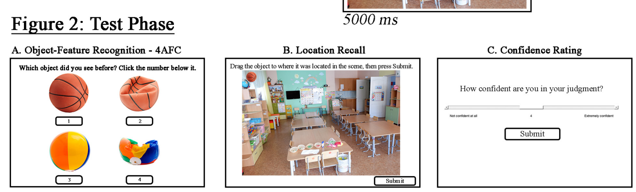


Figure 1: Sample stimuli and procedure for search (A) and Memory (B) blocks.

Figure 2: Test procedure. Recognition and recall were each followed by a confidence judgment.

Planned Analyses

Recognition accuracy for objects was calculated as the proportion of correct responses across trials (accuracy in the search block only included trials where participants successfully located the target during visual search). To assess feature memory, accuracy for both the exemplar and state features was calculated as the proportion of trials where they correctly identified the exemplar but not the state (i.e., Exemplar-Only) and the proportion of trials where they correctly identified the state but not the exemplar (i.e., State-Only).

Location recall accuracy was assessed as the Euclidean distance between the target study location and the recalled location. Distance was measured as the euclidean distance in pixels between center coordinates at test and center coordinates of the object presented during the study phase. Response time was also examined for both recognition and recall. Recognition and recall accuracy were analyzed using 2 (Encoding Task) x 2 (Congruency) repeated-measures ANOVAs.

To explore how confidence in memory judgments might impact recognition performance, trial-level recognition accuracy was analyzed using a mixed-effects logistic regression. Fixed effects included confidence ratings (centered within subjects), encoding task, congruency, and all interactions. Random intercepts for subjects and random slopes for confidence were included to account for individual differences in baseline accuracy and in the relationship between confidence and accuracy. Location recall was analyzed using a linear mixed-effects model. Fixed effects included confidence ratings (centered within subjects), encoding task, congruency, and all interactions. Random intercepts for subjects and random slopes for confidence were also included. Models were fit in R using the lme4 and lmer packages.

All analyses were assessed for statistical assumptions using QQ plots of residuals and Mauchly's test to evaluate normality and sphericity respectively; all assumptions were met. Homogeneity of variance was assessed for the between-subjects factors: block order and set. Levene's tests indicated that variance was homogenous across all groups ($p > .05$). There were no statistically significant differences based on block order or set ($p > .05$). The Holm correction was applied to all pairwise comparisons. Data was analyzed in Python (Version 3.12, 2024) and R (2024).

Results

Object-Feature Recognition

First we examined the effect of encoding task and congruency on overall object-state recognition accuracy (Figure 3A). A 2 (Encoding Task: Memory vs. Search) x 2 (Congruency: Congruent vs. Incongruent) repeated-measures ANOVA revealed no main effect of encoding task ($F(1,41) = .78$, $p = .383$, $\eta_p^2 = .019$) or congruency ($F(1,41) = .13$, $p = .719$, $\eta_p^2 = .003$), and no interaction ($F(1,41) = .32$, $p = .316$, $\eta_p^2 = .025$). Contrary to our hypothesis, object-state recognition accuracy was not impacted by encoding task. That is, we did not observe a search superiority benefit in memory for task irrelevant object features. Additionally, there was no difference in exemplar or feature memory across tasks or by congruency (see Table 1 for full descriptives).

Location Recall

Next we examined the effect of encoding task and congruency on location recall (Figure 3B). Recall was assessed as the error in distance between studied location and recalled location using euclidean distance. As such, greater error was indicative of poorer recall performance. A 2 (Encoding Task) x 2 (Congruency) repeated-measure ANOVA revealed a main effect of encoding task, $F(1,41) = 12.18$,

Table 1: Proportion Correct by Congruency & Encoding Task

Accuracy	Encoding Context			
	Memory		Search	
	Cong	Incong	Cong	Incong
Overall Accuracy	.62 (.48)	.63 (.48)	.66 (.47)	.64 (.48)
Exemplar-Only	.15 (.36)	.16 (.37)	.15 (.36)	.16 (.37)
State-Only	.14 (.34)	.11 (.32)	.12 (.33)	.14 (.35)
Recall Error	555(747)	855(954)	439(730)	675(860)
Recall Precision	47(28)	55(29)	48(27)	52(27)

$p < .01$, $\eta_p^2 = .229$. Memorizing objects led to worse location memory ($M = 705.03$, $SD = 869.48$) compared to searching for objects ($M = 556.67$, $SD = 806.23$). There was also a significant main effect of congruency, $F(1,41) = 50.99$, $p < .001$, $\eta_p^2 = .554$. Location recall was worse for incongruent locations ($M = 767.61$, $SD = 913.72$) compared to congruent locations ($M = 498.49$, $SD = 740.94$). There was no significant interaction, $F(1,41) = 1.10$, $p = .300$, $\eta_p^2 = .026$. Pairwise comparisons revealed searching for objects ($M = 438.57$, $SD = 730.33$) led to greater congruent location recall compared to memorizing objects ($M = 554.85$, $SD = 746.88$), $t(41) = 2.42$, $p < .05$, $d = .485$. Similarly, searching for objects also led to significantly better location recall for incongruent locations ($M = 674.61$, $SD = 859.94$) compared to memorizing objects ($M = 855.21$, $SD = 953.93$), $t(41) = -3.08$, $p < .001$, $d = .487$.

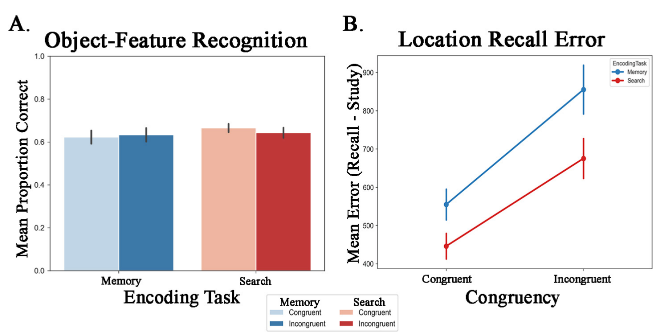


Figure 3: (A) Mean proportion correct and (B) mean recall error by encoding task and congruency.

Given the large variance in location recall, especially on incongruent trials, we also wanted to explore how congruency impacted recall precision (measured as only the trials where participants were within 100 pixels of the studied coordinates). It is possible that objects that appeared in incongruent locations were either correctly recalled or misremembered in congruent locations, leading to greater variability in responses, and the rate at which incongruent objects are correctly recalled might differ by encoding task. When we examined recall precision, we observed no main effect of encoding task, $F(1,40) = .85$, $p = .36$, $\eta_p^2 = .021$, but there was a significant main effect of congruency, $F(1,40) = 9.17$, $p < .01$,

$\eta_p^2 = .187$. Objects in congruent locations were more precisely recalled ($M = 47.82$, $SD = 27.25$) than objects in incongruent locations ($M = 53.57$, $SD = 28.2$). There was also a marginal interaction, $F(1,40) = 3.18$, $p = .08$, $\eta_p^2 = .074$. Although not statistically significant, pairwise comparisons suggested that on incongruent trials, searching for objects led to more precise recall of object locations ($M = 52.16$, $SD = 27.32$) compared to memorization ($M = 55.22$, $SD = 29.18$), $t(40) = -1.63$, $p = .22$, $d = .377$. There was no difference in recall precision on congruent trials between search ($M = 48.18$, $SD = 26.99$) and memorization ($M = 47.37$, $SD = 27.61$), $t(40) = -.51$, $p = .61$, $d = .129$.

Confidence Ratings

Object-feature Recognition We further examined the relationship between object-state recognition accuracy and confidence (Figure 4A). A mixed-effects logistic regression at the trial level revealed a significant main effect of confidence on recognition accuracy ($\beta = 0.56$, $SE = 0.05$, 95%CI [0.45, 0.66], $z = 10.31$, $p < .001$), indicating that higher confidence ratings predicted greater odds of correct responses (Figure 4A). Neither encoding task ($\beta = -0.01$, $SE = 0.13$, 95%CI [-0.26, 0.24], $z = -.11$, $p = .910$) nor congruency ($\beta = 0.004$, $SE = 0.13$, 95%CI [-0.25, 0.24], $z = 0.04$, $p = .971$) were significant, nor were any of the interactions ($p > .05$).

Location Recall We also examined the relationship between object-location recall error and confidence (Figure 4B). A linear mixed-effects trial level model revealed a significant main effect of confidence on location recall ($\beta = -142.53$, SE = 12.99, 95%CI [-167.99, -117.06], $t(206.71) = -10.97$, $p < .001$), indicating that on average higher confidence predicted lower recall error. Encoding task was not a significant predictor of location recall ($\beta = -34.75$, $SE = 37.51$, 95%CI [-108.26, 38.76], $t(2853.71) = -0.93$, $p = 0.354$). In contrast, congruency was a significant predictor ($\beta = 282.89$, $SE = 36.49$, 95%CI [211.37, 354.40], $t(2877.88) = 7.75$, $p < .001$), indicating that location recall error was greater on incongruent trials than congruent trials. Additionally, there was a significant interaction between congruency and confidence ratings ($\beta = -96.05$, $SE = 16.65$, 95%CI [-128.68, -63.43], $t(2881.97) = -5.77$, $p < .001$), indicating that confidence was a stronger predictor of recall performance when objects appeared in incongruent locations. When objects appeared in incongruent locations, higher confidence was associated with larger improvements in recall accuracy compared to congruent locations (Figure 4B). All other interactions were not significant ($p > .05$).

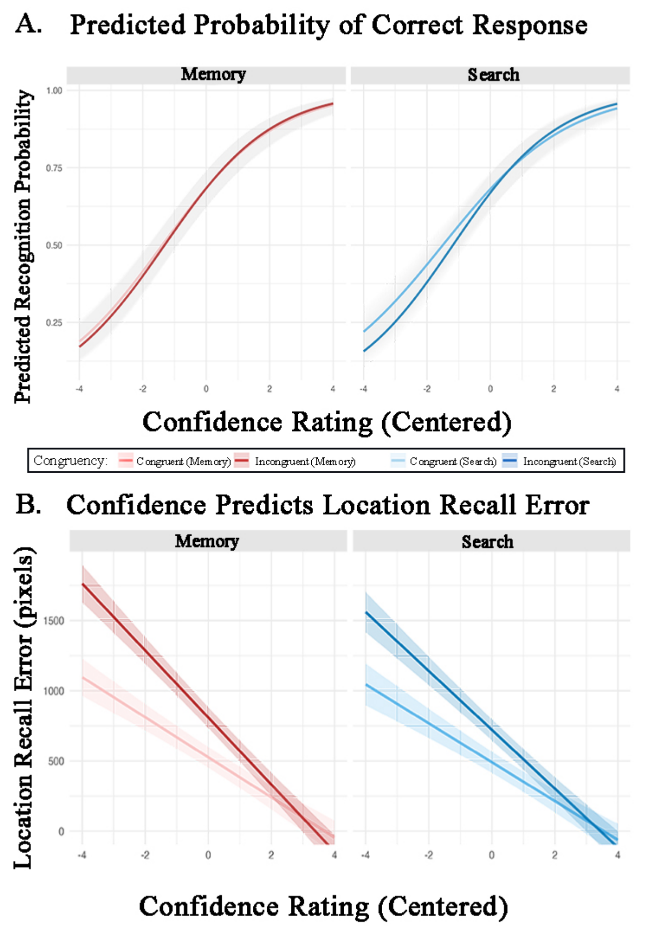


Figure 4: (A) Probability of correct item recognition predicted by confidence ratings. (B) Confidence ratings predicts location recall error.

Discussion

In the present study, we examined how encoding context and congruency shape what object features are remembered. We manipulated encoding context by either having participants search for objects or memorize highlighted objects in natural scenes. Past research has found evidence of a search superiority effect whereby objects that are searched for are better remembered than objects simply memorized (Draschkow et al., 2014; Helbing et al., 2020). Here we asked whether the search superiority effect would extend to memory for specific object features, including task relevant features (i.e., object location) and more importantly, task-irrelevant features (i.e., object states). Relatedly, we further examined whether the congruency between object locations in the scene relative to our prior expectations would also influence memory for task relevant and irrelevant features. Previous research found better location memory for objects studied in congruent locations compared to incongruent locations (Ramey et al., 2022, 2025) and better memory for both highly congruent and incongruent, compared to expectation-unrelated locations (Quent et al., 2022). Here we investigated whether the congruency benefit for object location, a task-relevant feature, would extend to memory for task-irrelevant features.

Contrary to our initial prediction, visual search, relative to standard memorization, did not enhance memory for all features of the searched object. That is, while visual search enhances overall single-item recognition of object exemplars (Draschkow et al., 2014; Helbing et al., 2020), this enhancing effect does not extend to object state featural information (e.g., full vs. empty, open vs. closed, etc.). During visual search, forming detailed object representations may not be as essential if the exemplar or feature information is enough to successfully complete search, which may be a potential explanation as to why the search superiority effect does not extend to object-feature binding. In ongoing research, we are exploring whether encoding contexts that direct attention towards specific object features, like the object state during visual search, can enhance object-feature binding in memory.

Similar to the encoding context on object-state memory, we also did not find that location congruency impacts memory for object-states. Past research has found conflicting findings on how expectation congruence impacts memory for expectation-unrelated information (Greve, Cooper, Tibon, & Henson, 2017; Persaud et al., 2025). Theoretical accounts suggest that expectation incongruence can enhance memory for all episodic event details, particularly when the expectation violation is sufficiently salient (Van Kesteren et al., 2012). It is possible that the 2D experience of studying objects in congruent and incongruent locations in our task was not salient enough to engage the necessary learning mechanisms and processes to improve memory for irrelevant features. Future research is needed to further probe the effect of expectation congruence on detailed featural memory.

In contrast to the effect of encoding context and congruency on object-state recognition, we did find effects of both on object location recall. That is, we replicated the search superiority effect for location recall (Helbing et al., 2020), such that location recall was more accurate following visual search than explicit memorization. In this way, looking for items enhances memory for where the object was found. Similarly, we found a strong congruency effect, such that location recall was more accurate for objects that appeared in congruent compared to incongruent locations. This is in line with previous research showing that congruent information is better remembered than incongruent information, particularly during visual search (Ramey et al., 2022). These findings support the idea that task relevance modulates the extent to which congruency and encoding context shape the selection and prioritization of features in episodic memory.

Furthermore, we found that congruency can interact with individuals' confidence in recalling feature information from memory. In the current study, higher confidence was associated with larger improvements in recall accuracy, particularly for objects that appeared in incongruent locations. This suggests that confidence, an important task-based factor, can provide additional insight into the impact of expectation congruence (and lack thereof) on the strength of memory representations. This is important because confidence may also provide additional insight into the underlying processes at play during retrieval. Memory confidence may not be as important when retrieving congruent information, where prior knowledge can buffer noisy memory traces, but greater confidence may indicate stronger memory traces for correctly retrieved incongruent information.

Our results highlight several interesting avenues for future research. First, this work demonstrates that encoding contexts play a critical role in the kinds of information that are prioritized in memory. Yet, it is not always clear which specific featural information will be enhanced following simple tasks that are thought to be feature agnostic. As such, future research should evaluate whether and how standard memory tasks differentially influence memory for specific object features. Second, while neither of the two encoding tasks employed in this study nor expectation congruence impacted object-state memory, it is possible that other tasks highlighting the relationship between object-state congruence could impact subsequent memory for state information. In follow-up research, we will examine whether different encoding tasks can change the types of information that are prioritized and later remembered.

Understanding how various encoding contexts and congruence shape memory for a variety of object features is critically important for understanding memory in everyday eyewitness scenarios. In everyday life, we encounter objects in various states, colors, locations, etc. and we learn about these objects across various contexts. Later on, it may be important to retrieve that information with great detail (e.g., eyewitness testimony). Which features are encoded is shaped by where attention is deployed based on task goals, which subsequently impacts what information is bound together in memory and later retrieved. Discerning how context and expectation-congruency shape the level of detail in these memory representations can shed light on mixed findings in the literature on object-exemplar memory, object-feature binding, and false memory, potentially identifying when errors arise due to task demands and/or expectation congruency.

Conclusion

In summary, the current findings emphasize the critical role that encoding context and task relevant manipulations (i.e., congruence) play in learning and memory. This work highlights the strategic and adaptive nature of the memory system in that it integrates and prioritizes information that is deemed relevant and important during initial learning. This work has important implications for theory development and suggests that careful considerations be made to task design and demands at encoding when examining broad memory phenomenon (e.g., visual search effects and congruency effects) as these can influence which information is most salient at encoding. Future research should examine whether and how current established encoding paradigms create advantages in memory for certain featural information, which could potentially shed light on mixed findings in the literature as well as contextualize the generalizability of well known patterns of results.

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