

Inhibition of Return and Refixation in Visual Search

Maoyan Fan

School of Physical Education and Sport Science, Fujian Normal University, Fuzhou 350107, China

Abstract: Search is efficient only if observers know when to leave a location and when to inspect it again. Inhibition of return (IOR) is usually inferred from slower responses at a previously cued or inspected location and is often taken as a mechanism that favors novel locations. The inference is incomplete. A cost measured with an experimental probe need not predict the next voluntary fixation, while returns are frequent in natural viewing. This review places classic cueing and visual-search studies alongside work on refixation, virtual and three-dimensional search, and real-world eye movements. The evidence separates three questions that are often conflated: how an old location is processed, whether it is selected again, and whether returning benefits the task. Laboratory results reliably demonstrate conditional costs, but their expression varies with response requirements and scene continuity. Studies of active viewing show that incomplete encoding, comparison demands, environmental change, and movement economy can make a return worthwhile. IOR is thus treated here as one bias in fixation priority, not a ban on looking back. The proposed return-control account predicts that revisiting will be favored when the expected benefit of another look exceeds the recency-related disadvantage and the cost of moving elsewhere.

Keywords: Inhibition of return; refixation; visual search; active vision; eye movements; ecological validity.

1. Introduction

Finding a target is only one part of visual search. The searcher must also decide whether the next look should go somewhere new or return to a place already inspected. Repeatedly checking the same rejected item wastes time, but never returning is also risky: the first view may have been poor, the scene may have changed, or a later subgoal may make the item relevant. This problem becomes more pronounced outside a fixed display, where gaze, head, and body movements unfold while the internal record of the scene remains incomplete [1-3].

IOR has often been invoked to explain how search moves away from recent locations. In the standard spatial-cueing task, a nonpredictive peripheral cue first speeds responses at its location; after a longer cue-target interval, the same location carries a response cost [4, 5]. Samuel and Kat's meta-analysis placed the most stable portion of this effect between roughly 300 and 1,600 ms, with less certainty about how long it persists [6]. The reversal is real, but its usual interpretation as a novelty-seeking device goes beyond the response-time result itself.

The dependent measure is decisive here. A slow response to a probe at an old location and a decision not to fixate that location again are not the same event. Under the label IOR, studies have examined perceptual loss, delayed orienting, inhibitory tags, fixation time before a return, and return frequency. Agreement among these outcomes cannot be assumed. Hooze et al. [7], for example, observed longer fixations before return saccades without the reduction in returns expected from a strict novelty-seeking account.

Much of the necessary background is already available in earlier reviews. Klein [5] surveyed the phenomenon from its time course to its neural and functional interpretations, and Wang and Klein [8] assessed its role in visual search. Other syntheses concentrated on electrophysiology [9], neuroscience [10], or the proposed input-output distinction [11]. Klein et al. [12] later brought that distinction back to search. What remains uncertain is narrower: how much can these measures tell us about an observer's decision to revisit a

location?

Research on refixation makes this uncertainty difficult to ignore. Looking back is common during natural viewing and has been associated with incomplete encoding, verification, memory failure, change monitoring, and task-relevant anchors [3]. Burlingham et al. [13] reached an especially instructive result across nine real-world tasks: immediate returns were frequent, and the preceding latencies were shorter than those before forward saccades. They attributed part of the pattern to movement economy, described as 'motor laziness.' This does not invalidate laboratory IOR. It does show that an inhibitory after-effect may be present without controlling the next fixation in a uniform way.

The question taken up here is therefore not whether IOR exists, but what its common measures allow us to infer about return during active search. The discussion moves from cue-target effects to search probes, virtual and three-dimensional tasks, and real-world eye movements. Across these settings, processing an old location and choosing it again are treated as separate outcomes. Relating them provides a focused extension of recent reviews of IOR in search [12] and refixation [3], and it sets the limits of the return-control account proposed later.

2. Conceptual Distinctions

2.1. Defining the scope of IOR

IOR is a spatial-orienting phenomenon, not a general label for inhibitory control. In stop-signal and go/no-go tasks, inhibitory control usually concerns suppression of a prepotent response. IOR concerns the altered processing of a location that has recently been cued or attended. The terminology overlaps, but the constructs and their standard measures do not. Only the spatial phenomenon and its role in search are considered here.

2.2. Behavioral cost, inhibitory tag, return saccade, and refixation

These terms describe different levels of analysis. The classic IOR effect is a relative performance loss at a cued

location; an inhibitory tag is the representation proposed to carry that history during search. Return saccades and refixations, in contrast, are observed actions. The eye travels back to a previously viewed region and samples it again. Slow probe responses can coexist with frequent returns, and few returns can arise from memory or strategy even when IOR has not been measured. The inference must match the dependent variable.

Controlled cueing and natural search consequently answer different questions. Cue-target experiments isolate what recent stimulation does to later processing under fixed timing. Free search records a sequence of choices made with uncertain memory and changing priorities. The first approach identifies a cost; the second is needed to establish whether that cost changes where the observer actually looks. Apparent conflicts often arise when evidence is moved from one level to the other.

Even among return measures, equivalence is rare. An immediate reversal to the last region differs from a refixation made after several intervening looks; after an object or observer moves, returning to a region may no longer mean returning to the same object. Experimental probes impose an orienting response, whereas spontaneous returns are chosen within the task. Probability, latency, post-return viewing time, and performance benefit must accordingly be reported as separate outcomes. The term *adaptive* is reserved here for returns that plausibly serve the current task, not merely for returns that are fast or frequent.

2.3. Input- and output-related forms of IOR

Redden et al. [11] used the terms input and output to distinguish two possible after-effects of recent stimulation. Input-related IOR concerns the quality or salience of information obtained from the old location. Output-related IOR concerns the criterion or priority for making a response, including an orienting movement. Which pattern appears may depend on the state of the reflexive oculomotor system. Klein et al. [12] applied this distinction to visual search, where either form could favor novelty through a different processing stage.

The input-output division is best retained as a provisional description. No electrophysiological component has proved unique to IOR across tasks [9], and the relevant neural evidence is distributed across sensory, attentional, parietal, collicular, and motor systems [10]. Current experiments continue to ask whether priority maps require sustained preparatory suppression and where output-related slowing occurs relative to the central bottleneck [14, 15]. For the present argument, the unresolved taxonomy matters less than the warning it provides: a loss in perceptual quality and a change in orienting choice should be analyzed separately.

3. Laboratory Evidence for Inhibited Return

3.1. Spatial cueing and the inference from cost to function

The most reproducible starting point is the temporal reversal in spatial cueing. A peripheral event draws attention to its position; facilitation appears early, followed later by slower responses at that position than at an uncued one [4]. Neither the onset nor the size of the difference is fixed. Target type, response mode, cue-back procedures, task requirements, and the chosen baseline all matter [5, 6, 12], while adaptation,

episodic binding, response repetition, and strategic control can contribute to the observed score.

What the cueing result establishes is a conditional disadvantage at a recent location. Its proposed foraging function requires more: the disadvantage must affect the ordering of later attentional or eye-movement choices. Search paradigms address that additional step.

3.2. Inhibitory tagging during visual search

Klein and MacInnes [16] derived old locations from eye movements made during a complex 'Where's Waldo?' search. A probe near an earlier fixation elicited slower orienting than a probe at a new region, but only while the scene remained on screen. This pattern was interpreted as scene-based inhibitory tagging. Reviewing related covert and overt studies, Wang and Klein [8] found the effect most consistently when the display persisted and inspection was effortful and serial; the estimated tag lasted about a second or covered several recently inspected items.

Because the old locations in these studies came from the participant's own search path, the result is closer to a search-history effect than ordinary cueing is. It still measures an imposed probe response, not the policy used to choose the next fixation. Scene removal further complicates the inference: landmarks disappear, continuation becomes less certain, and the current eye-movement plan is interrupted. Redden et al. [17] also found an effect of scene removal in a cue-target task. Persistence is therefore a condition under which the measured cost changes, rather than a diagnostic test for a dedicated search-memory tag.

3.3. Virtual foraging and the ecological ladder

Thomas et al. [18] moved the test into an immersive foraging environment. Participants searched leaves with a wand for hidden fruit and also responded when a leaf flashed. A flash at a searched leaf produced a slower response than one at an unvisited leaf. The old-location cost therefore survived manual exploration over a spatially extended scene. What the task did not record was avoidance in an uninterrupted, self-selected sequence of fixations.

Immersion does not remove the constraints of an experiment. The investigator still sets the goal, the available actions, the arrangement of objects, and the effort attached to each movement. Exhaustive inspection of a stable array may discourage returns, whereas a task with changing targets or several subgoals can make a return sensible. Virtual foraging therefore demonstrates that an old-location cost survives in a richer setting; whether it improves search must be established from fixation choices and performance.

4. Why Searchers Return

4.1. Return-related slowing does not guarantee return avoidance

Hooge et al. [7] directly questioned the idea that IOR generally facilitates saccadic foraging. Fixations preceding a return saccade lasted longer, yet returns remained common and sometimes exceeded the frequency predicted by a simple novelty rule. Their conclusion was task-bound rather than universal: IOR did not serve as a general foraging facilitator in the tested conditions. The pattern also separates two outcomes that are often merged. Return can be delayed without being removed from the set of available choices.

Nor does novelty have the same value in every task. Dodd

et al. [19] reported inhibition of old locations under some conditions and facilitation under others. Once a task requires comparison, confirmation, or recovery of a poorly encoded feature, a visited location may again become informative. Its history matters, but so does what the observer currently needs from it.

4.2. Search memory is partial and task dependent

Search memory is useful without being exhaustive. Peterson et al. [20] showed that search retains information about earlier inspections, whereas Gilchrist and Harvey [21] related refixation frequency to memory processes. Such memory can prevent redundant checking. The same limitation that makes a memory record economical, however, leaves details unavailable when a later decision demands them. IOR and memory may therefore influence the same scanpath without performing the same function.

In natural search, the memory problem extends beyond the eyes. Aivar et al. [1] found that remembered spatial structure guided both eye and body movements, while Botch et al. [2] linked individual differences in naturalistic search to performance in classic search tasks. Neither study manipulated IOR. Their relevance lies elsewhere: the next fixation is selected within a control system that also tracks body position, likely target locations, remembered scene structure, and the cost of acting.

4.3. Refixation as information recovery

A second look can supply detail that the first fixation did not encode or that memory no longer preserves [3]. This need is unsurprising. Foveal sampling is narrow, and the feature needed for a later judgment may not have been relevant when the object was first viewed. In that situation, sampling the scene again may cost less than maintaining a high-resolution internal record throughout the task. Whether the return was beneficial, however, must be assessed against task performance, not inferred from the scanpath alone.

A refixation has no single interpretation. It may repeat an ineffective search habit, recover an uncertain observation, check a changed object, or support comparison between locations. Sometimes the explanation is mainly motor: reversing the previous eye or head movement is cheap. Identical spatial trajectories can therefore arise from different task states. Without information about the observer's goal and prior evidence, labeling the return adaptive or maladaptive would be premature.

4.4. Real-world return behavior and movement economy

Burlingham et al. [13] recorded gaze in nine everyday activities rather than in a single laboratory search. Immediate returns occurred often, and the interval before them was shorter than the interval before forward saccades. That result runs against a simple prediction of delayed immediate return. The authors' movement-economy account suggests that reversing the eyes and head can be easier than redirecting them elsewhere. It explains a constraint on selection, not proof that the returned fixation improved performance.

Movement economy and attentional history can influence the same choice. A previously viewed region may carry a relative processing cost yet remain preferable when it offers more information or can be reached with less effort. Conversely, a novel region may be selected despite a larger

movement cost when it is strongly associated with the target. Real-world fixation selection is therefore likely to reflect several biases whose relative influence changes with the task and with the moment-to-moment state of search.

5. Boundary Conditions for Suppression and Refixation

Whether an observer returns depends on more than the recent history of a location. The evidence points to a set of linked questions: what can be gained by looking back, how the previous location is represented, and what action is required to reach it. The boundary conditions reviewed below matter because they alter one or more of these terms.

5.1. Task goal and expected information gain

Novelty is useful only in relation to a goal. Serial search through stable distractors rewards broad coverage, so an old rejected object has little immediate value. Free viewing imposes no comparable coverage requirement. Comparison and change-detection tasks may instead require a return, and natural action often alternates between seeking new information and monitoring a location needed for the next movement. Similar-looking scanpaths can therefore serve different purposes.

The relevant quantity is not novelty by itself but the information expected from the next look. A new location is attractive when it is likely to contain evidence for the current goal. An old one can regain value after uncertain encoding, memory loss, or environmental change. Under those circumstances, an IOR-related disadvantage may be too small to determine selection. Spatial memory is known to guide eye and body movements [1], and naturalistic search ability covaries with performance in classic tasks [2]. These results frame the choice problem, although neither study directly measured IOR or the benefit produced by a refixation.

5.2. Memory state and uncertainty

What was retained from the first inspection changes the case for returning. A confident, task-relevant memory leaves little to be gained from another look. A weak record does not. The balance can also shift during search: the target template may change, or a once-stable location may need checking after the environment changes. Thus the same display can yield different refixation patterns across observers or across successive stages of one task.

A short-lived inhibitory tag is not redundant with longer-lasting search memory. The former can discourage an immediate repetition during rapid sampling; the latter supports decisions over a wider part of the scene and over longer intervals. Strategic return becomes possible because memory preserves some aspects of previous inspection while allowing others to be resampled.

5.3. Scene persistence and task continuity

Probe studies repeatedly show a dependence on scene continuity. Costs around inspected locations are clearer while the search display remains present and often diminish after it disappears [8, 16]. A similar sensitivity to removal has been reported in cue-target work [17]. The visible scene may keep a tag attached to a location or object, but it also preserves the task context that gave the tag a purpose.

Removing a scene changes several things at once. Landmarks vanish; the observer may no longer expect search

to continue; eye-movement preparation is interrupted; and the probe is encountered in a different context. A smaller IOR effect after removal cannot, for that reason, be assigned uniquely to loss of a spatial tag. A cleaner test would vary scene visibility separately from expected task continuation and then compare the resulting processing cost with voluntary return.

5.4. Response mode and oculomotor state

Detection by key press, manual localization, saccadic localization, and free fixation choice do not sample the same stage of behavior. A perceptual disadvantage may delay detection yet leave the next saccade unchanged; an output bias is more likely to alter when or where an orienting response is made. The proposed input-output framework links this difference to the state of the reflexive oculomotor system [11]. Because no electrophysiological marker uniquely tracks IOR, neural evidence must also be interpreted in relation to the response required by the task [9, 10].

Recent experiments narrow the mechanistic alternatives without settling their behavioral reach. Van Moorselaar et al. [15] asked whether spatial priority maps show sustained preparatory suppression. Klein et al. [14] located the proposed output effect relative to a central bottleneck. Such work clarifies processing stages. It does not follow that the same effect will dominate fixation selection when memory, goals, and movement costs favor another location.

5.5. Spatial location, objects, and depth

Classic spatial IOR is strongest near the cued location, but visual search is directed toward objects embedded in scenes. Tipper et al. [22] reported that inhibition could follow a moving object, suggesting that return control is not limited to fixed retinal coordinates. Object-based coding is functionally attractive because objects can move while remaining relevant or rejected. The reviewed findings do not, however, establish that object-based coding is as general as location-based IOR; the outcome depends partly on how objects are defined and tracked.

Three-dimensional research adds another boundary. Qian et al. [23] examined object-based IOR across simple drawings and real objects, and Haponenko et al. [24] found that IOR in a simulated three-dimensional scene depended on the direction of the depth switch between cue and target. More recent evidence indicates that depth and object membership jointly modulate IOR [25]. These findings show that the priority of an old location cannot always be represented on a flat two-dimensional map.

Simulated depth answers a specific question; it is not equivalent to embodied search. A fixed observer viewing a stereoscopic display does not encounter the self-motion, occlusion, viewpoint change, and action cost present in the world. The next step is therefore not simply to make displays more realistic. Experiments must determine whether object and depth coding predict voluntary returns when observers can move through the scene.

5.6. Observer and environmental context

Search policies also vary across observers and environments. Naturalistic search performance reflects individual differences related to classic search ability [2]. In people with cerebral visual impairment, exploration of naturalistic scenes has also been linked to saliency cues [26], although that study did not test IOR or refixation control.

Training, expertise, age, clinical status, and task familiarity remain plausible sources of variation rather than established moderators of the IOR-return relation.

Environmental dynamics matter for the same reason. In a stable display, returning to a rejected distractor may be redundant. In a changing scene, previously inspected regions can acquire new information. A general account of return control must therefore include the probability that a location has changed and the observer's confidence in the earlier inspection. IOR may be most useful when the environment is sufficiently stable for recent rejection to remain valid, but sufficiently complex that immediate perseveration is costly.

6. An Adaptive Return-Control Account

The reviewed evidence suggests an adaptive return-control hypothesis, not a new neural module. On this account, recent selection gives an old location a disadvantage. The disadvantage is weighed against what another look could contribute to the current task and against the effort of reaching an alternative. An old location can consequently remain the best available choice. No experiment considered here has manipulated all of these influences together, so the proposal is an organizing account rather than an established decision rule.

This formulation accommodates dissociations that appear contradictory only when IOR is treated as a prohibition. A probe can be slow even though a planned return remains worthwhile. Scene continuity may preserve the coordinates of an inhibitory tag without making that tag decisive. Object and depth information define what is counted as the same place, whereas movement economy affects the cost of reaching it. The components need not change in parallel.

Several predictions follow, but they concern different measures. Degrading the first view or making change likely should increase voluntary returns; stable, well-remembered distractors should reduce them when broad coverage is useful. Changing the movement required to reach an alternative may alter return choice without altering a probe cost. By contrast, scene removal or a new response requirement may change the measured cost because the probe no longer preserves the active search state. The critical experiment would record probe-based IOR and uninterrupted fixation choices in the same task while varying memory certainty, scene continuity, and the value of reinspection. If return choice remains insensitive to these manipulations, the account would need to be revised.

Return, then, is neither proof that inhibition failed nor evidence that no inhibitory cost existed. It is a choice among alternatives. Establishing the role of IOR in that choice requires both measures: the cost attached to an old location and the observer's decision about where to look next.

7. Conclusion

Laboratory IOR and natural refixation describe related but distinct consequences of recent visual history. The former shows that processing or orienting toward an old location can carry a cost; the latter shows that the location may still be selected when another look serves the task. Stable rejection and a premium on coverage should make the two outcomes converge. Uncertain evidence, environmental change, comparison, or inexpensive reversal can separate them. IOR is therefore best understood as one contributor to fixation

priority. Its functional role in search will be established most convincingly when processing cost, voluntary return, and task performance are measured together.

References

- [1] Aivar, M. P., Li, C.-L., Tong, M. H., Kit, D. M., & Hayhoe, M. M. (2024). Knowing where to go: Spatial memory guides eye and body movements in a naturalistic visual search task. *Journal of Vision*, 24(9), 1. <https://doi.org/10.1167/jov.24.9.1>
- [2] Botch, T. L., Garcia, B. D., Choi, Y. B., Feffer, N., & Robertson, C. E. (2023). Active visual search in naturalistic environments reflects individual differences in classic visual search performance. *Scientific Reports*, 13, 631. <https://doi.org/10.1038/s41598-023-27896-7>
- [3] Nikolaev, A. R., Meghanathan, R. N., & van Leeuwen, C. (2025). Refixation behavior in naturalistic viewing: Methods, mechanisms, and neural correlates. *Attention, Perception, & Psychophysics*, 87(1), 25–49. <https://doi.org/10.3758/s13414-023-02836-9>
- [4] Posner, M. I., & Cohen, Y. (1984). Components of visual orienting. In H. Bouma & D. G. Bouwhuis (Eds.), *Attention and performance X: Control of language processes* (pp. 531–556). Erlbaum.
- [5] Klein, R. M. (2000). Inhibition of return. *Trends in Cognitive Sciences*, 4(4), 138–147. [https://doi.org/10.1016/S1364-6613\(00\)01452-2](https://doi.org/10.1016/S1364-6613(00)01452-2)
- [6] Samuel, A. G., & Kat, D. (2003). Inhibition of return: A graphical meta-analysis of its time course and an empirical test of its temporal and spatial properties. *Psychonomic Bulletin & Review*, 10(4), 897–906. <https://doi.org/10.3758/BF03196550>
- [7] Hooge, I. T. C., Over, E. A. B., van Wezel, R. J. A., & Frens, M. A. (2005). Inhibition of return is not a foraging facilitator in saccadic search and free viewing. *Vision Research*, 45(14), 1901–1908. <https://doi.org/10.1016/j.visres.2005.01.030>
- [8] Wang, Z., & Klein, R. M. (2010). Searching for inhibition of return in visual search: A review. *Vision Research*, 50(2), 220–228. <https://doi.org/10.1016/j.visres.2009.11.013>
- [9] Martín-Arévalo, E., Chica, A. B., & Lupiáñez, J. (2016). No single electrophysiological marker for facilitation and inhibition of return: A review. *Behavioural Brain Research*, 300, 1–10. <https://doi.org/10.1016/j.bbr.2015.11.030>
- [10] Satel, J., Wilson, N. R., & Klein, R. M. (2019). What neuroscientific studies tell us about inhibition of return. *Vision*, 3(4), 58. <https://doi.org/10.3390/vision3040058>
- [11] Redden, R. S., MacInnes, W. J., & Klein, R. M. (2021). Inhibition of return: An information processing theory of its natures and significance. *Cortex*, 135, 30–48. <https://doi.org/10.1016/j.cortex.2020.11.009>
- [12] Klein, R. M., Redden, R. S., & Hilchey, M. D. (2023). Visual search and the inhibitions of return. *Frontiers in Cognition*, 2, 1146511. <https://doi.org/10.3389/fcogn.2023.1146511>
- [13] Burlingham, C. S., Sendhilnathan, N., Komogortsev, O., Murdison, T. S., & Proulx, M. J. (2024). Motor “laziness” constrains fixation selection in real-world tasks. *Proceedings of the National Academy of Sciences*, 121(12), e2302239121. <https://doi.org/10.1073/pnas.2302239121>
- [14] Klein, R. M., Dölek, S., & Christie, J. (2026). Does the output form of inhibition of return operate at or after the bottleneck? *Acta Psychologica*, 262, 105944. <https://doi.org/10.1016/j.actpsy.2025.105944>
- [15] van Moorselaar, D., Voet, V., & Van der Stigchel, S. (2026). Inhibition of return without preparatory suppression in spatial priority maps. *The Journal of Neuroscience*, 46(21), e2257252026. <https://doi.org/10.1523/JNEUROSCI.2257-25.2026>
- [16] Klein, R. M., & MacInnes, W. J. (1999). Inhibition of return is a foraging facilitator in visual search. *Psychological Science*, 10(4), 346–352. <https://doi.org/10.1111/1467-9280.00166>
- [17] Redden, R. S., Klages, J., & Klein, R. M. (2017). The effect of scene removal on inhibition of return in a cue-target task. *Attention, Perception, & Psychophysics*, 79(1), 78–84. <https://doi.org/10.3758/s13414-016-1228-y>
- [18] Thomas, L. E., Ambinder, M. S., Hsieh, B., Levinthal, B., Crowell, J. A., Irwin, D. E., Kramer, A. F., Lleras, A., Simons, D. J., & Wang, R. F. (2006). Fruitful visual search: Inhibition of return in a virtual foraging task. *Psychonomic Bulletin & Review*, 13(5), 891–895. <https://doi.org/10.3758/BF03194015>
- [19] Dodd, M. D., Van der Stigchel, S., & Hollingworth, A. (2009). Novelty is not always the best policy. *Psychological Science*, 20(3), 333–339. <https://doi.org/10.1111/j.1467-9280.2009.02294.x>
- [20] Peterson, M. S., Kramer, A. F., Wang, R. F., Irwin, D. E., & McCarley, J. S. (2001). Visual search has memory. *Psychological Science*, 12(4), 287–292. <https://doi.org/10.1111/1467-9280.00353>
- [21] Gilchrist, I. D., & Harvey, M. (2000). Refixation frequency and memory mechanisms in visual search. *Current Biology*, 10(19), 1209–1212. [https://doi.org/10.1016/S0960-9822\(00\)00729-6](https://doi.org/10.1016/S0960-9822(00)00729-6)
- [22] Tipper, S. P., Driver, J., & Weaver, B. (1991). Object-centred inhibition of return of visual attention. *The Quarterly Journal of Experimental Psychology Section A*, 43(2), 289–298. <https://doi.org/10.1080/14640749108400971>
- [23] Qian, Q., Zhao, J., Zhang, H., Yang, J., Wang, A., & Zhang, M. (2023). Object-based inhibition of return in three-dimensional space: From simple drawings to real objects. *Journal of Vision*, 23(13), 7. <https://doi.org/10.1167/jov.23.13.7>
- [24] Haponenko, H., Britt, N., Cochrane, B., & Sun, H.-J. (2024). Inhibition of return in a 3D scene depends on the direction of depth switch between cue and target. *Attention, Perception, & Psychophysics*, 86(8), 2624–2642. <https://doi.org/10.3758/s13414-024-02969-5>
- [25] Haponenko, H., Britt, N., Cochrane, B., & Sun, H.-J. (2026). Inhibition of return in three-dimensional space is modulated by depth and object membership. *Quarterly Journal of Experimental Psychology*. Advance online publication. <https://doi.org/10.1177/17470218261417679>
- [26] Walter, K., Manley, C. E., Bex, P. J., & Merabet, L. B. (2024). Visual search patterns during exploration of naturalistic scenes are driven by saliency cues in individuals with cerebral visual impairment. *Scientific Reports*, 14, 3074. <https://doi.org/10.1038/s41598-024-53642-8>