Design Psychology Report – Brendan Dutton

Context: Open World or Exploration Games

In open world and exploration-based games, the main point in the game is to give the player freedom to roam, discover, and engage with large, non-linear environments. While this freedom can be immersive and rewarding, it also creates a cognitive challenge: players can easily become disoriented or miss important cues meant to guide their attention. The psychology of attention gives several tools for addressing this challenge through thoughtful environmental and visual design. This report is written from one assigned reading and three scholarly sources from psychology and cognitive science to explore how distraction, attentional guidance, affordances, and environmental salience can inform better design practices in open-world games.

Distraction and Traction (Eyal, 2019)

In Nir Eyal's article *Learn How To Avoid Distraction In A World That Is Full Of It*, the author defines distraction as any stimulus that pulls attention away from a goal-directed task. Distraction is not just a matter of willpower, it's often a response to internal triggers such as boredom or frustration, or external triggers such as notifications and sensory interruptions. Eyal says that the opposite of distraction is "traction," which means any action that moves a person toward their intended goal. He outlines four techniques that help manage distraction: mastering internal triggers, making time for traction, hacking back external triggers, and using pacts or commitments to maintain focus. (Nir Eyal, 2019)

While this article focuses on real-life behavior, its insights are highly relevant to game design. Players often experience in-game distractions, too many glowing objects, cluttered UI, unclear pathways, that in-turn pull them away from the main goal. By thinking in terms of "traction," designers can make intentional design choices that encourage players to stay engaged with core gameplay or narrative objectives. In open-world settings, this means creating environments that subtly guide the player's attention without overwhelming them or breaking immersion.

Cognitive Mapping and Wayfinding (Spiers, 2008)

Hugo Spiers' research into spatial cognition during wayfinding provides insight into how humans form mental maps of their environments. He found differences between two forms of spatial knowledge: route knowledge (a sequential understanding of paths) and survey knowledge (a more flexible, map-like understanding of an area's layout). Successful wayfinding, mainly in large or complex environments, relies on both types of knowledge and is supported by information such as landmarks, boundaries, and directional affordances. (Spiers & Maguire, 2008)

In the context of open-world games, designers should use both route-following and free exploration. Players benefit from familiar, repeatable paths that can be learned over time (route knowledge), but also need spatial layouts that help them build mental maps of the path (survey knowledge). Providing visual landmarks, like large towers, unique trees, or color-coded zones, helps players orient themselves and develop internal navigation models of the environment. Spiers' work confirms that these design elements can support the natural way the human brain processes and navigates different spaces.

Spatial Learning in Complex Environments (Topete, 2025)

Topete and colleagues conducted a study comparing how people learn the layout of different virtual environments, including both structured indoor settings and open, irregular outdoor spaces. Their findings showed that while a general spatial ability supports both of these scenarios, the structure and complexity of an environment largely affect how easily people learn it. For example, grid-based environments usually support faster learning than open environments with less boundaries or less repeating patterns. (Topete et al., 2025)

These findings reinforce the idea that open-world game environments need additional navigational support. Players in non-linear, organic settings may struggle to form meaningful mental maps unless the environment is designed with cognitive load in mind. Game designers can incorporate clear zones, structural boundaries (like cliffs, rivers, or walls), and frequent anchor points to help players segment and understand

space. Without these aids, players may become disoriented or distracted, interrupting their engagement with the game.

Attentional Guidance and the Meaning Map Approach (Henderson, 2019)

In their 2019 article, *Meaning and Attentional Guidance in Scenes*, Henderson and his team explore how our attention is drawn not just by what looks visually “loud” (like bright lights or strong contrast), but by what actually feels meaningful to us in a scene. They developed the concept of “meaning maps” to study this, which are basically visual maps showing which parts of a scene people find most meaningful, even without knowing the full context.

What they found is that people tend to focus on areas of a scene that offer useful or understandable information, like objects we recognize, places that hint at something happening, or signs of human activity. These meaning-rich areas often attract more attention than traditional “salient” areas, which might just be visually striking but not actually important. (Henderson et al., 2019)

This idea is really useful in open-world or exploration games. When players are free to roam around, it’s easy for them to overlook important clues or get lost if nothing in the environment stands out in a meaningful way. Instead of relying on glowing objects or obvious signposting, designers can place cues that feel like part of the world, like a worn-down path, a distant light in the fog, or a ruined structure that suggests history. These aren’t just eye-catching, they feel like they belong and invite players to explore naturally.

Conclusion

Looking across the different sources in this project, one clear theme stands out: attention isn’t just about what looks flashy, it’s about what feels important. In the context of open-world games, this matters a lot. Players have to make constant decisions about where to go and what to focus on, and if the environment doesn’t support those choices with the right kind of cues, it’s easy to lose direction or miss out on key story elements.

Nir Eyal's work reminds us how easily we're pulled off track by distractions, and how important it is to design for focus and intention (traction). Studies by Spiers and Maguire show that the layout of space and presence of landmarks deeply affect how players navigate and remember environments. Henderson's meaning map approach brings it all together by showing that players are naturally drawn to things that seem meaningful, not just visually loud.

By applying these psychological insights, game designers can build more thoughtful, player-friendly environments. It's not about telling players what to do, it's about guiding their attention in a way that feels organic, using meaning, structure, and story as invisible hands that shape the journey.

References

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