Figure 2: Sample solutions to depth ambiguity in an OIV/AR mockup. In these displays, the location of the rendered square is communicated more clearly by the use of transparency in these visualizations (compare to Figure 1). The use of transparent overlays (LEFT) conveys depth by letting the viewer see structure not otherwise visible, but while still perceiving the real-world structure. A similar approach (RIGHT) presents normally unseen structure by over-rendering a virtual "cut-away" of the occluding surfaces. This approach more clearly depicts the inside of the room, but at the cost of occluding real-world surfaces.

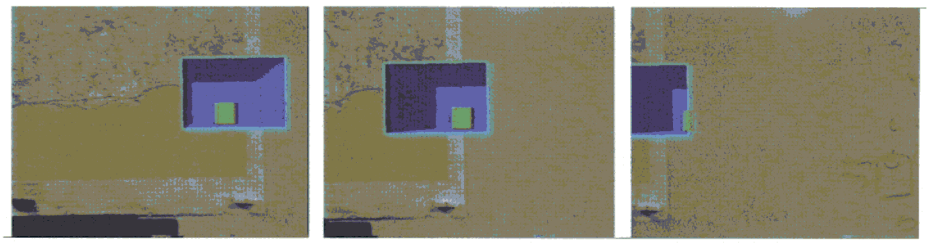

Figure 3: Three frames from a stimulus video capture generated with an AR-OIV system. In this particular example of a dynamic display (panning right), the target square is rendered to a location 1m behind the real-world map and is located within a rendered cut-away box. These frames illustrate 2 major perceptual cues: motion parallax (the small rendered target square moves relatively less than the map because the map is closer to the viewer than the rendered target) and occlusion (the target square is obscured by the boundaries of the cut away).

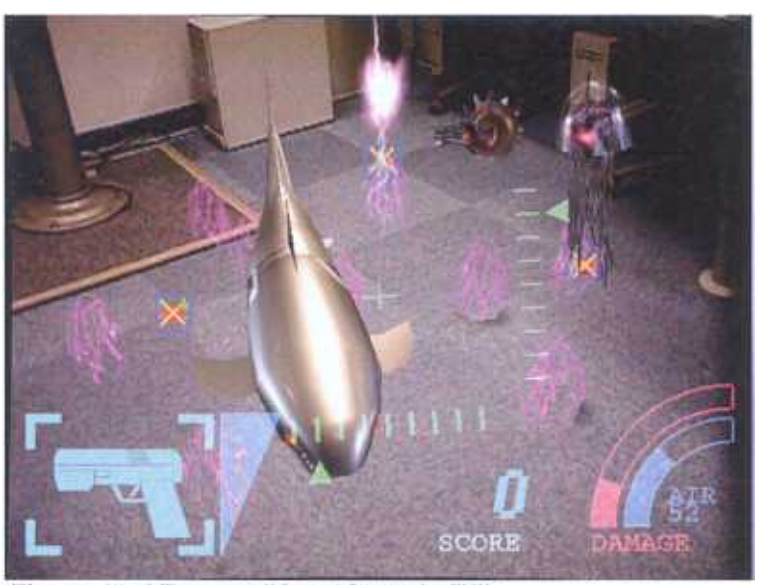

Figure 11. AR game "AquaGauntlet™"

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