

Controlling Objects in Mixed Reality

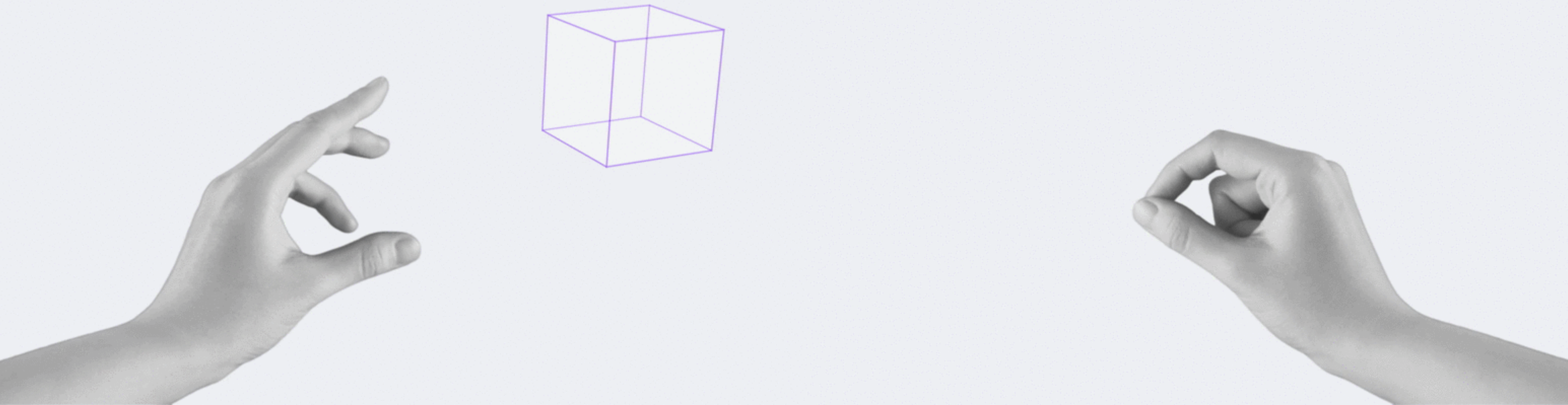
Derrick Ho MHCI+D

Derek Burkhardsmeyer MDes

Matt Imus MDes

Nirawit Jittipairoj ID

Let's talk about interactions



Physical interactions



Tactile Feedback, Approachable, Immediate Visual Feedback, Intuitive

Digital Interactions



Versatile, No physical space limits, Adapts to different contexts

MR/AR Interactions



Layering digital objects into the real world

We can leverage both physicality of objects and the versatility of software

Design Opportunities

1.

Thinking about the different complexities of objects and their designated actions

Simple Interactions



Complex Interactions

Scheduling Thermostats

Scheduling Lights

Manipulating a Music Queue

Searching for Music

Changing a Light Color

Dimming Lights

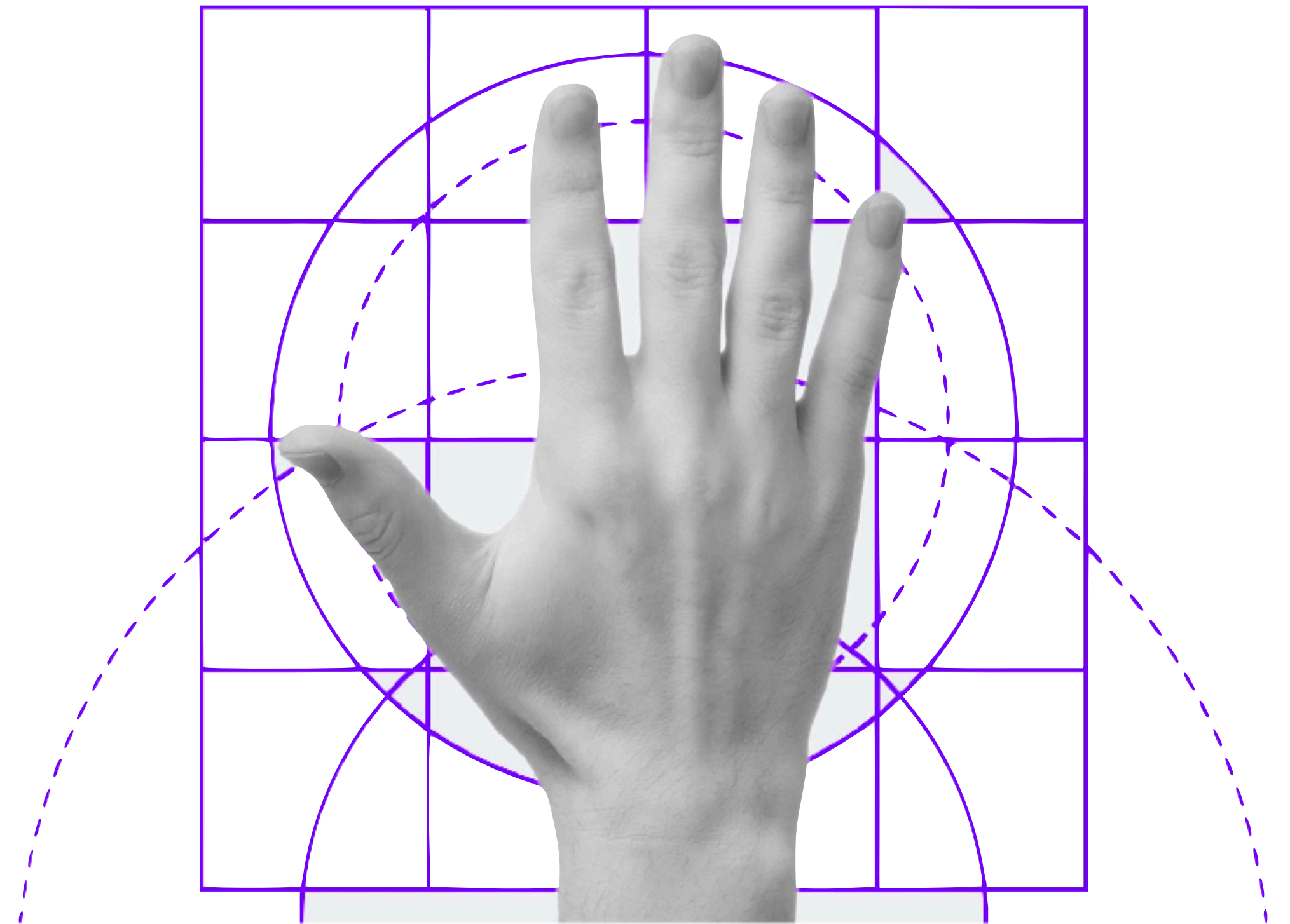
Turning On/Off Lights

Play/Pause Music

Design Opportunities

2.

Finding new ways to interact that are more appropriate to what MR offers us



Design Opportunities


3.

Designing a solution that can be applied to object interaction as a whole. Controlling music is a case study for a framework that can be applied to different objects.



First Hit
Joe Sal



A photograph of a white rectangular speaker sitting on a light-colored wooden shelf. A purple laser dot is projected onto the wall above the speaker. The text "Hotel California" and "Eagles" is projected onto the wall in white. The background shows a window with a dark view outside.

Hotel California
Eagles

👤 What can I help you with?

Discover

Song Title Artist	Song Title Artist	Song Title Artist
Song Title Artist	Song Title Artist	Song Title Artist
Song Title Artist	Song Title Artist	Song Title Artist
Song Title Artist	Song Title Artist	Song Title Artist

Recent

Song Title Artist
Song Title Artist
Song Title Artist
Song Title Artist

Glancing

How do we show our intent to use something?

We look at it



Minimal Controls

There shouldn't be clutter.

When you are passively glancing at something, you should see just the necessary information. Subtle. Unobtrusive.



More Controls

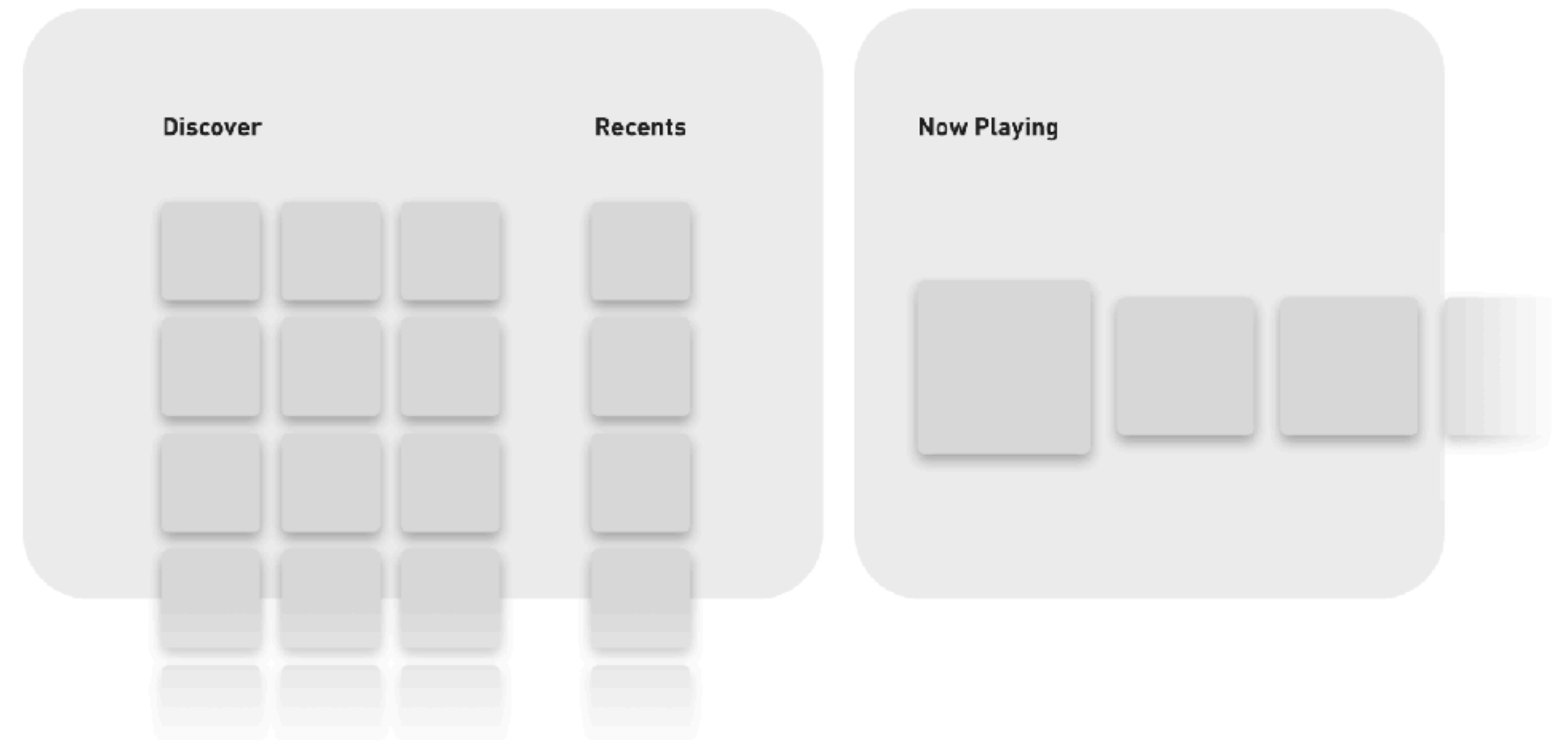
The idea here is that most objects are designed for single actions, we can hide these 'extraneous features' in a way that is presented only when asked for



2 Parts of the 'Full View'

Left view as a full, next level of information where the user has the option to explore other features of the object

Right view as an extension of the minimal controls



Interacting with the Queue

Treating each musical element as a physical object.

The queue acts as an extension of our initial minimal interactions (prev/next/play/pause)



Interacting with the Content Browser

Voice as the main navigation method

The problem with a lot of screen interaction is the abstraction between the actual action and what is portrayed.



Dismissing the Full View

This interaction should be as easy as it is to invoke, but different enough



Recap

How can we take advantage of the spacial capabilities of Mixed Reality and build an interface that fits seamlessly into our lives?

Rethinking the interaction model past flat 2D UIs and adding physicality to interface elements



If we had more time...

More time to visually represent our idea in video/Hololens form

Expand our system into other objects such as lighting, temperature, cooking, etc.

Explore more gestures



Nirawit Jittipairoj 7:48 PM

other than finishing presentations, anything else i can help with



DB 😎 8:01 PM

figure out how to give me 1 more day
or slow time

Thank You!