



CONTROL REDESIGN

A fundamental building block of interaction design, controls are designed to be conduits between a user's intention and a system's ability to understand and act on that intent. In this project, we selected a control and redesigned it by considering the user's intent, context, behavior, environment and physical limitations, and applying knowledge of human perception to create controls that are elegant, intuitive and easily learned. The goal is to recast interaction as a cognitive and explicitly communicative action and move away from more tacit expressions of intention and more visceral and embodied communication between a person and a device.

LOVE IT, HATE IT

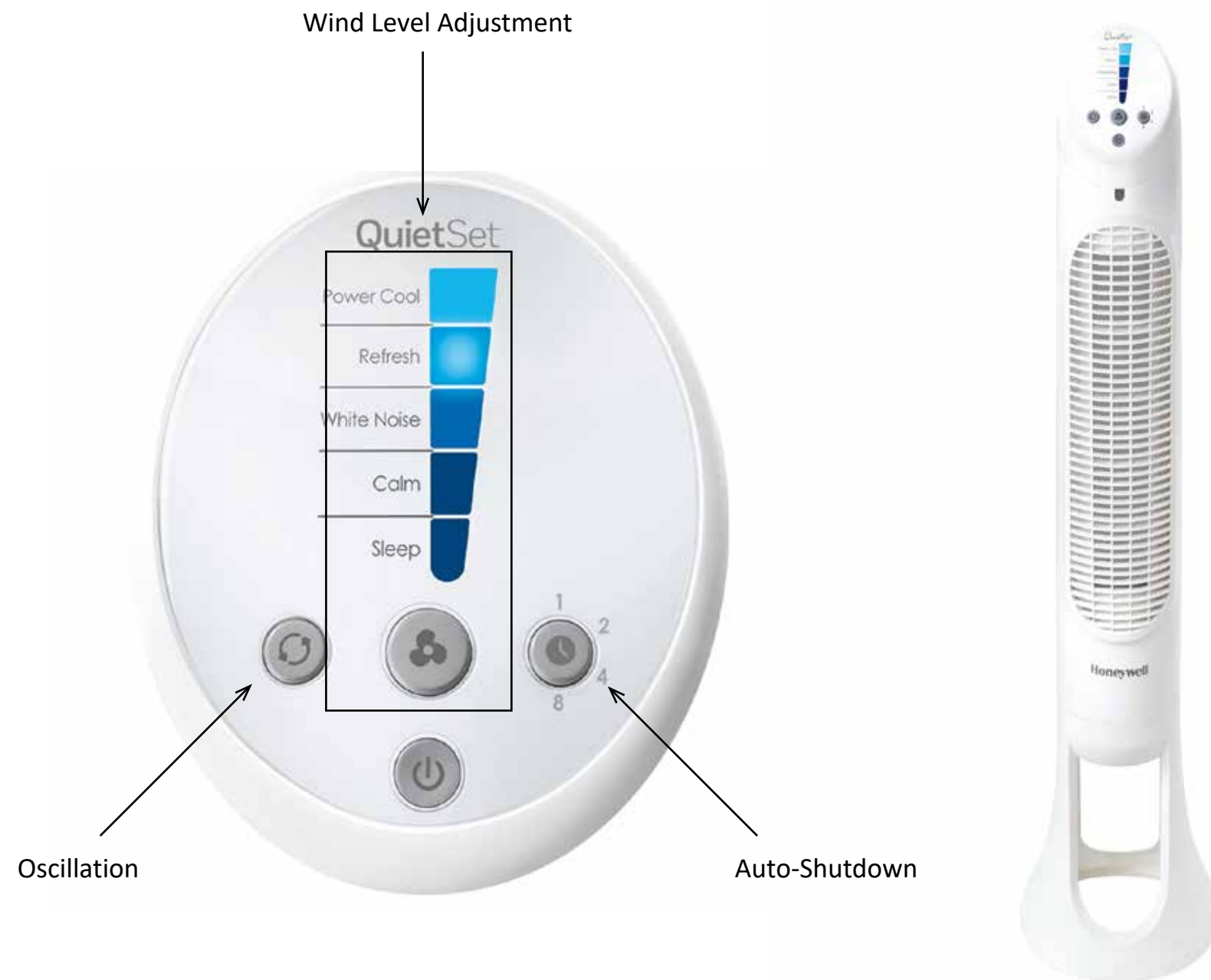
Honeywell QuietSet Tower Fan

Control: Wind Level, Oscillation, Auto-shutdown

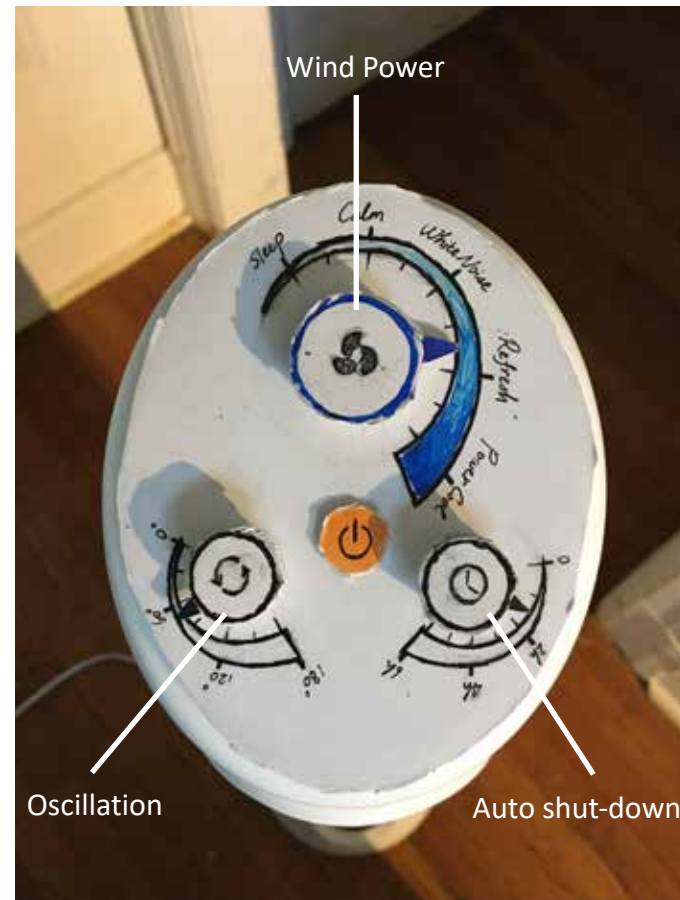
This is the fan that I have been using since last year. What I love about this design is that it has descriptions of the levels of wind and just by looking at their names we can easily choose which level to use (a lot of feedforward information). After pressing the wind-level button, the light of the current wind level is on, and we can adjust by pressing the wind-level button again to move to the next level (bottom->top->bottom).

While the design of the wind-level button is relatively strong, the oscillation and auto-shutdown buttons do not have much perceptual affordance. By looking at the oscillation button, we can't really tell how much angle it can oscillate across. The auto-shutdown button only has four discrete control levels (1h, 2h, 4h, 8h) when it's much more helpful to have more levels.

What also comes out as a potential source of improvement is the close proximity of the control interface to the fan--it sometimes causes inconvenience when you have to physically reach out to the fan in order to control it. This opens my idea that remote controls are a viable solution to this.



ITERATION I -- PAPER PROTOTYPES



1

2

Model 1:

This model was based on the design of the original control. It kept the power(on/off) button, but replaced the other three buttons with rotational wheels for easier and more options of adjustment (before, it had only a few discrete options). Some visual elements were made, including the arc bands of increasing widths at the end that indicate higher numbers.

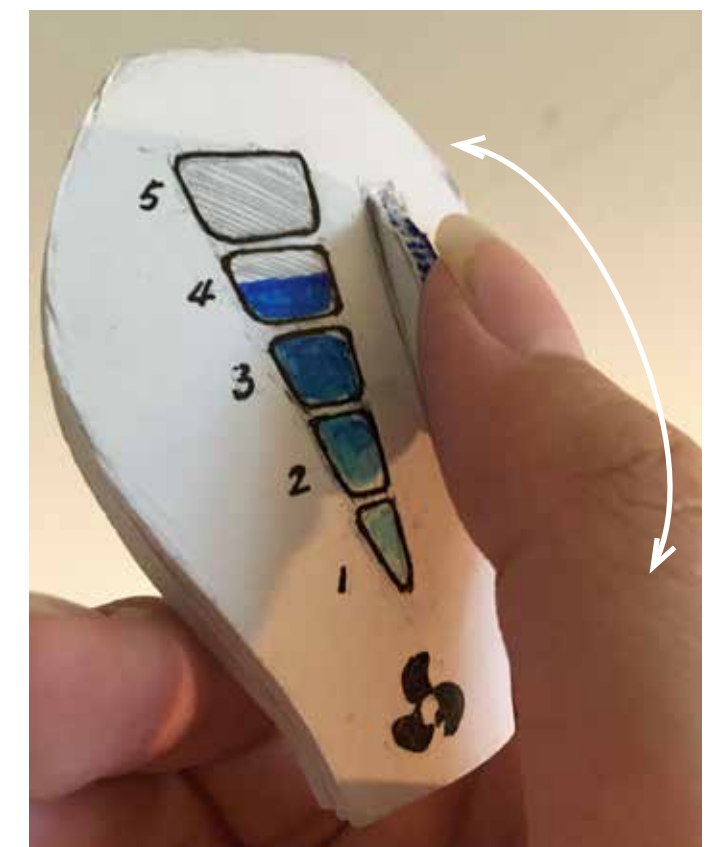
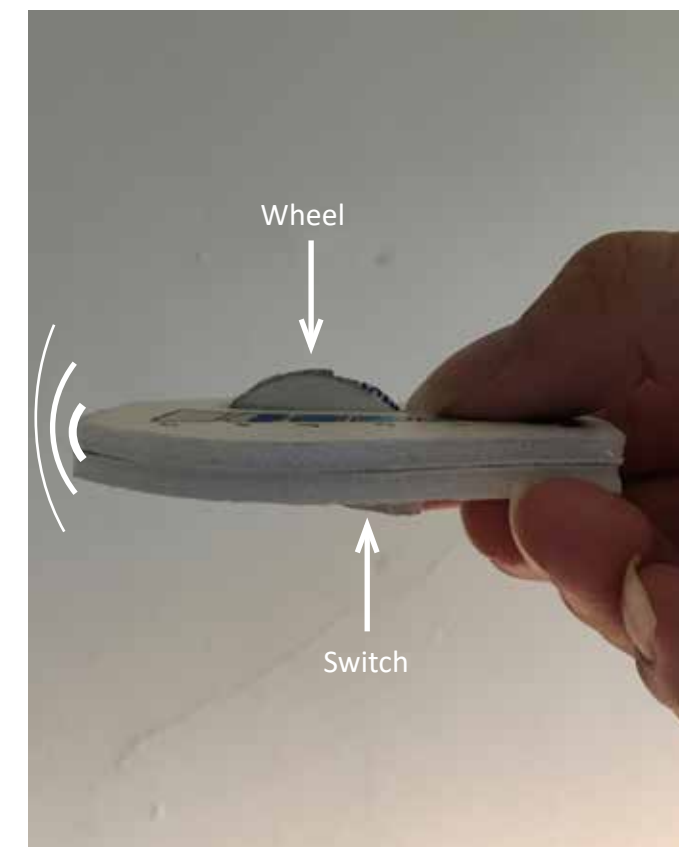
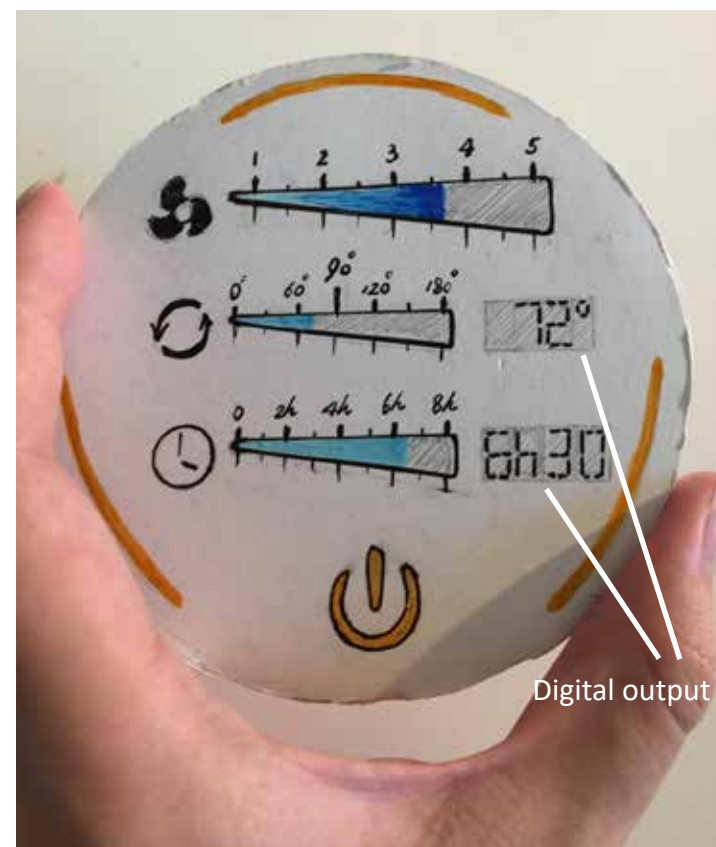
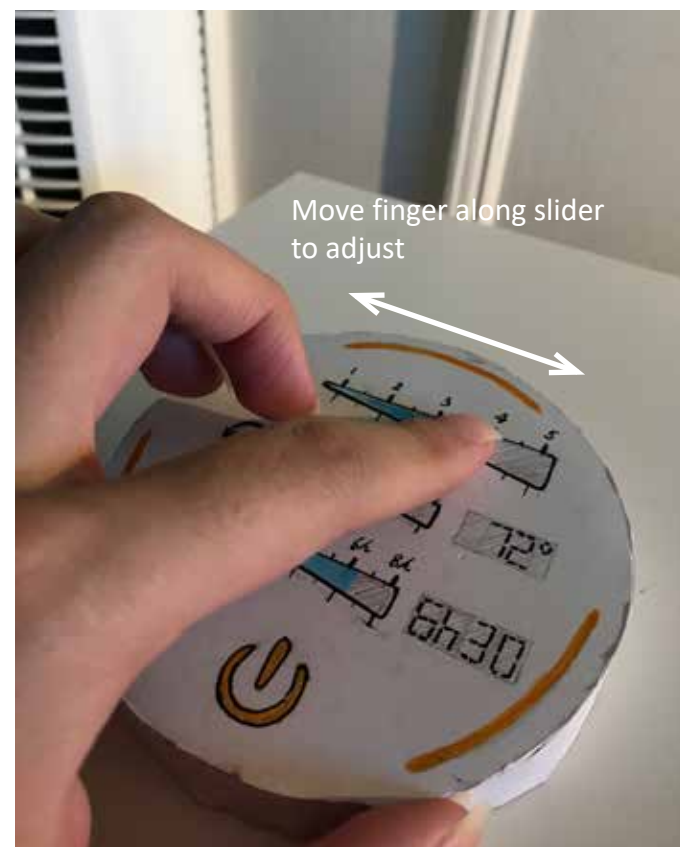
Model 2:

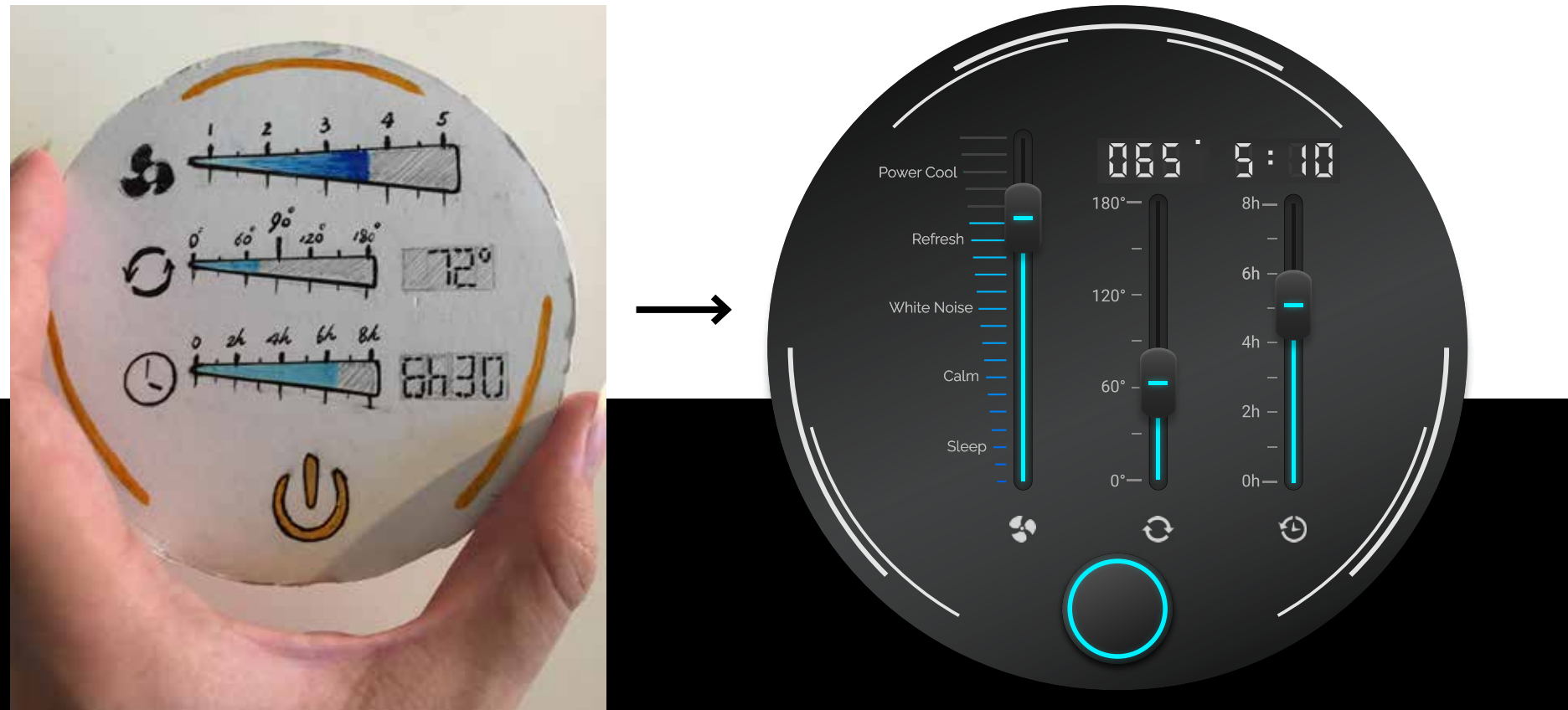
This design considered the convenience of having remote controls when one's working by the desk. This portable, intelligent desktop fan control "employed" the haptic technology--without involving any buttons or wheels--to manage those three levels of controls (power, angle, time). The blue light within each slider indicates the current condition (coupled with the more precise digital outputs).

Model 3:

This iteration was inspired by the idea that not all controls happen when people have full/convenient access to the central device--this remote mini-control allows for easy control with two available control options--on/off (switch), and wind power (vertical wheel).

3





<< Prototype 1:

This is the second iteration on the first desktop control prototype. Instead of using all-haptic controls, this one uses vertical sliders with indicator light bars while maintaining other important features, such as the digital screens for oscillation and auto-shutdown. It is simple, elegant, and precise for controlling the fan when one's working by the desk.

Why Changes?

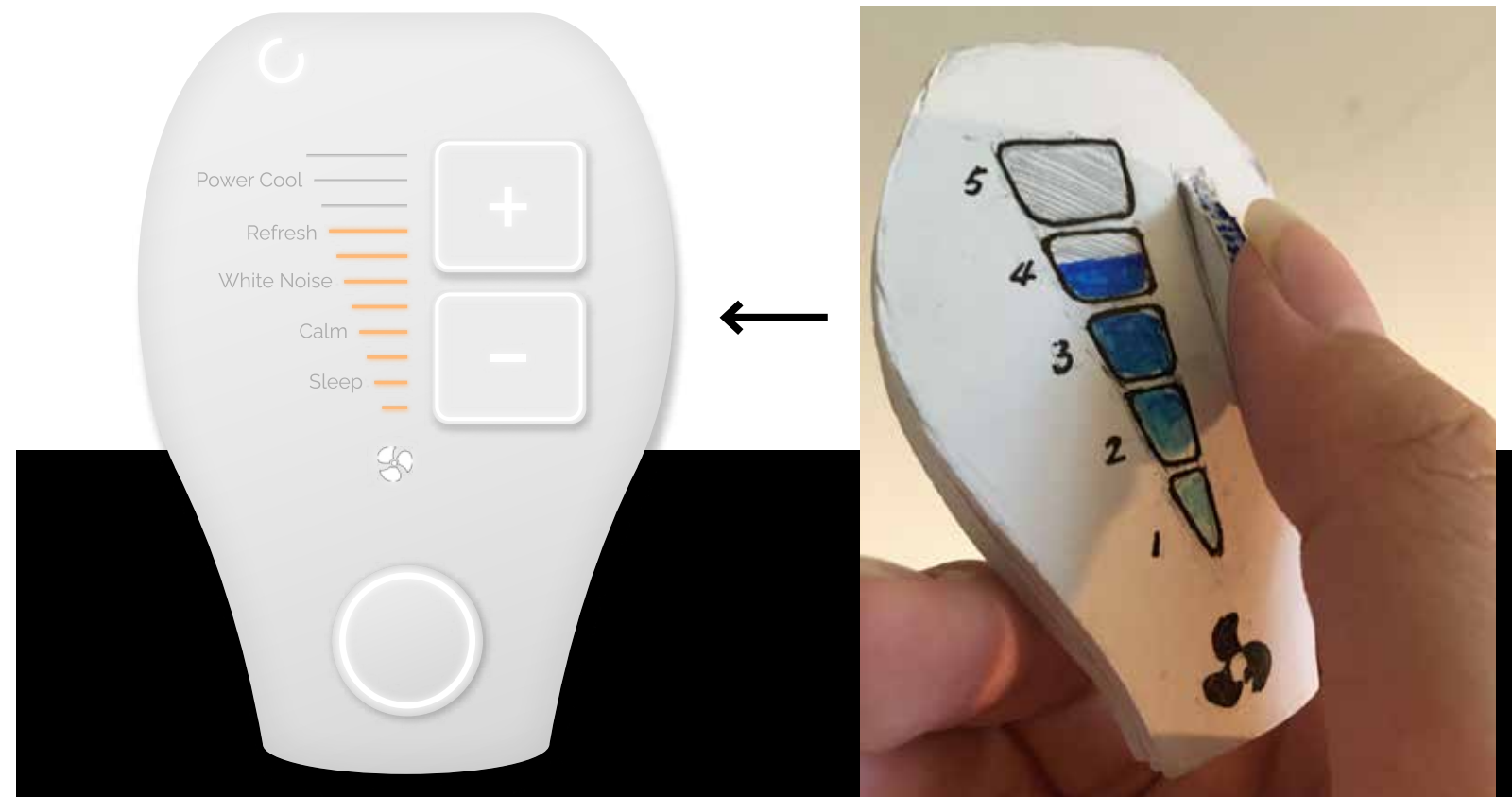
- Vertical sliders are more intuitive and precise
- Feedforwardness regained by adding descriptions of wind levels (from Sleep to Power Cool)

>> Prototype 2:

This is the second iteration on the remote mini-controller. Again, for simplicity sake, there are only two controls--power and wind-level. However, they are now on the same side of the controller, and instead of using a vertical wheel, a more straightforward "+" and "-" button is employed to control the wind level, which is now labeled from Sleep to Power Cool.

Why Changes?

- Buttons are now moved to the same side--allows for more convenience
- "+" and "-" buttons are more intuitive and easier to use
- Labels of different wind levels now replace the 1-5





Finally, I sought to combine the previous two iterations of desktop control and remote mini-control. The former has more functions, finer control gradients, but less portability; the latter is lighter and more portable, but has fewer control options. The question became: how can I merge them into that both has a complete set of functions and maximizes portability and usability...

>>Smart Control

- Complete set of functions
- More appropriate control gradient
- Visual and digital display
- Portable and easy to operate

