

When we perform an action we utilize feedback as validation, but the question remains of how our body quickly and accurately responds in the face of increasing computational complexity. Here, I compare the different modalities of action and feedback in my observations of JT playing the online role-playing game Final Fantasy 14, and the observations of another with Wendy playing the fighting game Super Smash Brothers 4. In JT's case, coordination relies on visual mappings, signs instantiated into the virtual world, and context driven movement. With Wendy, quick reflexive movement stems from top down knowledge imposed onto real-time visual information in order to make predictions with what is most likely to happen. For both cases, I will discuss how JT and Wendy utilize common cues, yet contextualize the world in slightly different manners based on the world they are embedded in.

A1: JT's ability bar displayed on his laptop screen.



B1: A snippet of Super Smash Brothers 4 where two characters fight each other



First, I will break down each subject's use of feedback to accomplish different types of coordination based on the type of game both play. In one field note acquired from the corpus

data describing the image B1. The observer describes Wendy performing instantaneous button presses with her right hand in conjunction with controlling an analog stick with her left thumb during the activity. A key observation is made where “hand movements [are] too fast to reliably record all movements.” Wendy’s extreme dexterity is accounted as an accomplishment of embodied cognition where the body performs computations itself adapting and extending space the controller provides as if it became part of the body (Marghetis Lecture: 4). It becomes reliable source to utilize without actively looking at the controller. Just as Wendy uses feedback to accomplish quick reactive dexterity, we see JT use feedback to accomplish group coordination.

JT also receives the same visual feedback to coordinate action, but JT uses feedback offload memory into the world rather than relying on embodied memory as Wendy does. Bringing Goodwin’s practices of acting with coding schemes, in this case the design of the controller in relation to virtual actions, we can explain JT’s behavior of being fixated on the screen in knowing the expected visual feedback on the screen from tilting the left control stick on the controller (Goodwin 1994: 609). JT makes sense of the causal relationship between visuals (as seen in in A1) and physical action because of his experience by categorizing controller actions into virtual movements allowing him to attend to what is only on what is on the screen. Scott Klemmer provides this notion of mental model versus actual model. A mental model is the visualization of how something works in the real world, and the actual model is the physical object itself (Klemmer 2015: Lecture). JT’s cognitive activity lies within him having the correct understanding of the design structured for interacting with the game using his controller, and his accuracy stems from this match between gestures on the controller plus the feedback displayed on the screen. We see key differences between the same types of action performed between Wendy and JT as what each game affords itself to users with its design. Wendy’s actions rely on fewer button combinations, which stem from the design of a fighting game allowing a user to quickly interleave them during a fight, while JT instead has an abundant amount of actions to take each with its own button assigned.

The inherent design of artifacts, both physical and virtual, facilitates JT’s and Wendy’s cognitive activity by how it directs their attention during the game. Making sense of what’s around us is often assumed as the ability to whittle down a computational complex environment by stripping away distractions until key features are left, yet as seen in both cases, the counterintuitive addition of bringing extra resources to what we attend from taking into consideration even the relative spacing between characters to attention towards . What this implication leaves us with is that instead of breaking down situations into its simplest units, we dynamically reorient the context we perceive by shifting sensory modalities and combining spatio-temporal information for synthesis. We may view Wendy’s constant character reorientation as well as JT’s visual

ability bar as semiotic resources that “speak” to them as a dialectical relationship where as one is reoriented, the other changes alongside to try to match both fields. Goodwin provides the explanation of the capacity to reflexively change as, situated process that encompasses both the sign-making capacity of the individual...and different kinds of semiotic phenomena...lodged within the material and social environment (Goodwin 2000: 1490)." JT and Wendy makes sense of the causal relationship between visual and physical action because of his experience by categorizing controller actions into virtual movements allowing him to attend to what is only on what's on the screen.

Works Cited:

Klemmer, S. (2015). Cognition and Design [Powerpoint slides]. Retrieved from <http://d.ucsd.edu/class/intro-hci/2015/lectures/HC...>