

Toy Story Midway Mania!: Overwhelming or Pure Disney Fun?

When I graduated from college, I moved to Florida to work at the most magical place on Earth – Walt Disney World. The number of different technologies I interacted with on a day-to-day basis was huge and varied, from the rides I rode on in my free time, the attractions I operated while working in my first year of employment, or the ticketing system I eventually used in Guest Relations. My interactive technology experiences may have been plentiful, but one experience that stands out is the attraction called *Toy Story Midway Mania!* at *Disney's Hollywood Studios*®. I will be analyzing the ride through various human behavioral concepts, such as proprioceptive sense, serial searches and resource sharing.

Like most attractions at Walt Disney World, *Toy Story Midway Mania!* (TSMM) is designed to immerse the rider in the theme of the ride. Based on Disney's *Toy Story* movies, the attraction is an interactive game-based ride where the riders sit in vehicles and play carnival-like games on large 3-D screens while wearing 3-D glasses. The vehicles also spin and move quickly throughout the inside of the ride, stopping at each game screen to let the rider play for a short period of time before moving to the next game. Before even entering the ride vehicles, there is a large queue full of gigantic games and toys and is designed to make the guest feel as if they *are* toy-sized. The queue is long, but immerses the guests in the entire theme.

Once on the ride, which is a vehicle where four people sit back-to-back in pairs, the riders are strapped in via a lap bar and each person has a “gun” in front of them. The gun has a pull-cord on it for one hand (to shoot) and a handle that can move the gun around for the other hand. There is a large sensor on the end of the gun, which interacts with the large, colorful game screens. Additionally, there is loud music and game sounds (like a midway!)

constantly being played while on the ride. A screen on the ride vehicle keeps the riders' point totals from the games, as well as accuracy.

The first time I rode TSMM, I was excited to experience the state-of-the-art, unique attraction. No other ride at Walt Disney World compared to this one, which opened in 2008. I was in awe of all of the detail of the attraction queue when I walked through the doors with my fellow Cast Member (Disney employee) friend. The noises were a little bit overwhelming, and the number of people waiting to ride the ride created even more noise within the confines of the snaking line. It was a cacophony of voices and music.

Once in the vehicle area, the noise increased, and I felt slightly more overwhelmed as the lights and colors are quite bright as well. As I worked in attractions before (but not TSMM), I knew that the noise level and overall ostentatiousness of the ride theming could both be elevated, but I immediately felt that TSMM took it to another level. (A fun, Disney-like level, but still another level.) Bright, flashy things and loud noises, especially in new situations, easily distract me.

The attraction hosts and hostesses, who we came upon once we snaked completely through the queue into the ride area, were barking (carnival barkers!) orders, in the friendliest way possible, to get the guests to grab their 3-D glasses and climb into the vehicles. Once I was seated with my friend, 3-D glasses on, the host quickly strapped us in and pointed out the pull-cord for shooting, how to move the gun and where to look at our points and accuracy levels. The vehicles then took off into the game area, spinning and jerking.

I had some idea of what the attraction entailed, just being the Disney nerd and Cast Member that I was, but I had no idea what to expect from the ride once I was actually at the first screen. When we arrived, the vehicle came to a halt while we interacted with the actual game screen. There was music, orders being yelled by animated characters, and a variety of movement by

animations within the game in front of us. The colors were bright and obviously, as it was 3-D, different things were popping out towards us. We were being timed with a timer on the screen (signifying how much time we had left until the vehicle whipped us to another screen), and we had to shoot as many targets as we possibly could, all while listening to the characters, pulling on the pull-cord rapidly, scanning the screen for new targets (that are worth the most points and constantly moving), and while items were flying out at us.

The games on each screen were fun, and the 5-6 minute ride flew by as I played. I had a blast, but by the end, my arm was noticeably tired from pulling the pull-cord and I felt a little dazed. I also am legally blind in my left eye, so seeing 3-D is taxing for me. Sometimes I don't really see much, but I have to really focus in order to have proper depth perception. I didn't realize how challenging that would be while riding the ride and playing the games. That, coupled with the different noises, bright colors and intermittent spinning of the vehicle, made the ride new and exciting, but also exhausting. Additionally, I was, needless to say, terrible at accuracy and gaining points.

The first concept of human behavior that can be applied to my experience on TSMM is proprioceptive sense, which is the sense that gives humans information about movement and orientation (Norman 2008). The ride, with its spins and jerks, along with the use of both hands to pull the gun cord and aim the gun at the 3-D screen used all three components of proprioceptive sense. From Norman (2008), the ride used kinesthetic sense (for the muscle movement required to use the gun), vestibular sense (for balance and movement information after the spinning stopped) and visual sense (for the hand-eye coordination required to shoot the targets).

The next concept that can be applied is the concept of serial searching, from Wickens (2004). The ride required riders to find targets on the screen and shoot at them. The search for these targets was serial because it required the

user to search for each target individually and to visually inspect each item on the screen in order to determine if the target was the correct one. If the screen was something the rider had used before and it was organized logically, it would be a non-serial search.

The last concept that can be applied is from Wickens (2004). He writes about resource sharing with his use of the Multiple-Resource Model, which relates to attention division. He states that the brain can only split attention between tasks that are not similar structurally, and that working on one task can degrade the other, based on what resources are being shared. When there are multiple things that demand the rider's attention, such as the audio cues (music, instructions on the screen, other players, etc.), visual cues (targets moving on screen, distractors, etc.), and spatial tasks (pointing, shooting), then the rider has to share their attention resources.

The concept of proprioceptive sense can be applied to my experience on TSMM because I had to have fine motor movements in order to operate the gun, as well as orient myself once the spinning stopped in order to properly aim the gun at the screen and play the game. I also had to have hand-eye coordination in order to properly hit the targets, which was difficult based on my vision limitations. By the end, I was also struggling to pull the cord quickly, due to the tired arm, and I had a tired brain from focusing on the 3-D targets. My personal limitations, along with the technology's proprioceptive sense utilization, caused me to have trouble responding to the required tasks.

The ride also required me to scan the screen constantly to find the targets, which is the concept of serial searching. I had never rode the ride before, so I had no prior expectations of where the targets would be. I had to look at all of the items on the screen in order to find what I was looking for. Additionally, there were a lot of non-targets on the screen (characters, scene

settings, etc.), which made the searching even more serial. Each screen required a lot of mental effort on my part in order to execute the tasks.

Playing the games at each screen on the ride required multiple components of my attention. The audio and visual overstimulation throughout the queue set the stage for the entire ride, which had even more audio and visual stimulation. The ride required me to focus on the character's orders, the moving targets and non-targets, the loud music, the sounds of the hit (or missed) targets, the players around me, the noise from other screens, the moving vehicles, the time ticking in the corner, the aiming of the gun, the pulling of the cord and more. I couldn't properly divide my attention in order to do all tasks well, so my accuracy and points suffered based on my attempts to listen to the instructions or search for higher targets. Because I am easily distracted by loud noises and bright colors, my task management was even poorer, which made the resource sharing that much more difficult. I couldn't do all things at once in order to be a "winner" on TSMM.

From the Walt Disney World website ("Toy Story Midway Mania!), TSMM is appropriate for all ages, so technically, the attraction is uniformly usable by the average human being, no matter their age. However, I do not believe the ride is *easily* usable by everyone. The average user may not have poor vision and poor depth perception, causing the 3-D to be difficult, like I do, nor may they be overwhelmed by loud noises and colors, but they still will have to use serial searching, resource sharing and proprioceptive sense in order to be successful game players. Since the games are different at every screen, and different every time the user rides the ride based on points scored, it would be difficult for the average park guest to become a proficient user of the attraction. I would also venture to say that it would be difficult for the average user *not* to feel a little exhausted or overwhelmed by the end of the ride, due to the effort required, even without any personal limitations. I don't believe my

first experience with TSMM would be that different from the average user based on the design of the ride.

It is possible, and even probable, that the attraction is not *meant* to be an interactive technology that is user-friendly. The Imagineers (ride creators) designed the ride to be unique and fun, but it can be assumed that they did not want it to be easy for guests to “conquer” the ride. They wanted them to want to ride again and try to get more points. The average user will most likely never ride the ride more than once, however, as what family wants to wait in line for hours multiple times for the same ride? Even as a Cast Member for three years, I only rode *Toy Story Midway Mania!* a handful of times, and my ability to score points (or hit targets accurately) never improved. My experience on the attraction may have been unique based on my personal limitations, but the application of the human behavior concepts in this paper show that the average user will not be exempt from the usability issues.

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References

"Toy Story Midway Mania!" *Toy Story Mania!* The Walt Disney Company. 2013. Web. 17 Oct. 2013. <<https://disneyworld.disney.go.com/attractions/hollywood-studios/toy-story-mania/>>.