Exploring Intuitive Ways To Recognize Escalators' Directions

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Part 1

Identifying The Need - First Round Observation

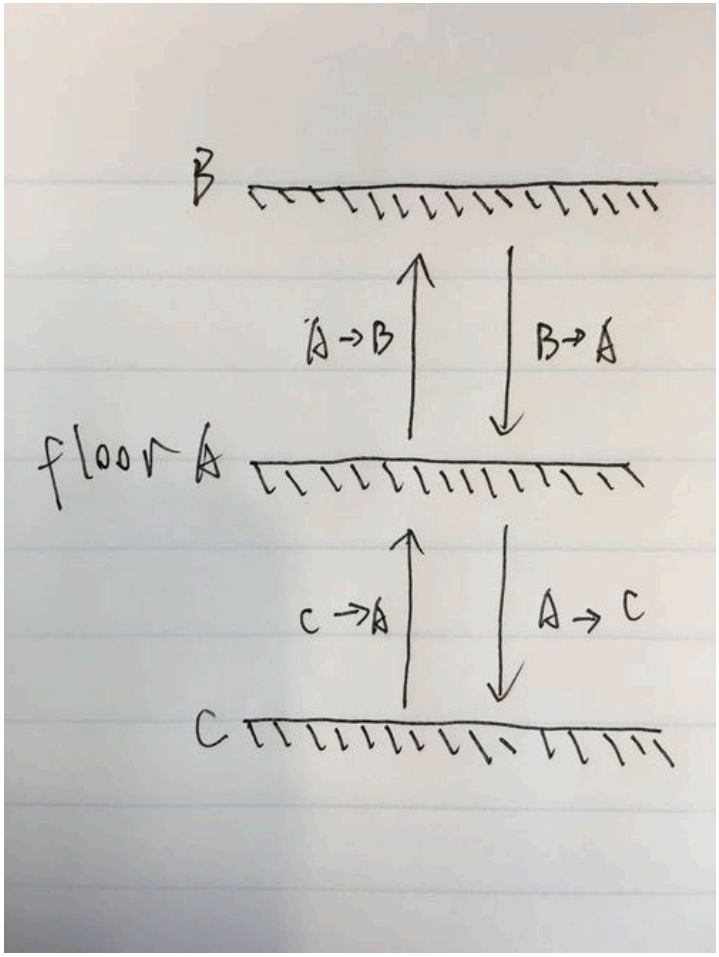
Observation

Water Tower Place is a large modern shopping mall located in the central area of Chicago, a lot of people shop here every day and every minute. it has 8 floors, and on each floor there are numerous shops. What I observed is that:

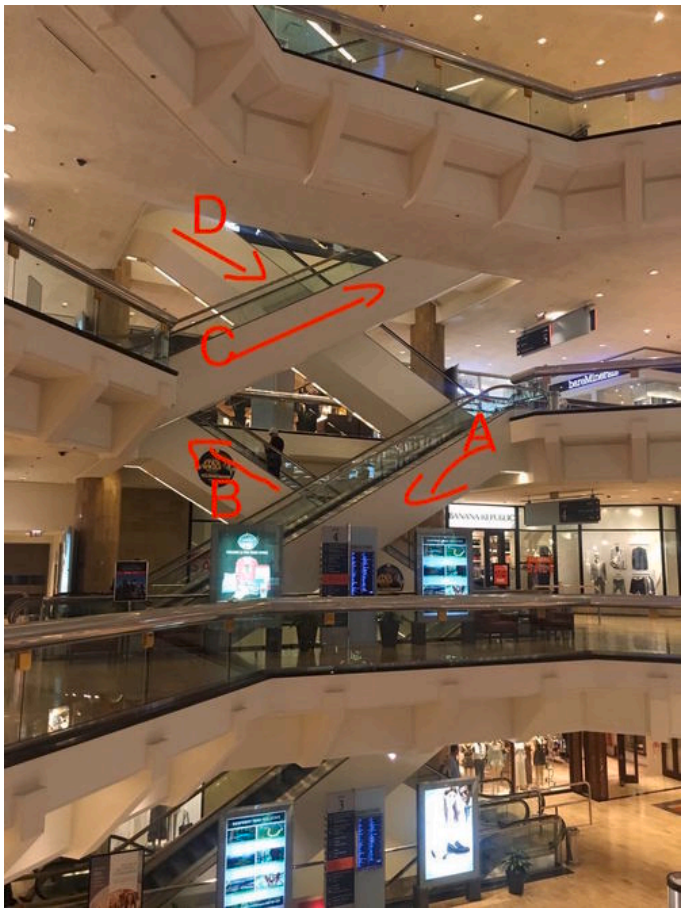
- when people come out of some shops and want to go upper/lower floor, because of thebuilding structure they can not recognize the direction of the escalators, they have to try their luck and go more steps to another escalator if they made a mistake.
- some people who are absent-minded or chatting happily with friends will occasionally go to the wrong escalator until they are about to take it and see its direction.

The Need

There are four directions of the escalators on each floor: this floor to next floor, next floor to this floor, previous floor to this floor, this floor to previous floor. As demonstrated by the image below.



In the Water Tower Place, the four directions are placed closely, which makes it convenient for shoppers to go to their destinations directly.



However, there is a problem in recognizing which direction the escalator is going. Imagine you want to to to the upper floor, and you are wondering which escalator you should take, you look at the escalators from this direction:

You can see two escalators connected with the upper floor, but how can you figure out which one goes to the upper floor from you floor and which goes from upper floor to your floor? From this direction, you can't see the movement of the escalators, you will be at lost and the only thing you can do is to guess and try your luck.

Logistics

The public space

In my two observations, there are much more people in the Water Tower Place than in the gym. With a large number of people, I can get more information and enough feedback on how people interact with the escalators, that's why I noticed some people had difficulty in recognizing the directions of different escalators after watching for some time. However, when I want to elinimate all the social aspects, I had to wait for the moment when people are all gone or there's nobody on the escalators, so the second time I went to the shopping mall, I had to chooce an early morning when few people are there.

On the contrary, there are not many people in the gym. In fact, I spent one whole night (because there will be more people coming to gym after work) staying in the gym and only 3 people used that equipment. In a public place like this, you will even feel uncomfortable when taking photos of others. One of the main advantages of this kind of place is you can do experiment with the equipment yourself more often.

A public place with more people will probably provide the richest source for observation, meanwhile, the social pressure for observation may also be the lowest because there are many people around. But it won't be easy if you want to observe what it will be like when there are fewer people.

The recording techniques

Personally I'm not good at drawing, I'm not a quick thinker either, so I would prefer collecting information with photos and videos and analyze them later.

Photos are more helpful for recording the true environment, they provide great details for analysis. Videos are essential if you want record moving objects. When sketching, we need to draw the people and the environment personally, it is more likely that we'll notice something that are not so obvious.

Thus in terms of enlightening, perhaps sketches would be the best choice. I didn't found photos or videos to be very enlightening.

Reflections

Learnings from observation

Even in the real 3D world, not everything happens in 3D, many things like the movement of an object happens in a 2D surface. Besides, even when something happens in 3D, it appears to be 2D in human eyes when looking from a certain direction. Ignoring such a transform would often result in defective design.

"Correspondence"
This concept really helps a lot, as well as the "transducer" and "inter-action". With these concepts, I realized that interaction happens every where and in various forms.

Take this observation as an example, identifying the correspondence and inter-action helps to set the boundry of the action, and keeps me focusing on the people, the floor, and the escalator. Since transducer is the thing that makes action happens, I was thinking that if there were inter-actions, there would probably be some problems with the transducers. Thus even though I came up with several solutions when I was considering the opportunities, such as giving instructions to people (which will probably expand the scope of correspondence or inter-action), or change the whole building structure of the mall (impossible, though, will change the identified correspondence and probably cause new inter-actions), I think doing something about the transducer -- the escalator, is a much more efficient and safer way to solve the problem.

Identifying needs and opportunities

The need for improving the escalators is not easy to identify. As stated above, the problem only occurs at a certain location of the floor, I noticed the need after walking around the whole mall for several times. Besides, it was also difficult to identify whether the shoppers had encountered the problem of recognizing the direction of the escalators. I had to keep close on the them and see whether they would finally take the escalator they were heading for.

Dimensionality

I realized that in real world interaction, dimensionality is a crucial factor to consider. While the things I observed are both in 3D, the inter-actions happened in 2D.

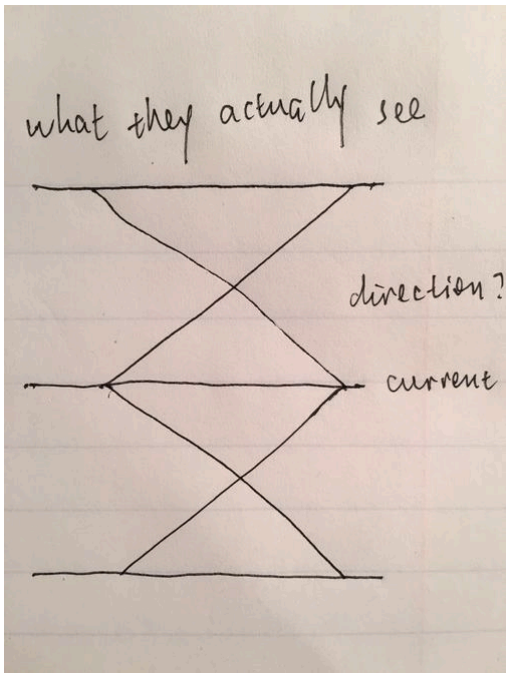
In this observation, there is a certain position from where the movement of the escalators are invisible, which transforms the 3D escalators to a 2D shape, the missing dimensionality contains important information for people to judge, thus when the 3D attribute disappears, there is no clue can be used to make judgements and people get confused.We should always be aware that there are dimension conversion in real world, and when 3D transforms to 2D, there will be a significant loss of information.

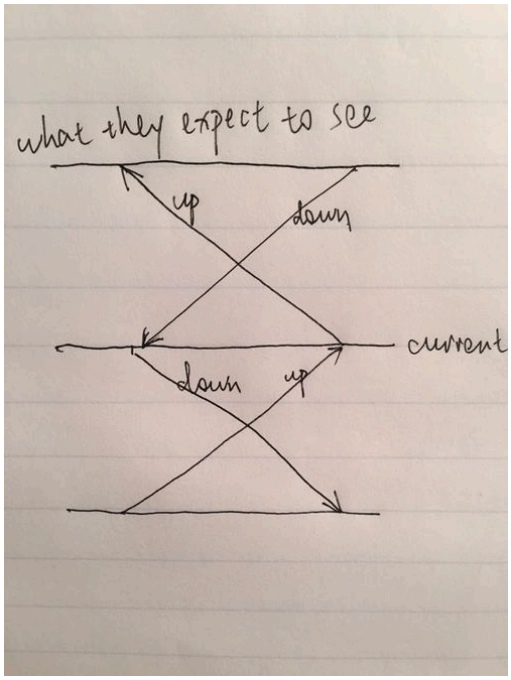
Correspondence

In this situation, the correspondence is the attraction between the shopper and his destination floor, the escalators serve as passive transducers.

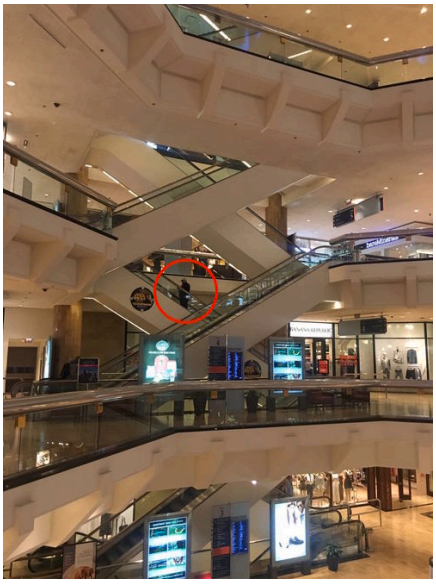
Inter-action

Although the escalators exist in 3D world, people make judgments in a 2D surface(the image below), the most disadvantage of 2D here is that people can not see the movement of the escalators, which is a 3D property, thus they have no idea which directions the escalators go. This is when the inter-action happens.





However, there are social aspects which would help people make decisions. Look at the picture below, there is a man taking an escalator going up, although you still can't see the movement of the escalators, you realize immediately the directions of the two escalators connected to the upper floor and which one you should take.



Opportunity

The shopping mall needs a solution to help shoppers recognize the directions of escalators easily.

Shopping malls like this should provide an indicator to show the movement of the escalator, the indicator could be lights, arrows, lines, etc. People should be able to see the indicator at any position, thus even though they still can't see the movement of the escalators, they still know which direction the escalators are moving forward. The indicator transforms the inter-action to correspondence.