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# Passengers in the Airport: Artefacts and Activities

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## ABSTRACT

This study addresses the ordinary activities of passengers in airports. Using observational techniques we investigated how passenger activities are mediated by artefacts, in this the bags that people carry. The relationship between passengers and their bags is shown to be complex and contingent on many factors. We report on our early research in the airport and document an emerging taxonomy of passenger activity. The significance of this research is in the contribution made to an understanding of passenger activities which could contribute to the design of future technologies for passenger facilitation and to airport terminal design.

## Author Keywords

airport passengers, field work

## ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI); Miscellaneous.

## INTRODUCTION

Airports are becoming increasingly customer-focused which is becoming dependant on technologies to enable better service. Radio-Frequency Identification (RFID) tags are often mentioned as an enabling technology, allowing airports to track passengers and bags with great effectiveness (DeVries, 2008; Wyld et al, 2005). In order to apply these technologies to facilitate the needs of airport users (passengers and personnel) it is necessary to understand what airport users currently do and how they interact while they are at an airport.

Passenger activities in an airport can be divided into two categories. The first is processing activities, the second discretionary activities. Processing activities are those directly related to conforming to the legal and regulatory requirements that must be followed to get on a plane. These activities include checking in, filling out any required departure paperwork, negotiating various security and identity checkpoints and boarding the plane at the gate. Activities outside of processing activities are discretionary. Takakuwa and Oyama (2003) found that only a small proportion of passenger time in an airport is spent on processing activities, including time spent while waiting to be processed.

As part of our research into passenger experiences in airports (Popovic, Kraal and Kirk, 2009), we have observed people as they move through the airport from check-in to security and from security to boarding. We record our observations on video and analyse them. One way we have found appropriate is to consider how objects that passengers use or carry with them, for example, their bags, affect the way they use the airport. Male and female passengers in airports carry bags almost ubiquitously. The ways in which passengers negotiate the airport with their bags has the potential to reveal much about the ways that airports are used. Making the artefact, that is the bag, the focus of the analysis allows us to understand how it mediates the interaction of the passengers with the airport infrastructure. As Popovic and Kraal (2008) have shown, understanding interaction as it is mediated by artefacts can lead to new insights about the activity and interaction. This type of object-oriented approach is an established method in ethnographic studies (Jordan, 1994; Robertson et al, 2005).

## METHODS

The research is based on the analyses of observational data collected from footage already available and video recording of activities at the airport terminal.

Due to logistical difficulties, namely that the researchers required an escort from the airport staff in order to conduct the observations, each observation reported here took place on a different day. However, they all took place at the airport's busiest time, between 7.30am and 10am on a weekday morning. All observations took place between April and August, 2009.

Data was collected by approaching passengers in the departures concourse of the airport and asking for their consent to be videotaped. Not all those approached agreed to be observed. Subjects were initially self-conscious but their need to negotiate the airport meant that they soon came to regard the researchers as part of the airport and we were largely ignored. At this stage data collection has consisted solely of observation at a distance. Future work will involve a more detailed approach and a closer engagement with participants.

Following data collection, each video was converted to a digital file and the content of the video coded. The codes used were dependant on the context observed and the activities undertaken within that particular situation – for example, check-in, security or activity within the departure lounge area – and each different activity observed had both unique and overlapping coding schemes. Coding was supported by the Observer (Noldus, 2008) software.

## EXPLORATORY FINDINGS

Our analysis focused on discretionary passenger activities and revealed two broad categories of discretionary activities: necessary activities and informal activities.

Necessary discretionary activities are travel-specific and are possibly pre-planned. For example: obtaining foreign currency. Informal discretionary activities are non travel-specific, For example: browsing, shopping or visiting a cafe.

We have seen that passengers complete their necessary activities before their informal activities. We can speculate that this ordering takes place as people ensure that they have enough time to complete their travel-specific activities before boarding an aircraft.

Several themes have emerged from the initial analysis of how people's activity in the airport is mediated by their bags that are potentially relevant to the development of a taxonomy of passenger activity. Though these themes are, at the moment, partial, they have already contributed to a deeper understanding of passenger activities in the airport.

### Ownership

For security reasons, airports are particularly concerned with the ownership of bags. For example, from the airport's point of view, a bag might be seen as an artefact that needs x-ray screening at security. In one observation we observed a security-screening episode where ownership of a bag was highly contextual. The observation began at check-in with a middle-aged couple who had several items on a luggage trolley as well as a small red soft bag (Figure 1).



Figure 1: Passengers queuing for check-in. Bags shown in red.



Figure 2: Walking to security, woman has bags

The woman also had a handbag. Initially the woman had the red bag, but while in the check-in queue she passed it to the man. Walking to security the woman again had the

bags (figure 2). During the security inspection process they put the bags on the conveyor belt of the scanner and the bags became 'theirs' (figure 3). The red bag was pulled off the conveyor to be physically examined by the security staff which involved taking it to a small carrel at the end of the security screening area. Both the man and woman went with the bag. Only after it was re-screened to the satisfaction of the security staff did the man and woman leave the security area. This interaction might have an influence when understanding security issues regarding bag ownership and planning to the design of interfaces at the screening point, taking into consideration a person-and-bag and more-than-one-person-and-a-bag instead of considering people and bags separately.



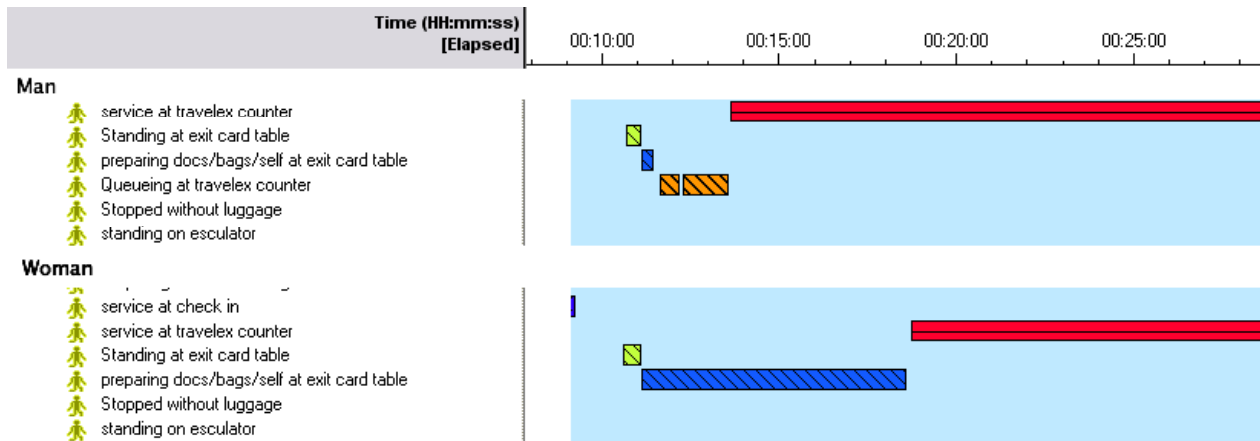
Figure 3: Passengers at security screening.

### Shared activities

It can be easy to think of groups of people moving through a space as a single entity. Many observations shows, groups split up and re-form multiple times over their time in the airport. In one case, an older couple took an opportunity to complete two unrelated activities in parallel by doing them individually rather than together.

After check-in the couple remained together and walked to the foreign currency exchange booth. The woman carried her handbag and a soft duffel bag. Next to the foreign exchange booth is a small counter with the forms that must be filled out in order to exit the country. The man stood in line at the foreign exchange booth and the woman put the duffel on the floor, kept her handbag on her shoulder and began to fill out the forms. Meanwhile the man was being served at the booth. The long time that the man was at the counter indicated that he had quite particular requirements. (Later activities revealed that the couple wanted more foreign currency than the booth had on hand.) The woman continued filling out the forms, occasionally moving along the counter to accommodate other passengers. As she moved along the counter nudged the duffel along the floor with her feet. She finished filling out the forms and then joined the man at the currency booth (Figure 4). Eventually they both left the booth and continued on to security.

This episode reinforced that people are linked on a social and individual level: they interact by sharing activity among the group or doing them together. The passengers started their activities together, split up to share activities in parallel, and joined together afterwards. This behaviour is worth noting as shared activities have the potential to speed up the passenger flow process by making queuing shorter for experienced passengers. The passengers



**Figure 4: Activities of man and woman. Man cues at travelex counter, then receives service. Woman first prepares exit card documents, then joins man at counter.**

observed were experienced travellers who knew what needed to be done and planned their set of activities. They also demonstrated an interrelation between informal travel-related activities such as obtaining foreign currency and the processing of completing the departure cards.

#### Concurrent activities

In this example, we observed a group of six young travelers. They were not trying to save time by performing activities concurrently but attempting to burn through their dwell time by occupying themselves. Their groups social bonds were less tight than the couple in the second example and they are less concerned with the activities of the other members of the group.

After completing check-in, security and passport control, the group sat down at a café and all put down their bags. Male 5 put his bag on the back of the couch and then left the main group, possibly to go to the shops. Eventually the rest of the group finished their coffee, picked up their bags and walked away, leaving Male 5's bag on the couch. It was clear that the group did not know they were responsible for Male 5's bag. Shortly afterwards, Male 1 is seen carrying Male 5's bag, while Male 5 is walking beside him, possibly in apology for neglecting it at the café.

Later, as the group sits in a group of other couches Female 1 leaves her bag with the group and goes to the shops. Eventually all of the group left their bags with Male 5 at the couches while they visited the shops. It is clear that in this case the person left at the couches is responsible for the group's bags. Over the time Male 5 waits at the couches some of the group return while others drift back to the group and then move away again.

As in the example of the older couple, this example showed how people in an airport are linked together on a social level and how that linking can be represented and mediated by their bags. Like the older couple, the group began their time in the airport together and then went through a series of splits and re-formations. Unlike the older couple, this group's social ties were weaker, or were less well negotiated, as can be seen when they neglected

Male 5's bag at the café. All of the activities that this group completed were unrelated to travel so they can be considered to be loosely coupled, rather than the tight coupling demonstrated by the older couple.

#### AN EMERGING TAXONOMY OF PASSENGER ACTIVITY

Our field work shows two kinds of discretionary activity. Some activities are self-selected by passengers to be necessary and others are informal. Necessary discretionary activities, which may have been preplanned, are activities related to the activity of traveling and benefit the group but do not necessarily need to be completed by the group eg currency exchange.

Informal discretionary activities may or may not benefit the group and may be undertaken as a group or as individuals, eg. browsing and shopping or eating and drinking.

In these examples, and in other field work we have completed, we have seen that people complete their processing activities before their discretionary activities. We have also seen that people complete their necessary discretionary activities before informal discretionary activities.

One limitation in our field work is that we have not seen passengers who are mixing processing and discretionary activities, for example by checking in and then visiting a café before going through security Understanding how and when people decide to intermingle activities in this way will be an area of future research.

Another perceived limitation relates to the bags that passengers carry context. The bags that passengers take on the plane must contain items that the passengers themselves consider important to either have on the plane or that they are personally concerned about, for example valuable items.

#### DISCUSSION

The significance of this research is in the application of fieldwork observation techniques to the problem of understanding passenger experience and interaction in airports. This paper illustrated some of the complex

activities that passengers performed in airports. By using passengers bags as a physical artefact with which to ground our research we have also shown the an object oriented approach is applicable in this situation.

The findings have shown passengers do not always carry the bag(s) that they 'own'. This has implications for many aspects of future airport design.

For example, the rather fluid way in which passengers share their bags implies that a bag cannot act as a stand-in for the passenger if it is necessary for there to be a constant relationship between a bag and a person for reasons of security or tracking. Any system that assumes such a relationship between people and artefacts is not socially grounded.

Second, activities that are common in airports, for example visiting cafes, shopping and, ubiquitously, waiting are all different to their non-airport equivalent activities because almost all travelers in an airport are carrying bags. Carrying, using and simply dealing with bags changes the relationship between people and between people and activities in ways that are important but needs better understanding.. Our future research in the airport aims to address these issues.

## CONCLUSION

The significance of this research is in the contribution to the understanding of passenger activities in the airport. It provides an emerging taxonomy of passenger activities that could, in the future, contribute to airport terminal design.

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