Communications at DinoFun World

Heike Hofmann, *Member, IEEE*, Dianne Cook, Andee Kaplan, Eric Hare, Vianey Leos-Barajas, Carson Sievert and Samantha

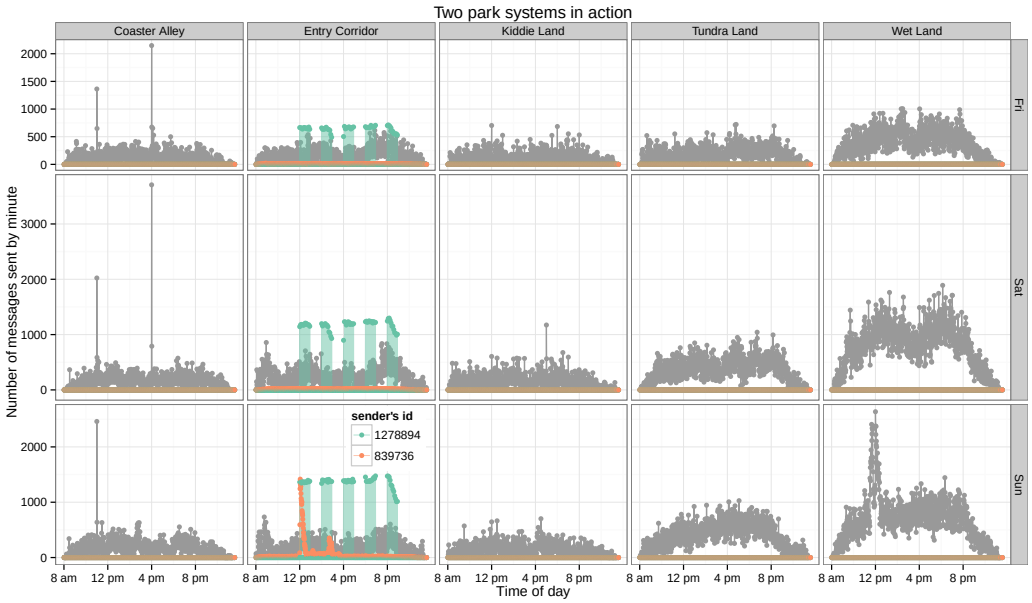

Fig. 1: Number of messages sent from different locations in the park at each minute of the day. In color, we see the two park systems in action: the park's help line (shown in orange) gets very busy twice on Sunday, once at 11 am, and once at 3 pm. Points in green are trivia questions sent out at five minute intervals to park goers by the DinoFun World app. About a quarter of park goers opts to get these questions. The Scott Jones shows at 10-11 am each day and 3-4 pm on Friday and Saturday creates a dip in the number of messages, which is particularly strongly pronounced in the Wet Land area. The flare-ups in the number of messages sent from Coaster Alley are related to park-goers sending messages as they are filing out of the Scott Jones show, while the spike of messages from the Wet Land is triggered by the discovery of the act of vandalism.

Index Terms—Keywords that describe your work. Will show as 'Index Terms' in journal please capitalize first letter and insert punctuation after last keyword

1 Data Manipulation

Some of our analysis is based on merging the communication information with the movements in the park. The common factor between the data sets is the timeline.

2 Results

2.1 Two park systems in action

Two IDs are notable for their large volume of messages: 1278894 and 839736. These IDs are responsible for almost 80% of the message volume. Both these ids are stationary, sending messages from the Entry Corridor only. From the pattern of messages sent and received we are able to identify these ids as the park's help line (839736) and the Cindysaurus trivia game (1278894), which is part of the DinoFun World app (how do we cite the auxiliary file?):

During the even hours between noon and 8 pm questions are sent from the Cindysaurus trivia game (1278894) at five minute intervals to just over 25% of all park goers. Judging from the large number of messages and the relatively low percentage of recipients this looks like an opt-in service. Besides these questions exactly at the top of every five minutes there are no other messages from this id. Almost all of the recipients quickly respond to each of the questions (while they wait in the very long lines).

Id 839736 on the other hand, has a very different pattern. Every single one of the messages sent from this id is solicited by a previous message by a park goer. On Friday and Saturday about 85% of all park goers make use of the park's help line, on Sunday this number spikes to 95% of all park goers.

The spikes at 10am, 11am, 3pm and 4pm are all related to Scott Jones sightings, who makes his way from the East entrance entering Kiddie Land to Grinosaurus Stage in the Coaster Alley. The spikes in the Wet Land area and the Entry Corridor between 10:30 am and 12 pm on Sunday are related to the unfortunate events surrounding Scott Jones.

2.2 A scene worthwhile texting about

At exactly 5 pm on Saturday a flurry of messages originates from the Kiddie Land. Who is texting and why?

2.3 A series of unfortunate events: who, when and where

Figure 4 shows the number of messages that originated from the Wet Land area by minute on Sunday between 11:00 am and 12:59 pm de-

- *Heike Hofmann, Andee Kaplan, Eric Hare, Vianey Leos-Barajas, Carson Sievert and Samatha Tyner are with the Department of Statistics, Iowa State University. E-mail: {hofmann, ajkaplan, erichare, vianey, csievert, sctyner}@iastate.edu.*
- *Dianne Cook is with the Department of Econometrics and Business Statistics, Monash University. E-mail: dicook@monash.edu.*

Manuscript received 31 Mar. 2015; accepted 1 Aug. 2015; date of publication xx Aug. 2015; date of current version 25 Oct. 2015. For information on obtaining reprints of this article, please send e-mail to: tvcg@computer.org.

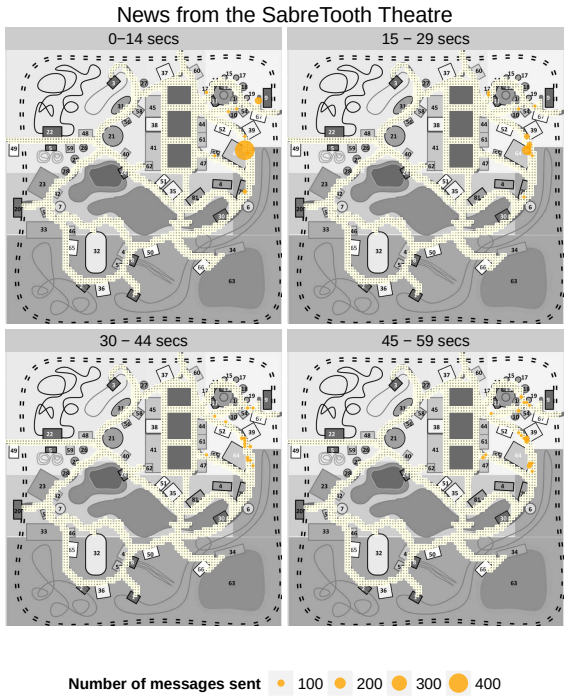

Fig. 2: Messages sent during the spike originating in the Kiddie Land. Maps at 15 second intervals show that some news-worthy event happened in front of the SabreTooth Theatre (location 64), from there people spread to the North and the South and then slowly dissipate.

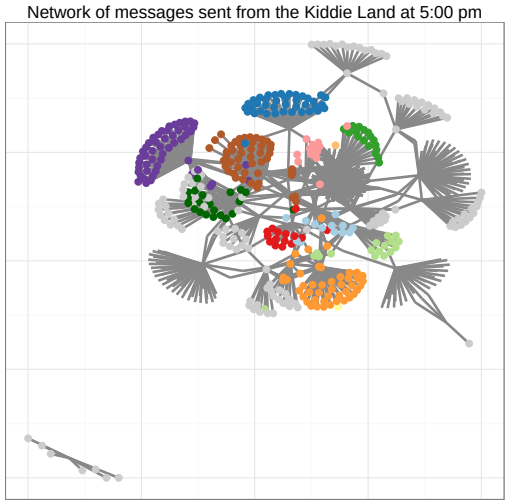

Fig. 3: Network of messages sent from the Kiddie Land at 5 pm. Over 1,000 messages are sent among just a few individuals. Included are all individuals, who sent at least three messages. Colored are all recipients of messages that got sent to at least 25 people.

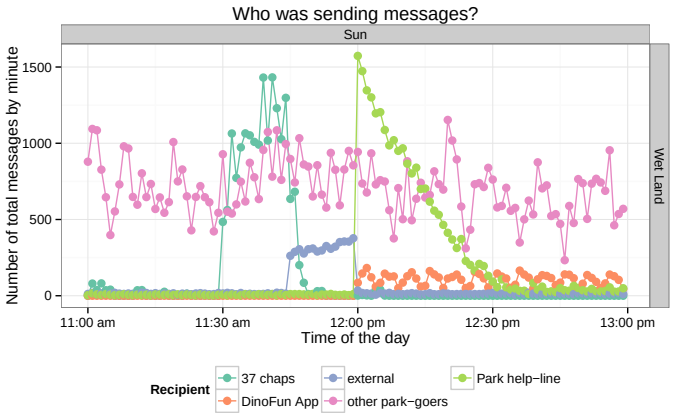

Fig. 4: Zoom into communications out of the Wet Land area on Sunday between 11:00 am and 12:59 pm. Several sources contribute to the spikes in sent messages.

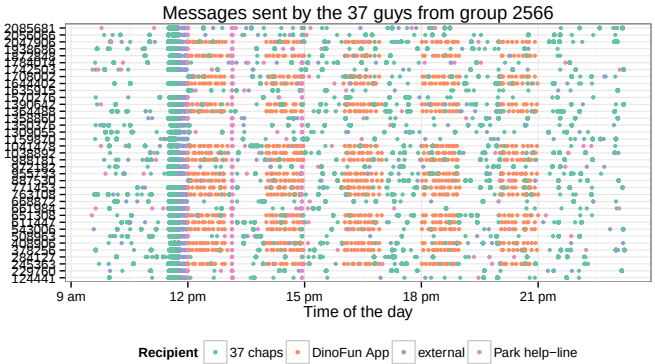

Fig. 5: Messages sent from the chaps of group 2566. Between 11:30 and 11:45 am there is a flurry of messages among the members of the group. About half of them take part in the Cindysaurus Trivia game.

tailing the contributions of different groups to the peak in communication. A tight group of 37 park goers is responsible for a first peak in messages around 11:30 - 11:45 am. This peak is made up of messages going forth-and-back between members of this group. The decrease in the number of messages among these guys goes hand-in-hand with a spike in messages to external recipients. This peak is immediately followed by a peak of messages right at noon spiking to over 1,500 messages to the park's help-line, likely related to the closing of Creighton Pavilion for the remainder of the day. While messages to the help-line calm down again over the next half an hour, the help-line stays busier than on a regular day.

XXX We need a good name for the 37 guys from group 2566 - neither one is good XXX

Interestingly, the sensors do not pick up on any movements for any one of the 37 members of the group between 9:45 until noon. They are either standing perfectly still in the same 5m x 5m cell (tile 32, 33), or they found a hole in the park's sensor system and are on the loose somewhere around the Creighton Pavilion, into which they conveniently fail to check in (see figure 6).

Acknowledgments

The authors wish to thank everybody who makes the software R [2] possible, and in particular the authors of the packages knitr [6, 5], ggplot2 [3], lubridate [1] and dplyr [4].

References

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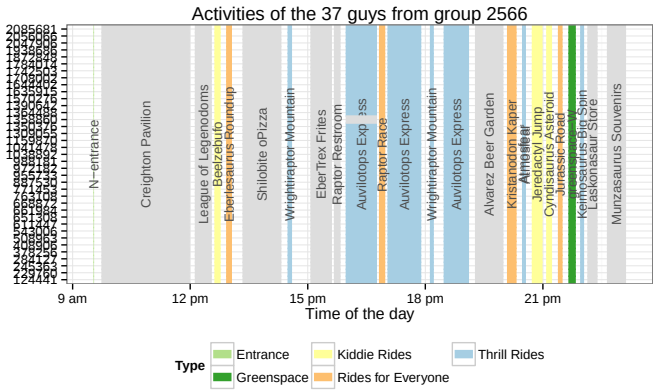

Fig. 6: What is group 2566 up to? These guys come into DinoFun World at around 9:30, but take their first ride after 12:30 pm - before that they spend a long time in or around Creighton Pavilion, however they never check into it! If they were not actively involved in the act of vandalism, they might have seen who was.

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