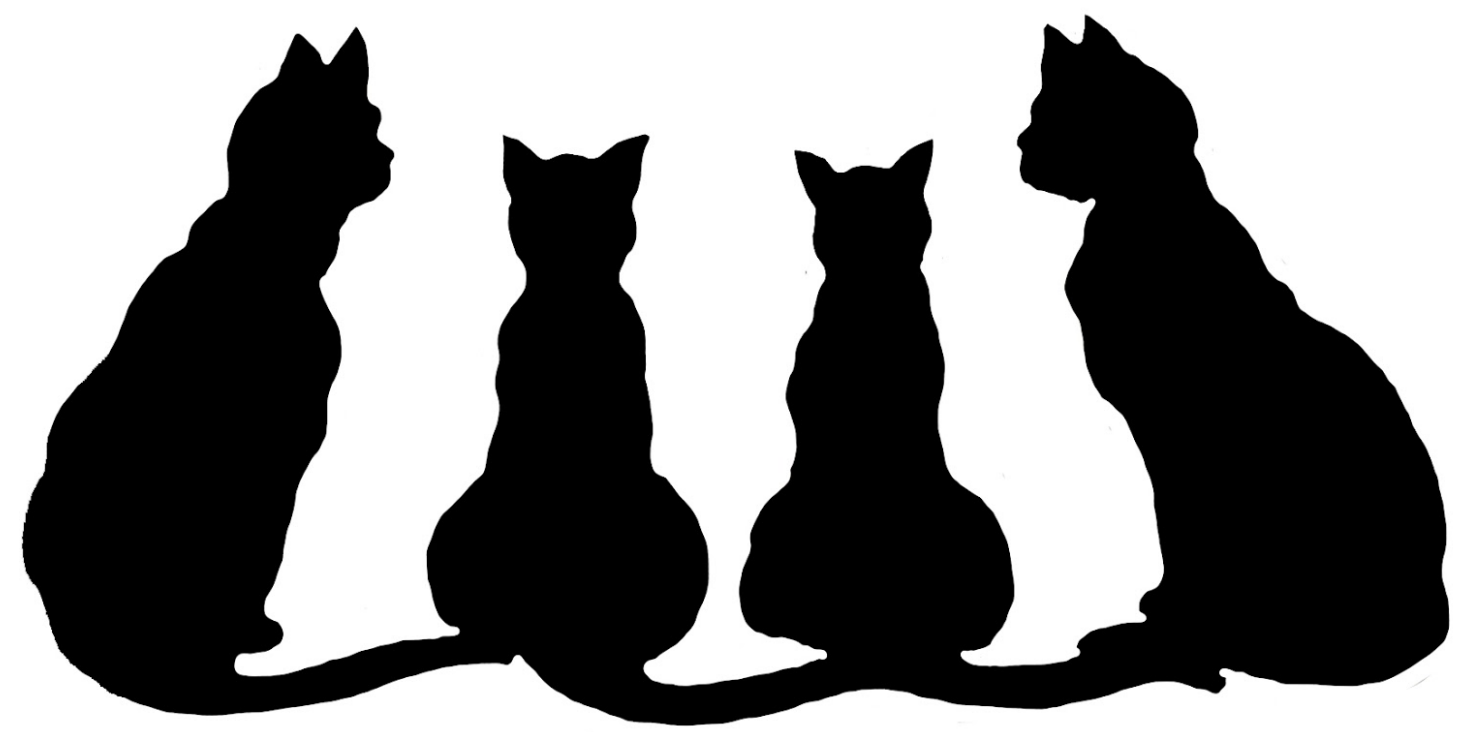
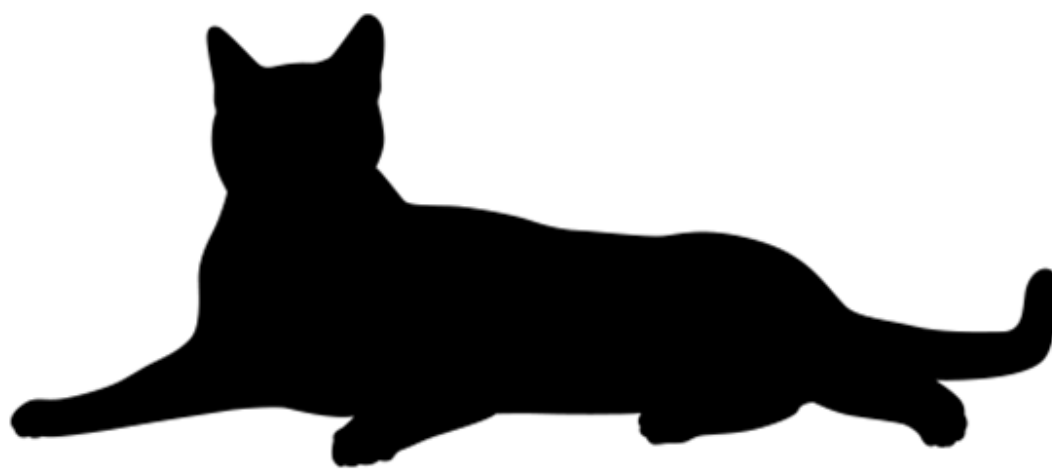


The Effect of Introduction of a New Member to an Established Social Cat Group in Shelters



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Introduction

According to the 2012 U.S. Pet Ownership & Demographic Sourcebook, approximately 36 million cats live in households in the United States (AVMA 2012). Cats enter new environments when going to a new home or entering a shelter. Cats already living in those environments as well as individual cats being introduced to those environments are thought to be significantly impacted by an introduction event. Instances of aggressive behavior have been shown to increase during and after an introduction event between bystander cats who are already live in an environment and introduced cats to that environment (Levine et. al., 2005).

Materials and Methods

For this study, a scan sampling technique was used to collect data of cats in a colony room at the SPCA serving Erie County. 19 individual cats were observed in 8 introduction events in this study.

30 minute long video samples were recorded by a camera mounted to the corner of the cat room where observations took place. An infrared light allowed for videos to be recorded in the dark as well as in full light. Samples were taken 24 hours before (T-24), 12 hours before (T-12), 30 minutes before (T-30), 30 minutes immediately after (T0), 12 hours after (T12), and 24 hours after (T24) an introduction event.

Video samples were coded using the Zoomonitor program in order to record the activity and location of observed cats at the beginning of every one minute.

The frequency of times that each activity was noted out of the 30 minute sample was calculated for each cat at every possible scan sample time. An average of frequencies over a sample time was calculated. As some bystanders were present for multiple introductions, a correction was made by comparing the average of percentages of activity levels of each individual during the sample times.

Results

The bar graphs to the right represents the total 30 minutes of each sample as a bar reaching the value 1.0. Bars are divided into 5 proportional segments that represent the 5 activity categories: *Out of Sight*, *Inactive*, *Locomote*, *Maintenance*, and *Other*.

Across sample times, the highest activity percentages are *Out of Sight* or *Inactive*. Of the 5 activity categories, *Other* average activity percentages were consistently low in comparison to the other average activity percentages in both Figure 1. and Figure 2.

Changes in average activity percentages occur for both bystanders and new cats across sample times. One notable change is the average activity percentage of bystanders engaging in *Maintenance* before compared to after an introduction event. Bystanders decrease their *Maintenance* behavior after an introduction event ($\chi^2 = 16.28$, $df = 5$, $p = 0.006$).

New cats have a significant change in locomotion ($\chi^2 = 10.29$, $df = 2$, $p = 0.006$) and out of sight ($\chi^2 = 6.26$, $df = 2$, $p = 0.04$) following an introduction.

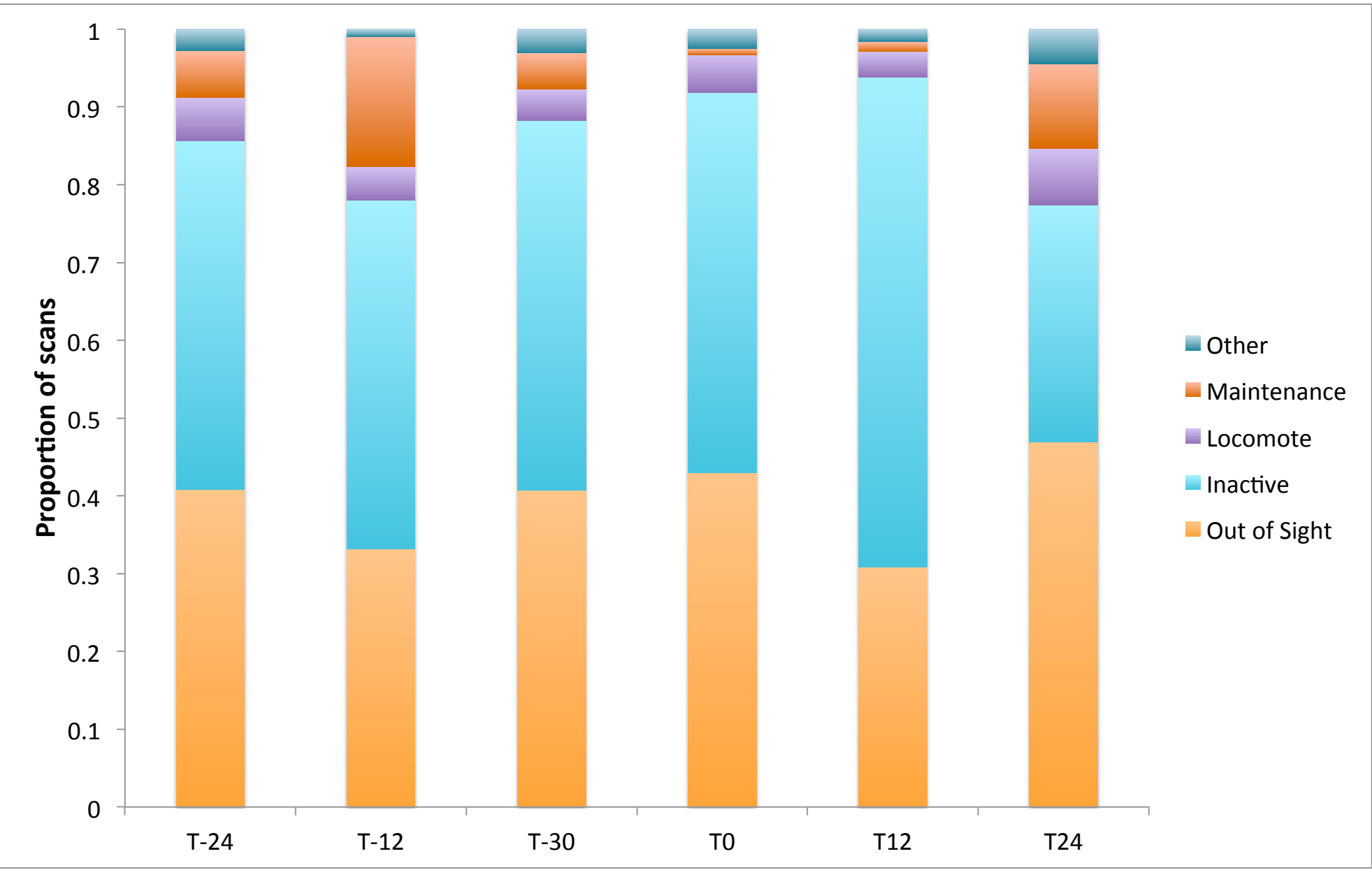


Figure 1. Bar segments depict the average activity percentages of bystander cats for each activity category at each sample time.

Bystanders	T-24	T-12	T-30	T0	T12	T24
Out of Sight	0.40817674	0.33224614	0.40741459	0.42968132	0.30804627	0.46948081
Inactive	0.44867671	0.44761023	0.47548647	0.48885388	0.63044402	0.30439707
Locomote	0.05512104	0.0430577	0.04027195	0.0487017	0.03272565	0.07235512
Maintenance	0.06074996	0.16743636	0.04609574	0.00823406	0.01287879	0.10950187
Other	0.02727555	0.00964957	0.03073125	0.02452903	0.01590909	0.04426513

Table 1. Presents the values of each activity percentage average at each sample time for bystanders.

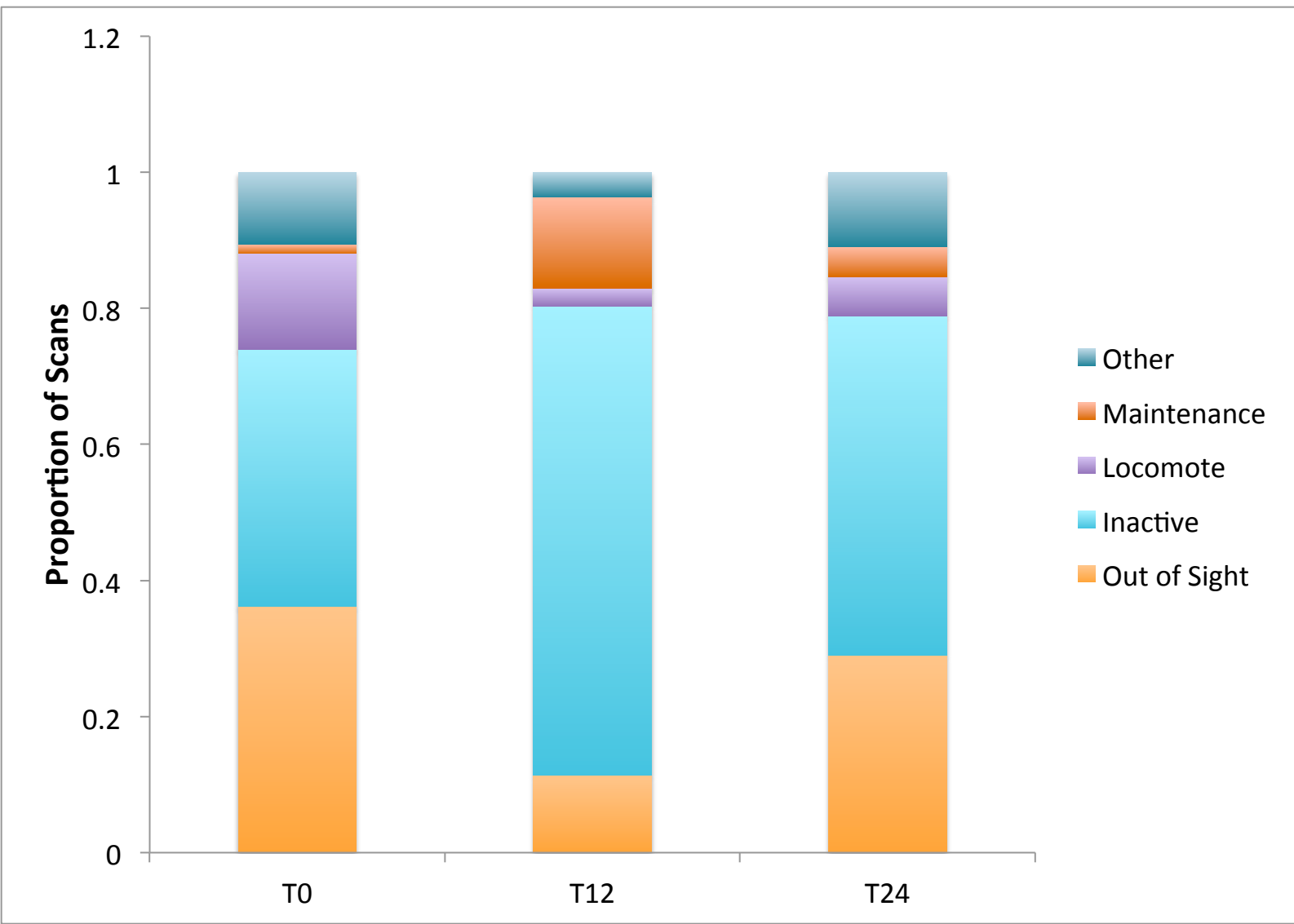


Figure 2. This bar graph depicts the average activity percentages of bystander cats for each activity category at each sample time.

New Cats	T0	T12	T24
Out of Sight	0.36143012	0.11344828	0.2902381
Inactive	0.37837361	0.68977011	0.49873706
Locomote	0.1409662	0.02678161	0.05714286
Maintenance	0.0137931	0.13333333	0.04458592
Other	0.10543696	0.03666667	0.10929607

Table 2. Presents the values of each activity percentage average at each sample time for new cats.

Conclusions

From what our data indicates at this point, it appears that cats change their behavior when there is an introduction event. Not only do new cats entering the new environment show changing average activity percentages, but so too do the bystanders of introduction events. Specifically, it is interesting that bystanders seem to suppress maintenance behavior following introductions. We note that, although not significant, new cats tend to increase their maintenance behavior during the same time period (T12). These changes may be related, which warrants further investigation.

It is our intent to continue investigating the activity differences between new cats and bystanders of introduction events to further understand the impacts of cat introduction events on all feline individuals involved. Currently, our sample size of introduction events is low, indicating that our current results may have low generalizability and more introductions are needed.

It is also important to note that some bystanders were new cats to the cat room at one point. This may lead to confounds in our data. With more cats, we would like to separate out bystanders into two groups: those who have only been bystanders and those who have experienced an introduction themselves.

From this study, we have grown concerned about the effects of successive introduction events occurring to the same bystander. Some bystanders encountered multiple introduction events in our samples. It may be the interest of future research to study longitudinally bystanders of multiple introduction events.

Literature cited

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