Recycling as Competition: An Examination of the Effects of Prompting and the "Keeping up with the Joneses Phenomenon" on Influencing Recycling Habits

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Recycling habits have long been viewed as a solely altruistic endeavor in the United States (DeYoung, 1993). Though some counties and cities have certain laws and restrictions regarding the sorting of recyclables, in the rest of the country it is left to the individual to recycle on his own with no immediate or personal consequence for neglect. This study investigates the effect of a phenomenon known as "Keeping Up With the Joneses" with respect to recycling habits within a college dormitory. Experimental groups which received prompting in the form of posters which compared their recycling rate to the dormitory-wide average increased their percentage of waste recycled approximately fifteen percentage points over control groups, showing that peer pressure and the desire to remain competitive with ones neighbors can be a powerful motivator with respect to recycling habits and behaviors.

Daniel Certo, 2012

Introduction

Changing behaviors is a complex, difficult and usually slow process. Many factors influence an individual's single decision, so matters are greatly confounded matters when attempting to influence the behaviors of a group. Reward is often the best route, as the simplicity of the principle is easily understood and produces results. An individual who is simply asked to perform an action is less likely to do so than an individual who is asked to perform the same action in return for some reward or incentive. The word “incentive” often insinuates a financial gain to one who performs as the incentive requests. Monetary incentives, though proven to be influential, are not always as cost effective as their low-overhead alternatives. There may also be emotional incentives such as envy or happiness which drive people to make certain decisions: a man who is jealous of his neighbor's new car is more likely to purchase a new vehicle than a man who has nothing to envy (Cordray, 2010).

Incentives can be used effectively to change a group's behavior towards something more beneficial, such as reducing energy consumption or improving recycling habits. The more cost-effective the incentive the better. One of the best-known examples: The most frequently cited estimate of the national potential speculates that achieving the full spectrum of Net Present Value (NPV)-positive efficiency improvements – that is, only the investments that pay for themselves – would reduce overall energy consumption by 23% and eliminate 1.1 gigatons of carbon dioxide emissions annually by the year 2020 (Granade et. al. 2009). Of these NPV improvements, a program developed by OPOWER of Virginia uses normative influences in a format that integrates itself with a home energy bill. Recently, a number of energy companies throughout the United States have begun issuing the Home Energy Reports (HERs) first developed by OPOWER to their customers. HERs, one of the most promising forms of NPV-positive efficiency improvements, display a household's energy consumption and compare their energy usage to their neighbors'. Customers participating in HERs nationwide have decreased their energy consumption by an average of 1.8% (Davis, 2011). This decrease in consumption results from the HERs exploitation of a phenomenon commonly known as “keeping up with the Joneses,” in which one individual does not wish to feel left behind by his more progressive neighbors and peers. This term was coined in 1913 by a comic strip of the same name, and refers

to the benchmarking of one's standard of living by comparing it to their neighbors' (Jacobs, 2005).

To “Keep Up With The Joneses” is to allow envy to drive a decision as opposed to need. The term was coined in 1913 by a newspaper comic strip with the same name. Themes of the "Keeping up with the Joneses" comic strip often involved situations in which Mrs. Jones was envious of her neighbor’s new car, sense of style, home accoutrements, etc. and would pressure Mr. Jones into buying superior products in order to appear ahead of the curve. This, in essence, is “Keeping up with the Joneses.” This phenomenon arises in societies where social benchmarking causes people to care about their standard of living in relation to their peers. In the case of the fictional Mr. and Mrs. Jones, their benchmarks were set by their next door neighbors. The phenomenon was in full swing in the early 20th century, when American consumerism was on a steep rise. Whereas societal standing was once determined by family name and pedigree, the rise in consumerism was changing this trend. By the 20’s and 30’s, “old money” and “new money” were terms reaching obsolescence. The increasing demand in status goods began to rise as American individuals were able to define and express themselves through the items they owned to a greater degree than ever before possible. The demand for status goods fueled by the Jones phenomenon gave rise to a new social mobility which was unheard of in the American society of previous history. The resulting feedback loop created a clamor of middle class citizens attempting to rise to the upper class by purchasing their way to recognition (Jacobs, 2005). Competition was particularly fierce in the ever increasing number of suburban neighborhoods, where middle class citizens were able to more easily gauge their own success based upon the relative success of their neighbors. The societal influence of this phenomenon was immense, and has helped to fuel conspicuous consumerism and the nature of American consumer markets ever since (Jacobs, 2005).

This phenomenon in relation to energy consumption was first tested by placing clothing hangers on the door knobs of a sample group of houses, each labeled with one of five themed messages. While the four least effective themes involved plainly stating the home's energy use or how much money the household could save by reducing their energy consumption, the fifth theme proved to be the most effective (Cordray, 2010). Coat hangers listed under the fifth theme compared the household's energy consumption to the average for households within the same

size range in the local neighborhoods. The fifth theme was the only one that showed a marked reduction in energy consumption among the sample households, and proved it viable for energy companies to use this strategy to reduce in-home energy consumption among their customer bases (Cordray, 2010). Thus, in terms of energy reduction, monetary incentives ultimately fall short in effectiveness compared to incentives aimed at the vulnerable human ego. As each household was held accountable for their energy consumption, each then felt a certain responsibility to do at least as well as their neighbors, either in an effort to pull their own weight or to out-do their peers. Where monetary incentives failed, social normative influences prevailed.

Due to the high success of "The Joneses" phenomenon in reducing energy consumption, it's logical to assume the technique will meet with equal success in waste reduction. Recycling is a habit heavily influenced by social normalizing (Holland et al, 2006), making it a prime candidate for further research into exploiting "The Joneses" phenomenon. Though it has been shown that informative displays and prompting strategies can increase recycling rates in a neighborhood, it will not change the social norms associated with it, thereby diminishing the recycling rate after the information is removed (Hopper and Nielsen, 1991). The most effective strategy of maintaining a high recycling rate in a neighborhood is a block-leader program, in which neighbors encourage one another to recycle, thus normalizing the behavior within the neighborhood (Hopper and Nielsen, 1991). Coercing communities to emulate this type of behavior is difficult. Currently, recycling is normalized in elementary school for most children in the United States (Knussen and Yule, 2008), a pursuit which is not without its own expenses. By using and adapting the techniques developed by OPOWER, it may be possible to reduce waste by increasing recycling rates with little overhead costs, thereby creating a new NPV-positive efficiency improvement which will ultimately pay for itself in recycled materials if augmented and implemented by waste management companies in cities and towns across the United States. On a smaller scale, it can also pave the way for improved recycling habits and behaviors on Allegheny College campus by creating a system which may be replicated in other residence halls, academic buildings, and college campuses across the country.

BACKGROUND

Studies into adjusting recycling habits have covered all age groups with an array of different techniques. It is often found that the simplest of actions can have a dramatic effect on recycling habits. Better recycling habits are important as it can help to alleviate the burden on the earth's limited natural resources like aluminum-bauxite and plastics made from oil, as well as supplement renewable resources such as lumber. Policy makers, environmental researchers, and concerned citizens increasingly propose low-tech household recycling as one way to reduce environmental destruction and degradation. By separating different types of recycling at the source, recycling is made far more cost-effective by reducing labor costs down the line (Hopper, 1991).

Allegheny College effectively labels every recycling bin with clear instruction as to what types of trash can go in which bin. Recycling bins are labeled either "Glass/Plastic," "Paper/Cardboard," or "Tin/Aluminum." Even if students are too lazy to sort their recycling, there are facilities on campus which will sort the recycling later, though at the cost of labor wages paid by the school. In the past, researchers have targeted behaviors directly without attempting to change or explain related attitudes and beliefs (Hopper, 1991; Holland, 2006). Manipulating the design, number and placement of recycling cans can have a great effect on overall recycling habits. By placing bins in convenient locations, it has been shown that the less one has to walk, the more likely it is they will recycle properly (Holland, 2006). Furthermore, visibility of cans in communal areas such as public parks or workplaces will also increase an individual's tendency to practice better recycling habits as the high visibility of the recycling/waste facilities will keep people aware of proper disposal areas. As most Americans were taught the importance of recycling in elementary school, simply making these disposal areas visible and prominent can promote the recycling habits instilled in childhood (Carrus et al,

2008).

It has also been proven that raffles, rewards, monetary incentives and competitions can have a positive effect on recycling habits by providing an extra incentive to recycle. These options are costly, however, as those responsible for organizing the extra incentives must maintain their competitive framework or risk losing the momentum they've created in changing recycling habits (Hopper, 1991). All too often, when a community incentive ends, so do the improved recycling habits. This is particularly unfortunate due to the effectiveness of community programs for increasing recycling rates within neighborhoods (Hopper, 1991). In one such community program, Block Leaders were assigned to several neighborhoods in order to help encourage and influence better recycling habits. When people had an authority figure to answer to, the consequences of poor recycling habits were made more evident and people were more likely to accept responsibility for sorting and properly disposing of their recycling. This study supports the idea that recycling is an altruistic behavior, and as such follows altruistic models that can be used to influence recycling behaviors positively (Hopper, 1991).

The problem with such a program is consistent with other community programs, however, in that the recycling habits quickly returned to normal once the Block Leader program was no longer required by the experiment. Those participating either didn't feel compelled to continue mindfully recycling without an authority figure keeping an eye on them or the experiment didn't run long enough to solidify those habits into the neighborhood residents (Hopper, 1991.) When community programs or incentives end, the new habits or routines rarely stick if there was not enough time to for them to become part of the normal behavior in the minds of its subjects.

Though community programs such as this have proven to be effective only as long as they last, recent innovations in electricity distribution and record keeping could bear a more permanent solution. OPOWER's Home Energy Reports have proven the effectiveness of manipulating a phenomenon known as "Keeping up with the Joneses," the idea that people are often influenced by the success of their neighbors to either become or appear more successful themselves. By using HERs to compare a household's energy use to that of their neighbors, OPOWER and other companies implementing HERs in place of standard electricity bills have

reported an average of nearly 2% reduction in electricity consumption in participating households by simply changing the format of their billing statements to include a comparative bar graph.

The low cost and high efficacy of this movement could be used elsewhere. People who regularly recycle list intrinsic motivation and personal satisfaction as their top two reasons for doing so (De Young & Kaplan, 1985-6). Ecologically concerned individuals don't necessarily seek ecological or economical gain from recycling, but instead are driven by the satisfaction that comes with knowing that one is doing something useful and worthwhile, thus casting recycling as an altruistic act. Acts of altruism are driven by the feeling of satisfaction, meaning altruism is emotionally driven. If emotional satisfaction from altruism works for improving recycling habits, then it is possible to gain that same satisfaction through recycling without being altruistically minded. Using the "Keeping up with the Joneses" phenomenon to produce these feelings of satisfaction in those that best their neighbors and consequent shame in those that fall behind, it could be possible to emotionally satisfy those who aren't motivated by altruism.

In the Block Leader program previously mentioned, simple prompting via mailed letters and fliers on doors could increase recycling habits drastically. Of the households in the Hopper et al study in 1991 which solely received written prompts to encourage recycling behavior, 20% of them began recycling regularly during the experiment whereas in the 17 months prior to the experimentation, the rarely recycled. (Hopper, 1991). The power of prompting combined with the "Keeping up with the Joneses" phenomenon could help to create a sustainable, long-term program if an institution were to take the initiative to implement one. As community programs have proven to fizzle out over time due to a lack of interest after an experiment is complete, it would be preferable to follow a model similar to HERs in order to consistently influence recycling behaviors over a longer span of time. Likely candidates for such a program include apartment buildings run by a co-op board, office buildings and college campuses due to the already recognized authority present in each of these settings. By creating a program that not only constantly reminds participants to recycle but also exploits the "Joneses" phenomenon, it could be possible to create a powerful force for influencing recycling behaviors.

METHODS

The testing period took place from January 31 to February 23 in Caflisch Hall, Allegheny College campus located in the city of Meadville, Pennsylvania. Caflisch Hall was chosen due to its unique layout which isolates clusters of student dormitories and groups them with clusters of waste and recycling receptacles, thus minimizing bias between experimental and control groups in the building.

The proposed program consists of regular measurement and recording of waste receptacles used by participants in order to create an accurate representation of individual success compared to a larger, group-wide average. In order to proceed, a method of presenting the results of the measurements is necessary. Due to the layout of a college residency building and the existence of communal trash and recycling bins, the easiest and most effective way to present this information was through informative posters hung above or near each group of recycling cans.

In order to create the posters necessary to influence students' recycling habits and to create a benchmark to compare to any fluctuations after the posters are implemented, a baseline recycling to total waste ratio needed to be recorded. Students in Caflisch were separated into nine groups, six experimental - 2A, 3A, 2B, 3B, 2C and 3C - and three control - Basement, 1A and 1C. The groupings were based on the clusters of waste receptacles and the students who could most easily access them (e.g. trash cans in hall way, closest trash cans to room). For one week, waste evaluation was conducted nightly by weighing and recording the mass of each recycling and non-recycling receptacle, then subtracting the weight of an empty receptacle from each individual measurement. Recordings were measured using a hanging butcher's scale held by hand, hooking and lifting each receptacle in order to record their weight. Each group's recycling

ratios were then calculated by finding the total mass of the recycling bins' contents and dividing by the total mass of the recycling bins' contents with the addition of the total mass of the non-recycling bins' contents (R/(R+W)). The same was done to find the average for all of Caflisch to create the benchmark against which all the experimental groups will be competing.

Once the baseline was determined for each group, posters with the title "Caflisch Recycling Trends" were created for each of the experimental groups, displaying a bar graph comparing their recycling ratio with the Caflisch wide average ratio. The ratios are displayed numerically as percentages directly on the removable bars to ensure the figures are understood by those that observe it. Posters were made of a scrim material so bars made of construction paper could be easily removed and replaced with scotch tape over the weeks of the experiment without damaging the poster-faces. The posters were also colored in such a way to make them contrast and stand out from their surroundings, further increasing the chances of students observing them and therefore being influenced by them. A goldenrod background with green lettering contrasted with the neutral colors in the hall way, ensuring they can be easily noticed by passersby. Furthermore, the way in which these percentages were calculated was displayed in the margins, thus reducing the chance of confusion over how an individual could improve these figures.

After the posters were hung on January 30th, experimental trials began the following day. Data was collected every Sunday, Tuesday, and Thursday night (barring nights when there was too little waste to be measured) in order to get the largest sample size without overlapping data. Though the cleaning staff in Caflisch follows a daily schedule for emptying bins, a number of the bins would often be left unemptied until the next day. This would cause problems for data collection, particularly if more recycling or waste was placed in the bins on top of the previous day's leftovers. Collection began between the hours of 11:30pm, the time when it was determined most students in the building are getting ready for bed and have presumably discarded their share of trash for the day, and 5:30am, when cleaning services would begin their trash detail. Posters were then updated every Monday to inform experimental groups of their progress. The calculations and procedures for collecting data and applying them to the posters remained the same after initial benchmarking, though weekly averages were then based on three

nights of data collection per week as opposed to seven as was the case for the initial series of data.

First Attempt

A preliminary attempt was made to record the success of combining the "Joneses" phenomenon with prompting between October and December of 2011, but was scrapped due to numerous problems with the experimental design. The posters used to prompt students to recycle and inform them of their progress were flimsy and easily torn or ripped from the wall. As a result, four different posters were destroyed over the course of the initial experiment. Also, data collection was only performed once weekly which allowed considerable bias to influence numbers due to small sample size and dependency on a single day to take an average for each floor as opposed to multiple trials per week. As was often the case, a section which normally recycled very well may go several days before placing their recyclables in the proper receptacles. If the data collection fell on one of these days, that floor would receive a "0%" for the week, even if they had recycled a larger ratio the rest of the week. Increasing the number of trials per week reduced the impact of empty data days and gave a more accurate picture of student recycling habits within the building. The posters used in the second experiment were made from a scrim material which is virtually impossible to rip, thus preventing destruction of the posters and the flow of information to the experiment's participants, and they were professionally printed to improve their appearance and to demonstrate more seriously the intent behind the project.

RESULTS

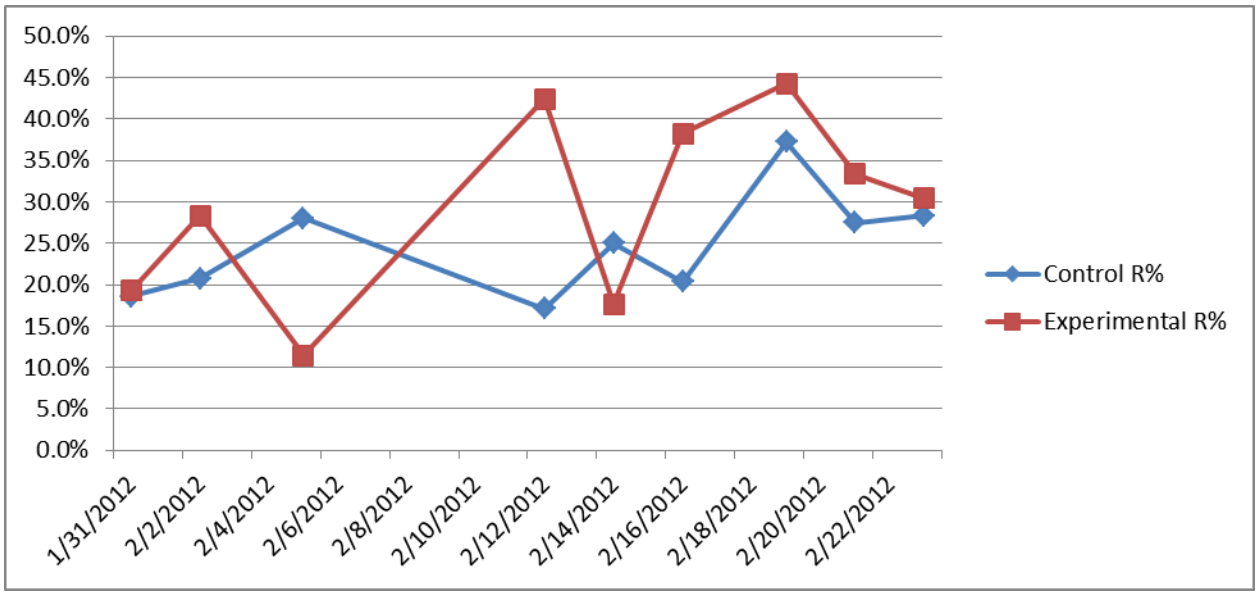

Figure 1 – Recycling Rates as percentages of all control groups compared to all experimental groups

Figure 1 shows the relationship between recycling rates in control groups versus the rates in experimental groups. Though experimental recycling rates appear volatile in comparison, Figure 2 below shows that the average of both experimental and control groups is much more stable over time. Initial benchmarks set the Caflisch wide average at 20.15% of all waste being recycled. Though both experimental and control groups average recycling rates increased, the experimental groups scored significantly higher than the control groups in seven of the nine trials. Furthermore, the rate of increase was much higher in experimental groups than in control groups. As illustrated in Figure 3, the trendline for experimental recycling rates has a steeper positive slope than the control groups, increasing from 20.15% on January 31 to a predicted rate of approximately 37% on February 23. The increase in control group rates was much smaller, from 20.05% on January 31 to about 28% predicted on February 23, a difference of 9 percentage points.

Control results were skewed by the oddity of the Caflisch Basement Group. Next to one of the clusters of trash cans is a lounge area and kitchenette – the only one in the building – thus causing all students who cook their meals to throw their waste away in the basement, leading basement records to appear sporadic. Due to the high amount of recyclable materials found in packaging for food and beverages, the trendline for basement recycling remains at a steady 40 - 41% for the entirety of the experiment (Figure 4).

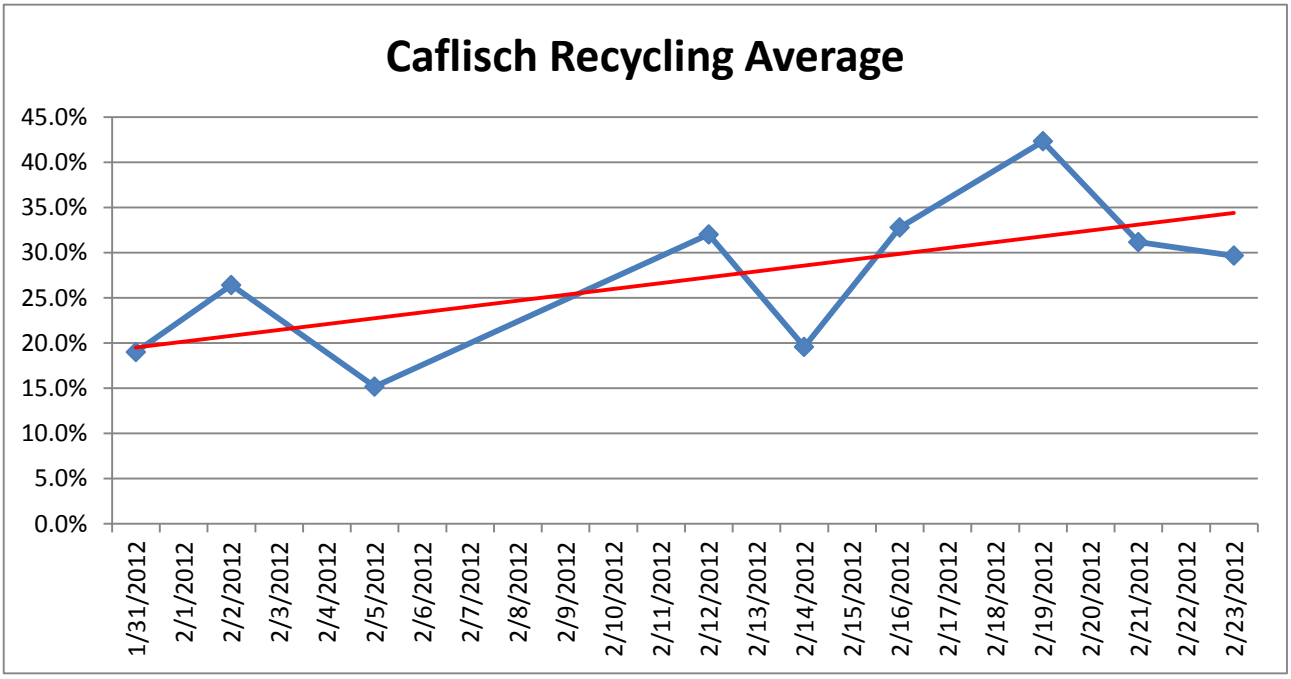

Figure 2- Caflisch recycling rates over time, experimental and control groups included, with red linear trendline to help display correlation

The Basement Group had the most unique graph shape, exhibiting an almost random set of data ranging from 0-100% recycling, the only group to span this range other than 3C – one of the experimental groups. 3C did show an increase in its average recycling rates, unlike the basement group, from 10% to nearly 45%, a dramatic improvement compared to any of the control groups in the experiment (Fig 6).

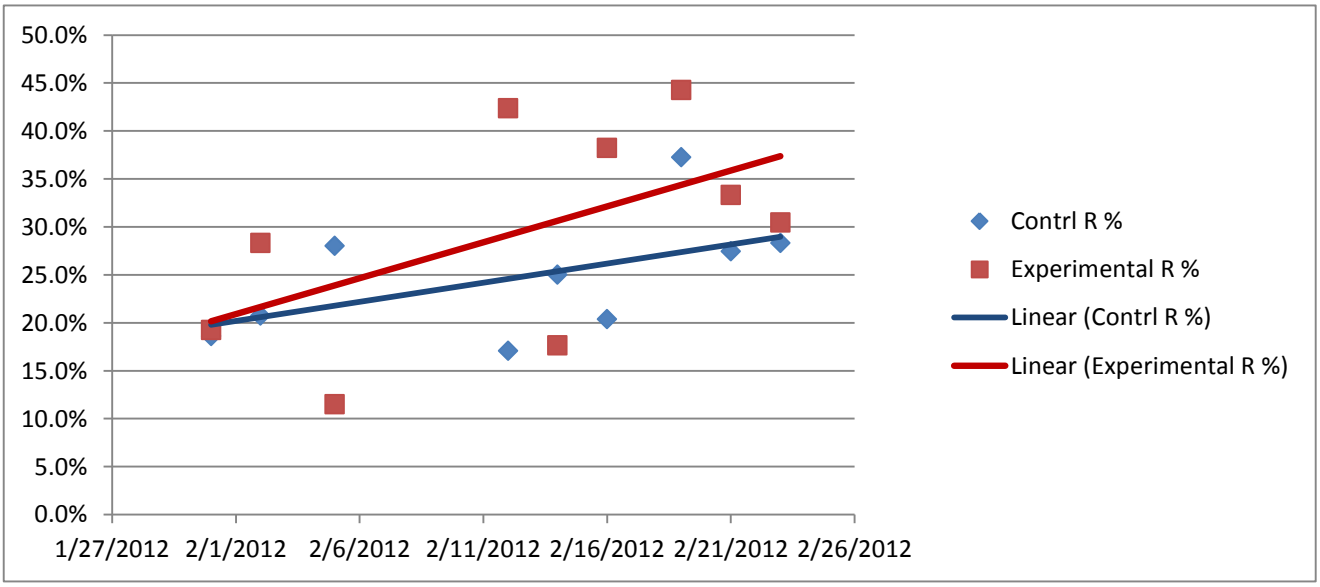

Figure 3- Control Vs Experimental rates scatter plot with linear trendlines to illustrate increase over time

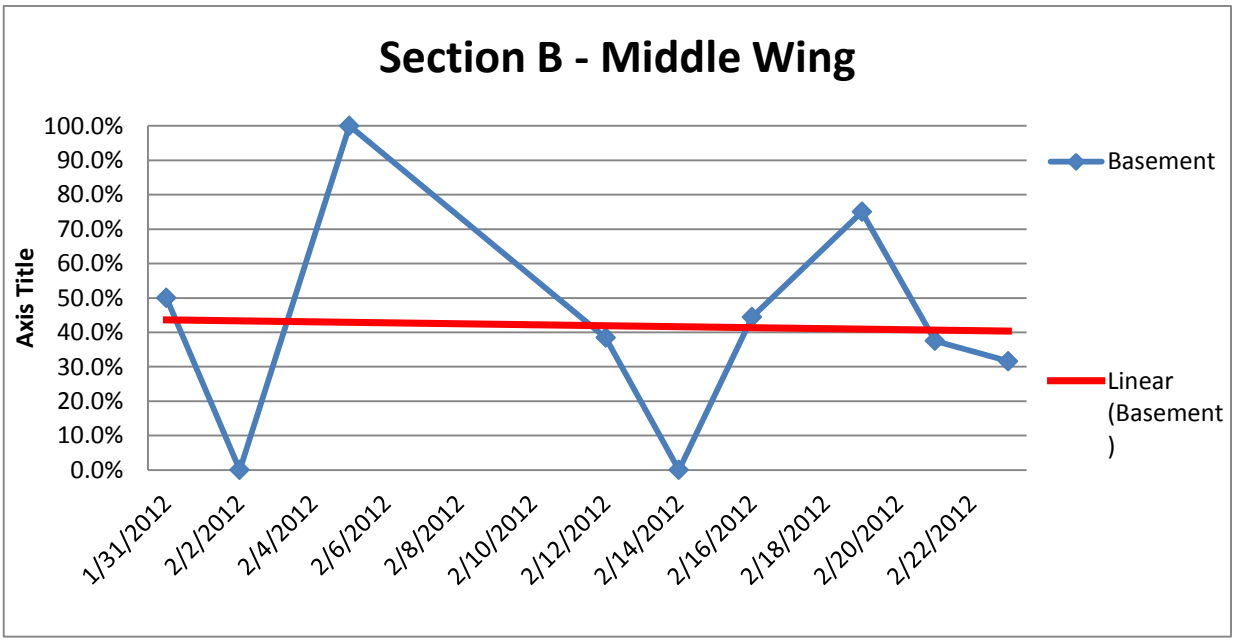

Figure 4- Graph showcasing Basement group's volatile data pattern and steady linear trendline.

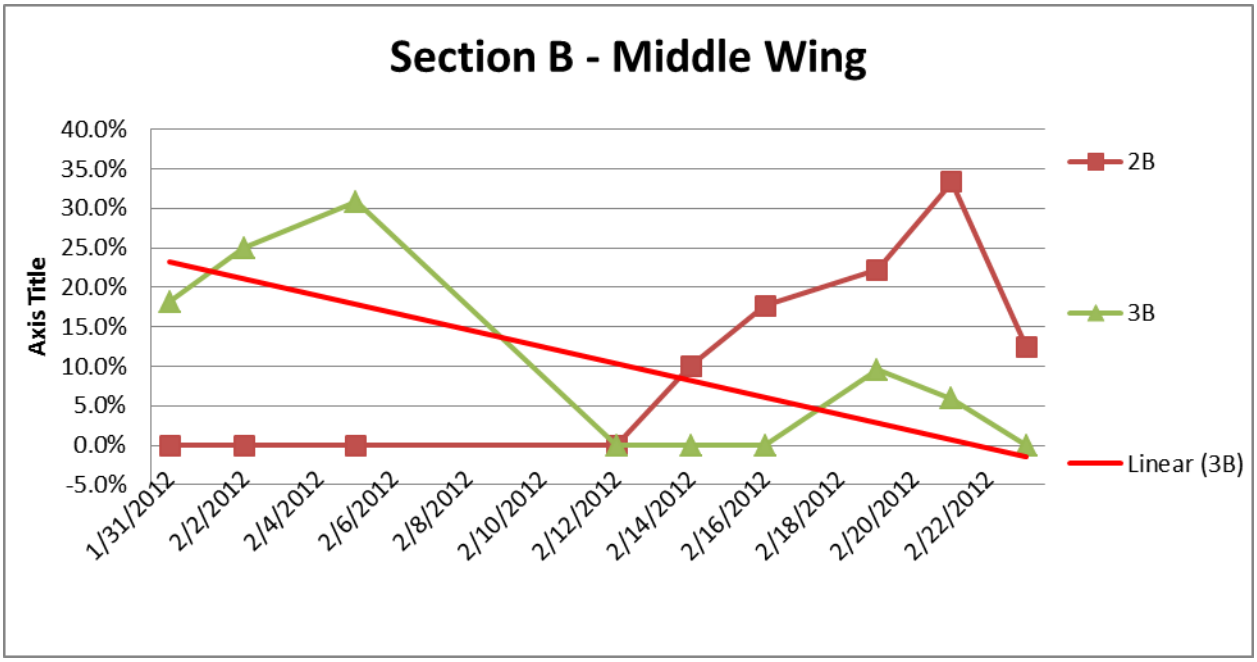

Figure 5- Linear trendline applied to section 3B to illustrate its slow decline over time

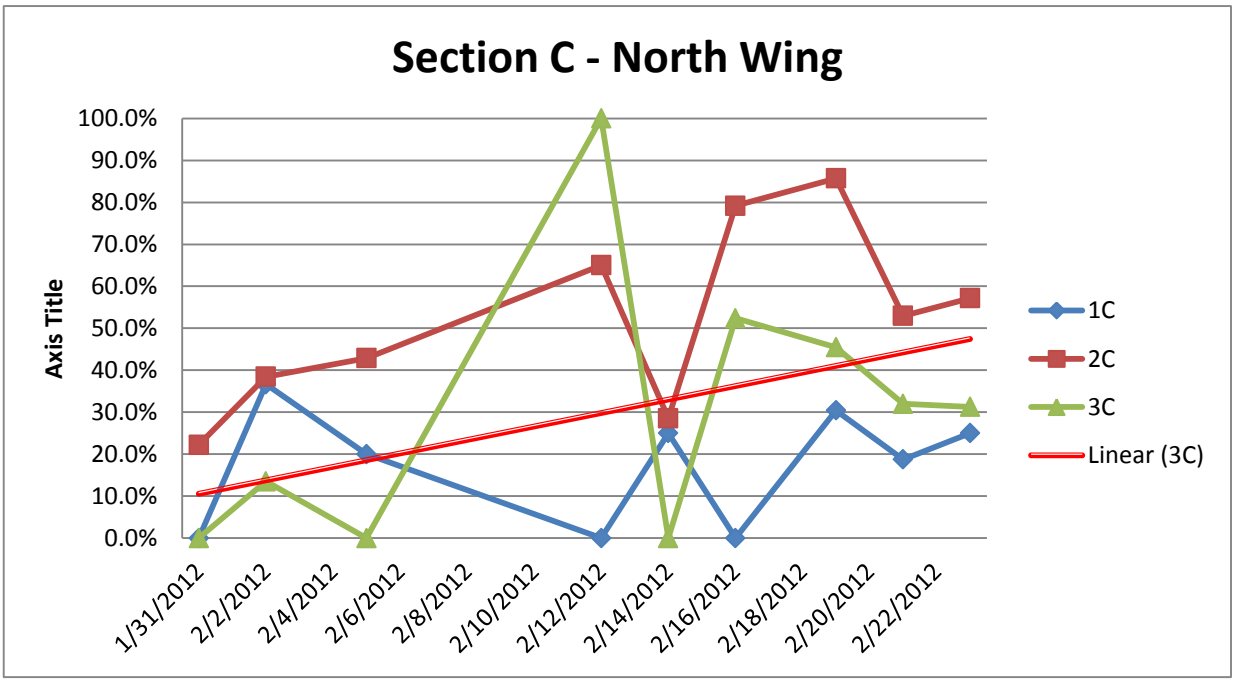

Figure 6- Section C recycling rates with a linear trendline to illustrate 3C's increase despite its sporadic levels

Recycling rates increased across the board, with only two groups showing stagnation or decline in recycling rates – Basement (Fig 4) and 3B (Fig 5) respectively. Oddly, 3B is the only floor to drop a significant amount and it is also an experimental group. There were two days, February 7 and 9, where most of the bins on all floors were completely empty or didn't have enough waste in them to be measured accurately, and were therefore excluded from all of the above graphs.

Overall, experimental groups exhibited a greater trend toward increasing recycling rates than control groups. Furthermore, groups which had a tendency to recycle little to nothing before the experiment (2B, 3C) began recycling more consistently after the posters were placed and the experimental trials began.

DISCUSSION

It appears the "Joneses" phenomenon in combination with persistent prompting has helped to influence better recycling habits within Caflisch hall. The environment in the residence hall makes for an excellent testing ground due to residents close proximity to each other and the ease of informing all of them of their progress through strategic placement of posters throughout the building.

Results and Conclusion

Though floor by floor data could appear erratic due to the few times no non-recyclable waste was disposed of on certain dates or vice versa, each experimental group (with the exception of 3B) showed an upwards trend in their recycling rates, with the average rate increase for experimental groups far exceeding the control groups. By the end of the experiment, the trendline for experimental groups was a full fifteen percentage points above the control groups. Thus, the posters which prompted experimental groups to recycle by showing how each group stacked up to their peers helped to increase the percentage of recycled waste by approximately 15 percentage points. As the highest recorded waste total in any one trial was 106.0 Kg, a 15 point increase in recycling rates can mean as much as 45 Kg more waste is recycled over the course of the week than without the posters in place. This increase could prevent an estimated

2340 Kg of recyclables from heading to the landfill if a program similar to this study is implemented in an office or apartment building with similar waste disposal needs.

Just as recycling can be an act of altruism in those who seek personal satisfaction from doing what they feel is right (Hopper, 1991), it can also be a self-serving action when proper motivators are in place. By prompting students with a display of their own recycling rates compared to others, the drive to be as good if not better than one's peers caused Caflisch Hall to recycle greater and greater amounts of their waste over time. Examination of the contents of recycling bins also showed that the increase in weight of recycling bins was due solely to increased recycling rates and more responsible habits and not simply throwing non-recyclable waste into the bins to influence the numbers in response to the posters. The amount of recycling observed in waste receptacles also dwindled over the course of the experiment as did the relative weight of the contents of said receptacles.

Future Implementation

Recreating this program and implementing it in other dorm buildings would be fairly easy. The data collection is fairly straightforward and simple, requiring only 20-30 minutes to measure and record all 45 bins in Caflisch hall. If a spreadsheet was created in Microsoft Excel or similar software, it would only require the data collectors to enter the raw data for the week and let the software do all of the calculations required for the posters. The difficult part would be updating the posters on a weekly basis. The bars for the graphs must be cut from construction paper to the correct sizes and replaced, a process which often took two to three hours to complete in Caflisch, a relatively small dorm building. These jobs would probably be delegated to RAs or student volunteers if implemented within a college campus.

The prohibitive factor in initiating a program such as this would be the cost. The posters used in this study cost about fifty dollars each, rounding to 300 dollars to supply the six experimental groups in Caflisch. Though cheaper alternatives may be used, the relatively expensive scrim used for the posters was the cheapest material that was guaranteed to survive the dangers of hanging on the wall of a college dormitory. The choice of material was to ensure the

posters' longevity and to persistently prompt subjects to recycle with minimal maintenance. Though the initial cost of the posters is somewhat prohibitive, they are robust enough to last for years and may be worth the cost down the road compared to cheaper alternatives which may tear or deteriorate more quickly and thus require more frequent replacement.

A program similar to this experiment could also be used in office buildings concerned with their environmental footprint. In conjunction with proper placement of receptacles, the posters encouraging recycling habits could help to reduce recycling in a workplace environment drastically. Eye-catching posters of this nature could also help to impress eco-friendly clientele and help to reduce the costs of in-house recycling and sorting facilities for larger office buildings.

Several factors were observed which could have negatively influenced recycling which this study did not address. Although the clusters of receptacles evaluated in this study were placed in clear view of passersby and clearly labeled, sections A and C had some issues with distribution. Each of the groups in these sections was separated by a bathroom, necessitating nearly a third of each of these groups to travel through the bathroom in order to reach the recycling bins, while two trash cans were placed in each of the bathrooms. It was observed that the bathroom bins were often filled with a mixture of recyclable and non-recyclable materials, indicating that students in the section isolated from the recycling cans weren't putting in the effort to carry their waste to the proper containers, and were content to simply place them in the most convenient spot. It is suggested that additional recycling receptacles be placed in these isolated areas of the building to further encourage good recycling habits and make it easy for students there to do the right thing, as it has been shown that proper placement and high visibility of recycling facilities has a dramatic influence on recycling rates (Holland, 2006).

In regards to the methods used in this study, the process of weighing trash cans could certainly be streamlined. As this study had no financial backing, the biggest prohibitive factor in implementation was cost, resulting in the cost-effective though tedious method of lifting and suspending each trash can by hand. To improve upon this method of data collection, it may be easier and more accurate to use a scale which one can place on the floor much like one would find in a bathroom. Inaccurate readings can occur as it becomes difficult to hold the scale steady

when one's arm is fully extended and suspending a considerable weight of trash for the several seconds it takes to read the scale. Using a floor mounted scale would take the human element out of the process and make for more accurate readings and an easier time of collecting data.

This technique is best applied in shared living or business spaces. Using posters in these shared spaces, such as an office building, apartment complex or college dormitory, is an effective way to reach many with as little material as possible. Suburbs or communities comprised of stand-alone housing would be a poor choice for this particular model, as there would be no local authority to take charge of the project and the method for displaying recycling information would need to be altered as no communal waste receptacles would exist. Further investigations into the Jones phenomenon with relation to recycling habits could explore the possibility of adapting the methods outlined above to work in a suburban neighborhood by adjusting the method of data distribution and display while incorporating the block leader program outlined in the Hopper study.

Limitations and Improvements

One of the largest problems with the data is the volatility and abnormality of the basement data. As the basement is both a residential and a common area in the building, it offered a strange mix of factors which were difficult to account for. Though the basement was designated as a control group, the frequency at which residents of experimental sections used the basement's lounge area and consequently used the waste bins located therein caused the data for the basement to be erratic and biased. The basement was included in this experiment due to the eight dorm rooms located on this floor, all in close proximity to the cluster of trash cans. The basement was also designated as a control due to its odd set-up. Unfortunately, the lounge and kitchenette are also immediately adjacent to the cluster, opening it up to data biases from visitors from other floors who have seen the posters and may still be acting accordingly. As a result, the hodgepodge of high and low values seen in figure 4 helped to skew the control data and Caflisch wide averages. In hindsight, including the basement in the experiment was a mistake. If Caflisch were to be reevaluated, the basement data should be left out of the averages and examined as its own entity. Similarly, any dorm, office, or apartment complex with a similar lounge area should be treated the same way if this model were to be duplicated.

Following up on the reasons for subjects increased recycling rates would be wise for future investigations. The easiest way to do this would be to conduct a survey which investigates the perceived effectiveness of the posters, whether or not the subjects believed the posters influenced their own recycling habits, and about their perceived habits before the experiment began. Though the data collected by this experiment shows how effective The Jones effect can be in relation to recycling, the survey would help to show whether or not the effect is entirely cognizant; if subjects actively think about their recycling habits as a result of the posters, then the effect hasn't been normalized yet. If the recycling habits are changed with a majority of the subjects denying that the posters and prompting had any effect on them, this could imply that the subjects are unconsciously responding to the Joneses prompting and the effect may be more readily normalized through repetition and consistent prompting.

The Future of the Joneses Effect

This study shows just how powerful a force The Keeping up with the Joneses phenomenon can be. In the case of OPOWER and its associates, energy companies were able to decrease consumption by nearly 2% with absolutely no cost to the consumer or the participating companies. The reason the OPOWER model is so inexpensive is because of the existing infrastructure in energy distribution. The numbers needed for the Home Energy Reports were already measured and included on the consumer's old electric bills. The only thing that was needed was an equation and a graphic to compare the numbers, and the 1.8% reduction in consumption was easily attained. In the case of recycling programs, no such infrastructure exists. It would be difficult to develop a program which measures each household's waste production under a waste management company's jurisdiction with the infrastructure currently in place, and changing this infrastructure to accommodate the model evaluated in this study may prove to be prohibitively expensive working from a top down approach. This isn't to say that the Joneses Effect isn't applicable outside of residential complexes and office buildings, but that the system of measurement and prompting would need to be different to suit the needs of suburban neighborhoods and single family homes.

The Jones Effect serves as an alternative motivator to guilt and altruism. Environmental movements have a tendency to use guilt or fear as a motivator, particularly in the case of global warming. Use of scare tactics (e.g. the future flooding of coastlines from increasing sea levels due to melting ice caps) and guilt trips (e.g. the loss of the polar bears to habitat degradation and global warming) have a tendency to paralyze people instead of inspiring action (Kollmuss & Agyeman, 2002). Those who act out of altruism already have beliefs in-line with the modern environmental movement and act appropriately (Kollmuss & Agyeman, 2002). In order to inspire altruism in someone, something has to change their beliefs or play upon their emotions in such a way that the subject believes that what he is doing is good and worthwhile. The Joneses Effect provides a third way to motivate people by manipulating jealousy and American consumerism, two forces which are widespread (Jacobs, 2005.) Pro-environmental actions are often predicated on a feeling of desire. Whether it's a desire to do the right thing or to beat your neighbors in the rat race, the ends justify the means. The desire to be altruistic, however, often takes a backseat to self-satisfaction in all but dedicated philanthropists. Even in the case of charity, it's the feeling of satisfaction one feels after donating money to the homeless or helping to build a home for the needy that is the driving force, and not simply the knowledge that they've helped someone in need (Carrus et al, 2008.) The Joneses Effect plays upon a more direct desire to be better than one's peers in whatever areas they are being evaluated. In Caflisch Hall, recycling rates increased despite numerous pre-existing signs hung by the Resident Advisors prompting students to recycle for the good of the planet. The existence of this signage before the experiment and the subsequent increase in recycling during the experiment suggests that the Joneses Effect trumped altruism in at least this study.

Though the methods used in this study are less than perfect, the results show hope for the future of the Joneses Effect in environmentalism for changing behaviors. It's been instrumental in helping OPOWER and other energy companies that implement HERs get something for nothing by reducing energy consumption at virtually no cost. Though 2% may not seem like a large reduction, the fact the reduction was made by simply changing the way the energy information is shared is a huge step towards unlocking the potential of the Joneses Effect. Unfortunately in the case of recycling, the infrastructure for data collection necessary to share the important information used in prompting individuals of their recycling habits, let alone compare recycling rates household to household, simply doesn't currently exist. Whereas a top

down approach worked for OPOWER, recycling programs should be implemented on a more localized level to help keep costs down. To follow the model proposed in this study, volunteer work or taking advantage of existing in-house employees is key to keeping costs down. As the posters used in this study were of a more expensive variety, cutting down on labor is essential to keeping this model cost-efficient. Despite the cost, this model shows how effective the Joneses Effect can be in ideal conditions, warranting further investigation into the phenomenon and its place in environmentalism.

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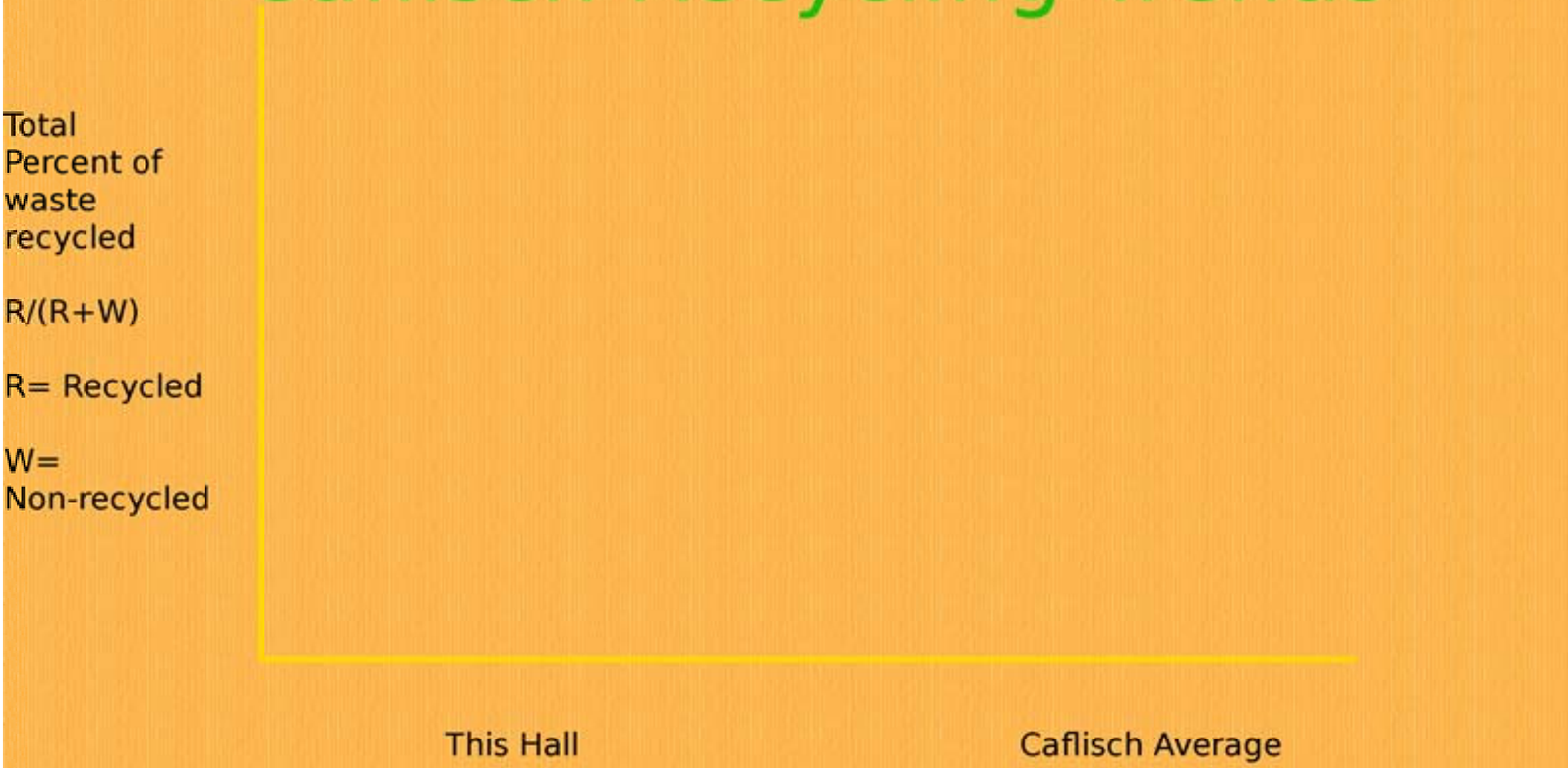
Caflisch Recycling Trends



Calculations based on ratio between Recycled waste (R) over total waste (R+W) and converted to a percentage. Percentages displayed are the percentage of waste which is recycled within this hall and throughout the whole of Caflisch. Updated Weekly.