# Hot Topic

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# *Executive Summary*

The reason for doing this project was to investigate rumors. We were particularly interested in finding out how different types of rumors travel in a given population setting. We first conducted an experiment that was based on how fast three different types of rumors would take to spread in a middle school classroom and measured how fast they spread and how accurately they were told. Next, we made the Starlogo model to find out what would happen if there were more subjects involved in the spreading of the rumor, would the results be different or the same? The program also models aspects such as, how long the rumors took to spread, how many people knew the rumor, and how popular the rumor was.

## Introduction

Rumors seem to be everywhere large amounts of people are found. People from all walks of life use rumors to communicate. Rumors can bring people up and can bring them down; they can be used to sell products among friends or neighbors; can be used to elect people to official positions. On the negative side, they can be used to hurt others badly. How fast rumors seem to spread is based on the type of topic of the rumor and how interesting it is to those who hear them. People seem to want to pass rumors based on what they stand to gain after passing them on to others. It also doesn't matter if the rumor is true or not, if the topic is good enough to grab other people's interest, it will spread fast.

Let's say you just heard a real juicy rumor about someone you know. It may not be true, but it's too good to keep to yourself. Your first instinct is to call all of your friends and pass it on. People like to pass on rumors for several reasons such as,

- **Feeling superior**. Sometimes when people feel down are have low self-esteem they pass on rumors about others so that they can feel better than the other person they are passing rumors about.

- **Belong to a group:**

If everybody else is gossiping or spreading rumors, one might feel that they have to fit in when they are in on a secret.

- **For attention:**

When one knows a secret that nobody knows, or are the first person in the group to hear a rumor, it might get the attention by being the center of the rumor mill. A rumor might sometimes get them the attention they need. Having the new scoop is like having money, telling it to people is like buying their attention, if only for a few minutes. One might even save up a really scandalous rumor, waiting for the right moment to blab in order to get maximum amount of attention for it.

- **For control of power:**

Certain people always want to be in control and at the top of the popularity ladder.

- **Out of jealousy or a need for revenge:**

If you're jealous of someone's looks, popularity, or money, you might gossip about that person in order to hurt him or her. If you feel that someone's done something bad to you, or deserves to be hurt, making up a rumor might satisfy your sense of justice.

- **Out of boredom**:

Most of middle school rumors are spread out of boredom. When one is bored, they sometimes home that rumors will stir up things in their community.

A rumor is a piece of information or a story that has not been verified, meaning that the person who is telling it doesn't know if it's true or false.

Rumors spread from person to person, or can spread from one person to a lot of people at the same time.

They can change slightly each time they're told, so they get more exaggerated over time.

Rumors are often a form of bullying especially if they are intended on hurting someone, break up a friendship, or make someone less popular. When rumors are spread against someone they get a feeling that they are not part of the in group.People who hear rumors can decide where it's hurtful or harmless. They need to consider why they would want to pass it, why would they want others to know the information being passed on, think about how the person who is being gossiped by would feel if he heard the rumor. Once they know, they can make a decision of passing or not passing the rumor. Unfortunately, anyone can be a target of rumors so it's a good idea to be careful with one's secrets.

## Method

In order to investigate our problem, we passed three types of rumors (one at a time) in classrooms of about 25 students and recorded the time it took to come back to us. We used one malicious rumor, one financial rumor, and one positive rumor. We were also interested to find out if the rumors would come back they way they were told. We had hypothesized that the malicious rumor would travel the fastest and would be told more accurately

## Results

The malicious rumor did indeed travel the fastest as predicted and did come back to us most accurately. The positive rumor fizzled out almost immediately.

We then created the StarLogo model of the spread or rumors to find out what other dynamics would be involved in rumor spreading.

## StarLogo Code

Turtle Procedures
to check-patches
wiggle
if color = white and pc = blue [grab one-of-turtles-here [setc-of partner white]]
if color = brown and pc = yellow [grab one-of-turtles-here [setc-of partner brown]]
if color = red and pc = green [grab one-of-turtles-here [setc-of partner red]]
end

to wiggle
lt random 360
rt random 360
fd 1
end

to vary
setbreed 1
end

to add-yellow
if breed = 0 [setc 48]
end

to add-blue

if breed = 0 [setc 108]
end

to add-green
if breed = 0 [setc 52]
end

to change
if color = 52 [pd]
if color = 108 [pd]
if color = 48 [pd]

if pc = random green [setc green]

```
if pc = random blue [setc blue]

if pc = random yellow [setc yellow]


end


Observer Procedures

lobals [
        malicious-color
        financial-color
        positive-color
]

patches-own [
        malicious-intensity
        financial-intensity
        positive-intensity
]

to setup
        ct
        make
        set malicious-color blue
        set financial-color green
        set positive-color yellow
end

to make
        crt number
end

to iterate
        update-intensity
        diffuse-intensity
        update-color
        ask-turtles [check-patches]
end

to update-intensity
        ask-patches [
                case (((pc div 10) * 10) + 5) [
                        malicious-color [
                                if ((malicious-intensity div 10) != (pc mod 10)) [
```

```
                                        set malicious-intensity ((pc mod 10) * 10)
                                ]
                        ]
                        financial-color [
                                if ((financial-intensity div 10) != (pc mod 10)) [
                                        set financial-intensity ((pc mod 10) * 10)
                                ]
                        ]
                        positive-color [
                                if ((positive-intensity div 10) != (pc mod 10)) [
                                        set positive-intensity ((pc mod 10) * 10)
                                ]
                        ]
                ]
                set malicious-intensity (malicious-intensity * 0.5)
                set financial-intensity (financial-intensity * 0.5)
                set positive-intensity (positive-intensity * 0.5)
        ]
end

to diffuse-intensity
        diffuse malicious-intensity 1.25
        diffuse financial-intensity 1
        diffuse positive-intensity 0.75;let's see
end

to update-color
        ask-patches [
                ifelse (malicious-intensity > financial-intensity) [
                        ifelse (malicious-intensity > positive-intensity) [
                                scale-pc malicious-color malicious-intensity 1 100
                                                                7
                                                                ]
                        [
                                                        8
                                scale-pc positive-color positive-intensity 1 100
                        ]
                ]
                [
                        ifelse (financial-intensity > positive-intensity) [
                                scale-pc financial-color financial-intensity 1 100
                        ]
                        [
                                scale-pc positive-color positive-intensity 1 100
                        ]
                ]
```

```
        ]
end

to experiment
cg
end
```

## Conclusion

The most significant original achievement on the project was watching how students really like or almost thrive on rumors. We learned that rumors are a form of bullying that students use to intimidate others. Rumormongering was also related to popularity. The more the popular, the more the student was listened to. But unfortunately, no one is spared from being the target of rumors.

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